UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

December 3, 2009

VIA HAND DELIVERY AND ELECTRONIC SUBMISSION

Ms. Eurika Durr
Clerk of the Board
Environmental Appeals Board
U.S. Environmental Protection Agency
1341 G Street, NW Suite 600
Washington, DC 20005

Re: San Jacinto River Authority, NPDES Appeal No. 09-09

Dear Ms. Durr:

Enclosed for filing please find an original copy of EPA Region 6's Response to the Petition for Review in the above captioned matter, including 17 excerpts from the administrative record marked as Exhibits, as well as a certified index to the administrative record.

Copies of these documents also are being filed electronically with the Board through the CDX system. Counsel for Petitioner is receiving these documents through FedEx delivery.

If you have any questions, please contact David Gillespie, Assistant Regional Counsel, EPA Region 6, at (214) 665-7467, or Stephen Sweeney, Office of General Counsel, at (202) 564-5491.

Stephen J. Sweeney for

T. David Gillespie
Assistant Regional Counsel, Region 6

Enclosures (described above)

Cc: Lauren Kalisek, Counsel for Petitioner

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

In the Matter of:	)	NPDES Appeal No. 09-09
San Jacinto River Authority	)	
Permit No. TX0054186	)	

RESPONDENT REGION 6'S MEMORANDUM IN OPPOSITION TO SAN JACINTO RIVER AUTHORITY'S PETITION FOR REVIEW

Counsel for United States Environmental Protection Agency, Region 6

Thomas David Gillespie, Assistant Regional Counsel
Office of Regional Counsel, EPA Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Pooja S. Parikh, Attorney-Advisor
Stephen J. Sweeney, Attorney-Advisor
Office of General Counsel (2355A)
U.S. Environmental Protection Agency
Washington, DC 20460

TABLE OF CONTENTS

RESPONSE TO PETITION FOR REVIEW 4

STATEMENT OF THE CASE 5

I. STATUTORY AND REGULATORY BACKGROUND 5
- A. The Clean Water Act and NPDES Permits 5
- B. EPA Review and Approval of State Water Quality Standards 7
- C. Implementation of Water Quality-Based Requirements in NPDES Permits 8
- D. Texas Water Quality Standards for Toxicity 9
- E. WET Limits and Testing 11

II. FACTUAL BACKGROUND 16
- A. SJRA Treatment Plant and Procedural History 16
- B. The Modified Permit 18

STANDARD OF REVIEW 20

ARGUMENT 23

I. The Region Properly Included a WET Limit in SJRA's Permit Based on WET Test Data That Demonstrated In-Stream Excursions Above State Water Quality Criteria for Toxicity ...23
- A. WET Test Data Demonstrated That SJRA's Effluent Has a Reasonable Potential to Cause Non-Attainment Of Texas Water Quality Criteria for Toxicity 24
- B. EPA is Not Bound by Texas' Implementation Procedures for WET in NPDES Permits Because Implementation Procedures Do Not Constitute State Water Quality Standards 27
- C. SJRA Challenges to the Validity of Sub-lethal WET Testing are Precluded By the D.C. Circuit Decision 33
- D. EPA Is Not Bound by Findings of the Texas Administrative Tribunal, But Rather Has an Independent Duty to Ensure Permit Limits Are As Stringent As Necessary to Meet Water Quality Standards 36
- E. The Region Adequately Explained its Decision That SJRA's 2008 Sub-lethal Toxicity Evaluation Failed To Demonstrate That WET Test Failures Were Primarily Due to SJRA's Source Water 38

II. The Permit Reasonably Articulates the Form of the WET Limit ..53
A. The Data Set for SJRA's Discharge Demonstrates That A Chronic WET Limit is Necessary to Assure Compliance With Texas WQS 54
B. SJRA Cannot Now Challenge the Reliability of WET Test Results Generated Using the WET Test Procedures Standardized Through Rulemaking 56
C. Potential Lack of Ability to Control the Cause of Toxicity Or Prevent Future WET Permit Violations Does Not Supersede the Need for a WET Limit to Meet State Water Quality Standards 61
D. Toxicity Reduction Evaluation Triggers for Fathead Minnow Testing Do Not Render the Region's Decision to Impose a Single Test Failure WET Limit for *C. dubia* Irrational or Inadequately Explained 63

III. The Region Reasonably Rejected SJRA's Proposal to Use the "South Carolina Percent Effect" Approach 65

IV. The Permit Reasonably Starts a Three-Year Compliance Schedule Upon the Effective Date of the Modified Permit 67

V. The Permit Reasonably Specifies the TRE Trigger After Fathead Minnow Test Failures 68

VI. The Permit, Fact Sheet, and Response to Comment Explain the Meaning of "Lowest," "Average," and "Minimum" 70

VII. The Region Has Deleted Two Reporting Requirements Contested By SJRA 71

CONCLUSION 72

TABLE OF EXHIBITS 73

RESPONSE TO PETITION FOR REVIEW

Pursuant to 40 C.F.R. § 124.19 and the Board's Order of October 15, 2009, the U.S. Environmental Protection Agency Region 6 (Region or EPA) respectfully submits this response to the Petition for Review filed by the San Jacinto River Authority (SJRA or Petitioner) on July 29, 2009, in the above captioned matter. The petition in this case primarily challenges EPA Region 6's inclusion of an effluent limit for "whole effluent toxicity" (WET or toxicity) in the Petitioner's National Pollutant Discharge Elimination System (NPDES) permit. The limit is for toxicity based on sub-lethal effects measured using a freshwater invertebrate, a water flea, called the *Ceriodaphnia dubia*.

The Region developed the limit in order to meet Texas water quality standards applicable to toxicity, based on several years of data generated by SJRA demonstrating sub-lethal toxicity using that test organism. Petitioner's challenge misinterprets applicable State water quality standards, raises issues and test methodology challenges that cannot be raised in this proceeding and/or proffers technical arguments that were not raised with specificity during the comment period. As described in greater detail below, SJRA's request for review on this issue, and others, should be denied.

STATEMENT OF THE CASE

I. STATUTORY AND REGULATORY BACKGROUND

A. The Clean Water Act and NPDES Permits

Congress enacted the Clean Water Act (CWA or Act) "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." CWA § 101(a), 33 U.S.C. § 1251(a). To achieve this objective, the CWA makes it unlawful for any person to discharge any pollutant into the waters of the United States from any point source, except as in compliance with the Act. CWA §§ 301, 402, 33 U.S.C. §§ 1311, 1342. Under CWA section 402, EPA may "issue a permit for the discharge of any pollutant, or combination of pollutants" so long as the requirements of the CWA and its implementing regulations are met. *Id.* NPDES permits generally contain discharge limitations and establish related monitoring and reporting requirements. CWA § 402(a)(1)-(2), 33 U.S.C. §§ 1342(a)(1)-(2). The regulations governing EPA's NPDES permit program are generally found in 40 C.F.R. Parts 122, 124, 125 and 136.

NPDES permits are issued by EPA or, in those jurisdictions in which EPA has authorized a state agency to administer the NPDES program, by a state agency subject to EPA review and possible objection, if a permit is outside the guidelines and requirements of the CWA. CWA §§ 402(b)-(d), 33 U.S.C. §§ 1342(b)-(d). EPA authorized Texas to administer the NPDES program for discharges within the jurisdiction of the State water pollution control agency on September 14, 1998. 63 Fed. Reg. 51164 (Sept. 24, 1998); *see also Letter from Greg A. Cooke, Regional Administrator, EPA Region 6 to Governor George Bush, Governor of Texas*, dated September 14, 1998 [AR # 73]. For the

discharges relevant to this Petition, the authorized NPDES permitting authority in Texas is the Texas Commission on Environmental Quality (TCEQ), subject to EPA oversight.

CWA section 301 requires the achievement of effluent limitations based on specified "technology-based" standards, as well as any more stringent limitations necessary to meet water quality standards. CWA §§ 301(b), 33 U.S.C. § 1311(b). Technology-based limitations applicable to publicly owned treatment works (POTWs), like SJRA, must meet performance-based requirements based on secondary treatment. CWA § 301(b)(1)(B), 33 U.S.C. § 1311(b)(1)(B). Limits based on secondary treatment consists of technology-based requirements expressed in terms of five-day biochemical oxygen demand (BOD_5), total suspended solids, and pH. 40 C.F.R. Part 133.

Water quality-based effluent limits, on the other hand, are designed to ensure that state water quality standards (WQS) are met regardless of the technological and economic factors that inform the derivation of technology-based limitations. CWA section 301(b)(1)(C) requires achievement of "any more stringent limitation … necessary to meet water quality standards...established pursuant to any State law or regulation...." 33 U.S.C. § 1311(b)(1)(C). Thus, NPDES permits must contain effluent limitations necessary to attain and maintain the WQS, without consideration of the cost, availability or effectiveness of treatment technologies. *See U.S. Steel Corp. v. Train*, 556 F.2d 822, 838 (7th Cir. 1977) (finding "states are free to force technology" and "if the states wish to achieve better water quality, they may [do so], even at the cost of economic and social dislocations"); *see In re City of Moscow*, 10 E.A.D. 135, 168 (EAB 2001) (stating that section 301(b)(1)(C) "requires unequivocal compliance with applicable [WQS], and does not make any exceptions for cost or technological feasibility"); *see also*

In re New England Plating Co., 9 E.A.D. 726, 738 (EAB, 2001) ("In the first instance, there is little question that cost considerations play no role in the *setting* of effluent limits.") (emphasis in original).

B. EPA Review and Approval of State Water Quality Standards

The CWA obliges states to establish water quality standards applicable to waters of the state, and to submit those standards to EPA for review and approval. CWA § 303(a)&(b); 33 U.S.C. § 1313(a)&(b). States are required to review applicable WQS from "time to time …but at least once each three years" and, as appropriate, modify or adopt new or revised WQS. CWA § 303(c), 33 U.S.C. § 1313(c). States are then required to submit new or revised WQS to EPA for review and approval. *Id.* EPA then must determine whether the new or revised WQS meet the requirements of the CWA and either approve or disapprove such new or revised WQS. CWA § 303(c)(3), 33 U.S.C. § 1313(c)(3); 40 C.F.R. § 131.21. When a state adopts a WQS that goes into effect after May 30, 2000, the WQS does not become applicable for purposes of the CWA until EPA approves that WQS. 40 C.F.R. § 131.21(c). Applicable WQS for purposes of the CWA are the minimum standards that must be met when the CWA and regulations implementing the CWA refer to WQS, such as when developing water quality-based effluent limits (WQBELs) in NPDES permits. 40 C.F.R. § 131.21(d). Thus, if WQS are adopted by a state but are not yet approved by EPA as WQS under CWA section 303(c), such new or revised WQS are not applicable when implementing the CWA through NPDES permits.

WQS consist of three elements, two of which are relevant here: (1) a designated beneficial "use" of the water, such as for public water supply, aesthetics, recreation,

propagation of fish, or agriculture; and (2) "criteria," which specify the amounts of various pollutants that may be present in those waters without impairing the designated uses, expressed either in numeric form for specific pollutants or in narrative form (*e.g.*, "no toxics in toxic amounts"). CWA § 303(c)(2)(A), 33 U.S.C. § 1313(c)(2)(A); *see* 40 C.F.R. §§ 130.3, 130.10(d)(4), 131.6, 131.10 and 131.11. Federal regulations implementing the CWA expressly recognize the establishment by the states of water quality standards based upon narrative criteria. 40 C.F.R. §§ 131.3(b), 131.11(b)(2).

C. Implementation of Water Quality-Based Requirements in NPDES Permits

As explained above, CWA section 301(b)(1)(C) requires NPDES permits to include effluent limitations as necessary to meet WQS. Federal NPDES regulations provide that a permit must contain effluent limits as necessary to protect state water quality standards, "including State narrative criteria for water quality." 40 C.F.R. §§ 122.44(d)(1), 122.44(d)(5) (providing in part that a permit incorporate any more stringent limits required by section 301(b)(1)(C) of the CWA); 54 Fed. Reg. 23868, 23875 (June 2, 1989). A permit would be inconsistent with section 301(b)(1)(C) if the permit did not contain effluent limits necessary to attain and maintain both narrative and numeric water quality criteria. The courts have explicitly recognized that water quality criteria can be expressed in narrative form and, in that form, can be used to derive water quality-based effluent limits (WQBELs). *See American Paper Inst. v. EPA*, 996 F.2d 346, 351 (D.C. Cir. 1993) ("Congress'...intent, made explicit in section 301 of the CWA, [was] that *all* state water quality standards be enforced through meaningful limitations in NPDES permits") (emphasis in original); *American Iron & Steel Inst. v. EPA*, 115 F.3d 979, 990

(D.C. Cir. 1997) (discharge permits must incorporate limitations that ensure both numeric and narrative water quality standards are met).

D. Texas Water Quality Standards for Toxicity

Texas WQS have narrative criteria to protect against toxicity, which contemplate the use of WET limits as a tool to implement these criteria. *See* 30 Tex. Admin. Code § 307.4 (General Criteria) ("Surface waters will not be toxic ... to ... aquatic life); *See also* 30 Tex. Admin. Code § 307.6(b)(2) (Toxic Materials, General provisions) ("Water in the state with designated or existing life uses shall not be chronically toxic to aquatic life"). Texas WQS general policy statement supports this protection. *See* 30 Tex. Admin. Code § 307.1 ("It is the policy of this state and the purpose of this chapter to maintain the quality of water in the state consistent with public health and enjoyment, propagation and protection of terrestrial and aquatic life"). This policy and these requirements protecting Texas waters from toxicity are implemented through WET testing:

> § 307.6. Toxic Materials
>
> * * *
>
> (e) Total Toxicity.
> (1) Total (whole effluent) toxicity of permitted discharges, as determined from biomonitoring of effluent samples at appropriate dilutions [*i.e.*,WET testing], will be sufficiently controlled to preclude acute total toxicity . . . . *Chronic total toxicity*, as determined from biomonitoring of effluent samples [*i.e.*, WET testing], *will be precluded* in all water in the state with existing or designated aquatic life uses . . . .

30 Tex. Admin. Code §§ 307.6(b) and (e) (emphasis added).

The protection from toxicity includes protection from "chronic toxicity," which is defined as toxicity exemplified by sub-lethal toxic effects, such as impairment of growth or reproduction:

> § 307.3. Definitions and Abbreviations

* * *

> (10) Chronic toxicity - Toxicity which continues for a long-term period after exposure to toxic substances. Chronic exposure *produces sub-lethal effects, such as growth impairment and reduced reproductive success,* but it may also produce lethality. The duration of exposure applicable to the most common chronic toxicity test is seven days or more.

30 Tex. Admin. Code § 307.3 (a)(10) (emphasis added). Thus, it is clear that Texas' WQSs protect for chronic toxicity, which explicitly includes sub-lethal effects.

If toxicity (either lethal or sub-lethal) is found, the Texas WQS and the permit itself require that the permittee conduct tests, specifically, a toxicity identification evaluation (TIE) and toxicity reduction evaluation (TRE) to attempt to determine what is causing the toxicity. The provisions further require that following such tests, additional conditions, including WET limits may be included in the permit.

