PERALES, ALLMON & ICE, P.C.
ATTORNEYS AT LAW
1206 San Antonio Street
Austin, Texas 78701
(512) 469-6000 · (512) 482-9346 (facsimile)
info@txenvirolaw.com

Of Counsel:
David Frederick
Richard Lowerre
Brad Rockwell
Vic McWherter

September 6, 2023

Laurie Gharis, Chief Clerk
Texas Commission on Environmental Quality
Office of the Chief Clerk, MC 105
P.O. Box 13087
Austin, Texas 78701-3087

Via TCEQ Online Comment Form

RE: Request for Contested Case Hearing and Request for Reconsideration regarding Application by Corix Utilities (Texas) Inc. for TPDES Permit No. WQ0013977001.

Dear Ms. Gharis:

Environmental Stewardship ("Requestor") submits this request for a contested case hearing regarding the above-referenced Application by Corix Utilities (Texas), Inc. ("Applicant" or "Corix") and provides the following information. The Executive Director's Response to Comments ("RTC") did not resolve issues previously raised by Requestor in its public comments and public meeting request from March 8, 2023. Environmental Stewardship may be contacted through my office at the address and telephone number indicated below.

I. Environmental Stewardship is an "Affected Person."

Environmental Stewardship strives to protect the use and quality of the Colorado River as an affiliate of the Waterkeeper Alliance. Environmental Stewardship focuses its

efforts on the Colorado River from Longhorn Dam downstream to La Grange. With regard to the Application at issue in this matter, Environmental Stewardship is an affected person.

Environmental Stewardship meets the qualifications requiring that the Commission recognize it as an "affected person" under the applicable law. Participation in a hearing on the Application is consistent with Environmental Stewardship's purposes, which include protection, conservation, restoration, and enhancement of the earth's natural resources in order to meet current and future needs of the environment and humans. The relief sought by Environmental Stewardship is prospective, and, thus, the participation of an individual member of Environmental Stewardship is not required.

Richard Martin, a member of Environmental Stewardship, would otherwise have standing to request a hearing in his own right as a consequence of his potentially adversely impacted recreational interests. Mr. Martin has fished in the area of the Colorado River from Webberville to Bastrop for more than 50 years. He fishes by catch and release in the Wilbargers Bend area of the Colorado River approximately two to three times each month, depending upon weather.[1] This area of the Colorado River is little more than 1 mile downstream of the discharge point. Mr. Martin has noticed that over the last 50 years the

[1] Although of no relevance to the substantive consideration of this hearing request, Environmental Stewardship notes that Mr. Martin resides at 703 Austin Street, Bastrop, Texas. This address is approximately 10 miles from the proposed discharge. Considering that Texas Courts require that a person be granted a hearing as a mandatory prerequisite to judicial review, it would violate the conditions of TCEQ's delegated authority to administer the NPDES Permitting Program if TCEQ were to require that Mr. Martin, or any other person, own property within a certain distance of the proposed discharge as the threshold question for determining the "affected person" question. *See* 40 C.F.R. § 123.30 ("A State will not meet this standard if it narrowly restricts the class of persons who may challenge the approval or denial of permits (for example, if only the permittee can obtain judicial review, if persons must demonstrate injury to a pecuniary interest in order to obtain judicial review, *or if persons must have a property interest in close proximity to a discharge or surface waters in order to obtain judicial review*.").

number of large fish in the Colorado River has dropped significantly. He estimates that the fish population within the Colorado River has been reduced by approximately 89%. He is concerned that the proposed discharge will contain contaminants that will result in a further decline of fish populations in the area, which would adversely impact his ability to catch fish in the Wilbarger Bend area of the Colorado River. The area of the receiving waters of the discharge upstream of Wilbarger Bend contain a relatively low volume of flow in comparison to the volume of the proposed discharge, such that upon operation as fully authorized the discharge will not be significantly diluted prior to reaching Wilbargers Bend.

Mr. Martin has a personal justiciable interest related to a legal right affected by the application. The Bill of Rights of the Texas Constitution, by amendment in 2015, guarantees the right of each citizen to fish. Tex. Const. Art. I, § 34. In the case of *Texas Department of State Health Services v. Crown Distribution LLC*, 647 S.W.3d 648 (Tex. 2022), Justice Young, joined by Chief Justice Hecht, Justice Devine, and Justice Blacklock wrote that this is one of the interests that Texas courts must enforce under the Due Course of Law provision of the Texas Constitution. *TDSHS* at 677. Mr. Martin also has the legal right to engage in such fishing activities within the Colorado River since the Colorado River at Wilbargers Bend is a navigable water. *See Diversion Lake Club v. Heath*, 58 S.W.2d 566, 570 (Tex. App. – Austin, 1933).

Mr. Martin's ability to exercise his right to fish will potentially be adversely impacted by the proposed discharge. The proposed treatment plant, after expansion, is intended to serve approximately 2,000 living use equivalents of missed use residential and

commercial properties. The discharge will contain nutrients and oxygen-demanding substances that will potentially lower the dissolved oxygen in receiving waters in a way that would contribute to a further impairment of the abundance and diversity of aquatic life in downstream waters, including Wilbargers Bend. The discharge will also contain harmful bacteria. Furthermore, the discharge will contain dissolved solids and suspended solids. Mr. Martin is concerned that the discharge of these dissolved solids and suspended solids will only worsen the impact of increasing solids concentrations within the Colorado River that he has observed over the years.

Texas has represented to the Environmental Protection Agency that a determination of whether someone is an affected person is governed by the same standards as govern Article III standing in Federal Court, with the Texas Attorney General stating:

> The criteria regarding determination of affected persons in the TCEQ's rules comport with the standing requirements in Article III of the United States Constitution for judicial review under the state statutes applicable to federal permit programs being implemented by the TCEQ, including the TPDES program. There is no material difference between the TCEQ's standards and the standards the federal courts apply when deciding judicial standing, which are based on the United States Supreme Court decision in *Lujan v. Defenders of Wildlife, et al.*, 504 U.S. 555 (1992).[2]

Mr. Martin's recreational interests meet the test outlined in *Lujan v. Defenders of Wildlife, et al.*, (*Lujan*).

The United States Supreme Court in *Lujan* established that standing involves three elements: (1) an injury in fact, which is a concrete and particularized invasion of a legally

[2] Statement of Legal Authority to Regulate Oil and Gas Discharges under the Texas Pollutant Discharge Elimination System Program, Texas Attorney General Ken Paxton, September 18, 2020.

protected interest that is actual or imminent, not conjectural or hypothetical; (2) a fairly traceable causal connection between the injury and the conduct complained of; and, (3) it must be likely as opposed to speculative that the asserted injury will be redressed by a favorable decision.[3]

The United States Supreme Court applied the *Lujan* test to recreational standing in the case of *Friends of the Earth, Inc. v. Laidlaw Environmental Servs*., 528 U.S. 167, 182 (2000). *Laidlaw* involved standing with respect to a National Pollutant Discharge Elimination System ("NPDES") permit, much like the immediate case involves the question of whether Mr. Martin has standing with respect to the Texas Pollutant Discharge Elimination System ("TPDES") permit sought by Corix. In *Laidlaw*, the Plaintiffs alleged that a member lived half a mile from the facility, that he occasionally drove to the receiving river, that it looked and smelled polluted, and that he would like to fish, camp, swim, and picnic in the area of the receiving river between 3 to 15 miles downstream from the facility as he had as a child, but would not do so out of concern for the discharges at issue in the case.[4] Mr. Martin utilizes downstream waters in an area closer to the discharge than was the case in *Laidlaw.*

In *Laidlaw*, the Court explained that "plaintiffs adequately allege injury in fact when they aver that they use the affected area and are persons 'for whom the aesthetic and recreational values of the area will be lessened' by the challenged activity." *Id.* (quoting *Sierra Club v. Morton*, 405 U.S. 727, 735 (1972), and citing *Lujan v. Defenders of Wildlife*,

[3] Lujan v. Defenders of Wildlife, 504 U.S. 555, 561 (1992).
[4] Friends of the Earth v. Laidlaw Environmental Services (TOC), Inc., 528 U.S. 167, 181 – 182 (2000).

504 U.S. 555, 562-563 (1992)). The *Lujan* Court, itself, had noted that, "[o]f course, the desire to use or observe an animal species, even for purely esthetic purposes, is undeniably a cognizable interest for purpose of standing."[5]

Mr. Martin satisfies the requirements of standing based on his recreational interests, consistent with the standards set forth in *Lujan* and *Laidlaw*. His use of the downstream waters for fishing constitutes the use of an animal species, which *Lujan* recognizes as legally protected. He is particularly impacted by the discharge in a way distinct from the general public by virtue of his regular use of the receiving waters, dating back fifty years. His concerns as to the potential impact of the proposed discharge will be redressed by his participation in a contested case hearing on the issuance of the permit, as such a proceeding will allow a determination of whether the draft permit is sufficiently protective of the recreational and aquatic life uses of the downstream waters, including the Wilbargers Bend area of the Colorado River.

Arguments have previously been forwarded that a recreational interest cannot be particularized because many people have the right to engage in a recreational activity. It is true that any person has the right to fish in the Wilbargers Bend area of the Colorado River. However, as the Texas Supreme Court has noted, in approvingly quoting the United States Supreme Court, "[t]o deny standing to persons who are in fact injured simply because many others are also injured, would mean that the most injurious and widespread Government actions could be questioned by nobody . . . where a harm is concrete, though

[5] *Lujan* at 562 – 563.

widely shared, the Court has found injury in fact."[6] Would no judicial review be available if the Texas Legislature were to pass a statute imposing a state income tax in violation of the Texas constitution merely because many people would be required to pay the tax? The answer, of course, is no. The fact that many others can also fish in the downstream waters is entirely irrelevant to the "affected person" determination. The government cannot evade judicial review by choosing to injure many, instead of only a few.[7]

Environmental Stewardship will note that the circumstances of Corix's Application alter the applicable considerations relevant to Environmental Stewardship's hearing request from those at issue in non-federal programs. In obtaining delegated authority to issue TPDES Permits for discharges associated with oil and gas activities, the Texas Attorney General stated that, "the TCEQ does not consider discretionary factors in 30 Tex. Admin. Code § 55.203(d) that may not be consistent with the determination of Article III standing, such as the merits of the underlying TPDES permit application, in evaluating whether a hearing requester is an affected person."[8] Thus, TCEQ may not deny Environmental Stewardship's request based upon a finding that the conditions of the permit will be adequately protective of downstream waters so as to prevent the potential impacts

[6] *Andrade v. NAACP of Austin*, 345 S.W.3d 1, 7-8 (Tex. 2010) quoting approvingly *United Statesv. Students Challenging Regulatory Agency Procedures*, 412 U.S. 669, 686-688 (1973) and *FEC v. Akins*, 524 U.S. 11, 24 (1998).

[7] Texas courts require that a person obtain a contested case hearing prior to pursuing judicial review of a TCEQ permitting decision. *Sierra Club and Public Citizen v. Texas Commission on Environmental Quality*, 2016 WL 1304928 (Tex. App. – 2016) (not designated for publication). Thus, the scope of the affected person standard applied by TCEQ necessarily implicates whether Texas provides a sufficient opportunity for judicial review of TCEQ's TPDES permitting decisions.

[8] Statement of Legal Authority to Regulate Oil and Gas Discharges under the Texas Pollutant Discharge Elimination System Program, Texas Attorney General Ken Paxton, September 18, 2020, at p. 22.

of concern to Mr. Martin and Environmental Stewardship. To the degree that Senate Bill 709, or *Texas Commission on Environmental Quality v. Sierra Club*, 455 S.W.3d 228 (Tex. App. – Austin, 2014) indicate otherwise, they have no applicability to this hearing request by virtue of the distinct federal context.

II. Disputed Issues of Fact Remain

The Executive Director's Response to Comments did not resolve the concerns raised in comments filed by Environmental Stewardship. Generally speaking, the permit has not been shown to protect water quality consistent with the Texas Water Quality Standards. A more detailed explanation of the errors in the Executive Director's proposal to issue the permit is set forth in Attachment A to this request, which is incorporated into this request for all purposes.

III. Issues for Reconsideration and, alternatively, Hearing

Environmental Stewardship requests that the Commission reconsider the Executive Director's decision, and deny the permit, in light of the errors identified in Exhibit A.

If the Commission does not reverse the Executive Director's decision to issue the draft permit, the alternative, Environmental Stewardship requests a contested case hearing on the following issues, previously raised in comments submitted by Environmental Stewardship:

(1) Whether the draft permit will adversely affect downstream water quality in violation of applicable requirements. (Response to Comments Issue Nos. 3, 5, 7, 12, 16, 20, 21, and 24)

(2) Whether the draft permit will adversely affect groundwater in violation of applicable requirements. (Response to Comments Issue Nos. 3 and 4)

(3) Whether the draft permit will adversely affect human health in violation of applicable requirements. (Response to Comments Issue No. 6)

(4) Whether the draft permit will prevent nuisance odor conditions in compliance with applicable requirements. (Response to Comments Issue No. 10)

(5) Whether issuance of the permit is consistent with the State's regionalization policy. (Response to Comments Issue Nos. 13 and 25)

(6) Whether the representations contained in the Application are accurate and complete. (Response to Comments Issue No. 14)

(7) Whether public notice was sufficient. (Response to Comments Issue No. 15)

(8) Whether the draft permit should be modified or denied in consideration of the Applicant's compliance history. (Response to Comments Issue No. 17)

(9) Whether the draft permit contains all appropriate and necessary conditions. (Response to Comments Issue Nos. 22 and 23)

(10) Whether the proposed location meets applicable location standards. (Response to Comments Issue No. 32)

(11) Whether the proposed discharge will cause excessive erosion. (Response to Comments Issue No. 33)

IV. Conclusion

For the reasons set forth above, Environmental Stewardship is an affected person, and requests a contested case hearing on the subject application with regard to the issues identified above.

Respectfully submitted,

/s/ Eric Allmon
Eric Allmon
State Bar No. 24031819
PERALES, ALLMON & ICE, P.C.
1206 San Antonio
Austin, Texas 78701
512-469-6000 (t) | 512-482-9346 (f)
eallmon@txenvirolaw.com

Counsel for Environmental Stewardship

ATTACHMENT A

Request for Contested Case Hearing

Request for Reconsideration

and

Deficiency Review of Executive Director's Responses to Public Comments on Corix/McKinney Roughs WWTP permit application.

September 6, 2023

By

Steve Box

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REQUEST FOR CONTESTED CASE HEARING

Environmental Stewardship is requesting that the Commissioners of Texas Commission on Environmental Quality (TCEQ) direct the Executive Director to conduct a contested case hearing on the Corix/McKinney Roughs TPDES Permit Application WQ001397701 to determine whether Segment 1428 of the Colorado River (Basin 14) in Bastrop County, Texas, has been properly assessed in accordance to Title 30 of the Texas Administrative Code, using the guidelines for the determination and review of attainable use provided in the standards implementation procedures, to 1) confirm that the Segment is meeting the Exceptional Aquatic Life, Recreational, and Drinking Water standards assigned to the segment, and 2) is capable receiving and assimilating such treated wastewater as is proposed for disposal into the segment without degrading attainment of these use standards.

JUSTIFICATION

Recreational use of Segment 1428 by fishermen and boaters indicate that this segment of the river has likely degraded over the past decades resulting in impairment of the quality of fishing experience, threatening human health from consumption of fish, and impairing the quality of aquatic-life use on the ecology of the fish and macrobenthic communities that directly impacts recreational use of the river by fishermen and boaters. The recreational use and experience of fishermen and boaters needs to be investigated to determine if this segment is meeting the standards set for recreational use of this segment of the river.

Environmental Stewardship cites the replies of two Environmental Stewardship members as justification for the above requested contested case hearing.

See also justification provided for requesting a reconsideration of the permit after the above mentioned contested case hearing is completed.

REQUEST FOR RECONSIDERATION

Environmental Stewardship is requesting that the Commissioners of Texas Commission on Environmental Quality (TCEQ) reconsider the Corix/McKinney Roughs TPDES Permit Application WQ001397701 after conducting a review to determine whether Segment 1428 of the Colorado River (Basin 14) in Bastrop County, Texas, has been properly assessed in accordance to Title 30 of the Texas Administrative Code, using the guidelines for the determination and review of attainable use provided in the standards implementation procedures, to 1) confirm that the Segment is meeting the Exceptional Aquatic Life, Recreational, and Drinking Water standards assigned to the segment, and 2) is capable receiving and assimilating such treated wastewater as is proposed for disposal into the segment without degrading attainment of these use standards.

JUSTIFICATION

The fact that a total of 50 species of fish were collected in the entire river reach from Longhorn Dam to Wharton during the LCRA/SAWS Project indicates that it is *unlikely* that Segment 1428 met the 51 species standard required to satisfy the Exceptional Aquatic-Life Use standard for Segment 1428 during that timeframe. The Bio-West report likely provides the best dataset to assess the health of the river in the 2004-07 timeframe, however, current data are still lacking, and is needed, to make a current assessment. (ES 1 Comment 3)

TCEQ justifies disposal of treated wastewater into Segment No. 1428 of the Colorado River on the basis that it is not currently listed on the State's inventory of impaired and threatened waters (the 2022 CWA § 303(d) list) in its Notice of Application and Preliminary Decision for TPDES Permit for Municipal Wastewater[1]. This statement seeks to imply that this segment is not impaired or threatened waters, and therefore meets the criteria to accept disposal of treated wastewater into the river. To the contrary, the evidence shows that concerns were initially raised about impairment of fish and macrobenthic communities in the 2002 Texas Integrated Report on the Colorado River Basin along with nutrients nitrogen and phosphate.

It also appears that very little has been done to further investigated or otherwise address these concerns since their initial listing in 2002, thus the Agency is making its determination without having the scientific evidence to support its position.

In reviewing the 2000-2022 Texas Integrated [Assessment] Reports[2] for the Colorado River (Basin 14) it is clear that impaired fish and macrobenthic communities in these

1 (4 in filed comments) NOTICE OF APPLICATION AND PRELIMINARY DECISION FOR TPDES PERMIT FOR MUNICIPAL WASTEWATER TPDES, Permit No. WQ0013977001, Deba Dutta, P.E.12/16/2022.

2 (6 in filed comments) The Texas Integrated Report describes the status of the state's waters, as required by Sections 305(b) and 303(d) of the federal Clean Water Act. It summarizes the condition of the state's surface waters, including concerns for public health, fitness for use by aquatic species and other wildlife,

segments of the river were carried over without evidence of biological assessments having been conducted for these concerns. Methods[3] for collecting and analyzing biological assemblage and habitat data provides metrics for evaluating fish and benthic communities for exceptional aquatic use for ecoregions, including Segment 1428. However, we are unable to find references to any recent data that has been collected that indicates that this segment is fully supporting, or not supporting, this standard of use. As such, we requested[4] that TCEQ provide any such data as are available that would justify their determination that this segment is, or is not, meeting the Exceptional Aquatic Use standards. The Executive Director did not provide this information as requested. (ES filed comments May 28, 2023) **ATTACHMENT 1** Provides evidence of our findings).

