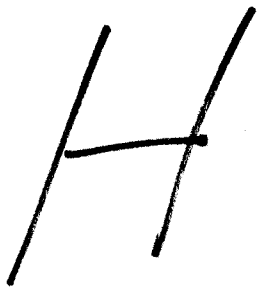

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February 27, 2009

Ms. Diane Smith
Planning and Analysis Branch (6WQ-NP)
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733

VIA FEDERAL EXPRESS

Re: Application to Discharge to Waters of the United States Permit No. TX0054186 San Jacinto River Authority, Woodlands POTW No. 1.

Dear Ms. Smith:

Enclosed please find San Jacinto River Authority's ("SJRA's") comments and appendices regarding the Environmental Protection Agency's ("EPA's") Proposed NPDES Permit No. TX0054186 Modifications (the "Modified Permit"), for SJRA's Woodlands Wastewater Treatment Plant No. 1.

Thank you for your attention to this matter. Please do not hesitate to contact me if you have any questions.

Sincerely,

Lauren Kalisek
Attorney representing San Jacinto River Authority

LJK/mab
Enclosures
ltr090227 Transmittal Ltr To D Smith.Doc

cc: (without Appendices)
Mr. David Gillespie, EPA
Mr. Robert Martinez, TCEQ
Mr. Reed Eichelberger, SJRA
Mr. Don Sarich, SJRA
Ms. Tojuana Cooper, SJRA
Dr. Peggy Glass, Alan Plummer & Associates, Inc.
Mr. Rex Hunt, Alan Plummer & Associates, Inc.

SAN JACINTO RIVER AUTHORITY COMMENTS TO PROPOSED NPDES PERMIT NO. TX0054186 MODIFICATIONS WOODLANDS WASTEWATER TREATMENT PLANT NO. 1

FEBRUARY 27, 2009

DEFINITIONS AND ABBREVIATIONS

2008 STE – San Jacinto River Authority Sublethal Toxicity Evaluation, The Woodlands Wastewater Treatment Plant No.1 submitted to the United States Environmental Protection Agency, November 2008. (See Appendix.)

Application – SJRA's NPDES Permit Application filed with EPA June 1, 2006, and related documents.

C. dubia – *Ceriodaphnia dubia.*

CFR – Code of Federal Regulations.

Chronic Freshwater Guidance – U.S. Environmental Protection Agency. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. Fourth Edition; October 2002. (Available at http://www.epa.gov/waterscience/wet/disk3/ctf.pdf).

DMR – Discharge monitoring report.

EPA – Environmental Protection Agency.

Fathead Minnow – *Pimephales promelas.*

IC_{25} – 25-percent Inhibition Concentration. The toxicant concentration that would cause a 25 percent reduction in mean young per female for a *C. dubia* test population or a 25 percent reduction in mean growth for a Fathead Minnow test population.

IP – Procedures to Implement the Texas Surface Water Quality Standards. Document No. RG-194 (Revised). January 2003. (See Appendix.)

Interlaboratory Variability Study – U.S. Environmental Protection Agency, Office of Water. Final Report: Interlaboratory Variability Study of EPA Short-term Chronic and Acute Whole Effluent Toxicity Test Methods, Vol. 1. Document No. EPA 821-B-01-004. U.S. Environmental Protection Agency, Office of Water, Washington, D.C. (Available at http://www.epa.gov/waterscience/WET/finalwetv1.pdf).

MAL – Minimum Analytical Level.

mg/L – Milligrams per liter.

ml – Milliliter.

Modified Permit – NPDES Permit No. TX0054186 for WWTP No. 1 with proposed permit modifications issued by EPA on January 30, 2009.

NOEC – No Observed Effects Concentration.

NPDES – National Pollutant Discharge Elimination System.

PFD – The Administrative Law Judge's Proposal for Decision in TCEQ Docket No. 2003-1213-MWD; SOAH Docket No. 582-04-1194. (See Appendix.)

SJRA – The San Jacinto River Authority.

SOAH – The State Office of Administrative Hearings, Texas.

Standard Methods for the Examination of Water and Wastewater – American Public Health Association, American Water Works Association, and Water Environment Federation. Standard Methods for the Examination of Water and Wastewater. 19th Edition. 1995.

State Permit – The permit issued by the TCEQ on October 16, 2008 for WWTP No. 1. (See Appendix.)

TAC – Texas Administrative Code.

TCEQ – Texas Commission on Environmental Quality.

TCEQ Order – TCEQ's "Order Regarding Application by San Jacinto River Authority for Renewal of TPDES Permit No. 11401-001 in Montgomery County; TCEQ Docket No. 2003-1213-MWD; SOAH Docket No. 582-04-1194." (See Appendix.)

TCEQ Record – The record associated with TCEQ Docket No. 2003-1213-MWD; SOAH Docket No. 582-04-1194, including the hearing transcripts, SJRA's Exhibits, the Executive Director's Exhibits, the PFD, the TCEQ Order and the State Permit. (See Appendix.)

TIE – Toxicity Identification Evaluation.

TPDES – Texas Pollutant Discharge Elimination System.

TRE – Toxicity Reduction Evaluation.

TSD – Technical Support Document for Water Quality Based Toxics Control. Document No. EPA 505/2-90-001.

TSWQS – Texas Surface Water Quality Standards, 30 TAC §§ 307.1-307.10.

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

WET Variability Document – U.S. Environmental Protection Agency, Office of Wastewater Management. Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the National Pollutant Discharge Elimination System. Document No. EPA 833-R-0-003. 2000. (Available at http://www.toxicity.com/pdf/epa2000june.pdf.)

WET – Whole Effluent Toxicity.

The Woodlands – the community served by WWTP No. 1.

WWTP No. 1 – The Woodlands Wastewater Treatment Plant No. 1 that is the subject of the Modified Permit.

WWTP No. 2 – The Woodlands Wastewater Treatment Plant No. 2.

INTRODUCTION

SJRA's comments on the Modified Permit are categorized as follows: (1) copper monitoring requirement; (2) WET limits and WET testing requirements; (3) monitoring outfall 002; and (4) correction of information in the Fact Sheet, and typographical errors. References to specific Modified Permit provisions by item and page number are included in the headings for each comment.

I. COPPER MONITORING REQUIREMENT
(Part I. Item A.1 at p.1)

The Modified Permit requires monitoring for total copper. Page 7 of the Fact Sheet notes that the IP calls for the inclusion of monitoring requirements if the "*average* of the effluent data equals or exceeds 70% but is less than 85% of the calculated daily average limit."[1] The Fact Sheet explains that contrary to the provisions of the IP, EPA is imposing the monitoring value based on a single value exceeding this 70% threshold. In addition, EPA cites a statement made in one of SJRA's TIE reports as additional justification for the monitoring requirement.

Comments: The IP drafted by TCEQ establishes the procedures and methods by which the TSWQS are implemented through permitting. EPA approved the IP on November 22, 2002 as consistent with NPDES permitting requirements.[2] The IP clearly provides that, in establishing water quality based effluent limits and monitoring requirements, the "*average concentration* of the effluent data is . . . compared to the daily average limit" and if the "*average* of the effluent data equals or exceeds 70% but is less than 85% of the calculated daily average limit" monitoring is usually included as a permit condition for the parameter of concern.[3]

In the Fact Sheet (pages 6 and 7), the permit writer very carefully records the various copper concentrations that have been reported and computes an average value. However, rather than focusing on the average value, the Fact Sheet compares the maximum concentration to the allowable discharge concentration. The average concentration of copper should have been compared to the allowable discharge concentrations, which would have demonstrated that a permit provision for monitoring is not required.

The application of the 70% screening value to the reported maximum concentration as a basis for determining monitoring requirements mixes apples and oranges. The designation of the 70% screening value by TCEQ assumes this value will be applied to an average concentration. If the maximum reported concentration is to be used, the screening percentile should be significantly higher.

