



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**REGION 10**

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OFFICE OF  
WATER AND WATERSHEDS

July 19, 2017

Stephanie Jenkins  
Idaho Department of Environmental Quality  
1410 N. Hilton  
Boise, Idaho 83706

RE: EPA's Comments on Idaho's Draft Negotiated Rule #2 for Aquatic Life Criterion for Selenium, Docket No. 58-0102-1701, and Proposals from J.R. Simplot and NuWest for Site-Specific Selenium Criteria for Specific Waters in Southeast Idaho

Dear Stephanie:

The EPA appreciates the opportunity to provide comments to the Idaho Department of Environmental Quality (DEQ) on the draft negotiated rule #2 for updating Idaho's selenium aquatic life criterion. The EPA continues to support DEQ's work with respect to considering revisions to criteria for which the EPA has published new and/or revised Clean Water Act Section 304(a) recommended criteria.

The information presented at the June 13, 2017 negotiated rulemaking meeting suggests DEQ is still considering a site-specific recalculation based approach for deriving selenium criteria for certain waters in Idaho where sturgeon are not resident species. DEQ's presentation was helpful in providing the proposed geographic scope and/or area that DEQ believes this proposed recalculation approach would be applicable; however, there are still a number of important details that require additional consideration by DEQ. In addition, the presentations on each of the proposed site-specific criteria for selenium in certain waters in southeastern Idaho were also informative; however, the EPA has identified a number of concerns related to these site-specific criteria proposals that warrant further consideration by DEQ.

The EPA has reviewed the revised draft rule (#2) and associated materials and provides recommendations in the enclosure to this letter. In addition, the EPA notes that several previous comments provided to DEQ in the EPA's June 6, 2017 comment letter have not yet been addressed. Therefore, the EPA is reiterating those comments in the enclosure.

The EPA has reviewed Section 210.01, Idaho's table of toxic criteria and associated footnotes, and finds the language for the most part consistent with EPA's Aquatic Life Ambient Water Quality Criterion for Selenium – Freshwater 2016.<sup>1</sup> The EPA is pleased to see that consistent with the EPA's 2016 national recommended selenium criterion DEQ's draft rule for statewide

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<sup>1</sup> USEPA (U.S. Environmental Protection Agency). 2016. *Aquatic Life Ambient Water Quality Criterion for Selenium–Freshwater 2016*. EPA 822-R-16-006. U.S. Environmental Protection Agency, Office of Water, Washington, DC. <https://www.epa.gov/wqc/aquatic-life-criterion-selenium-documents>

criteria includes all four elements, and expresses the four elements in a manner that explicitly affirms that the whole-body or muscle elements supersede the water column element, and the egg-ovary element supersedes any other element. However, the EPA recommends DEQ revisit the frequency of exceedance component specific to the tissue based criteria (both egg/ovary and whole body), as it is inconsistent with EPA's current recommendations regarding fish tissue based criteria and so requires further scientific justification for EPA to consider.

Selenium water quality criterion elements based on fish tissue (egg-ovary, whole body, and/or muscle) sample data override the criterion elements based on water column selenium data due to the fact that fish tissue concentrations provide the most robust and direct information on potential selenium exposure and effects in fish. However, because selenium concentrations in fish tissue are a result of selenium bioaccumulation via dietary exposure, there are two specific circumstances where the fish tissue concentrations do not fully represent potential effects on fish and the aquatic ecosystem: 1) in "fishless" waters, and 2) in areas with new selenium inputs where steady state has not been achieved. Because of the inability to collect sufficient fish tissue to measure selenium concentrations in such waters, water column concentrations will best represent selenium levels required to protect aquatic communities and downstream waters in such areas. The EPA recommends DEQ include additional detail (i.e., scientific evidence of resident aquatic communities in Idaho waters, including the presence or absence of sturgeon) regarding these situations as it will provide the public with a better understanding of DEQ's approach to the application of the water column criterion in these situations. The EPA recommends DEQ develop additional guidance which provides a full discussion and establishes a detailed procedure for the application of selenium criteria in fishless waters and in areas with new selenium inputs. Such guidance should include a discussion of what is meant by "new selenium inputs" and activities that are likely included so that these situations are better understood by the public as well as the regulated community.

The EPA acknowledges that development of site-specific fish tissue criterion elements using the species recalculation procedure may be an appropriate approach for deriving protective criteria in some circumstances. The species recalculation procedure is intended to allow site-specific criteria to differ from the national criteria recommendations (i.e., concentrations that are higher or lower than national recommendations) when there are demonstrated differences in sensitivity between the site's resident aquatic species and those surrogate species that were used to derive the national criteria recommendations.

