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March 23, 2015

Ms. Cheryl Niemi
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Water Quality Program
P.O. Box 47600
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Subject: Comments on Human Health Water Quality Criteria and Implementation Tools

Dear Ms. Niemi,

Thank you for the opportunity to provide comment on the Human Health Water Quality Criteria (HH WQC) and Implementation Tools in Washington Administrative Code (WAC) 173-201A issued January 12, 2015.

Crown Resources Corporation (Crown) and Echo Bay Minerals Company (Echo Bay) operate mining and processing facilities in northeastern Washington. Crown and Echo Bay join in the comments provided by the American Exploration and Mining Company (AEMA) on the HH WQC and Implementation Tools (attached). We believe that there are opportunities to strengthen the rule and supporting documentation, including:

- Additional rationale is needed to support decisions on the fish consumption rate, relative source contribution for the fish consumption rate, the selected PCB criteria, and selected arsenic criteria;
- State-wide variances should be added to the rule with clarifying provisions, so they are available for use if/when appropriate;
- The cost-benefit analysis should be strengthened to accurately reflect the costs and challenges of the new HH WQC;
- The document should explicitly acknowledge that there are no implementation tools available to new or expanding dischargers; and
- Language about the use of AKART from human health protection in WAC 173-201A-240 Toxic Substances should be removed.

We appreciate the opportunity to comment on the Washington State HH WQC and we look forward to your consideration and integration of our comments.

Regards,

Mark N. Ioli
Vice-President and General Manager

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Ms. Cheryl Niemi
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Subject: Comments on Human Health Water Quality Criteria and Implementation Tools

Dear Ms Niemi:

Thank you for the opportunity to comment on Human Health Water Quality Criteria (HH WQC) and Implementation Tools in Washington Administrative Code (WAC) 173-201A issued January 12, 2015.

AMEA is a 120 year old, 2,400 member, non-profit, non-partisan trade association based in Spokane, Washington. AEMA members reside in 42 states, including Washington State, 7 Canadian provinces and 9 other countries and are actively involved in prospecting, exploring, mining, and reclamation closure. Our diverse membership includes every facet of the mining industry including geology, exploration, mining, engineering, equipment manufacturing, technical services, and sales of equipment and supplies. AEMA's broad membership represents a true cross-section of the American mining community from small miners and exploration geologists to both junior and large mining companies. More than 90% of our members are small businesses or work for small businesses. Most of our members are individual citizens.

We appreciate the effort of the Washington State Department of Ecology (Ecology) in engaging us throughout this process as it seeks to improve the Washington State HH WQC. We are supportive of the proposed HH WQC, which are more protective than the current HH WQC.

While we are supportive of the overall direction of the HH WQC, we see opportunities to strengthen the rule and supporting documentation moving forward. Specifically, we believe that:

- Additional rationale is needed to support decisions on the fish consumption rate, relative source contribution (RSC) for the fish consumption rate, the selected PCB criteria, and the selected arsenic criteria,
- State-wide variances should be added to the rule with clarifying provisions, so they are available for use if/when appropriate,

- The cost benefit analysis should be strengthened to accurately reflect the costs and challenges of the new HH WQC,
- The document should explicitly acknowledge that there are no implementation tools available to new or expanding dischargers, and
- Language about the use of AKART from human health protection in WAC 173-201A-240 Toxic substances should be removed.

For your convenience we have provided more detailed comments in the attached document.

Again, we appreciate the opportunity to comment on the Washington State HH WQC and we look forward to your consideration and integration of our comments.

Regards,

Matthew Ellsworth

Government Affairs Manager

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Comments are provided below in descending order of priority.

1. **A relative source contribution (RSC) of 1 is reasonable for a fish consumption rate of 175 g/day, but the rationale for the selection of this RSC should be more developed in the Key Decisions Overview.**

   Ecology's Key Decisions Overview (Ecology 2015c) included strong rationale for the selection of an RSC of 1. However, the below rationale related to the history of the use of the RSC and the conservative nature of reserving exposure for other pathways were not discussed. This rationale provides important context and should be included in the Relative Source Contributions section of the Key Decisions Overview (Ecology 2015c).

   The RSC approach was originally developed for the calculation of maximum contaminant level goals (MCLs) for safe drinking water. MCLs, unlike HH WQC, are not directly enforceable regulations. EPA's 1989 draft National Primary and Secondary Drinking Water Regulations (EPA 1989) are often cited as the source for the 80/20 RSC approach. This EPA document provides no data to support this approach for drinking water (or any other exposure routes) but instead states that the approach was used because data were inadequate. EPA received many divergent comments on the use of a 20% floor and 80% ceiling for the RSC as applied to drinking water. EPA's discussion of comments received (EPA 1991) focused on whether the RSC properly accounted for volatilization and dermal exposure, indicating that the critical review of the RSC (in general) and more specifically, the 80/20 RSC approach, did not focus on issues relevant to HH WQC.