However, SJRA does not consider screening based on a single data point as a valid regulatory policy. A single data point can always be an error as a result of contamination or flawed laboratory procedure. In addition, if a single data point controls the regulatory decision,

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[1] Fact Sheet at p. 7 quoting IP at p. 83.
[2] IP at p. 1.
[3] IP at p. 83.

the number of samples and length of the period of record are irrelevant. The potential impact of a discharge is dependent on the frequency and magnitude of the substance in the discharge. This should be considered when determining permit limits or monitoring requirements.

As part of the justification for the copper monitoring requirement, the Fact Sheet references a statement in a laboratory report for a TIE study conducted by SJRA. On page 8 of the Fact Sheet, it is stated:

> "The report [the TIE report] does discuss that reductions in toxicity by activated carbon treatment is an indicator of the presence of an 'organic probably non-polar or metal such as zinc or copper'."

The intent of the statement in the laboratory report is misrepresented in the Fact Sheet. The statement is provided merely to inform the reader regarding the type of substances that might be removed by granular activated carbon, i.e., non-polar organics or metals. Zinc and copper are offered only as examples of the types of metals that may be removed. The statement is not intended to suggest that, in the case of the WWTP No. 1, the probable toxicant is a non-polar organic or zinc or copper. Other TIEs were conducted on samples of effluent from WWTP No. 1 that did not provide an indication that copper was a possible toxicant.

EPA's deviation from the IP and inclusion of a copper monitoring requirement based on a single data point is arbitrary and capricious and an abuse of EPA's discretion.[4]

Recommendation: EPA should delete the monitoring requirement for total copper in Part I, Item A.1 and modify the Fact Sheet accordingly.

II. WET LIMITS AND WET TESTING REQUIREMENTS

A. Imposition of WET Limits (Part I Item A.1 at p. 2; Part II Item E)

The Modified Permit contains lethal and sublethal WET limits for *C. dubia*. The Fact Sheet states that EPA evaluated the need for lethal and sublethal WET limits based on its review of SJRA's WET test data and application of policies and procedures outlined in the TSD.[5] Particularly, EPA concludes that SJRA's effluent "demonstrated significant sublethal effects in 14 of 59 tests performed over the past five years. . . [.]" and has actually caused exceedances of TSWQS. EPA goes on to argue that if left uncontrolled, "effluent from this facility will continue to cause or contribute to exceedance(s) of [TSWQS]."[6]

Comments: EPA's inclusion of WET limits in the Modified Permit is flawed for several reasons, that can be summarized as follows: (1) SJRA's 2008 STE shows that the cause of sublethal failures is due to source water quality that qualifies SJRA for an exemption under the TSWQS rather than the imposition of WET limits; (2) inclusion of WET limits is in

[4] 5 U.S.C.A. § 706(2)(A) (2004).
[5] Fact Sheet at p.25.
[6] *Id.* at pgs. 26-27.

contravention of the IP previously approved by EPA; (3) WET test results were previously reviewed by TCEQ during the course of an evidentiary hearing and TCEQ determined that WET limits were not required; (4) the TSD method is inappropriate; and (5) sublethal failures are not predictive of instream impacts.

(1) 2008 STE

EPA's inclusion of WET limits in the Modified Permit completely ignores the 2008 STE submitted by SJRA in November 2008 that concludes that SJRA's sporadic WET test failures are a result of the unusual ionic composition of the dissolved salts in the potable water supply for The Woodlands. The 2008 STE explains 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. The 2008 STE documents SJRA's three year study to characterize and identify the cause of its reported sublethal test failures, which included:

- toxicity characterizations;
- mock effluent testing;
- WET testing with an alternative test organism;
- WET testing under a carbon dioxide atmosphere;
- Significant Industrial User investigation;
- ion exchange treatment of effluent;
- source water WET and water chemistry testing;
- chemical analysis of effluent;
- chemical inventory of industrial and commercial businesses in the service area; and
- WET testing comparisons between WWTP No.1 and SJRA's WWTP No. 2.

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. The definition of toxicity in the TSWQS excludes adverse effects caused by concentrations of dissolved salts, when the salts originate in the source water.[7] EPA's failure to consider the 2008 STE in its permitting decision here is arbitrary and capricious and an abuse of discretion.[8]

(2) Deviation from IP

The IP only provides for the imposition of lethal WET limits and, then, only in specific cases.[9] If applied to the WET test data summarized in Appendix H of the Fact Sheet, WET limits would not be required because SJRA has not reported any lethal WET test failures for the review period.[10] As noted previously, the IP has been approved by EPA and serves as the guiding

[7] 30 TAC § 307.3(a)(65).
[8] 5 U.S.C.A. § 706(2)(A).
[9] IP at pgs. 101-125.
[10] Under the IPs, WET limits for lethal effects are only imposed in two circumstances. In the first, limits are imposed if a lethal test failure occurs within five years of the termination of a TRE due to cessation of lethality. WWTP No.1 has not exhibited significant lethality to either test species since January 2002, despite years of monthly testing. Its Janauary 2002 and November 2001 test results indicating lethality were determined by TCEQ

document establishing how permit limits and requirements are developed to maintain TSWQS. IP, not TSD, is the appropriate policy to follow in making a reasonable potential determination as required in 40 CFR §122.44. The IP has been approved by EPA, and EPA provides no justification for deviation from it. EPA fails to explain how its previous legal evaluation of the IP was incorrect or what circumstances may have changed since 2002 warranting its policy reversal. EPA's failure to abide by the written policy it has approved and implemented in its review of permits for TSWQS, and in the creation of this specific Modified Permit, is arbitrary and capricious and an abuse of its discretion.[11]

(3) TCEQ Record

EPA's inclusion of WET limits in the Modified Permit also directly conflicts with the TCEQ's specific findings of fact and conclusions of law made after an evidentiary hearing conducted before SOAH in 2005 regarding TCEQ's renewal and issuance of the State Permit and the inclusion of a WET limit in that permit. Based on the recommendation of the presiding Administrative Law Judge and her review of the evidentiary record (including testimony and evidence offered by EPA), the TCEQ found that, when applying the policies regarding WET limits contained in the IP to SJRA's WET testing data, WET limits were not warranted in SJRA's permit.[12] TCEQ specifically found that SJRA's lethal WET test results for *C. dubia* were "too unreliable to constitute a part of the basis for including a WET limit in SJRA's permit."[13] With regard to the sublethal test effects, TCEQ found them to be "inadequate evidence of toxicity to trigger a WET limit; their primary significance is their tendency to corroborate any toxicity exhibited in tests for survival."[14] (It is important to note, as discussed above, the IPs only require the imposition of lethal WET limits based on lethal test results, and not based on sublethal test results as EPA proposes here.)

EPA objected to the State Permit issued by the TCEQ and federalized the permit, leading to its issuance of the Modified Permit that is the subject of these comments. However, nowhere in its objection, or the Fact Sheet for the Modified Permit, does EPA explain how TCEQ erred in its application of governing laws, regulations or EPA approved polices (i.e., the IP) or interpretation of the facts regarding SJRA's WET test data. Rather than justifying its disagreement with TCEQ's decision based on the facts determined by the evidentiary hearing and the laws, regulations, and policies at issue, EPA is now simply changing the rules to fit the outcome it desires. It is ignoring that portion of the IP that does not support the imposition of WET limits in the Modified Permit and ignoring the fact-finding performed by the TCEQ on the issue of WET limits.

For permitted discharges in Texas, the "reasonable potential" review mandated by 40 CFR § 122.44(d)(1)(v) is found in the IP. It is not the TSD Reasonable Potential Calculation

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to be unreliable test results. (See TCEQ Record). In the second circumstance, limits are imposed if a TRE determines that toxicity cannot be controlled by a chemical specific limit, Best Management Practices, or other toxicity control measure. However, this trigger is also not applicable since there have been no lethal test failures requiring a TRE in the last ten years.

