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August 21, 2009

U.S. Environmental Protection Agency
Clerk of the Board, Environmental Appeals Board
Colorado Building
1341 G Street, N.W., Suite 600
Washington, DC 20005

Via Federal Express

RE: San Jacinto River Authority; NPDES Permit No. TX0054186

Dear Clerk of the Board:

Enclosed please find the original and five (5) copies of the San Jacinto River Authority's Petition for Review of NPDES Permit Issued by Region 6 on July 24, 2009 including three (3) sets of exhibits. I am authorized to receive service relating to this proceeding. My contact information is:

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Thank you for your attention to this matter.

Sincerely,

Lauren Kalisek

LJK:jgb
1197/06/090821
Enclosures

cc: Mr. Miguel I. Flores w/enclosures
Mr. Don R. Sarich w/enclosures
Dr. Peggy Glass w/enclosures
Mr. Reed Eichelberger w/enclosures w/o exhibits
Mr. Martin C. Rochelle w/enclosures w/o exhibits

BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

In re:	)	
	)	
San Jacinto River Authority	)	NPDES Appeal No. _____
	)	
NPDES Permit No. TX0054186	)	
	)	

PETITION FOR REVIEW OF NPDES PERMIT ISSUED BY REGION 6 ON JULY 24, 2009

SUBMITTED ON BEHALF OF
THE SAN JACINTO RIVER AUTHORITY

By: Lauren Kalisek
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Date: August 21, 2009

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I. INTRODUCTION

In *Edison Electric Institute. v. E.P.A,* the Court of Appeals for the District of Columbia confirmed the reasonableness of the test method for Whole Effluent Toxicity ("WET") testing in the face of an industry challenge.[1] In upholding the method, however, the court made clear its understanding that individual WET test results "will be wrong some of the time."[2] The Court clarified that its opinion should not prevent individual permittees from challenging specific test results.[3] At the time the Court of Appeals was considering the *Edison Electric* case, Petitioner, the San Jacinto River Authority, was in the process of doing just that. It was successfully challenging two of its WET test results before the Texas Commission on Environmental Quality ("TCEQ") and a state administrative law judge ("ALJ") during the process of renewing its discharge permit.[4]

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[1] *Edison Electric Inst. v. E.P.A.,* 391 F.3d 1267 (D.C. Cir. 2004) (referred to herein as *"Edison Electric").* As described in *Edison Electric*, and the Environmental Appeals Board's (the "Board") decision in *In Re Town of Ashland Wastewater Treatment Facility*, 9 E.A.D. 661, 662-663 n. 3 (E.A.B. 2001), WET testing involves the exposure of a sample of treated effluent to aquatic organisms to measure the organisms' response and determine the toxic effect of the effluent. There are two types of WET tests—acute, which are conducted over a short period of time, usually 24 hours, measuring lethality; and chronic, which are conducted over a longer period of time, usually 7 days, measuring lethal and sublethal effects on growth and reproduction. The type of WET testing at issue in this appeal is the seven-day chronic testing on the *Ceriodaphnia dubia* (*"C. dubia"*) for lethality and reproduction (sublethality). *See* discussion at Part II.C.

[2] *Edison Electric Inst.,* 391 F.3d at 1272.

[3] *Id.*

[4] Texas law grants permittees and other "affected persons" the right to an evidentiary hearing before the State Office of Administrative Hearings ("SOAH") on the TCEQ's decision to grant a discharge permit. TEX. WATER CODE ANN. § 26.028(c) (Vernon 2008). Such hearings involve the naming of parties, the establishment of a procedural schedule, discovery, submission of prefiled testimony, a live hearing before an administrative law judge during which parties are afforded the right to cross-examination of witnesses, the presentation of a rebuttal case; and final written closing briefs. 30 Tex. Admin. Code, Chapter 80 (West 2009).

TCEQ Staff and representatives of Region 6 ("Region") of the Environmental Protection Agency ("EPA"), had argued for the imposition of a WET limit for lethality based on reported lethal effects in Petitioner's November 2001 and January 2002 test results. Petitioner was able to show through an evidentiary hearing, in which the Region participated as an expert witness, that the test results were not reliable when reviewing the underlying bench sheets and dose response curves for the tests, as well as the laboratories' control charts, and considering the passing results obtained by another laboratory on a split sample of the January 2002 test.[5] The final decision of the ALJ and order issued by the TCEQ affirmed the invalidity of these test results.[6]

However, rather than accepting the decision of the TCEQ and the recommendation of the state ALJ, the Region, for the first time since delegation of the National Pollutant Discharge Elimination System ("NPDES") program to Texas in 1998, federalized a Texas permit. In so doing, the Region has now concluded that TCEQ's WET implementation policy, which it previously approved in November 2002 as protective of Texas Surface Water Quality Standards ("TSWQS"),[7] and on which the TCEQ's decision and state hearing were based, does not meet the requirements of federal regulations. Based on this reversal of its previous legal opinion, it has issued a final NPDES permit, including both lethal and sublethal WET limits, based on Petitioner's sublethal test results. Pursuant to 40 C.F.R. § 124.19(a), Petitioner seeks

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[5] *See* discussion at Part II.A., pgs. 6-9.

[6] *See* discussion at Part II. A., pgs. 7-9.

[7] The Texas Surface Water Quality Standards are found at Title 30, Texas Administrative Code, Chapter 307 (West 2007).

the Environmental Appeals Board's ("Board") review of certain conditions of NPDES Permit No. TX0054186 ("Modified Permit"), which the Region issued on July 24, 2009.

The permit authorizes Petitioner's discharge of treated effluent from its publicly owned treatment works ("POTW"), The Woodlands Wastewater Treatment Plant No. 1 (the "Plant"), to Panther Branch, and thence to Spring Creek, Classified Segment No. 1008 in the San Jacinto River Basin.[8] Petitioner brings this challenge to the Region's permitting decision because the Region's actions in this case are legally and factually erroneous and involve important policy considerations warranting review.[9] Of significance among these considerations is the recognition that if the Court of Appeals' decision in *Edison Electric* that permittees should be able to challenge WET test results is to have any meaning, the Region should not be allowed to unreasonably thwart a successful challenge through the federalization process. Also, the question of under what circumstances the Region may deviate from permitting policies it previously determined to be protective of state surface water quality standards when it federalizes an individual permit warrants review and careful consideration. In addition, the Region has unreasonably disregarded evidence provided by Petitioner that its sublethal WET test results are not violative of TSWQS. Finally, Petitioner requests review of other permit provisions that are also erroneous and require review as discussed in detail herein.

II. FACTUAL AND STATUTORY BACKGROUND

[8] *See* U.S. Envtl. Prot. Agency, Region 6, NPDES Permit No. TX0054186 issued July 24, 2009 ("Modified Permit") at Exhibit A.

[9] 40 C.F.R. § 124.19(a) (2009) (establishing the standards for the Board's review of NPDES permitting decisions).

A. Petitioner and Permit History

Petitioner is a river authority and political subdivision of the State of Texas created by the Texas Legislature pursuant to Article XVI, Section 59 of the Texas Constitution to control, store, preserve and distribute the waters of the San Jacinto River and its tributaries. It is also empowered to preserve and protect the sanitary condition of such water.[10] Its mission is to "develop, conserve, and protect the water resources of the San Jacinto River watershed."[11] It owns and operates three municipal wastewater treatment plants, one of which is the Plant. The Plant has an ultimate design capacity of 7.8 million gallons per day and serves residential and commercial development in the community of The Woodlands, Texas.

Prior to delegation of the NPDES program to the State of Texas pursuant to the Clean Water Act in 1998, all municipal dischargers in Texas operated under two separate permits: an NPDES permit issued by EPA in accordance with the Clean Water Act and a state permit issued by the predecessor agencies of the TCEQ pursuant to Chapter 26 of the Texas Water Code.[12] After 1998, discharge permits are now issued by the TCEQ as Texas Pollutant Discharge Elimination System ("TPDES") permits and include the requirements of both state and federal laws for that discharge.[13] In its Memorandum of Agreement ("MOA") with the TCEQ's predecessor agency regarding delegation, EPA agreed to the framework by which the TCEQ will draft and

[10] Tex. Civ. Stat. Ann. Art. 8280-121, § 2 (Vernon 1954); Act of June 16, 1991, 72nd Leg., R.S., ch. 698, § 8C, 1991 Tex. Gen. Laws (to be codified as an amendment of Tex. Civ. Stat. Ann. 8280-121).

[11] *See* Petitioner's website at http://www.sjra.net.

[12] 33 U.S.C. § 1342(a) (2001); TEX. WATER CODE ANN. § 26.027 (Vernon 1993).

[13] 33 U.S.C. § 1342(b) (2008); TEX. WATER CODE ANN. § 26.027 (Vernon 2009).

issue permits, and specified the conditions under which the EPA continues to oversee the program, including review and comment on certain permits and a procedure to withdraw federal authorization for a specific permit if its objections to the permit are not resolved by TCEQ (permit "federalization").[14] In addition, EPA has also approved the methods and procedures used by TCEQ in drafting permits designed to protect TSWQS as found in the *Procedures to Implement the Texas Surface Water Quality Standards*, RG-194, Revised January 2003 ("Implementation Procedures").[15] The MOA provides that the Implementation Procedures are subject to EPA review and approval after delegation and that TPDES permits will be developed and issued in accordance with such approved procedures.[16] The Region approved the Implementation Procedures in November, 2002 with some exceptions that are not relevant to this proceeding.[17]

Much of the permitting history of the Plant can be summarized by a review of the "Findings of Fact" in the Order issued by the TCEQ at the conclusion of the state evidentiary hearing.[18] Since the original construction of the facility, Petitioner has operated the Plant under its federal NPDES permit issued in 1989 and its Chapter 26

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[14] *Memorandum of Agreement Between the Texas Natural Resource Conservation Commission and the U.S. Environmental Protection Agency, Region 6 Concerning the National Pollutant Discharge Elimination System,* September 14, 1998 ("MOA"). *See* Exhibit B.

[15] *See* Exhibit C; *see also Letter from Miguel I. Flores, Director, Water Quality Protection Division, U.S. Environmental Protection Agency, Region 6 to Mark Vickery, Deputy Director, Texas Comm'n on Env. Quality,* dated November 22, 2002. *See* Exhibit D.

[16] MOA at pg. 27.

[18] Tex. Comm'n Envtl. Quality, *Order Regarding Application by San Jacinto River Authority for Renewal of TPDES Permit No. 11401-001 in Montgomery County*, TCEQ Docket No. 2003-1213-MWD; SOAH Docket No. 582-04-1194 ("TCEQ Order"). *See* Exhibit E.

state discharge permit.[19] In 1991, due to several lethal WET test results indicating lethal toxic effects from 1989 through 1991, Petitioner initiated a toxicity reduction evaluation ("1991 TRE") to investigate possible causes of the toxicity.[20] In 1993, the Region first proposed inclusion of a WET limit in Petitioner's NPDES permit because of these earlier test results.[21] At that time, EPA's procedural rules allowed for evidentiary hearings on permit decisions, and Petitioner requested an evidentiary hearing on the imposition of a WET limit. The Region never acted on Petitioner's request for an evidentiary hearing and the terms of its 1989 NPDES permit remained in effect.[22]

In 1997, Petitioner filed an application for renewal of its state permit previously issued in 1995 (Permit No. 11401-001).[23] In June and July of 1998, Petitioner reported lethal toxic effects in its WET testing, and Petitioner again instituted a TRE ("1998 TRE").[24] In September 1998, delegation of the NPDES program to the State of Texas was approved, and the TCEQ Executive Director took steps to update Petitioner's application to serve as a TPDES permit application.[25] The Executive Director then prepared a draft TPDES permit that did not contain a WET limit in late 2000.[26] Upon

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[19] TCEQ Order at Finding of Fact ("FOF") Nos. 2, 5, pg. 2.

[20] *Id.* at FOF 3, pg. 2.

[21] *Id.* at FOF 4, pg. 2. The causes of this lethal toxicity from 1989 to 1991 were resolved by operational and personnel changes.

[22] *Id.*

[23] *Id.* at FOF 6, pg. 2.

[24] *Id.* at FOF 7, pg. 2.

[25] *Id.* at FOF Nos. 8, 10, 11 pgs. 2-3.

[26] *Id.* at FOF 12, pg. 3.

review, the Region requested the imposition of a lethal WET limit, which was added by the Executive Director, and Petitioner protested such inclusion.[27]

In June 2001, the Executive Director approved the closure of Petitioner's 1998 TRE because 12 months of testing showed a "cessation of lethality."[28] In late 2001, the Region approved the issuance of a TPDES permit without a WET limit; however, Petitioner's WET testing for November 2001 and January 2002 exhibited lethal toxic effects.[29] The Executive Director prepared another revised draft permit to include a WET limit, and Petitioner requested an evidentiary hearing because it did not believe that the November 2001 and January 2002 WET tests were reliable.[30] The draft permit was referred to SOAH and an evidentiary hearing was held February 7-9, 2005.[31] At the hearing, the Region participated through the appearance of its WET Coordinator, Phillip Jennings, as a witness on behalf of the Executive Director, who provided testimony and evidence and was subjected to cross-examination.[32]

Upon the close of the evidentiary hearing, the ALJ issued a 46-page Proposal For Decision ("PFD") and recommended findings of fact and conclusions of law to the TCEQ, which were modified, and then adopted by the Commissioners of the TCEQ at a

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[27] *Id.*

[28] *Id.* at FOF 14, pg. 3.

