Texas Commission on Environmental Quality (TCEQ) Comments on Draft *Technical Support Materials for EPA's Aquatic Life Ambient Water Quality Chronic Criteria for Selenium-Freshwater*

Docket ID Number EPA–HQ–OW–2016–0551

Background

The EPA published draft technical support materials to assist states when considering adoption and implementation of EPA's final chronic selenium criterion. The 60-day public comment period for the technical support materials began on October 13, 2016. The EPA published the final criterion on July 13, 2016 in accordance with Section 304(a)(1) of the Clean Water Act (CWA). There are four technical support documents to address various regulatory programs of the CWA. The four documents are as follows:

- *Technical Support for Adopting and Implementing EPA's 2016 Selenium Criterion in Water Quality Standards*
- *Technical Support for Fish Tissue Monitoring for Implementation of EPA's 2016 Selenium Criterion*
- *Frequently Asked Questions (FAQs): Implementing the 2016 Selenium Criterion in Clean Water Act Sections 303(d) and 305(b) Assessment, Listing, and Total Maximum Daily Load (TMDL) Programs*
- *Frequently Asked Questions (FAQs): Implementing WQS that Include Elements Similar or Identical to EPA's 2016 Selenium Criterion in Clean Water Act Section 402 NPDES Programs*

Detailed technical guidance is needed to provide sufficient clarity, due to the complex elements comprising EPA's final criterion. The following six aspects are included in the final criterion: (1) fish tissue concentration in egg-ovaries, (2) fish tissue concentration in muscle, (3) fish tissue concentration in the whole-body, (4) monthly water column concentration for lentic (non-flowing) systems such as reservoirs, (5) monthly water column concentration for lotic (flowing) systems such as streams and rivers, and (6) intermittent concentrations for lotic and lentic aquatic systems to account for pulses of elevated selenium concentrations. When available, fish tissue based aspects would override water column concentrations, since selenium is bioaccumulative. Considerable uncertainty exists regarding how these elements would be implemented in regulatory programs under the CWA, particularly due to the complex nature of the criterion and the need for clarity and flexibility in implementation guidance. The TCEQ offers the comments provided below.

Comments on Draft Technical Support Documents

I. *Technical Support for Adopting and Implementing EPA's 2016 Selenium Criterion in Water Quality Standards.*

A. The TCEQ recommends that EPA afford states the flexibility to adopt water column concentrations as the primary component of state standards.

As presented, EPA's fish tissue and water column-based criterion is burdensome and confusing. EPA has recommended that all six aspects of the criterion be adopted as a single criterion composed of multiple parts into state water quality standards. EPA has also prescribed a hierarchy for states to follow in order to determine the most-applicable aspect, with fish tissue targets superseding those based on water column concentrations. It is unlikely states would have adequate information available to evaluate all six aspects. States would need to determine the applicable target based on data availability. Since the water column concentrations for lentic, lotic, and intermittent-exposure scenarios are already protective of fish tissue concentrations; and these values will be used to derive wastewater permits limits, EPA's guidance should be clarified to afford states the flexibility to adopt water column concentrations as the primary component of state standards. This increased clarity will reduce uncertainty regarding the most applicable aspect of the criterion.

II. Technical Support for Fish Tissue Monitoring for Implementation of EPA's 2016 Selenium Criterion.

A. TCEQ Recommends that EPA allow states the flexibility to adopt and implement aspects of the selenium criterion that consider the constraints of established state fish tissue monitoring programs. If implemented, draft guidance for fish tissue monitoring will impact existing state resources to sample fish tissue.

Existing resources to collect fish tissue samples are coordinated among multiple state agencies, such as the Texas Parks and Wildlife Department and the Texas Department of State Health Services. Existing sampling efforts serve a variety of purposes, including ecological and human health risk assessments. The redirection of resources away from established monitoring purposes - particularly during critical times, toward the specific task of evaluating selenium in reproductive fish tissue may not be an efficient use of state resources and monitoring efforts. EPA should consider existing state resources and priorities, and allow states the flexibility to adopt and implement selenium criterion aspects that meet the needs of established fish tissue monitoring programs within each state.