[11] 5 U.S.C.A. § 706(2)(A).

[12] TCEQ Order at p. 16.

[13] TCEQ Order at p. 12, Finding of Fact Nos. 74, 80.

[14] TCEQ Order at p. 12, Finding of Fact No. 83.

contained in Appendix G of the Fact Sheet. EPA should abide by the policies it has approved within the IP with regard to the imposition of WET limits in Texas permits.

EPA's deviation from the IP in this case, and its failure to consider or apply the TCEQ Record, including specific findings of fact and conclusions of law established by TCEQ, constitutes an abuse of EPA's discretion and is arbitrary and capricious.[15] EPA cannot simply ignore the policy it has previously approved regarding WET limits in Texas or ignore the extensive TCEQ Record and TCEQ Order addressing the imposition of WET limits in SJRA's permit. EPA must provide a meaningful, thorough and thoughtful response to the TCEQ Record and TCEQ's decision in order to justify its imposition of any WET limit in the Draft Permit. Copies of documents comprising the TCEQ Record are submitted as an Appendix to these comments and are incorporated herein for all purposes.

(4) TSD

EPA bases its reasonable potential analysis on the TSD. The calculation procedure in the TSD 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. Recognizing that this is an unreasonable basis on which to impose permit limits, EPA has stated that it is not EPA's intent, typically, to impose WET limits based on a single test failure. Thus, if there has ever been a test failure, the determination of a need for permit limits for WET is totally discretionary on the part of the permit writer. The procedures in the IP for determining when permit limits are required are clearly superior.

(5) Instream Impacts

EPA also states that it has concluded, based on the rate and magnitude of sublethal test failures, that "actual exceedances of the State's narrative water quality standard for the protection of aquatic life have already occurred." [emphasis added]. Section X.B.6 also contains a statement that SJRA's discharge "in fact causes non-attainment of the State's narrative WQS." EPA offers no factual support for these statements. There are no data presented documenting adverse impacts on aquatic life in the receiving stream for WWTP No. 1's discharge. The existence of an impairment cannot be inferred from the WET test results because existing studies of relationships between WET tests of effluent and instream biological communities do not demonstrate that, when the only WET test failures are sublethal and infrequent, there is an associated impairment of the instream biological community.

EPA and others have conducted a large number of studies to establish the extent to which WET test results are predictive of instream impacts on aquatic life. There are no studies that have shown that intermittent failures of only the sublethal endpoint are predictive of instream impacts. In fact, in a report published by EPA in July 1999, prepared by Victor De Vlaming and Teresa J. Norberg-King (A Review of Single Species Toxicity Tests: Are the Tests Reliable Predictors of Aquatic Ecosystem Community Responses? EPA/600/R-97/114) the authors concluded on page 24:

[15] 5 U.S.C.A. § 706(2)(A).

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

SJRA is unaware of any studies since 1999 that have reached a different conclusion. In fact, a recent study by the Water Environment Research Foundation [*Evaluation of WET Testing as an Indicator of Aquatic Health in Effluent-Dominated Streams: A Pilot Study. 03-ECO-2T.* by Jerry Diamond James Stribling (2007)] found that, "WET test results [of effluent] exhibited few relationships with [instream] bioassessment results, and could not usually predict instream effects even when incorporating actual effluent dilution." It is notable that, in this study, most of the *C. dubia* and Fathead Minnow WET test failures were sublethal rather than lethal.

Recommendation: The WET limits should be deleted from the Modified Permit and the Fact Sheet should be revised accordingly.

B. **Use of IC_{25} in Lieu of NOEC** (Part I Item A.1. at pgs 1-2; Part II Items D&E at pgs 2-16)

The WET limits contained in the Modified Permit require the use of NOEC to determine test results and response actions.

Comments: The use of NOEC in calculating end points in WET testing relies on hypothesis testing techniques for statistical analysis. However, both the Chronic Freshwater Guidance[16] and the EPA WET Variability Document[17] state that point estimation techniques, which produce values such as IC_{25}, are the preferred statistical methods in calculating end points for effluent toxicity tests, rather than hypothesis testing techniques. EPA guidance provides the option of using either NOEC or IC_{25} in reviewing and determining sublethal WET test results.[18] Use of IC_{25} is preferable because it is less variable and a more robust analysis that is based on all of the test data.

In the current Fact Sheet, seven pages are devoted to flawed justifications for why the NOEC endpoint should be retained, even though the second sentence in the 7-page discussion acknowledges NOEC and IC_{25} are "equally acceptable." In addition, on page 16, it is noted that "the TSD reports that NOEC is approximately the analogue of IC_{25}." Actually, the EPA Chronic Freshwater Guidance in §9.5.1 states that IC_{25} is the preferable endpoint.[19] If IC_{25} is at least as good or better than NOEC, it is unclear why EPA Region 6 refused to include it in the permit.

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[16] Chronic Freshwater Guidance at p. 41, Section 9.5.1.

[17] WET Variability Document, Chapter 3, Section 3.4.1 states that the "greater variability of the NOEC underscores the desirability of using point estimates to characterize effluent toxicity."

[18] Section 9 of the Chronic Freshwater Guidance discusses both hypothesis testing (i.e. NOEC) and point-estimate (i.e. IC_{25}) analysis as viable endpoint techniques.

[19] Chronic Freshwater Guidance at p. 41.

Examples of EPA's flawed justifications for the use of NOEC are its statements surrounding:

(1) Analysis of North Carolina data
(2) Ability to detect a 20% response
(3) Lack of definition of endpoint by TSWQS

(1) The Fact Sheet reports the results of an evaluation of WET test data submitted by dischargers in North Carolina. The study concluded that, when NOEC and IC_{25} disagree, NOEC is more protective. The basis for this conclusion is unclear. It is equally possible that the study results, in fact, demonstrate that NOEC is more subject to false positives.

(2) If, in fact, a NOEC is reported based on a 20% effect, which is described as a benefit of NOEC, the reliability of this result is subject to great uncertainty. In a study conducted by EPA and published in 2000 it was reported that only 10 out of 33 laboratories (approximately one-third) were able to detect a 25% sublethal effect.[20] Values reported based on a 20% sublethal effect have a high probability of being reflective of the natural variability of the organism response rather than a response to effluent quality.

(3) An argument is also made that EPA cannot use an IC approach because the TSWQS has not defined the percentage level of impairment that would represent an acceptable level of toxicity. Nothing in guidance or EPA policy allows states to identify a level of impairment that is less restrictive than 25% or IC_{25}.

In addition, as previously noted, EPA guidance indicates NOEC and IC_{25} are approximately the same. Therefore, by defining NOEC, the TCEQ has effectively defined the acceptable percentage level of impairment. The critical dilution, which EPA has designated as the "numeric expression of the narrative WQS" serves to define what constitutes a passing test or a failure regardless of whether the endpoint is NOEC or IC_{25}; and Texas has designated the critical dilution that is the basis for determining toxicity for TSWQS.

Also, on page 16 of the Fact Sheet, EPA argues that:

> The NOEC has the advantage of being based upon a significant difference between performance of control organisms and those exposed to one or more test treatments, rather than a set reduction in performance.

This statement presents a misleading picture of the statistical analyses performed for both NOEC and IC_{25}. Tests performed for both NOEC and IC_{25} endpoints use multiple test treatments. Both endpoints are calculated based on a reduction in performance. However, NOEC calculations compare each different test treatment (dilution) separately to the control. The relationship between the results for two or more dilutions is not considered, except in a subjective manner when attempting to interpret results when there is not a monotonic dose response. The IC_{25} deals with tests with a non-monotonic dose response in a less subjective manner.

[20] Wet Variability Document at page 5-8, Table 5-1.