As with any criterion, a site-specific criterion must protect the most sensitive designated use and must be based on sound scientific rationale. With regard to deletion of species (e.g., the sturgeon), DEQ will need to consider how to adequately demonstrate that the species is not resident to the proposed sites in order to justify why such a criterion would be appropriate and indicate that the criterion is protective of the designated use (e.g., aquatic life) in those waters. Additionally, DEQ will need to ensure that any criterion provides protection of recreationally and commercially important aquatic species. For example, species within the family Salmonidae may occur in locations where sturgeon do not; thus, DEQ should consider appropriate toxicity data (e.g., whole body *Oncorhynchus* Genus Mean Chronic Value (an EC<sub>10</sub>) of 9.052 mg/kg dry

weight) in light of any recalculation procedure, especially if toxicity values fall below the recalculated criterion.<sup>2</sup>

Lastly, as with any criterion, the EPA regulations at 40 CFR 131.10(b) provide that “[i]n designating uses of a waterbody and the appropriate criteria for those uses, the state shall take into consideration the water quality standards of downstream waters and ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters.” Especially in cases where downstream waters are lentic waterbody types (e.g., lakes, reservoirs, impoundments, some slow-moving rivers), or harbor more sensitive species, a selenium criterion more stringent than that required to protect in-stream uses may be necessary to ensure that water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters.

The EPA reviewed the draft proposals by Simplot and Nu-West for site-specific selenium criteria using the recalculation approach and has a number of concerns with those proposals as well as DEQ’s proposal for site-specific criteria for non-sturgeon waters. The EPA’s primary concerns regarding Simplot’s approach are the species sensitivity distribution, the method used to derive the whole body criterion element and the application of the criterion to Crow Creek. With respect to the Nu-West proposal, the EPA’s main concern regarding the criterion value relates to how the recalculation procedure was performed. The EPA provides our detailed comments and recommendations in the enclosure to this letter.

As stated in the EPA’s previous comment letter to DEQ, in implementing the water quality criterion for selenium under the NPDES permits program, DEQ may need to establish additional procedures due to the unique components of the selenium criterion. If the state decides to use the selenium water column concentration criterion element only (as opposed to using both the water column and fish tissue elements) for conducting reasonable potential (RP) determinations and establishing water quality-based effluent limitations (WQBELS) per 40 CFR 122.44(d), existing implementation procedures used for other acute and chronic aquatic life protection criteria may be appropriate. However, if the state also decides to use the selenium fish tissue criterion element values for NPDES permitting purposes, additional state WQS implementation procedures will be needed for determination of RP and development of appropriate WQBELS. The EPA recommends the use of the water column element in developing WQBELS.

States and authorized tribes have flexibility in how they interpret a discrete fish sample to represent a population. Generally, fish collected to calculate average tissue concentrations for a site are collected in one sampling event, or over a short time interval due to logistical constraints and costs for obtaining samples. The EPA provides information on sampling of fish populations in the *Draft Technical Support for Fish Tissue Monitoring for Implementation of EPA’s 2016*

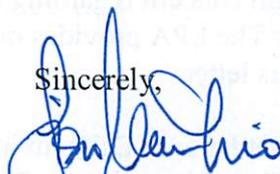
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<sup>2</sup> USEPA (U.S. Environmental Protection Agency). 2016. *Aquatic Life Ambient Water Quality Criterion for Selenium–Freshwater 2016*. EPA 822-R-16-006. U.S. Environmental Protection Agency, Office of Water, Washington, DC. (pages 142-144) <https://www.epa.gov/wqc/aquatic-life-criterion-selenium-documents>

*Selenium Criterion.*<sup>3</sup> Furthermore, the EPA provides information on how to use the four-part criterion for the purposes of National Pollutant Discharge Elimination System (NPDES) permitting and waterbody assessment, listing, and total maximum daily load (TMDL) development in the following documents: *Draft 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* and *Draft 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*, respectively.<sup>4 5</sup> The EPA recommends DEQ provide additional detail and specific procedures for application of the selenium criterion in Clean Water Act programs and that this be included in implementation guidance.

The EPA appreciates DEQ's thoughtful consideration to these issues as you move forward in adopting revised aquatic life criterion for selenium that is protective of aquatic life in Idaho's waters. The EPA continues to be available to provide assistance to DEQ on further development of the rule language and implementation procedures. If you have any questions or would like to discuss these comments further, please contact me at (206) 553-1834 or Mark Jankowski at (206) 553-1476.