> (2) General provisions for controlling total toxicity.
>
> * * *
>
> (D) If toxicity biomonitoring results indicate that a discharge is exceeding the restrictions on total toxicity in this section, then the permittee shall conduct a toxicity identification evaluation and toxicity reduction evaluation in accordance with permitting procedures of the commission. As a result of a toxicity reduction evaluation, additional conditions may be established in the permit. *Such conditions may include total toxicity limits* [*i.e.*, WET limits] . . . .

30 Tex. Admin. Code § 307.6(e)(2)(D) (emphasis added). Texas WQS also exclude from the definition of "toxicity" "adverse effects caused by concentrations of dissolved salts ... in source waters." 30 Tex. Admin. Code § 307.3(65).

These WQS requirements for toxicity quoted above all apply to SJRA because it discharges to a waterbody that is designated as a "life use" (specifically, "contact recreation, high quality aquatic life and public water supply"). *See* 30 TAC § 307.10 Appendix A (Site-specific Uses and Criteria for Classified Segments)(segment 1008,

Spring Creek). SJRA has previously conducted a TRE and TIEs that indicate chronic toxicity for sub-lethal effects. *Petition* at pp. 5-6.

E. WET Tests and WET Limits

EPA's WET test methods, in 40 C.F.R. § 136.3(a), Table 1A, are vital to the effective control of toxic pollutants in the Nation's waters under the CWA, because chemical-specific limits alone cannot necessarily fully protect against the toxic effects of a facility's effluent. A facility's effluent may be toxic to aquatic life, even though the causative chemical may not be identified. In other cases, discharges of several chemicals in a single effluent, each meeting the applicable individual WQBELs, still can be toxic because of the synergistic effects of the chemical mixture. *See Technical Support Document for Water Quality-based Toxics Control* (TSD), EPA/505/2-09-010 (2nd printing, March 1991), section 1.6 at p. 23 [Ex. # 7, AR # 79]. WET testing can determine the integrated effects of all chemicals in a single effluent sample and detect toxicity caused by pollutant parameters for which there are no water quality standards or test methods. Finally, WET testing is the only *direct* way to measure the toxic effects of the effluent on organisms exposed to it. *Id.*

WET testing involves the comparison of a specific biological outcome in an exposed group of organisms (experimental group) to an unexposed group (control group), to test the hypothesis that the biological outcome is associated with the exposure. Before any conclusions are made from such comparisons, the results are analyzed statistically, to ensure – with reasonable certainty – that any observed difference was not due to chance. *See Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving*

Waters to Freshwater Organisms, EPA-821-R-02-013, at 37 (4th ed. Oct. 2002) section 9.4 at p. 40. [Ex. # 8, AR # 80] (Methods Manual).

In the case of WET testing, small groups of organisms in selected species of aquatic life, *e.g.*, fish, invertebrates, and plants, are exposed to specified concentrations of effluent, in a controlled laboratory setting, to determine the acute or chronic effects of the effluent. These test organisms are typically born and cultured in laboratories for the purpose of toxicity testing. WET test indicator species have been proven to be suitable for WET testing because of their availability, ease of maintenance, and short reproductive cycles. WET test methods are designed to test for certain chronic biological outcomes, *e.g.*, survival, growth, and reproduction. *Methods Manual* at p. 37 [Ex. # 8, AR # 80].

The WET test results are measured, analyzed and may be expressed in terms of one or more statistical endpoints. The Methods Manual describes two: (1) No Observable Effect Concentration (NOEC), the highest concentration of toxicant that causes no observable adverse effect on the organisms; and (2) Inhibition Concentration (IC), the point estimate of the effluent concentration that would cause a specified percentage reduction, *e.g.*, 25 %, in a measurement such as reproduction or growth. For example, if exposing test organisms to a solution composed of equal parts clean dilution water and a facility's effluent causes a 25% reduction in the growth of the organisms, the IC_{25} for growth is 50% effluent. *Methods Manual* at sections 9.1 and 9.2 at p. 37 [Ex. # 8, AR # 80]

Replication – exposing not just one organism but, for example, *ten* organisms to *each* concentration level of effluent, taking the average of that result, and comparing it to an average based on *ten* unexposed sets of control organisms – is an integral part of WET

test method design. WET test methods using fish or invertebrates typically require the use of 60 to 200 organisms per test. Chemical test methods, in comparison, are based on a single measurement of a sample. The large number of replicates, the use of averaging, and statistical methods account for variability and protect against small changes being interpreted as findings of toxicity. *See Methods Manual*, section 9.4.5 at p. 40 [Ex. # 8, AR # 80]

Figure 1. Waterflea (*Ceriodaphnia dubia*) Chronic Toxicity Test Design

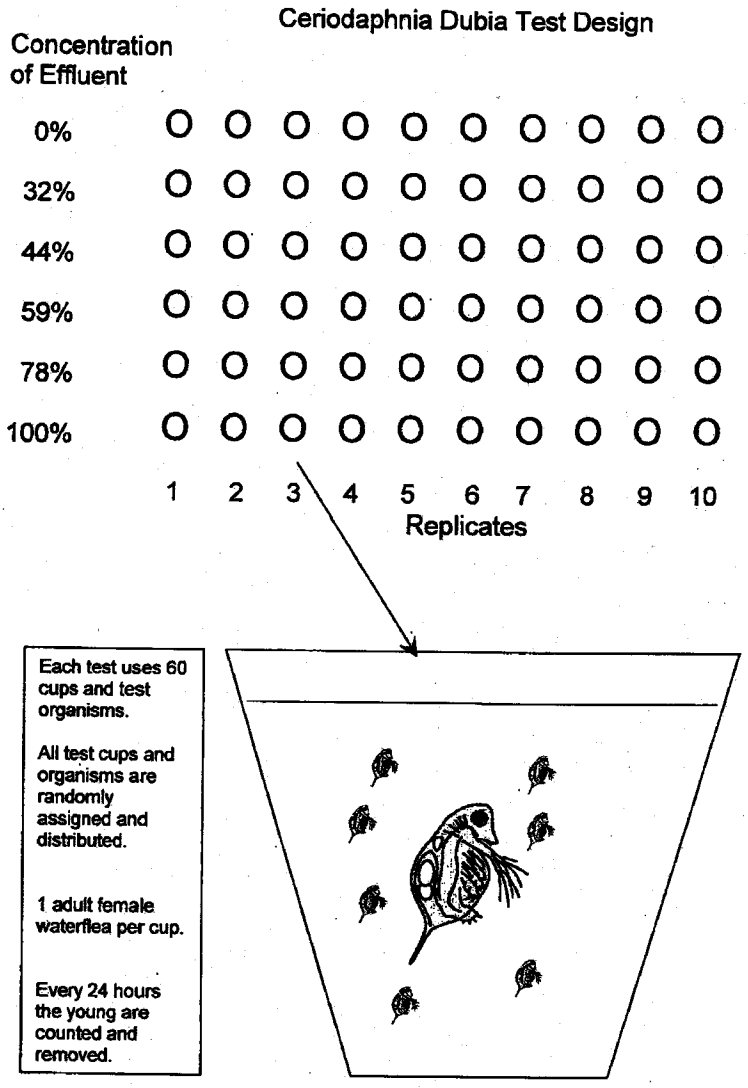

Figure 1 depicts the design of the WET test method used to determine compliance with the WET limit at issue in the Petition, specifically, the *Ceriodaphnia dubia* (*C. dubia*), Survival and Reproduction Test. *Fact Sheet* at p. 23. This test is designed to determine the effect of effluent on the ability of *C. dubia,* a common water flea, to survive and reproduce. Each circle in Figure 1 represents a cup. At the beginning of the test, each cup contains one juvenile female *C. dubia* less than 24 hours old. The top row represents the control group, which is exposed only to the dilution water used in the test; the control group is therefore exposed to no effluent.[1] The experimental groups of test organisms are exposed to the specified concentrations of effluent (in this example 32, 44, 59, 78 and 100%). At the end of the test (typically seven days) the total offspring produced by each adult in each cup are summed. Figure 2, below, provides an example of hypothetical test data collected after the seven-day test period. The results are reported as an average of the number of fleas in each cup, at each effluent level (last column). Each treatment, *i.e.*, effluent dilution, is compared statistically to the control treatment, *i.e.*, the organisms not exposed to the effluent but otherwise subject to all of the other influences as the test organisms. Comparison of the test organisms to the control organisms further isolates possible reasons for differences in organisms' response or "controls" against sources of variability in response to influences other than the effluent to which the test organisms are exposed.

[1] If the dilution water itself contributed to a toxic response in exposed organisms, the response should be most pronounced in the control organisms, though all of the organisms in the 100% effluent group would be exposed to any toxicity from the dilution water.

Figure 2. Example reproduction results for *Ceriodaphnia dubia* toxicity test

Concentration of Effluent	*Ceriodaphnia dubia* Reproduction										Avg. No. Young
Control (0%)	31	33	29	28	32	31	35	29	30	32	31.0
32%	20	17	23	18	19	21	14	22	21	19	19.4
44%	23	15	16	16	19	15	19	10	13	12	15.8
59%	14	8	11	5	8	17	10	8	7	7	9.5
78%	8	7	7	1	2	9	9	5	4	9	6.0
100%	5	8	2	2	6	3	11	4	2	7	5.0
Replicate No.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	

In the Figure 2 example, even though the average number of *C. dubia* in each cup declines after being exposed to even the lowest concentration of effluent (32%) and declines progressively as the samples are exposed to increasing concentrations of effluent, the test methodology requires that the results at each concentration be compared to the control using statistical tools before the analyst can make any conclusions about toxicity.

Evaluation of test results relies on statistical procedures to evaluate the significance between organisms' responses. The Methods Manual identifies two statistical endpoints, NOEC and IC_{25}, and associated procedures to determine those values and evaluate the significance of responses. If the laboratory observes a difference between the organisms exposed to a particular concentration of effluent and the control group, and the difference is so significant that it can be concluded, with reasonable certainty, that the difference is not due to chance, and assuming the test otherwise meets acceptability criteria specified in the test procedures, then the results indicate a valid "failure," and that concentration of effluent is "toxic." In the example above, in all

concentrations of the effluent tested, the reduction in the average number of *C. dubia*, compared to the control was so significant that it can be concluded, with reasonable certainty, that it was not a chance occurrence. Thus, there are toxic effects at all effluent concentrations tested. Accordingly, the "no observed effect concentration," NOEC, for this hypothetical effluent would be <32%.

II. FACTUAL BACKGROUND

A. SJRA Treatment Plant and Procedural History

SJRA owns and operates a publicly owned treatment works (POTW), which is an advanced wastewater treatment facility with a design flow of 7.8 million gallons per day to a tributary of the San Jacinto River Basin in Montgomery County, Texas. Prior to authorization of the Texas NPDES permitting program in 1998, Region 6 was the NPDES permitting agency. At the times relevant to this proceeding, the Texas Commission on Environmental Quality was the permitting agency, subject to EPA oversight.

At the Region's request, on December 2, 2005, TCEQ submitted a revised Texas Pollutant Discharge Elimination System (TPDES) permit for EPA review. *See Letter from Miguel I. Flores, Director, Water Quality Protection Division, EPA Region 6 to Dan Eden, Deputy Director, Texas Commission on Environmental Quality*, dated January 6, 2006 [Ex. # 1, AR # 1]. On January 6, 2006, EPA timely provided its specific objection to issuance of the permit, pursuant to 40 C.F.R. 123.44 and section C.3.b of the Memorandum of Agreement between EPA and TCEQ based on a lack of WET limits required by federal law. *Id.* SJRA was copied on this letter. Specifically, EPA objected that the permit failed to include: (1) appropriate requirements to address sub-lethal

toxicity, (2) a toxicity reduction evaluation (TRE) to identify the causative toxicant(s) and control(s) related to sub-lethal effects, and (3) adequate measures to monitor for persistent sub-lethal test failures. *Id.*

TCEQ issued its permit on January 17, 2006, without including the revisions specified in the Region's objection letter and without notifying EPA that it had done so. *SJRA TPDES permit # 11401-001*, TCEQ Docket No. 2003-1213-MWD, January 17, 2006 [Ex. # 4, AR # 35]. Neither TCEQ nor SJRA took any action in response to the Region's letter of objection.[2] When EPA learned that TCEQ had issued the permit without revisions or notification, EPA transmitted a letter on March 9, 2006, stating that the permit as issued did not meet the minimum requirements to protect the Texas water quality standards and as such was not a Clean Water Act NPDES permit. *Letter from Miguel I. Flores, Director, Water Quality Protection Division, EPA Region 6 to Dan Eden, Deputy Director, Texas Commission on Environmental Quality*, dated March 9, 2006 [Ex. #2, AR # 2]. The Region also reminded TCEQ that Region 6 would assume exclusive authority to issue the permit if the State agency did not revise the permit to satisfy EPA's objections in its specific objection letter by the end of the 90-day period allowed to make revisions. *Id.*; *see also* CWA § 422(d)(2); 40 C.F.R. §§ 122.4(c) and 123.29. The Texas permit issued to SJRA in 1989 was administratively continued. *See* 40 C.F.R. § 122.6.

On April 13, 2006, EPA transmitted a letter informing TCEQ and SJRA that EPA had exclusive authority to issue the permit and requiring SJRA to submit a permit application and WET test data under its Order for Information authority. *Letter from*

[2] Under EPA regulations, "any interested person," e.g., including a permittee, may request a hearing on an EPA objection. 40 C.F.R. § 123.44(e). Neither TCEQ nor SJRA requested such a hearing.

Claudia V. Hosch, Chief, NPDES Permit Branch, EPA Region 6 to Donald R. Sarich, Division Manager, San Jacinto River Authority, dated April 13, 2006 [Ex. # 3, AR # 5]; CWA § 308, 33 U.S.C. § 1318.

EPA received the requested information on June 2, 2006, and analyzed the information submitted according to federal regulations. *Fact Sheet* at p. 4 [Ex. # 6, AR # 60]. The Region proposed a draft permit and, after taking comment, issued a final permit on September 28, 2007. [AR # 96]. SJRA petitioned the Board for review of the permit, but upon review of the SJRA petition and an intervening notification by TCEQ of a different in-stream flow estimation, the Region withdrew the contested conditions and notified the Board, which dismissed the Petition as moot. Order Dismissing Petition for Review (March 28, 2008), NPDES Appeal No. 07-19 [AR # 70]. After re-consideration, the Region proposed to modify the permit on January 29, 2009. *Proposed Modified Permit* at p. 1 [AR # 59]. Prior to proposal and by letter dated November 4, 2008, SJRA submitted a document described as a sub-lethal toxicity evaluation (2008 STE) of the effluent's sub-lethal toxicity. *Letter from Donald R. Sarich, Division Manager, San Jacinto River Authority, to Phillip Jennings, Effluent Toxicity Coordinator, Region 6* [Ex. # 14, AR # 122]. During the public comment period on the Proposed Modified Permit, SJRA submitted comments on March 2, 2009. *Comments* [Ex. # 12, AR # 127]. After consideration of comments received, the Region issued the Modified Permit on July 29, 2009. *Modified Permit* at p. 1 [Ex. # 5, AR # 54].