[29] *Id.* at FOF Nos. 15-18, pg. 3.

[30] *Id.* at FOF 19, pg. 3.

[31] *Id.* at FOF 25, pg. 4.

[32] State Office of Administrative Hearings, *Proposal for Decision*, SOAH Docket No. 582-04-1194 (TCEQ Docket No. 2003-1213-MWD) June 15, 2005 ("PFD") at pg. 15. *See* Exhibit F.

subsequent public hearing.[33] Based on the evidentiary record developed during the state proceeding, the ALJ and the TCEQ found that few permittees in Texas have performed as much WET testing as has Petitioner over the years.[34] They determined that the test results that gave rise to the 1991 TRE were unrelated to the test results from 1998 and 2001-2002 and that this early toxicity problem was resolved by operational and personnel changes at the facility.[35] They concluded that the 1998 TRE was properly closed due to a "cessation of lethality" (meaning that testing ceased to demonstrate toxic effects and, therefore, no meaningful analysis can be performed).[36] With regard to the November 2001 and January 2002 test results that formed the primary basis of the Executive Director and the Region's imposition of a WET limit in Petitioner's permit, the ALJ and the Commission found the test results to be too unreliable for the following reasons:

- the November 2001 test was not carried out according to applicable test protocols;
- the testing laboratory's organisms were overly stressed as indicated in the reference testing;
- the dose-response relationships for both tests were non-monotonic;

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[33] *See generally* PFD (Exhibit F); TCEQ Order (Exhibit E). The ALJ prepares a written PFD summarizing and evaluating the evidence presented that is submitted to the TCEQ Commissioners including proposed findings of fact and conclusions of law. TEX. GOV'T CODE ANN. § 2003.047(m) (Vernon 2008). The TCEQ Commissioners consider the ALJ's proposal as contained in the PFD at a subsequent public hearing and may adopt it or substitute its own findings of fact and conclusions of law under certain conditions. *Id.* In this instance, the Commissioners concluded that the ALJ incorrectly assigned the burden of proof in the evidentiary hearing to the Executive Director, but that the evidence presented at the hearing still preponderated in favor of the conclusion that the test results at issue were invalid and that a WET limit was not warranted.

[34] *Id.* TCEQ Order at FOF 64, pg. 10.

[35] *Id.* at FOF 65, pg. 10.

[36] *Id.* at FOF 68, pg. 11; FOF 56.d, pg. 9.

- a split sample on the January 2002 test demonstrated no toxic effects; and
- in the month between the two tests, December 2001, split samples sent to two different labs demonstrated no toxic effects.[37]

Therefore, as recommended by the ALJ, the TCEQ determined that a WET limit was not necessary to maintain compliance with TSWQS.[38]

The TCEQ issued a final order and permit in January 2006 without a WET limit.[39] The Region filed an objection to the State Permit, pursuant to the procedures of the MOA. The Region thereafter instituted the process to issue a separate NPDES permit to Petitioner. Petitioner timely filed an application with the Region on June 2, 2006, and provided subsequent information and data as requested by the Region. The Region issued a draft permit on December 7, 2006, and Petitioner filed its comments to such draft permit on February 19, 2007, in conformance with 40 C.F.R. §§ 124.11;124.13.[40] The Region issued its response to comments and the first final permit on September 28, 2007 ("2007 EPA Permit").[41] Petitioner properly filed a request for review with the Board on September 28, 2007. On March 14, 2008, the Region withdrew the contested

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[37] *Id.* at FOF Nos. 70-81, pgs. 11-12.

[38] *Id.* at FOF 85, pg. 13.

[39] *Id.* at Ordering Provision 2.a, pg. 16. *See* Exhibit E.

[40] *See* U.S. Envtl. Prot. Agency, Region 6, Draft NPDES Permit No. TX0054186, ("2006 Draft Permit") and accompanying Fact Sheet ("2006 Fact Sheet") issued December 7, 2006; Comments by San Jacinto River Authority Draft NPDES Permit No. TX0054186 Woodlands Wastewater Treatment Plant No. 1, February 19, 2007 ("2007 Petitioner's Comments").

[41] *See* U.S. Envtl. Prot. Agency, Region 6, NPDES Permit No. TX0054186 Response to Comments, issued September 28, 2007 ("2007 RTC").

portions of the 2007 EPA Permit and requested that the Board dismiss SJRA's petition as moot.[42] The Board dismissed SJRA's petition on March 28, 2008.[43]

During this time, the Plant effluent exhibited sporadic sublethal toxicity in routine monthly WET testing. In response to the new focus by the Region on sublethal test results, Petitioner instituted an aggressive sublethal toxicity evaluation program to identify the cause of its intermittent sublethal test results. This effort culminated in November 2008, when Petitioner submitted to the Region its report entitled "San Jacinto River Authority Sublethal Toxicity Evaluation, The Woodlands Wastewater Treatment Plant No.1" documenting the study performed by Petitioner over the previous three years ("2008 STE"). The 2008 STE was conducted in accordance with TRE requirements (although it was not a formal TRE in that it was not performed in response to any effective provision in either its state or federal permit) and concluded that the cause of Petitioner's sublethal test results was not a toxicant, but rather the natural chemistry of the groundwater serving as Petitioner's municipal water supply (high alkalinity and low hardness). The Region never responded to the 2008 STE. Rather, the Region issued a Draft Permit Modification of the 2007 EPA Permit on January 29, 2009 ("Draft Modified Permit"), again proposing WET limits, and Petitioner filed its comments to such draft permit modification on February 27, 2009, in conformance with

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[42] U.S. Envtl. Prot. Agency, Region 6, NPDES Permit No. TX0054186, *Memorandum in Support of Notification of Withdrawal of Portions of NPDES Permit and Respondent's Motion to Dismiss as Moot, or in the Alternative for a Stay of Proceedings,* March 14, 2008, Docket No. TX0054186.

[43] U.S. Envtl. Prot. Agency, Region 6, NPDES Permit No. TX 0054186, Order Dismissing Petition for Review, March 28, 2008, Docket No. TX 0054186.

40 C.F.R. §§ 124.11; 124.13.[44] The Region issued its response to comments and the final modified permit on July 24, 2009 (the "Modified Permit").[45]

The Region has issued the Modified Permit containing both lethal and sublethal WET limits based on sublethal test results. In order to reach this result, the Region has determined that the Implementation Procedures it previously approved as protective of TSWQS controlling toxicity do not meet federal requirements[46]— even though such procedures have not changed since their original promulgation in 2002 when the Region approved them. The evidentiary hearing before the ALJ and the TCEQ's final decision were based on the policies laid out in the Implementation Procedures that focus on control of toxicity through review of test results for *lethal* effects and the imposition of WET limits for *lethality*.[47] Under the Implementation Procedures, as applied to the facts of that case, it would have been appropriate to impose a WET limit in Petitioner's permit for *lethality* only if it were shown that the November 2001 and January 2002 results for *lethality* were valid.[48]

Because Petitioner successfully proved such results were invalid at the State level, in accordance with the TCEQ policies the Region had approved, the Region has

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[44] U.S. Envtl. Prot. Agency, Region 6 Draft NPDES Permit No. TX0054186 ("Draft Modified Permit") and accompanying Fact Sheet ("2009 Fact Sheet") issued January 29, 2009. *See* Exhibit G; Comments by San Jacinto River Authority Draft NPDES Permit No. TX0054186 Woodlands Wastewater Treatment Plant No. 1, February 27, 2009 (" Petitioner's Comments"). *See* Exhibit H.

[45] *See* U.S . Envtl. Prot. Agency, Region 6, NPDES Permit No. TX0054186 issue d July 24, 2009 ("Modified Permit") (Exhibit A); *See* U.S. Envtl. Prot. Agency, Region 6, NPDES Permit No. TX0054186 Response to Comments ("2009 RTC"), issued July 24, 2009. *See* Exhibit I.

[46] 2009 RTC at pgs. 11-12.

[47] TCEQ Order FOF Nos. 55-56, at pgs. 8-9; PFD at pgs. 35-36, 42.

[48] PFD at pgs. 35-36; 40-41; Tex. Comm'n on Envtl. Quality, Procedures to Implement the Texas Surface Water Quality Standards, Jan 2003 at pgs. 112-113. ("Implementation Procedures"). *See* Exhibit C.

now inappropriately changed the applicable policies upon federalization of the permit to include review of sublethal test results as a basis for imposition of WET limits for lethality and sublethality. In addition, the Region dismissed the results of the 2008 STE, which otherwise indicated that WET limits are not required, with only a cursory and substantially flawed review of the report. The Region has also incorporated various other permit provisions that it fails to adequately support; are unreasonable; are not in conformance with applicable agency permitting policies or procedures; or are otherwise not supported by the underlying facts and law, as described in detail in Part IV herein.

B. Applicable Federal Regulations, State Water Quality Standards, and Implementation Procedures

The Region's permitting decision in this case, of which Petitioner seeks review, is generally governed by the following federal regulations, state water quality standards and implementation procedures. Title 40, C.F.R. § 122.44(d)(1)(v) provides that when a permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to an instream excursion above a narrative criterion for toxicity within an applicable state water quality standard, the permit must contain limits for whole effluent toxicity. The TCEQ has adopted the TSWQS that establish such narrative criteria for toxicity which generally prohibit chronic toxicity to aquatic life in waters with aquatic life uses.[49] In addition, the TCEQ has adopted the Implementation Procedures, also approved by EPA in 2002, that provide the process to be used in conjunction with the "reasonable potential" determination required by 40 C.F.R. § 122.44(d). This process includes imposition of WET testing requirements for facilities of

[49] 30 Tex. Admin. Code § 307.6(b)(2)(2009).

a certain size, retesting if a test indicates lethal effects and commencement of a TRE if the retest also shows lethal effects.[50] If a TRE fails to identify a toxicant, the permit may be amended to include a WET limit for lethality.[51] A WET limit for lethality may also be included in a permit upon the report of a test and a retest indicating lethal effects following the closure of a TRE for cessation of lethality.[52]

C. WET Testing

The type of WET testing at issue in this appeal is chronic WET testing on the *C. dubia*. In the test, ten organisms, with one organism placed in each beaker, are exposed to dilutions of effluent with lab water for the control group. [53] Five different dilutions are used during the test with one dilution designated as the "critical dilution" to approximate the actual concentration of effluent in the receiving stream at critical low flow conditions.[54] Therefore, 60 organisms are used to set up the initial test. The test compares survival rates (lethality) and reproduction rates (sublethality) for the 10 replicates in each dilution to the 10 control replicates (organisms exposed to no effluent).[55] The test is run over seven days. A test reports toxic effects if there is a "statistically significant difference" between survival or reproduction rates measured at

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[50] Implementation Procedures at pgs. 101-125.

[51] The Implementation Procedures clearly indicate that the imposition of a WET limit is only appropriate for demonstrations of "persistent significant lethality" at the conclusion of a TRE failing to identify a toxicant, where a chemical specific limit or best management practice would be inadequate, or after closure of a TRE for cessation of lethality and the effluent again demonstrates "persistent, significant lethality" to the same species within a five year period. *Id.* at pgs. 112-113.

[52] *Id.*

[53] PFD at pgs. 5-8. The PFD provides a good summary of the WET test method.

[54] *Id.*

[55] *Id.*

the critical dilution compared to those rates for the control.[56] A testing laboratory uses a statistical software package to run the statistical analysis to determine whether the differences are "statistically significant." The use of a dilution series provides data for the creation of a "dose response curve" to illustrate the degree of toxic effect as compared to the effluent concentration. Higher effluent concentrations are generally expected to cause a greater degree of mortality and reproduction impairment and lower concentrations to have lesser impacts – a monotonic dose-response. Non-monotonic dose-response curves that do not follow this pattern warrant additional review to confirm test validity, although EPA guidance accepts certain types of non-monotonic results.[57]

If there are WET test failures of sufficient magnitude and persistence to warrant it, a Toxicity Reduction Evaluation ("TRE") is performed. The first part of the TRE is a Toxicity Identification Evaluation ("TIE"). There are three primary phases to a TIE: characterization, identification, and confirmation. These are generally described as follows:

> Characterization--During the characterization phase, individual aliquots of a sample that exhibits a toxic effect in a WET test are treated in a variety of ways with chemical and physical treatments. Each of the types of treatment will reduce or eliminate the toxic effects of a specific category of pollutants. For example, one treatment is to aerate an aliquot of the sample. If the sample ceases to induce a toxic effect after it is aerated, the toxicant may be a volatile organic.