   HH WQC are for organism only (marine) or organism plus water (freshwater) and therefore address a major exposure pathway (i.e., fish and shellfish consumption) not covered by drinking water regulations. For many of the bioaccumulative chemicals of most concern (e.g., mercury, polychlorinated biphenyls [PCBs]), fish and shellfish consumption overwhelmingly dominates exposure for populations that consume high quantities of fish (i.e., high-fish-consuming populations). Ecology has indicated that their selected FCR (i.e., 175 g/day or about five 227-g meals per week of fish and/or shellfish assumed to be harvested exclusively in Washington waters, every week for 70 years) is intended to reflect high-fish-consuming populations. Consumption of surface water in the proposed HH WQC is assumed to be 2 L/day; the 90th percentile of drinking water consumption is 2.35 L/day (EPA 2011). Presumably, if a person is drinking surface water (as is assumed in the freshwater HH WQC), he or she is not also being exposed to drinking water, so "reserving" exposure for the drinking water pathway is unnecessary.

   Marine and anadromous fish and shellfish make up more than half of the total consumption reported in the studies that Ecology considered (Ecology 2013a) in selecting an FCR for HH WQC. Hence, the marine/anadromous portion alone is at least 10-fold higher than the assumed consumption rate (i.e. 6.5 g/day) used for EPA's HH ambient water quality criteria (AWQC) when the RSC approach was initially proposed by EPA for inclusion in HH WQC.

2. **The selected PCB criteria are reasonable for this ubiquitous legacy chemical, but additional rationale should be presented in the Key Decisions Overview.**

   The section entitled Challenging Chemicals: PCBs in the Key Decisions Overview (Ecology 2015c) should discuss the preponderance of PCB-listed waterways, the Governor's directive (Office of the Governor 2014) as it pertains to unregulated sources of chemicals, and PCB source identification work on the Spokane River.

   The Key Decisions Overview (Ecology 2015c) discussed environmental fate in general but did not discuss water and fish concentration data from Washington. Many, if not most, Washington water bodies could qualify as impaired based on the current PCB criteria and listing policy. Information showing that 70% of all freshwater fish samples state-wide exceed the "fish tissue equivalent concentration-listing trigger "was presented by Ecology in the Policy Forums (Ecology 2013b). Ecology completed its state water quality assessment and 303(d) list (which would provide the most recent PCB 303(d) listings) and released them for public review on March 17, 2015.

   Per Governor Inslee's directive (Office of the Governor 2014), "While we are increasing levels of protection on discharges from permitted facilities, the fact remains that facilities are often not the sources of the chemicals we are most concerned about. Focusing only on these facilities will have limited benefit in reducing toxics regulated under this rule and will not address the larger universe of unregulated contaminants." For example, Ecology's source assessment of the Spokane River (Ecology 2011) indicated that only 20% of the PCB loading was due to municipal and industrial dischargers. Thus, further reduction of PCB HH WQC would do little to reduce concentrations of PCBs in Washington fish.

3. **The selected arsenic criteria represent a reasonable approach for this abundant naturally occurring element; some additional support should be included in the EIS.**

   As discussed in the Key Decisions Overview (Ecology 2015c), the selection of the maximum concentration level (MCL) for arsenic in drinking water as the HH WQC for arsenic is reasonable for this naturally abundant element and is consistent with criteria in many other states. The EIS (Ecology 2015a), in its arsenic criteria "Usability" table, stated that use of Oregon arsenic criteria would result in criteria below natural background. On the previous page, the EIS stated that "arsenic in surface waters, based on discrete samples, may infrequently exceed the SDWA MCL of 10 µg/L, but frequently exceed the NTR human health criteria concentration of 0.018 and 0.14 µg/L." Assuming that discrete samples also frequently exceed the Oregon criteria (1.0 and 2.1 µg/L), the text preceding the Usability table should state this to provide more support for the selected HH WQC.

4. **Language about the use of AKART from b) Human health protection in WAC 173-201A-240 Toxic substances should be removed.**

   The sentence "Dischargers have the obligation to reduce toxics in discharges through the use of AKART" should be removed. The use of AKART is discussed elsewhere in the rule as it pertains to meeting WQC.

5. **A more robust rationale for the selected FCR is needed; this should be added to the Key Decisions Overview.**

   A stronger rationale is needed for the selected FCR, including an identification of the datasets used and the populations and percentile(s) of the populations that it is intended to reflect. This discussion should be added to Key Decisions Overview (Ecology 2015c). If there is not more support for the 175-g/day rate, it should be reconsidered in favor of a value that can be better supported.