B. The Modified Permit

The Region had found that the effluent discharged from SJRA Woodlands Plant No.1 Outfall 001 causes an in-stream excursion above the Texas WQS established to

protect aquatic life from toxicity pursuant to 40 C.F.R. § 122.44(d) (water quality based effluent limits required if a discharge causes, has the reasonable potential to cause, or contributes to non-attainment of water quality standards); *Fact Sheet* at p. 4 [Ex. # 6, AR # 60]. The Region found that not only did the discharge exhibit the reasonable potential to cause non-attainment of Texas water quality standards for toxicity, but that numerous sub-lethal test failures over a number of years indicated that there actually have been excursions above the established WQS. *Fact Sheet* Appendix G (documenting dates when WET tests failed, *i.e.,* with "no observed effect concentration" (NOEC) value of less than 78%) [Ex. # 6, AR # 60].

As part of the permit conditions, the Region included WET limits based on chronic toxicity tests using the common water flea that SJRA is challenging in this Petition. *Permit* at part II.D [Ex. # 5, AR # 54]. EPA also allowed SJRA a three-year schedule of compliance for the WET limits. During that three year period, SJRA could perform any additional studies, construction or investigations of its pollutant contributors that it may deem appropriate. *Id.* at Part I.B. In addition, the permit includes a reopener to require chemical-specific effluent limits, additional testing, and/or other appropriate actions to address toxicity should SJRA identify and confirm the toxicant responsible for its toxicity prior to the completion of the compliance schedule. *Id.* at Part II.E(1)(d).

In addition to the WET limit for *C. dubia* measuring sub-lethal toxicity (i.e., impaired growth and reproduction) with a delayed effective date, the permit also includes toxicity testing requirements using *C. dubia* and the fathead minnow that are effective upon issuance of the permit. *Permit*, I.A.1 & n8 & n9, p.2 [Ex, # 5, AR # 54]. Though the Region found that, based on the existing data set measuring toxicity with the fathead

minnow, the SJRA discharge likely had the reasonable potential to cause non-attainment of the water quality standard for toxicity, *Fact Sheet*, Appendix G, p.2 [Ex. 6, AR # 60], the data set was much smaller than the data set developed using the *C. dubia* test. The fathead minnow data set included 21 data points generated between June of 2003 and June of 2008, only two of which indicated toxicity, once in 2003 and again in 2004. *Id.* Rather than impose a permit limit based on toxicity that may have since been resolved, the Region decided to include a condition requiring quarterly testing initially, with the potential to reduce to bi-annually depending on initial test results, as well as a requirement to initiate an evaluation of measures to reduce toxicity if persistent toxicity was found. *Permit*, II.D.5 [Ex. # 5, AR # 54].

STANDARD OF REVIEW

SJRA filed this Petition for Review pursuant to 40 C.F.R. § 124.19(a), which affords persons aggrieved by a Region's NPDES permit decision the opportunity to appeal to the EAB. Although the Board has broad authority to review decisions made in NPDES permit cases, EPA intended the Board's power of review to be exercised "only sparingly." *See* 44 Fed. Reg. 32853, 32887 (June 7, 1979).

In proceedings brought under 40 C.F.R. § 124.19(a), the Board generally will not grant review unless the petitioner establishes that a permit condition is based on a clearly erroneous finding of fact or conclusion of law, or involves an exercise of discretion or an important policy consideration that the Board determines warrants review. 40 C.F.R. § 124.19(a)(1)-(2); *In re Carlota Copper Co.*, 11 E.A.D. 692, 708 (EAB 2004). The burden of demonstrating that review is warranted rests with the petitioner. 40 C.F.R. § 124.19(a); *see Rohm & Haas,* 9 E.A.D. 499, 504 (EAB 2000). A petitioner must argue

with specificity why the Board should grant review. *In re Puerto Rico Electric Power Authority,* 6 E.A.D. 253, 255 (EAB 1995). To meet the threshold of specificity required under 40 C.F.R. § 124.19(a), a petitioner must take two necessary steps: (1) state the objections to the permit that are being raised for review, and (2) explain why the Region's previous response to those objections is clearly erroneous or otherwise warrants review. *See Michigan Dep't of Envtl. Quality v. EPA*, 318 F.3d 705, 708-09 (6th Cir. 2003) (citing *In re Puerto Rico Elec. Power Auth.*, 6 E.A.D. at 255). Thus, the mere repetition of objections made during the comment period or the "mere allegation of error" without specific supporting information are insufficient to warrant review. *In re Phelps Dodge Corp.*, 10 E.A.D. 460, 496, 520 (EAB 2002); *In re Knauf Fiber Glass, GmbH*, 9 E.A.D. 1, 5 (EAB 2000).

Additionally, clear error or reviewable exercise of discretion is not established simply because petitioner presents a difference of opinion or alternative theory regarding a technical matter. *In re Town of Ashland Wastewater Treatment Facility*, 9 E.A.D. 661, 667 (EAB 2001). Instead, when a petitioner challenges the Region's technical judgment, "[p]etitioners must provide compelling arguments as to why the Region's technical judgments or its previous explanations of those judgments are clearly erroneous or worthy of discretionary review." *Id.* at 668 (citing *In re Ash Grove Cement Co.*, 7 E.A.D. 387, 404 (EAB 1997)).

Moreover, where the science in an area is uncertain, a contrary opinion urged by a petitioner will neither establish that a rational, adequately explained judgment by the Region is clearly in error nor overcome the Board's traditional deference to Regional technical determinations. *In re Dominion Energy Brayton Point, L.L.C.*, 12 E.A.D. 490,

511 (EAB 2006). This particularly heavy burden advances the policy imperative of "ensur[ing] that the locus of responsibility for important technical decision making rests primarily with the permitting authority, which has the relevant specialized expertise and experience." *See In re Peabody W. Coal Co.,* 12 E.A.D. 22, 34 (EAB 2005), citing *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 567-68 (EAB 1998), rev. denied sub nom. *Penn Fuel Gas, Inc. v. EPA*, 185 F.3d 862 (3d Cir. 1999). ("[W]here a permit decision pivots on the resolution of a genuine technical dispute or disagreement, the Board prefers not to substitute its judgment for the judgment of the decisionmaker specifically tasked with making such determinations in the first instance.") In such cases, deference to the Region's decision is generally appropriate if "the record demonstrates that the Region duly considered the issues raised in the comments and if the approach ultimately selected by the Region is rational in light of all of the information in the record." *NE Hub Partners* at 567-68. If conflicting views of the Region and a petitioner indicate "bona fide differences of expert opinion or judgment on a technical issue, the Board typically will defer to the Region." *Id.* at 567-68.

Finally, a party petitioning the Board for review must raise "all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by the close of the public comment period (including any public hearing) under section 124.10." *See* 40 C.F.R. § 124.13. Moreover, "the petitioner must have raised during the public comment period the specific argument that the petitioner seeks to raise on appeal; it is not sufficient for the petitioner to have raised a more general or related argument during the public comment period." *See In re Government of the District of*

Columbia Municipal Separate Storm Sewer System, 10 E.A.D 323, 339 (EAB 2002) (construing *In re RockGen Energy Ctr.*, 8 E.A.D. 536, 547-48 (EAB 1999)).

ARGUMENT

The Region properly determined the need for and form of permit limitations and conditions based on applicable Texas water quality standards for toxicity.

I. The Region Properly Included a WET Limit in SJRA's Permit Based on WET Test Data That Demonstrated In-Stream Excursions of the State Water Quality Criteria for Toxicity

As discussed above, Texas water quality criteria require protection against toxic effects, specifically including effects on the growth and reproduction of aquatic life, known as "sub-lethal" toxicity. WET test data submitted by SJRA as required by its NPDES permit has demonstrated significant sub-lethal toxic effects on numerous occasions and over many years. *Fact Sheet* at p. 25 [Ex. # 6, AR# 60]. Based on this data, the Region determined that SJRA's effluent has the reasonable potential to exceed Texas water quality criteria requiring protection against toxicity, and accordingly established WET limits in the permit.

The Petitioners do not challenge the validity of the WET test results – rather, the petitioners argue that despite the sub-lethal WET test failures, the permit should not contain WET limits because a state guidance document, *Procedures to Implement the Texas Surface Water Quality Standards* ("Implementation Procedures"), does not specify WET limits based on sub-lethal WET testing results. The controlling legal requirement, however, is not the guidance document, but rather the federal permitting regulation and the State water quality *standards* approved under CWA section 303(c). *See* 122.44(d)(1)(i) (requiring limits for all pollutants that "will cause, have the reasonable

potential to cause, or contribute to an excursion above any State water quality *standard*...")(emphasis added). As explained below, the State guidance document was never established under State law, submitted to the Region, nor approved as a revision to State water quality standards. Regardless of what the guidance document may recommend regarding State implementation of WET limits in State permits, the federal permit must include limits necessary to meet State water quality standards.

As explained above, the State water quality criteria require protection against sub-lethal toxicity. Although the water quality standards allow for a limited exception where the adverse effects are caused primarily by dissolved salts in the source water, SJRA did not provide sufficient data and information to show that its effluent qualified for this exception. Therefore, based on its finding that the SJRA discharges caused non-attainment of Texas water quality criteria for sub-lethal toxicity, the Region properly included WET limits in the Modified Permit.

A. WET Test Data Demonstrated That SJRA's Effluent Has a Reasonable Potential to Cause Non-Attainment of Texas Water Quality Criteria for Toxicity

Based on WET test data submitted by SJRA, the Region determined that SJRA's effluent has the reasonable potential to cause – and has in fact caused – in-stream excursions above Texas' water quality criteria for toxicity. SJRA developed the data supporting this determination under earlier NPDES permits (issued both by the Region and the State) that had required SJRA to conduct seven-day freshwater WET tests using EPA-promulgated WET test methods to determine whether there were longer-term (chronic) effects on survival (lethal effect) or growth and reproduction (sub-lethal

effects).[3] SJRA's effluent demonstrated significant chronic sub-lethal effects in 14 of 56 tests performed over the past five years, with, in some cases, statistically significant sub-lethal toxicity demonstrated at all effluent concentrations tested (from 86% effluent down to less than 23% effluent).[4] *Fact Sheet* at p. 25 [Ex. # 6, AR # 60].

The Texas water quality criteria provide protection against chronic total toxicity, which is defined in the criteria to include both lethal and sub-lethal effects. Specifically, the criteria provide that "[c]hronic total toxicity, as determined from biomonitoring of effluent samples, will be precluded in all waters in the state with existing or designated aquatic life uses..." 30 Tex. Admin. Code § 307.6(e)(1)(2000). *See also* 30 Tex. Admin. Code § 307.6(b)(2) ("Water in the state with designated or existing aquatic life uses shall not be chronically toxic to aquatic life..."). The criteria specifically define chronic toxicity as including "sub-lethal effects, such as growth impairment and reduced reproductive success." 30 Tex. Admin. Code § 307.3(a)(10).

The Region evaluated whether the discharge has the "reasonable potential" to cause an in-stream excursion above Texas' narrative water quality standards, as required by 40 C.F.R. 122.44(d)(1)(i)(ii) and (v), in order to determine the need for an effluent limit to meet the standards. *Fact Sheet* at pp. 25-26 [Ex. # 6, AR# 60]. In assessing the need for a limit, the Region considered the available WET test data, as well as the effluent critical dilution – essentially, a numeric expression of the "worst case scenario" in-stream flow that serves to translate the narrative water quality criteria for the

[3] Tests for chronic toxicity can also measure lethality. If test organisms die, not only will the tests indicate reductions in growth and reproduction, but tests also measure survival, i.e., the effluent's lethality.

[4] The lower the toxic effluent concentration, the more toxic the effluent. For example, toxicity at effluent concentrations of 23%, 36%, 59%, 71% and 85% would indicate a more toxic effluent than one where an effect was demonstrated only at the 85% effluent concentration and not at the other, lower effluent concentrations tested.

protection of aquatic life, as determined by TCEQ and provided to the Region. *Fact Sheet* at p. 14 [Ex. # 6, AR # 60]. Based on this analysis, the Region found that SJRA's effluent has actually failed (i.e. been demonstrably toxic) for the sub-lethal endpoint numerous times at and well below the effluent critical dilution during the previous permit period. *Id.* That finding means that the discharge not only has the reasonable potential to cause non-attainment of the narrative criteria for sub-lethal toxicity, but that the discharge has actually caused non-attainment of the narrative criteria. *Id.* In other words, "reasonable potential" to exceed the WQS was not merely predicted; actual in-stream excursions above the State's narrative water quality standards had already occurred. *See id.* EPA's regulations at 40 C.F.R. § 122.44(d)(1)(v) specifically require that a permit include WET limits where there is reasonable potential to exceed a state narrative criteria. Accordingly, the Region included the WET limit in this permit.

SJRA now suggests that measures such as monitoring and TREs – as outlined in the State's Implementation Procedures – can be sufficient to protect Texas water quality criteria for sublethal toxicity. *Petition* at p. 26. SJRA did not raise this argument in its comments to the Region during the comment period, and therefore review of this issue has not been preserved and should be denied. *See Gov't of D.C. Mun. Separate Storm Sewer Sys.*, 10 E.A.D. 323, 339 (EAB 2002) ("the petitioner must have raised during the public comment period the specific argument that the petitioner seeks to raise on appeal"). Moreover, the Region disagrees. Neither WET monitoring nor toxicity studies (TREs and TIEs) restrict the discharge of WET, i.e., neither represents an "effluent limitation" restricting the discharge. As such, neither protects against an in-stream

excursion above the water quality criteria requiring protection against lethal and sub-lethal toxicity.

SJRA's proferred control measures would not be consistent with the regulations at 40 C.F.R. § 122.44(d)(1)(v), which require that where a discharge has the reasonable potential to cause or contribute to an in-stream excursion above a narrative criterion within an applicable state water quality standard, "the permit must contain *effluent limits* for whole effluent toxicity" (emphasis added). The term "effluent limitation" is defined in the Clean Water Act as a "restriction…on quantities, rates, and concentrations of chemical, physical, biological and other constituents…" CWA § 502(11), 33 U.S.C. § 1362(11). Monitoring requirements or a TRE are not a "limit" or "limitation" within the meaning of EPA's regulations and the CWA. As EPA indicated in its preamble to 40 C.F.R. § 122.44(d)(1), simply including monitoring requirements as a trigger for WET limits is not sufficient, "because it does not, by itself, restrict the quantity, rate or concentration of pollutants in an effluent." 54 Fed. Reg. 23868, 23875 (June 2, 1989). Monitoring requirements and TREs are merely studies of the discharge that do not, in themselves, restrict or control a toxic discharge as necessary to meet Texas water quality criteria.