Similarly, the Fact Sheet contains a statement on page 20, in the section justifying a 0.75 dilution ratio factor, that also implies that NOEC endpoints are influenced by the combined results of all of the dilutions tested. The statement is that:

> . . . the greater the difference [of test results between test treatments with a high percentage of effluent and test treatments with a low percentage of effluent], the more likely the higher dilutions (100% and 75%) will appear to be statistically 'different' from the lower ones.

The NOEC is not influenced in any way by the results of test treatments below the critical dilution (except that the lower effluent dilutions are needed to confirm the presence of a dose response). This statement, too, appears to misrepresent how test data are interpreted when developing an NOEC.

The following comments are also provided in response to EPA's arguments regarding NOEC in the Fact Sheet:

Citation to a report by Warren Hicks et al., 2006, page 17

Although a full citation to the referenced report is not provided, it is assumed this is the WERF Report. The objectives of this report did not include comparing the relative error and variability of NOEC and IC_{25}. SJRA is unable to find the section that provides such a comparison.

Discussion under Figure 2, page 18

The statement is made that, "... several tests passed using the IC_{25} approach even though the mean effect at the IWC [instream wastewater concentration or critical dilution] was equal to or slightly greater than 25%." This statement was intended to demonstrate that NOEC is more protective than IC_{25}. However, it can easily be the value at the IWC concentration that is incorrect. This could occur if the reduction in reproduction for the dilution sample representative of the IWC was disproportionately high compared to the relative reduction in reproduction in the dilution samples bracketing the IWC dilution. In this event, the IC_{25} value is more likely to be correct.

NOEC includes a test at the critical dilution, page 19

The statement is made that "[a]nother strength of the NOEC approach (as adjusted by Region 6), is that the effluent critical dilution is always included as one of the effluent testing concentrations and, where possible, is bracketed by higher and lower effluent dilutions." This statement seems to reflect a lack of understanding regarding how WET tests are set up. The same dilution series is run regardless of whether the reported endpoint is NOEC or IC_{25}. The tests for IC_{25} also include the effluent critical dilution as one of the effluent testing concentrations and, where possible, can be bracketed by higher and lower effluent dilutions.

Increase in number of dilutions analyzed, page 20

Section X.B.4.a suggests that a permittee may wish to increase the number of effluent dilutions analyzed. It does not state what the purpose of this would be. The option may be offered as a way to address the lack of accuracy of the NOEC test compared to the IC_{25}. The only value that can be reported for a NOEC is one of the effluent dilutions tested. Therefore, if the dilutions tested are 50% and 25%, and there is a significant difference at 50%, the NOEC has to be reported as 25%. However, the true value could be between 25% and 50%. It would be possible to get a closer estimate if intermediate dilutions were also analyzed. However, this would increase the testing costs. It is not clear why requiring a permittee to conduct substantially more expensive tests--that still have a significant element of imprecision--is preferable to simply using the standard number of dilutions and using the IC_{25} calculation to interpolate between the dilutions measured to obtain a better estimate of the point at which effects become significant.

Number of replicates is an advantage, page 24

The statements are made that, "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." These statements, apparently, are trying to present the variability of the WET test as an advantage. The comparison is seriously flawed. There is no restriction against making more than one measurement of a sample when conducting chemical analyses. In fact, duplicate or even triplicate analyses of the same sample are sometimes run. However, when conducting chemical analyses, it is not necessary to analyze a sample 60 to 200 times in order to obtain a reasonably reliable value.

In addition to EPA's flawed analysis regarding IC_{25}, EPA fails to consider another approach that it has adopted—the use of Percent Effect (PE) as the test endpoint. There are a number of limitations associated with the use of NOEC as a test endpoint that are not present with a PE endpoint:

- With a NOEC endpoint, a test conclusion can be controlled by an anomalous result for one set of the effluent dilutions in the test. A PE endpoint is based on a best-fit line and integrates the results of all of the test data.

- In tests without a well-defined dose-response curve, determining the NOEC endpoint can be highly subjective. The PE endpoint eliminates much of the subjectivity.

- PE is a much better determinant of the practicality of conducting a successful TRE than NOEC. To have a reasonable possibility of being successful in a sublethal TRE, there needs to be at least a 40-50% reduction in reproduction in 100% effluent compared to reproduction in the control. Frequently, tests of municipal effluent that exhibit sublethal, but not lethal, failures have very flat dose-response curves so that none of the effluent concentrations tested have a 40% reduction in reproduction. Specifying that TRE studies should be conducted on effluents with an NOEC of 75%

does not address the fact that these effluents frequently do not have a 40% reduction in 100% effluent.

- The results based on PE are logical in that higher values indicate greater toxicity.

EPA has approved a PE-type of approach in South Carolina, and it has been deemed to be consistent with available guidance and regulations.

Recommendation: The Modified Permit should be revised to incorporate the use of PE or IC_{25} rather than NOEC for WET testing requirements and the Fact Sheet should be modified accordingly.

C. **Use of Test Results Below the Critical Dilution** (Part II Items D&E at pgs 2-16)

The Modified Permit incorporates SJRA's comments in the October 26, 2007 Petition for Review of NPDES Permit issued by Region 6 on September 28, 2007 (the "Petition"). In the Petition SJRA commented that NOEC be defined as the concentration "at which" there is not a statistically significant difference in response compared to the control. SJRA noted that this definition is consistent with the EPA Method Manual. The Method Manual defines NOEC as the highest concentration at which there is not a statistically significant difference. However, the Modified Permit still uses the old language in some instances that involve the use of test results for effluent dilutions below the critical dilution.

Comments and Recommendation: NOEC should not be retained as the endpoint for chronic tests. However, if it is, all permit provisions dependent on a determination of NOEC and or the evaluation of test results, should be revised to delete the phrase "and below" and "or below"; including, the following sections of the Modified Permit: pages 3 and 4 of Part II (Section D.2), page 4 of Part II (Section D.2.a.1.ii), page 11 of Part II (Section D.6.a), and page 12 of Part II (Section E.1.c) and any other provisions where the phrases appear.

D. **Compliance Determination for Chronic Tests** (Part IItem A.1. at p.2 ; Part II. Item E.3.c)

The Modified Permit provides that for the WET limits, a permit violation occurs for every test where the organism response at the critical dilution is statistically different from the organism response in the control.[21]

Comments: SJRA strongly objects to the inclusion of WET limits in the permit. However, if a limit is included, the basis for determining compliance with the limit should be substantially revised. The importance of basing decisions on the IC_{25} endpoint rather than NOEC has already been discussed.

In addition, the Draft Permit provides that every test where the organism response at the critical dilution is statistically different from the organism response in the control is a permit

[21] See comments in section above for discussion of the deletion of the phrase "or below" at Part II. Item E.3.(c).

violation. This requirement is inconsistent with (1) the types of limits imposed for other chronic toxicants; (2) the different regulatory approaches applied to lethal and sublethal WET limits; (3) the potential for infrequent and sublethal test failures to be predictive of instream impacts and adverse impacts on aquatic life, and (4) the variability of the test.

(1) Limits for Other Chronic Toxicants

Permit limits for other parameters that are included to control instream chronic toxicity are not set such that it is a permit violation if there is a single-sample exceedance of the concentration required to maintain WQS at the critical dilution. Typically, the concentration required to maintain WQS applies a 30-day average concentration limit. Since chemical parameters can be analyzed daily, this could be an average of tests performed on 24-hour composite samples, and this limit could be calculated based on as many as 30 samples. The permit limit for a single 24-hour composite sample is twice the 30-day average limit, typically. And the limit for a grab sample is typically three times the limit for the 30-day average. It should also be noted that test results for chemical analyses are substantially less variable than results for WET tests.

(2) Lethal and Sublethal Tests Require Different Regulatory Approaches

Because of differences in test variability and the frequent inability of permittees to conduct a successful sublethal TRE, the sublethal WET permit limits should be different than the lethal WET permit limits.