It will be very difficult for states to accomplish monitoring to collect fish egg-ovary samples that sufficiently adhere to EPA's draft guidelines, in part due to the restrictions and considerations included in the guidelines. Examples of restrictions and considerations to accomplish the collection of fish egg-ovary tissue in accordance with EPA's guidelines, as described below, will stretch existing state resources to collect fish tissue samples.

- Spatial and temporal restrictions to sample targeted species, specifically spatial requirements to capture spawning periods, and temporal requirements to consider patterns of migration for spawning purposes.
- Size considerations to collect sufficient amounts of fish egg-ovary samples needed for analytical analyses. This will make the sampling of smaller fish species particularly difficult, even when compositing samples.

- Considerations to target fish species that may exhibit the potential to bioaccumulate selenium, if exposed. Reproductive, migration and feeding behaviors; sensitivity to selenium and residence time in the water body should be considered when identifying a target species for sampling purposes.
- Ensuring composite samples are comprised of the same species, particularly those sensitive to selenium.
- Waterbodies of interest may have limited opportunities to collect fish tissue samples, due to insufficient populations of fish.

B. TCEQ requests clarification on the availability and acceptability of analytical methods to determine selenium in fish tissue.

Since EPA does not have approved methods under 40 CFR §136 for determining selenium in fish tissue, EPA' guidance should be revised to provide additional detail and clarity regarding methods and modifications that would be acceptable to implement the fish tissue aspects of EPA's recommended criterion. TCEQ has particular concerns regarding the accreditation status of such methods under the National Environmental Laboratory Accreditation Program. Since 2008, TCEQ is required by state statute to limit our acceptance of environmental data to only data generated by a laboratory accredited under the Texas Laboratory Accreditation Program. Unless the results for selenium in fish tissue are determined by an accredited laboratory, these requirements and lack of specificity by EPA may limit the agency's ability to implement a criterion based on fish tissue, if adopted.

III. Frequently Asked Questions (FAQs): Implementing the 2016 Selenium Criterion in Clean Water Act Sections 303(d) and 305(b) Assessment, Listing, and Total Maximum Daily Load (TMDL) Programs.

A. TCEQ recommends that EPA allow states flexibility when implementing the criterion in surface water assessments and identification of impairments. If adopted, EPA's recommended selenium criterion may result in an increase of inappropriate listings of water bodies as impaired on the 303(d) List.

Current monitoring resources support the collection of routine parameters on a once-per quarter basis. Resources for more intensive sampling of miscellaneous metals in water such as selenium are allocated on a case-by-case basis, if available. Since attainment decisions may be based on limited data, the appropriateness of comparing quarterly instantaneous grab samples to a criterion representing a 30-day average is questionable, and may result in spurious listings. EPA should allow states flexibility to develop assessment methodologies that appropriately consider the constraints of state monitoring resources, when implementing the criterion in surface water assessments and identification of impairments.

B. TCEQ recommends that EPA provide additional guidance to clarify assessment methodologies, particularly for the removal of impairments from the 303(d) List, once identified as impaired.

EPA has provided a decision matrix to identify attainment status based on available fish tissue and water column data. However, the implementation guidance does not include sufficient detail on the methods by which a waterbody would be removed from the 303(d) List, once it is listed. In some cases, the amount of supporting information needed to de-list a waterbody is significantly more than that needed to identify the impairment, particularly for toxics. Due to the complex nature of the recommended criterion, including the hierarchy established as part of the criterion, EPA should revise the guidance to provide specific guidance to states on how to de-list impairments. This is particularly needed since the complexity of attainment decisions may be further complicated by assessment considerations such as the period of record and minimum sample requirements.

