

EPA Comments on Implementation Procedures December 2010

Comments on Whole Effluent Toxicity

1. **Reasonable Potential (RP) for Whole Effluent Toxicity (WET)** (IPs, page 113): The implementation procedures (IPs) do not adequately address RP. Federal regulations require NPDES permitting authorities to determine whether each NPDES-permitted discharge has the reasonable potential to cause or contribute to an exceedance of a State water quality standard or criterion. EPA has attempted to work with TCEQ since February 2005 to develop acceptable procedures. However, after several draft proposals and recent cautionary letters from EPA Region 6, TCEQ submitted revisions to its IPs that do not address RP for WET in any meaningful manner. In addition, recently submitted TPDES permits do not include WET limits where RP clearly exists.

TPDES permits issued under the NPDES program must fully meet the requirements of the Clean Water Act, federal regulations and the Texas WQS. In order for EPA to approve the WET section of the IPs submitted for EPA approval, the document must be revised to include RP procedures that fully and clearly explain TCEQ's decision-making process, and all information and data to be used in making the determination. In addition, the document must provide a clear explanation of any process which results in data being discarded or otherwise not used. These revisions should be completed as expeditiously as possible to prevent further impacts to aquatic life, delays in the issuance of TPDES permits and potential specific objections to permits/fact sheets that do not provide a clear, detailed and consistent process for determining reasonable potential for WET.

2. **Permit Effective Dates for Variances and Limits:** The Agency cannot approve permits that allow for compliance schedules or variances which do not include a specific date for compliance with final effluent limitations.
3. **Statistical Interpretation of Test Results** (IPs, Page 107): As previously noted to TCEQ, this section and all such references regarding any adjustment of the nominal error rate must be removed for EPA to consider approval of the IPs. In point of clarification of this issue, subsequent to publishing its approach in July 2000, EPA determined that the procedure lacked sufficient scientific basis and withdrew it. The 2002 WET test method manual revisions set the nominal error rate at 0.05, and do not allow for adjustment for that value. Test results based on any nominal error rate other than 0.05 are not acceptable for purposes of permit compliance and any test results based on an any value other than 0.05 must be recalculated based on the standard rate of 0.05 before evaluating RP.
4. **Reasonable Potential Determination - Review of Previously Submitted WET Data** (IPs, Page 113): This specific issue is not addressed in the IPs, however, on page 55, #116 in the TCEQ Response to Comments on the IPs, TCEQ lists several qualifiers it intends to employ in establishing RP for WET –

“The TCEQ approach will be grounded in the best scientific information available, consideration of EPA guidance as allowed under the MOA, staffs' professional and scientific knowledge (including but not limited to, artifactual toxicity, non-representative data, and source water toxicity) in dealing with RP determination and WET related issues, experience, and familiarity with program administration of permits with lethal and sublethal monitoring, and testing methodologies.”

EPA previously commented to TCEQ on the review of data already submitted for purposes of determining compliance with the NPDES program, and stated that test results meeting the established test acceptability criteria may not subsequently be discounted. Each piece of this information must be fully and clearly documented in the fact sheet. Any previously reported WET data or test results that TCEQ determines will not be used in RP analysis is subject to EPA review and must be submitted as part of the public record for the draft permit package. Standard permit requirements have for years precluded the submission of invalid test data. EPA anticipates that it will very rarely allow data that has been submitted for purposes of NPDES compliance to be subsequently disqualified.

5. **RP Determination – Compliance Periods** (IPs, Page 114): TCEQ's proposal to delete TRE requirements from permits will affect the use of compliance schedules and likely result in conflicts with the revised WQS which state: "Where conditions may be necessary to prevent or reduce effluent toxicity, permits *must* include a reasonable schedule for achieving compliance with such additional conditions." (30 TAC § 307.6(e)(2)(D)).

EPA has provided guidance on the appropriate use of compliance schedules (See attached memo, Compliance Schedules for Water Quality-Based Limitations in NPDES Permits, James Hanlon, May 5, 2007). As proposed, permittees who demonstrate significant toxic effects and fail to aggressively self-implement a TRE and /or have had sufficient time to already have done so will not qualify for a compliance schedule. Also, a permit compliance schedule must be an "enforceable sequence of actions or operations leading to compliance," must be fully described and supported in the permit fact sheet and require compliance as soon as possible - i.e., "The permitting authority should not simply presume that a compliance schedule be based on the maximum time period allowed by a State's authorizing provision."