Furthermore, the TCEQ's publicly available database that covers data obtained from 1968 through the present indicates that data on the presence of toxicants such as metals, polynuclear aromatic hydrocarbon carcinogens, and organic herbicides and pesticides has not been collected routinely or is inconclusive or in fact points to significant contamination. In fact, there is an appalling lack of data. In summary, no measurements of potentially toxic compounds in the Webberville to Bastrop segment of the Colorado have been carried out since 1996, 27 years ago, and those assays that were carried out previously were sporadic at best, in many cases "inadequate" to detect toxic levels of the compound and carried out with samples obtained about 35 miles upstream from the proposed facility. (ES 4 Comment 5)

and specific pollutants and their possible sources.
https://www.tceq.texas.gov/waterquality/assessment/20twqi

3 (7 in filed comments) Surface Water Quality Monitoring Procedures, Volume 2, Appendix B (RG-416, Revised May 2014)

4 ES filed comments May 28, 2023.

WE SEEK ANSWERS TO THESE QUESTIONS:

DOES THE ECOLOGICAL HEALTH OF SEGMENT 1428 OF THE COLORADO RIVER MEET THE EXCEPTIONAL AQUATIC LIFE USE STANDARD?

IS THE SEGMENT ABLE TO ASSIMILATE THE WASTEWATER TO BE DISPOSOSED OF INTO THE RIVER?

The health of a river — an ecological system which functions as a massive water filter — requires that best-available treatment technology be used in order to meet exceptional aquatic-life use standards.

Depending on the health of a stream, and how it is managed to maintain its ecological health, it should be able to assimilate some amount of pollution as it flows through the environment. As you might expect, a healthy stream can carry and treat a larger "load" of pollution than a stream that is ecologically stressed or impaired. This is what is called a stream's "assimilative capacity".

The assimilative use of a stream or river to removed pollutants must be balanced with the other uses of the stream, such as for recreation, drinking-water supply, and, in the case of Segment 1428 of the Colorado River, exceptional aquatic-life use.

The amount of pollutant load that a stream can handle, while also attaining the beneficial recreational, drinking-water supply and exceptional aquatic-life use, must be managed by limiting the amount of total pollution load that is allowed to be disposed of into the stream. This is done in the permitting process and, where needed, by a management process called Total Maximum Daily Loading (TMDL).

The TCEQ is the agency of the state that has been delegated the authority under the federal Clean Water Act to manage this balancing of beneficial uses in Texas.

The starting place in managing the balance between the beneficial uses of a stream or river is a periodic "health assessment". Just like we get a periodic health checkup to assess how our body is functioning -- whether it is compromised by disease or poor diet -- a stream needs to be assessed to determine whether it is meeting the standards that have been set for it, or if it is in some way impaired. If it is impaired and cannot manage the pollution load that has been placed on it, then, by law, a Total Maximum Daily Load limit must be determined, and a management plan established, to remedy the impairment and return the stream to a healthy status.

Again, the TCEQ is the agency that has been delegated the responsibility to do periodic assessments of the water quality and ecological health of Texas rivers, streams, and lakes.

I. INTRODUCTION

Environmental Stewardship[5](ES) has extracted certain information from Executive Director's Decision Letter and Executive Director's Response to Comments document.

ES copied sections of the above document and pasted those sections into this document to serve as context to its review of the sufficiency of TCEQ's responses. TCEQ responses to the comments have been extracted in part and the information is indented and identified as "ED's RESPONSE (in part):"; the full text can be found in the original document. Environmental Stewardship's replies to the TCEQ Executive Director's replies to ES comment are listed the order of occurrence in the ED's document as ES # followed by the Comment #, e.g., (ES 1 Comment 3). ES replies are also indented as "ES REPLY:" OR "ES MEMBER (Name optional) REPLY:" or "Other Organization REPLY:".

The TCEQ's Interim Executive Director, Kelly Keel, provided responses to comments by the Individuals and organization listed below that submitted timely comments as required by 30 Texas Administrative Code (TAC) Section (§) 55.156, before a permit is issued.

A. Individuals and organization that submitted timely comments:

The Executive Director (ED) of the Texas Commission on Environmental Quality (the commission or TCEQ) files this Response to Public Comment (Response) on the Corix Utilities (Texas) Inc.'s application and ED's preliminary decision for major amendment to Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0013977001. As required by 30 Texas Administrative Code (TAC) Section (§) 55.156, before a permit is issued, the ED prepares a response to all timely, relevant, and material, or significant comments. TCEQ received comments **from Steve Box, Executive Director** on behalf of Environmental Stewardship **and its Members**, Kermit D. Heaton, Brian M. Keegan, Miriam Hall, Lauren Demates, Mary Ceallaigh, Laurie Mason, Neal Herbert Cook, Becky Smith, Stan Gerdes, Charles Schwertner, Melanie Pavlas, Carl Altman-Kaough, Natasha Martin on behalf of the Management Committee of the Lost Pines Groundwater Conservation District Board of Directors, Michael C. Macleod (**correctly: Michael C. MacLeod, Ph.D.**), Karen Sterling, Andrew Wier, Chapman Edward Ambrose, Mike Novak, Lynda MacLeod, Bruce Jerpseth, Mark Mayfield, **Skip Connett**, Sean Mason, Darrell Bartley, Michael Mills, Charles S. Teeple, Linda Curtis, Amy and Richard Krause, Charlotte Gilman, Renate Suitt, and Shirley H. Adams. This response addresses all such timely public comments received, whether or not withdrawn. If you need more information about this permit application or the wastewater permitting process, please call the TCEQ Office of Public Participation and Education Program at 1-800-687-4040. General information about the TCEQ can be found at our website at https://www.tceq.texas.gov (Emphasis Added)

[5] 52 mentions of Environmental Stewardship.

The Executive Director also provided information on the following topics on pages 1-3 of the Executive Directors August 7, 2023, Decision Letter and Response to Comment (RTC).

EXECUTIVE DIRECTOR'S RESPONSE TO PUBLIC COMMENT
I. BACKGROUND
A. Description of Facility (page 1)
B. Procedural Background (page 1-2)
C. Access to Rules, Statutes, and Records (page 3)
II. COMMENTS AND RESPONSES

II. ENVIRONMENTAL STEWARDSHIP'S REPLIES TO EXECUTIVE DIRECTOR'S RESPONSES TO COMMENTS ON THE APPLICATION.

ES 1 (Comment 3): Environmental Stewardship is **concerned about the overall ecological health of the Colorado River, its tributaries, and the aquifers of the region**. Environmental Stewardship asks **whether it is appropriate for TCEQ to allow wastewater to be disposed into this segment of the river** where the McKinney Roughs treatment plant is located.

> **ED'S RESPONSE (in part)**: The designated uses for Segment No. 1428 are primary contact recreation, public water supply, and exceptional aquatic life use. The sewage water will be treated and disinfected as required by the draft permit, regulations, and effluent limits prior to discharge to protect human health and wildlife. The effluent limits in the draft permit are set to maintain and protect the existing instream uses. These effluent limits satisfy the requirements of the Colorado River Watershed Protection Rule (30 TAC Chapter 311, Subchapter E). The TCEQ Water Quality Division has determined that the draft permit is in accordance with the TSWQS, which ensures that the effluent discharge is protective of aquatic life, human health, and the environment. The review process for surface water quality is conducted by the Standards Implementation Team and Water Quality Assessment Team surface water modelers. The effluent limits in the draft permit are set to maintain and protect the existing instream uses.
>
> The ED determined that these uses should be protected if the facility is operated and maintained as required by the proposed permit and regulations. The ED has made a preliminary determination that the draft permit, if issued, meets all statutory and regulatory requirements. The TCEQ also submitted the draft permit to the U.S. Environmental Protection Agency (EPA) Region 6 for review. The EPA reviewed the draft permit and did not have any objections to its issuance.
>
> **ES Reply:** ED's reply indicates that the agency has followed the prescribed statutes in conducting the review and evaluation of the application in preparing the draft permit.
>
> **ED misses the basis of ES's concern about the overall ecological health of the Colorado River and its tributaries as articulated in ES 3, ES 4, ES 5, and**

ES 6 related to Comment 5; ES 15 Comment 12; ES 20 Comment 16; and ES 25, ES 28, and ES 29 Comment 20.

ES is concerned that the TCEQ has not conducted biological studies on the concern listed in 2002 regarding the impairment of fish and macrobenthic communities in the lower portion of Segment 1428 in Bastrop County. For more than 18 years, the agency has "brought forward" these concerns without conducting the studies, and therefore the agency is not able to affirmatively state that this segment of the river meets the Aquatic-Life Use standard established for this segment. Failing the ability to make an affirmative statement on the health of the river, the agency falls back to its statement ***"Segment No. 1428 is not currently listed on the State's inventory of impaired and threatened waters (the 2022 CWA § 303(d) list).[6]"***

This statement *implies* that the health of the river is meeting the Aquatic-Life Use standard. However, lacking the biological data needed, the agency is not able to determine whether the lower reach of Segment 1428 meets the standard, or should be included on the current inventory of impaired and threatened waters.

The only biological studies that appear in the databases we (ES and Michael C. Macleod) have reviewed were conducted in 2002 on the Travis County Park reach of the river in Travis County.

ES asserts that the residents who live along the Webberville to Bastrop reach of the river, or who hold an interest in the overall health of the river, or who are ES Members, or are organizations like ES whose purpose is to protect the health of the river, have a right to know the current health of the river based on data that has been collected and assessed or the purpose of determining if the uses of the river are being met.

ES further asserts that it is the duty of TCEQ, under its delegated authority from EPA Region 6, to act on behalf of the Federal Government and EPA in regulating and enforcing the Clean Water Act in the State of Texas.

ES is aware of studies on this segment of the river that were conducted as a part of the LCRA/SAWS project in 2004-07, and reported in 2008 by Bio-West Inc.[7], however, these studies are not listed by TCEQ and LCRA refuses to provide copies to ES even though they confirmed that they have the studies and agreed to provide copies to ES at the public LCRA Water Management Plan update briefing on June 6, 2023.

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[6] Corix Utilities (Texas) Inc., TPDES Permit No. WQ0013977001, Statement of Basis/Technical Summary and Executive Director's Preliminary Decision, page 3.

[7] Colorado and Lavaca Rivers and Matagorda Basin and Bay Expert Science Team (CL-BBEST) Environmental Flow Regime Recommendations Report, March 1, 2011: Intensive biological and physical data collection activities conducted 2004-2007 (BIOWEST, Inc. 2004, BIO-WEST, Inc. 2005, BIO-WEST, Inc. 2006, BIO-WEST, Inc. 2007), page 2-120.

The following is a summary of the Bio-West studies[8]:

> Aquatic habitats use data were collected at **10 sites from Longhorn Dam to Wharton** in 2004–2007 using various fish sampling techniques including seining, backpack electrofishing, barge electrofishing, and boat electrofishing. **50 species of fish collected.** A habitat guild approach was used to assess aquatic habitat modeled over a range of flows using River2D models at each site (BIO-WEST, Inc.2008). Life-history information, a radio telemetry study to identify adult habitat, and field confirmation of spawning habitat for blue suckers was used to supplement the fish guild approach. (Emphasis added)

The fact that a total of 50 species of fish were collected in the entire river reach from Longhorn Dam to Wharton indicates it is *unlikely* that Segment 1428 met the 51 species standard required to satisfy the Aquatic-Life Use standard for that Segment, much less the Bastrop reach of that segment. However, the Bio-West report likely provides the best dataset to assess the health of the river in the 2004-07 timeframe. However, current data are still lacking and is needed to make a current assessment.

ES 2 (Comment 4): Environmental Stewardship comments that their member residents down river from the McKinney Roughs WWTP, are **concerned about potential contamination of their groundwater wells as a result of continuing degradation of the water quality in the river** that can result in contamination of shallow aquifers by under-regulated chemical compounds often found in municipal and industrial wastewater.

> **ED'S RESPONSE (in part)**: The legislature has determined that "the goal of groundwater policy in this state is that the **existing quality of groundwater not be degraded. This goal of non-degradation does not mean zero-contaminant discharge."** Chapter 26 of the Texas Water Code further states, "discharges of pollutants, disposal of wastes, or other activities subject to regulation by state agencies be conducted in a manner that will maintain present uses and not impair potential uses of groundwater or pose a public health hazard."
>
> The ED has determined that the draft permit is in accordance with the TSWQS, which ensures that the effluent discharge is protective of aquatic life, human health, and the environment. The review process for surface water quality is conducted by the Standards Implementation Team and Water Quality Assessment Team surface water modelers. **The ED has determined that if the surface water quality is protected, then the groundwater quality in the vicinity will not be impacted by the discharge.** Therefore, the permit limits given in the draft permit are intended to maintain the existing uses of the surface waters and preclude degradation will also protect groundwater.

[8] CL-BBEST Report, page 2-125.

The groundwater rules do not address private wells because they are not under the jurisdiction of the Safe Drinking Water Act and are, therefore, not subject to TCEQ regulation. TCEQ recommends that well owners periodically test their water for microbial and chemical contaminants and properly maintain their well. It is the responsibility of the private well owner to take steps to have his or her water quality tested at least annually for possible constituents of concern—or more often if the well is thought to have a surface water connection.

ES Reply: ES agrees that if the surface water is protected, then the groundwater is likely protected. However, though private wells are not subject to TCEQ regulation, the concern being raised is with TCEQ's collection of data, assessment, and regulation of the river in the reach where our members reside. The private wells will be impacted to the same extent that commercial wells of the same nature (location and formation from which water is derived) will be impacted.

Once again, TCEQ fails to respond to the concerns ES has raised regarding the ability to assess the current health of the lower portion of Segment 1428 of the river.

ES 3 (Comment 5): Environmental Stewardship asks **whether the Executive Director's antidegradation review was accurate**, e.g., proper evaluation of the *current state* of pollutants in, and impairments of, the Colorado River downstream of the discharge, proper use of the historic measuring period for evaluation of degradation, and proper evaluation of the degradation standard.

ED'S RESPONSE: In accordance with 30 Texas Administrative Code § 307.5 and TCEQ's *Procedures to Implement the Texas Surface Water Quality Standards* (June 2010), an antidegradation review of the receiving waters was performed. A Tier 1 antidegradation review has preliminarily determined that existing *water quality uses will not be impaired by this permit action*. Numerical and narrative criteria to protect existing uses will be maintained. A Tier 2 review has preliminarily determined that no significant degradation of water quality is expected in Colorado River Below Lady Bird Lake/Town Lake, which has been identified as having exceptional aquatic life use. Existing uses will be maintained and protected. The TSWQS in 30 TAC Chapter 307 require that discharges may not degrade the receiving waters and may not result in situations that impair existing, attainable or designated uses, and that surface waters not be toxic to aquatic life, terrestrial wildlife, livestock, or domestic animals.

Therefore, the permit was crafted to be protective of exceptional aquatic life uses in the receiving stream. If studies determined that the segment is currently achieving a lower aquatic life use, it would be a violation of our antidegradation rules to craft a permit to that lower aquatic life use.

Effluent limitations in the draft permit for the conventional effluent parameters (i.e., BOD5, TSS, and minimum DO) are based on stream standards and waste load allocations for water quality-limited streams as established in the TSWQS and the State of Texas Water Quality Management Plan (WQMP).

ES REPLY: If the Agency has crafted the permit to be protective of exceptional aquatic life uses without adequate data to assess that this standard is being met, then the agency is in violation of its antidegradation rules.

ES 4 (Comment 5): ES asks **whether impairments in Segment 1428, AUID: 1428_0 have been timely field studied u**sing biological metrics, monitored, and assessed by TCEQ, based on TCEQ, TPWD, or LCRA data collected since originally assessed in 2006 to determine it the segment should be on the 303(d) list based on impairment of fish and microbenthic communities, nitrogen, and phosphorus, or whether removal of these causes for impairment were justifiably based on best-available science.

ED'S RESPONSE: Regarding ES's comment regarding **whether impairments of Segment 1428 have been studied**, the Texas Integrated Report's Index of Water Quality Impairments is compiled every two years and contains waterbodies classified as Category 4 or Category 5. Category 4 waterbodies (also known as the 305(b) list) are water bodies for which a Total Maximum Daily Load (TMDL) project has already been adopted, or for which other management strategies are underway to improve water quality. Category 5 waterbodies compromise the 303(d) list and is comprised only of impaired waters for which the state plans to develop a TMDL. TMDL projects are conducted on water bodies that have been found to be impaired for a specific constituent or other water quality-related parameter. **Segment No. 1428 is not currently listed as impaired**.

ES REPLY: TCEQ does not answer the question about **whether studies have been timely conducted to evaluate the impairment concerns that have been raised,** but rather just indicate that they are required to do an updated assessment ... every two years.

TCEQ has brought these concerns forward every review cycle since for about 20 years without conducting biological studies on the fish and macrobenthic communities to determine if they are healthy. If all of the permit conditions and other regulatory actions are being successfully applied and enforced, then these communities should be healthy. However, the studies need to be done to verify their health status.

A review of the reports by ES and Michael C. MacLeod, indicate that such data have not been collected and evaluated in the lower portion of Segment 1428 between Webberville and the 969 bridge (the lowest portion of the segment).

By stating that the Segment is *not currently impaired* the TCEQ's is creating the *illusion* that they have the information they need to make a determination and that the segment is OK. That is quite different from being able to make an affirmative statement that the segment is healthy because the data is in the bank!

Reviewing the 2022 reports linked in the document, it is curious that Segment 1434 (the Colorado River above La Grange in Fayette County, and below the Hwy 969 bridge in Bastrop County) is on the concerns list due to Nitrate and Total Phosphate in the water, yet Segment 1428 is not on the list, while Gilliland Creek in the Travis County end of the Segment is also listed for Nitrate.

It is also notable that the concern for fish and macrobethic communities in Segment 1428 that had been brought forward for so many years without getting the studies done, suddenly have been taken off the list as a result of adopting new guidelines on July 7, 2022, the same date the reports were published.

ES Member MacLeod REPLY: Furthermore, TCEQ does not answer the question about whether chemical studies have been timely conducted to evaluate the impairment concerns that have been raised, but rather just indicate that they are required to do an updated assessment ... every two years. The TCEQ's publicly available database that covers data obtained from 1968 through the present indicates that data on the presence of toxicants such as metals, polynuclear aromatic hydrocarbon carcinogens, and organic herbicides and pesticides has not been collected routinely or is inconclusive or in fact points to significant contamination. In fact, there is an appalling lack of data.

The following points emerge from this database:

1. TCEQ currently has no sampling sites on the lower portion of Segment 1428. The closest sampling site is approximately 35 miles upstream of the McKinney Roughs region, at the County Park in Webberville. There are several sites listed as inactive in this portion of the segment, but no data on the above mentioned pollutants has ever been reported from these sites.
2. From 1992 -1996, 13 metals were assayed in water from the Webberville site between 1 and 8 times. Manganese was assayed only once, and its level was 21 ppb. This is about 16-fold higher than TCEQ's published chronic freshwater benchmark. Even though the manganese level was far above the safe level, TCEQ never again measured manganese at this site, nor apparently did they do anything to remedy or further study the problem.
3. Two of the metals included in these analyses and assayed multiple times (silver and cadmium) were not detected at the lower limit of detection of the assays used. However, for both of these metals the TCEQ benchmark level was well below the limit of detection. Thus, these data are not valid for ensuring that the river is not polluted above the benchmark level. For brevity, we will call such assays "inadequate."
4. The water at the Webberville site was assayed twice in 1990-1991 for a number of organic pollutants. In this dataset, we identified 17 compounds for

which TCEQ has established a benchmark. Only three of these compounds (aldrin, hexachlorobenezene and pentachlorophenol) were found to have concentrations lower than the benchmark. For the remaining 14 compounds (chlordane, DDD, DDE, DDT, endosulfan, diazinon, dieldrin, endrin, heptachlor, heptachlor epoxide, malathion, methoxychlor, parathion, toxaphene) the assay used was "inadequate". For example, the limit of detection for chlordane was 0.4 ppb and the benchmark level was 0.004 ppb, 100-fold lower. The worst case was toxaphene where the detection limit was 25,000-fold higher than the benchmark.