EPA Region 6 recognizes that a sublethal WET test cannot be implemented the same as a lethal WET test and consequently specifies a significantly different trigger for a sublethal TRE than for a lethal TRE. A lethal TRE is triggered if one of three retests demonstrates lethal effects. In contrast, a sublethal TRE is triggered when two of three retests demonstrate sublethal effects and the sublethal effects are observed at a minimum of 75% effluent dilution. A sublethal TRE requires twice the failure rate in the retests as a lethal test and in addition a sublethal TRE requires a minimum effluent concentration.

Even though EPA Region 6 recognizes that a sublethal WET test requires a different implementation than a lethal WET test, it does not consistently provide for this difference. Just as in the TRE trigger, sublethal WET permit limits should also require a substantially greater frequency of failure than the lethal WET limit before being considered a permit violation.

(3) Predictability of Instream Impacts

The reasonableness of considering a single test failure a permit violation is also called into question when one considers the lack of evidence linking a single test failure to instream biological impacts. A WERF study published in 1999 [Diamond, J., C. Daley, and T. Moore, *Evaluating Whole Effluent Toxicity Testing as an Indicator of Instream Biological Condition*, Project 95-HHE-1] found that the relationship between WET test failures and instream biological impairments was more likely to exist if a discharger failed at least 25% of their tests. As

discussed above, there are no studies that have shown that intermittent failures of only the sublethal endpoint are predictive of instream impacts.[22]

(4) Test Variability

Establishing a regulatory requirement that every test must pass is inconsistent with the known variability of the *C. dubia* test, particularly the reproduction test. Such a standard cannot be achieved regardless of the diligence of the permittee. Compliance should be based on a median value of tests conducted over a 12-month period.

The variability of the test is documented in an EPA study of test variability, the reference toxicant charts maintained by laboratories that conduct WET tests, a WERF study of variability, and the tests of a mock effluent that had a composition similar to the composition of the Woodlands WWTP effluent, with respect to the concentrations of the major ions present. Each of these is discussed below:

EPA Study: The variability of the test is documented in the EPA report, *Interlaboratory Variability Study of EPA Short-term Chronic and Acute Whole Effluent Toxicity Test Methods, Vol. I*, (2001). The Interlaboratory Variability Study was conducted by EPA from September 1999 to April 2000. As part of this study, EPA split samples of a reference toxicant, an effluent, and a receiving water and sent the split samples to multiple laboratories. EPA asked the laboratories to identify the lethal and sublethal NOEC for each sample. There were 34 participating laboratories. Collectively, these laboratories performed 48 tests of the reference toxicant sample, 27 tests of the effluent sample, and 13 tests of the receiving water sample. Some tests were unsuccessful or invalid so the total number of test results reported is less than the number of tests performed. (Of the 88 tests, 10 were unsuccessful or invalid, i.e., only 80% of the tests were successfully completed. It is unlikely that EPA would accept this low rate of test completion from a permittee.) Also, apparently, the reference toxicant sample was incorrectly formulated because most (but not all) laboratories reported NOEC values for survival and reproduction in the reference toxicant of 100%, which suggests there was no toxicant present. The results of the study are shown in Table A.

The laboratories reported a wide range of results for identical samples. For most sample and test endpoints of sublethal and lethal effects, approximately 30% of the labs reported a value that was different than the median value (the value reported by the majority of the laboratories, which can be considered the correct value for the purposes of the study) for the test. In addition, when the test result was different than the median, it was more likely to be less than the median, which would indicate a false positive, than to be greater than the median, which would indicate a false negative. Such results indicate that permittees are significantly more likely to have a test indicate non-toxic effects when none truly exist (a false positive) than to have a test indicate no toxic effects when such effects are present (false negative).

[22] See comments in above section, II.A.(5), Instream Impacts.

Table A

Variability of 7-day *Ceriodaphnia dubia* Survival and Reproduction Test as Determined in the EPA Report, Interlaboratory Variability Study of EPA Short-term Chronic and Acute Whole Effluent Toxicity Test Methods, Vol. 1 (2001)

Sample Type	Endpoint	Frequency of NOEC (for specified % Effluent)						Median NOEC (% Effluent)	Total Number of Tests	% of Test Results < Median	% of Test Results > Median
		<6.25%	6.25%	12.5%	25%	50%	100%				
Reference Toxicant	Survival	0	0	0	1	0	35	100	36	3	0
	Reproduction	0	2	3	1	4	26	100	36	28	0
Effluent	Survival	0	2	6	15	0	0	25	23	35	0
	Reproduction	0	3	17	4	0	0	12.5	24	13	17
Receiving Water	Survival	0	0	0	9	1	0	25	10	0	10
	Reproduction	0	0	3	7	0	0	25	10	30	0

- There were 34 laboratories participating in this study.
- Assume the median value is the "correct" value.
- For 4 out of 6 tests, approximately 1/3 of the laboratories reported a different result than the "correct" result. Frequently, these laboratories reported the sample as being more toxic than the "correct" result.

Reference Toxicant Charts: The variability of the test also can be observed by inspecting reference toxicant charts prepared by the laboratories that conduct WET tests. At least once each month, a WET laboratory runs a WET test with a known toxicant in order to confirm that its organisms are responding within an acceptable range. The result of each test is plotted on a 24-month graph to document the normal range of variability for that specific laboratory. Figures A B and C are reference toxicant charts (*C. dubia*) for four laboratories that conduct WET testing.[23] These laboratories use sodium chloride as the toxicant and report the IC_{25} value for the test, which is the concentration of sodium chloride that produces a 25% reduction in reproduction.

All of the results shown on Figures A, B and C are in the acceptable range for the test. For these four laboratories, the 24-month median IC_{25} ranges from 600 mg/L to 1003 mg/L of sodium chloride, which is a relatively wide range. However, depending on the laboratory and the month, the individual test results are much more variable. The IC_{25} for individual tests ranged from 255 mg/L sodium chloride to 1210 mg/L.

This variability can be compared to the variability of chemical analyses for chloride concentrations in this range. Standard Methods for the Examination of Water and Wastewater indicates that the relative standard deviations for the results of chloride tests typically used for concentrations in this range (Argentometric Method and Mercuric Nitrate Method) are 3-4%. This means that 95% of the time (1 out of 20 samples) the values reported for a standard sample containing 600 mg/L of sodium chloride would be between 540 mg/L to 640 mg/L.

These charts confirm that, as observed in the data from the EPA Interlaboratory Variability Study, while a median value of multiple tests may approximate the "correct" answer, any single test can be significantly wrong. Further, inspection of the reference toxicant charts confirms that results may differ from the median for several months at a time. Therefore, conducting one or two additional tests in consecutive months has a low likelihood of producing the correct value.

[23] *See* Attachment E to SJRA Comments filed February 19, 2007 for underlying laboratory reports.