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[56] *Id.*

[57] *Id.*

Identification—Once a potential category or categories of toxicants are identified, the TIE activities are directed toward identifying the specific substance in that category that is causing test failures. This may be accomplished by chemical analyses, by intensive investigation of the types of commercial and industrial activities in the wastewater treatment plant service area, by collecting samples from the wastewater collection system in conjunction with the industrial survey, or other methods, as appropriate.

Confirmation—Because the types of manipulations required to conduct a TIE can induce artifactual toxicity, once the toxicant is tentatively identified, it is essential to confirm that the correct toxicant is identified by some method other than the one initially used to identify the toxicant. A variety of techniques are used to do this including testing with an alternative organism, spiking a sample to confirm a dose-response of the same magnitude as that exhibited by the effluent samples, or creating a "mock effluent" (a solution prepared in the laboratory with a composition similar to the effluent being tested that includes the probable toxicant).

It is very important that the tests in each of these phases be repeated so that the same result is obtained several times. The importance of repeating the tests is set forth in TPDES permits.[58] Because toxic effects can be induced by the study treatments, any one test can produce anomalous results.

[58] See, for example, Modified Permit at Part II, Item D.5.b.1 requiring the permittee to perform multiple investigations as a part of its TRE.

Once the substance causing test failures is identified, the remainder of the TRE focuses on identifying a way to eliminate the test failures.

III. THRESHOLD PROCEDURAL REQUIREMENTS

As discussed previously, the Region issued its first draft permit on December 7, 2006. Petitioner timely filed its comments on the draft permit on February 19, 2007. The Region issued its response to comments and final permit on September 28, 2007, and Petitioner properly filed a request for review with the Board on September 28, 2007. On March 14, 2008, the Region withdrew the contested portions of the NPDES permit, and the Board dismissed Petitioner's appeal as moot on March 28, 2008.

The Region then issued a modification of the 2007 draft permit (defined herein as the Draft Modified Permit), and Petitioner filed its comments to such draft permit modification on February 27, 2009, in conformance with 40 C.F.R. §§ 124.11; 124.13. The Region issued its response to comments ("2009 RTC") and the final Modified Permit on July 24, 2009. Petitioner files this appeal with the Board requesting review of certain portions of the Modified Permit as set forth herein within 30 days in conformance with 40 C.F.R. § 124.19(a). All issues presented by Petitioner herein were raised in its initial comments on the Draft Modified Permit and are summarized below and include citations to its initial comments. Any new arguments made herein are in response to new arguments and statements made by the Region in the 2009 RTC.

IV. SUMMARY OF ERRORS BY REGION

A. Standard of Review and List of Issues

The Board will generally not grant review of petitions filed under 40 C.F.R. § 124.19(a) unless it appears from the petition that the permit condition at issue is based

on a clearly erroneous finding of fact or conclusion of law or involves an important policy consideration that the Board, in its discretion, should review.[59] While the Board has broad power to review decisions under Section 124.19, this power is to be exercised "only sparingly."[60]

Agency policy favors final adjudication of most permits at the Regional level.[61] On appeal to the Board, a petitioner bears the burden of demonstrating that review is warranted.[62] Section 124.19(a) requires that a petitioner both state the objections to the permit that are being raised for review and explain why the permit decision maker's previous response to those objections (i.e., the decision maker's basis for the decision) is clearly erroneous or otherwise warrants review.[63]

In addition, the Board traditionally assigns a heavy burden to petitioners seeking review of issues that are essentially technical in nature.[64] When the Board is presented with technical issues, it determines whether the record demonstrates that the Region duly considered the issues raised in the comments and whether the approach ultimately

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[59] 40 C.F.R. § 124.19(a) (2009); *see also In re Gov't of D.C., Mun, Separate Storm Sewer Sys.*, 10 E.A.D. 323, 332-33 (EAB 2002) (hereinafter "*D.C. MS4*"); *In re City of Moscow, Idaho*, 10 E.A.D. 135, 140-41 (EAB 2001) (hereinafter "Moscow"); *In re City of Irving, Tex. Mun. Separate Storm Sewer Sys.*, 10 E.A.D. 111, 122 (EAB 2001) (hereinafter "*Irving MS4*").

[60] 45 Fed. Reg. 33,290, 33,412 (May 19, 1980); *see also D.C. MS4*, 10 E.A.D. at 333; *Moscow*, 10 E.A.D. at 141; *In re Rohm & Haas Co.,* 9 E.A.D. 499, 504 (EAB 2000).

[61] 45 Fed. Reg. at 33,412; *see also D.C. MS4*, 10 E.A.D. at 333; *Moscow*, 10 E.A.D. at 141; *Irving MS4*, 10 E.A.D. at 122; *In re New England Plating Co.*, 9 E.A.D. 726, 730 (EAB 2001).

[62] *D.C. MS4*, E.A.D. at 333; *see also Moscow*, 10 E.A.D. at 141; *In re Haw. Elec. Light Co.*, 8 E.A.D. 66, 71-72 (EAB 1998).

[63] *See In re South Shore Power, LLC*, PSD Appeal No. 03-02, slip op at 10 (EAB June 4, 2003); *In re Caribe Gen. Elec. Prods.*, 8 E.A.D. 696,710 (EAB 2000)

[64] *Moscow*, 10 E.A.D. at 142; *see also In re Town of Ashland Wastewater Treatment Facility*, 9 E.A.D. 661, 667 (EAB 2001).

adopted by the Region is rational in light of all the information in the record.[65] The Region's rationale for its conclusions, however, must be adequately explained and supported in the record.[66]

In this appeal, Petitioner raises significant issues regarding conditions of the Modified Permit that are clear errors by Region 6 warranting review when applying the above principles. These issues include: (1) the Region's imposition of WET limits for lethality and sublethality for *C. dubia* in contravention of the evidentiary record developed in the state evidentiary hearing process, the Implementation Procedures it previously approved as protective of TSWQS, and the STE report submitted by Petitioner in 2008;[67] (2) definition of a permit violation based on a single WET test result rather than using a median approach that accounts for variability in test results; (3) rejection of the use of the South Carolina Percent Effect approach in lieu of NOEC to report WET test results; (4) inadequate compliance period for WET limits; (5) triggers for sublethal Fathead Minnow retest TREs; (6) WET limit reporting provisions that are unclear and confusing; and (7) the imposition of new burdensome WET test reporting requirements that are above and beyond typical permit requirements. Each of these issues is discussed in detail below, along with citations to the relevant comments to the Draft Modified Permit by Petitioner and the Region's 2009 RTC, except for the item No. 7 discussing new language that was not included in the Draft Modified Permit.

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[65] *D.C. MS4*, 10 E.A.D. at 334.

[66] *Id.* at 342-43 ("Without an articulation by the permit writer of his [or her] analysis, we cannot properly perform any review whatsoever of that analysis and, therefore, cannot conclude that it meets the requirement of rationality.")

[67] *See* San Jacinto River Authority, *Sublethal Toxicity Evaluation*, The Woodlands Wastewater Treatment Plant No. 1 (November 2008) enclosed at Exhibit J.

B. Imposition of WET Limits

Petitioner objects to and requests review of Part I, Section A, 1. Final Effluent Limits—Outfall 001, Whole Effluent Toxicity Limit, including n. 10, p. 2; Part I, Section B. pgs. 4-5; and Part II, Section E.2.c., p. 13 of the Final Permit which provide for the imposition of WET limits for lethality and sublethality with a three-year compliance period. Petitioner's initial comments on this issue are found at Petitioner's Comments pgs. 6-26 and the Region's response is found at 2009 RTC pgs. 8-26.

The Modified Permit contains lethal and sublethal WET limits for *C. dubia*. The 2009 Fact Sheet states that EPA evaluated the need for lethal and sublethal WET limits based on its review of SJRA's WET test data and application of policies and procedures outlined in the Technical Support Document ("TSD").[68] Particularly, EPA concludes that SJRA's effluent has failed the sublethal test endpoint "numerous times" and goes on to argue that if left uncontrolled, "effluent from this facility will continue to cause or contribute to exceedance(s) of [TSWQS]."[69]

In response to the information provided in the 2009 Fact Sheet, Petitioner commented that the Region's inclusion of WET limits is flawed because: (1) SJRA's 2008 STE shows that the cause of its sublethal failures is the natural chemistry of SJRA's municipal water supply; (2) the imposition of such limits based on sublethal test results is in contravention of the Implementation Procedures previously approved by the Region; (3) the need for WET limits was previously reviewed by the TCEQ during the course of an evidentiary hearing and TCEQ determined that such limits were not

[68] 2009 Fact Sheet at pg. 25.

[69] *Id.* at pgs. 25-26.

required to maintain TSWQS; (4) the TSD method is inappropriate because it imposes a WET limit based on a single test failure; and (5) sublethal test failures are not predictive of instream impacts.

The Region responds to these arguments in the 2009 RTC by concluding that with respect to 2008 STE, the findings are "conjectural and not supported by the data in the study, and apparently premised on the inability of the analyst to identify a specific toxicant in the exceedances."[70] In response to Petitioner's discussion of deviation from the Implementation Procedures it has previously approved, the Region responds that it has not approved the Implementation Procedures as revisions to the TSWQS and that the Implementation Procedures are "neither state law nor regulation."[71] It similarly responds to Petitioner's comments regarding the TCEQ evidentiary hearing by asserting that "TCEQ does not have an EPA-approved method of determining reasonable potential for WET compliant with its WQS."[72]

The Region additionally argues that although it bases its reasonable potential calculation procedure on the TSD, its conclusions are not based on a single test failure and reasserts its conclusion that the Implementation Procedures are inadequate to determine reasonable potential and protect aquatic life according to the TSWQS, among other arguments.[73] Finally, with respect to whether sublethal test results are truly predictive of instream toxicity, the Region argues that it is not necessary to present

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[70] 2009 RTC at pg. 8.

[71] *Id.* at pgs. 11-12.

[72] *Id.* at pg.13

[73] *Id.* at pg. 14.

data that document actual instream impacts; that WET test methods have improved since 1991; that the WET test method was upheld in *Edison Electric*, and that "several non-EPA works published prior to 1999" examined relationships between chronic toxicity and detectable adverse affects in streams, including a 1990 North Carolina Study.[74]

There are several significant policy issues and legal and factual errors raised in the Region's response that merit review by the Board as set out below.

1. The Region's reversal of its previous determination regarding the legality of the WET policy contained in the TCEQ Implementation Procedures is arbitrary and capricious because the Region has not identified any reasonable basis for such reversal.

To understand the significance of the Region's imposition of WET limits, including sublethal limits, based on results of sublethal tests, it is important to understand the TCEQ WET policy previously approved by the Region as protective of TSWQS. As discussed above, such provisions, approved by the Region in 2002, call for the imposition of WET limits only for lethality based on test results showing lethal effects and only after a permittee has conducted a TRE that was not successful in identifying a toxicant, or where a TRE has been closed when monthly testing demonstrated no lethal effects for 12 consecutive months and a permittee reports a subsequent lethal effect confirmed by a retest.[75] In the state evidentiary hearing, it was determined that a WET limit for lethality was not warranted based on review of test results for lethal effects that were at issue in that case in accordance with the

[74] *Id.* at pgs. 14-18.

[75] See Part II.B., discussion of WET provisions of Implementation Procedures.

Implementation Procedures. Here, the Region seeks to impose both lethal and sublethal WET limits based on sublethal test results that were not the subject of the state evidentiary hearing.

In its 2009 RTC, the Region makes the surprising statement that, despite its determination in 2002 that the provisions of the Implementation Procedures governing WET were approved, the TCEQ does not have an "EPA-approved method of determining reasonable potential for WET compliant with its [TSWQS]."[76] This reversal of the Region's position with regard to the adequacy of Texas' WET policy, which relies on lethal test results and lethal WET limits as contained in the Implementation Procedures is a significant policy decision warranting review by the Board. The Region has completely reversed its interpretation of 40 C.F.R.§ 122.44(d) requirements as they apply to the Implementation Procedures, without an adequate explanation for such a departure. This conduct constitutes arbitrary and capricious agency action.[77] The

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[76] 2009 RTC at pg. 13.

[77] *See Ohio Valley Environmental Coalition v. Horinko*, 279 F.Supp.2nd 732, 762 (S.D. W.Va. 2003). In considering a challenge to EPA's approval of the State of West Virginia's implementation procedures for antidegredation review, including the exemption of activities under general Section 402 and 404 permits, the district court noted that although EPA has discretion to change its interpretation of its regulations, there is a "presumption that an agency's policies will be carried out best if the settled rule is adhered to" and that an agency "must justify its change of interpretation with a reasoned analysis for that change." *Id.* (emphasis added). Because EPA failed to adequately explain the change in its position from 2000 that it is not possible to conduct a Tier 2 antidegredation review when a general permit is issued prior to the identification and evaluation of specific discharges into specific waters to an acceptance that such review is possible when it approved West Virginia's implementation procedures in November, 2001, the court held that EPA's approval of that section of West Virginia's procedures was arbitrary and capricious. It vacated the agency's decision and remanded the matter back to the agency for further consideration based on its opinion. *Id.* at 777.