B. EPA Is Not Bound By Texas' Implementation Procedures for WET in NPDES Permit Because Implementation Procedures Do Not Constitute State Water Quality Standards

Rather than challenge the WET test data upon which the Region relies or application of federal regulations to that data, SJRA argues that the State's procedures for implementation of water quality standards in State permits do not require WET limits based on sub-lethal WET test failures. *Petition* at p. 21. Specifically, SJRA notes that

the Implementation Procedures call for WET limits only for lethality, based on test results showing lethal effects, and even then, only in some circumstances. *Id.* Regarding sub-lethal effects, the Implementation Procedures urge only an optional TRE in response to "persistent sub-lethal effects." *See* Texas Commission on Environmental Quality, *Procedures to Implement the Texas Surface Water Quality Standards* (Jan. 2003) at p. 111, available at http://www.tceq.state.tx.us. [AR # 78]. The Implementation Procedures do not specify inclusion of WET limits based on sub-lethal toxicity. *See id.*

A key flaw in SJRA's argument is that the Implementation Procedures document is not a Texas water quality standard, but rather, a non-binding, non-regulatory guidance document, even as it relates to the State's permitting. *See Implementation Procedures* at p. 2 [Ex. # 13, AR # 78] ("[T]his is a guidance document and should not be interpreted as a replacement to the rules."); *RTC* at p. 12 [Ex. # 11, AR # 121]. The EAB has specifically rejected the argument that a State policy document controls the Region's determination of what permit conditions are necessary to ensure attainment of State water quality standards for WET. *See J&L Specialty Products Corp.*, 5 E.A.D. 31, 62 (EAB 1994) (upholding EPA's decision to include TRE requirements in permit to implement state water quality standards, even though state policy document cited by petitioners would specify only monitoring). Under federal regulations, what ultimately controls the Region's determination of what permit conditions are necessary is what is required by the state water quality *standards*. *See* 40 C.F.R. § 122.44(d)(1)(v). As discussed above, the Texas WQS require protection against both lethal and sub-lethal toxicity. The Region cannot relax these requirements based on a State guidance document. *See American Cyanamid Co.*, 4 E.A.D. 790, 799 (EAB 1993) ("We do not believe... that EPA can or

should presume to relax an otherwise clear State water quality standard, and thereby risk violating its own obligations under the Clean Water Act, unless there are very compelling reasons to conclude that the State standard does not mean what it says").

NPDES permits must include WET limits where necessary to meet state water quality standards. The Region has never considered the Texas Implementation Procedures to represent new or revised water quality standards and has never approved them as such. *See Fact Sheet* at pp. 3-4 [Ex. 6, AR # 60], *RTC* at p. 12 [Ex. 11, AR # 121]. The only way for a state to revise its water quality standards is through the processes described in CWA section 303(c) and its implementing regulations at 40 C.F.R. Part 131. Specifically, a state must formally submit any new or revised water quality standards to EPA for review, who then must determine whether the new or revised water quality standards meet the requirements of the CWA, and finally either approve or disapprove such standards. CWA § 303(c), 33 U.S.C. § 1313(c); 40 C.F.R. § 131.21. New or revised water quality standards do not go into effect until EPA approves such standards. 40 C.F.R. § 131.21(c)

SJRA attempts to muddy the issue by asserting throughout its brief that the Region "approved" the Implementation Procedures. *See, e.g., Petition* at pp. 12, 18, 19, 21, 23, 24, 26). The stubborn fact remains, however, that the Region never approved the Implementation Procedures as new or revised *water quality standards* under CWA section 303(c). The Region did comment on and "conditionally approve"[5] the Implementation Procedures as part of the Continuing Planning Process required under CWA section 303(e) and 40 C.F.R. § 130.5(c) and the Memorandum of Agreement

[5] EPA's approval was conditional on certain permitting provisions unrelated to WET. *See Letter from Miguel Flores, EPA Region 6, to Mark Vickery, Texas Commission on Environmental Quality*, Nov 22, 2002. [AR # 128]

between the Texas Natural Resource Conservation Commission (State administrative predecessor to TCEQ for administration of the NPDES program) and EPA Region 6. As explained above, however, the Region's conditional approval under CWA section 303(e) did not represent EPA approval of the Implementation Procedures as new or revised water quality standards under CWA section 303(c). Therefore, the Region is not bound by the Implementation Procedures in establishing limits in this permit. Instead, the Region must ensure, pursuant to its regulations at 40 C.F.R. § 122.44(d)(1)(i), that the limits are consistent with the EPA-approved State water quality standards.

The Region disagrees with SJRA's assertion that it has arbitrarily reversed its interpretation of 40 C.F.R. § 122.44(d). *See Petition* at p. 22. The Region's interpretation of this regulation is unchanged. The Region has consistently interpreted this regulation to require permit limits to be as stringent as necessary to meet State water quality standards. SJRA's argues that the Region changed its interpretation as to whether the Implementation Procedures are consistent with Texas' water quality standards. The Region's conclusions – that the Implementation Procedures represented an acceptable interim shift in State implementation in the State's "continuing" planning – did not even purport to apply to the acceptability of the underlying approved water quality standards. The "conditional approval" of the State's Continuing Planning Process is not a change in the Region's interpretation of the NPDES permitting regulation, but rather a factual question as to whether the procedures specified in the Implementation Procedures will result in the levels of protection specified in Texas' water quality criteria. The Region's approval of the State's continuing planning is not a change to any underlying interpretation of 40 C.F.R. § 122.44(d).

This situation is distinguishable from that in the *Ohio Valley* case cited by SJRA. *See Petition* at p. 22, n. 77. In the *Ohio Valley* case, EPA had articulated in several Federal Register notices a prior interpretation of its antidegradation regulation that was clearly at odds with that EPA Region's current interpretation and the *Ohio Valley* court found that the Region had failed to adequately explain why its current interpretation was reasonable in light of the rationale set forth in support of EPA's prior interpretation. *Ohio Valley Environmental Coalition v. Horinko*, 279 F. Supp. 2d 732 (S.D. W.Va. 2003). Here, there was no earlier EPA statement that specifically articulated an interpretation inconsistent with the Region's current interpretation. In other words, at no point has the Region ever explicitly said that the Implementation Procedures are in fact consistent with State water quality criteria, or articulated a basis for such interpretation. True, the Region conditionally approved the Implementation Procedures under the Continuing Planning Process and Memorandum of Agreement – but nowhere in that conditional approval letter does the Region even mention consideration of the federal regulation at 40 C.F.R. § 122.44(d) or corresponding provisions of the State's permitting regulations, or explain why the Implementation Procedures are consistent with such regulations.[6]

Moreover, even if the conditional approval could be viewed as an *implicit* interpretation that the Implementation Procedures were consistent with Texas water

[6] EPA further notes that where EPA has specifically considered this issue, EPA has indicated to the State its interpretation that the Implementation Procedures are not in fact consistent with the state water quality criteria requiring protection against sub-lethal toxicity. *See, e.g., Letter from Miguel Flores, Director, Water Quality Protection Division, EPA Region 6, to Dan Eden, Deputy Director, TCEQ* (Jan. 6, 2006) [Ex. # 1, AR #1] (indicating that if EPA were to issue this permit, it would contain WET limits for sub-lethal toxicity); *Letter from Jane B. Watson, Chief, Ecosystems Protection Branch, EPA Region 6, and Claudia Hosch, NPDES Permits Branch Chief, EPA Region 6, to L'Oreal Stepney, Water Quality Division Director, TCEQ* (Mar. 9, 2006) [Ex. # 17, AR # 111] ("Since the TCEQ water quality standards already provide for protection of aquatic life at the sub-lethal effects, the implementation procedures should be revised with respect to WET limits for sub-lethal effects");

quality criteria, the Supreme Court has recognized an Agency's authority to change its prior interpretation where the agency "justifie[s] [its] change of interpretation with a "reasoned analysis'" for that change. *See Rust v. Sullivan,* 500 U.S. 173, 186-87 (1991)(quoting *Motor Vehicles Mfrs. Ass'n. v. State Farm Mut. Automobile Insurance Co.*, 463 U.S. 29, 42 (1983). Unlike in *Ohio Valley*, where the court found that EPA had failed to explain why its revised interpretation was reasonable – particularly in light of rationale articulated earlier in support of the prior interpretation – here, the Region has clearly explained in the Fact Sheet and Response to Comments the basis for its interpretation that the Implementation Procedures are not sufficient to protect against sub-lethal toxicity as required by Texas water quality criteria.

In its brief, SJRA points out that the Region did not raise its concerns about the Implementation Procedures during the course of a State Office of Administrative Hearings (SOAH) hearing, arguing that the Region's failure to raise this issue somehow confirms that it is arbitrarily changing its interpretation of the regulations. *Petition* at p. 24. SJRA's argument, however, fails to consider the context of (and the passage of time since)[7] the SOAH hearing. At that time, there were lethal WET test failures that the Region believed would be a sufficient basis to require WET limits in the permit; both the Region and TCEQ therefore focused their arguments on defending the validity of these test measurements indicating *lethal* WET test failures. The Region did not need to raise its concern that the Implementation Procedures were insufficient to protect against sub-lethal toxicity as required by Texas water quality criteria because sub-lethal test results

[7] In the SOAH hearing, SJRA contested the State permitting agency's reliance on two WET tests conducted in 2001 and 2002 indicating lethality. [Ex. 15, AR # 129]. The hearing occurred nearly five years ago. The WET test data generated by SJRA that demonstrates sub-lethal toxicity – the data upon which the limit in the Modified Permit is based – spans a time period from 2003 through 2008.

were not specifically at issue. In fact, SJRA specifically acknowledges in its brief that "sub-lethal test results… were not the subject of the state evidentiary hearing." *Petition* at p. 22.

Therefore, that the Region did not raise its concerns about the Implementation Procedures in the SOAH hearing cannot be said to "undercut[] the credibility of the Region's response now," as SJRA asserts. *Petition* at p. 24. As discussed above, the Region did not rely on the Implementation Procedures in developing the Modified Permit because the WET limit is based on sub-lethal WET test failures, and SJRA argues that limits based on sub-lethal WET testing are not required under the Implementation Procedures.

C. SJRA Challenges to the Validity of Sub-lethal WET Testing Are Precluded By The D.C. Circuit Decision

SJRA argues that there is no reliable correlation between sub-lethal WET testing and in-stream toxicity, and that therefore WET limits based on sub-lethal WET testing are not necessary to meet Texas water quality criteria. *Petition* at p. 26. What SJRA argues is really a challenge to the scientific validity of WET test testing with respect to sub-lethal endpoints – a challenge that EPA previously faced in the D.C. Circuit, which *upheld* the EPA action. *See Edison Electric Inst. v. EPA*, 391 F.3d 1267 (D.C. Cir. 2004). In the *Edison Electric Inst.* case, industry challengers made similar arguments regarding the lack of correlation between laboratory toxicity and in-stream impacts – particularly at lower levels of toxicity – but the D.C. Circuit found that EPA had successfully demonstrated such correlation with regard to chronic toxicity. Specifically, the *Edison Electric Inst.* court upheld the WET test methods in full, holding that "[b]efore implementing a test method, EPA must establish that the measured characteristic bears a

rational relationship to real-world conditions; the available studies reasonably support such a conclusion with regard to chronic toxicity." *Edison Electric Inst.* at p. 1274. In supporting this conclusion, the court pointed to EPA's *Technical Support Document for Water Quality Based Toxics Control* (Mar. 1991), which had found that the likelihood that the data may be explained by randomness, rather than actual correlation, to be 0.1%. *See id.* In other words, there is a strong likelihood that data indicating laboratory toxicity is correlated to in-stream impacts and cannot be explained away by randomness.

SJRA's attempt to distinguish the *Edison Electric Inst.* decision is misguided. SJRA argues that the decision applies to "the broader field of 'chronic toxicity,' and does not address the subset issue of 'sub-lethal toxicity.'" *Petition* at p. 31. This argument attempts to prove too much. The industry challengers in the *Edison Electric Inst.* case specifically challenged the WET test procedures that measured growth and reproduction. *See Edison Electric* at 1269 n.1 (listing the specific test procedures challenged by petitioners and noting that "each of these four tests measures chronic toxicity, which is defined in relation to test organisms' growth and reproduction ...."). Growth and reproduction are both *sub-lethal* endpoints – and therefore, sub-lethal WET testing was specifically at issue in the *Edison Electric Inst.* case. The challengers in *Edison Electric Inst.* specifically contested the "representativeness" of the test results – i.e., "the ability of test results to predict in-stream effects accurately." *Edison Electric Inst.* at 1273. That challenge to the representativeness of test results is the same argument that SJRA is raising here – that sub-lethal WET test failures should not result in the inclusion of WET limits in the permit because there is no reliable correlation to actual in-stream toxicity. The court rejected this argument in *Edison Electric Inst.*, upholding all four of EPA's

WET test methods for sub-lethal toxicity, including the specific test methods used by the Region in establishing the WET limits in the Modified Permit.

The Region recognizes – as SJRA points out – that the *Edison Electric* decision specifies that permittees are free to challenge individual WET test results. *See Edison Electric* at 1272 ("[W]e are concerned here only with test methodology, not results of particular tests in the field. Our decision does not endorse the validity of any test result in the future, nor does it foreclose a defense that the result is wrong"). However, here SJRA is not challenging the validity of the individual test results that formed the basis for the WET limits in the permit.[8] SJRA has not raised any arguments as to why the particular sub-lethal WET tests upon which the Region found toxicity was demonstrated were somehow unreliable or invalid. Rather, SJRA accepts that the WET tests were performed correctly and demonstrated failures in the laboratory,[9] but argues that those WET test failures are not sufficiently predictive of actual in-stream toxic effects. The *Edison Electric Inst.* court already considered the issue of whether sub-lethal WET test failures were sufficiently correlated with in-stream toxicity, and found that EPA had reasonably demonstrated that the WET tests were so correlated. SJRA's backhanded challenge to the validity of the test methods for sub-lethal toxicity is therefore precluded in this proceeding.

---

[8] SJRA did challenge certain earlier test results finding lethal WET test failures in the context of the SOAH evidentiary hearing. However, these earlier WET test results (from November 2001 and January 2002) are not the basis for the WET limits in the permit at issue. As discussed in n6, *supra*, the WET limits in this permit are based on WET tests conducted from April 2003 to June 2008 indicating sub-lethal toxicity.

[9] *See infra* at Section II.B, pp. 56-60, for similar arguments regarding "single test failures" and the findings of the *Edison Electric* court.

D. EPA Is Not Bound by Findings of the Texas Administrative Tribunal, But Rather Has Independent Duty to Ensure Permit Limits Are As Stringent As Necessary To Meet Water Quality Standards

The Region recognizes that a Texas administrative law judge concluded, based on an evidentiary hearing, that WET limits were not required in SJRA's permit in order to meet Texas water quality criteria. SJRA argues that the Region's action in federalizing the permit following the State administrative adjudication decision somehow "thwarts the intent of the delegation of federal programs..." *Petition* at p. 25. In fact, the opposite is true. The Region's action in federalizing the permit is entirely consistent with and furthers the intent of the Clean Water Act, which authorizes EPA to approve state NPDES permitting programs to administer NDPES in lieu of EPA, but provides EPA with a crucial oversight role in ensuring that state-issued permits are consistent with federal regulations. *See* CWA § 402(d), 33 U.S.C. § 1342(d). *See also* 40 C.F.R. § 123.44(c)(1) (authorizing EPA to object to issuance of a state permit if the permit fails to apply or ensure compliance with any applicable regulatory requirement). EPA's regulations specifically authorize the Region to object to issuance of a permit if "[t]he effluent limits in the permit fail to satisfy the requirements of 40 C.F.R. § 122.44(d)," the regulatory provision requiring that permits contain limits as stringent as necessary to meet state water quality standards. Accordingly, the Region is not bound by the conclusion of a Texas administrative tribunal with respect to the need for WET limits in SJRA's permit. Rather, the Region is specifically authorized to object to permits that it determines fail to meet the federal regulatory requirements.