By not continuing the use of TREs and TRE triggers in permits, TCEQ is providing permittees with what amounts to a five-year delay in even beginning to address toxicity. Moreover, the WQSs now state that a TRE (duration is not defined, but historically 28 months) may be required, and a compliance schedule (three years) must be included. In addition, the IPs now introduce an additional one-year "study period" prior to initiating a compliance schedule. Thus, potentially toxic discharges could be permitted to continue for over eleven years (and over two permit cycles) before any positive control would become effective in a permit. This would not constitute timely and appropriate actions to preclude exceedances of the WQS.

Lastly, EPA has concerns that the new one-year study period followed by a three-year compliance schedule constitutes a four-year compliance schedule, which is not allowed by the WQS. EPA's position is that if substantial and ongoing corrective actions have not been taken after toxicity has been demonstrated and confirmed by a follow-up test, anything beyond a compliance schedule of up to three years (if warranted) would not be approvable.

6. **Reasonable Potential Determination - Basis for Removing WET Limits** (IPs, Page 114): TCEQ proposes to remove WET limits after a 3 year period of compliance with quarterly testing. As previously communicated to TCEQ, EPA disagrees with the notion that twelve WET tests performed over a three year period constitute an adequate basis for removal of a permit limit. In view of federal anti-backsliding requirements, this is an inadequate amount of data on which to make such a determination. Further, the removal of a WET limit, as with any other limit, must first be based on an analysis of reasonable potential – which TCEQ has not yet developed for WET. EPA also notes that for purposes of making decisions on site-specific criteria for use in individual permits, the IPs require a minimum of 30 samples for hardness (page 157), pH (page 158), chlorides (page 159), total suspended solids (page 161) and metals (page 161), all taken at a minimum of one week apart, and a minimum of 50 samples for total dissolved solids (page 180). TCEQ has provided no basis for establishing a three-year WET limit, the IPs do not even mention removing a chemical limit after any period of time, nor do the WQS address this important issue.
7. **Addressing WET Limit Violations** (IPs, Pages 114 and 117): The IPs state that noncompliance with a WET limit is based on a scheduled test failure followed by at least two additional test failures demonstrated in the required additional testing period. EPA disagrees with this approach – a single violation is a permit violation and an exceedance of the narrative Texas water quality standard for protection of aquatic life.
8. **Toxicity Reduction Evaluations (TREs)** (IPs, page 115): In our previous comments, because EPA was mindful of the scope of its authority, the Agency took no position on whether the IPs, and permits, must include TRE requirements. However, EPA strongly encourages TCEQ to include TRE requirements (and now including sublethal TREs) in the IPs and permits as has been done since 1991. Otherwise, TCEQ is establishing a scenario where a permittee need take no action whatsoever after repeated test failures, potentially wasting opportunities to find toxic samples, and identify sources and controls for toxicants in a timely manner. In fact, there is no reason for not including TREs in permits even with WET limits - other States have done so for years.

In addition, it appears that the water quality standards, implementation procedures and the continuing planning process documents are inconsistent with respect to TRE requirements.

- a. The IPs state that TREs *are suggested* but TRE requirements will no longer be included in TPDES permits(s) (except for purposes of the Texas 24-Hour LC50 test).
- b. The WQS state that a TRE *may* be required.
- c. Series 18 of the continuing planning process (CPP) states that “If a discharge repeatedly fails effluent toxicity tests, then a toxicity reduction evaluation *is required*...”
- d. Series 18 of the CPP also states that “Any significant toxicity observed during biomonitoring must then be evaluated and eliminated.”

With respect to item d. above, TCEQ will need to explain how it will ensure that “Any significant toxicity observed during biomonitoring...” will be evaluated and eliminated, given that the IPs simply suggest that permittees perform a TRE. This problem will be further exacerbated by TCEQ removing reopeners from its permits, as indicated on Page 48, #117, of its Response to Comments on the IPs, “The commission responds that the second paragraph of the TRE section states that two retests will be performed. The additional retest results will be used as part of the RP determination. *The commission does not intend to place re-opener clauses in the permit language.*”

TCEQ has not provided a process by which the IPs, WQSs and CPP are reconciled with respect to TREs. It is unclear what environmental benefit is to be achieved by purposefully discontinuing a permitting requirement that ensures timely investigation and corrective actions after WET test failures (which indicate impairment of aquatic ecosystems).