5. Bottom sediment at the Webberville site was assayed for 6 polynuclear aromatic hydrocarbons 4 times between 1992 and 1996. In all cases , the assays were "inadequate".

In summary, no measurements of potentially toxic compounds in the Webberville to Bastrop segment of the Colorado have been carried out since 1996, 27 years ago, and those assays that were carried out previously were sporadic at best, in many cases "inadequate" to detect toxic levels of the compound and carried out with samples obtained about 35 miles upstream from the proposed facility.

Especially given the large amount of development that has taken place in this area in the last 25 years, it is completely implausible to suggest that TCEQ's chemical measurement data support the idea that this region of Segment 1428 continues to be "pristine" and worthy of the exceptional use label.

Before adding more waste streams to Segment 1428, it is incumbent on TCEQ to actually measure these toxicants in the river at sites close to the proposed plants.

ES 5 (Comment 5): Environmental Stewardship asks that TCEQ provide copies of the anti-degradation reviews on the receiving waters (Tier 1 and 2), and the studies that underlay these reviews.

ES REPLY: TCEQ did not respond to the request for copies of the reviews, or the studies that underlay these reviews, nor have they provided such documents.

ES 6 (Comment 5): Environmental Stewardship further requests **that this determination be reexamined**[9] and modified after appropriate studies have been conducted to determine the **current status of impaired fish and macrobenthic communities resulting from nitrogen, phosphates, and other impairments** in the segments 1428, including the level of PFAS contamination.

ED'S RESPONSE (in part): Regarding ES's comment regarding whether studies have been conducted to **determine the current status of impaired fish and macrobenthic communities resulting from nitrogen, phosphates, and other impairments** in the segments 1428, including the level of PFAS contamination,

[9] ES understands that a request for reconsideration must be made during the 30 day period following the ED's publishing this report. See page 1 of ED's Decision letter.

the Texas Administrative Code 307.5(c)(2)(B) with regard to the Tier 2 antidegradation review requires that the highest water quality sustained since November 28, 1975 define baseline conditions for determining degradation. Therefore, the permit was crafted to be protective of exceptional aquatic life uses in the receiving stream. If studies determined that the segment is currently achieving a lower aquatic life use, it would be a violation of our antidegradation rules to craft a permit to that lower aquatic life use.

ES REPLY: ED does not respond to the request for reexamination, nor does it answer the question about whether studies have been conducted on the river, but rather discuss the way the permit is crafted. They also avoid making a statement on the health status of the river by moving the attention to the permit criteria. Just because the permit criteria are set such that they *should* protect the river does not mean that they *have* protected the river. Verification is required.

ED skirts the question by **defining baseline conditions** for determining degradation. TCEQ does not quantify or describe the baseline conditions.

ED does not respond to the question about whether current data have been, or will be, collected and used in the Integrated Report for the lower portion of segment 1428 that is in Bastrop County, and in reevaluating this permit.

ES 7 (Comment 6): Environmental Stewardship asks whether the proposed discharge will adversely impact the health of the members of Environmental Stewardship and their families, **as a result of contact with the waters of the Colorado River** downstream of the discharge, e.g., exposure during access to the River from McKinney Roughs Park to chemicals in the discharge.

ED'S RESPONSE (in part): Effluent limitations in the draft permit for the conventional effluent parameters (i.e., BOD5, TSS, and minimum DO) are based on stream standards and waste load allocations for water quality-limited streams as established in the TSWQS and the State of Texas Water Quality Management Plan (WQMP).

Specifically, the methodology is designed to ensure that no source will be allowed to discharge any wastewater that: 1) results in instream aquatic toxicity; 2) **causes a violation of an applicable narrative or numerical state water quality standard**; 3) **results in the endangerment of a drinking water supply;** or 4) results in aquatic bioaccumulation **that threatens human health**.

ES REPLY: ED bases its decision on conventional parameters to protect water quality but fail to demonstrate that the data have been collected and evaluated to determine if these standards are actually working, the water quality meets the biological standards, and the fish and macroinvertebrate communities are in fact healthy as required, much less that such are protective of human health.

ES 8 (Comment 6): Environmental Stewardship asks whether the proposed discharge will adversely impact the health of the members of Environmental Stewardship and their families, **as a result of consumption of fish caught in the Colorado River**, e.g., **exposure to PFAS** and other toxic chemical in the discharge.

> **ED'S RESPONSE (in part):** Specifically, the methodology is designed to ensure that no source will be allowed to discharge any wastewater that: 1) results in instream aquatic toxicity; 2) causes a violation of an applicable narrative or numerical state water quality standard; 3) results in the endangerment of a drinking water supply; or 4) **results in aquatic bioaccumulation that threatens human health**.
>
> **ES REPLY:** ED has not demonstrated that the methodology used to allow discharge of wastewater that contains PFAS, chemicals that are known to persist and bioaccumulate in aquatic environments, and other toxic compounds will protect human health.
>
> A 2023 study[10] published in Environmental Research reported that "Ingestion of PFAS from contaminated food and water results in the accumulation of PFAS in the body and is considered a key route of human exposure. Exposure assessment suggests that a single serving of freshwater fish per year with the median level of PFAS as detected by the U.S. EPA monitoring programs translates into a significant increase of PFOS levels in blood serum".

ES 9 (Comment 6): Environmental Stewardship asks whether the proposed discharge will adversely impact the health of the members of Environmental Stewardship and their families or **their agricultural operations**, e.g., exposure to contaminants that enter the alluvial and related aquifers during times of recharge from the river and subsequent pumping from members wells **for drinking water and irrigation**.

> **ED'S RESPONSE (in part):** The TSWQS provide that surface waters cannot be toxic to aquatic or terrestrial organisms. While the TSWQS and the IPs do not specifically designate criteria for the protection of cattle or livestock, **they do designate criteria for the protection of aquatic life that should preclude negative impacts to the health and performance of cattle or wildlife.**
>
> **ES REPLY:** TCEQ fails to recognize that the question is about water pumped for drinking water and irrigation, not livestock watering. Regardless, TCEQ has not demonstrated that the methodology used to allow discharge of wastewater that contains PFAS and other toxic compounds -- when assimilated into surface water, and thereby into alluvial aquifers and pumped to irrigate crops -- will protect human health.

[10] Environmental Research 220 (2023) 115165. Locally caught freshwater fish across the United States are likely a significant source of exposure to PFOS and other perfluorinated compounds. https://doi.org/10.1016/j.envres.2022.115165.

ES 10 (Comment 6): Environmental Stewardship asks whether the draft permit includes all appropriate and necessary requirements to protect the public health; and the environment, e.g., **monitoring, record keeping and reporting to allow the Commission and the public to access the data needed to evaluate the impacts over time**.

> **ED'S RESPONSE (in part):** The draft permit includes all appropriate and necessary requirements to protect the public health; and the environment, e.g., monitoring, record keeping and reporting to allow the Commission and the public to access the data needed to evaluate the impacts over time. Sampling, analysis, and reporting for compliance of the permit provisions shall be performed in accordance with the Monitoring and Reporting Requirements section and the Definitions and Standard Permit Conditions section of the draft permit.
>
> **ES REPLY:** ES encourages TCEQ to be vigilant in enforcing these requirements to protect the public health and the environment.

ES 11 (Comment 7): Environmental Stewardship and Kermit D. Heaton comment that **Environmental Stewardship has sampled eleven locations in this segment of the river and has detected per- and polyfluoroalkyl substances (PFAS) at levels that need to be investigated before the permit is finalized.** Kermit Heaton further comments that PFAS compounds are linked to human health problems and bioaccumulate in the tissues of fish and other aquatic animals.

> **ED's RESPONSE (in part):** The TCEQ has not investigated the potential effects of emerging contaminants, in effluent. Neither the TCEQ nor the EPA has promulgated rules or criteria limiting emerging contaminants in wastewater. **The EPA is investigating emerging contaminants and has stated that scientists have not found evidence of adverse human health effects from emerging contaminants in the environment.** Removal of some emerging contaminants has been documented during municipal wastewater treatment; however, standard removal efficiencies have not been established. In addition, there are currently no federal or state effluent limits for emerging contaminants. So, while the EPA and other agencies continue to study the presence of emerging contaminants, there is currently no clear regulatory regime available to address the treatment of emerging contaminants in domestic wastewater. Accordingly, neither the TCEQ nor the EPA has rules on the treatment of contaminants.
>
> **ES REPLY:** ED does not answer the question specific to PFAS compounds but rather generalizes the response to all "emerging contaminants". Contrary to the statement about EPA not having found evidence of adverse human health effects, EPA has issued proposed Drinking Water Standards[11] on PFOA, PFOS, GenX, and PFBS compounds that discusses the health effects of these

[11] EPA, Lifetime Drinking Water Health Advisories for Four Perfluoroalkyl Substances Federal Register / Vol. 87, No. 118 / Tuesday, June 21, 2022 / Notices, Pages 36848-9.

compounds. See also ES 8 (Comment 6) for references to the health effects of PFOS and other PFAS compound from consumption of freshwater fish.

ES 12 (Comment 7): Environmental Stewardship asks **whether the proposed discharge will adversely impact: the environment, fish and other aquatic life, and wildlife, including endangered or threatened species, e.g., excess nutrients, chlorine, and PFAS.** Environmental Stewardship comments that PFAS compounds should be limited in this wastewater permit to the extent possible and that the applicant be required to identify sources of these compounds, monitor, and determine whether treatment technology is available to remove them from the discharge.

ES 13 (Comment 10): Environmental Stewardship asks **whether the treatment facilities and discharge will be operated and maintained to avoid nuisance conditions**, e.g., odors from the operations, sludge management or ponding of waste waters at the facilities or in the discharge ditch or ditches or the unnamed stream. ES states that a Corix spokesperson agreed with one of their members that the sulfur odor was a concern and that was an indication that the facility is operating at over-capacity.

(Comment 11) Miriam Hall expresses concern about the increased discharges effect on recreational uses of the stream such as swimming and kayaking. Skip Connett comments that people fish and swim right at the outfall.

ES 14 (Comment 12): Environmental Stewardship states that **there are statements in the draft permit summary regarding impairments to the Colorado River that are contrary to the information collected by the state over two decades.** For example, he states that TCEQ asserts that Segment No. 1428 where the treated wastewater will be discharged is not currently listed on the State's inventory of impaired or threatened waters. Environmental Stewardship states **that this segment has the highest aquatic and recreational use standards available in the state**.

ED's RESPONSE: Segment No. 1428 is not currently listed in Index of Water Quality Impairments of the Texas integrated Report as either Category 4 or 5. This list can be viewed here:
List of Impaired waters: https://www.tceq.texas.gov/downloads/water-quality/assessment/integrated-report-2022/2022-imp-index.pdf,
and list of bodies of water with concerns for use attainment:
https://www.tceq.texas.gov/downloads/water-quality/assessment/integrated-report-2022/2022-concerns.pdf

Regarding the impaired fish community and impaired macrobenthic community in water, these listings were added in 2010 based on concern for near-nonattainment of the TSWQS based on numeric criteria.

> **ES REPLY:** This is TCEQ's primary fallback position when asked if this segment of the river is meeting the Aquatic-life Use standard. Once again, they do not provide data to support or refute this claim, likely because they do not have any data since 2002 on record and. TCEQ does not indicate that it used the 2004-8 LCRA/SAWS studies reference in ES 1 (Comment 3) which TCEQ does not confirm exists in this document when asked. LCRA has the studies but is unwilling to voluntarily release to ES after agreeing to do so in a public meeting on the WMP.
>
> Regarding the impaired fish and macrobenthic community response, why have they not investigated the concern further by conducting biological studies? TCEQ has been punting this one down the road since 2002.

ES 15 (Comment 12): Environmental Stewardship comments that in reviewing the 2020 Texas Integrated [Assessment] Report for the Colorado River (Basin 14), **impaired fish and macrobenthic communities in these segments of the river are not only currently impaired, but many of these impairments are carried forward from the 2010 report "due to inadequate data for this method of assessment"** that covers the 2000-2009 period. Environmental Stewardship comments that Segment 1428 is impaired and should be on the 303(d) list of impaired streams.

ES 16 (Comment 13): Environmental Stewardship comments that **it would be more appropriate that this wastewater should be consolidated in a regional facility somewhere off of the McKinney Roughs Park property.** ES believes that there is a need for regionalization to reduce the number of fragmented systems that are springing up in this segment of the river.

ES 17 (Comment 13): Environmental Stewardship asks **whether fragmentation of wastewater treatment facilities in the region will be adequately addressed**.

ES 18 (Comment 14): Environmental Stewardship asks **whether the Application, and all representations contained therein, are complete and accurate and were provide and evaluated by a qualified person.**

ES 19 (Comment 15): Environmental Stewardship asks **whether the Applicant substantially complied with applicable public notice requirements,** e.g., whether the landowner list is correct for mailed notice and proper and timely notice was issued in the appropriate newspaper(s).

ES 20 (Comment 16): Environmental Stewardship comments that **TCEQ should provide any such data that is available that would justify their determination that this segment is, or is not, meeting the Exceptional Aquatic Use standards**.

> **ED's RESPONSE:** TCEQ records for this application are also available at the TCEQ's Office of the Chief Clerk until the TCEQ takes final action on the application. Some documents located at the Office of the Chief Clerk may also be

located in the Commissioners' Integrated Database at www.tceq.texas.gov/goto/cid.

ES REPLY: The TCEQ has not indicated whether or not the data that would justify their determination is included in the documents available at the Office of the Chief Clerk or the Commissioners' Integrated Database.

ES 21 (Comment 16): Environmental Stewardship asks **whether the Commission has been transparent as is necessary to provide the public adequate, complete, and timely notice of proposed actions and whether TCEQ timely and efficiently provided the information and documents necessary for the public interest to be able to review and respond to such proposed actions without delays.**

ED's RESPONSE: TCEQ records for this application are also available at the TCEQ's Office of the Chief Clerk until the TCEQ takes final action on the application. Some documents located at the Office of the Chief Clerk may also be located in the Commissioners' Integrated Database at www.tceq.texas.gov/goto/cid.

ES 22 (Comment 17): Environmental Stewardship comments that Corix has already been cited by TCEQ for numerous violations under the original permit.

ES 23 (Comment 18): Environmental Stewardship asks if there will be new subdivisions and where they will be located.

ES 24 (Comment 19): Environmental Stewardship further asks whether they dispose of only treated domestic waste or is it commingled with industrial waste.

ES 25 (Comment 20): Environmental Stewardship asks whether the evaluation of impacts properly considers current conditions and complies with applicable regulations to ensure the draft permit is protective of water quality, including utilizing accurate assumptions and inputs, e.g., **proper evaluation of the current state of pollutants in and impairments of the Colorado River and its tributaries downstream of the discharge in a manner that considers the total loading on the river**.

ES 26 (Comment 20): Environmental Stewardship asks **whether the impacts of the explosion of gravel mining operations and associated stormwater permits in this segment of the river have been properly considered and enforced relative to the silt load being deposited into the river.**

ES 27 (Comment 20): Environmental Stewardship asks **whether the 10-fold increase in discharge is an appropriate ecological aquatic life use of the tributary**. Environmental Stewardship states that TCEQ should conduct, prior to making a final

decision regarding this permit, such biological assessment studies as are necessary to not only adequately assess, but to take remedial actions where needed to reverse the degradation of this segment of the river.

ES 28 (Comment 20): Environmental Stewardship comments that **due to lack of scientific studies, TCEQ is not able to make an affirmative statement regarding the ecological health of this segment of the Colorado River.**

ES 29 (Comment 20): Environmental Stewardship states that the only thing TCEQ can say about this segment is that it's not on the 303(d) list of impaired waters, but there is not data. Chapman

ES 30 (Comment 21): Environmental Stewardship commented that the Sunset Commission recently found that TCEQ's oversight of water could better protect the state's scarce resources (Issue 3). ES further believes that the above issue fits into this finding and that this matter needs to be reviewed and corrected before a permit is issued.

ES 31 (Comment 22): Environmental Stewardship asks whether the draft permit includes all appropriate and necessary requirements to comply with Texas law, TCEQ rules and policies, and whether the discharge and permit include the required biomonitoring.

ES 32 (Comment 22): Environmental Stewardship asks whether the burden of proof has rightfully been placed on the Applicant and the Commission to prove that concerns and issues brought up before the Commission are in accordance with the federal laws that have been delegated to the State.

ES 33 (Comment 23): Environmental Stewardship asks whether the draft permit includes all appropriate and necessary requirements to assure it can be enforced, e.g., are the facilities, the discharge location and monitoring stations clearly identified so that TCEQ, TPWD, and Bastrop County could inspect and sample the discharge and sources clearly reported to assure proper evaluation of any effluent or impacts.

ES 34 (Comment 24): Environmental Stewardship asks whether the effluent limitations and conditions of 30 TAC Chapter 311: Watershed Protection; Subchapter E: Colorado River Watershed, have been updated to include best-available technology-based treatment to meet the exceptional aquatic use standard.

ES 35 (Comment 24): Environmental Stewardship comments that TCEQ should provide a review of best-available wastewater treatment technology necessary to meet the exceptional aquatic life use, recreational, and drinking water standards that apply to Segment 1428 of the Colorado River, and to require such standards be used in this permit. Environmental Stewardship comments that consideration of centralized, decentralized and water resource recovery options should be included in cooperation with the City of Bastrop and Bastrop County.

ES 36 (Comment 24): Environmental Stewardship asks whether the existing facility will be decommissioned and new technology, plus a sulfur abatement plan mentioned in the permit will adequately address the issues raised. Michael

ES 37 (Comment 25): Environmental Stewardship asks whether this amendment application should be considered a new permit application and located where it can serve the regional needs of the community avoiding the trend toward fragmentation of wastewater services in this segment.

(COMMENT 28: Skip Connett states that paid users of the park should have standing as affected parties.

ES 38 (Comment 32): Environmental Stewardship ask whether a different location could be considered. Amy Krause, Deborah Richard, and Environmental Stewardship ask whether a different location could be considered. Skip Connett comments that since the facility is outdated, this would have been a good opportunity to remove the discharge from this facility and look at other options. Skip Connett asks whether Corix has exhausted all other site options and doesn't use cost as the sole determining factor.

ES 39 (Comment 33): Environmental Stewardship expresses concern about the 10-fold increased flow into the unnamed tributary will cause erosion of the banks and streambed, leading to further siltation of the river, destruction of the natural streambed, degrading the natural ecology, and thereby also degrading the park experience.

ES 40 (Comment 33): Environmental Stewardship further comments that they are already noticing shoaling of silt along the reach of the river where the Hwy 969 boat ramp is located under the bridge. ES states that boaters are saying that this is making the ramp difficult, if not impossible/impractical, to use.