C. TCEQ recommends that natural sources of selenium be incorporated into assessment determinations.

Information on addressing natural sources of selenium as part of the assessment and impairment identification process is not included in the *FAQ*. Addressing natural sources with a site-specific standard appears appropriate, however, natural sources of contaminants can also be a consideration as part of the decision to not include a waterbody on the 303(d) List. Additional guidance is particularly needed, since EPA's recommended pathway for developing site-specific criteria focuses on site-specific bioaccumulation factors using available fish tissue data. A mechanism for addressing the presence of naturally-occurring sources of selenium, when only water column data are available, is also needed.

IV. Frequently Asked Questions (FAQs): Implementing WQS that Include Elements Similar or Identical to EPA's 2016 Selenium Criterion in Clean Water Act Section 402 NPDES Programs

A. TCEQ recommends that EPA clarify guidance regarding the use of distance and residence time thresholds to determine reasonable potential (RP).

The *FAQ* states that RP is demonstrated where fish tissue data collected from a waterbody shows an excursion of any of the fish tissue aspects of the water quality criterion and a permitting authority determines that a point source discharge to the waterbody contains selenium. However, no information is given regarding distance and residence time thresholds to determine RP. The following are examples that need additional clarification, with reference to the specific question and answer number provided in the *FAQ*:

- A2-1: The location(s) of fish collection and the point source outfall location. Would this distance threshold change based on upstream and downstream collection distances, stream flow, permitted effluent flow, etc.?
- A2-5: Distance thresholds for a discharge to lotic waters that eventually flows into lentic waters. Is there a distance threshold between the water bodies or other method to determine when the use of the lentic aspect of the criterion would not

be appropriate? This could be highly variable depending on stream flow, discharge volume, stream slope, etc.

- A2-6: The recommended residence time threshold to distinguish between a lentic and lotic waterbody needs to be clarified.

B. TCEQ requests EPA to provide additional clarification for key terms used in the *FAQ*.

Additional clarity is needed for key terms included in the *FAQ*, but not clearly defined. These terms are as follows:

- Noncontinuous discharge: Is anything less than 30 days of discharge per month to be considered noncontinuous? If not, where is the line between continuous and noncontinuous drawn?
- Elevated selenium concentration: When implementing the intermittent exposure aspect of EPA's recommended criterion, what constitutes elevated selenium concentrations?

C. TCEQ recommends that EPA reconsider the amount of information needed to conduct RP analyses, and clarify remaining issues so that states can conduct RP analyses according to established timeframes. The amount of information required to assess RP is overly burdensome, would increase timeframes to issue permits, and in need of clarification.

According to steps described in the flowchart of Attachment 2, *EPA's Recommended Flowchart for Implementing EPA's 2016 Selenium Criterion in NPDES Permits Program,* a considerable amount of data and information is needed to assess RP for implementation of both the water column and fish tissue aspects of EPA's recommended criterion. Collection of ambient water quality or fish tissue data is not currently required of permit applicants. Significant sampling efforts will be required to evaluate fish tissue as part of RP to determine water quality based effluent limits. This level of sampling has not previously been required of permit applicants. Sampling efforts may have to overcome issues involving fish migration and possible tissue contamination from sources other than the permitted discharge. This requirement could greatly increase permit issuance timeframes and result in a backlog of permits with detectable selenium in their effluent.

In cases where a discharge enters an intermittent stream, water quality data may not be obtainable. It is unclear how to proceed with these permits. EPA should clarify the preference of options for states to consider when there is a lack of ambient water quality and fish data available to conduct RP, particularly options that may be preferred by EPA. If data were obtained and sampling results indicate the fish tissue aspect of the criterion was exceeded, it is unclear how the results might be converted into reasonable permit limits that would bring the applicant back into compliance. Additional guidance is needed by states to determine if exceedance of the intermittent exposure aspect of the selenium criterion occurs "not more than once in three years on average". Further clarification for consideration of frequency of exceedance is particularly needed given

the complexity and degree of uncertainty associated with intermittent exposure scenarios.