Moreover, in issuing an NPDES permit, EPA has an independent obligation to ensure that permit limits are as stringent as necessary to meet state water quality

standards, as required under 40 C.F.R. § 122.44(d)(1). In other words, EPA cannot simply rely on a state's interpretation of what limits are protective of state water quality standards – but rather, must independently ensure that the permit contains any more stringent limits that are necessary to meet state standards. *See In re City of Jacksonville, District II Wastewater Treatment Plant,* 4 E.A.D. 150, 158 (EAB 1992) ("[w]hen the Region reasonably believes that a state water quality standard requires a more stringent permit limitation than specified by the State, the Region has an independent duty under CWA 301(b)(1)(C) to include the more stringent permit limitation.")[10]. In this earlier State adjudication, the Region had specifically disagreed with SJRA's arguments, and ultimately the SOAH's conclusion, that the two WET test failures for lethality (in November 2001 and January 2002) were invalid and therefore did not require WET limits in the permit. *See Proposal for Decision*, State Office of Administrative Hearings (June 15, 2005) at pp. 23-30 (explaining EPA's reasons for disagreement) [Ex. # 15, AR # 129]. The Region determined, based on various sub-lethal WET test failures, including failures since the SOAH hearing, that WET limits were required in the Modified Permit in order to protect against sub-lethal toxicity, as required by State water quality criteria. The Region therefore properly included WET limits in this permit based on sub-lethal WET test failures.

Perhaps most important in the Petition currently before the Board, the Region did not rely on the WET tests that were at issue in the SOAH hearing – specifically, the November 2001 and January 2002 WET test failures for lethality – because, among other

[10] EPA notes that here, the State of Texas waived certification of the Modified Permit under CWA section 401. As the Board has recognized, "[w]here … the State waives certification so that the Region is left to exercise its own judgment in establishing permit conditions to implement the State water quality standards, the Region's judgment will be upheld as long as it is reasonable." *J&L Specialty Products Corp.*, 5 E.A.D. 31, 62 (EAB 1994).

things, SJRA's effluent has demonstrated toxicity so many times since those test failures. *RTC* at p. 13 [Ex. # 11, AR # 121]. The WET limit in this particular permit is based on *sub-lethal* WET test failures documented *since* 2002– not the lethal test failures that SOAH found to be invalid individual tests. Therefore, even if EPA were somehow bound by the holding of the SOAH hearing that the lethal test failures at issue were invalid, it would have no bearing on the WET limit in the Modified Permit, which is based on demonstrated sub-lethal WET test failures.

The Region disagrees with SJRA's assertion that federalization of the permit somehow prevents the permittees from being able to challenge the validity of individual test results in contravention of the *Edison Electric Inst.* decision. SJRA is certainly still free to challenge the validity of the sub-lethal WET test results underlying the WET limits in this EPA-issued permit, but it has not done so here. SJRA has not raised any issues with respect to the validity of the results of these specific tests, but rather the reliability of all the valid test results demonstrating toxicity.[11] SJRA's earlier administrative State adjudicatory challenge with respect to entirely different tests is simply not relevant to the permitting decision here.

E. The Region Adequately Explained its Decision That SJRA's 2008 Sub-lethal Toxicity Evaluation Failed To Demonstrate That WET Test Failures Were Primarily Due To SJRA's Source Water

SJRA next argues that a toxicity evaluation, the "2008 Sub-lethal Toxicity Evaluation" (2008 STE), that it provided to the Region soon before proposal of the Modified Permit establishes that the effluent's demonstrated toxicity qualifies for an exemption from Texas water quality criteria, which excludes from the definition of

[11] SJRA obviously does not contest the reliability of the valid test results that do not indicate toxicity. The *Edison Electric* court recognized, however, that WET tests may sometimes indicate "no toxicity" when toxicity should be indicated. 371 F.3d at 1271-72.

toxicity adverse effects caused by concentrations of dissolved salts originating in the source water. *Petition* at p. 33. Due to the timing of the "three year" study submission, and the Region's lack of participation in the development of or notice regarding its preparation, the Region concedes that the Fact Sheet to the Modified Permit did not discuss the 2008 STE. As a consequence, the only available administrative record relating to the 2008 STE study consists of the SJRA submission itself, further description and argument by SJRA in its comments on the Modified Permit, and the Region's responses to comments.

The Region responded to the SJRA comments premised on the 2008 STE. *RTC* at pp. 8-11 [Ex. # 11, AR # 121]. Regarding the conclusions of the 2008 STE that were specific to the SJRA effluent, SJRA argued that the valid measures of WET test failures were "the result of the unusual ionic composition of the dissolved salts in the potable water supply" serving the community. *Comments* at p. 7 [Ex. # 12, AR # 127]. The comment had relied on the 2008 STE for the conclusion that "variability of the test organisms' sensitivity to the ionic characteristics of the water supply, including high alkalinity and low hardness, is the cause of the reported test failures." *Id.* The comment closed by noting that the "information, analysis and conclusion of the 2008 STE all support the conclusion that rather than imposing WET limits, SJRA qualifies for an exemption from such limits." *Id.* The Region prepared a more lengthy response to this brief comment. *RTC* at pp. 8-11 [Ex. # 11, AR # 121].

In responding to this comment, the Region disagreed with SJRA's sweeping assertion that the 2008 STE "explains that variability of the test organisms' sensitivity to the ionic characteristics of the water supply … is the cause of the reported test failures."

RTC at p. 8 [Ex. # 11, AR # 121]. The Region responded that the conclusion was conjectural and not supported by data in the study, and the Region hypothesized that the analyst was unable to identify a specific toxicant causing the WET test failures. *Id.* First, the Region noted that the 2008 STE did not establish that well water that has been treated to attain drinking water quality and purity, then passed through homes, businesses, and commercial establishments in a community of 88,000, then routed through a wastewater treatment plant was toxic primarily due to the variability of test organisms as it relates to concentrations of salts in the original well water. *Id.* at p. 9. The Region identified the six components of the 2008 STE, and then pointed to language in the STE itself that subsequently dismisses the results of each component as either inconclusive or otherwise not useful. *Id.* Of particular relevance to the issue relating to the "source water" exemption in the water quality studies, the Region noted that the 2008 STE itself indicated that the WET tests of the water supply "exhibited a range of responses from no effect, to sub-lethal effects, to lethal effects."[12] *Id.* The Region further explained that the 2008 STE lacked certain analyses and data that would be necessary to validate SJRA's conclusion. *Id.*

The Region disagreed regarding the SJRA effluent's qualification for the "source water" exemption from Texas water quality criteria for toxicity. *RTC* at p. 10 [Ex. # 11, AR # 121]. The Region explained that the exemption was developed with specific respect to potential toxicity from discharges from facilities in areas of South and West Texas whose water supplies contain lethally toxic levels of total dissolved solids and that discharge into streams of similar salinity characteristics, which the Region distinguished

[12] If dissolved salts in the source water, in this case groundwater from fixed wells, were the primary source of toxicity, presumably the toxic effects would be more constant and consistent.

from the source water serving SJRA's community. *Id.* The Region noted that application of the exemption was very rare, i.e., only to select industrial facilities, where the total dissolved solids levels, ionic constituents, and relative ratios of those ions in the influent, effluent, and receiving stream have an "obvious similarity and connection." *Id.* The Region concluded that the 2008 STE did not make those connections for SJRA and the receiving water. *Id.*

By challenging the Region's responses to its brief comment, SJRA attempts to argue before the Board (with much greater specificity than provided in its actual comments) that the 2008 STE demonstrates that its effluent's numerous sub-lethal WET test failures are attributable not to the toxicity of its effluent, but rather to the high salinity of its "source water." *Petition* at p. 32. SJRA argues that its effluent is not toxic within the meaning of Texas WQSs, which excludes from the definition of "toxicity" "adverse effects caused by concentrations of dissolved salts… in source waters." 30 Tex. Admin. Code, Part 1, § 307.3(65). As explained in the Region's Response to Comments, however, SJRA failed to provide sufficient information to explain why its effluent would qualify for the "source water" exemption under Texas water quality criteria. *RTC* at p. 10 [Ex. # 11, AR # 121]. Moreover, SJRA fails to present or sufficiently explain the data to reasonably support the conclusion that the test failures are due primarily to the levels of dissolved salts in the source water. *See RTC* at pp. 8-11 [Ex. # 11, AR # 121]. In its brief, SJRA attempts to explain away the Region's criticisms of the STE as invalid or misguided. *Petition* at pp. 33-46. After reviewing the arguments presented in SJRA's brief, the Region continues to believe that SJRA has failed to present the necessary data to demonstrate that dissolved salts, which SJRA characterizes as low hardness and high

alkalinity, in the source water is the primary cause of the numerous sub-lethal WET test failures. The Region will address each of SJRA's arguments below.

First, with respect to the Region's explanation that the dissolved salts exemption is limited to certain streams in Texas, SJRA now argues in its brief that the Region failed to cite to a particular provision in the Texas water quality criteria limiting the application of this exception. *Petition* at p. 48. While it is accurate that the Region did not include a specific citation in its Response to Comments, the Region did fully explain the intention behind this limited exception. *See RTC* at p. 10 [Ex. # 11, AR # 121] (noting that this exemption was developed for facilities whose water supplies contain naturally toxic levels of dissolved salts and that discharge to streams of similar salinity characteristics).

This intention is reflected in the preamble to the Texas water quality standards regulation, about which the Board can take official notice. 20 Tex. Reg. 4701 (June 30, 1995). In the past, the Board has on occasion considered documents not included in the administrative record by the Region at the time of decision-making when the Board considers that decision at the appellate stage. In an administrative analogue to judicial notice, the Board has characterized its consideration of such documents as "official notice." *In re Arecibo & Aguadilla Regional Wastewater Treatment Plants,* 12 E.A.D. 97, 145 n86 (EAB 2005) (taking "official notice" of official public documents)(citations omitted).

The preamble to the Texas water quality standards regulation explains that some streams in Texas have natural, in-stream concentrations of dissolved salts that are relatively high; that organisms in such waters have adapted to such concentrations over long periods of time; and that organisms in waters that receive high concentrations of

dissolved salts from man-induced activities do not have a similar ability for adaptation. 20 Tex. Reg. at 4719. In other words, the purpose of this exclusion is to avoid findings of toxicity when organisms in the waters would have adapted to exposures to such concentrations over long periods of time. Absent information about receiving water dissolved salt levels, ionic concentrations and relative ratios in the effluent and the receiving stream, the Region could not have determined whether SJRA's receiving water is one in which organisms would have adapted to naturally high salinity or would be subject to anthropogenic sources of salinity. As indicated in the Response to Comments, SJRA's 2008 STE simply did not provide the necessary data to show that the purpose of this exemption would be served. *See RTC* at p. 10 [Ex. # 11, AR # 121].

The Region further notes that the Texas Implementation Procedures (upon which SJRA relies for its argument that only studies, and not limits, are required for sub-lethal WET test failures) also describe how a permittee may determine whether its discharge qualifies for the exception, providing, among other things, that "EPA will review any protocol that could affect permits… that are subject to EPA approval." *Implementation Procedures* at p. 122 [Ex. # 13, AR # 78]. SJRA never provided the Region with an opportunity to review the design of the testing to be conducted in the 2008 STE, only the results.

SJRA argues that the Region mischaracterized the 2008 STE report by noting that the 2008 STE report itself dismissed the various sub-studies in the STE as "inconclusive or otherwise not useful." *Petition* at p. 33. First, SJRA defends the findings of its mock effluent WET tests, arguing that even though the results were inconsistent, they were not "inconclusive." *Petition* at p. 34. SJRA explains that the WET test failure rate of mock

effluent (consisting only of laboratory grade salts to match the ionic composition of the plant's effluent) was similar to that of the plant's effluent. In both cases, there were failures in about 40% of the tests. SJRA argues that "[t]he finding that the sub-lethal WET test failure rate of the mock effluent is the same as the sub-lethal 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 sub-lethal failures." *Id.*

The Region analyzed this data, however, and reasonably determined that it was inconclusive, as explained in the Response to Comments. *RTC* at p. 9 [Ex. # 11, AR # 121]. Given that the salinity of the effluent is relatively constant (i.e. does not fluctuate significantly), if the WET test failures of the Plant effluent were due to salinity, the failure rates should, in fact, be consistent. In other words, WET tests should be passing consistently or failing consistently – not passing 60% of the time and failing 40% of the time. The fact that the failure rate is <u>not</u> consistent indicates that there likely is some other toxicant – one that is more variable in the effluent than groundwater salinity – that is causing the WET test failures. This is not surprising, given that the facility is a POTW, where the influent can vary from day to day, or week to week, depending on the nature of the discharges from the numerous industrial, commercial, residential, municipal and storm water sources that discharge wastewaters into POTW systems for treatment. Because of this inconsistency in the WET test failures, the Region reasonably concluded in its Response to Comments that the data submitted by SJRA in 2008 STE fails to demonstrate that the sub-lethal WET test failures are "caused by" salinity, within the meaning of the Texas water quality criteria. [13]

[13] This elaboration of the Region's response to SJRA's brief comment submitted during the comment period (*Comments* at p.7) [Ex. # 12, AR # 127] is provided to further explain the Region's response, in light

SJRA next attempts to defend the conclusions of the 2008 STE's various other sub-studies, arguing that the Region took quotations from the report out of context in finding that these sub-studies were inconclusive. The Region, however, did review and consider the sub-studies and reasonably determined that they failed to support SJRA's conclusion that the WET test failures were attributable to salinity in the source water, as documented in the Response to Comments. *See RTC* at pp. 9-10 [Ex. # 11, AR # 121]. Nothing in SJRA's Petition undermines the reasonableness of the Region's conclusions. With respect to the ion exchange study, SJRA acknowledges that the sub-study was "not informative." *Petition* at p. 35. SJRA also concedes that "it is not expected that anything significant would be learned from [the colloidal solids] study," thus confirming the reasonableness of the Region's earlier conclusion *See id.* With respect to the CO_2 atmosphere tests, the Petition acknowledges that the test results were highly variable, as the Region had noted in its Response to Comments (*RTC* at p. 9) [Ex. # 11, AR # 121], but argues that "[i]t is not clear in what way the Region believes this information refutes the study conclusion." For the reasons discussed above, the Region believes that the inconsistency in the WET test results of the SJRA plant's effluent – i.e. passing 60% of the time and failing 40% of the time – indicates that something other than salinity in the

---

of the arguments now presented by SJRA in its Petition. The regulations require that persons who seek review of a permit decision "must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by the close of the comment period." 40 C.F.R. 124.13. SJRA did not elaborate on the 2008 STE during the comment period, but merely alleged that the "information, analysis and conclusion of the 2008 STE all support the conclusion" that SJRA "qualifies for an exemption" from the applicable water quality standard for toxicity. Comments at p.7 [Ex. # 12, AR # 127]. In the cover letter attached to the 72 page STE, SJRA did not raise issues or present argument, but merely explained that the report "demonstrate[d] SJRA's efforts to identify the cause(s) of the sporadic sub-lethal test failures." Cover letter to 2008 STE, p.1 [Ex. # 14, AR # 122]. The Region should not be compelled to divine the scope and nuances of a commenter's concern beyond the comment presented during the comment period. The commenter is obliged to raise its concerns with specificity; the Region should not be required to "figure out" the issues the commenter is raising and the commenter's supporting arguments.

source water is causing the numerous sub-lethal WET test failures. The Region would expect that if the toxicant were in fact salinity, the results would largely be consistent, and therefore does not believe that the CO_2 atmosphere tests support SJRA's arguments.[14]

In addition, the Region expressed serious concerns about the techniques used for toxicity testing for the CO_2 atmosphere tests in the STE. *RTC* at pp. 9-10 [Ex. # 11, AR # 121]. SJRA now argues to the Board that these criticisms are unfounded. *Petition* at p. 36. For the reasons specified in the Response to Comments, the Region disagrees with SJRA's assertion that the 2008 STE relied on "accepted techniques for toxicity testing." *Id.*

First, the Region had concerns about the use of samples that were between three and thirteen weeks old, which as explained in Response to Comments is far past the 72 hour maximum holding time for compliance tests. *RTC* at p. 9. [Ex. # 11, AR # 121]. In fact, the WET Test Methods Manual specifies that "[i]f data from the samples are to be acceptable for use in the NPDES Program, the lapsed time (holding time) from sample collection to first use of each … sample must not exceed 36 h[ours]," allowing for an extension of this holding time for up to 72 hours only where the permittee is able to provide "supportive data which show that the toxicity of the sample is not reduced." *Methods Manual* at p. 32 [Ex. # 8, AR #80]. The Method Manual's primary concern with the use of an old sample is that toxicity can dissipate over time – which SJRA in fact acknowledges in its brief "is certainly true in some cases." *Petition* at p. 36.