Sincerely,



Lisa Macchio

Water Quality Standards Coordinator

Enclosure

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<sup>3</sup> USEPA (U.S. Environmental Protection Agency). 2016. *Technical Support for Fish Tissue Monitoring for Implementation of EPA's 2016 Selenium Criterion*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

<sup>4</sup> USEPA (U.S. Environmental Protection Agency). 2016. *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*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

<sup>5</sup> USEPA (U.S. Environmental Protection Agency). 2016. *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*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

## Enclosure

### **Comments on Idaho DEQ's Draft Rule #2 - Selenium Aquatic Life Criteria and Proposals for Site-Specific Recalculation-Based Approaches for Deriving Selenium Criteria for Certain Waters in Idaho**

#### **J. R. Simplot Company Report – Draft Proposed Site-Specific Selenium Criterion for Hoopes Spring, Sage Creek, and Crow Creek near the Smoky Canyon Mine (April 2017)**

The EPA has reviewed J.R. Simplot's draft report and provides the following concerns and detailed comments for DEQ to consider.

#### **Executive Summary**

(p. 8) Table ES-1. The frequency proposed for the fish tissue samples is “not more than once in three years on average”. This is not consistent with EPA's recommendation, which is a frequency of “not to exceed”. The 1985 Guidelines' (EPA PB85-227049) recommendation for a return frequency of once in three years on average is based on the ability of an aquatic ecosystem to recover from a toxic insult when pollutant impacts are associated exclusively with a water column exposure. The frequency component of the fish tissue elements of the selenium criterion differs from the typical “once-in-three years on average” frequency of water column criteria because selenium is a bioaccumulative and the pathway for exposure is through the food web. Studies have shown that it can take in excess of 10 years for selenium concentrations in fish tissue to return to an acceptable level after fish tissue concentrations have reached concentrations associated with reproductive impacts (Chapman et al. 2010, Finley and Garrett 2007). As fish tissue concentrations have a much longer recovery time than water column concentrations, the EPA recommends a frequency of “not to be exceeded” for fish tissue criterion elements, consistent with the EPA's 2016 national recommended selenium criterion.

(p. 8, Table ES-1, Footnote 1) The EPA recommends sampling and monitoring recommendations be addressed more comprehensively and separate from the regulatory language for the criteria. The EPA suggests more detailed information on monitoring and sampling considerations would be helpful and that DEQ provide such information in separate technical support materials.

#### **Section 1.0 Introduction**

(p. 11) The sentence ‘the [EPA 1987] criterion was based on bluegill sunfish in lentic habitats which are not found in southeast Idaho’ is unclear. If the bluegill sunfish are not present in southeast Idaho, then survey data should be provided to justify the claim. If the lentic habitats (e.g., lakes, oxbow stream segments, or reservoirs) are not present in southeast Idaho then that statement too should be supported in order to corroborate the latter part of the paragraph justifying the chronic criterion recalculation.

(p. 11) Please provide a citation for the statement that cold water species are less sensitive to selenium than warm water species.

### Section 2.2 Study Area

(p. 13, Footnote 4) The EPA regulations at 40 CFR 131.10(b) provide that “[i]n designating uses of a waterbody and the appropriate criteria for those uses, the State shall take into consideration the water quality standards of downstream waters and ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters.” Additional information needs to be provided to describe how the currently proposed criterion, particularly the water column criterion element of 13.55 µg/L for Crow Creek, is protective of downstream uses in Wyoming, which has a water column Se criterion of 5 µg/L.

### Section 2.3 Scope of Applicability

(p. 16-17) The EPA has concerns regarding the application of the proposed SSC to North Fork Sage Creek and Pole Canyon Creek; areas that have not been sufficiently characterized. The report lacks the necessary detail for applying the proposed site specific criteria to these two additional water bodies as they were not included in the initial development of the study design and therefore have not been characterized. The EPA suggests inclusion of data that would corroborate the statement in the report that the SSC is likely applicable to these streams even though they have not been characterized.

### Section 4.0 Background and Chronology for the Current SSC Proposal

(pg. 23) Please provide data that demonstrates that bluegill sunfish and white sturgeon, or any surrogates that could be represented by these species, are not present at the site. In addition, please demonstrate that the proposed criterion will be protective of uses downstream, including noting how any waters that may contain sturgeon downstream are protected.