9. **WQS v IPs on TREs and Compliance Schedules:** It does not appear that the general standard at 306.6(e)(2) fully supports the narrative standard at 307.6(e). The phrase “...may require TRE...” presents an issue of implementation; it is not a water quality standard. Further, TCEQ must define what constitutes an acceptable TRE and the duration period of a TRE, as well as explain how the concepts of TRE (in the WQS), a one-year “initial study period” (in the IPs) and a compliance schedule (in the WQS and IPs) work together. It appears that the 1-year initial study period presented with a compliance period is actually a 4 year compliance schedule – this contradicts the WQS, which limit compliance schedules to a maximum of 3 years. In addition, the federal regulations governing the use of compliance schedules preclude general application of the maximum period allowed by a State (see enclosure - EPA Memo, “Compliance Schedules for Water Quality-Based Limitations in NPDES Permits (James A. Hanlon, May 10, 2007)).

10. **POTW Flow Rates – Domestic Dischargers** (IPs, Page 102): The sentence “Permittees with more than one flow phase in their permit begin WET testing upon expansion to 1 MGD or greater” is misleading and must be corrected to, “Permittees with more than one flow phase in their permit begin WET testing upon expansion to, *or the discharge of, 1 MGD or greater, whichever comes first*” or similar. [See EPA Comments, May 2008]. Once a POTW facility has discharged at the rate of ≥ 1.0 mgd under normal operating conditions, that facility is functionally an NPDES major discharger and must comply with requirements for major POTW facilities.

11. **WET limits vs monitoring-only** (IPs, Page 102): As noted in our comments dated May 23, 2008, the first sentence of the first paragraph is incorrect. Facilities whose effluent “... demonstrates significant potential to exert toxicity in the receiving water...” require WET limits, not just WET monitoring. Facilities whose effluent poses a very low potential for toxicity are required to monitor for WET, but WET limits are not required unless toxicity is demonstrated in testing during the permit term.

Non WET Related Comments

1. **Total Residual Chlorine Requirements for Minor POTWs (IPs, Page 131):** Minor POTWs (i.e., those with design flows of > 1.0 mgd) constitute a class of Texas discharge permits which specifically authorizes the discharge of toxics in toxic amounts. Most of these permits have not previously been subject to EPA review, however that status is currently under review since EPA has identified this as a significant programmatic issue. In its revisions to its IPs, TCEQ elected to establish dechlorination requirements for a relatively small portion of its minor domestic discharge universe, only those facilities that are new or expanding, with design flows between 0.5 and 1.0 mgd. TPDES permits for these facilities typically require the facility's effluent to "...contain a chlorine residual of at least 1.0 mg/l and shall not exceed 4.0 mg/l after a detention time of at least 20 minutes (based on peak flow)...," with no requirement to dechlorinate the effluent prior to discharge. For discharges to many small streams, this permit condition effectively authorizes the discharge of a toxic (chlorine) in toxic amounts (4.0 mg/l is almost 400 times EPA's chronic criterion and 200 times EPA's acute criterion for chlorine toxicity to aquatic life). In addition, such permit requirements are in direct conflict with TCEQ's narrative water quality standard for the protection of aquatic life and constitute reasonable potential for exceedance of the criterion. Among the necessary changes for EPA to approve the WET section of the IP document submitted for EPA approval, the document must be revised to include appropriate restrictions on the level of chlorine and other substances used to disinfect effluents discharged from minor POTWs. EPA recognizes that this requirement will impact many minor POTWs and is willing to assist TCEQ in prioritizing a phased implementation plan (i.e., discharges with the most significant environmental impacts first, etc.) that will result in appropriate chlorine controls for a significantly greater number of minor POTWs in the near future.

2. **Nutrients:** While EPA acknowledges the steps taken by TCEQ to begin addressing nutrient concerns through the IPs, we believe such actions should not be limited to dischargers that are new or expanding. EPA also notes that the IPs' reference to potential effluent limits as low as 0.5 mg/l phosphorus may not be sufficiently protective. EPA recommends that the IPs include a reference to the potential for significantly lower phosphorus limits. All domestic discharges and other facilities with potential to discharge nutrients to reservoirs with chlorophyll-a criteria should be evaluated for potential limits.