Similarly, the Region here has changed its interpretation that the Implementation Procedures it previously approved for the State of Texas are consistent with the requirements of Section 122.44(d)'s "reasonable potential" analysis without an adequate justification. Such action, as noted by the court in *Ohio Valley*, is arbitrary and capricious action.

Region has failed to explain how its legal evaluation of the WET policy included in the Implementation Procedures at the time they were approved in 2002 was flawed and what circumstances have changed since 2002 warranting such a reversal. Without such an explanation, the agency's action should not be allowed to stand.

In the 2009 RTC, the Region attempts to support this policy change by noting its communications with TCEQ and the regulated community on this issue since February 2005.[78] However, nowhere in the 2009 Fact Sheet, the 2009 RTC or the correspondence attached to the 2009 RTC, is there any explanation as to why TCEQ's WET policy is suddenly insufficient. The Region does not identify any change since 2002, such as significant number of waterbodies in Texas listed as impaired for sublethal toxicity, revisions to federal regulations, or similar issues that would support what is, in essence, its withdrawal of its previous approval of TCEQ WET Policy.

At most, the correspondence references the need for TCEQ to "modify its implementation procedures to ensure full compliance with federal regulations at 40 CFR 122.44(d)(1)," in response to EPA's Office of Water's Permitting for Environmental

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Further, an agency's consistency with past practice is pertinent to any arbitrary and capricious analysis. *Puerto Rico Sun Oil Co. v. EPA*, 8 F.3d 73, 77 (1st Cir. 1993). An agency may "repudiate prior norms, may narrow zone in which some rule will be applied, or may determine that rule not be applied in particular case, but whatever the ground for departure from prior norms, the agency must explain its departure so that the reviewing court may understand the basis of the agency's action and judge the consistency of that action with the agency's mandate." *Atchison, T. & S. F. Ry. Co. v. Wichita Bd. of Trade*, 412 U.S. 800, 808, 93 S.Ct. 2367 (1973). "Reasonable refinement and reformation" of agency practices are permissible to prevent locking an agency into a single position or policy. *Puerto Rico Aquaduct & Sewer Auth. v. EPA*, 35 F.3d 600, 608, 609 (1st Cir. 1944). However, by changing its interpretation of the Implementation Procedures which were previously approved, the EPA is making a major policy shift beyond simply refining and reforming prior policies, and without adequate justification and explanation has acted arbitrarily and capriciously.

[78] 2009 RTC at pg. 13.

Results ("PER") process.[79] However, the regulations at the heart of the issue, 40 C.F.R. 122.44(d)(1) have not been amended since July 24, 1992.[80] The Implementation Procedures met the requirements of 40 CFR §122.44 (d)(1) in 2002 or the Region would not have approved them. Now, even though there has been no change to these federal regulations or the Implementation Procedures since that time, the Region has concluded that the Implementation Procedures are insufficient, conveniently allowing it to impose WET limits based on Petitioner's sublethal test results.

2. The Region's policy reversal regarding TCEQ's WET policy is arbitrary and capricious in that it renders the state evidentiary hearing process meaningless if the Region is allowed to simply change its interpretation of federal regulations upon federalization of the permit.

It is also important to note that February 2005, the time the Region cites as the commencement of its communications with TCEQ with respect to its reversal on TCEQ's WET Policy, was the same time during which Petitioner's state evidentiary hearing was conducted. However, the Region's representative made no mention of the Region's concerns regarding TCEQ's WET Policy at the hearing. This failure to raise such a fundamental issue at the state hearing undercuts the credibility of the Region's response now and confirms the arbitrary and capricious nature of its action.

Since the Region's effort to impose WET limits in Petitioner's permit at the State level failed, the Region was put in the position of changing its interpretation of the applicable regulations and policies upon its federalization of the permit to support its desired outcome of the imposition of WET limits in the Modified Permit. The Region

[79] *Id.* at Attachment 2, Letter dated March 9, 2006, attached comments at pg. 1.

[80] 57 Fed. Reg. 33040-01 (July 24, 1992).

had every opportunity prior to and during TCEQ's consideration of the TPDES permit and the hearing before SOAH to argue that the Implementation Procedures should not be used because they do not meet federal regulations. However, it did not do so.

The Region's action in federalizing the permit and changing the policy at the center of its permitting decision with regard to WET limits renders meaningless the TCEQ permitting process and the rights afforded permittees by Texas law to an evidentiary hearing on permitting decisions. Such action thwarts the intent of the delegation of federal programs, like the NPDES program and the entire permitting process under the Clean Water Act, if the Region may simply reverse its legal interpretations to fit a desired outcome regardless of action taken at the state level. Such action is offensive to the fundamental principles of fairness in the administrative process.

In addition, the Region's action in this case is in direct contravention of the federal district court's decision in *Edison Electric* that permittees should be able to challenge individual test results.[81] The Region's federalization of the permit and imposition of WET limits based on its re-interpretation of applicable WET policies has effectively nullified Petitioner's successful challenge to the validity of its test results in the state evidentiary hearing. It has precluded the very process that the *Edison Electric* court determined should be available to permittees. Such action is arbitrary and capricious and should be reversed.

3. The Region's new position that the Implementation Procedures are not fully protective of TSWQS is incorrect and constitutes legal

[81] *Edison Electric Inst.*, 391 F.3d at 1272.

error because the Region cannot identify any reliable scientific study or data correlating sublethal test results to instream toxicity.

The Region's response is also legally flawed in concluding that the Implementation Procedures are not fully protective of TSWQS. As discussed above, the Implementation Procedures are consistent with the language of the TSWQS in that they call for the imposition of WET limits at the conclusion of a TRE. With respect to sublethal toxicity, nowhere in the 2009 Fact Sheet or the 2009 RTC does the Region explain why the measures outlined in the Implementation Procedures, such as enhanced monitoring and TRE work in response to sublethal effects, cannot serve to control toxic impacts and be protective of the TSWQS, as the Region presumably concluded when it formally approved the implementation procedures in 2002.

The approach taken by the Implementation Procedures with regard to sublethal WET testing and limits is supported by the understanding of many technical experts in this field that the sublethal effects exhibited in WET testing are highly variable and may not be predictive of instream toxicity. Sublethal testing reports subtle reproductive or growth responses of living organisms, and different individual organisms respond differently to the same exposure conditions. That the Implementation Procedures provide for monitoring and TREs for persistent sublethal test results, but do not call for the imposition of sublethal WET limits, or limits for lethality based on sublethal results, is clearly reflective of these concerns and such measures are certainly reasonable. Indeed, it is clear that TCEQ has not concurred with the Region's approach to WET

limits or its requests with respect to revisions to the Implementation Procedures on these matters despite over four years of negotiation.[82]

The approach taken in the Implementation Procedures to only require monitoring and TREs for sublethal effects is further supported by the argument made by Petitioner in its Comments that there is no demonstrated correlation between sublethal WET testing and actual instream toxicity impacts. At the heart of the many pages of discussion found in Petitioner's Comments and the 2009 RTC is that the Region cannot point to a single study that demonstrates a reliable correlation between *sublethal* testing and instream toxicity. Without this support, the Region has no basis for its legal conclusion that the Implementation Procedures are not protective of TSWQS.

In its comments Petitioner cited scientific literature indicating that sublethal failures of effluent WET tests are not indicative of instream impacts. The Region responded with several arguments, including:

- The study cited by Petitioner indicating that sublethal correlations are problematic by De Vlaming and Norberg-King is outdated;
- The study by Eagleson, *et al.* established a correlation between chronic test failures and instream impacts; and
- The validity of WET testing was resolved in *Edison Electric.*

However, a review of these arguments once again displays how such a correlation is not supported by the scientific literature cited by the Region. In the following discussion it is crucial to understand the distinctions between "chronic toxicity",

[82] *See*, Tex. Comm'n on Env. Quality, letter from Glenn Shankle, Executive Director to Water Docket, EPA Docket Center, March 30, 2005; letter from Dan Eden, Deputy Director to Mr. Miguel I. Flores, Director, April 13, 2006; and letter from Dan Eden, Deputy Director to Miguel Flores, Director, July 31, 2007 enclosed at Exhibit K; *See also*, 2009 RTC at Attachment 2.

"lethal toxicity", and "sublethal toxicity." Much of the current debate treats chronic toxicity and sublethal toxicity as synonymous; but, in fact, the terms have very different meanings. Chronic toxicity includes lethality as well as sublethality.[83] In addition, it is important to note that reported lethal toxicity in a chronic WET test can be either acute or chronic lethality. It is considered acute lethality if all test organisms die in the first day of a chronic test. It is considered chronic lethality if the significant lethality is spread over much of the test period. In both cases of lethality, the test result is still generally reported as chronic lethality because that is the type of test that was being conducted.

Petitioner's Comments discussed the conclusion in EPA report EPA/600/R-97/114 by Victor De Vlaming and Teresa J. Norberg-King, published in 1999 at page 24, that:

> [w]e appear to be approaching consensus that when significant lethality (and in the case of effluents, assuming accurate dilution has been considered) is seen in toxicity tests there is a very high potential of aquatic ecosystem impairment. As this connection is accepted, we continue to struggle with the idea that sublethal effects on indicator species can result in detectable adverse ecosystem responses.

The Region responds in the 2009 RTC that this study is outdated because (1) WET test methods have been improved since the 1991 version in effect at the time of the study; and (2) the study's focus was on the short-comings of using a single test species.

Petitioner is not aware of, nor does the Region cite to, any studies that have been conducted since the De Vlaming and Norberg-King report was published that establish a relationship between *sublethal* test failures and instream impacts even with

[83] Petitioner does not offer a position on whether chronic lethality in test results is indicative of instream biological impacts.

the improved test methods since 1991. In the absence of more recent reports or studies, the findings of De Vlaming and Norberg-King stand.

The Region infers that test protocols wherein a *C.dubia* test and a fathead minnow test are run concurrently are not single-species tests. However, this is not correct. A single-species test is a test that only exposes one species to the test media and uses the response of that species as an indicator for ecosystem response. Each of the tests being discussed (*C. dubia* and fathead minnow) is a single-species test. The other type of testing that has been considered, and used at times, in contrast to single-species testing, combines several species or organisms in the test media (such as microcosm testing, for example, that would involve a more complex re-creation of the aquatic environment using multiple test organisms). In addition, nothing in the report suggests that concurrent tests with two different indicator species would change the report conclusions with respect to less than lethal impacts.

Instead of citing to a more recent study incorporating revised WET test methods in its 2009 RTC, the Region cites to a study by Eagleson, *et al.*, published in 1990, (nine years prior to the De Vlaming and Norberg-King report) in which concurrent effluent WET tests and instream biological assessments of streams were conducted in North Carolina. First, it is interesting to note that all of the data for this study were collected prior to 1991, the date cited in the 2009 RTC as a point in time at which significant revisions were made in WET test procedures. Further, this study was available to De Vlaming and Norberg-King, discussed in their report, and cited in the bibliography and yet these authors still came to the conclusion in 1999 that sublethal correlation is problematic.

The most serious limitation of the Eagleson study, with respect to the Region's contention that it demonstrates that sublethal failures are indicative of instream impacts, is the fact that the study report does not identify the nature of the chronic test failures that occurred.[84] The test failures could h ave been due to acute lethality, chronic lethality, or sublethality. If most of the failures were, in fact, due to acute lethality exhibited in the chronic test, it is not surprising that there was a correlation between test failures and instream impacts. This would not have been unexpected in the late 1980's when the data were collected because many domestic wastewater plants still discharged significant concentrations of chlorine and ammonia in their effluents. In the absence of a differentiation in the nature of the chronic test failure with respect to whether it was lethal or sublethal, the Eagleson study does not support the Region's position. Petitioner has attempted to obtain the underlying data for the 1990 study to resolve the question of the nature of the chronic test results. However, it has not been successful in this effort. The Region's reliance on this 1990 study, based on out of date WET testing methods, which does not differentiate the nature of the chronic test results

[84] The results of the WET testing of effluents are presented in the study publication by Eagleson in Table 1 as the "chronic value". Eagleson et al, *Comparison of Measured Instream Biological Responses with Responses Predicted Using the Ceriodaphnia dubia Chronic Toxicity Test, Environmental Toxicology and Chemistry*, Vol. 9, pgs. 1019-1028 (1990). In the publication, the "chronic value" is defined as "a concentration of effluent (expressed as a percent) above which detrimental effects are expected to occur in the test population." *Id.* at pg. 1020. Testing protocols used both the EPA WET test methodology and a North Carolina modification of the EPA methodology. When the EPA methodology was used, the chronic value was calculated by determining the geometric mean of the No Observed Effect Concentration (NOEC) and the Lowest Observed Effect Concentration (LOEC). WET test results were determined for both lethality and sublethality. However, Table 1 does not identify which chronic values describe lethal effects and which chronic values describe sublethal effects. In addition, failures for lethality would have been acute failures, if they occurred in the first two days of the seven-day test. However, test protocols do not require this differentiation to be made when reporting the results of a chronic test. Therefore, the study publication provides no information regarding which of the test failures were acute lethality.

and where the underlying data are not available, is certainly a poor basis on which to contend that a correlation between *sublethal* test results and instream impacts definitively exist. Again, because the Region does not have a solid scientific basis for correlating *sublethal* test results to instream impacts, its determination that the Implementation Procedures are not protective of TSWQS is erroneous and should not be allowed to stand.