### Section 5.2 Field Monitoring

(p. 27) In describing trends of selenium concentrations in Hoopes Spring, the report states that there are no seasonal effects, but then in the next sentence it states that during the spring runoff selenium concentrations decline and then they increase during low flow periods in summer and fall. These seem to be seasonal effects. Please clarify the trends of selenium concentrations and selenium loads within this stream throughout the year.

### Section 6.2 Whole Body

In order to determine a whole body criterion element, a conversion factor (CF) calculated from the brown trout data was used to convert the egg-ovary criterion element into a whole body criterion element. The EPA has some concerns about this method of calculating a whole body criterion element value. Conversion factors are based on physiological processes and tend to be driven more by the species than the site. Therefore, it is more appropriate to

create a new SSD of whole body SMCVs. The whole body SMCVs could be calculated by converting each egg-ovary SMCV to a whole body SMCV using a species specific CF or a whole body SMCV that was directly measured could be used. This whole body SSD should be used to calculate the whole body criterion element using the 4 most sensitive species as described in the 1985 Guidelines (EPA PB85-227049).

### Section 6.3.3 Site-Specific Water Value

Simplot proposed to use the BAF derived water column value generated from data from the summer/fall seasons due to the ease of data collection for future evaluations. While the report says that this is the sole reason they selected this value, the section and associated foot note also say that the summer/fall data best simulate when maternal brown trout will be accumulating dietary selenium and that it is the time of year when selenium concentrations in the water column are highest. However, this value is the highest derived criterion element of all the situations presented (mechanistic model: all seasons and spring/fall; BAF: all seasons and spring/fall), which appears to make it the least conservative option rather than the most conservative option for a water column criterion element. As accumulation rates change with physiological requirements as well as selenium availability, it is most prudent to capture the spectrum of accumulation rates to ensure the protection of the most sensitive conditions. Given this, EPA recommends calculating the BAF with the all seasons data rather than with the spring/fall data.

### Section 7.0 Proposed Criterion Implementation

The report states that the elevated selenium concentrations at the site are due to historical mining activities. Are there not additional impacts from current mining activities? Are the mines in this area not currently active?

The EPA does not support the use of the water column criterion element as a trigger value. As the water column criterion element is derived from the fish tissue criterion element, it is appropriate to use it as a criterion element. The accumulation of selenium within fish tissue often starts with a release of selenium into the water column, where it then is incorporated in the algae, detritus, and particulate matter of the environment. From there, the Se moves up the food web into higher trophic levels. Using the water column element as a criterion rather than a trigger value allows for the detection and prevention of a water column concentration that could lead to detrimental concentrations in fish in the future, after the selenium has accumulated in the food chain. If we wait until fish downstream from the site have selenium concentrations in their tissues that exceed the criterion, then the fish are already experiencing effects and an impairment has already occurred. After fish are experiencing effects, it can take 10 years or longer for those fish to recover from those effects after corrective actions are taken. Given this, waiting until fish tissue concentrations are greater than the criterion is not protective of the community. Instead, the water column criterion element is better suited to establish appropriate permit limits and controls for selenium sources, and excursions of the

water column criterion element should prompt corrective actions to prevent use impairments from occurring.

### Tables

Table 4: The EPA has several concerns about the species sensitivity distribution (SSD) that was used to derive the egg-ovary selenium criterion element. First, the EPA has concerns over the use of species mean chronic values (SMCVs) in this SSD as opposed to using genus mean chronic values (GMCVs). When creating an SSD, EPA recommends using GMCVs rather than SMCVs as species within a genus tend to be more similar toxicologically than species in different genera. Using GMCVs rather than SMCVs prevents data sets from being biased by an overabundance of species in one or a few genera. The EPA also has concerns about some of the species that were included in the SSD. Simplot included some species in their SSD that EPA did not include in the criterion derivation due to the inability to effectively characterize an EC<sub>10</sub> value for the species. These include the Yellowstone cutthroat trout and white sucker. The EPA found that the Yellowstone cutthroat trout data were highly variable and therefore a clear effect value could not be calculated from these data. The EPA also decided not to include the white sucker data in the criterion derivation, as this study did not have a control and a clear effect level was not observed in this study. Lastly the EPA is concerned about the inclusion of the sculpin data, which is >22 mg/kg dw for a NOEL. This lower bound is lower than all the *Oncorhynchus* genera, so while we know that there is no effect below 22 mg/kg dw, we do not know when that effect begins. Given that this is unknown and that there is a small chance it may be lower than the trout (solely based on the fact that we don't have information showing otherwise), it may not be appropriate to include this information in the SSD. In addition, this study was not considered for the 2016 criterion and the quality of the data has not been evaluated by the EPA. As only a summary of the study was included in the proposal, the EPA requests that additional information about this study be presented so that the quality of these data can be verified.