Procedures related to Chlorophyll-a/Nutrients Permitting (IPs, pages 30-54):

- Some of the conversion factors utilized in the equations are not adequately identified or labeled (i.e. 1381525 in equation #3, 4047 in equation #4, and 0.3048 in equation #5).
- What is the justification for an assumption of 3.5 mg/L TP in effluent if no TP data is available?
- The model appears to rely on a perception that there is only one discharger per waterbody. Are these cumulative loadings?
- If this model is used only to assess new or expanding dischargers, it is possible that the model will not adequately represent to sum of TP inputs to a reservoir.

3. **Regression Equation for Establishing Critical Low-Flows in Specific Water Bodies in the Cypress Creek Basin (IPs, pages 93 and 95-99):** Tables 4a through 4e include tables for alternate values to be used in place of 7Q2 critical low flow values (or the previously-approved Table 4 for East Texas streams, which is based on bedslope). The tables are intended for use in the following water bodies: Harrison Bayou (unclassified water body in segment 0401); segment 0406 - Black Bayou; segment 0407 - James Bayou; 0409 - Little Cypress Creek (Bayou); and segment 0410 - Black Cypress Bayou (plus upstream unclassified portion). The flows are calculated from a regression-based equation, which is

the basis for site-specific dissolved oxygen criterion (with the addition of safety factor of 0.5 mg/l to dissolved oxygen criterion).

The Use Attainability Analysis (UAA) does not address the application of this equation for alternative low flow values. The only reference to such use is a statement in a 2009 summary of the UAA which says "For purposes of applying DO models to establish permit limits using the regression equation, information is being developed to include in the current revisions to the TCEQ Procedures to Implement the Texas Surface Water Quality Standards." The values in Tables 4a-4e are considerably higher than the 7Q2 values available from the three U.S. Geological Survey gauge stations available for the above segments. Two stations are located on segment 0409- Little Cypress Creek (Bayou) and the 7Q2 values are 0.53 cfs and 0.1 cfs. The 7Q2 low flow was also calculated from the gauge station on segment 0410 - Black Cypress Bayou. For segment 0409 - Little Cypress Creek (Bayou), the headwater flows in Table 4d range from 69 cfs to 1140 cfs, to protect a dissolved oxygen criterion of 4.0 mg/l. Similar differences are found between the 7Q2 value for segment 0410 - Black Cypress Bayou and the values in Table 4e. The values in Tables 4a-4e are also much larger than the values found in Table 4 of the IPs, ranging from 0.1 cfs to 3.0 cfs, to protect a dissolved oxygen criterion of 4.0 mg/l.

EPA is currently reviewing the UAA as the basis for the site-specific criteria changes in Appendices A and D of the Texas Water Quality Standards. However, we need additional information to support the second use of the equation in the IPs. We also note that environmental groups have recently submitted comments on this UAA to EPA.

4. **Narrow Tidal Rivers** (IPs, Page 92): It would be helpful to define the limitations of how far upstream TCEQ intends to look to find usable flow data for narrow tidal rivers. It would also be helpful to provide working definitions of the terms river and stream – when does a stream become a narrow tidal river? This has impact on the level of protection being afforded to aquatic life.
5. **Water Bodies with a Dissolved Oxygen Impairment:** EPA rules currently preclude additional loadings to segments listed as impaired on the 303(d) list. Additional oxygen demanding loadings to segments listed as impaired for dissolved oxygen would be precluded under most scenarios, and existing discharges would be capped at current permitted levels.
6. **Stormwater Permits:** Under general provisions, the draft IPs state that TCEQ does not have routine procedures for establishing limits based on standards, but then goes on to say in certain circumstances TCEQ may include numeric technology-based limits in individual permits. Where a general permit covers a discharge subject to an Effluent Limitations Guideline (ELG), that numeric limit must be included in the general permit; these numeric limits are not limited to individual permits.
7. **Temporary Variances:** In the past, temporary variances have only been granted for wastewater discharges; however, TCEQ is now proposing to allow temporary variances for storm water discharge permits as well. Procedures regarding the implementation of this addition are not adequately discussed in the temporary variance section of the IPs.