Figure A
Reference Toxicant Data
Ceriodaphnia dubia
Reproduction IC_{25}

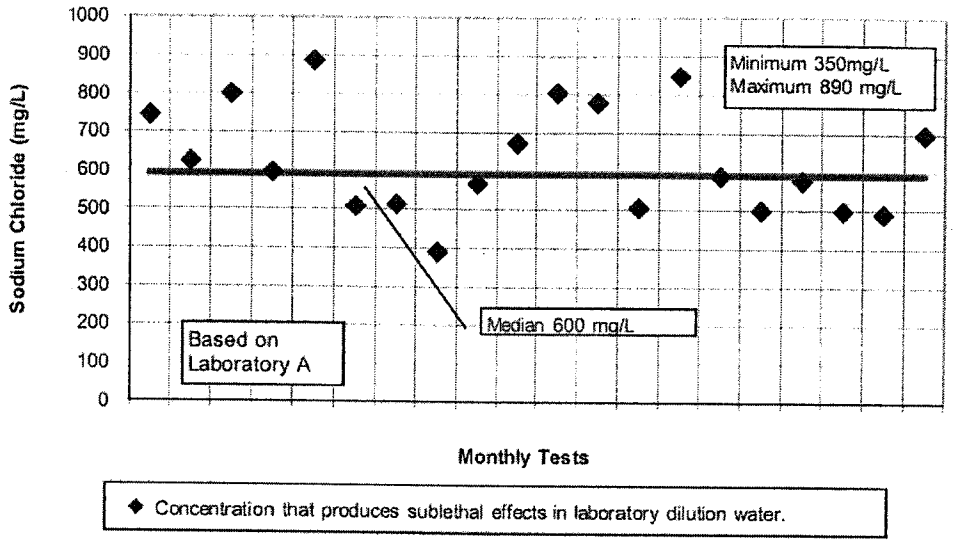
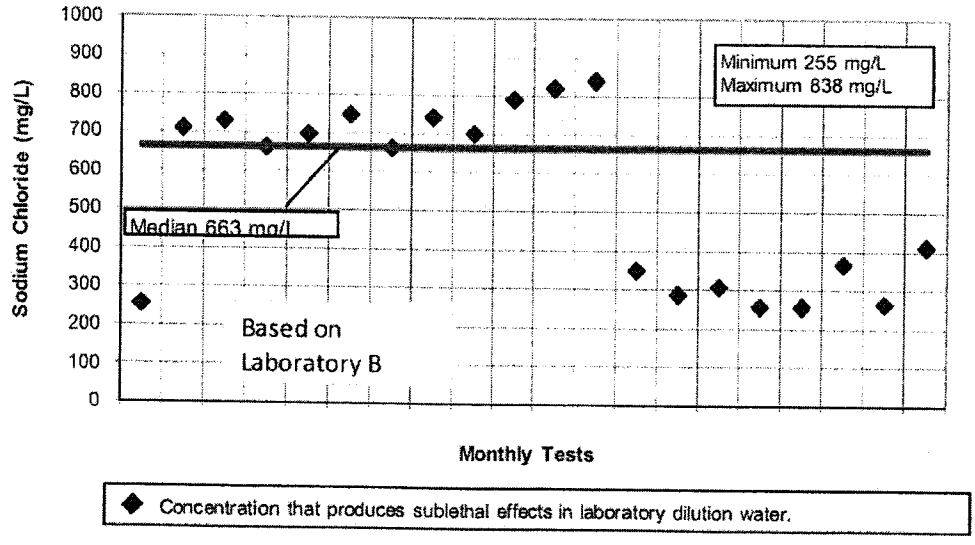


Figure B
Reference Toxicant Data
Ceriodaphnia dubia
Reproduction IC_{25}



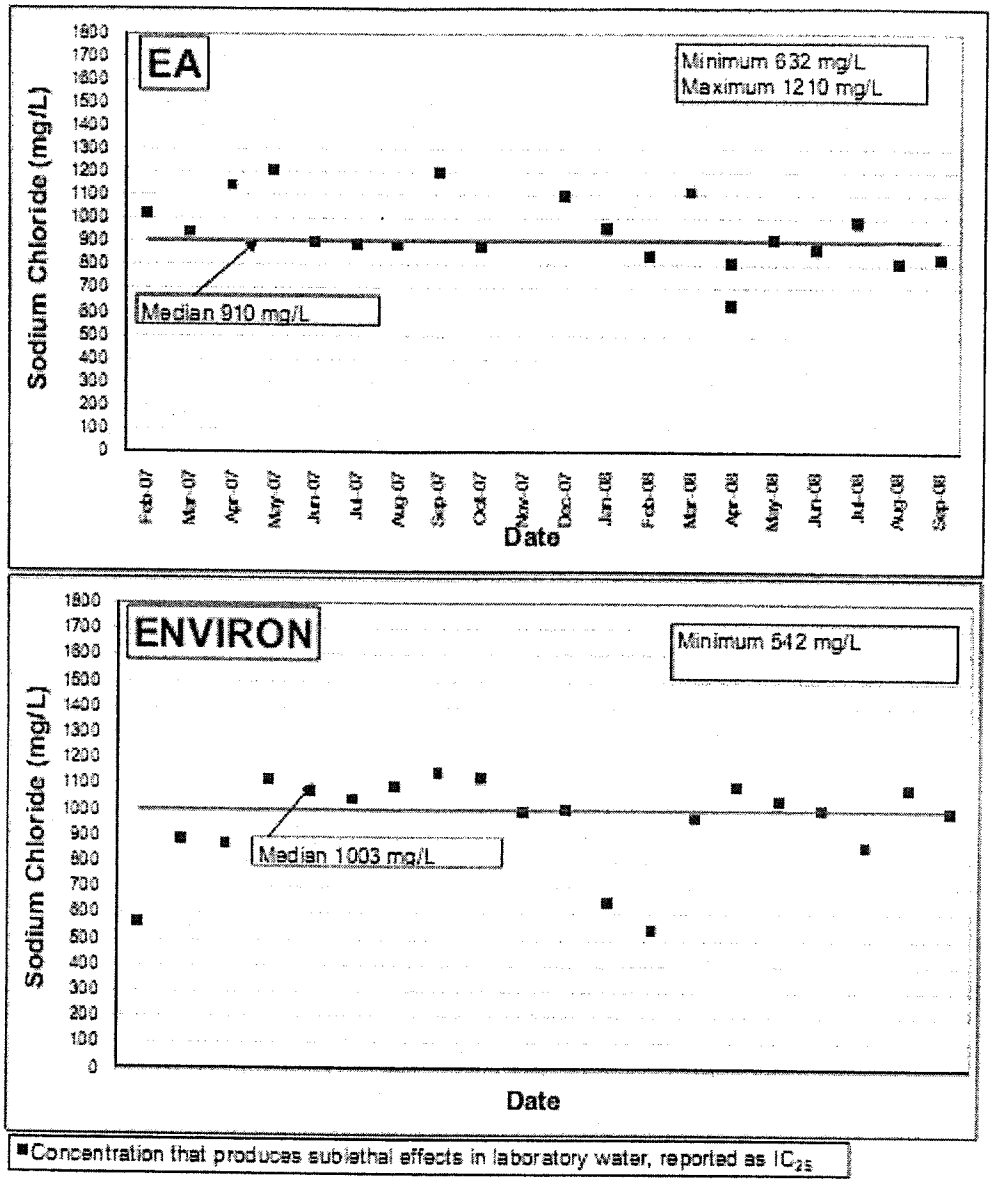


Figure C

Reference Toxicant Data
Ceriodaphnia dubia
Reproduction IC_{25}

WERF Report: As wide as the results are that are reflected on the reference toxicant charts presented herein, the actual variability of the test is much greater. This is reflected in the data maintained by EPA in the National Reference Toxicant Database.

The WERF Report determined test variability using reference toxicant data compiled by EPA. The database and the quality assurance protocols applied to the database by EPA are described in Section 3 of the WET Variability Document. The WET Variability Document states that for each test in the database, EPA personnel or an EPA contractor calculated the effect concentration, verified that all test acceptability criteria has been met, and verified that the statistical flow chart for evaluating the raw data had been followed correctly. The WET Variability Document further states that "thus, all summary statistics and estimates were calculated from the replicate data and strictly followed the most current EPA test methods."[24]

The WERF Report on test variability presents a graphical summary of the IC_{25} values for the chronic 7-day *C. dubia* reproduction test as reported in the National Reference Toxicant Database. The reference toxicant in these tests was the same reference toxicant that was used by the four laboratories for which results are presented on Figures A, B and C sodium chloride. The summary in the WERF Report of the reproduction test results is reproduced on Figure D.

