



December 6, 2019

SENT VIA EMAIL TO: [paula.wilson@deg.idaho.gov](mailto:paula.wilson@deg.idaho.gov)  
[Docket: 58-0102-1801](#)  
[Human Health Water Quality Criteria for Arsenic](#)

Ms. Paula Wilson  
Idaho Department of Environmental  
Quality 1410 N. Hilton, Boise, ID 83706

Dear Ms. Wilson:

The Department of Environmental Quality (Department) has commenced a rulemaking to revise the arsenic human health water quality criteria and had a meeting on November 20. The J.R. Simplot Company (Simplot) has participated in past meetings on this rulemaking and has retained Arcadis U.S. Inc. (Arcadis) to help provide technical information relevant to this rulemaking.

At the November 20 meeting, the Department presented preliminary results of this year's surface water and fish tissue sampling effort. About half of the paired fish tissue and water samples were available at the time of the meeting. The Department also presented some preliminary evaluations of the 2019 data. Those evaluations found little relationship between the concentration of inorganic arsenic in surface water and fish tissue. At the close of the meeting, the Department requested that stakeholders provide additional suggestions for how the Department might evaluate the data. The bullets below present some such suggestions.

- The Department reported that inorganic arsenic was detected in most, but not all, fish tissue samples. When conducting future regressions, consider running separate regressions that include and exclude the samples with non-detected concentrations.
- Consider parsing the data by regulatory basin, stream size, watershed land use, proximity to known geothermally active areas, fish species or feeding type, size of fish and then running regressions of the parsed data to see if a better relationship between surface water and fish tissue concentration is apparent.
- Consider conducting a multiple regression that simultaneously accounts for some of the factors mentioned in the preceding bullet.

- Based on the presentation of preliminary data, three fish tissue samples appear to be outliers, with inorganic arsenic concentrations greater than 8 ug/kg. Review the collection and analysis methods for these samples to confirm the reported concentrations are representative. Review and compare the characteristics of these fish and the streams from which they were collected to determine if those are unique in some way that might explain the observed elevated inorganic arsenic concentrations.
- The preliminary data suggest the ratio of inorganic to total arsenic varies by about 80-fold. Are the ratios similar in surface water and fish tissue from the same location? Explore whether the ratio of inorganic to total arsenic affects fish tissue concentration.
- Given the large variation in the ratio of inorganic to total arsenic in surface water, run regressions using total arsenic to see if a better relationship between surface water and fish tissue concentrations becomes apparent.

We hope this information is helpful to the Department in deriving an Idaho human health water quality criterion for arsenic. Please contact me at (208) 780-7365 if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'A. Prouty', with a long horizontal line extending to the right.

Alan L. Prouty  
Vice President, Environmental & Regulatory Affairs

CC: Paul Anderson, Arcadis