III. FINDINGS AND DEFICIENCIES

A. Findings of Facts:

1. TCEQ's reply indicates that the agency has followed the prescribed statutes in conducting the review and evaluation of the application in preparing the draft permit. (ES 1 Comment 3)
2. ED misses the basis of ES's concern about the overall ecological health of the Colorado River and its tributaries as articulated in (ES 1 Comment 3)
3. The effluent limits in the draft permit are set to maintain and protect the existing instream uses. These effluent limits satisfy the requirements of the Colorado River Watershed Protection Rule (30 TAC Chapter 311, (ES 1 Comment 3)
4. The TCEQ Water Quality Division has determined that the draft permit is in accordance with the TSWQS, which ensures that the effluent discharge is protective of aquatic life, human health, and the environment. (ES 1 Comment 3)
5. The review process for surface water quality is conducted by the Standards Implementation Team and Water Quality Assessment Team surface water modelers. (ES 1 Comment 3)
6. The effluent limits in the draft permit are set to maintain and protect the existing instream uses. (ES 1, Comment 3)
7. The ED determined that these uses should be protected if the facility is operated and maintained as required by the proposed permit and regulations. (ES 1 Comment 3)
8. The ED has made a preliminary determination that the draft permit, if issued, meets all statutory and regulatory requirements. (ES 1 Comment 3)
9. The TCEQ also submitted the draft permit to the U.S. Environmental Protection Agency (EPA) Region 6 for review. The EPA reviewed the draft permit and did not have any objections to its issuance, (ES 1 Comment 3)
10. The legislature has determined that “the goal of groundwater policy in this state is that the existing quality of groundwater not be degraded. This goal of non-degradation does not mean zero-contaminant discharge.” (ES 2 Comment 4)
11. Chapter 26 of the Texas Water Code further states, “discharges of pollutants, disposal of wastes, or other activities subject to regulation by state agencies be conducted in a manner that will maintain present uses and not impair potential uses of groundwater or pose a public health hazard.” (ES 2 Comment 4)
12. The ED has determined that the draft permit is in accordance with the TSWQS, which ensures that the effluent discharge is protective of aquatic life, human health, and the environment. (ES 2 Comment 4)

13. The ED has determined that if the surface water quality is protected, then the groundwater quality in the vicinity will not be impacted by the discharge. (ES 2 Comment 4)
14. The groundwater rules do not address private wells because they are not under the jurisdiction of the Safe Drinking Water Act and are, therefore, not subject to TCEQ regulation. (ES 2 Comment 4)
15. In accordance with 30 Texas Administrative Code § 307.5 and TCEQ's *Procedures to Implement the Texas Surface Water Quality Standards* (June 2010), an antidegradation review of the receiving waters was performed.(ES 3 Comment 5)
16. The TSWQS in 30 TAC Chapter 307 require that discharges may not degrade the receiving waters and may not result in situations that impair existing, attainable or designated uses, and that surface waters not be toxic to aquatic life, terrestrial wildlife, livestock, or domestic animals. (ES 3 Comment 5)
17. Effluent limitations in the draft permit for the conventional effluent parameters (i.e., BOD5, TSS, and minimum DO) are based on stream standards and waste load allocations for water quality-limited streams as established in the TSWQS and the State of Texas Water Quality Management Plan (WQMP). (ES 3 Comment 5)
18. the Texas Integrated Report's Index of Water Quality Impairments is compiled every two years and contains waterbodies classified as Category 4 or Category 5. Category 4 waterbodies (also known as the 305(b) list) are water bodies for which a Total Maximum Daily Load (TMDL) project has already been adopted, or for which other management strategies are underway to improve water quality. Category 5 waterbodies compromise the 303(d) list and is comprised only of impaired waters for which the state plans to develop a TMDL. (ES 4 Comment 5)
19. A review of the reports by ES and Michael C. MacLeod, indicate that such data have not been collected and evaluated in the lower portion of Segment 1428 between Webberville and the 969 bridge (the lowest portion of the segment). (ES 4 Comment 5)
20. The TSWQS provide that surface waters cannot be toxic to aquatic or terrestrial organisms. While the TSWQS and the IPs do not specifically designate criteria for the protection of cattle or livestock, they do designate criteria for the protection of aquatic life that should preclude negative impacts to the health and performance of cattle or wildlife (ES 9 Comment 6)
21. The draft permit includes all appropriate and necessary requirements to protect the public health; and the environment, e.g., monitoring, record keeping and reporting to allow the Commission and the public to access the data needed to evaluate the impacts over time. Sampling, analysis, and reporting for compliance of the permit provisions shall be performed in accordance with the Monitoring and Reporting Requirements section

and the Definitions and Standard Permit Conditions section of the draft permit. (ES 10 Comment 6)

22. The TCEQ has not investigated the potential effects of emerging contaminants, in effluent. Neither the TCEQ nor the EPA has promulgated rules or criteria limiting emerging contaminants in wastewater. **The EPA is investigating emerging contaminants and has stated that scientists have not found evidence of adverse human health effects from emerging contaminants in the environment.** Removal of some emerging contaminants has been documented during municipal wastewater treatment; however, standard removal efficiencies have not been established. In addition, there are currently no federal or state effluent limits for emerging contaminants. So, while the EPA and other agencies continue to study the presence of emerging contaminants, there is currently no clear regulatory regime available to address the treatment of emerging contaminants in domestic wastewater. Accordingly, neither the TCEQ nor the EPA has rules on the treatment of contaminants. (ES 11 Comment 7)
23. ES is providing the results of its sampling of PFAS compounds in the Austin-Smithville reach of the Colorado River, its main tributaries, the Colorado Alluvial Aquifer, and domestic wells**.** (ES 11 Comment 7)
24. Segment No. 1428 is not currently listed in Index of Water Quality Impairments of the Texas integrated Report as either Category 4 or 5. This list can be viewed here:
    a. List of Impaired waters: https://www.tceq.texas.gov/downloads/water-quality/assessment/integrated-report-2022/2022-imp-index.pdf,
    b. and list of bodies of water with concerns for use attainment: https://www.tceq.texas.gov/downloads/water-quality/assessment/integrated-report-2022/2022-concerns.pdf (ES 14 Comment 12)
25. Regarding the impaired fish community and impaired macrobenthic community in water, these listings were added in 2010 based on concern for near-nonattainment of the TSWQS based on numeric criteria. (ES 14 Comment 12)

B. Conclusions of Law: (See cover letter requesting reconsideration)

C. Perceptions:

1. It appears that the Agency has exercised a Travis County bias that has had the effect of ignoring, not testing, and not assessing biological and chemical impairments in the Webberville to Bastrop reach of the Colorado river for more than 20+ years where the applicant has requested a 10-fold increase in discharge of treated wastewater into the river. (ES #)
2. Reviewing the 2022 reports linked in the document, it is curious that Segment 1434 (the Colorado River above La Grange in Fayette County, and below the Hwy 969 bridge in Bastrop County) is on the concerns list

due to Nitrate and Total Phosphate in the water, yet Segment 1428 is not on the list, while Gilliland Creek in the Travis County end of the Segment is also listed for Nitrate impairment. (ES 4 Comment 5)

3. It is notable that the concern for fish and macrobethic communities in Segment 1428 that had been brought forward for so many years without getting the studies done, suddenly have been taken off the list as a result of adopting new guidelines on July 7, 2022, the same date the reports were published. (ES 4 Comment 5)
4. Given the large amount of development that has taken place in this area in the last 25 years, it is completely implausible to suggest that TCEQ's chemical measurement data support the idea that this region of Segment 1428 continues to be "pristine" and worthy of the exceptional use label. (ES 4 Comment 5)
5. ES encourages TCEQ to be vigilant in enforcing these requirements to protect the public health and the environment, ES 10 Comment 6)

D. Deficiencies:

1. ES is concerned that the TCEQ has not conducted biological studies on the concern listed in 2002 regarding the impairment of fish and macrobenthic communities in the lower portion of Segment 1428 in Bastrop County. (ES 1 (Comment 3)
2. For more than 20 years, the agency has "brought forward" these concerns without conducting the studies, and therefore the agency is not able to affirmatively state that this segment of the river meets the Aquatic-Life Use standard established for this segment. Failing the ability to make an affirmative statement on the health of the river, the agency falls back to its statement ***"Segment No. 1428 is not currently listed on the State's inventory of impaired and threatened waters (the 2022 CWA § 303(d) list).[12]"*** (ES 1 Comment 3)
3. This statement *implies* that the health of the river is meeting the Aquatic-Life Use standard. However, lacking the biological data needed, the agency is not able to determine whether the lower reach of Segment 1428 meets the standard, or should be included on the current inventory of impaired and threatened waters. (ES 1 Comment 3)
4. The only biological studies that appear in the databases we (ES and Michael C. Macleod) have reviewed were conducted in 2002 on the Travis County Park reach of the river in Travis County. (ES 1 Comment 3)
5. ES asserts that the residents who live along the Webberville to Bastrop reach of the river, or who hold an interest in the overall health of the river, or who are ES Members, or are organizations like ES whose purpose is to protect the health of the river, have a right to know the current health of the river based on data that has been collected and assessed for the purpose of determining if the uses of the river are being met. (ES 1 Comment 3)
6. ES further asserts that it is the duty of TCEQ ,under its delegated authority from EPA Region 6, to act on behalf of the Federal Government and EPA in regulating and enforcing the Clean Water Act in the State of Texas. (ES 1 Comment 3)
7. ES is aware of studies on this segment of the river that were conducted as a part of the LCRA/SAWS project in 2004-07, and reported in 2008 by Bio-West Inc.[13], however, these studies are not listed by TCEQ and LCRA refuses to provide copies to ES even though they confirmed that they have the studies and agreed to provide copies to ES at the public LCRA Water Management Plan update briefing on June 6, 2023. (ES 1 Comment 3)

[12] Corix Utilities (Texas) Inc.,TPDES Permit No. WQ0013977001, Statement of Basis/Technical Summary and Executive Director's Preliminary Decision, page 3.

[13] Colorado and Lavaca Rivers and Matagorda Basin and Bay Expert Science Team (CL-BBEST) Environmental Flow Regime Recommendations Report, March 1, 2011: Intensive biological and physical data collection activities conducted 2004-2007 (BIOWEST, Inc. 2004, BIO-WEST, Inc. 2005, BIO-WEST, Inc. 2006, BIO-WEST, Inc. 2007), page 2-120.

8. Though private wells are not subject to TCEQ regulation, the private wells will be impacted to the same extent that commercial wells of the same nature (location and formation from which water is derived) will be impacted. The agency has not investigated and determined that the commercial wells have not been impacted. (ES 2 Comment 4)
9. The permit was crafted to be protective of exceptional aquatic life uses in the receiving stream. If studies determined that the segment is currently achieving a lower aquatic life use, it would be a violation of our antidegradation rules to craft a permit to that lower aquatic life use. (ES 3 Comment 5)
10. If the Agency has crafted the permit to be protective of exceptional aquatic life uses without adequate data to assess that this standard is being met, then the agency is in violation of its antidegradation rules. (ES 3 Comment 5)
11. TCEQ does not answer the question about whether studies have been timely conducted to evaluate the impairment concerns that have been raised, but rather just indicate that they are required to do an updated assessment ... every two years. (ES 4 Comment 5)
12. If all of the permit conditions and other regulatory actions are being successfully applied and enforced, then these communities should be healthy. However, the studies need to be done to verify their health status. (ES 4 Comment 5)
13. ED does not answer the question about whether chemical studies have been timely conducted to evaluate the impairment concerns that have been raised, but rather just indicate that they are required to do an updated assessment ... every two years. The TCEQ's publicly available database that covers data obtained from 1968 through the present indicates that data on the presence of toxicants such as metals, polynuclear aromatic hydrocarbon carcinogens, and organic herbicides and pesticides has not been collected routinely or is inconclusive or in fact points to significant contamination. In fact, there is an appalling lack of data. (ES 4 Comment 5)
14. In summary, no measurements of potentially toxic compounds in the Webberville to Bastrop segment of the Colorado have been carried out since 1996, 27 years ago, and those assays that were carried out previously were sporadic at best, in many cases "inadequate" to detect toxic levels of the compound and carried out with samples obtained about 35 miles upstream from the proposed facility. (ES 4 Comment 5)
15. Before adding more waste streams to Segment 1428, it is incumbent on TCEQ to actually measure these toxicants in the river at sites close to the proposed plants. (ES 4 Comment 5)
16. TCEQ did not respond to the request for copies of the reviews, or the studies that underlay these reviews, nor have they provided such documents (ES 5 Comment 5)
17. ED does not respond to the request for reexamination, nor does it answer the question about whether studies have been conducted on the river, but

rather discuss the way the permit is crafted. They also avoid making a statement on the health status of the river by moving the attention to the permit criteria. Just because the permit criteria are set such that they *should* protect the river does not mean that they *have* protected the river. Verification is required. (ES 6 Comment 5)

18. ED skirts the question by defining baseline conditions for determining degradation. ED does not quantify or describe the baseline conditions. (ES 6 Comment 5)
19. ED does not respond to the question about whether current data have been, or will be, collected and used in the Integrated Report for the lower portion of segment 1428 that is in Bastrop County, and in reevaluating this permit. (ES 6 Comment 5)
20. ED bases its decision on conventional parameters to protect water quality but fail to demonstrate that the data have been collected and evaluated to determine if these standards are actually working, the water quality meets the biological standards, and the fish and macroinvertebrate communities are in fact healthy as required, much less that such are protective of human health (ES 7 Comment 6)
21. ED has not demonstrated that the methodology used to allow discharge of wastewater that contains PFAS, chemicals that are known to persist and bioaccumulate in aquatic environments, and other toxic compounds will protect human health. (ES 8 Comment 6)
22. A 2023 study[14] published in Environmental Research reported that "Ingestion of PFAS from contaminated food and water results in the accumulation of PFAS in the body and is considered a key route of human exposure. Exposure assessment suggests that a single serving of freshwater fish per year with the median level of PFAS as detected by the U.S. EPA monitoring programs translates into a significant increase of PFOS levels in blood serum". (ES 8 Comment 6)
23. TCEQ fails to recognize that the question is about water pumped for drinking water and irrigation, not livestock watering. Regardless, TCEQ has not demonstrated that the methodology used to allow discharge of wastewater that contains PFAS and other toxic compounds -- when assimilated into surface water, and thereby into alluvial aquifers and pumped to irrigate crops -- will protect human health. (ES 9 Comment 6)
24. ED does not answer the question specific to PFAS compounds but rather generalizes the response to all "emerging contaminants". Contrary to the statement about EPA not having found evidence of adverse human health effects, EPA has issued proposed Drinking Water Standards[15] on PFOA, PFOS, GenX, and PFBS compounds that discusses the health effects of these compounds. See also ES 8 (Comment 6) for references to the

[14] Environmental Research 220 (2023) 115165. Locally caught freshwater fish across the United States are likely a significant source of exposure to PFOS and other perfluorinated compounds. https://doi.org/10.1016/j.envres.2022.115165.

[15] EPA, Lifetime Drinking Water Health Advisories for Four Perfluoroalkyl Substances Federal Register / Vol. 87, No. 118 / Tuesday, June 21, 2022 / Notices, Pages 36848-9.

health effects of PFOS and other PFAS compound from consumption of freshwater fish. (ES 11 Comment 7)

25. This is TCEQ's primary fallback position when asked if this segment of the river is meeting the Aquatic-life Use standard. Once again, they do not provide data to support or refute this claim, likely because they do not have any data since 2002 on record and. TCEQ does not indicate that it used the 2004-8 LCRA/SAWS studies reference in ES 1 (Comment 3) which TCEQ does not confirm exists in this document when asked. LCRA has the studies but is unwilling to voluntarily release to ES after agreeing to do so in a public meeting on the WMP.
26. Regarding the impaired fish and macrobenthic community response, why have they not investigated the concern further by conducting biological studies? TCEQ has been punting this one down the road since 2002. (ES 14 Comment 12)
27. The TCEQ has not indicated whether or not the data that would justify their determination is included in the documents available at the Office of the Chief Clerk or the Commissioners' Integrated Database. (ES 20 Comment 16)

List of Attachments

Attachment 1	Supporting evidence for issues raised by Environmental Stewardship in comments to TCEQ regarding Gapped Bass/The Boring Company, and Corix/McKinney Roughs wastewater TPDES Permit applications
Attachment 2	Timeline for Listing and Assessment of Colorado River (Basin 14), Segment 1428: Impairments listed since 2000 in the Texas Integrated Reports
Attachment 3	2000 Texas Water Quality Inventory (SFR-050/00), Volume 3, Basins 12-25, Colorado River Basin
Attachment 4	2002 Colorado River Basin 14 Assessment (From TCEQ Website)

ATTACHMENT 1

Supporting evidence for issues raised by Environmental Stewardship in comments to TECQ regarding Gapped Bass/The Boring Company, and Corix/McKinney Roughs wastewater TPDES permit applications

SUMMARY OF FINDINGS

Fish and Macrobenthic Communities have been TCEQ listed[1] as "impaired ... in water "as "TCEQ cause[s]" for concern in numerous Assessment Units (AUID) of Segment 1428 since before 2002[2] and were carried forward at each assessment through 2020. Both are "use concerns" (CN[3]) based on "inadequate data (less than 4)" (ID). The methods of assessment for these parameters for Aquatic Life Use were listed in 2020 as "regional" and "qualitative", respectively.

These two biological parameters of concern that relate to aquatic life use have been carried forward for at least 18 years without having been further evaluated to determine whether to rate them as fully supporting (FS), nonsupport (NS), or no concern (NC).

Fish Community, as an Aquatic Life Use Method, and the lower segment of the Colorado River, were *delisted* from the July 7, 2022,[4] TCEQ Water Quality Report[5]. Dissolved oxygen concerns in the upper segment of the Colorado river were also *delisted* from the same report.

NOTE: Segment 1428 was included in "*intensive biological and physical data collection activities conducted in 2004-2007*" and reported in 2008[6]. Aquatic habitat and use data were collected at 10 sites from Longhorn Dam to Wharton. Fifty (50) species of fish[7] were collected in the entire lower basin.

Nutrient screening for Nitrate and Total Phosphate have been TCEQ listed as General Use "in water" "TCEQ cause" of concern based on the concentration levels that these compounds are found in water. (See Documents cited in footnotes 1 and 2). Neither have been caried forward from previous assessments. Both are "screening level concerns" (CS) based on adequate data (AD). The method of assessment for these General Use parameters have been by Nutrient Screening Levels. Orthophosphorus was listed in this group until 2020.

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[1] 2020 Texas Integrated Report - Assessment Results for Basin 14 - Colorado River Basin, Segment 1428, page 183 of 242.

[2] 2002 Basin Assessment from TCEQ website; 2006 Texas Water Quality Inventory - Basin Assessment Data By Segment, Segment 1428, Page 1 of 7; 2008 Texas Water Quality Inventory - Basin Assessment Data based on Segment (March 19, 2008) page 1 of 5; 2010 Water Quality Inventory: Assessment Results for Basin 14 - Colorado River (page 280 - 297).

[3] From 2006 to 2008 CN was listed as "Concern for Near non-attainment" until changed in 2010 to "Use Concern".

[4] TCEQ SFR-127, 2022 Guidance for Assessing and Reporting Surface Water Quality in Texas, was adopted July 7, 2022.