Finally, the Region's argument that the *Edison Electric* decision confirms that sublethal testing is correlated to instream impacts is incorrect. The D.C. Court of Appeals opinion clearly notes that "[b]efore implementing a test method, EPA must establish that the measured characteristic bears a rational relationship to real world conditions . . ."[85] Although the opinion goes on to observe that "available studies reasonably support such a conclusion with regard to chronic toxicity" [emphasis added] and cites to the TSD, this observation again only applies to the broader field of "chronic toxicity" and does not address the subset issue of "sublethal toxicity".[86] Again, Petitioner challenges the Region to point to any study that clearly and unambiguously correlates sublethal testing with instream impacts. One would assume that if the Region could meet this burden, TCEQ's concerns regarding the Region's proposed changes to its Implementation Procedures would be somewhat alleviated.

4. The Region's rejection of SJRA's 2008 Sublethal Toxicity Evaluation showing that the sublethal toxic effects demonstrated in SJRA's effluent are due to the unique natural chemical composition of SJRA's source water is clearly erroneous, is not adequately explained and is not supported by the record.

[85] *Edison Electric Inst.*, 391 F.3d at 1274.

[86] *Id.*

Prior to the Region's issuance of the Modified Permit, SJRA submitted a report on its 2008 Sublethal Toxicity Evaluation Study.[87] The 2008 STE explains that variability of the WET test organisms' sensitivity to the ionic characteristics of SJRA's water supply, including high alkalinity and low hardness, is the cause of the reported test failures. The 2008 STE documents SJRA's three year study to characterize and identify the cause of its reported sublethal test failures, which included:

- toxicity characterizations;
- mock effluent testing;
- WET testing with an alternative test organism;
- WET testing under a carbon dioxide atmosphere;
- Significant Industrial User investigation;
- ion exchange treatment of effluent;
- source water WET and water chemistry testing;
- chemical analysis of effluent;
- chemical inventory of industrial and commercial businesses in the service area; and
- WET testing comparisons between the Plant and Petitioner's Wastewater Treatment Plant No. 2 (WWTP #2).

The information and analysis of the 2008 STE support the conclusion that Petitioner's sublethal test results do not demonstrate "toxicity" as defined in the TSWQS, and, therefore, no WET limits are needed. The definition of toxicity in the

[87] *See* Exhibit J.

TSWQS excludes adverse effects caused by concentrations of dissolved salts, when the salts originate in the source water.[88]

In the 2009 RTC, the Region argues that 2008 STE was inconclusive and "is conjectural and not supported by the data in the study."[89] However, in its explanation of this observation, the Region misquotes language from the study, superficially equates inconsistent test results with inconclusiveness of the study, otherwise takes information from the study out of context, fails to recognize the thoroughness and depth of analysis provided in the study, displays a lack of understanding of sublethal toxicity identification investigation procedures, and includes a comparison of sublethal test results to other POTWs it incorrectly claims use the same source water and have reported no sublethal test results. In essence, the Region provides no meaningful or thoughtful response to the 2008 STE, and its arguments, where not flat-out wrong, are otherwise easily refuted.

First, the Region "cherry-picks" statements made in the 2008 STE report discussing inconsistent test results for the various sub-studies and quotes them out of context to support its conclusion that "the results of the studies are subsequently dismissed as inconclusive or otherwise not useful."[90] This argument is such an extreme mischaracterization of the 2008 STE report that it defies logic and is quite at odds with the significant amount of work and analysis that went into the three year effort, as documented in the report.

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[88] 30 Tex. Admin. Code § 307.3(a)(65)(2009).

[89] 2009 RTC at pg. 8.

[90] *Id.* at pg. 9.

The Region's flawed equation of inconsistency with inconclusiveness is exemplified in its misquote of the 2008 STE regarding the results of WET tests for mock effluent. The mock effluent is prepared with non-toxic laboratory water. Laboratory-grade salts are added to create a solution with the same composition of major ions as the Plant effluent. The finding that the sublethal WET test failure rate of the mock effluent is the same as the sublethal WET test failure rate of the Plant effluent is very strong confirmation that the ionic composition of the water supply is the key factor in the periodic sublethal failures.

The Region appears to dismiss this very significant finding by recording a sentence purported to be from the 2008 STE report. The Region quotes the report as saying, "[th]e results of WET tests for mock effluent are inconclusive."[91] In fact, the sentence in the report reads as follows: "The results of WET tests of the mock effluent are inconsistent."[92] This is a very different finding than a finding that the results are "inconclusive." The results of the mock effluent tests are inconsistent (i.e., the tests were sometimes a pass and sometimes a fail even though the quality of the test solution was exactly the same each time) in the same way and to the same extent (failures in approximately 40% of the tests) as the tests of the Plant effluent are inconsistent. The 2008 STE report is quite clear that the inconsistency of the mock effluent test results provide strong support for the finding that the ionic make-up of the water supply is the cause of test failures. The Region cannot dismiss this finding simply by misquoting the report.

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[91] *Id.*

[92] San Jacinto River Auth., *Sublethal Toxicity Evaluation The Woodland Wastewater Treatment Plant No. 1* (Nov. 2008) at pg. VII – 4 ("2008 STE") (Emphasis added).

With respect to other quotations taken out of context in the 2009 RTC, it is clear that additional review of the 2008 STE indicates that such information is, in fact, supportive of the Study's conclusions:

- "As shown, the source water exhibited a range of responses from no effect, to sublethal effects, to lethal effects."—This finding is strong support for the study conclusions. WET tests were conducted on water collected from the wells providing the water supply for the Plant service area (the "source water"). As with the Plant effluent and the mock effluent, some of the tests were a pass, and some of the tests were a fail. In fact, in one test there was a lethal failure. This is consistent with the conclusion that the combination of low hardness and high alkalinity is the cause of test failures because the source water has lower hardness (the use of water adds minerals) and higher alkalinity (wastewater treatment processes reduce alkalinity) than the effluent.
- "The cause of the strong lethal and sublethal effects in the blank is unknown." And "The ion exchange studies provided only limited information regarding whether or not the ionic composition of the effluent is the cause of sublethal test failures."— The laboratory analysts concluded that ion exchange studies were not a useful technique because the treatment changed the samples too much. It was not possible to hold all other factors consistent and increase the hardness, for example. The sub-studies were included in the 2008 STE report in the interest of providing a comprehensive summary of the work performed. The fact that this sub-study was not informative does not refute the other pertinent sub-studies. The basic nature of toxicity studies is that some types of studies turn out to be useful and others do not, depending on the nature of the toxicant.
- "Very little was learned from this study."—This statement refers to a sub-study conducted to determine if colloidal solids could be a factor in test failures. Since the ion composition was found to be the cause of test failures, it is not expected that anything significant would have been learned from this study.
- "This result tends to support the premise that sublethal test results are highly variable."—This statement and the preceding language quoted in the 2009 RTC relate to evaluations of the effects of conducting WET tests under a CO_2 atmosphere. It is not clear in what way the Region believes this information

refutes the study conclusions. This discussion refers directly to the results of repeated baseline tests of the November 12 effluent sample, which varied from exhibiting no toxicity, to exhibiting sublethal toxicity, to exhibiting better performance than the control. These results support the finding that sublethal test results are highly variable, and repeated tests of the same sample can produce very different results. The results of the sub-study itself (testing under CO_2 atmosphere) supported the report conclusion that high alkalinity is a contributing factor in periodic sublethal failures.

- "As shown in Table VIII-4, the *D. Magna* had 25% reduced reproduction in the effluent compared to the control. This suggests that *D. magna* is also sensitive to the ion composition of the effluent and is not a practical alternative to the *C. dubia* test."—It is not clear why the Region thinks this statement refutes the study findings. Petitioner is not aware of any studies of the sensitivity of *D. magna* to the combination of low hardness and high alkalinity. This series of tests was conducted in the hope of finding an alternative testing organism that would be sensitive to toxic effects but not as sensitive to the ionic imbalance of the Plant effluent so that a better test organism could be specified in the permit.

In the midst of its misquoting of statements in the 2008 STE, the Region offers several criticisms of the tests conducted under carbon dioxide (CO_2) atmosphere. It is not clear why the Region places so much emphasis on these tests. Furthermore, the criticisms are leveled at protocols that are accepted techniques for toxicity investigations.

- The first criticism is that the effluent samples used in the study were more than 72-hours old (the maximum holding time for compliance tests). However, it is not possible to conduct studies to identify causes of toxicity test failures within 72 hours. It is standard protocol to use a sample in toxicity investigations as long as meaningful results can be obtained. The reason offered by the Region as to why the sample should not have been used is that toxicity can dissipate over time. This is certainly true in some cases. However, in this study, as explained in the quote provided directly over this criticism, one of the effluent samples used exhibited greater toxicity in a later test rather than less. This later test was conducted

approximately three weeks after the first test. Therefore, the causative substance was not lost within 72 hours.

- The second criticism is that the studies were conducted on 100% effluent. It is standard practice in studies of this type, when the effect is weak, to use a 100% sample so that results can be more well-defined. It is interesting this comment goes on to state that, if the sample had been diluted, the dilution would have ameliorated any toxic effects -- which is exactly the problem with this comment. It is not possible to do toxicity studies if there is no toxic effect.
- The third comment is that, in the ambient air tests, four of the five effluent samples performed better than the control. This is not an unusual result. In addition, in this test, the differences in organism performance in the effluent samples (18.4-22.4 neonates/organism) and the control (18.1 neonates/organism) are not large enough to be meaningful.

At the conclusion of its list of misconstrued quotations from the 2008 STE, the Region goes on to imply that only limited testing was conducted to determine whether copper and/or zinc concentrations in the effluent contribute to sublethal test failures with the misleading statement, "the metals analyses performed after 2006 do not include either zinc or copper."[93] While this statement is true, it ignores (and really hides) the extensive testing conducted by Petitioner before and during 2006 on the question of whether metals, including copper and zinc, were causative factors in sublethal test failures. As is typical in toxicity studies, the initial characterization studies included the addition of ethylene diamine tetraacetic acid ("EDTA") to evaluate whether any of a group of divalent metals, including copper and zinc, were potential toxicants. These tests did not indicate that metals are contributing to the sublethal effects. Nevertheless, during 2006, 23 samples were analyzed for a group of metals including copper and zinc.

[93] 2009 RTC at pg. 10.

Based on these results, metals, including copper and zinc, were eliminated as possible causes to allow for a more focused effort on other alternatives.

The Region has cited to no information supporting its allegation that it was inappropriate for Petitioner to discontinue metals testing and focus its resources on other alternatives other than an unsupported statement that "[p]revious analyses of these two metals indicate levels in SJRA's effluent that could cause and or contribute to sub-lethal toxic effects to *C. dubia*" and a citation to a 2009 article published in a scientific journal by N.L. Cooper ("Cooper Article") discussing toxicity of certain metals to *C. dubia*.[94] First, the Region does not identify to what "previous analyses" it is referring. Second, the findings of the Cooper Article to which the Region refers do not support its argument that Petitioner did not adequately investigate the possibility that the periodic sublethal failures are due to copper and/or zinc. The study presented in the Cooper Article concluded that copper and zinc combinations with concentrations of 1.3 ug/L and 13 ug/L, respectively, induce sublethal impacts in *C. dubia*. However, the findings in this article, published this year (2009), differ significantly from previous research. If water quality standards were to be based on these findings, the standards would be up to 10 times less than the current criteria. For example, the chronic water quality standard for copper for the Plant's receiving stream is approximately 16.3 micrograms per liter (ug/L) due to the identification in the Implementation Procedures of an ambient hardness of 30 milligrams per liter (mg/L) for the first classified segment downstream of the discharge (i.e., Spring Creek, Segment 1008).[95] Since the toxicity of

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[94] *Id.*

[95] *See* 30 Tex. Admin. Code § 307.6(c)(8).

copper in water is inversely related to the hardness, the calculated standard is relatively low. Even standards developed by states that have discharges to the Great Lakes, which tend to be lower than most state standards, are not this low. For example, Minnesota has a chronic standard for copper of 5.2 ug/L for discharges to Lake Superior, if the hardness is 50 mg/L.[96]

Next, the Region complains that there were not enough comparable test results to validate similarities between sublethal failure rates among the Plant, WWTP # 2 and mock effluent. The effluent from the Plant, the effluent from SJRA's WWTP # 2, and the mock effluent prepared using non-toxic laboratory water and laboratory-grade reagents have comparable composition with respect to the major ions that are present, including the presence of low hardness and high alkalinity. All three of these types of samples exhibit approximately the same rate of failure of the sublethal test - 40%. This is extremely strong evidence supporting the 2008 STE conclusions. However, in the 2009 RTC, the Region tries to negate these findings with two irrelevant arguments:

- Concurrent tests were not always conducted on the three types of samples—Conducting tests of the three types of samples concurrently is not necessary, or even meaningful. The variability in the sublethal response of the test organisms to the ionic composition of these samples is such that even concurrent tests of the same solution (a "split sample" test, for example) do not consistently exhibit the same result. The relevant basis for comparison is to look at the total results for a number of tests over time. This was done. As of November 2008, there were 56 sublethal WET tests of the Plant effluent during the most recent 5-year period; there were 21 sublethal WET tests of the Plant effluent for the period beginning in June 1999; and there were 10 sublethal WET tests of the mock effluent. The sublethal failure rates exhibited in each of these were as follows:

[96] Minn. Admin. Rule 752.0100, Subp. 2 (2009).