Attempting to minimize this concern now, SJRA points to the fact that in one of the effluent samples used in this study, the sample exhibited greater toxicity in a later test

[14] *See supra* n13.

source water is causing the numerous sub-lethal WET test failures. The Region would expect that if the toxicant were in fact salinity, the results would largely be consistent, and therefore does not believe that the CO_2 atmosphere tests support SJRA's arguments.[14]

In addition, the Region expressed serious concerns about the techniques used for toxicity testing for the CO_2 atmosphere tests in the STE. *RTC* at pp. 9-10 [Ex. # 11, AR # 121]. SJRA now argues to the Board that these criticisms are unfounded. *Petition* at p. 36. For the reasons specified in the Response to Comments, the Region disagrees with SJRA's assertion that the 2008 STE relied on "accepted techniques for toxicity testing." *Id.*

First, the Region had concerns about the use of samples that were between three and thirteen weeks old, which as explained in Response to Comments is far past the 72 hour maximum holding time for compliance tests. *RTC* at p. 9. [Ex. # 11, AR # 121]. In fact, the WET Test Methods Manual specifies that "[i]f data from the samples are to be acceptable for use in the NPDES Program, the lapsed time (holding time) from sample collection to first use of each … sample must not exceed 36 h[ours]," allowing for an extension of this holding time for up to 72 hours only where the permittee is able to provide "supportive data which show that the toxicity of the sample is not reduced." *Methods Manual* at p. 32 [Ex. # 8, AR #80]. The Method Manual's primary concern with the use of an old sample is that toxicity can dissipate over time – which SJRA in fact acknowledges in its brief "is certainly true in some cases." *Petition* at p. 36.

Attempting to minimize this concern now, SJRA points to the fact that in one of the effluent samples used in this study, the sample exhibited greater toxicity in a later test

[14] *See supra* n13.

conducted three weeks after an initial test, thus showing that the causative substance was not lost within the first 72 hours. *Petition* at p. 36. Even if this were the case with respect to *one* out of the many effluent samples tested in the 2008 STE, that single instance does not diminish the Region's concern that the toxicity of effluent samples can dissipate over time in many cases. SJRA does not proffer any supporting data to show that the toxicity of other effluent samples was not reduced. The Region thus reasonably determined that the 2008 STE improperly relied on older samples in toxicity testing.

Second, the Region expressed concerns about the fact that the 2008 STE studies were conducted on 100% effluent. *See RTC* at p. 9 [Ex. # 11, AR # 121]. In its brief, SJRA now claims that this is "standard practice in studies of this type." *Petition* at p. 37. While the Region agrees that it may be standard practice to conduct one set of tests at 100% effluent, that standard practice is not adequate to evaluate causes of toxicity at much lower concentrations of effluent, such as has occurred with SJRA. *See* U.S. Environmental Protection Agency, *Methods Manual* at p. 32 [Ex. # 8, AR #80] (Recommending use of a series of five effluent concentrations to ensure that there is sufficient information on the dose-response relationship); *TSD* at p. 57 [Ex. # 7, AR # 79] ("The use of single concentration toxicity tests is strongly discouraged ...."). To explain toxicity at lower concentrations of effluent, the 2008 STE should have evaluated a series of dilutions in order to determine whether there are toxic effects at lesser dilutions – including, in this case, at the critical dilution of 78% and down as low as the 23% effluent dilution, the concentration at which at least one test showed statistically significant sub-lethal toxicity. Lacking that specific type of test data, the Region could not reasonably

reach the conclusion that SJRA reached based on its 2008 STE – that there are no other toxicants in its effluent and that all toxicity is related primarily to its source water.

SJRA then goes on to attack as "misleading" the Region's concern specified in its Response to Comments that "the metals analyses performed after 2006 do not include zinc or copper." *Petition* at p. 37. SJRA argues that it conducted initial characterization studies that eliminated zinc and copper as possible causes. *Id.* at pp. 37-38. As indicated in the Response to Comments, however, the Region determined that it was not appropriate to discontinue testing for zinc or copper, in light of an available scientific study by N.L. Cooper ("Cooper study"), which demonstrated that zinc and copper at levels in SJRA's effluent could cause sub-lethal effects. *RTC* at p. 10 [Ex. # 11, AR # 121]. The Cooper study, which is included in the record, found significantly reduced reproduction in test solutions containing levels of copper, zinc, and lead much lower than those reported by SJRA. Cooper, Naomi L. et al., *Toxicity of Copper, Lead and Zinc Mixtures to Ceriodaphnia dubia and Daphnia carinata*, Ecotoxocology and Environmental Safety 70 (2009), 1523-1528 at 1525 [Ex. # 16, AR # 106].

While SJRA acknowledges the findings of this article in its Petition, it argues that it differs from "previous research." *Petition* at p. 38. Although the Petition is not clear as to the "previous research" to which it refers, SJRA attempts to discount the findings of the Cooper study by arguing that "if water quality standards were to be based on these findings, the standards would be up to 10 times less than the current criteria." *Id.* Even if this were the case, such a conclusion does not necessarily refute the findings of the Cooper study as it relates to copper and zinc toxicity at levels measured in SJRA's effluent. The water quality criteria that SJRA refers to in its brief are chemical-specific

criteria, not criteria for WET, which can be more stringent than chemical-specific criteria to protect against the synergistic, additive, and antagonistic effects of combinations of chemicals. *See TSD* at pp. 20-21 [Ex. # 7, AR # 79]. Moreover, the findings of the Cooper study may in fact call for more stringent limits to protect against toxicity; the fact that limits are not more stringent does not mean Cooper's findings are wrong.

SJRA next dismisses as "irrelevant" the Region's concern that concurrent tests were not always conducted on three types of samples, arguing that concurrent testing is "not necessary or even meaningful." *Petition* at p. 39. The Region disagrees. SJRA concluded based on the 2008 STE that all toxicity at these different plants is due to the same cause without any evidence other than a similarity in the frequency of test failures. WET test failure frequency, however, could just as easily be related to intermittent and totally separate batch discharges from within the POTW's collection systems or other sources, some of which could have been revealed through concurrent testing. [15]

SJRA also dismisses as irrelevant the Region's concern that the method used to report the results is not consistent. *Petition* at p. 39. The Region detailed in its Response to Comments the particular deficiencies in the reporting of the test results, including that the data were reported based on different test endpoints (e.g., percent effluent NOECs, percent Difference from Control, or Pass/Fail), explaining that, as a result, there were "not enough comparable test results to validate [SJRA's] conclusion"). *RTC* at p. 10 [Ex. # 11, AR # 121]. SJRA apparently perceives no obligation to present the data in a way that the Region can understand and interpret. *Petition* at p. 40 ("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."). Again, the Region disagrees. SJRA is

[15] *See supra* n13.

arguing that the adverse effects at issue are associated with salinity and thus not "toxicity" under Texas water quality standards. In order to do so, SJRA must present its data in a way that would allow the Region to evaluate supporting data and determine whether it can support SJRA's conclusion. The Region cannot be expected to simply accept SJRA's conclusion without having access to the necessary underlying data to support it.

SJRA next attempts to undermine the Region's conclusion that ionic imbalance cannot be the cause of test failures because test failures occurred in samples containing only 23% Plant effluent. *Petition* at p. 40. As explained in the Response to Comments, SJRA has presented no data to suggest that the mock effluent (consisting of only laboratory grade salts matching the ionic composition of the source water) could result in test failures at dilutions of 23%. *RTC* at p. 11 [Ex. # 11, AR # 121]. Instead, the Petition now attempts to challenge for the first time the validity of the two test failures for plant effluent at 23%, suggesting that 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." *Petition* at p. 41. SJRA submitted these 2008 STE test results to the Region as valid, and cannot now challenge the validity of these results, particularly when it failed to do so in its comments on the draft permit. *See* 40 C.F.R. § 124.13 (requiring permittee to raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by the close of the public comment period); *In re Broward Cty, Florida*, 6 E.A.D. 535, 553 (EAB 1996) (denying review of petitioner's argument that Region erred in selecting test species, where petitioner failed to sufficiently articulate its objections during the public comment period).

The Region further notes that even if these two tests were invalid, SJRA fails to present any data to demonstrate that the numerous other WET test failures at dilutions less than 85% effluent were attributable to salinity. As discussed above, SJRA conducted the tests of mock effluent at only 100% effluent and 85% effluent – thus failing to provide any data indicating whether salinity could be the cause of test failures at any lower dilutions.

Finally, SJRA challenges the validity of the Region's assertion that other POTWs drawing source water from the same aquifer have not had similar WET test failures. *Petition* at p. 42. In the Response to Comments, the Region explained that two POTWs (Shenandoah and the Southern Montgomery County Municipal Utility District) drawing water from the same aquifers as the SJRA facility have both reported passing all WET tests in 100% effluent. *RTC* at p. 11 [Ex. # 11, AR # 121]. In its Petition, SJRA argues that the quality of the water supply for these two facilities is "significantly different" than the quality of the water supply for its facility. *Petition* at p. 42. The Region disagrees. With respect to alkalinity, the numbers for all of the facilities in the Table provided in SJRA's Petition range from 201 mg/L to 281 mg/L $CaCO_3$, which the Region considers to be within a similar range. *Id.* at p. 44, Table A. With respect to hardness, the total hardness numbers for the source water for the SJRA plant was 23 mg/L $CaCO_3$ in 2005, compared with 21 mg/L for the Shenendoah POTW and 29 mg/L for the SMCMUD POTW – also within a similar range. Even the hardness value of 48 mg/L reported for the SJRA plant's source water in 2004 would not be considered "significantly different" from the other numbers.[16]

---

[16] *See supra* n13.

SJRA's claim for eligibility for the exclusion for "dissolved salts in source water" is premised on its characterization of its own source water as "low hardness and high alkalinity." The hardness values reported for the other two POTWs, however, are *less* than those of the SJRA plant's source water, and therefore would be expected to be *more toxic*, if anything, than the SJRA plant's source water, thus undermining SJRA's suggestion that the quality of the SJRA influent source water was contributing to greater toxicity for the SJRA plant than these other POTWs. [17]

SJRA further argues that SMCMUD has in fact reported sub-lethal test failures over the past five years. The WET test data available to the Region at the time of issuance of the Modified Permit, however, did not indicate any such failures.[18] *RTC* at p. 11. The Petition also argues that SJRA could not confirm whether the Shenandoah facility has had WET test failures during the last five years because the database only includes results from six WET tests, only one of which included sub-lethal test results. *Petition* at p. 46. The Region notes that, except for the two to three most recent reporting quarters, any WET test failures would be available on the database; the fact that the six tests reported in the database all indicated passing in 100% effluent provided a reasonable basis for the Region to conclude in its Response to Comments that there were no WET test failures during this time. *RTC* at p. 11 [Ex. # 11, AR # 121].

In conclusion, the Region disagrees with SJRA's assertion that the Region's actions were arbitrary and capricious in rejecting SJRA's conclusion that the measured

---

[17] *See supra* n13.

[18] SMCMUD did report one sublethal test failure in the second quarter of 2009, but this information was not available in EPA's Online Tracking Information System (OTIS) at the time EPA developed its Response to Comments. The most recent data available on OTIS indicates that in the third quarter of 2009, SMCMUD passed all WET tests for both lethal and sublethal toxicity. *See* OTIS database at http://www.epa-otis.gov/otis.

sub-lethal toxicity is caused by salinity in the source water. The Region has thoroughly reviewed SJRA's 2008 STE, and for the reasons discussed above and in the Response to Comments, the Region reasonably determined that SJRA's 2008 STE fails to demonstrate this causation. Given the fundamentally scientific and technical nature of this inquiry, the Board should defer to the Region's determination. *See Hecla Mining Company Lucky Friday Mine*, NPDES Appeal No. 06-05, slip op. at 26, no. 27 (EAB Oct. 31, 2006), 13 E.A.D. at __; ("As we have explained on many occasions, the Board assigns a particularly heavy burden to a petitioner seeking review of a permit based on issues that are fundamentally scientific or technical in nature."). *See also In re Gov't of DC Mun. Separate Sewer Sys.*, 10 E.A.D. 323, 348 (EAB 2002); *In re Steel Dynamics Inc.*, 9 E.A.D. 165, 201 (EAB 2000).

II. The Permit Reasonably Articulates the Form of the WET Limit

The permit reasonably establishes a chronic WET limit measured using *C. dubia*, the violation of which constitutes violation of the permit. The Fact Sheet explains that a statistically significant sub-lethal effect, i.e., impairment to growth or reproduction, causes non-attainment of the applicable Texas water quality standard for toxicity at the critical dilution available in the receiving water (78%, after considering available dilution). *Fact Sheet*, pp. 5-6, 25-56 [Ex. # 6, AR # 60]. Based on the Region's determination that SJRA's discharge causes non-attainment of the Texas water quality standards, the Region included an effluent limit consistent with the regulatory requirement for establishment of a water quality based effluent limitation for WET. *See* 40 C.F.R. 122.44(d)(1)(v). As already noted, SJRA does not challenge the dataset upon which the Region determined that the discharge causes non-attainment of the relevant

narrative water quality criterion. That SJRA dataset indicates test failures below the critical dilution on 14 of the 58 dates tested. *Fact Sheet*, pp. 25-26 & Appendix G [Ex. # 6, AR # 60].[19]

Instead, SJRA argues that, for the purposes of compliance monitoring, the Region either failed to respond to SJRA's comments or was arbitrary and capricious in rejecting SJRA's proposed form of WET limit, which would use long-term averaging to minimize the effect of future instances when the SJRA discharge would cause non-attainment of the narrative water quality standard. *Comments*, p. 24 [Ex. # 12, AR # 127]. The Board should reject the Petition on this issue because the Region reasonably responded to (1) SJRA's comments attacking reliance on a valid WET test result that indicates toxicity and (2) SJRA's proposed long-term average limitation, explaining why it would not be as stringent as necessary to meet the applicable Texas water quality standard for chronic toxicity. Regardless, the Region's imposition of a WET limit for chronic toxicity using the *C. dubia* is based on uncontested data generated by SJRA using nationally-applicable testing procedures, is not based on any clearly erroneous finding of fact or conclusion of law, and does not otherwise warrant the Board's review as an abuse of EPA discretion or an important policy consideration.