[5] See: Timeline and Exhibits in Support of Evidence for Issues raised by Environmental Stewardship in comments to TCEQ regarding Gapped Bass/The Boring Company, and Corix/McKinney Roughs wastewater TPDES Permit Applications and Draft Permits.

[6] Colorado and Lavaca Rivers and Matagorda and Lavaca Bays Basin and Bay Expert Science Team (CL-BBEST) Environmental Flow Regimes Recommendations Report, March 1, 2011.

[7] Surface Water Quality Monitoring Procedures, Volume 2: Appendix B: Greater than or equal to 52 fish species are needed to support the exceptional aquatic-life use standard for fish (Metric for Ecoregion 30 (Table B.6.) and greater than or equal to 42 species for Ecoregion 31 Table B.7.).

Both have been chemical parameters of concern for at least 20 years but continue to be assessed and included because the data indicates an ongoing concern that is short of being characterized as nonsupport (NS) that would trigger a Category 5c response.

The Nitrate and Total Phosphate concerns in lower segment of the Colorado River were also *delisted* from the July 7, 2022, TCEQ Water Quality Report.

Category 5c concerns, like bacteria in this Segment, are included on the 303(d) list and require additional data or information to be collected and/or evaluated for one or more parameters before a management strategy, normally TMDLs for chemical parameters, is selected.

NEW Guidelines for Assessing and Reporting Surface Water Quality in Texas

New guidelines were adopted by TCEQ on July 7, 2022, the same day that several of the concerns mentioned above were de-listed. Chapter 1, Summary of the Reporting Approach provides some insight into the new decision-making process. The following sections need to be reviewed to determine if they justifiably account for the de-listings:

Development of the Integrated Report and 303(d) List

Development of the IR includes the following basic steps:

·Active solicitation and selection of acceptable data and information to develop the IR.
·Solicit stakeholder input on assessment guidance and revise existing methods as necessary.
·Assessing the data and information to determine which water bodies are not meeting TSWQS (See Chapters 2 and 3).
·Preparing and categorizing the draft IR.
·Data provider review of assessment data and summary information.
·Receiving public comment on the draft IR.
·Revising and finalizing the assessment and List based on new information and comments from the EPA and the public.
·Developing a schedule for TMDLs for Category 5 water bodies.
·Present draft IR at a TCEQ Agenda for Commission approval.
·Submit draft IR to EPA for review and approval.

Data and Information Used

As required by CWA Section 303(d) and 40 Code of Federal Regulations (CFR) Section 130.7(b)(5), TCEQ considers all existing and readily available water quality-related data and information during the development of the IR. TCEQ solicits data and information primarily through established public outreach mechanisms of the Texas Clean Rivers Program (CRP), including steering committee meetings, public meetings, publications, and by posting drafts of the IR on TCEQ's website.
TCEQ and the EPA recognize that there are some boundaries that must be established for the data and information ultimately used for listing. These include:

·**Time limitations** - In most circumstances, data collected prior to the most recent seven-to-ten-year assessment period do not adequately reflect current conditions.

·**Data quality** - Given the regulatory implications associated with the use of water quality data, the TCEQ uses scientifically rigorous and consistent water quality sampling methods to help ensure valid outcomes.

·**Data format -** All data must be in a form that does not require extensive data format manipulation to be useable for assessment. TCEQ provides guidance and support to monitoring entities that allow them to submit data in an appropriate and consistent format.

Data must therefore meet minimum quality assurance (QA) and QC requirements established by TCEQ. This includes collection of data according to applicable procedures in the *Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods, RG 415, and Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, RG 416*, hereafter referred to as the SWQM Procedures Volume 1 and SWQM Procedures Volume 2, as well as applicable Texas laboratory accreditation requirements (Title 30 Texas Administrative Code [TAC], Chapter 25).

Data that are not collected under a TCEQ-approved quality assurance project plan (QAPP), if submitted, must be accompanied by documentation of QA for evaluation by TCEQ water quality staff. Data without appropriate QA documentation will be considered as anecdotal evidence to support or refute assessment results but will not be used in statistical evaluations.

Removing a Water Body from the 303(d) List

Water bodies are removed from the 303(d) List (Category 5) for any one on the following seven reasons:

·**Standards are met** - Additional monitoring data demonstrate that a water body meets applicable water quality standards.

·**Errors in listing** - Errors in the data or procedures used to list the water body invalidate the original basis for listing.

·**New procedures used** - Procedures used by the state to assess water quality monitoring data are routinely improved and revised. In the absence of recent data, the original data set for a listed water body may be reassessed with more accurate procedures and be found to attain the standard or criteria. The strength and quality of the data set, and quality of the water must also meet the requirement for delisting using revised methods.

·**Revised standards** - Water quality standards and criteria have been revised, and a listed water body attains the new standards or criteria.

·**TMDL approval** - The EPA approves a TMDL designed to attain water quality standards for a water body-Category 4a.

·**Water body expected to meet** - Based on water quality controls in place (other than a TMDL), attainment of the water quality standards is expected in a reasonable period of time-Category 4b.

·**Impairment not caused by a pollutant** - New information demonstrates that the impairment is not caused by a pollutant, and that water quality conditions cannot be changed by the allocation and control of pollutants through the TMDL process-Category 4c.

Note that for Category 4 impairments, because there are water quality controls in place, or the non-support is not amenable to TMDL processes, impairments are removed from Category 4 when water quality standards are attained.

DISCUSSION

It appears that data and information that is *over seven years o*ld, and/or *reassessed with more accurate procedures* and though not stated, may be determined to not be suitable for use in assessments.

It would appear that in cases where the data have been listed as *inadequate data,* and where no attempt has been made to collect adequate data, the lack of an effort to get adequate data after seven years, can be the rationale for wholly discarding use of the original data and the concern can be de-listed as being an *error in listing*, or dismissed due to *new procedures*.

CONCLUSIONS

Fish and Macrobenthic Communities have been a TCEQ cause based on impairment in water concerns that have not been investigated for at least 18 years by collecting biological field data to determine whether to rate them as fully supporting (FS), nonsupport (NS), or no concern (NC).

Without a holistic biological assessment of these biological indicators of the status of aquatic life use, there is no ability for TECQ, or the public, to determine whether management strategies for constituents in discharges to this segment of the river -- such as nitrogen and total phosphate -- are degrading the water quality in this Colorado River segment to an extent that the aquatic life use has also been degraded, or not degraded.

The Executive Director has asserted,

> "no significant degradation of water quality is expected in the Colorado River below Lady Bird Lake/Town Lake which has been identified as having exceptional aquatic life use",

Thae above assertion for both the Tier 1 and Tier 2 antidegradation review cannot be reliably concluded given the uncertainty in the data and the Agency's levels of evaluations of the conditions in the Colorado River Segment 1428 below Lady Bird Lake/Town Lake.

It further appears that the adoption of new guidelines for assessing and reporting surface water data were used to delist the fish and macrobenthic community concerns. This decision should be reconsidered in light of the history.

ATTACHMENT 2

Timeline for Listing and Assessment of Colorado River (Basin 14) Segment 1428
-- Impairments listed since 2000 in the Texas Integrated Reports --

SUMMARY

Fish Community: (Colorado River lower Segment to Gilleland Creek)

2000 Use Supported
2002 Concern; lower end of segment to Gilleland Creek
Not Assessed; lower end of segment to Gilleland Creek
Overall Secondary Concern, lower end of segment to Gilleland Creek
2 samples, 0 exceedances
2006 Concern for Near non-attainment (CN)), Inadequate Data (ID)
2008 Concern for Near non-attainment (CN)), Inadequate Data (ID)
2010 Use Concern (CN), Inadequate Data (ID)
2020 Use Concern (CN), Inadequate Data (ID)
2022 **Fish Community as an Aquatic Life Use Method was Delisted (July 7, 2022**)

Macrobenthic Community: (Colorado River lower Segment to Gilleland Creek)

2000 Use Supported
2002 Concern; lower end of segment to Gilleland Creek
Not Assessed; lower end of segment to Gilleland Creek
Overall Secondary Concern, lower end of segment to Gilleland Creek
2 samples, 1 exceedance
2006 Concern for Near non-attainment (CN)), Inadequate Data (ID)
2008 Concern for Near non-attainment (CN)), Inadequate Data (ID)
2010 Use Concern (CN)), Inadequate Data (ID)
2020 Use Concern (CN), Inadequate Data (ID)
2022 **Colorado River delisted from this Aquatic Life Use Method (July 7, 2022)**

Dissolved Oxygen:

2020 New Method Added
Colorado River, Walnut Creek to Longhorn Dam (CS) (May 31, 2020)
2022 **Colorado River, Walnut Creek to Longhorn Dam delisted** (July 7, 2022)

Habitat:

2020 New Method Added

Timeline for Listing and Assessment of Colorado River (Basin 14)
Segment 1428
-- Impairments listed since 2000 in the Texas Integrated Reports --

Walnut Creek

Nitrate:	**No. Listings**	
2000	Nitrite + nitrate is a concern in the lower 20 miles.	
2002	Concern: lower end of segment to Gilleland Creek	
	38 samples, 11 exceedances	
	Concern: Overall Nutrient Enrichment	
2006	1	
2008	2	
2010	3	
2020	6	May 31, 2020
2022	5	July 7, 2022
		Colorado River lower segment delisted

Orthophosphorus:	**No. Listings**	
2002	Concern: lower end of segment to Gilleland Creek	
	38 samples, 11 exceedances	
2006	2	
2008	2	
2010	3	
2020	0	

Total Phosphates:	**No. Listings**	
2006	1	
2008	2	
2010	3	
2020	2	May 31, 2020
2022	1	July 7, 2022
		Colorado River lower segment delisted

Bacteria Single Sample:	**No. Listings**	**Concern**
2000	Contact recreation use is not supported due to elevated fecal coliform in the upper 6 miles.	
2002	Gilleland Creek listed for bacteria	
2006	1	
2008	2	CN
2010	1	CN
	1	NS

Timeline for Listing and Assessment of Colorado River (Basin 14)
Segment 1428
-- Impairments listed since 2000 in the Texas Integrated Reports --

2020	0		May 31, 2020
2022	0		July 7, 2022

Bacteria Geomean:	**No. Listings**	**Concern**	
2002	1	5c	Gilleland Creek
2006	1		
2008	2	CN	
	2	NS	
	4	5c	
2010	3	CN	
	5	5c	
2020	3	CS	May 31, 2020
	3	4a	May 31, 2020
2022	2	CN	July 7, 2022
	4	4a	July 7, 2022

Timeline for Listing and Assessment of Colorado River (Basin 14)
Segment 1428
-- Impairments listed since 2000 in the Texas Integrated Reports --

2006 - Report from TCEQ website (See Exhibit 5)

- **Assessment Data (7 TCEQ Causes Listed)**

  - Fish Community — Concern for Near non-attainment (CN) — Carry Forward
    1428_01 Colorado River, Lower end of segment to Gilleland Creek

  - Macrobenthic Community- Concern for Near non-attainment (CN) — Carry Forward
    1428_01 Colorado River, Lower end of segment to Gilleland Creek

  - Nitrate — Concern for Screening level (CS) — No
    1428_01 Colorado River, Lower end of segment to Gilleland Creek

  - Orthophosphorus — Concern for Screening level (CS) — No
    1428_01 Colorado River, Lower end of segment to Gilleland Creek
    1428_02 Colorado Rover. Gilleland Creek to Walnut Creek

  - Total Phosphorus — Concern for Screening level (CS) — No
    1428_01 Colorado River, Lower end of segment to Gilleland Creek

  - E. coli — Non-Supporting (NS), Impaired Category 5c — No
    1428_03 Walnut Creek to Longhorn Dam

Timeline for Listing and Assessment of Colorado River (Basin 14)
Segment 1428
-- Impairments listed since 2000 in the Texas Integrated Reports --

2008 - Reports from TCEQ website (See Exhibit 6)

- **Integrated Report - Not Available on TCEQ website**
- **Assessment Data - 20 TCEQ Causes Listed**
  - Fish Community — Concern for Near non-attainment (CN) — Carry Forward
    1428_01 Colorado River, Lower end of segment to Gilleland Creek

  - Macrobenthic Community- Concern for Near non-attainment (CN) — Carry Forward
    1428_01 Colorado River, Lower end of segment to Gilleland Creek
    1428B_04 Walnut Creek, From Dessau Rd. upstream to MoPac/Loop 1

  - Nitrate — Concern for Screening level (CS) — No
    1428_01 Colorado River, Lower end of segment to Gilleland Creek
    1428C_01 Gilleland Creek, From Colorado River upstream to Taylor Lane
    1428C_02 Gilleland Creek, From Taylor Lane upstream to Old Hwy 20

  - Orthophosphorus — Concern for Screening level (CS) — No
    1428_01 Colorado River, Lower end of segment to Gilleland Creek
    1428C_01 Gilleland Creek, From Colorado River upstream to Taylor Lane

  - Total Phosphorus — Concern for Screening level (CS) — No
    1428_01 Colorado River, Lower end of segment to Gilleland Creek

  - Bacteria Single Sample — Concern for near non-attainment (CN) — No
    1428_03 Colorado River, Walnut Creek to Longhorn Dam
    Fecal coliform
    1428C_01 Gilleland Creek, From Colorado River upstream to Taylor Lane

  - Bacteria Single Sample — Non-Supporting (NS), Impaired Category 5c — No
    1428B_05 Walnut Creek, From MoPac upstream to RR west of Loop 1
    E. coli

  - Bacteria Geomean — Concern for near non-attainment (CN) — No
    1428B_04 Walnut Creek, From Dessau Rd. upstream to MoPac/Loop 1
    E. coli
    1428B_05 Walnut Creek, From MoPac upstream to RR west of Loop 1
    E. coli

  - Bacteria Geomean — Non-Supporting (NS) — No
    1428_03 Colorado River, Walnut Creek to Longhorn Dam
    Fecal coliform
    1428C_01 Gilleland Creek, From Colorado River upstream to Taylor Lane
    Fecal coliform

- Bacteria Geomean Non-Supporting (NS), Impaired Category 5c No

1428_03 Colorado River, Walnut Creek to Longhorn Dam
E. coli
1428B_01 Walnut Creek, From Colorado River upstream to FM 969
Fecal coliform
1428B_03 Walnut Creek, From old Manor Rd. upstream to Dessau Rd.
Fecal coliform
1428C_01 Gilleland Creek, From Colorado River upstream to Taylor Lane
E. coli

Water Bodies Evaluated

- Colorado Below Town Lake Assessed in 2008 TWQS-Appendix A
- Walnut Creek Assessed in 2008 Presumption from Flow Type
- Gilleland Creek Assessed in 2008 Presumption from Flow Type

- **Colorado River Below Town Lake**
  - Colorado River, Walnut Creek to Longhorn Dam Category 5c Bacteria Not Carried Forward
  - Walnut Creek Category 5c Bacteria Not Carried Forward
  - Gilleland Creek Category 5c Bacteria Not Carried Forward

- **303(d) List**
  - Bacteria Colorado River Category 5c First Listed 2006
  - Bacteria Walnut Creek Category 5c First Listed 2006
  - Bacteria Gilleland Creek Category 5c First Listed 1999

- **Water Bodies and Impairments Added to 303(d) List**
  - None added for Segment 1428

- **Water Bodies and Parameters Removed from 303(d) List**
  - None removed for Segment 1428

Timeline for Listing and Assessment of Colorado River (Basin 14) Segment 1428
-- Impairments listed since 2000 in the Texas Integrated Reports --

2010 - Report from TCEQ - 18 TCEQ Causes Listed, 4 Screening Level Concerns wo/Cause Listed (See Exhibit 7)

- Fish Community (Regional) Use Concern (CN) Carry Forward
  1428_01 Colorado River, Lower Segment to Gilleland Creek

- Macrobenthic Community (Qualitative)
  Use Concern (CN) Carry Forward
  1428_01 Colorado River, Lower Segment to Gilleland Creek
  1428B_04 Walnut Creek, From Dessau Rd. upstream to MoPac/Loop 1

- Nitrate Screening Level Concern(CS) No
  1428_01 Colorado River, Lower Segment to Gilleland Creek
  1428_02 Colorado River, Gilleland Creek upstream to Walnut Creek
  1428C_01 Gilleland Creek, From CR upstream to Taylor Lane
  1428C_02 Gilleland Creek, From Taylor Lane upstream to Old Hwy 20

- Orthophosphorus Screening Level Concern(CS) No
  1428_01 Colorado River, Lower Segment to Gilleland Creek
  1428_02 Colorado River, Gilleland Creek upstream to Walnut Creek
  1428C_01 Gilleland Creek, From CR upstream to Taylor Lane

- Total Phosphorus Screening Level Concern(CS) No
  1428_01 Colorado River, Lower Segment to Gilleland Creek
  1428_02 Colorado River, Gilleland Creek upstream to Walnut Creek

- Bacteria Single Sample Screening Level Concern (CS) No
  1428B_04 Walnut Creek, From Dessau Rd. upstream to MoPac/Loop 1

- Bacteria Single Sample Nonsupport (NS) No
  1428B_05 Walnut Creek, From MoPac/Loop 1 upstream to RR. west of Loop 1

- Bacteria Geomean Screening Level Concern (CS) No
  1428B_01 Walnut Creek, From Colorado River upstream to FM 969
  1428B_02 Walnut Creek, From FM969 to Old Manor Rd.
  1423B_03 Walnut Creek, From Old Manor Rd. upstream to Dessau Rd.

- Bacteria Geomean Nonsupport (NS), Category 5c No
  5c: Additional data and information will be collected before a TMDL is scheduled
  1428_03 Colorado River, Walnut Creek to Longhorn Dam
  1428B_05 Walnut Creek, From MoPac/Loop 1 upstream to RR. west of Loop
  1428C_01 Gilleland Creek, From CR upstream to Taylor Lane
  1428C_03 Gilleland Creek, From Old Hwy 20 to Cameron Rd.
  1428C_04 Gilleland Creek, From Cameron Rd to the spring sourc

Timeline for Listing and Assessment of Colorado River (Basin 14) Segment 1428
-- Impairments listed since 2000 in the Texas Integrated Reports --

2020 - Reports from TCEQ (See Exhibit 8)

May 31, 2020, Report (19 TCEQ Causes Listed)

- Fish Community (Regional) Use Concern (CN) Carry Forward
  1428_01 Colorado River, Lower Segment to Gilleland Creek

- Macrobenthic Community (Qualitative) Use Concern (CN) Carry Forward
  1428_01 Colorado River, Lower Segment to Gilleland Creek
  1428B_04 Walnut Creek, From Dessau Rd. upstream to MoPac/Loop 1

- Nitrate Screening Level Concern(CS) No
  1428_01 Colorado River, Lower Segment to Gilleland Creek
  1428_02 Colorado River, Gilleland Creek upstream to Walnut Creek
  1428C_01 Gilleland Creek, From CR upstream to Taylor Lane
  1428C_02 Gilleland Creek, From Taylor Lane upstream to Old Hwy 20
  1428C_03 Gilleland Creek, From Old Hwy 20 to Cameron Rd.
  1428C_04 Gilleland Creek, From Cameron Rd to the spring source

- Total Phosphorus Screening Level Concern(CS) No
  1428_01 Colorado River, Lower Segment to Gilleland Creek
  1428_02 Colorado River, Gilleland Creek upstream to Walnut Creek

- Dissolved Oxygen Screening Level Concern(CS) No
  1428_03 Colorado River, Walnut Creek to Longhorn Dam

- Bacteria Geomean Screening Level Concern(CS) Carry Forward
  1428B_02 Walnut Creek, From FM969 to Old Manor Rd.
  1428B_04 Walnut Creek, From Dessau Rd. upstream to MoPac/Loop 1
  1428C_01 Gilleland Creek, From CR upstream to Taylor Lane

  Bacteria Geomean Nonsupport (NS), Category 4a No
  4a: ALL TMDLs have been completed and approved by EPA
  1428B_05 Walnut Creek, From MoPac/Loop 1 upstream to Union Pacific RR. south of McNeil Drive
  1428C_03 Gilleland Creek, From Old Hwy 20 to Cameron Rd.
  1428C_04 Gilleland Creek, From Cameron Rd to the spring source

- Habitat **New Method** Screening Level Concern(CS) Carry Forward
  1428B_03 Walnut Creek, From Old Manor Rd upstream to Dessau Rd.