Table 6: The selenium water column element concentrations calculated using the empirical BAF indicate very different criteria would be appropriate for Crow Creek (~4.5 µg/L) than for Hoopes Spring and Sage Creek (~17 µg/L). These values indicate that it is likely more appropriate to consider these two different sites, one site that is Hoopes Spring, Sage Creek, and possibly South Fork Sage Creek and then another site that is just Crow Creek. In addition, the EF values and the TTF values calculated for these water bodies are also very different, again indicating that the same criterion may not be appropriate for all of these water bodies.

### Figures

Please include a legend on the second figure that indicates what the brown-orange lines represent.

On the third figure, please include all sampling locations that are referenced in the graphs in Figures 5 and 6.

Figure 4: Please indicate what the open diamonds represent.

Figure 5: In the text, the report indicates that some control measures were being put into place to help reduce the amount of selenium that is being discharged into the surrounding water bodies. Please indicate either in the text or on these graphs when these measures were put into place or will be put into place. Does Simplot anticipate that control measures installed at Pole Canyon will impact/have impacted the selenium concentrations in any of the water bodies in this proposal?

Figure 5: As the proposed water column criterion elements are in  $\mu\text{g/L}$ , it may be more effective for these graphs to also present total selenium concentration as  $\mu\text{g/L}$ , so that the reader can easily compare the data presented with the criterion proposed.

Figure 5: What occurred in 2006 that has led to the increase in selenium concentrations? Is this when the mine became operational?

Figure 7: Please correct legend to indicate that Upstream Brown trout are represented by the blue bars. Also it would be helpful to include on the map where these fish were collected.

#### Appendix B

Every other page of this report is missing from the pdf. Please include all the pages of this report.

#### **Nu-West Industries Report - Proposal for Site-Specific Selenium Criteria for the Upper Blackfoot River and Georgetown Creek Watersheds (June 2017)**

The EPA has reviewed Nu-West's report and provides the following concerns and detailed comments for DEQ to consider.

#### Section 2 Definition of Sites

(p. 1) The geographic definition of each site is sparse in this section. A map and hydrologic description of these sites including sampling locations (and dates) (from surveys and stocking records used for this study) would be ideal in this section.

#### Section 3 Resident Fish Species

(p.2) Provide references to specific survey and stocking records used for this study in footnotes or provide links/titles in the subsequent section (3.1 Resident Fish in the Upper Blackfoot River Watershed). Please provide information on the likelihood that resident

aquatic communities would be the same or different depending on the time of year in which sampling was conducted.

### Section 3.1 Resident Fish in the Upper Blackfoot River Watershed

(p.3) More specificity on references would provide a better check on accuracy of Table 1. The language ‘...were consistently confirmed from extensive surveys conducted by various entities’ could be qualified with specific entities and surveys, including the exact years the data represent.

The proposed lower site boundary for the selenium SSC for the Upper Blackfoot River is at the river’s mouth, where it enters the Blackfoot Reservoir. Given the selenium criteria in the reservoir (a downstream lentic waterbody) are more stringent than the proposed selenium SSC in the river it would be important to discuss how the proposed selenium SSC would be protective of the adfluvial trout in this area. Yellowstone cutthroat trout exhibit three life history strategies: 1) a fluvial life history in which fish feed and grow in larger rivers such as the Blackfoot River and then migrate to tributaries for spawning and rearing 2) an adfluvial life history in which individuals feed and grow in lakes before migrating to tributaries for spawning and rearing, and 3) a resident form in which fish live their entire life cycle in the tributary streams. It is the EPA’s understanding the Blackfoot Reservoir provides lacustrine habitat for an adfluvial form of Yellowstone cutthroat trout that resides in the reservoir for most of its life before migrating upstream in the spring to spawn and rear in the upper tributaries.<sup>6</sup> Therefore an important concern is whether the proposed selenium SSC is protective of any resident species with an adfluvial life history and that are or could be present at the site. The EPA recommends that the protectiveness of the proposed SSC to the adfluvial species be addressed and discussed in the report.

### Section 3.2 Resident Fish in Georgetown Creek Watershed

Please provide a summary of the methods used to conduct each of the fish surveys.