A. The Data Set for SJRA's Discharge Demonstrates that a Chronic WET Limit is Necessary to Assure Compliance with Texas WQS

The WET limit is based on repeated and recurring WET test failures at concentrations at or below 85% effluent dilution. *Fact Sheet*, pp. 25-26 & Appendix G [Ex. # 6, AR # 60]. The 85% effluent dilution was critical dilution used to determine toxicity in the SJRA permit prior to modification. Approximately a quarter of the

[19] SJRA attached a copy of the Fact Sheet to its Petition as Exhibit G, but neglected to include Appendix G of the Fact Sheet.

available valid data points indicated toxicity at or below the 85% effluent dilution. Of the 58 dates that SJRA generated valid[20] test results, 14 of those results did not indicate "no observed effect" at the critical dilution, but instead at a much lower effluent dilution. *Id.* In the Modified Permit, the critical dilution is now 78% effluent dilution. *Id.* The change in the critical dilution is based on information provided by the State of Texas indicating that the SJRA effluent represented less of the stream flow than TCEQ previously believed[21] – that the receiving waters provided slightly more dilution to accommodate the SJRA discharge than previously believed. *Fact Sheet*, p. 6 [Ex. # 6, AR # 60]. Regardless, the available data still indicated toxicity[22] at or below the adjusted critical dilution of 78%. Based on these valid test failures in the 14 of 58 tests, the Region concluded that the discharge had the reasonable potential to cause non-attainment of the Texas water quality standard for chronic toxicity. *Id.*

SJRA does not directly challenge the Region's conclusion of the need for a permit limit based on these data points. Instead, SJRA challenges the Region's reliance on *any* valid test result to establish a WET limit, arguing that the Region did not adequately respond to its comments regarding the variability of WET testing, that a permittee may have no ability to control the cause of the violation or prevent future violations, and that the Region irrationally established a chronic WET limit using the *C. dubia* test species

---

[20] The Fact Sheet, p. 25, refers to 59 tests. In analysis documented in Appendix G, the Region excluded a *C. dubia* data generated on 12/02/05 because the analysis was questionable, leaving 58 valid data point. *Fact Sheet*, p.25 & Appendix G, p.2 [Ex. # 6, AR # 60].

[21] As such, the dilution series measured by SJRA, and evaluated by the Region in determining the need for a WET limit (to assure attainment with the water quality standard for toxicity), did not include the appropriate effluent dilution to *most* reliably evaluate attainment of the toxicity standard.

[22] The 62% dilution measured under the pre-existing permit -- next lowest measured dilution below the 85% critical dilution -- however, was also below the 78% critical dilution in the Modified Permit. All of the data points upon which the Region relied, therefore, indicated toxicity at or below the adjusted critical dilution.

rather than a study requirement like the Region established for a different test species. The Board should reject each of these arguments because the Region adequately responded to the comments raised.

B. SJRA Cannot Now Challenge the Reliability of WET Test Results Generated Using the WET Tests Procedures Standardized through Rulemaking

SJRA alleges that the Region did not engage on a key argument made by SJRA as to why a median, rather than a single test approach, should be used for WET limits in the permit. *Petition* at pp. 50-52. SJRA contends that the Region ignored the SJRA's comments why data on test variability demonstrate why a "WET limit should not be defined as a single test failure." *Id.* at 50. Contrary to SJRA's arguments, the Region fully considered and addressed SJRA's comments.

In their comments, SJRA had challenged the Region's analysis of the need for a limit based on "a single test failure." *Comment*, p. 9 [Ex. # 12, AR # 127] ("The calculation procedure [] results in a requirement for a permit limit if there is ever a single test failure, regardless of how many tests are conducted and regardless of the time period covered."). The Region responded that it did not base its evaluation on a single test failure, but rather on a continuing rate of test failures. *RTC*, p.14 [Ex. # 11, AR # 121]. SJRA also commented that the Agency had not correlated single (and repeated) test failures of chronic toxicity tests to adverse in-stream water quality effects further making it unreasonable to set a single test failure permit limit. *Comment*, p.9-10 [Ex. # 12, AR # 127]. The Region responded that the chronic WET limit was not premised on correlated

in-stream effects, but rather on documented potential for non-attainment of the Texas water quality standard for toxicity. *RTC*, p.15 [Ex. # 11, AR # 121].

The focus of the Petition's current attack on "single test failures" does not challenge the basis for the limit as it did in its comment, but rather, the expression of the limit and a finding of violation based on a single test failure, folding in themes from its earlier comments regarding the unreasonableness of reliance on single test failures and in-stream impacts. *Petition* at 51-53. SJRA's direct comments challenging use of a valid test failure as the basis for a compliance determination also re-stated their variability arguments[23] as the reason why a one test failure limit is unreasonable. *Comments*, pp. 16-24 [Ex. # 12, AR # 127]. Contrary to SJRA's argument that the Region did not "engage in [SJRA's] key [variability] argument why a[n average] median, rather than a single test approach, should be used for WET limits," *Petition* at p.52, the Region fully addressed why a 12-month average limit (SJRA's average median approach) would not assure attainment of the relevant Texas water quality standard. *RTC*, p.23 [Ex. # 11, AR # 121]. The Region also explained why given the infrequent (quarterly) testing required by the permit an average median limit would not be representative of the effluent of the discharge in the receiving water. *Id.* Finally, the Region explained that generalized challenges to WET test variability and using of test results for compliance purposes had been addressed by the D.C. Circuit when it upheld the judicial challenge to the rulemaking standardizing WET tests for nation-wide use. *Id.*

---

[23] In their comments, SJRA relied on EPA data generated and arrayed for the purpose of supporting the earlier EPA rulemaking standardizing WET testing procedures (and other data ostensibly developed in the 2008 STE purporting to demonstrate SJRA's eligibility for the source water exclusion from Texas water quality standards for toxicity) to support SJRA's proposal for a WET limit expressed as an annual average. *Comments*, pp. 16-24 [Ex. # 12, AR # 127].

The Board should not review SJRA's general challenges based on test variability here because the D.C. Circuit has already done so. *Edison Electric Inst., et al. v. EPA*, 391 F.3d 1267 (D.C. Cir. 2004). In *Edison Electric Inst.*, the D.C. Circuit, responding to multiple challenges based on the alleged "extreme variability" of WET testing (including based on the EPA Interlaboratory Variability Study cited by SJRA), credited EPA's conclusions that "WET test methods exhibit a degree of precision compatible with numerous chemical-specific tests already in use," in rejecting the challenge. *Edison Electric Inst.*, 391 F.3d at 1271.

The Board has adjudicated challenges to the unreliability of WET tests for "single test" permit violations based on allegations of WET test variability previously. *In the Matter of City of Jacksonville, District II Wastewater Treatment Plant*, 4 E.A.D. 159, 155-156 (EAB 1992); *In the Matter of: American Cyanamid Company, Santa Rosa Plant; In the Matter of: Jefferson Smurfit Corporation, Jacksonville Paperboard Mill*, 4 E.A.D. 790 (1993); *In re J&L Specialty Products Corp.*, 5 E.A.D. 31, 57-65 (EAB 1994); *In re City of Hollywood, Florida*, 5 E.A.D. 157, 170-175 (EAB 1994); *In re Broward County, Florida*, 6 E.A.D. 535, 549-553 (EAB 1996). In each instance, the Board focused its inquiry on the text of the applicable state water quality standard for toxicity and whether the limit would assure attainment of the water quality standard.

Of special significance is explanation provided by the Board regarding "faulty data." A footnote in the Board's decision, *In the Matter of American Cyanamid Company*, 4 E.A.D. 790, 797 n6 (EAB 1993), explains the difference between a challenge to the WET testing methodology and actual errors in the performance or reporting of a toxicity test (*e.g.*, laboratory error) as a defense to liability for an alleged

permit violation. In the current case, like in *In the Matter of American Cyanamid Co.*, SJRA is precluded from challenging the former. A permittee may always raise the latter challenge, however, to the extent the permittee seeks to overcome the conclusive evidence of permit limitation violations recorded in a permittee's Discharge Monitoring Reports by "demonstrate[ing], as an affirmative defense to liability for exceeding the effluent toxicity limitation in its permit, that a failed toxicity test was not correctly performed or that the results of the test were not correctly reported." *Id.* SJRA cannot argue, however, that a valid single test "failure" generated using the approved test method does not indicate non-compliance with the applicable water quality standard.

The D.C. Circuit in *Edison Electric Institute* also recognized this distinction recognized in *In the Matter of American Cyanamid Co.* The D.C. Circuit explained that "even accepting that WET tests will be wrong some of the time," it upheld the WET tests against the "single test failure" argument. *Edison Electric Inst.*, 391 F.3d at 1272. The court went on, "[n]othing we have written thus far, and nothing we write in the balance of this opinion forecloses consideration of the validity of a particular test result in an enforcement action." *Id.* In the Petition, SJRA does not challenge the reliability of any particular test result validly generated using the approved WET test method, but rather challenges the reliability of any "single test" result – based on the arguments about the variability of "single test" results – that might otherwise demonstrate toxicity, and thus non-attainment of the State water quality standard.[24]

---

[24] Moreover, the Board should not remand SJRA's comment to the Region to "engage in [an] argument" (Petition, p.52) over whether to use an annual average limit rather than a "single test" limit because generalized challenge to valid test results based on test variability are precluded under the Clean Water Act (CWA). CWA section 509(b)(1) requires challenges to regulations be brought within 120 days of promulgation. The Board has recognized that this provision precludes regulatory challenges before the Board, and that the Board generally does not entertain challenges to final Agency regulations in the context of permit appeals. *In re USGen New England Inc. Brayton Point Station*, 11 E.A.D. 525, 555 (EAB 2004)

SJRA's attempts to distinguish its current challenge from the issues addressed in *Edison Electric Inst.*, *Petition* at p.51, are unavailing. The D.C. Circuit, after explaining how, in a statistical distribution, "[m]ultiple measurements will exhibit some degree of variation, yielding an error band that extends above and below some intermediate value," 391 F.3d at 1271, which is precisely the argument that SJRA propounds that "while a median value of multiple tests may approximate a correct answer, any single test can be significantly wrong." *Petition* at p.50. SJRA, like the petitioners in *Edison Electric Institute*, "neglect[s] to mention that just as some permittees who "should be" in compliance may be deemed violators, other permittees who "should be" violators may be deemed in compliance," because of the nature of any distribution. 391 F.3d. at 1272. The Court noted that the "real question is whether this variation is excessive, and EPA has demonstrated that it is not." *Id.* SJRA argues that the case "only" analyzed the 'validity of WET test methods,' but the bases upon which SJRA argues the Region should have adopted SJRA's proposed annual average limit are results of a study, data, and report purporting to establish that results from a "single test" using the WET test methods are not valid. The CWA's judicial review provision preclude such variability based challenges at this time, and thus the Board should not remand to the Region the SJRA comments about variability requiring the Region to "engage in [an] argument" over variability.[25]

(citations omitted) and that Board precedent establishes an "especially strong presumption" against such review. *Id.* at 557-558.

[25] SJRA also restates a comment relating to daily analysis of chemical parameters and 30 day average concentration limits. *Petition* at pp. 51-52. The Region's disagreed that SJRA's analogy to a chemical specific limits warranted treating a "single test" failure for WET differently than a single test failure of a chemical specific test, and explaining that the duration, frequency, and magnitude of permit violations was appropriately considered in the context of enforcement discretion. *RTC*, p.21 [Ex. # 11, AR # 121]. In addition, the Region rejected SJRA's claim that chemical tests are "significantly less variable" than WET tests, citing the findings of the D.C. Circuit in *Edison Electric Inst.* *RTC*, p.22 [Ex. # 11, AR #121]. In the

C. Potential Lack of Ability to Control the Cause of Toxicity or Prevent Future WET Permit Violations Does Not Supersede the Need for a WET Limit to Meet State Water Quality Standards

SJRA further argues that the Region's rejection of its proposed annual median approach to define a permit limit was not rational or adequately explained because it is not reasonable to impose a permit violation where the permittee may have no ability to control the cause of the violations. *Petition* at pp. 52-53. The Region fully considered and addressed SJRA's arguments in the record. SJRA's arguments are unavailing.

The Region reasonably concluded that SJRA's proposal for an annual average limitation for chronic WET fails to take into account the periodic or episodic nature of toxic events that may impact a receiving stream. The Region explained this conclusion in response to SJRA's comment that that a single test failure limitation is inconsistent with known variability of the *C. dubia* test and that compliance cannot be achieved regardless of diligence by the permitttee. *RTC*, pp. 23-24 [Ex. # 11, AR # 121].

After explaining that the 12-month median limit would be inconsistent with Texas water quality standards for toxicity, the Region explained that the causes of valid test failures by POTWs are influenced by a variety of factors, for example, inputs of toxic materials into sewer systems, rain events, and the timing of other upsets. *RTC*, p. 24 [Ex. # 11, AR # 121]. As such, if toxicity is actually observed, it likely is periodic or episodic, as demonstrated by the SJRA data. *Id.* Because only a small portion of the effluent is tested, typically three days over a 90 day quarter of testing (which would translate into 12

Petition, SJRA does not elaborate on its argument comparing chemical testing to WET testing, but merely restates the comment. In merely restating its comment, SJRA has not demonstrated with specificity why the Region's prior response on this issue is clearly erroneous or otherwise merits review, and thus the issue warrants no further intervention by the Board. *In re Hecla Mining Co, Lucky Friday Mine*, at 26 & n26 (citations omitted).

days a year for SJRA's proposed annual median limit), the Region explained that toxicity that is actually detected likely is indicative of longer-term toxic impacts. *Id.*

The Region further reasoned that even though annual averaging may appear to demonstrate no net adverse impact or permit limit violations, such an approach would discount the likely importance of the periodic single test failures. *Id.* After citing to studies documenting long-term recoveries of stream systems impaired by toxicity, the Region explained that the more frequent (quarterly) "single test" limits would avoid possible long term adverse impacts that might be "masked by an annual averaging period." *Id.*

SJRA now objects to that response arguing that "scientific data does not support a correlation between sub-lethal results and in-stream impacts."[26] *Petition* at p. 52. The objection misses the point; the Region was merely explaining that, because discharges are tested so infrequently, single test failures are indicative of more frequent failures, and thus should not be masked through an annual average.[27] SJRA is making a collateral attack on the representativeness of WET tests as surrogates for ambient toxicity, which the Board should rejected as an untimely challenge to the WET test regulations and irrelevant to whether SJRA's repeated single test failures should be masked with an annual average limit.