Timeline for Listing and Assessment of Colorado River (Basin 14)
Segment 1428
-- Impairments listed since 2000 in the Texas Integrated Reports --

2020 - Reports from TCEQ (continued)

July 7, 2022, Report (14 TCEQ Causes Listed)

- Macrobenthic Community (Qualitative) Use Concern (CN) Carry Forward
  1428B_04 Walnut Creek, From Dessau Rd. upstream to MoPac/Loop 1

- Nitrate Screening Level Concern(CS) No
  1428_02 Colorado River, Gilleland Creek upstream to Walnut Creek
  1428C_01 Gilleland Creek, From CR upstream to Taylor Lane
  1428C_02 Gilleland Creek, From Taylor Lane upstream to Old Hwy 20
  1428C_03 Gilleland Creek, From Old Hwy 20 to Cameron Rd.
  1428C_04 Gilleland Creek, From Cameron Rd to the spring source

- Total Phosphorus Screening Level Concern(CS) No
  1428_02 Colorado River, Gilleland Creek upstream to Walnut Creek

- Bacteria Geomean Use Concern(CN) Carry Forward
  1428B_02 Walnut Creek, From FM969 to Old Manor Rd.
  1428C_04 Walnut Creek, From Dessau Rd. upstream to MoPac/Loop 1

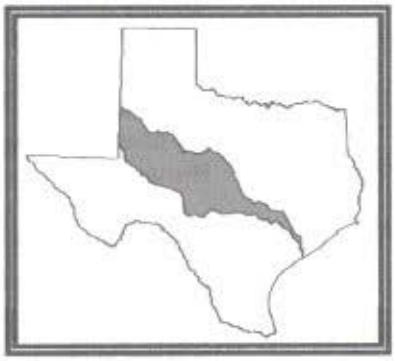
- Bacteria Geomean Nonsupport (NS), Category 4a No
  4a: A state-developed TMDL has been approved by EPA or TMDL has been established by EPA for any water-pollutant combination.
  1428B_05 Walnut Creek, From MoPac/Loop 1 upstream to Union Pacific RR. south of McNeil Drive
  1428C_01 Gilleland Creek, from confluence
  1428C_03 Gilleland Creek, From Old Hwy 20 to Cameron Rd.
  1428C_04 Gilleland Creek, From Cameron Rd to the spring source

- Habitat **New Method** Screening Level Concern(CS) Carry Forward
  1428B_03 Walnut Creek, From Old Manor Rd upstream to Dessau Rd.

ATTACHMENT 3

2000

Basin 14
Colorado River



Texas Water Quality Inventory 2006
(SFR-050/00)
Volume 3, Basins 12-25
• Colorado River Basin

Colorado River Basin Narrative Summary

The headwaters of the Colorado River begin in eastern Dawson County. The river flows approximately 600 miles to Matagorda Bay in the Gulf of Mexico. Major tributaries to the Colorado are: the North and South Concho River near San Angelo; San Saba River near San Saba; Pecan Bayou near Brownwood; Llano River near Llano; Pedernales River near Johnson City; and Barton Creek and Onion Creek near Austin. Total basin drainage area in Texas is 39,893 square miles. Austin is the largest city in the basin, followed by Odessa, San Angelo, Midland, Big Spring, and Brownwood.

For water quality management purposes, the Colorado River Basin has been divided into 34 segments consisting of 1,583 stream miles. Fifteen major reservoirs are located throughout the basin, which cover 119,587 surface acres.

Lake J. B. Thomas, the most upstream reservoir, has good water quality. Downstream of the reservoir, water quality deteriorates due to oil field activities and natural salt deposits. The water quality of the Concho, Llano, and Pedernales Rivers is good, with periodic depressed dissolved oxygen concentrations and elevated fecal coliform densities. Elevated fecal coliform densities found in many of the tributary streams in the Austin area originate mostly from unidentified nonpoint source runoff.

The largest citizen-based monitoring program in the state, the Colorado River Watch Network (CRWN), extends from the mouth of the Colorado River upstream past Lake Buchanan. Volunteers sample 10 mainstem segments of the Colorado River and many of its tributaries. Sampling is conducted monthly for about seven different constituents. Funding and support for the CRWN is provided by the LCRA and the CRP.

2000

Colorado River Basin

Segment 1428 - Colorado River Below Town Lake

Water body description:	From a point 100 meters (110 yards) upstream of FM 969 near Utley in Bastrop County to Longhorn Dam in Travis County
Water body classification:	Classified
Water body type:	Freshwater Stream
Water body length / area:	41.00 Miles
Use support summary:	The contact recreation use is not supported due to elevated fecal coliform densities in the upper 6 miles. Other uses are supported.
Water quality concerns summary:	Nitrite + nitrate nitrogen is a concern in the lower 20 miles.
Additional information:	A project is scheduled for fecal coliform bacteria to do one or more of the following: assess the relevant water quality standard; to confirm the impairment; to conduct a total maximum daily load (TMDL) to evaluate the causes and sources and allocate the allowable loading; or to correct the impairment under another program. For more information on specific TMDL projects, visit the TNRCC Web site at *www.tnrcc.state.tx.us/water/quality/tmdl/*. (No longer available

Monitoring sites used in the assessment

Station	Station Description
12466	Colorado River at county park in Webberville
12469	Colorado River at FM 973 at Del Valle
12474	Colorado River Bridge on US 183 southeast of Austin
12475	Colorado River just below Longhorn Dam in Austin

Published studies

Publication	Date	Author
IS 75 Colorado River	Dec. 1984	Werkenthin, F.

Wastewater dischargers

Permit type	Number of outfalls
Agriculture	2
Domestic	33
Industrial	16

Historical fish kills

Start date	Location	Fish killed	Suspected cause
09/08/1994	Little Walnut Creek at Brookhollow Circle and 7012 ½ Geneva Drive, Austin, TX	1,000	Low Dissolved Oxygen
10/29/1994	Buescher State Park Lake east of Bastrop, TX	100	Low Dissolved Oxygen
03/29/1995	Walnut Creek tributary in Austin	49	Organic compound
02/11/1996	Gilleland Creek tributary	79	Inorganic compound
06/12/1996	Boggy Creek	5	Organic compound
07/13/1996	Lake Walter E. Long	16	Organic compound
08/02/1996	Tannehill Creek	150	Inorganic compound
01/18/1999	Buttermilk Branch Creek - 100 yds downstream of Cameron Street in East Austin	416	Organic compound

Colorado River Basin

Segment 1434 - Colorado River Above La Grange

Water body description: From a point 100 meters (110 yards) downstream of SH 71 at La Grange in Fayette County to a point 100 meters (110 yards) upstream of FM 969 near Utley in Bastrop County

Water body classification: Classified

Water body type: Freshwater Stream

Water body length / area: 74.00 Miles

Use support summary: Available data indicate that the aquatic life, contact recreation, public water supply, and general uses are supported. The fish consumption use was not assessed due to insufficient data.

Water quality concerns summary: Available data indicate that there are no water quality concerns.

Monitoring sites used in the assessment

Station	Station Description
12293	Colorado River below SH 95, 1 mi, at Olive Rd in Smithville
12457	Colorado River at SH 95/SH Loop 230 at Smithville
12461	Colorado River in Bastrop City Park, 100 meters (300 ft) upstream of SH 71
12462	Colorado River at Loop 150 south of Bastrop

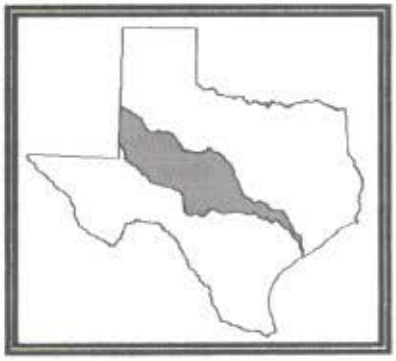
Wastewater dischargers

Permit type	Number of outfalls
Domestic	18
Industrial	5

ATTACHMENT 4

2002 Colorado River Basin Assessment from TCEQ Website

Basin 14
Colorado River



Colorado River Basin Narrative Summary

The headwaters of the Colorado River are located in the western portion of the state in Dawson County and flow southeast approximately 900 miles to Matagorda Bay in the Gulf of Mexico. This feature makes the Colorado River the longest river in the United States that is contained within the borders of one state.

The Colorado River basin includes 55 counties and covers approximately 40,000 square miles from eastern New Mexico to the Gulf of Mexico. It's flow carries it from an elevation of almost 3,000 ft. above sea level in the semi-arid west, through the rugged canyons of the Texas Hill Country before crossing the Coastal Plains to empty in the Gulf. Major community centers include Austin, San Angelo, Bay City, Big Spring, Brownwood, and El Campo. Important tributaries to the Colorado include the North and South Concho River near San Angelo; San Saba River near San Saba; Pecan Bayou near Brownwood; Llano River near Llano; Pedernales River near Johnson City; and Barton Creek and Onion Creek near Austin.

For water quality management purposes, the Colorado River Basin has been divided into 34 classified segments consisting of 1,525 stream miles. Fifteen major reservoirs are located throughout the basin, which cover 119,591 surface acres.

Naturally saline soils and oil-field related activities, coupled with several years of drought have created high levels of dissolved solids in the upper portion of the basin. E.V. Spence Reservoir and the Colorado River below the reservoir do not meet their designated uses because of elevated amounts of dissolved solids. The water quality of the San Saba, Llano, and Pedernales Rivers is good. In the middle portion of the basin, most water bodies support their designated uses. The water quality of the Highland Lakes is good, with periodic depressed dissolved oxygen concentrations resulting from seasonal mixing. Elevated nutrient levels and fecal coliform densities found in many of the tributary streams in the Austin area originate mostly from unidentified non-point source runoff.

The largest citizen-based monitoring program in the state, the Colorado River Watch Network (CRWN), extends from the mouth of the Colorado River upstream through the Highland Lakes, to Pecan Bayou above Brownwood, to the Llano River at Junction, to the San Saba River at San Saba, and to the Pedernales above Stonewall. Volunteers sample 10 mainstem segments of the Colorado River and many of its tributaries. Sampling is conducted monthly for about seven different constituents. Funding and support for the CRWN is provided by the LCRA and the CRP.

SegID: **1426** **Colorado River Below E. V. Spence Reservoir** Overall Category: **5a**

Water body location: From a point 3.7 km (2.3 miles) below the confluence of Mustang Creek in Runnels County to Robert Lee Dam in Coke County

Area	Parameter	Category	Rank
Coke County line to SH 208	chloride	5a	H
Coke County line to SH 208	total dissolved solids	5a	H
Country Club Lake to Coke County line	chloride	5a	H
Country Club Lake to Coke County line	total dissolved solids	5a	H
Lower end of segment to Country Club Lake	chloride	5a	H
Lower end of segment to Country Club Lake	total dissolved solids	5a	H
SH 208 to dam	chloride	5a	H
SH 208 to dam	total dissolved solids	5a	H

SegID: **1427** **Onion Creek** Overall Category: **5c**

Water body location: From the confluence with the Colorado River in Travis County to the most upstream crossing of FM 165 in Blanco County

Area	Parameter	Category	Rank
From end of segment upstream to US 183	depressed dissolved oxygen	5c	D

SegID: **1427A** **Slaughter Creek (unclassified water body)** Overall Category: **5c**

Water body location: Intermittent stream with perennial pools from the confluence with Onion Creek to above US 290 west of Austin

Area	Parameter	Category	Rank
Entire water body	impaired macrobenthos community	5c	D

SegID: **1428C** **Gilleland Creek (unclassified water body)** Overall Category: **5c**

Water body location: Perennial stream and intermittent stream with perennial pools from the confluence with the Colorado River up to the spring source (Ward Spring) northwest of Pflugerville, in Travis County

Area	Parameter	Category	Rank
From Taylor Lane upstream to Old Highway 20	bacteria	5c	D

SegID: **1429B** **Eanes Creek (unclassified water body)** Overall Category: **5c**

Water body location: From the confluence of Town Lake in central Austin in Travis County to the upstream perennial portion of the stream in west Austin in Travis County

Area	Parameter	Category	Rank
Entire water body	bacteria	5c	D

SegID: **1429C** **Waller Creek (unclassified water body)** Overall Category: **5c**

Water body location: From the confluence of Town Lake in central Austin in Travis county to the upstream portion of the stream in north Austin in Travis County

Area	Parameter	Category	Rank
From the confluence with Town Lake to East MLK Blvd.	impaired macrobenthos community	5c	D

Basin Tabular Summaries

For each basin, there are two documents: Tabular Summary of Use Support and Tabular Summary of Water Quality Concerns

Tabular Summary of Use Support

This series of tables provides a quick, detailed reference to water quality status within a basin. The summary identifies the indicators used to assess support of designated uses. For each indicator, support codes are used to identify the level of attainment as fully supporting (FS), partial supporting (PS), not supporting (NS), not assessed (NA), and not applicable (X). Indicators that contribute to partially supporting and not supporting uses are in bold type.

Tabular Summary of Water Quality Concerns

This series of tables provides a quick, detailed reference to water quality problems within a basin. The summary identifies the indicators used to assess water quality concerns. For each indicator, the presence of a water quality problem is identified as a concern (C), no concern (NC), threatened (TH), not assessed (NA), or not applicable (X). Indicators that contribute to concerns are in bold type.

Colorado River Basin Tabular Summary of Use Support (continued)

Key to support codes FS = fully supporting PS = partially supporting NS = not supporting NA = not assessed X = not applicable	Onion Creek 1427	Slaughter Creek 1427A	Williamson Creek 1427B	Bear Creek 1427C	Boggy Creek 1427D	Marble Creek 1427E	Rinard Creek 1427F	Unnamed Tributary to Slaughter Creek 1427G	Colorado River Below Town Lake 1428	Boggy Creek 1428A	Walnut Creek 1428B	Gilleland Creek 1428C
DESIGNATED USE SUPPORT												
Contact Recreation Use	FS	FS	FS	NA	NA	FS	FS	NA	FS	NA	FS	**NS**
Noncontact Recreation Use	X	X	X	X	X	X	X	X	X	X	X	X
Public Water Supply Use	FS	X	X	X	X	X	X	X	FS	X	X	X
Aquatic Life Use												
Dissolved Oxygen grab min	FS	FS	FS	NA	NA	FS	FS	NA	FS	NA	FS	FS
Dissolved Oxygen 24-hour avg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen 24-hour min	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organics in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Toxicity tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment Toxicity tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Habitat	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macrobenthos Community	FS	**NS**	FS	NA	NA	NA	NA	NA	NA	NA	FS	NA
Fish Community	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Consumption Use												
Advisories and Closures	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Human Health Criteria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GENERAL USE SUPPORT												
Water Temperature	FS	X	X	X	X	X	X	X	FS	X	X	X
pH	FS	X	X	X	X	X	X	X	FS	X	X	X
Chloride	FS	X	X	X	X	X	X	X	FS	X	X	X
Sulfate	FS	X	X	X	X	X	X	X	FS	X	X	X
Total Dissolved Solids	FS	X	X	X	X	X	X	X	FS	X	X	X

Colorado River Basin Tabular Summary of Use Support (continued)

Key to support codes FS = fully supporting PS = partially supporting NS = not supporting NA = not assessed X = not applicable	1428D Little Walnut Creek	1428E Fort Branch Creek	1428F Tannehill Branch Creek	1428G Wells Branch	1428H Carson Creek	1428I Decker Creek	1428J Harris Branch	1429 Town Lake	1429A Shoal Creek	1429B Eanes Creek	1429C Waller Creek	1429D East Bouldin Creek
DESIGNATED USE SUPPORT												
Contact Recreation Use	NA	NA	NA	NA	NA	NA	NA	FS	NA	NA	NA	NA
Noncontact Recreation Use	X	X	X	X	X	X	X	X	X	X	X	X
Public Water Supply Use	X	X	X	X	X	X	X	FS	X	X	X	X
Aquatic Life Use												
Dissolved Oxygen grab min	NA	NA	NA	NA	NA	NA	NA	FS	NA	NA	NA	NA
Dissolved Oxygen 24-hour avg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen 24-hour min	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals in water	NA	NA	NA	NA	NA	NA	NA	FS	NA	NA	NA	NA
Organics in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Toxicity tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment Toxicity tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Habitat	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macrobenthos Community	NA	FS	NA	NA	NA	NA	FS	NA	FS	NA	NS	NA
Fish Community	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Consumption Use												
Advisories and Closures	NA	NA	NA	NA	NA	NA	NA	FS	NA	NA	NA	NA
Human Health Criteria	NA	NA	NA	NA	NA	NA	NA	FS	NA	NA	NA	NA
GENERAL USE SUPPORT												
Water Temperature	X	X	X	X	X	X	X	FS	X	X	X	X
pH	X	X	X	X	X	X	X	FS	X	X	X	X
Chloride	X	X	X	X	X	X	X	FS	X	X	X	X
Sulfate	X	X	X	X	X	X	X	FS	X	X	X	X
Total Dissolved Solids	X	X	X	X	X	X	X	FS	X	X	X	X

Colorado River Basin Tabular Summary of Use Support (continued)

Key to support codes FS = fully supporting PS = partially supporting NS = not supporting NA = not assessed X = not applicable	West Bouldin Creek 1429E	Blunn Creek 1429F	Harper's Branch 1429G	Johnson Creek 1429H	Barton Creek 1430	Barton Springs 1430A	Tributaries to Barton Creek 1430B	Mid Pecan Bayou 1431	Upper Pecan Bayou 1432	O. H. Ivie Reservoir 1433	Colorado River above La Grange 1434	Cedar Creek 1434B
DESIGNATED USE SUPPORT												
Contact Recreation Use	NA	NA	NA	NA	FS	FS	FS	FS	FS	NA	FS	FS
Noncontact Recreation Use	X	X	X	X	X	X	X	X	X	X	X	X
Public Water Supply Use	X	X	X	X	X	X	X	X	FS	FS	FS	X
Aquatic Life Use												
Dissolved Oxygen grab min	NA	NA	NA	NA	FS	FS	FS	FS	FS	FS	FS	FS
Dissolved Oxygen 24-hour avg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Oxygen 24-hour min	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Organics in water	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Water Toxicity tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sediment Toxicity tests	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Habitat	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Macrobenthos Community	FS	FS	NA	NA	FS	NA	FS	NA	NA	NA	NA	NA
Fish Community	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fish Consumption Use												
Advisories and Closures	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Human Health Criteria	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GENERAL USE SUPPORT												
Water Temperature	X	X	X	X	FS	X	X	FS	FS	FS	FS	X
pH	X	X	X	X	FS	X	X	FS	FS	NA	FS	X
Chloride	X	X	X	X	FS	X	X	FS	FS	NA	FS	X
Sulfate	X	X	X	X	FS	X	X	FS	FS	NA	FS	X
Total Dissolved Solids	X	X	X	X	FS	X	X	FS	FS	NA	NA	X

Colorado River Basin Tabular Summary of Use Support (continued)

Key to support codes FS = fully supporting PS = partially supporting NS = not supporting NA = not assessed X = not applicable	1434C Lake Bastrop
DESIGNATED USE SUPPORT	
Contact Recreation Use	FS
Noncontact Recreation Use	X
Public Water Supply Use	X
Aquatic Life Use	
Dissolved Oxygen grab min	FS
Dissolved Oxygen 24-hour avg	NA
Dissolved Oxygen 24-hour min	NA
Metals in water	NA
Organics in water	NA
Water Toxicity tests	NA
Sediment Toxicity tests	NA
Habitat	NA
Macrobenthos Community	NA
Fish Community	NA
Fish Consumption Use	
Advisories and Closures	NA
Human Health Criteria	NA
GENERAL USE SUPPORT	
Water Temperature	X
pH	X
Chloride	X
Sulfate	X
Total Dissolved Solids	X

(based on data from 03/01/1996 to 02/28/2001)

Colorado River Below Town Lake

Segment: 1428 Colorado River Basin

Basin number:	14
Basin group:	D
Water body description:	From a point 100 meters (110 yards) upstream of FM 969 near Utley in Bastrop County to Longhorn Dam in Travis County
Water body classification:	Classified
Water body type:	Freshwater Stream
Water body length / area:	41 Miles
Water body uses:	Aquatic Life Use, Contact Recreation Use, General Use, Fish Consumption Use, Public Water Supply Use

Parameters Removed from the 2000 303(d) List: bacteria

Additional Information: The aquatic life, contact recreation, public water supply and general uses are fully supported. The fish consumption use was not assessed.