(p. 4) Please specify the specific dates (at least to the level of month) and exact locations of surveys used to summarize data for Table 2.

### Section 4 Proposed Site-Specific Criteria for Selenium

(Table 3) Please clarify what value will be used for the water column element of the criterion. Is Nu-West proposing that the 3.1 µg/L stay in place until an alternate water column value is proposed? Please provide a site-specific water column value that corresponds with fish tissue values.

(p. 5, footnote 7) A description of the hydrology at each site would better qualify the

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<sup>6</sup> Trout Unlimited. 2012. Upper Blackfoot River Watershed Assessment and Identification of Priority Projects. Final. Prepared for the Upper Blackfoot River Initiative for Conservation. February 1, 2012.

statement in this footnote – *i.e.*, ‘In streams or reaches of streams where fish are naturally absent due to low flow conditions.’

(p. 5, footnote 7) In the presentation that Nu-West gave at the Idaho negotiated rulemaking meeting, the company indicated that they plan to use the BAF method for determining water column values. The EPA has concerns over the BAF method described for determining the water column value for No Name Creek. Nu-West has proposed using a tissue concentration value from Angus Creek and a water column value from No Name Creek to derive the water column criterion element for No Name Creek. EPA is unclear how this leads to an appropriate BAF to accurately derive the criterion for No Name Creek. The BAF is a numeric approximation of the Se accumulation dynamics (uptake rate, for example) within a waterbody and may be inappropriate when developed using data across multiple waterbodies that differ in their hydrological and biological characteristics. Please provide additional information supporting this approach including how this approach appropriately protects both No Name Creek’s uses and the downstream uses in Angus Creek. In addition, the EPA does not support the use of a trigger value. The water column value is a part of the criterion and should be used for compliance and assessments as such in fishless waters.

(p. 5) The EPA has concerns over the methodology used to derive the site specific criterion for these two sites. To perform a recalculation of the 304(a) criterion, the EPA recommends using the 2013 recalculation method ([https://www.epa.gov/sites/production/files/2015-08/documents/revised\\_deletion\\_process\\_for\\_the\\_site-specific\\_recalculation\\_procedure\\_for\\_aquatic\\_life\\_criteria.pdf](https://www.epa.gov/sites/production/files/2015-08/documents/revised_deletion_process_for_the_site-specific_recalculation_procedure_for_aquatic_life_criteria.pdf)) to determine which species should be retained in the SSD, and then calculating the criterion using the 4 most sensitive genera according to the 1985 aquatic life criterion guidelines (<https://www.epa.gov/sites/production/files/2016-02/documents/guidelines-water-quality-criteria.pdf>). Using this process will ensure that all appropriate surrogate species are retained in the SSD and that an appropriate regression is utilized to derive a criterion that is protective of 95% of the genera. When this method is used the criterion for Georgetown Creek would be an egg-ovary criterion element of 20.60 mg Se/kg dw, a muscle criterion element of 13.58 mg Se/kg dw, and a whole body criterion element of 10.27 mg Se/kg dw. The criterion for Upper Blackfoot River would be an egg-ovary criterion element of 22.31 mg Se/kg dw, a muscle criterion element of 12.9 mg Se/kg dw, and a whole body criterion element of 9.86 mg Se/kg dw. These values are more conservative than the currently proposed criteria. In addition, as there are recreationally important trout in these sites, the criterion may need to be made more stringent to protect these species. Specifically, the current proposed values are higher than the SMCV for rainbow trout, a recreationally important species, so the criterion would need to be lowered to protect this species.

### Section 5.3 Catostomidae

In several places in this section unbound data is presented with a lower bound that is lower than the proposed criterion. As these lower bounds are below the proposed criterion they cannot be used as conclusive evidence that the proposed criterion will be protective.

### Attachment 1 and 2:

Please provide copies of the actual species lists for the fish surveys. Please clarify whether all fish species identified in these surveys are listed in these tables or only those that were consistently found at these sites.

### Non-Sturgeon Waters Site Specific Criteria

As stated in our previous comment letter the EPA does not have specific details regarding how DEQ will demonstrate what species assemblage is present at the “site(s)” and how the assemblage relates to the taxonomic representation in the criterion. The EPA recommends DEQ develop a detailed technical support document providing this kind of information as well as details regarding the basis for the geographic scope of the proposed “non-sturgeon” waters. If DEQ is interested in moving forward on the proposed recalculation approach, it would be important for DEQ to develop a robust scientifically sound justification, and provide the necessary detail so the public and the EPA can provide meaningful input to DEQ.