- Plant Effluent 43% in 85% effluent
- WWTP #2 Effluent 40% in 100% effluent
- Mock Effluent 40% in 100% sample

This is a very substantial record on which to base the statement that the three types of samples exhibit comparable results.

- The method used to report the results is not consistent—The terms used to report the study results do not change the study results, and part of the reason for a difference in the reporting terms is that, because study techniques for toxicity studies are different than compliance testing techniques, it is not appropriate to use the same statistical procedures to evaluate the data from the two types of tests.

  In fact, the manner in which results are reported on Table IV-2 and Table IX-3 in the 2008 STE are the same. Both of these tables present data from compliance testing. Pass or Fail is reported for each test on Table IV-2, and the footnote at the bottom of Table IX-3 can be used to identify each test on that table as a Pass or Fail. The results in Table VII-3 are not reported as NOEC, or a Pass or Fail based on NOEC, because toxicity studies do not follow the protocols used in compliance testing with respect to the number of dilutions tested and the number of replicates of each dilution. This is common practice to control the costs and time requirements of these types of studies. However, it is clear from the data presented in Table VII-3 that the mock effluent frequently exhibits a substantial sublethal effect. That it may be too difficult for the Region to interpret and compare the data as presented is surely not a valid basis to summarily dismiss such information.

Finally, the Region also concludes that ionic imbalance cannot be the cause of test failures because test failures occurred in samples containing only 23% effluent. During the period of January 2004 through September 2008, the period covered by the 2008 STE, there were 56 compliance WET tests performed. Of these tests, there were two tests with a reported NOEC of less than 23% and one test with a reported NOEC of less than 27%. The very randomness of these results calls their significance into

question, given the variability of the test. However, it is also questionable whether two of the three tests were valid WET tests.

Figure 1X-4 in the 2008 STE presents dose-response plots for all failures of the *C. dubia* test between January 2004 and September 2008. As can be observed, there were 17 reported test failures during this period. The two tests with a reported NOEC of less than 23% and the test with a reported NOEC of less than 27% occurred in August 2004, November 2006, and June 2006, respectively. As can be observed, there is no dose-response exhibited in the June 2006 or the November 2006 tests. Having a valid dose-response (i.e., increasing concentration of toxicant results in increasing response by the organisms) is a basic requirement of toxicity testing.[97] Based on what is now being determined about the effects of bacterial contamination in *C. dubia* tests, these results may have been indicative of a biologically contaminated sample, which should have been reported as an invalid test and not a test failure.[98] This leaves one test with a reported NOEC of less than 27% out of 56 tests performed, which does not outweigh the remainder of the 2008 STE study results.

In considering the Region's rather cursory arguments regarding the 2008 STE, it is also important to note that Petitioner used two of the most respected testing laboratories in the country for this work: EA EST in Sparks, Maryland and Advent-Environ in Brentwood, Tennessee. Both of these laboratories are looked to by the

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[97] EPA, Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, October 2002, page 50.

[98] *See*, Johnson, Pieter T.J., Joyce E. Loncore, Jeffery D. Sheilds, Daniel E. Stanton, Ryan B. Carnegie, and Eric. R. Preu, "Chytrid infections of Daphnia pulicaria : development, ecology, pathology and phylogeny of Polycaryum leave," Freshwater Biology (2006) 51, 634–648, for discussion of impacts of bacteria contamination to *C. dubia.*

Region and others within EPA in providing guidance to the Agency and the regulated community on WET testing.[99] These are the very laboratories whose principal scientists provided presentations and guidance in the 2006 Region WET Workshop discussed in the Region's 2009 RTC, and Petitioner chose to work with these laboratories because they are well-regarded by the Region and the EPA as a whole. These laboratories worked closely with Petitioner in developing and implementing the sub-studies comprising the overall study and confirmed the findings of the 2008 STE.[100]

In addition to its criticisms of the 2008 STE, the Region also concludes that two other nearby POTWs, the City of Shenandoah ("Shenandoah") and Southern Montgomery County Municipal Utility District ("SMCMUD") have drinking water sources of the same quality as the Plant, yet have spotless WET testing records. The Region states that these facts disprove the finding that the quality of the Plant water supply is the cause of the periodic sublethal test failures. This conclusion, however, is not valid, for at least two reasons. First, the quality of the water supply for Shenandoah appears to be similar to SMCMUD, but the quality of these two entities is significantly different than the quality of the water supply for the service area of the Plant. Second, a review of available reporting information indicates that these entities have not, in fact, reported five years of passing lethal and sublethal WET tests. Both of these erroneous conclusions made by the Region are addressed further below.

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[99] *See* Schedule for US EPA Region VI WET Workshop. January 2006 at pgs. 19-20, Day 1 and Day 2 at 2009 RTC, Attachment 2 (unnumbered pages), which included Wayne McCulloch of EA EST and Scott Hall of Advent-Environ at Exhibit I.

[100] Each lab's agreement with the conclusion of the report is documented by inclusion of each lab's name on the cover of the 2008 STE Report. *See* 2008 STE at cover page (Exhibit J).

All of these residential developments (the service area of the Plant served by Petitioner, SMCMUD and Shenandoah) do not obtain their water supplies from precisely the same source. Petitioner serves several municipal utility districts located in The Woodlands. These include the Woodlands Municipal Utility District No. 2 ("MUD No. 2"); Montgomery County Municipal Utility District No. 6 ("MUD No. 6"); Montgomery County Municipal Utility District No. 36 ("MUD No. 36") and the Woodlands Metro Center MUD ("Metro Center MUD"). All of these districts are served by one water plant taking groundwater from four wells in the Evangeline Aquifer and four wells in the Jasper Aquifer, scattered throughout the service area. Shenandoah also takes water from the Evangeline and Jasper Aquifers, but in different locations than the wells operated by Petitioner. SCMUD takes water from the Evangeline and Chicot aquifers.

Based on Annual Drinking Water Quality Reports from these entities, a summary of the concentrations of the relevant quality constituents is presented below in Table A. The Annual Drinking Water Quality Reports summarized in Table A are included in Exhibit L.

TABLE A

Water Supply Quality Comparison

The Woodlands Wastewater Treatment Plant No. 1

Service Area, Shenandoah, and

Southern Montgomery County Municipal Utility District

Total Hardness as mg/L $CaCO_3$

Service Area	Average Concentration	Year Analyzed
The Woodlands (MUD 2, MUD 6,MUD 36, Metro Center MUD)	23 48	2005 2004
Shenandoah	21	2005
Southern Montgomery County MUD	29	2002

Total Alkalinity, as mg/L $CaCO_3$

Service Area	Average Concentration	Year Analyzed
The Woodlands (MUD 2, MUD 6,MUD 36, Metro Center MUD)	263 271 281	2007 2004 2005
Shenandoah	220 227	2008 2005
Southern Montgomery County MUD	201 220 209	2008 2005 2002

As concluded in the STE report, the cause of the periodic sublethal failures was found to be the combination of very low hardness concentrations and high alkalinity. As shown in Table A, the average hardness concentrations in the water supplies of Shenandoah and SMCMUD are approximately two times higher than the average hardness concentrations in the water supplies for the Plant. In addition, the average Total alkalinity in the water supplies of Shenandoah and SMCMUD are approximately 18% to 23% lower, respectively, than the average Total alkalinity of the Plant district water supplies. Therefore, Shenandoah and SMCMUD cannot be said to have the same quality of source water as the Plant.

Regarding WET testing records, copies of WET test results for Shenandoah and SMCMUD, Petitioner is baffled by the Region's statements. In addition, discharge monitoring reports ("DMRs") for these POTWs were obtained from EPA online records and directly from the WET coordinator for the TCEQ. SMCMUD does have almost five - years of biomonitoring data available from the TCEQ (although several results seem to be missing from the TCEQ records), but only part of two years of records of biomonitoring results from the EPA web site. In addition, during this five-year period, sublethal failures have, in fact, been reported for the SMCMUD. It should also be noted that during this five-year period, SMCMUD only performed 14 WET tests, compared to the 56 tests performed for the Plant during the period January 2004 through September 2008. However, it is not correct that SMCMUD has not reported any sublethal test failures.

Very limited records (certainly less than 5 years) of data were available for Shenandoah. Therefore, it is not possible to confirmed whether the facility has had WET failures or not during the last 5 years. The combined data base obtained from TCEQ staff and the Region online records for Shenandoah only includes results for WET tests on six occasions. There are quarterly tests from September 2006 through September 2007 and one test in December 2008. In addition, only lethal test results are provided except for the December 2008 tests where sublethal results are identified. However, it would be difficult to have many sublethal failures when only one sublethal test is reported.[101]

In conclusion, it is clear that the Region has given the 2008 STE short shrift. Taking text of the report out of context, misquoting it, and relying on only a cursory review of other data from neighboring POTWs, among other failings, is certainly not adequate support for the Region's rebuke of the 2008 STE. The Region has acted arbitrarily and capriciously in dismissing the results of the 2008 STE and including WET limits in the Modified Permit.

5. The Region's response that WET limits are required to ensure compliance with TSWQS is incorrect and constitutes legal error because Petitioner is in compliance with the TSWQS in that it has conducted a TRE type study showing that its sublethal test results are not indications of "toxicity" as defined in the TSWQS.

Throughout the 2009 RTC, the Region argues that the state evidentiary record and TCEQ Order are incorrectly based on the Implementation Procedures. It argues that the correct basis of its permitting decision is on the "Texas WQS" and that such

[101] Southern Montgomery County Municipal Utility District and City of Shenandoah, Routine Biomonitoring History (2004-2009). *See* Exhibit M.

standards mandate the imposition of WET limits.[102] However, the Region fails to recognize that Petitioner is in compliance with the language of the TSWQS. The TSWQS include specific provisions with regard to WET. They state, in pertinent part, that "chronic total toxicity", as determined from biomonitoring of effluent samples, will be precluded in all water in the state with existing or designated aquatic life uses and that dischargers whose effluent has a significant potential for exerting toxicity in receiving waters will be required to conduct whole effluent toxicity biomonitoring at appropriate dilutions.[103] The TSWQS go on to state that if toxicity biomonitoring results indicate that a discharge is exceeding the restrictions on total toxicity, then the permittee shall conduct a toxicity identification evaluation and toxicity reduction evaluation in accordance with permitting procedures of the commission.[104] As a result of a toxicity reduction evaluation, the TSWQS recognize that additional conditions may be established in the permit.[105] Such conditions may include total toxicity limits, chemical specific limits, and/or best management practices designed to reduce or eliminate toxicity.[106]

Therefore, the TSWQS themselves establish the procedure to be followed prior to the imposition of WET limits in a permit—they are to be imposed "as a result of a toxicity reduction evaluation." In this instance, Petitioner's 2008 STE followed the

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[102] 2009 RTC at pg. 13.

[103] 30 Tex. Admin. Code §§ 307.6(e)(1); 307.6(a)(2)(A)(2009).

[104] *Id.* at § 307.6(a)(2)(D).

[105] *Id.*

[106] *Id.*

requirements of a TRE and concluded that Petitioner qualifies for an exemption from WET limits. The definition of "toxicity" in the TSWQS excludes adverse effects caused by concentrations of dissolved salts when salts originate in the source water.[107] Petitioner has followed the procedure set forth in the TSWQS regarding investigation of its sublethal test results and this investigation has concluded that such test results are not indicative of "toxicity" as defined in the TSWQS. Therefore, the TSWQS do not require the imposition of WET limits.