---

[26] Though the content of the studies cited in the Response to Comment was not elaborated, the Region does not concede that the studies do not establish a correlation between sub-lethal toxicity and adverse in-stream effects. The sites evaluated in the studies were already impaired, and in some cases severely, which was a necessary study design component to establish such a correlation.

[27] Though not relied on by the Region in response to comments regarding the proposed annual average, NPDES regulations do require that effluent limits for continuous discharges from POTWs be expressed as average weekly and average monthly discharge limitations unless impracticable. *See* 40 C.F.R. 122.45(c)(2).

SJRA does not present a serious challenge that the WET test limit designed to meet the State water quality standards is irrational because a permittee cannot control toxicity. SJRA expresses its policy preference for the triggering of a toxicity reduction evaluation (TRE), like the Region did with single test failures using the fathead minnow test, rather than a limitation. *Petition* at p. 53. SJRA suggests that the WET limit is irrational and creates a "Catch 22" because it precludes the opportunity to identify the cause and prevent future toxicity because toxic effects are too ephemeral. *Id.* The Board should note, however, that SJRA's effluent has demonstrated measured sub-lethal toxicity since at least August of 2004, *Fact Sheet*, Appendix G, p.3 [Ex. # 6, AR # 60], and that SJRA did not report any attempt to identify or evaluate the source of its sub-lethal toxicity until after the Region proposed the permit modification, and that the chronic WET limit has a three year delayed effective date. SJRA has had and will continue to have sufficient notice of and time to identify the source of its toxicity and to resolve it. The Region fully explained the basis for imposing the WET limit and the Region's explanation is reasonable.

D. Toxicity Reduction Evaluation Triggers for Fathead Minnow Test Failures Do Not Render the Region's Decision to Impose Single Test Failure WET Limit for *C. dubia* Irrational or Inadequately Explained

SJRA further argues that the Region's decision not to allow a greater frequency of in-stream excursions above the toxicity WQS in defining the permit WET limit to be irrational in light of the permit requirements regarding TREs for fat head minnows. *Petition* at pp. 53-54. SJRA argues that the permit's conditions regarding fathead minnow testing demonstrate that a more conservative approach like an annual median average limit (as opposed to a single test violation) should have been used in defining the

WET test. *Id.* SJRA argues that the Region's decision to impose a WET limit using the *C. dubia* test is irrational in light of the Region decision to include only a WET testing requirement using the fathead minnow, which itself includes a requirement for more accelerated confirmatory testing for sub-lethality toxicity than it does for lethal toxicity. *Petition* at p. 54. The Region's decision to include different permit requirements that vary based on test species was reasonable and fully explained in the record.

The TRE trigger, based on a fathead minnow test that indicates toxicity, is appropriate based on the fathead minnow toxicity data generated by SJRA. The data suggest that fathead minnow toxicity should not recur during the course of the permit and that the previously measured toxicity may have been resolved more than five years ago. If toxicity does recur, the permit requires the permittee to confirm the toxicity and, if the toxicity persists, to initiate action to reduce the toxicity. *Permit*, II.D.2.a. & II.D.5 [Ex. # 10, AR # 120]. The permit sets a lower confirmatory testing requirement for lethal toxicity compared to sub-lethal toxicity. *Permit*, II.D.2.a.

The permit does not impose a similar TRE trigger in response to toxicity measured using the *C. dubia*, because a permit violation itself[28] presumably motivates the permittee to reduce its toxicity and a permit requirement to do so would be unnecessary. *Fact Sheet*, p.26 [Ex. 6, AR # 60] (discussing the opportunity of a permittee to conduct a TRE at any time, including during a compliance schedule). As discussed previously, the WET limit using *C. dubia* is premised on a larger data set suggesting increasing toxicity. The difference between how the permit treats toxicity measured using fathead minnows and *C. dubia* is not a "valid recognition [by the Region] that it is inappropriate to require

[28] SJRA's proffered distinction between lethal and sub-lethal toxicity as it relates to the WET limit on sub-lethal toxicity measured with the *C. dubia* test is illusory. A lethal effect on *C. dubia* test organisms, i.e., death, is also demonstrated with the sub-lethal test because dead organisms do not grow and/or reproduce.

a sublethal TRE for an infrequent test failure with a small impact." *Petition* at p. 54. The difference is based on recognition of the differences in the data sets regarding toxicity to the respective test species and the appropriate permitting mechanisms to address previously measured toxicity.

The Region also adequately responded to SJRA's comment regarding different regulatory approaches to respond to lethal and sub-lethal toxicity. *RTC*, p. 22 [Ex. # 11, AR # 121]. SJRA commented that the Region had recognized that sub-lethal WET tests "cannot be implemented" the same as lethal tests and, as such, had specified a significantly different trigger for a sub-lethal TRE than for a lethal TRE. Specifically two test failures (for sub-lethal) and one test failure (for chronic), as well as sub-lethality at a level lower than the critical value (i.e., conditions assuming that the effluent is less dilute than expected). *Comments*, p. 15 [Ex. # 12, AR # 127]. The Region responded by noting that SJRA had not identified where the Region "recognize[d] that sublethal tests cannot be implemented the same as a lethal WET test," but appears to have conceded that during an interim period for a transition to WET permitting prior to 2005, the Region's policy may have supported SJRA's assertions. *RTC*, p.22 [Ex. # 11, AR # 121]. The SJRA comments did not identify the Modified Permit as an example of irrationally different treatment of response actions required relating to toxicity test failures using the fathead minnow and *C. dubia* test organisms.

III. The Region Reasonably Rejected SJRA's Proposal to Use the "South Carolina Percent Effect" Approach

As noted above, EPA has promulgated standardized testing procedures for WET testing at 40 C.F.R. 136.3(a), Table IA. In that table, the "parameters and units" for the WET test relevant to the *C. dubia* limit in the SJRA permit are expressed as "Toxicity,

chronic, fresh water organisms, NOEC or IC_{25}, percent effluent." Id. The SJRA permit specifies the relevant limitation as "Whole Effluent Toxicity Limit (PCS 22414) (7-Day NOEC)." *Permit*, I.A.1., p.2 [Ex. # 10, AR # 120]. The Region explained its bases for why the permit expressed the limit using the "no observed effect concentration" (NOEC) rather than the "inhibition concentration" (IC_{25}) in the Fact Sheet. *Fact Sheet*, pp. 15-21 [Ex. # 6, AR # 60].

In its comments, SJRA challenged the Region's rationale for the NOEC limit, as well as its analysis of the IC_{25} limit. *Comments*, pp. 10-14 [Ex. # 12, AR # 127]. SJRA proposed that the NOEC limit be revised to incorporate either the IC_{25} limit or a third form of limit, called the "South Carolina Percent Effect" approach. *Id.* at p. 14. In its petition, SJRA no longer challenges the Region's rationale for including a NOEC limit rather than an IC_{25} limit, but instead challenges the Region's response regarding the "South Carolina Percent Effect." *Petition* at pp. 55-56.

Regarding the "South Carolina Percent Effect" approach, the Region's response to comment explained that EPA had not approved the "full South Carolina PE approach," even for South Carolina. *RTC*, p.19 [Ex. # 11, AR # 121]. The Region explained that:

- "[T]he 40% benchmark has been disallowed as not being adequately protective;" and
- "The balance of the South Carolina approach is an IC25 (point estimate testing), which that State has adopted for its use;" and that
- "Texas and the other four States in Region 6 have elected to continue using the NOEC approach (hypothesis testing), which is equally supported by EPA test methodologies."

RTC, p.19 [Ex. # 11, AR # 121]. Based on "personal communication" with an employee of the South Carolina Department of Health and Environmental Control, SJRA

challenges the first two of the three points made by the Region in response to comment. SJRA does not explain why the Region erred, but rather merely contradicts the Region's responses.

SJRA does not, however, contest the Region's final point – that Texas continues to use the NOEC approach, which is supported by EPA test methodologies. The standardized WET test procedures do not specify which of the two approaches – hypothesis testing (NOEC) or point estimation (IC_{25}) – must be used in conjunction with the approved procedures. The choice remains available to the permitting agency. The standardized procedures do not, however, identify a third approach to WET test design and statistical analysis, for example, the "South Carolina Percent Effect" approach. Given that SJRA does not provide a reasoned basis for its proposed third approach, much less provide more than mere contradiction to the Region's response, the Board should deny review of the Region's choice of the NOEC limit in the permit.

IV. The Permit Reasonably Starts a Three-Year Compliance Schedule Upon the Effective Date of the Modified Permit

The WET limit for sub-lethal toxicity measured using the *C. dubia* becomes effective three years after the effective date of the permit modification. *Permit*, I.A.1 n10, p.2 [Ex. # 10, AR # 120]. SJRA identifies and contests the provisions of the Modified Permit that establish a schedule of compliance, including reporting requirements. *Id.* I.B, at p.2. Neither provision of the Modified Permit contains a date certain for effectiveness of the contested WET limit. The purpose for SJRA's objection on this point is unclear.[29] The Modified Permit currently provides for what SJRA

[29] The Region acknowledges that SJRA made an abbreviated comment regarding the schedule of compliance that the Region disagreed. *RTC* at p. 25 [Ex. # 11, AR # 121]. Upon close review of the actual

apparently seeks from the Board. Under applicable regulations, a permit becomes effective 30 days after service of notice of a Region's final permit decision unless review by the Board is requested under 40 C.F.R. 124.19. *See* 40 C.F.R. 124.15(a) & (b)(2). A petition for review by the Board stays the contested permit conditions, as well uncontested provisions which are not severable, pending final agency action. *See* 40 C.F.R. 124.16(a)(1)&(2). Final agency action occurs when a "final" permit decision is issued by the Region after action by the Board. *See* 40 C.F.R. 124.19(f)(1). If a permit condition is challenged and stayed, then the associated compliance schedule also is stayed. 44 Fed. Reg. 32854, 32883 (June 7, 1979); 45 Fed. Reg. 33290, 33412 (May 19, 1980).

V. The Permit Reasonably Specifies the TRE Trigger After Fathead Minnow Test Failures

As noted previously, the Modified Permit requires the permittee to conduct a toxicity reduction evaluation (TRE) based on WET test failures measured using the fathead minnow test. *Permit*, II.D.2 at 4 [Ex/ # 10, AR # 120]. If quarterly testing demonstrates significant lethal and/or sub-lethal effects at the critical dilution, then additional tests (also referred to as 'retests' or confirmation tests) is to determine the duration of a toxic event. *Id.* If the quarterly test indicates only sub-lethal toxicity at the critical dilution, then the permittee must initiate a TRE if any two of the three additional tests demonstrates significant sub-lethal effects at 75% effluent or lower. *Permit*, II.D.2.a.iii at 4 [Ex. # 10, AR # 120]. In addition, the Modified Permit specifies that the

---

text of the Modified Permit, however, there does not appear to be a genuine dispute between SJRA and the Region regarding when the schedule of compliance on the contested WET limit starts.

TRE must be initiated upon the date of test completion of the first failed retest. *Id.* A TRE may also be required for failure to perform the required retests. *Id.*

SJRA commented that TRE testing should only be required if there is at least a 40% reduction in the response in a 100% effluent sample rather than any re-test failure at a fixed effluent dilution. *Comments*, p. 26 [Ex. # 12, AR # 127]. SJRA argued that it could not conduct a toxicity identification evaluation (TIE), which it explained is typically necessary to perform a TRE, without a 40% reduction in the response. *Id.*

The Region rejected the comment explaining that significant toxic events should be investigated to the maximum level reasonably possible and noting that SJRA did not provide support for its assertion regarding the possibility to do a TIE study without a 40% reduction in response. *RTC* at p. 26 [Ex. # 11, AR # 121]. The Region also noted that the permit did not require a TIE prior to initiation of a TRE. *Id.*

In the Petition, SJRA does not proffer further support, other than to cite general allegations about variability of the tests and its own experience with its 2008 STE. *Petition* at 58-59. SJRA's only additional challenge to the TRE trigger beyond the comment provided during the comment period is mere rhetorical flourish. SRJA claims the Region's response is illogical (because a TIE necessarily precedes a TRE) and derides the response as requiring a permittee merely to check a box indicating completion of a meaningless TRE. *Petition* at p. 59. In doing so, SJRA has not demonstrated with specificity why the Region's prior response on this issue is clearly erroneous or otherwise merits review, and thus the issue warrants no further intervention by the Board. *In re Hecla Mining Co, Lucky Friday Mine*, at 26 & n26 (citations omitted).

Regarding the inconsistency between the permit provisions requiring initiation of the TRE after the first or second retest failures, the Region agrees that the former represents a typographical error and is revising the permit accordingly. A TRE for sub-lethal toxicity measured using the fathead minnow must be initiated upon the second retest failure.

VI. The Permit, Fact Sheet, and Response to Comment Explain the Meaning of "Lowest," "Average," and "Minimum"

The Modified Permit specifies reporting obligations regarding WET test failures measured with the *C. dubia* test. *Permit*, II.E.3.b at p. 16-17 [Ex. # 10, AR # 120]. The Modified Permit requires reporting of two WET values, specifically, for the "30-Day Average NOEC" and the "7-Day Minimum NOEC", under Parameter No. 22414 on the DMR for the reporting period. *Id.* SJRA objects that the use of terms is contradictory and confusing. *Petition* at p. 60.

In its comments, SJRA had expressed concern that additional tests (demonstrating effluent quality different from the lowest "no observed effect concentration") are "basically ignored by EPA and should not be reported." *Comments* at p. 25 [Ex. # 12, AR # 127]. The Region responded by explaining that the permit allowed averaging of multiple tests conducted within the reporting period and that the terms are otherwise self-explanatory, i.e., that "lowest" means "lowest NOEC" measured in a compliance test during the reporting period (whether it be weekly, monthly, or quarterly), and how that value should be entered in the discharge monitoring report (DMR). *RTC* at p. 24 [Ex. # 11, AR # 121]. Further, if more than one test was performed during the reporting period, the "average minimum" datum in the DMR would be the average of those multiple tests. *Id.* at p. 25.

In the Petition, SJRA expresses a concern about an unclear third value about which the permittee must report, specifically, the "30-Day Average NOEC", about which the permit requires reporting of the "lowest" such value. *Petition* at pp. 60-61. The Region submits that "lowest" values continue to mean "lowest" single values and that an "average" value continues to mean the average of multiple values. The Region recognizes that, because reporting may be accelerated from quarterly to monthly if a WET tests fails, there may be confusion regarding the meaning of a "lowest" 30-day average because there may be more than one 30 day period during a quarter, but does not otherwise understand SJRA's concern expressed in its original comment suggesting that the Region ignore data points because reporting is not required.

VII. The Region Has Deleted Two Reporting Requirements Contested by SJRA

SJRA identifies two additional typographical errors, *Petition* at pp. 61-63, and the Region agrees to revise the permit accordingly.

CONCLUSION

For the foregoing reasons, the Board should deny SJRA's Petition for Review.

Respectfully submitted,

Stephen J. Sweeney for

Thomas David Gillespie
Assistant Regional Counsel
Office of Regional Counsel, EPA Region 6
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Pooja S. Parikh, Attorney-Advisor
Stephen J. Sweeney, Attorney-Advisor
Office of General Counsel (2355A)
Washington, DC 200460

Counsel for Respondent
U.S. Environmental Protection Agency, Region 6

Date: December 3, 2009