DEQ has derived a BAF to be used for the calculation of a water column criterion element to be applied to waters where sturgeon are not resident. DEQ derived this BAF using the numerical relationship (a proportion) between the 304(a) whole body and water column criterion elements. With this BAF (2.75 (lotic) and 5.69 (lentic) L/g) and the proposed “sturgeon free” whole body criterion element of 9.5 mg/kg dry weight, a new water column element was calculated to be 3.4 and 1.7 µg/L for lotic and lentic waters, respectively. DEQ stated that because the BAF was “conservative”, the resultant new water column criterion was conservative. However, no further information has been provided to EPA to substantiate that the BAF is indeed conservative for Idaho’s waters. The derived BAF is essentially the 20<sup>th</sup> percentile BAF for the nation and therefore is not intended to represent a smaller geographic scale such as a state’s waters or for that matter, a subset of waters in the state. Although the national BAF is roughly at the 20<sup>th</sup> percentile, the same BAF may represent a higher or lower percentile of BAFs for Idaho. Therefore, the EPA requests more information from DEQ that addresses the “conservative” nature of the BAF for Idaho waters. DEQ may consider using its own data for this analysis and/or further explain how the national BAF represents bioaccumulation processes in Idaho waters by detailing how water body types compare for each region.

### Rule Language – Section 58.01.02.210.01 Statewide Selenium Criterion

The frequency component for the fish tissue selenium aquatic life criterion is not the same as for the water column criterion. Frequency is the number of times an excursion can occur over time without impairing the aquatic community or other use. The current recommendation (1985

Guidelines – EPA PB85-227049)<sup>7</sup> for return frequency of once in three years on average is based on the ability of an aquatic ecosystem to recover from a toxic insult when pollutant impacts are associated exclusively with a water column exposure. The frequency component of the fish tissue elements of the selenium criterion differs from the typical “once-in-three years on average” frequency of water column criteria. Selenium is a bioaccumulative pollutant; therefore, elevated levels in various ecological compartments (e.g., biota, surficial sediments) require a long period to decrease, and the associated aquatic community requires a long time to recover following reduction or removal of an elevated selenium exposure to a given system. The “once in three years” frequency is recommended for toxics where the pathway of effect is through exposure to the water column. As selenium is bioaccumulative and the pathway for exposure is through the food web, the typical criteria return frequency is not appropriate for selenium in fish tissue as this could lead to sustained ecological impacts. Past studies have shown that it can take fish tissue in excess of 10 years to return to an acceptable level after fish tissue concentrations have reached concentrations associated with reproductive impacts (Chapman et al. 2010, Finley and Garrett 2007). As fish tissue has a much longer recovery time than water column concentrations, a frequency of “not to exceed” would be more appropriate for this criterion element. For additional information regarding duration and frequency, see sections 2.7.6 and 2.7.7 of the EPA’s Aquatic Life Ambient Water Quality Criterion for Selenium – Freshwater 2016.<sup>8</sup> The EPA recommends DEQ include a frequency of “not to be exceeded” for fish tissue criteria consistent with the EPA’s 2016 national recommended selenium criterion.

The frequency component for the monthly average water column criterion for selenium is a concentration value not to be exceeded more than once in three years on average; consistent with the current recommendation in the 1985 Guidelines for water column criteria. The EPA recommends DEQ specify the appropriate frequency component for the water column criteria for the proposed state-wide and each of the site-specific criteria.

In the table at 210.01, the second entry for selenium which specifies the updated selenium criterion effective once the EPA approves, contains both footnote “r” as well as footnote “f”. Footnote “f” specifies the criterion is to be expressed as total recoverable however footnote #4 contained in “r”, correctly specifies that the water column values are expressed as dissolved total selenium. The EPA finds this confusing and suggests DEQ clarify what appears to be contradictory information.

Footnote #2 includes a statement regarding sampling of fish tissue. It specifies that composite sampling shall consist of at least five individuals of the same species and similar size. Although this limited statement regarding composite sampling might appear helpful, additional and more detailed information regarding sampling is needed. Since monitoring has its own set of issues,

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<sup>7</sup> USEPA (U.S. Environmental Protection Agency). 2010. Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses. EPA PB85-227049. U.S. Environmental Protection Agency, Office of Research and Development, Duluth, Minnesota.