The Region argues in its 2009 RTC that the exemption afforded under the TSWQS for dissolved salts is not applicable to Petitioner because this exemption was developed to address toxicity from discharges from facilities in areas of South and West Texas where water supplies contain lethally toxic levels of dissolved salts and that Petitioner is not in this intended part of the State.[108] It also argues that there is not a "clear and obvious" similarity and connection between the dissolved salts levels, ionic constituents, and relative ratios of those ions in the influent, effluent, and receiving stream.[109]

The Region, however, cites to no provision in the TSWQS limiting the dissolved salts exemption to certain areas of the State or requiring a level of "clear and obvious" similarities between influent, effluent and the receiving stream. Certainly, the 2008 STE shows that the cause of the sublethal failures is the ionic composition of the source water, i.e. dissolved salts. The definition of "toxicity" in the TSWQS excludes this issue

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[107] 30 Tex. Admin. Code § 307.3(a)(65). *See also*, Petitioner's Comments at pg. 7.

[108] 2009 RTC at pg. 10.

[109] *Id.*

from the definition of "toxicity." Therefore, under the TSWQS, Petitioner's sublethal test results are not indications of toxicity requiring control by WET limits.

C. Definition of WET Limit Violation

Petitioner objects to and requests review of Part I, Item A.1 Whole Effluent Toxicity Limit p. 2 and Part II, Item E.1.c p. 13 of the Modified Permit which establish that a single WET test demonstrating significant toxic effects constitutes a permit violation. Petitioner's initial comments on this issue are found at Petitioner's Comments pgs. 16-23, and the Region's response is found at RTC pgs. 45, 47-65.

The Modified Permit provides that every test where the organism response at the critical dilution is statistically different from the organism response in the control is a permit violation. Such a provision imposes a standard that cannot be consistently achieved regardless of the diligence of the permittee. Petitioner commented that imposing a compliance requirement that every test must pass is inconsistent with the variability of the test, among other arguments. Petitioner suggested that given the challenges associated with the conversion of WET tests to WET limits, the Region should use a median approach where compliance is based on a median value of the results of sublethal tests conducted over a 12 month period.

In response, the Region provides a very limited and cursory discussion of the points raised in Petitioner's comments, and completely ignores comments regarding test variability. The Region argues that because damage is done at the time of discharge, even if annual averaging appears to show no net impacts of WET exceedances, periodic exceedances of WET limits are of "significant concern," especially in light of the fact that the Region believes the period of recovery for streams is a year or more.

The Board should review the Region's decision to define WET limit violations on the basis of a single WET test failure rather than implementing a median approach because the Region's decision is an important policy consideration impacting many permittees with WET limits. Although the issue of how WET limits should be drafted is highly technical in nature, the Region's approach must still be rational and adequately explained and supported. Here, the Region's response does not meet this standard.

1. The Region's imposition of WET limits based on a single test failure rather than a median approach is arbitrary and capricious in that the Region failed to consider and respond to the arguments provided in Petitioner's Comments with respect to test variability.

As discussed above, Petitioner provided in its Comments a detailed and thorough discussion regarding test variability to explain why a WET limit should not be defined as a single test failure. These comments included discussion of the results of the EPA Interlaboratory Variability Study;[110] inspection of reference toxicant charts for labs conducting WET tests and an explanation that the control charts confirm that while a median value of multiple tests may approximate a correct answer, any single test can be significantly wrong; results of the WERF Report,[111] and the results of Petitioner's own testing on mock effluent as a part of its 2008 STE. Rather than actually consider and discuss the arguments set forth in Petitioner's Comments, the Region simply refers to quotations from *Edison Electric* that are taken out of context and alleges that "EPA

[110] U.S. Envtl. Prot. Agency Office of Water, *2001 Final Report: Interlaboratory Variability Study of EPA Short-term Chronic and Acute Whole Effluent Toxicity Test Methods*, Vol. 1. EPA 821-B-01-004 ("EPA Interlaboratory Variability Study").

[111] Warren Hicks, Ph.D., William, Benjamin R. Parkhurst, Ph.D.; and Song Qian, Ph.D., Accounting for Toxicity Test Variability in Evaluating WET Test Results; Document No. 00-ECO-1, 2006 ("WERF Report.")

provided a detailed discussion of the variability issue in the Fact Sheet for this permit" which is not correct.[112]

With regard to the Region's reference to *Edison Electric*, the D.C. Court of Appeals was discussing the flaws in appellants' claims regarding variability and chronic toxicity unit calculations. This discussion should not be read to constitute a broad recognition that WET test methods produce results directly analogous to chemic al testing results. The court was not addressing arguments that Petitioner raises in this Petition that WET limits, and in particular sublethal WET limits, should not rely on a single test failure. In fact, the court recognizes this differentiation, stating that "there is an important distinction between the validity of a test method and the validity of a particular result from the test when it is used to determine compliance with permit conditions."[113] The court further states that even though the "EPA warned against using a single test result to institute an action for a civil penalty," the case only analyzed the "validity of WET test methods."[114]

As Petitioner stated in its Comments, the concentration required to maintain TSWQS applies a 30 day average concentration limit. Since chemical parameters can be analyzed daily, this can be an average of tests performed on 24-hour composite samples and the limit could be calculated based on as many as 30 samples. The permit limit for a single 24-hour composite sample typically is twice the 30-day average

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[112] 2009 RTC at pg. 23.

[113] *Edison Electric*, 391 F.3d at 1272.

[114] *Id.*

limit, and the limit for a grab sample is typically three times the limit for the 30-day average.

In addition, the Region simply ignores the information provided in Petitioner's Comments regarding the EPA Interlaboratory Variability Study; inspection of reference toxicant charts for labs conducting WET tests; results of the WERF Report, and the results of Petitioner's own testing on mock effluent as a part of its 2008 STE. Instead, the Region makes a general statement alleging that it has previously discussed test variability in the 2009 Fact Sheet. However, the 2009 Fact Sheet does not appear to contain such a discussion. Without engaging on the key argument made by Petitioner as to why a median, rather than a single test approach, should be used for WET limits in the permit, the Region's decision on this issue is arbitrary and capricious.

2. The Region's rejection of the use of a median approach to define a WET limit violation is not rational or adequately explained or supported because it is not reasonable for the Region to impose a permit violation where a permittee may have no ability to control the cause or prevent future violations.

The Region argues that a median approach fails to take into consideration the periodic or episodic nature of toxic events that may impact a receiving stream. Based on its assumption that the period required for recovery of a stream from a toxic event can take up to a year or more, an annual averaging period could mask these longer-term impacts. First, the Region has no scientific basis for its assumption of a one-year recovery period in a receiving stream for *sublethal* effects. For the reasons discussed previously, the scientific literature does not support a correlation between sublethal results and instream impacts.

In addition, this concern should be balanced against implementation of a permitting policy that triggers a violation for the type of toxic effect that can be meaningfully investigated and controlled by a permittee. For example, other provisions of the Modified Permit setting forth the procedures for WET testing on the fathead minnow require the commencement of a TRE only after three out of four monthly tests demonstrate toxic effects.[115] The reason for such a delay in instituting a TRE is to confirm that the toxicity is of sufficient duration that a meaningful investigation can be conducted. Without a meaningful investigation, identification of the cause of the reported toxicity does not occur, nor does control of such cause. Permit provisions that a single test failure is a permit violation place the permittee in a "Catch 22" of incurring a permit violation with no ability to identify the cause and prevent future occurrences because the toxic effects are too ephemeral. Such a WET limit based on a single test result is in no way an effective control against exceedance of TSWQS – it only serves to subject a permittee to fines and enforcement for a test result. As the Region has recognized that toxic effects should be of sufficient duration to warrant the institution of a TRE, so too should it recognize that a WET limit violation should be based on toxic events of a sufficient duration to give a permittee adequate opportunity for investigation and control activities.

3. The Region's refusal to consider a different approach for at least sublethal limits is not rational or adequately explained because the Modified Permit provisions regarding TRE triggers already acknowledge that a more conservative regulatory approach is warranted.

[115] Modified Permit, Item II. D.2.a.iii at pg. 4.

Petitioner commented that lethal and sublethal test results require different regulatory responses. The Region disagrees, as set forth in the 2009 RTC, and suggests that Petitioner has not identified where the Region has recognized that a sublethal WET test cannot be implemented the same as a lethal WET test. However, in contradiction to this statement, this very permit treats the two test results differently. In Part II.D.2.a, the Modified Permit sets forth what is to occur if there is a failure of a fathead minnow test. If there is a failure, the permittee is required to conduct three additional tests at monthly intervals. If any one of the additional tests demonstrates lethality at the critical dilution (78%), a TRE is to be initiated. However, if sublethal effects are demonstrated in the additional testing, it requires two additional test failures at an effluent concentration of 75% or less to trigger a TRE. This is a valid recognition that it is inappropriate to require a sublethal TRE for an infrequent test failure with a small impact. Just as with the TRE trigger, sublethal WET permit limits should also require substantially greater frequency of failure than the lethal WET limit. The Region responds that the above described practice is only an interim approach as permittees begin to transition to WET limits for sublethal toxicity. However, this argument does not change the underlying assessment that sublethal testing is different, and a more conservative approach should be used. If a substantially greater frequency of failure should be used to institute a sublethal TRE, should not it also be incorporated into the very definition of a sublethal limit itself? Otherwise, a permittee is in the interesting position of racking up permit violations at the same time that it may not be able to institute a meaningful TRE because of the infrequent nature of the failures and the small impact.

D. Rejection of the South Carolina Percent Effect Approach in Lieu of NOEC to Report WET Test Results

Petitioner objects to and requests review of Part I, Item A.1 at p. 2; Part II, Item D; and Part II, Item E. imposition of 7-day NOEC of the Modified Permit which require the use of NOEC rather than the South Carolina Percent Effect approach to report WET test results. Petitioner's comments on this issue are found at Petitioner's Comments pgs. 13-14 and the Region's response is found at 2009 RTC pgs. 37-39.

The WET provisions contained in the Modified Permit require the use of NOEC to determine test results and response actions. Petitioner's Comments discussed a number of limitations to the use of NOEC as a test endpoint that are not present with a "percent effect" endpoint. The Region responded that the "South Carolina PE approach" has not been approved by EPA and that the 40% benchmark used in this protocol has been disallowed as not being adequately protective.

Like the definition of a WET limit violation, the choice between the use of the South Carolina Percent Effect approach and NOEC is a technical determination that involves an important policy consideration warranting review and must be shown to be rational and adequately explained and supported. The Region's response fails to meet these standards in that it incorrectly states the status of EPA's approval of the South Carolina Percent Effect approach.

1. The use of NOEC rather than the South Carolina Percent Effect approach is not rational or adequately explained or supported because the Region incorrectly describes the status of EPA's approval of such approach.

The Region's summary of the current status of the South Carolina program is inaccurate. Based on personal communications with Mr. Vernon Beaty with the South Carolina Department of Health and Environmental Control, the current status of the South Carolina WET program is as follows:

EPA has disapproved the statistical method originally proposed by South Carolina regarding how the dose-response curve is drawn through the test results for the multiple dilutions used in the test. However, the interpretation of the dose-response curve with respect to determining whether a test is classified as a Pass or a Fail is based on a Percent Effect value and not a Point Estimate, contrary to the statement in the 2009 RTC. In addition, the 40% Percent Effect value is, in fact, still used when determining permit compliance. A permittee is in compliance with its permit if the average Percent Effect for all tests conducted during a reporting period does not exceed 25% at the critical dilution and if the maximum Percent Effect reported for any test during the testing period does not exceed 40% at the critical dilution.[116]

E. WET Limit Compliance Period

Petitioner objects to and requests review of Part I, Item B at pgs. 4-5 Schedule of Compliance. These provisions, if imposed, mandate that WET limits in the Modified Permit are effective for three years after the "permit effective date" which would end October 31, 2012. Petitioner commented that because WET limit provisions in the Modified Permit have been stayed by this proceeding, the compliance period should not begin until final action is taken regarding WET limits.

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[116] Personal communication with Mr. Vernon Beaty on August 21, 2009.

Because this Appeal will stay the effective date of the WET limits, the compliance period should begin after the appeal is concluded if WET limits are still included in the Modified Permit. Petitioner requests the Board to direct the Region to rephrase this provision to state that Petitioner is to attain final effluent limitations no later than three years after the permit effective date *or three years after the effluent limit effective date, whichever is later.*

F. Trigger for Fathead Minnow Sublethal TRE

Petitioner objects to and requests review of Part 1, Section A Final Effluent Limits, p. 1, Part 1, Section B, pgs. 4-5, and Part II, Section D.2.a.iii, pg 4 of the Modified Permit, which provide that a TRE will be initiated if two of the three Fathead Minnow additional tests show sublethal effects in samples that are 75% effluent or less. Petitioner's comments on the Modified Permit are found at Petitioner's Comments pg. 26 and the Region's response is found at 2009 RTC pg. 26.

The Petitioner objects to the trigger currently included in the Modified Permit for Fathead Minnow sublethal TREs where two of three retests exhibit significant sublethal effects in samples that are 75% effluent or less. Petitioner commented that it is not possible to do the TIE studies that are typically necessary to perform a TRE unless there is at least a 40% reduction in the sublethal response in the highest effluent dilution and the trigger proposed in the Draft Modified Permit does not ensure that this will always be the case. Petitioner recommended that the provision be reworded to state that if any two of the three additional retests demonstrates 40% sublethal effects at the highest dilution tested, the permittee shall commence the TRE.