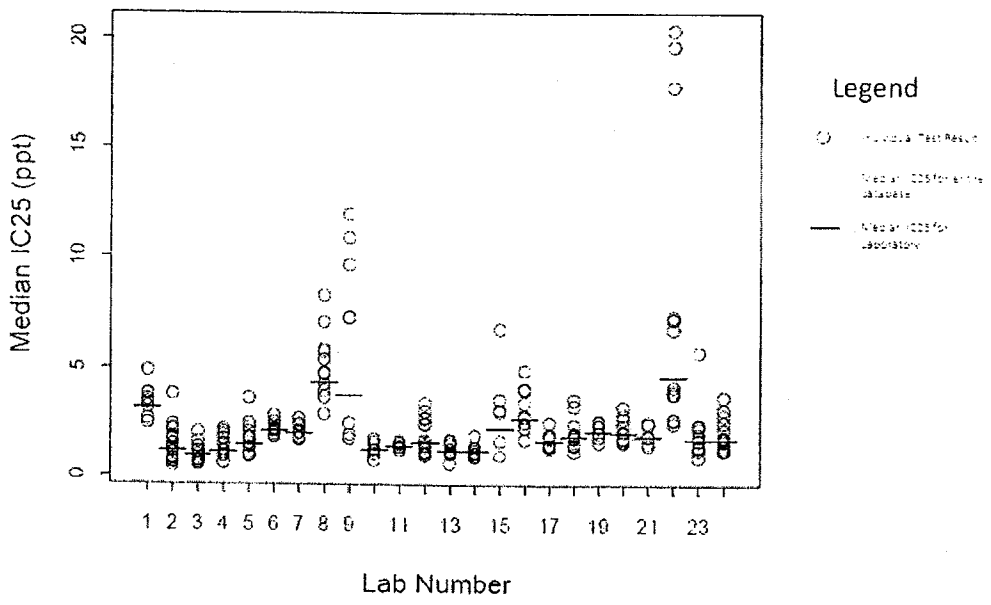
Data from 24 laboratories are presented on Figure D. Circles document the results of individual tests reported by the laboratory. The short, solid, horizontal line on each vertical line represents the median of the IC_{25} values reported by that laboratory. The dotted horizontal line that crosses the entire chart is the median of all of the IC_{25} values reported by the different laboratories.

As indicated on Figure D, the median IC_{25} for reproduction, based on all of the tests in the EPA National Database, is almost 2,000 mg/L of sodium chloride (which is much greater than the values reported by the two laboratories whose results are presented on Figures A, B and C). Median IC_{25} reproduction values for individual laboratories range from approximately 1,000 mg/L to approximately 5,000 mg/L. Individual test results range from approximately 600 mg/L to over 20,000 mg/L.

Similar widely distributed results can be observed for the 7-day chronic *C. dubia* survival test. Figure E is also from the WERF Report. It presents a graphical summary of the test results in the EPA National Reference Toxicant Database for the survival test. As indicated on Figure E, the median IC_{25} for survival, based on all of the tests in the EPA database is approximately 1,800 mg/L. Median IC_{25} survival values for individual laboratories range from just over 1,000 mg/L to approximately 3,500 mg/L. Individual test results range from approximately 300 mg/L to well over 6,000 mg/L. The seeming contradiction in these results wherein sublethal impacts occur at higher concentrations than lethal impacts should be noted.

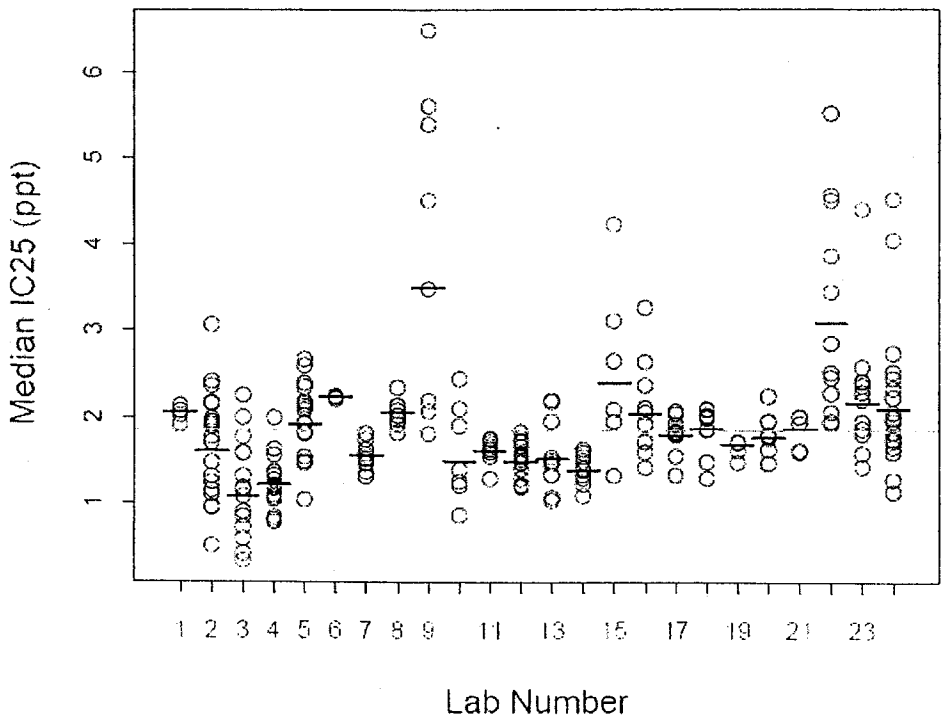
[24] WET Variability Document, Chapter 3, Section 3.1.

Figure D
Reference Toxicant Data
Ceriodaphnia dubia Reproduction IC_{25}



Based on EPA National Reference Toxicant Database, Reproduced from WERF Report

Figure E
Reference Toxicant Data
Ceriodaphnia dubia Survival IC_{25}



Legend

Individual Test Result

Median IC25 for entire database

Median IC25 for Laboratory

Mock Effluent: If repeated tests of the same reference toxicant solution show different results from one test to the next, it can be expected that the results of tests of effluent samples of comparable quality will also show different results from one test to the next. This is confirmed by the results of the tests of the WWTP No. 1 mock effluent sample conducted as part of the 2008 STE. The mock effluent had a consistent ionic composition, which was comparable to the concentrations of the major ions in the WWTP No. 1 effluent; and it was prepared using non-toxic laboratory water. However, 40% of the mock effluent samples failed the sublethal test, and 60% of the mock effluent samples passed the sublethal test.

Summary: A permit limit based on a single chronic WET test result is inappropriate because of the test variability documented above. Many factors other than effluent quality can determine test results. The variability of response between different organisms is a significant factor. If a WET limit is imposed, it should be consistent with the variability of the test. The determination of permit compliance should not be based on an individual test result because of the high likelihood that any single test can be unrepresentative. There is no truly "correct" result for a WET test because the test result is defined by the responses of the specific organisms used in that individual test (organisms are not equivalent to laboratory instruments; they do not consistently respond the same way to the same concentration of a substance). The fact that different sets of organisms respond differently is documented in the WET test results reported in the EPA Interlaboratory Variability Study, the EPA National Reference Toxicant Database for *C. dubia*, the results presented on reference toxicant charts, and the test of the Woodlands WWTP mock effluent. All of these studies are based on repeated tests of solutions with a consistent quality. All other variables were controlled in accordance with test protocols. Nevertheless, a wide range of test results was obtained in each study. The results for the Fathead Minnow tests are not distributed over quite as wide a range as the *C. dubia* tests, but are still highly variable.

If compliance is to be judged based on the chronic WET test, it should be based on the central tendency of the data. As shown in the Interlaboratory Variability Study, there can be a moderate degree of agreement among tests and laboratories regarding the median value for a sample. However, both the Interlaboratory Variability Study and the reference toxicant charts show that the median must be determined based on a sufficient number of tests. As shown on the reference toxicant charts, testing during three successive months is not sufficient to define the central tendency of the data.