Biological data were sampled under conditions which made it difficult to collect representative samples. TNRCC and LCRA will identify appropriate sample conditions and collect additional data.

2002 Concerns:

Assessment Area	Use or Concern	Concern Status	Description of Concern
Lower end of segment to Gilleland Creek	Nutrient Enrichment Concern	Concern	nitrate+nitrite nitrogen
Lower end of segment to Gilleland Creek	Nutrient Enrichment Concern	Concern	orthophosphorus
Lower end of segment to Gilleland Creek	Narrative Criteria Concern	Concern	impaired fish community
Lower end of segment to Gilleland Creek	Narrative Criteria Concern	Concern	impaired macrobenthos community

Monitoring sites used:

Assessment Area	Station ID	Station Description
Lower end of segment to Gilleland Creek	12466	COLORADO RIVER AT COUNTY PARK IN WEBBERVILLE
Onion Creek to Walnut Creek	12469	COLORADO RIVER AT FM 973 AT DEL VALLE
Walnut Creek to Longhorn Dam	12474	COLORADO RIVER BRIDGE ON US 183 SOUTHEAST OF AUSTIN
Walnut Creek to Longhorn Dam	12475	COLORADO RIVER JUST BELOW LONGHORN DAM IN AUSTIN

(based on data from 03/01/1996 to 02/28/2001)

Published studies: Publication	Date	Author
IS 75 Colorado River	Dec. 1984	Werkenthin, F.

Segment ID: 1428 **Water body name:** Colorado River Below Town Lake

Freshwater Stream | Colorado River Basin | Total size: 41 Miles

Assessment Year	Assessment Method	Status of Use Support or Concern	Location	Location size	# of samples	# of exceedances	Mean
Aquatic Life Use							
2002	Dissolved Oxygen grab average	No Concern	Lower end of segment to Gilleland Creek	21	38	1	
2002	Dissolved Oxygen grab average	No Concern	Onion Creek to Walnut Creek	15	25	0	
2002	Dissolved Oxygen grab average	No Concern	Walnut Creek to Longhorn Dam	5	57	3	
2002	Dissolved Oxygen grab minimum	Fully Supporting	Lower end of segment to Gilleland Creek	21	38	0	
2002	Dissolved Oxygen grab minimum	Fully Supporting	Onion Creek to Walnut Creek	15	25	0	
2002	Dissolved Oxygen grab minimum	Fully Supporting	Walnut Creek to Longhorn Dam	5	57	0	
2002	Dissolved Oxygen 24hr average	Not Assessed	Lower end of segment to Gilleland Creek	21	0		
2002	Dissolved Oxygen 24hr average	Not Assessed	Onion Creek to Walnut Creek	15	0		
2002	Dissolved Oxygen 24hr average	Not Assessed	Walnut Creek to Longhorn Dam	5	0		
2002	Dissolved Oxygen 24hr minimum	Not Assessed	Lower end of segment to Gilleland Creek	21	0		
2002	Dissolved Oxygen 24hr minimum	Not Assessed	Onion Creek to Walnut Creek	15	0		
2002	Dissolved Oxygen 24hr minimum	Not Assessed	Walnut Creek to Longhorn Dam	5	0		
2002	Acute Metals in water	Not Assessed	Lower end of segment to Gilleland Creek	21	1		
2002	Chronic Metals in water	Not Assessed	Lower end of segment to Gilleland Creek	21	1		
2002	Macrobenthos Community	Not Assess-Not Represent	Lower end of segment to Gilleland Creek	21	2	1	31
2002	Fish Community	Not Assess-Not Represent	Lower end of segment to Gilleland Creek	21	2	0	49
2002	Overall Aquatic Life Use	Fully Supporting	Lower end of segment to Gilleland Creek	21			
2002	Overall Aquatic Life Use	Fully Supporting	Onion Creek to Walnut Creek	15			
2002	Overall Aquatic Life Use	Fully Supporting	Walnut Creek to Longhorn Dam	5			

Segment ID: 1428 **Water body name:** Colorado River Below Town Lake

Freshwater Stream | Colorado River Basin | Total size: 41 Miles

Assessment Year	Assessment Method	Status of Use Support or Concern	Location	Location size	# of samples	# of exceedances	Mean
Contact Recreation Use							
2002	E. coli single sample	Fully Supporting	Lower end of segment to Gilleland Creek	21	25	2	
2002	E. coli single sample	Fully Supporting	Onion Creek to Walnut Creek	15	19	3	
2002	E. coli single sample	Fully Supporting	Walnut Creek to Longhorn Dam	5	25	2	
2002	E. coli geometric mean	Fully Supporting	Lower end of segment to Gilleland Creek	21	25		38
2002	E. coli geometric mean	Fully Supporting	Onion Creek to Walnut Creek	15	19		49
2002	E. coli geometric mean	Fully Supporting	Walnut Creek to Longhorn Dam	5	25		123
2002	Fecal coliform single sample	Fully Supporting	Lower end of segment to Gilleland Creek	21	31	3	
2002	Fecal coliform single sample	Fully Supporting	Onion Creek to Walnut Creek	15	22	2	
2002	Fecal coliform single sample	Fully Supporting	Walnut Creek to Longhorn Dam	5	32	8	
2002	Fecal coliform geometric mean	Fully Supporting	Lower end of segment to Gilleland Creek	21	31		71
2002	Fecal coliform geometric mean	Fully Supporting	Onion Creek to Walnut Creek	15	22		45
2002	Fecal coliform geometric mean	Fully Supporting	Walnut Creek to Longhorn Dam	5	32		198
2002	Overall Recreation Use	Fully Supporting	Lower end of segment to Gilleland Creek	21			
2002	Overall Recreation Use	Fully Supporting	Onion Creek to Walnut Creek	15			
2002	Overall Recreation Use	Fully Supporting	Walnut Creek to Longhorn Dam	5			
General Use							
2002	Water Temperature	Fully Supporting	Lower end of segment to Gilleland Creek	21	38	0	
2002	Water Temperature	Fully Supporting	Onion Creek to Walnut Creek	15	25	0	
2002	Water Temperature	Fully Supporting	Walnut Creek to Longhorn Dam	5	36	0	
2002	pH	Fully Supporting	Lower end of segment to Gilleland Creek	21	38	0	
2002	pH	Fully Supporting	Onion Creek to Walnut Creek	15	25	0	
2002	pH	Fully Supporting	Walnut Creek to Longhorn Dam	5	35	0	

Segment ID: 1428 **Water body name:** Colorado River Below Town Lake

Freshwater Stream | Colorado River Basin | Total size: 41 Miles

Assessment Year	Assessment Method	Status of Use Support or Concern	Location	Location size	# of samples	# of exceedances	Mean
General Use (continued)							
2002	Chloride	Fully Supporting	Lower end of segment to Gilleland Creek	21	96		48
2002	Chloride	Fully Supporting	Onion Creek to Walnut Creek	15	96		48
2002	Chloride	Fully Supporting	Walnut Creek to Longhorn Dam	5	96		48
2002	Sulfate	Fully Supporting	Lower end of segment to Gilleland Creek	21	105		38
2002	Sulfate	Fully Supporting	Onion Creek to Walnut Creek	15	105		38
2002	Sulfate	Fully Supporting	Walnut Creek to Longhorn Dam	5	105		38
2002	Total Dissolved Solids	Fully Supporting	Lower end of segment to Gilleland Creek	21	142		344.5
2002	Total Dissolved Solids	Fully Supporting	Onion Creek to Walnut Creek	15	142		344.5
2002	Total Dissolved Solids	Fully Supporting	Walnut Creek to Longhorn Dam	5	142		344.5
2002	Overall General Use	Fully Supporting	Lower end of segment to Gilleland Creek	21			
2002	Overall General Use	Fully Supporting	Onion Creek to Walnut Creek	15			
2002	Overall General Use	Fully Supporting	Walnut Creek to Longhorn Dam	5			
Fish Consumption Use							
2002	Overall Fish Consumption Use	Not Assessed	Lower end of segment to Gilleland Creek	21			
2002	Overall Fish Consumption Use	Not Assessed	Onion Creek to Walnut Creek	15			
2002	Overall Fish Consumption Use	Not Assessed	Walnut Creek to Longhorn Dam	5			
Public Water Supply Use							
2002	Overall Public Water Supply Use	Fully Supporting	Lower end of segment to Gilleland Creek	21			
2002	Overall Public Water Supply Use	Fully Supporting	Onion Creek to Walnut Creek	15			
2002	Overall Public Water Supply Use	Fully Supporting	Walnut Creek to Longhorn Dam	5			
Overall Use Support							
2002		Fully Supporting	Lower end of segment to Gilleland Creek	21			

Segment ID: 1428 **Water body name:** Colorado River Below Town Lake

Freshwater Stream | Colorado River Basin | Total size: 41 Miles

Assessment Year	Assessment Method	Status of Use Support or Concern	Location	Location size	# of samples	# of exceedances	Mean
Overall Use Support (continued)							
2002		Fully Supporting	Onion Creek to Walnut Creek	15			
2002		Fully Supporting	Walnut Creek to Longhorn Dam	5			
Nutrient Enrichment Concern							
2002	Ammonia Nitrogen	No Concern	Lower end of segment to Gilleland Creek	21	35	1	
2002	Ammonia Nitrogen	No Concern	Onion Creek to Walnut Creek	15	23	1	
2002	Ammonia Nitrogen	No Concern	Walnut Creek to Longhorn Dam	5	38	2	
2002	Nitrite + Nitrate Nitrogen	Concern	Lower end of segment to Gilleland Creek	21	38	11	
2002	Nitrite + Nitrate Nitrogen	No Concern	Onion Creek to Walnut Creek	15	26	5	
2002	Nitrite + Nitrate Nitrogen	No Concern	Walnut Creek to Longhorn Dam	5	42	0	
2002	Orthophosphorus	Concern	Lower end of segment to Gilleland Creek	21	38	11	
2002	Orthophosphorus	No Concern	Onion Creek to Walnut Creek	15	26	4	
2002	Orthophosphorus	No Concern	Walnut Creek to Longhorn Dam	5	42	0	
2002	Total Phosphorus	No Concern	Lower end of segment to Gilleland Creek	21	34	7	
2002	Total Phosphorus	No Concern	Onion Creek to Walnut Creek	15	22	4	
2002	Total Phosphorus	No Concern	Walnut Creek to Longhorn Dam	5	37	0	
2002	Overall Nutrient Enrichment Concerns	Concern	Lower end of segment to Gilleland Creek	21			
2002	Overall Nutrient Enrichment Concerns	No Concern	Onion Creek to Walnut Creek	15			
2002	Overall Nutrient Enrichment Concerns	No Concern	Walnut Creek to Longhorn Dam	5			
Algal Growth Concern							
2002	Chlorophyll a	No Concern	Lower end of segment to Gilleland Creek	21	38	1	
2002	Chlorophyll a	No Concern	Onion Creek to Walnut Creek	15	27	1	

Segment ID: 1428 **Water body name:** Colorado River Below Town Lake

Freshwater Stream | Colorado River Basin | Total size: 41 Miles

Assessment Year	Assessment Method	Status of Use Support or Concern	Location	Location size	# of samples	# of exceedances	Mean
Algal Growth Concern (continued)							
2002	Chlorophyll a	No Concern	Walnut Creek to Longhorn Dam	5	42	0	
Sediment Contaminants Concern							
2002	Overall Sediment Contaminant Concerns	Not Assessed	Lower end of segment to Gilleland Creek	21			
2002	Overall Sediment Contaminant Concerns	Not Assessed	Onion Creek to Walnut Creek	15			
2002	Overall Sediment Contaminant Concerns	Not Assessed	Walnut Creek to Longhorn Dam	5			
Fish Tissue Contaminants Concern							
2002	Overall Fish Tissue Contaminant Concerns	Not Assessed	Lower end of segment to Gilleland Creek	21			
2002	Overall Fish Tissue Contaminant Concerns	Not Assessed	Onion Creek to Walnut Creek	15			
2002	Overall Fish Tissue Contaminant Concerns	Not Assessed	Walnut Creek to Longhorn Dam	5			
Public Water Supply Concern							
2002	Finished Water: Chloride	No Concern	Lower end of segment to Gilleland Creek	21			
2002	Finished Water: Chloride	No Concern	Onion Creek to Walnut Creek	15			
2002	Finished Water: Chloride	No Concern	Walnut Creek to Longhorn Dam	5			
2002	Finished Water: Sulfate	No Concern	Lower end of segment to Gilleland Creek	21			
2002	Finished Water: Sulfate	No Concern	Onion Creek to Walnut Creek	15			
2002	Finished Water: Sulfate	No Concern	Walnut Creek to Longhorn Dam	5			
2002	Finished Water: Total Dissolved Solids	No Concern	Lower end of segment to Gilleland Creek	21			
2002	Finished Water: Total Dissolved Solids	No Concern	Onion Creek to Walnut Creek	15			

Segment ID: 1428 **Water body name:** Colorado River Below Town Lake

Freshwater Stream | Colorado River Basin | Total size: 41 Miles

Assessment Year	Assessment Method	Status of Use Support or Concern	Location	Location size	# of samples	# of exceedances	Mean
Public Water Supply Concern (continued)							
2002	Finished Water: Total Dissolved Solids	No Concern	Walnut Creek to Longhorn Dam	5			
2002	Finished Water: MTBE	No Concern	Lower end of segment to Gilleland Creek	21			
2002	Finished Water: MTBE	No Concern	Onion Creek to Walnut Creek	15			
2002	Finished Water: MTBE	No Concern	Walnut Creek to Longhorn Dam	5			
2002	Finished Water: Perchlorate	Not Assessed	Lower end of segment to Gilleland Creek	21			
2002	Finished Water: Perchlorate	Not Assessed	Onion Creek to Walnut Creek	15			
2002	Finished Water: Perchlorate	Not Assessed	Walnut Creek to Longhorn Dam	5			
2002	Finished Water: Overall	No Concern	Lower end of segment to Gilleland Creek	21			
2002	Finished Water: Overall	No Concern	Onion Creek to Walnut Creek	15			
2002	Finished Water: Overall	No Concern	Walnut Creek to Longhorn Dam	5			
2002	Surface Water: Chloride	No Concern	Lower end of segment to Gilleland Creek	21	96		48
2002	Surface Water: Chloride	No Concern	Onion Creek to Walnut Creek	15	96		48
2002	Surface Water: Chloride	No Concern	Walnut Creek to Longhorn Dam	5	96		48
2002	Surface Water: Sulfate	No Concern	Lower end of segment to Gilleland Creek	21	105		38
2002	Surface Water: Sulfate	No Concern	Onion Creek to Walnut Creek	15	105		38
2002	Surface Water: Sulfate	No Concern	Walnut Creek to Longhorn Dam	5	105		38
2002	Surface Water: Total Dissolved Solids	No Concern	Lower end of segment to Gilleland Creek	21	142		344.5
2002	Surface Water: Total Dissolved Solids	No Concern	Onion Creek to Walnut Creek	15	142		344.5
2002	Surface Water: Total Dissolved Solids	No Concern	Walnut Creek to Longhorn Dam	5	142		344.5
2002	Surface Water: Overall	No Concern	Lower end of segment to Gilleland Creek	21			

Segment ID: 1428 **Water body name:** Colorado River Below Town Lake

Freshwater Stream | Colorado River Basin | Total size: 41 Miles

Assessment Year	Assessment Method	Status of Use Support or Concern	Location	Location size	# of samples	# of exceedances	Mean
Public Water Supply Concern (continued)							
2002	Surface Water: Overall	No Concern	Onion Creek to Walnut Creek	15			
2002	Surface Water: Overall	No Concern	Walnut Creek to Longhorn Dam	5			
2002	Overall Public Water Supply Concerns	No Concern	Lower end of segment to Gilleland Creek	21			
2002	Overall Public Water Supply Concerns	No Concern	Onion Creek to Walnut Creek	15			
2002	Overall Public Water Supply Concerns	No Concern	Walnut Creek to Longhorn Dam	5			
Narrative Criteria Concern							
2002	Overall Narrative Criteria Concerns	No Concern	Onion Creek to Walnut Creek	15			
2002	Overall Narrative Criteria Concerns	No Concern	Walnut Creek to Longhorn Dam	5			
2002	Macrobenthos Community	Concern	Lower end of segment to Gilleland Creek	21			
2002	Fish Community	Concern	Lower end of segment to Gilleland Creek	21			
2002	Overall Narrative Criteria Concerns	Concern	Lower end of segment to Gilleland Creek	21			
Overall Secondary Concern							
2002		Concern	Lower end of segment to Gilleland Creek	21			
2002		No Concern	Onion Creek to Walnut Creek	15			
2002		No Concern	Walnut Creek to Longhorn Dam	5			

Cedar Creek (unclassified water body)

Segment: 1434B Colorado River Basin

Basin number:	14
Basin group:	D
Water body description:	Perennial stream from the confluence with the Colorado River upstream to the confluence of an unnamed tributary at FM 525 in Bastrop County
Water body classification:	Unclassified
Water body type:	Freshwater Stream
Water body length / area:	21 Miles
Water body uses:	Aquatic Life Use, Contact Recreation Use, Fish Consumption Use

Additional Information: The aquatic life and contact recreation uses are fully supported. The fish consumption use was not assessed.