The Region responds that Petitioner does not provide support for its argument that there needs to be at least a 40% reduction in sublethal response and that the permit TRE conditions do not include any requirement to perform TIE studies or to identify the specific pollutant(s) responsible for the toxicity.

In addition, Petitioner commented that the provision in the Draft Modified Permit establishing that the sublethal TRE initiation date is the test completion date of the first failed retest is inconsistent with the provision requiring a TRE upon the failure of a second retest. The Region did not respond to this comment.

1. The Region's inclusion of TRE triggers for Fathead Minnow sublethal testing that are inadequate to conduct needed TIE studies is clearly erroneous and is not adequately explained.

The Region is in error in requiring the commencement of a Fathead Minnow sublethal TRE based on retests that are 75% effluent or less, because, as Petitioner explains in its comments, this requirement does not ensure that it will be possible to conduct meaningful TIE studies that are necessary to perform a TRE. Petitioner bases this conclusion on knowledge of the variability of the sublethal tests and its own experience with the 2008 STE. However, it is clear that the Region also recognizes that the level of response must be larger for sublethal TREs by virtue of the fact that the Modified Permit provides that sublethal TREs do not have to be done if the NOEC exceeds 75% effluent. The only point of disagreement is how should the extent of the response be quantified (NOEC versus Percent Effect) and how large does the response need to be in order to support TRE studies.

Extensive discussion has been provided on the variability of the sublethal test. This variability is exacerbated by the treatments performed during the TIE studies. The

differences in the TIE test response must be large enough to differentiate between variations due to manipulations and true changes in the effluent response. During the work on the 2008 STE, Petitioner's testing laboratory recommended that there must be at least a 40 Percent Effect in order to conduct TIE studies.

The NOEC endpoint does not provide information on the magnitude of the effect. It is possible to have a 20 to 25 Percent effect at any NOEC concentration. A 20-25 Percent Effect is not sufficient to support sublethal TRE studies.

In addition, the Region's argument that TRE requirements do not include TIEs is illogical in that the purpose of a TRE is to determine the cause of the toxicity. A significant component of this effort is initial TIE testing, without which a TRE would not be meaningful. It is unclear what the Region believes would make up a TRE in the absence of initial TIE testing. Under the Region's logic, all is well as long as a permittee can check a box noting that it is conducting a TRE because it apparently it does not matter what the TRE will consist of or whether it will be meaningful.

2. The Region's inclusion of permit provisions establishing a sublethal effects TRE initiation date as the completion date of the first retest is clearly erroneous and not adequately explained where other permit provisions establish that a TRE is not required until after the failure of the second retest.

In its 2009 RTC, the Region fails to address Petitioner's comment that the initiation date of the sublethal TRE on the date of the first retest does not make sense in light of the provisions noting that a sublethal TRE is not required until the failure of the second retest. The Region should provide a reasonable explanation for this inconsistency. Otherwise, the permit provision should be modified as recommended by Petitioner.

G. WET Limit Reporting Provisions

Petitioner objects to and requests review of Part II, Item E.3.b at pgs. 16-17 providing for the reporting requirements for WET testing on *C. dubia*. Petitioner commented that these reporting requirements are contradictory and confusing with respect to the use of undefined terms for "30–Day Average NOEC," "7-Day Minimum NOEC," "DAILY AVERAGE MINIMUM NOEC," and "30–Day Average Minimum NOEC." Although Petitioner appreciates the Region's attempts to explain these terms in its 2009 RTC, Petitioner believes that such explanation does not resolve the underlying issue of the unclear and inconsistent permit terms.

1. The Region's failure to clearly define the terms for *C. dubia* WET test reporting requirements is unreasonable, and the permit language should be revised to adequately establish such reporting requirements.

The provisions at Part II, Item E.3.b at p. 16 require Petitioner to report values for the "30-Day Average NOEC" and the "7-Day Minimum NOEC" on its DMR for each reporting period. The provisions go on to explain that if more than one valid test is performed during the reporting period, the test NOECs may be averaged arithmetically and reported as the "DAILY AVERAGE MINIMUM NOEC." However, the "DAILY AVERAGE MINIMUM NOEC" is neither the "30-Day Average NOEC," nor the "7-Day Minimum NOEC" required in the previous paragraph. Presumably, this may be a third value that the Petitioner has the option to report. If so, it is unclear what the regulatory implication of this third value may be in the context of enforcement. If the "DAILY AVERAGE MINIMUM NOEC" is the same as or can be reported in place of "30-Day Average NOEC," the permit language should so state.

The provisions go on to require Petitioner to report the "LOWEST 30-Day Average Minimum NOEC" and the "lowest 7-Day Minimum NOEC." Is the "30-Day Average *Minimum* NOEC" (emphasis added) in the sentence at the top of page 17 the same parameter as the "30-Day Average NOEC" on the preceding page, or does the inclusion of the word "minimum" have significance? In addition, if Petitioner is required to report the lowest NOEC values as described, what is the need to provide an average of the NOECs to be reported as the "DAILY AVERAGE MINIMUM NOEC?" Finally, it is unclear how an "average" value can also be labeled as a "minimum" value.

The example calculation provided by the Region in its 2009 RTC at page 25 does not appear to comply with the permit provisions because there is no reporting of the "30-Day Average NOEC" or the "LOWEST 30-Day Average Minimum NOEC." Only values labeled as "7-Day Minimum" and "Daily Average Minimum" are provided. If these are the only values that are required to be reported, then these permit provisions should be revised to so state.

H. Other WET Testing Reporting Requirements

Petitioner objects to and requests review of Part II, Section D at p. 3 Whole Effluent Toxicity Testing (7 Day Chronic NOEC Freshwater) Fathead Minnow introductory paragraph prior to 1.a starting with "A copy of the full report ..." and ending with the address of the Region 6 Whole Effluent Toxicity Coordinator; and Part II, Section E at p.12 Whole Effluent Toxicity Limits (7 Day Chronic NOEC Freshwater) Ceriodaphnia dubia introductory paragraph prior to 1.a starting with "A copy of the full report..." and ending with the address of the Region 6 Whole Effluent Toxicity

Coordinator. The provisions were not included in the Draft Modified Permit and constitute new language on which Petitioner did not have an opportunity to comment.

These provisions impose unduly burdensome reporting requirements on Petitioner that mandate the filing of full WET test reports to EPA within 30 days of test completion and an additional written notification to EPA within 10 days of test termination (and prior to submission of discharge monitoring reports) for any test in which a significant difference from the test control (lethal or sublethal effects) is detected in the 25%, 33%, 44% and/or 59% effluent concentrations. Petitioner already submits its full WET test reports to the Region and has provided the Region with a significant amount of information regarding its WET testing and toxicity investigation work in the form of its 2008 STE report. Full WET testing reports may not be received from testing laboratories within 30 days of test completion, making it difficult for Petitioner to comply with this requirement. The Region provides no explanation as to why it seeks to impose this 30-day deadline when other provisions of the Modified Permit already require the filing of the full report and the recording of test results on the subsequent monthly DMRs for that reporting period.[117] Also, the Region provides no explanation as to why it would need an additional written notice within 10 days of test completion for some test results when it would already receive notice of these results in the full reports and the DMRs.

1. The Region's imposition of expedited and duplicative WET test reporting requirements is arbitrary and capricious because the Region provides no reasonable basis for imposing this additional regulatory burden on Petitioner.

[117] *See* Modified Permit, Part II.D.4 at p. 8, Part II.E.3 at pg. 16.

The Region federalized Petitioner's permit in January/February 2006 and it is now August 2009. The Region never formally responded to all of the information provided in the 2008 STE until it was forced to do so in the 2009 RTC. That the Region would suddenly need copies of Petitioner's full WET test reports within 30 days and an additional written 10 day notice of certain test results is not consistent with the historical pace of regulatory action in this matter. What action does the Region believe it will take upon receipt of the full report in 30 days or additional notice within 10 days for some tests that would be different than under standard permit reporting requirements? The Region should explain its need to impose these additional regulatory burdens on Petitioners.

V. CONCLUSION

Consider the following summary of the Region's permitting actions with respect to the permit at issue in this case and as discussed in this Petition:

- The Region first sought to impose a WET limit in Petitioner's permit in 1993.
- The Region failed to grant Petitioner's related evidentiary hearing request in 1993.
- It insisted on WET limit again in 2001 based on November 2001 and January 2002 test results that were determined to be unreliable in the state evidentiary hearing (even now the Region does not list the test results as a basis for WET limits in the Modified Permit).
- It insisted on WET limits upon federalization of permit based on sublethal test results only after determining that state Implementation Procedures it previously approved are not protective of TSWQS.
- It withdrew contested portions of the federal permit upon closer review of such permit provisions after Petitioner's first appeal to the Board in 2007.

- It never formally responded to the 2008 STE until forced to do so in the 2009 RTC, and even then, its response mischaracterizes and distorts the study and references incorrect data and information.

Does this timeline reflect the actions of an unbiased and objective agency promulgating well-crafted and defensible permitting provisions? The answer is clearly no. Rather, this list reflects an agency that, for more than fifteen years, has been seeking to impose WET limits in Petitioner's permit no matter what the underlying facts and governing policies may be. It has even gone so far as to change its policies in the midst of the permitting action without any reasonable justification to achieve its goals. In the end, there should be some mechanism that forces the Region to account for its less than objective pursuit of a WET limit in Petitioner's permit. Petitioner is hopeful that the Board will provide such a forum.

VI. RELIEF REQUESTED

For the foregoing reasons, Petitioner requests that the Board grant this Petition and conduct a review of the Modified Permit conditions identified herein and remand such provisions to the Region for revisions consistent with this Petition. In the alternative, Petitioner requests that the Board remand to the Region those conditions for which the Region failed to provide an adequate response as discussed herein.

Respectfully submitted,

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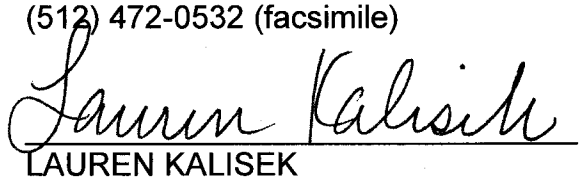

LAUREN KALISEK

Attorneys for the San Jacinto River Authority

Date: August 21, 2009.

TABLE OF EXHIBITS

A. U.S. Environmental Protection Agency, Region 6, NPDES Permit No. TX0054186, issued July 24, 2009 ("Modified Permit").

B. Memorandum of Agreement Between the Texas Natural Resource Conservation Commission and the U.S. Environmental Protection Agency, Region 6 Concerning the National Pollutant Discharge Elimination System, September 14, 1998 ("MOA").

C. Texas Commission on Environmental Quality, Procedures to Implement the Texas Surface Water Quality Standards, RG-194, Revised January 2003 ("Implementation Procedures).

D. U.S. Environmental Protection Agency, Letter Approving TCEQ Procedures to Implement Texas Surface Water Quality Standards, November 22, 2002.

E. Texas Commission on Environmental Quality, Order Regarding Application by San Jacinto River Authority for Renewal of TPDES Permit No. 11401-001 in Montgomery County, TCEQ Docket No. 2003-1213-MWD; SOAH Docket No. 582-04-1194 ("TCEQ Order").

F. State Office of Admin. Hearings, Proposal for Decision, SOAH Docket No. 582-04-1194 (TCEQ Docket No. 2003-1213-MWD) June 15, 2005 ("PFD").

G. U.S. Environmental Protection Agency, Region 6 Draft NPDES Permit No. TX0054186 ("Draft Modified Permit") and accompanying Fact Sheet ("2009 Fact Sheet") issued January 29, 2009.

H. Comments by San Jacinto River Authority Draft NPDES Permit No. TX0054186 Woodlands Wastewater Treatment Plant No. 1, February 27, 2009 ("2009 Petitioner's Comments").

I. U.S. Environmental Protection Agency, Region 6, NPDES Permit No. TX0054186, Response to Comments, issued July 24, 2009 ("2009 RTC").

J. San Jacinto River Authority, *Sublethal Toxicity Evaluation*, The Woodlands Wastewater Treatment Plant No. 1 (November 2008) ("2008 STE").

K. Texas Commission on Environmental Quality, correspondence with W.S.E.P.A. Region 6 regarding revisions to Whole Effluent Toxicity (WET) Components of the Texas Pollutant Discharge Elimination System Program.

L. TCEQ Annual Drinking Water Quality Reports, Municipal Utility District 2, Municipal Utility District 6, Municipal Utility District 36, Metro Municipal Utility District, Shenandoah Municipal Utility District, Southern Montgomery Municipal Utility District, (2004, 2006 and 2008).

M. Southern Montgomery County Municipal Utility District and City of Shenandoah, Routine Biomonitoring History (2004 – 2009).