<sup>8</sup> USEPA (U.S. Environmental Protection Agency). 2016. *Aquatic Life Ambient Water Quality Criterion for Selenium–Freshwater 2016*. EPA 822-R-16-006. U.S. Environmental Protection Agency, Office of Water, Washington, DC. (pages 27-29) <https://www.epa.gov/wqc/aquatic-life-criterion-selenium-documents>

independent of the criteria values, the EPA recommends DEQ not include information related to sampling in the footnotes to the criteria values. The EPA recommends DEQ address sampling and monitoring recommendations more comprehensively and separate from the regulatory language for the criteria, as Idaho does with respect to its methyl mercury fish tissue criterion. For example, it would be helpful to provide information on circumstances when analysis of individual fish samples might be useful and sufficient. The EPA's draft technical support document provides a detailed discussion of a number of considerations such as temporal and spatial concerns, sample type (composite and individual) and target species.<sup>9</sup> The EPA suggests more detailed information on monitoring and sampling considerations would be helpful and DEQ provide such information in separate technical support materials. The EPA recommends DEQ consider developing technical support and/or implementation guidance for fish tissue monitoring for implementation of its selenium criterion. It would then be helpful for the rule language to include a reference to such technical support materials for fish tissue monitoring.

In addition, footnote #2 includes the following wording: "...(*within the 75% rule*)". As previously suggested, development of more detailed implementation guidance for fish tissue monitoring for selenium would include sufficient detail regarding DEQ recommendations with respect to fish tissue samples. Although those familiar with tissue sampling may be familiar with what the 75% rule implies, it's likely that the general public and even those who are familiar with Idaho's WQS may not. Therefore, because this is unlikely to be helpful in the context of rule language specifying fish tissue elements supersede the water column element, the EPA suggests DEQ delete the second sentence in footnote #2. However, if DEQ wishes to retain the footnote as is, for this to be meaningful and user friendly, the EPA suggests DEQ include additional language that provides a short explanation of the 75% rule with regard to fish tissue sampling.

#### **Rule Language – Section 58.01.02.287. Site Specific Criteria**

The EPA is supportive of DEQ providing a performance-based approach to site-specific water column values for selenium by referencing Appendix K of the EPA's 2016 selenium criterion document as the method to be utilized. DEQ should consider including additional language noting that if alternate approaches other than Appendix K are used that such criteria will need to be treated individually as site-specific criteria consistent with the procedures described in DEQ rule at section 58.01.02.275.

58.01.02.287.01 and 287.02 – See comments above regarding the EPA's concerns with the derivation of fish tissue criteria values for each of the site-specific criteria proposed for the subsection of the Blackfoot Subbasin (Nu West's proposal) and the subsection of the Salt Subbasin (J.R. Simplot's proposal). The EPA recommends DEQ evaluate all concerns the EPA has provided above regarding the site-specific criteria and consider revisions to the site-specific criteria regulatory language consistent with any modifications to delineation of the site(s) and/or recalculations that may be needed to address these concerns. For example the EPA recommends

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<sup>9</sup> USEPA (U.S. Environmental Protection Agency). 2016. *Technical Support for Fish Tissue Monitoring for Implementation of EPA's 2016 Selenium Criterion*. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

DEQ consider revising the rule to address the following: 1) the numeric values contained in the tables under 287.01 and 287.02 should be revisited to address concerns the EPA raised with respect to consistency with the EPA's recalculation procedure, 2) the rule language should specify the frequency component of "not to be exceeded" for the site-specific fish tissue criteria and the frequency component for the water column values of "not to be exceeded more than once in three years on average" and 3) the tables in 287.01 and .02 should include a value for the water column criteria for each site-specific criteria.

58.01.02.287.03 – The draft rule language describing the waters where the site-specific criteria for non-sturgeon waters apply is somewhat odd in that it is written to specify where the criteria do not apply. The draft rule language states the following in describing the site:

*"All waters of the state except the main stems of the Kootenai, Salmon, and Snake Rivers, as well as 4th field HUCs flowing directly into the aforementioned rivers."*

The EPA suggests a more useful way to describe the site is to provide a list of waters where the criteria apply rather than describing the area where the criteria do not apply. In addition, specifying where the criteria do not apply as 4<sup>th</sup> field Hydrologic Unit Codes (HUCs) to the main stems of these three rivers is not as helpful or useful as providing the names of the waterbodies within the 4<sup>th</sup> field HUCs, or providing the list of subbasins and/or waterbodies consistent with the tables in Idaho's WQS at 58.01.02.110 – 160.