2002 Concerns:

Assessment Area	Use or Concern	Concern Status	Description of Concern
Entire water body	Aquatic Life Use	Use Concern	depressed dissolved oxygen

Monitoring sites used:

Assessment Area	Station ID	Station Description
Entire water body	16176	CEDAR CREEK APPROX 200FT DOWNSTREAM OF FM304

Segment ID: 1434B **Water body name:** Cedar Creek (unclassified water body)

Freshwater Stream | Colorado River Basin | Total size: 21 Miles

Assessment Year	Assessment Method	Status of Use Support or Concern	Location	Location size	# of samples	# of exceedances	Mean
Aquatic Life Use							
2002	Dissolved Oxygen grab average	Use Concern	Entire water body	21	12	4	
2002	Dissolved Oxygen grab minimum	Fully Supporting	Entire water body	21	12	0	
2002	Dissolved Oxygen 24hr average	Not Assessed	Entire water body	21	0		
2002	Dissolved Oxygen 24hr minimum	Not Assessed	Entire water body	21	0		
2002	Overall Aquatic Life Use	Fully Supporting	Entire water body	21			
Contact Recreation Use							
2002	E. coli single sample	Fully Supporting	Entire water body	21	10	0	
2002	E. coli geometric mean	Fully Supporting	Entire water body	21	10		18
2002	Fecal coliform single sample	Fully Supporting	Entire water body	21	10	1	
2002	Fecal coliform geometric mean	Fully Supporting	Entire water body	21	10		37
2002	Overall Recreation Use	Fully Supporting	Entire water body	21			
Fish Consumption Use							
2002	Overall Fish Consumption Use	Not Assessed	Entire water body	21			
Overall Use Support							
2002		Fully Supporting	Entire water body	21			
Nutrient Enrichment Concern							
2002	Ammonia Nitrogen	No Concern	Entire water body	21	14	2	
2002	Nitrite + Nitrate Nitrogen	No Concern	Entire water body	21	14	0	

Segment ID: 1434B **Water body name:** Cedar Creek (unclassified water body)

Freshwater Stream | Colorado River Basin | Total size: 21 Miles

Assessment Year	Assessment Method	Status of Use Support or Concern	Location	Location size	# of samples	# of exceedances	Mean
Nutrient Enrichment Concern (continued)							
2002	Orthophosphorus	No Concern	Entire water body	21	14	0	
2002	Total Phosphorus	No Concern	Entire water body	21	14	0	
2002	Overall Nutrient Enrichment Concerns	No Concern	Entire water body	21			
Algal Growth Concern							
2002	Chlorophyll a	No Concern	Entire water body	21	14	2	
Sediment Contaminants Concern							
2002	Metals in sediment	Not Assessed	Entire water body	21	1		
2002	Organics in sediment	Not Assessed	Entire water body	21	1		
2002	Overall Sediment Contaminant Concerns	Not Assessed	Entire water body	21			
Fish Tissue Contaminants Concern							
2002	Overall Fish Tissue Contaminant Concerns	Not Assessed	Entire water body	21			
Narrative Criteria Concern							
2002	Overall Narrative Criteria Concerns	No Concern	Entire water body	21			
Overall Secondary Concern							
2002		No Concern	Entire water body	21			

(based on data from 03/01/1996 to 02/28/2001)

Colorado River above La Grange

Segment: 1434 Colorado River Basin

Basin number:	14
Basin group:	D
Water body description:	From a point 100 meters (110 yards) downstream of SH 71 at La Grange in Fayette County to a point 100 meters (110 yards) upstream of FM 969 near Utley in Bastrop County
Water body classification:	Classified
Water body type:	Freshwater Stream
Water body length / area:	74 Miles
Water body uses:	Aquatic Life Use, Contact Recreation Use, General Use, Fish Consumption Use, Public Water Supply Use

Additional Information: The aquatic life, contact recreation, public water supply and general uses are fully supported. The fish consumption use was not assessed.

2002 Concerns:

Assessment Area	Use or Concern	Concern Status	Description of Concern
Reeds Creek west of Smithville to upper end of segment	Nutrient Enrichment Concern	Concern	nitrate+nitrite nitrogen

Monitoring sites used:

Assessment Area	Station ID	Station Description
Reeds Creek west of Smithville to upper end of segment	12461	COLORADO RIVER IN BASTROP CITY PARK, 100 METERS (300 FT) UPSTREAM OF SH 71
Reeds Creek west of Smithville to upper end of segment	12462	COLORADO RIVER AT LOOP 150 SOUTH OF BASTROP
Southern-Pacific RR to Reeds Creek west of Smithville	12293	COLORADO RIVER BELOW SH 95, 1 MI, AT OLIVE RD IN SMITHVILLE
Southern-Pacific RR to Reeds Creek west of Smithville	12457	COLORADO RIVER AT SH95/SH LOOP 230 AT SMITHVILLE

Segment ID: 1434 **Water body name:** Colorado River above La Grange

Freshwater Stream | Colorado River Basin | Total size: 74 Miles

Assessment Year	Assessment Method	Status of Use Support or Concern	Location	Location size	# of samples	# of exceedances	Mean
Aquatic Life Use							
2002	Dissolved Oxygen grab average	No Concern	Reeds Creek west of Smithville to upper end of segment	26	29	0	
2002	Dissolved Oxygen grab average	No Concern	Southern-Pacific RR to Reeds Creek west of Smithville	26	29	1	
2002	Dissolved Oxygen grab minimum	Fully Supporting	Reeds Creek west of Smithville to upper end of segment	26	29	0	
2002	Dissolved Oxygen grab minimum	Fully Supporting	Southern-Pacific RR to Reeds Creek west of Smithville	26	29	0	
2002	Dissolved Oxygen 24hr average	Not Assessed	Reeds Creek west of Smithville to upper end of segment	26	0		
2002	Dissolved Oxygen 24hr average	Not Assessed	Southern-Pacific RR to Reeds Creek west of Smithville	26	0		
2002	Dissolved Oxygen 24hr minimum	Not Assessed	Reeds Creek west of Smithville to upper end of segment	26	0		
2002	Dissolved Oxygen 24hr minimum	Not Assessed	Southern-Pacific RR to Reeds Creek west of Smithville	26	0		
2002	Acute Metals in water	Not Assessed	Reeds Creek west of Smithville to upper end of segment	26	1		
2002	Chronic Metals in water	Not Assessed	Reeds Creek west of Smithville to upper end of segment	26	1		
2002	Overall Aquatic Life Use	Not Assessed	Lower 22 miles of segment	22			
2002	Overall Aquatic Life Use	Fully Supporting	Reeds Creek west of Smithville to upper end of segment	26			
2002	Overall Aquatic Life Use	Fully Supporting	Southern-Pacific RR to Reeds Creek west of Smithville	26			

Segment ID: 1434 **Water body name:** Colorado River above La Grange

Freshwater Stream | Colorado River Basin | Total size: 74 Miles

Assessment Year	Assessment Method	Status of Use Support or Concern	Location	Location size	# of samples	# of exceedances	Mean
Contact Recreation Use							
2002	E. coli single sample	Fully Supporting	Reeds Creek west of Smithville to upper end of segment	26	23	1	
2002	E. coli single sample	Fully Supporting	Southern-Pacific RR to Reeds Creek west of Smithville	26	23	1	
2002	E. coli geometric mean	Fully Supporting	Reeds Creek west of Smithville to upper end of segment	26	23		33
2002	E. coli geometric mean	Fully Supporting	Southern-Pacific RR to Reeds Creek west of Smithville	26	23		34
2002	Fecal coliform single sample	Fully Supporting	Reeds Creek west of Smithville to upper end of segment	26	23	1	
2002	Fecal coliform single sample	Fully Supporting	Southern-Pacific RR to Reeds Creek west of Smithville	26	23	1	
2002	Fecal coliform geometric mean	Fully Supporting	Reeds Creek west of Smithville to upper end of segment	26	23		64
2002	Fecal coliform geometric mean	Fully Supporting	Southern-Pacific RR to Reeds Creek west of Smithville	26	23		59
2002	Overall Recreation Use	Not Assessed	Lower 22 miles of segment	22			
2002	Overall Recreation Use	Fully Supporting	Reeds Creek west of Smithville to upper end of segment	26			
2002	Overall Recreation Use	Fully Supporting	Southern-Pacific RR to Reeds Creek west of Smithville	26			
General Use							
2002	Water Temperature	Fully Supporting	Reeds Creek west of Smithville to upper end of segment	26	31	0	
2002	Water Temperature	Fully Supporting	Southern-Pacific RR to Reeds Creek west of Smithville	26	29	0	

Segment ID: 1434 **Water body name:** Colorado River above La Grange

Freshwater Stream | Colorado River Basin | Total size: 74 Miles

Assessment Year	Assessment Method	Status of Use Support or Concern	Location	Location size	# of samples	# of exceedances	Mean
General Use (continued)							
2002	pH	Fully Supporting	Reeds Creek west of Smithville to upper end of segment	26	29	0	
2002	pH	Fully Supporting	Southern-Pacific RR to Reeds Creek west of Smithville	26	29	0	
2002	Chloride	Fully Supporting	Lower 22 miles of segment	22	55		55
2002	Chloride	Fully Supporting	Reeds Creek west of Smithville to upper end of segment	26	55		55
2002	Chloride	Fully Supporting	Southern-Pacific RR to Reeds Creek west of Smithville	26	55		55
2002	Sulfate	Fully Supporting	Lower 22 miles of segment	22	67		44
2002	Sulfate	Fully Supporting	Reeds Creek west of Smithville to upper end of segment	26	67		45
2002	Sulfate	Fully Supporting	Southern-Pacific RR to Reeds Creek west of Smithville	26	67		45
2002	Total Dissolved Solids	Not Assessed	Lower 22 miles of segment	22	3		366
2002	Total Dissolved Solids	Not Assessed	Reeds Creek west of Smithville to upper end of segment	26	3		366
2002	Total Dissolved Solids	Not Assessed	Southern-Pacific RR to Reeds Creek west of Smithville	26	3		366
2002	Overall General Use	Fully Supporting	Lower 22 miles of segment	22			
2002	Overall General Use	Fully Supporting	Reeds Creek west of Smithville to upper end of segment	26			
2002	Overall General Use	Fully Supporting	Southern-Pacific RR to Reeds Creek west of Smithville	26			
Fish Consumption Use							
2002	Overall Fish Consumption Use	Not Assessed	Lower 22 miles of segment	22			

Segment ID: 1434 **Water body name:** Colorado River above La Grange

Freshwater Stream | Colorado River Basin | Total size: 74 Miles

Assessment Year	Assessment Method	Status of Use Support or Concern	Location	Location size	# of samples	# of exceedances	Mean
Fish Consumption Use (continued)							
2002	Overall Fish Consumption Use	Not Assessed	Reeds Creek west of Smithville to upper end of segment	26			
2002	Overall Fish Consumption Use	Not Assessed	Southern-Pacific RR to Reeds Creek west of Smithville	26			
Public Water Supply Use							
2002	Overall Public Water Supply Use	Fully Supporting	Lower 22 miles of segment	22			
2002	Overall Public Water Supply Use	Fully Supporting	Reeds Creek west of Smithville to upper end of segment	26			
2002	Overall Public Water Supply Use	Fully Supporting	Southern-Pacific RR to Reeds Creek west of Smithville	26			
Overall Use Support							
2002		Fully Supporting	Lower 22 miles of segment	22			
2002		Fully Supporting	Reeds Creek west of Smithville to upper end of segment	26			
2002		Fully Supporting	Southern-Pacific RR to Reeds Creek west of Smithville	26			
Nutrient Enrichment Concern							
2002	Ammonia Nitrogen	No Concern	Reeds Creek west of Smithville to upper end of segment	26	19	0	
2002	Ammonia Nitrogen	No Concern	Southern-Pacific RR to Reeds Creek west of Smithville	26	20	1	
2002	Nitrite + Nitrate Nitrogen	Concern	Reeds Creek west of Smithville to upper end of segment	26	22	6	
2002	Nitrite + Nitrate Nitrogen	No Concern	Southern-Pacific RR to Reeds Creek west of Smithville	26	23	6	

Segment ID: 1434 **Water body name:** Colorado River above La Grange

Freshwater Stream | Colorado River Basin | Total size: 74 Miles

Assessment Year	Assessment Method	Status of Use Support or Concern	Location	Location size	# of samples	# of exceedances	Mean
Nutrient Enrichment Concern (continued)							
2002	Orthophosphorus	No Concern	Reeds Creek west of Smithville to upper end of segment	26	22	5	
2002	Orthophosphorus	No Concern	Southern-Pacific RR to Reeds Creek west of Smithville	26	23	5	
2002	Total Phosphorus	No Concern	Reeds Creek west of Smithville to upper end of segment	26	18	2	
2002	Total Phosphorus	No Concern	Southern-Pacific RR to Reeds Creek west of Smithville	26	19	3	
2002	Overall Nutrient Enrichment Concerns	Not Assessed	Lower 22 miles of segment	22			
2002	Overall Nutrient Enrichment Concerns	Concern	Reeds Creek west of Smithville to upper end of segment	26			
2002	Overall Nutrient Enrichment Concerns	No Concern	Southern-Pacific RR to Reeds Creek west of Smithville	26			
Algal Growth Concern							
2002	Chlorophyll a	Not Assessed	Lower 22 miles of segment	22			
2002	Chlorophyll a	No Concern	Reeds Creek west of Smithville to upper end of segment	26	23	1	
2002	Chlorophyll a	No Concern	Southern-Pacific RR to Reeds Creek west of Smithville	26	24	1	
Sediment Contaminants Concern							
2002	Overall Sediment Contaminant Concerns	Not Assessed	Lower 22 miles of segment	22			
2002	Overall Sediment Contaminant Concerns	Not Assessed	Reeds Creek west of Smithville to upper end of segment	26			
2002	Overall Sediment Contaminant Concerns	Not Assessed	Southern-Pacific RR to Reeds Creek west of Smithville	26			

Segment ID: 1434 **Water body name:** Colorado River above La Grange

Freshwater Stream | Colorado River Basin | Total size: 74 Miles

Assessment Year	Assessment Method	Status of Use Support or Concern	Location	Location size	# of samples	# of exceedances	Mean
Fish Tissue Contaminants Concern							
2002	Overall Fish Tissue Contaminant Concerns	Not Assessed	Lower 22 miles of segment	22			
2002	Overall Fish Tissue Contaminant Concerns	Not Assessed	Reeds Creek west of Smithville to upper end of segment	26			
2002	Overall Fish Tissue Contaminant Concerns	Not Assessed	Southern-Pacific RR to Reeds Creek west of Smithville	26			
Public Water Supply Concern							
2002	Finished Water: Chloride	No Concern	Lower 22 miles of segment	22			
2002	Finished Water: Chloride	No Concern	Reeds Creek west of Smithville to upper end of segment	26			
2002	Finished Water: Chloride	No Concern	Southern-Pacific RR to Reeds Creek west of Smithville	26			
2002	Finished Water: Sulfate	No Concern	Lower 22 miles of segment	22			
2002	Finished Water: Sulfate	No Concern	Reeds Creek west of Smithville to upper end of segment	26			
2002	Finished Water: Sulfate	No Concern	Southern-Pacific RR to Reeds Creek west of Smithville	26			
2002	Finished Water: Total Dissolved Solids	No Concern	Lower 22 miles of segment	22			
2002	Finished Water: Total Dissolved Solids	No Concern	Reeds Creek west of Smithville to upper end of segment	26			
2002	Finished Water: Total Dissolved Solids	No Concern	Southern-Pacific RR to Reeds Creek west of Smithville	26			
2002	Finished Water: MTBE	No Concern	Lower 22 miles of segment	22			
2002	Finished Water: MTBE	No Concern	Reeds Creek west of Smithville to upper end of segment	26			

Segment ID: 1434 **Water body name:** Colorado River above La Grange

Freshwater Stream | Colorado River Basin | Total size: 74 Miles

Assessment Year	Assessment Method	Status of Use Support or Concern	Location	Location size	# of samples	# of exceedances	Mean
Public Water Supply Concern (continued)							
2002	Finished Water: MTBE	No Concern	Southern-Pacific RR to Reeds Creek west of Smithville	26			
2002	Finished Water: Perchlorate	Not Assessed	Lower 22 miles of segment	22			
2002	Finished Water: Perchlorate	Not Assessed	Reeds Creek west of Smithville to upper end of segment	26			
2002	Finished Water: Perchlorate	Not Assessed	Southern-Pacific RR to Reeds Creek west of Smithville	26			
2002	Finished Water: Overall	No Concern	Lower 22 miles of segment	22			
2002	Finished Water: Overall	No Concern	Reeds Creek west of Smithville to upper end of segment	26			
2002	Finished Water: Overall	No Concern	Southern-Pacific RR to Reeds Creek west of Smithville	26			
2002	Surface Water: Chloride	No Concern	Lower 22 miles of segment	22	55		55
2002	Surface Water: Chloride	No Concern	Reeds Creek west of Smithville to upper end of segment	26	55		55
2002	Surface Water: Chloride	No Concern	Southern-Pacific RR to Reeds Creek west of Smithville	26	55		55
2002	Surface Water: Sulfate	No Concern	Lower 22 miles of segment	22	67		44
2002	Surface Water: Sulfate	No Concern	Reeds Creek west of Smithville to upper end of segment	26	67		45
2002	Surface Water: Sulfate	No Concern	Southern-Pacific RR to Reeds Creek west of Smithville	26	67		45
2002	Surface Water: Total Dissolved Solids	Not Assessed	Lower 22 miles of segment	22	3		366
2002	Surface Water: Total Dissolved Solids	Not Assessed	Reeds Creek west of Smithville to upper end of segment	26	3		366

Segment ID: 1434 **Water body name:** Colorado River above La Grange

Freshwater Stream | Colorado River Basin | Total size: 74 Miles

Assessment Year	Assessment Method	Status of Use Support or Concern	Location	Location size	# of samples	# of exceedances	Mean
Public Water Supply Concern (continued)							
2002	Surface Water: Total Dissolved Solids	Not Assessed	Southern-Pacific RR to Reeds Creek west of Smithville	26	3		366
2002	Surface Water: Overall	No Concern	Lower 22 miles of segment	22			
2002	Surface Water: Overall	No Concern	Reeds Creek west of Smithville to upper end of segment	26			
2002	Surface Water: Overall	No Concern	Southern-Pacific RR to Reeds Creek west of Smithville	26			
2002	Overall Public Water Supply Concerns	No Concern	Lower 22 miles of segment	22			
2002	Overall Public Water Supply Concerns	No Concern	Reeds Creek west of Smithville to upper end of segment	26			
2002	Overall Public Water Supply Concerns	No Concern	Southern-Pacific RR to Reeds Creek west of Smithville	26			
Narrative Criteria Concern							
2002	Overall Narrative Criteria Concerns	No Concern	Lower 22 miles of segment	22			
2002	Overall Narrative Criteria Concerns	No Concern	Reeds Creek west of Smithville to upper end of segment	26			
2002	Overall Narrative Criteria Concerns	No Concern	Southern-Pacific RR to Reeds Creek west of Smithville	26			
Overall Secondary Concern							
2002		No Concern	Lower 22 miles of segment	22			
2002		Concern	Reeds Creek west of Smithville to upper end of segment	26			
2002		No Concern	Southern-Pacific RR to Reeds Creek west of Smithville	26			