   Permittees will have to meet the requirement of the new HH WQC as soon as the criteria go into effect. Thus, any small change in the criteria could mean the difference between compliance and non-compliance, trigger the need for very expensive treatments options (if such options are available), and/or impact an entity's ability to open a new business. The selected FCR is intended to represent high-fish-consuming populations. The selection of an FCR should be one that is well supported based on existing datasets descriptive of consumption (by some group/groups). Ecology's rationale for an FCR of 175 g/day seems to be that this is the rate that was selected by the State of Oregon. .

   Presenting a clear rationale for the selected FCR creates a stronger foundation for the level of protection ultimately afforded by the HH WQC. The lack of rationale for 175 g/day is disappointing given the amount of time and effort that Ecology has invested in the evaluation of different datasets and the estimation of FCRs for different Washington groups (Ecology 2013a). The Key Decisions Overview (Ecology 2015c) stated that the value was "representative of average FCRs ('all fish and shellfish,' including all salmon, restaurant, locally caught, imported, and from other sources) for highly exposed populations that consume both fish and shellfish from Puget Sound waters." It is unclear which datasets were included in the averaging and whether 175 g/day is an average of averages, 90th percentiles, 95th percentiles, or some other statistic (if the same statistic was used for each dataset?) or if any weighting was applied to the datasets to reflect demographics of the State.

6. **Provisions for the option of state-wide variances should be added to Section 2, Types of Variances, under WAC 173-201A-420 Variance.**

   The approval and effective dates of the Implementation Tools are not linked. Thus, HH WQC could be approved even though all of the Implementation Tools may not yet be available. Alternatively, if the HH WQC are not approved, the proposed Implementation Tools may not be adequate. For example, if EPA promulgates HH WQC similar to Oregon's HH WQC, there may be an urgent need for state-wide variances for PCBs. State-wide variances should be added to Section 2, Types of Variances, under WAC 173-201A-420 Variance.

7. **The CBA understates the costs and challenges of the proposed rule and the adoption of new, more sensitive analytical methods. The EIS should better represent the importance of analytical sensitivity relative to HH WQC as well.**

   The tables including HH WQC and analytical sensitivities in Appendix B of the EIS (Ecology 2015a) are helpful. They would be much more useful, however, if criteria below approved analytical method sensitivity were listed in bold type. This would help readers more easily understand how current and proposed HH WQC compare to analytical methods and help frame many of the discussions in the CBA (Ecology 2015b).

Chapters 5 and 7 of the CBA (Ecology 2015b) understate the cost of the proposed HH WQC. In Chapter 5, Ecology notes that most new 303(d) listings are expected on waterbodies with no dischargers. The listings will discourage potential development on those waterways; this should be recognized in Chapter 5. The process of TMDL development is slow and there will likely be many more 303(d) listed waterbodies than waterbodies with TMDLs for several decades. However, Ecology's discussion of costs in Chapter 7 focuses on the cost of more sensitive analytical methods (driven in part by lower criteria) associated with TMDLs. More sensitive analytical methods will mean more listings (and more TMDLs with more stringent requirements). Again the loss of development (i.e. new or expanding dischargers) on listed waterbodies or water bodies with TMDLs is not discussed. New development may be forced to locate elsewhere, and dischargers needing to expand their facilities may choose to relocate. These costs need to be discussed in Chapters 5, 7, and 8.

8. **Allowance for "as soon as possible" in compliance schedules and variances is an improvement on these Implementation Tools; however, the limited utility of variances should be recognized in the CBA.**

   The extension of the compliance schedules to potentially be longer than 10 years (without a standardized time limit) is a positive amendment. Variances are also specified to be concluded "as soon as possible" rather than being limited to 10 years as in EPA's 2013 Water Quality Standards Regulatory Clarifications (EPA 2013). The variance usability table in the EIS (Ecology 2015a) correctly classifies the usability of variances as low because of the uncertainty regarding EPA's approval. The low likelihood of the use of variances should be discussed in the CBA (Ecology 2015b), in Section 6.3.3, as this is a "benefit" that is unlikely to be realized by most dischargers. In addition, EPA may determine that variances (for Washington) cannot exceed 10 years.

9. **There are no Implementation Tools available to new or expanding dischargers; this should be clarified in the Key Decisions Overview.**

   As has been clear for some time, compliance schedules and variances will not be available to new or expanding dischargers. Because this is not a change from the baseline, this is not discussed in the CBA (Ecology 2015b). This is mentioned in the Compliance Schedules section of the Key Decisions Overview (Ecology 2015c) but not in the Variances section. This is an important issue that needs to be clearly identified for all readers, even if no solution is currently endorsed by Ecology. Thus, a new section that calls out the issue that new and expanding dischargers cannot use variances or compliance schedules should be added to the Key Decisions Overview (Ecology 2015c).

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