Recommendation: If a WET limit is imposed (despite the results of the 2008 STE and other reasons stated in Part II.A. herein), the method for determining compliance should be revised to read as follows:

> "The conditions of this item are effective beginning with the effective date of the WET limit. When the median of all tests conducted during the previous twelve months exceeds the IC_{25} value set forth in Part I of this permit, the permittee shall be considered in violation of this permit limit, and the testing frequency for the affected species will increase to monthly until such time as compliance with the IC_{25} effluent limitation is demonstrated, at which time the permittee may return to the testing frequency stated in Part I of the Draft Permit. The median value

shall be recalculated and reported each month based on the results during the previous twelve-month period."

E. **WET Testing Reporting Requirements** (Part I Item A.1 at p. 2; Part II Item E.3.b. at p. 16)

Phrases used to describe the reporting requirements for WET tests in Part I.A.1 and Part II.E.3.b. are not defined and, in some cases, do not make sense. The terms used are as follows:

- 30-day Average
- Lowest 30-day Average Minimum
- 7-day Minimum
- Daily Average Minimum

Comments: Only the term "30-day Average" is defined in the Modified Permit. The other terms are not defined and their respective means are unclear. The second paragraph of Part II.E.3.b. is unclear as to "average" and "minimum." The paragraph states:

> If more than one valid test for a species was performed during the reporting period, the test NOEC's may be averaged arithmetically and reported as the DAILY AVERAGE MINIMUM.

It is unclear why an average would be reported as a minimum. Furthermore, the second paragraph contradicts the third paragraph, which implies that averaging is not allowed. It states:

> ... Only ONE set of biomonitoring data for each species tested is to be recorded on the DMR for each reporting period. The data submitted should reflect the LOWEST lethal and sublethal effects results for each species during the reporting period.

The repeated use of the words "lowest" and "minimum" in the Reporting Requirements suggest that in the event that SJRA conducts more than one test in a reporting period, EPA is only interested in the lowest NOEC observed and that only the lowest NOEC is to be reported. The section implies that any additional tests demonstrating effluent quality different than the lowest NOEC are basically ignored by EPA and should not be reported.

Recommendation: Provide definitions for the terms used. Provide for the possibility of reporting more than one test during a reporting period.

F. **WET Compliance Schedule** (Part I Item B. at p.4)

Part I.B sets forth a compliance schedule for attainment of the WET permit limits. SJRA believes WET limits should not be imposed. Therefore, there is no basis for a compliance schedule for WET.

In addition, the compliance schedule proposed does not recognize the work that has been completed. SJRA has determined the "exceedance cause(s)." The periodic sublethal failures of WET tests of effluent from WWTP No. 1 are caused by the dissolved salts in the source water for the public water supply. The 2008 STE presenting the findings and backup data were provided to EPA Region 6 in November 2008. Based on this fact, SJRA is seriously perplexed by a statement in Section X.B.6 (page 26) of the Fact Sheet that "[t]he facility has performed toxicity reduction and identification evaluations, but has not identified a specific toxicant that causes the test failures." Since the cause is dissolved salts in the source water, controls are not needed. TSWQS excludes test failures due to dissolved salts in source waters from the definition of toxicity.

Recommendation: If, however, EPA persists in imposing WET limits and disregarding the TSWQS, the compliance schedule should be revised. Currently, Part I.A of the permit (footnote 10 on page 2) specifies that the WET limits are effective beginning three (3) years after the "permit effective date." The permit effective date is set forth in the permit as November 1, 2007, the date the permit was initially issued. Therefore, the compliance period would end October 31, 2010, slightly over a year and one-half from now. The implementation of the WET limit provisions in the permit was delayed, pending the results of the appeal to the Environmental Appeals Board. The three-year compliance period should not begin until final action is taken with respect to the WET limits.

G. **Trigger for Sublethal TRE, Fathead Minnow** (Part II Item II.D.2.a.iii at p.4)

Section II.D.2.a.iii addresses when a TRE is required if there are sublethal failures of the Fathead Minnow test.

Comments: The Modified Permit provides that a TRE will be initiated if two of the three retests exhibit significant sublethal effects in samples that are 75% or less effluent. As noted by EPA in the Fact Sheet, a reduction in response as low as 20% can be considered statistically significant. It is not possible to do the TIE studies that are typically necessary to perform a TRE unless there is at least a 40% reduction in the sublethal response, in the highest effluent dilution. Requiring that there be a statistically significant effect in a 75% effluent sample does not ensure that there will be a 40% reduction in the sublethal response in a 100% effluent sample; and, therefore, does not ensure that it will be possible to conduct meaningful TIE studies.

Recommendation: This provision should be reworded to state,

"If any two of the three additional tests demonstrates 40% sublethal effects at the highest dilution tested, the permittee . . . ."

In addition, this paragraph specifies that the Sublethal Effects TRE initiation date will be the test completion date of the "first" failed retest. Since the TRE is not required until there is a second failed retest, this sentence should be revised to establish the TRE initiation date as the test completion date of the second failed retest.

III. MONITORING FOR OUTFALL 002
(Part I Item A.2 at p.3)

Section I.A.2. (page 3) addresses effluent limitations and monitoring requirements for the intermittent discharge at Outfall 002. As previously described, effluent will be discharged from Outfall 002 to Harrison Lake only when needed to provide irrigation water for the golf course. It is anticipated that such discharges will be infrequent, ocurring only during very warm weather, and of short duration (less than 24 hours).

Comments: SJRA is unclear how to comply with the sampling and reporting requirements for Outfall 002. Flows for Outfall 002 are not expected to continue for a continuous 24-hour period; so, a 24-hour composite sample would not be representative of the discharge. In addition, seldom, if ever, will there be a discharge for five consecutive days during a week and times of discharge may not be conducive to the requirement in Part I, page 3, footnote 2 which states that "[t]he first sample of any day shall be at least sixteen (16) hours after the first daily sample of the previous day." In any event, monitoring and reporting on a five-day per week schedule are excessive for a 0.6 MGD intermittent discharge.

Recommendation: SJRA recommends that Section I.A.2. be amended to incorporate the following:

- Samples are only required once per week on normal workdays of Monday through Friday for all parameters except flow when discharging from Outfall 002.
- Flow is measured continuously when discharging from Outfall 002.
- All monitoring and reporting requirements are specified as applicable only "when discharging."
- For all parameters where 24-hour composite samples are required ($CBOD_5$, TSS, and NH_3-N), 24-hour composite samples collected at Outfall 001 are sufficiently representative of the discharge quality at Outfall 002. (Samples for Outfall 001 and Outfall 002 are collected at the same location.) Permit limits for each Outfall apply to the sample that is representative of both outfalls.
- TRC, pH, and DO measurements for Outfall 001 are sufficiently representative of the discharge quality for Outfall 002. Permit limits for each Outfall apply to the sample that is representative of both Outfalls.

IV. CORRECTION OF INFORMATION IN THE FACT SHEET AND TYPOGRAPHICAL ERRORS

Typographical Error in Modified Permit (Part I Item A.1 at p.2) The two sections on "Effluent Characteristics" for WET include a parenthetical "See Part II, Section F." These references should be revised to state, "See Part II, Section E." Section F addresses the Minimum Quantification Level (MQL) for copper.

Fact Sheet Population Information (Item VIII at p. 2) The population of The Woodlands is approximately 88,000 rather than 37,333 persons.

Fact Sheet Discussion of Permit Limits and Monitoring Requirements for Outfall 002 (Item X.3 at p. 5) The last sentence of the second paragraph should be revised to clarify that limits applicable to Outfall 002 do not apply to Outfall 001 on days that discharge occurs at Outfall 002.

(Item X4.b at p. 6) This paragraph suggests that biomonitoring requirements apply to Outfall 002 which is inconsistent with the Modified Permit. This language should be clarified.

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