

## MEMORANDUM

TO: Tashina Jasso

FROM: Ryan Schierman, Uranium Recovery Program Manager.

DATE: December 6, 2019

SUBJECT: RE: Long-Term Compliance with Selenium and Uranium Concentrations in the Sweetwater River at the Split Rock, Wyoming, Uranium Mill Tailing Radiation Control Act (UMTRCA) Title II site.

### DISCUSSION

By letter dated May 1<sup>st</sup>, 2019, Western Nuclear Incorporated (WNI) submitted a request to the Wyoming Department of Environmental Quality (WDEQ) Land Quality Division's Uranium Recovery Program (LQD) to amend License Condition (LC) 74 with regards to the selenium alternate concentration limit (ACL) for the Northwest Valley. This request came in response to selenium being observed in a well (WN-42A) downgradient of the POC well at a concentration of 0.074 mg/L during the second half of 2018. The LQD issued a preliminary decision and instructed WNI to publish the decision for public comment on August 26<sup>th</sup>, 2019. The public comment period ended on November 18, 2019 and the LQD has received no objections or comments.

In anticipation of WNI submitting an ACL request the Department of Energy Legacy Management Group (DOE) sent correspondence to the LQD detailing concerns with the WNI site dated April 23, 2019. This letter is intended to address those concerns presented to LQD.

### DOE CONCERNS

#### *Applicable Standards for Selenium*

The Sweetwater River is classified as a Class 2AB waterbody in the vicinity of the Split Rock, Wyoming UMTRCA Title II site. The DOE letter argues based on the Wyoming Regulations on surface water that for class 2AB waters "Unless it is shown otherwise, these waters are presumed to have sufficient water quality and quantity to support drinking water supplies and are protected for that use. Class 2AB waters are also protected for nongame fisheries, fish consumption, and aquatic life other than fish, recreation, wildlife, industry, agriculture, and scenic value uses (Water Quality Regulations Chapter 1)." Additionally the DOE argues that the chronic and acute aquatic standards for selenium (0.05 and 0.02 mg/L) are more stringent than the drinking water standard for selenium and therefore should be the applicable standard.

The LQD agrees with the DOE that the chronic standard should be applied as the relevant and appropriate surface water standard in the evaluation of the selenium ACL. As stated by DOE, 97% of the selenium values reported in the 1999 characterization report were non-detects

with a reporting limit of 0.005 mg/L. To increase the ACL, WNI re-evaluated the historical laboratory data for background selenium. The laboratory used by WNI was contacted to obtain the true detection limit for each sample as the lab had, in the official reports, reported results as below a "reporting limit" instead of the sample detection limit. The laboratory returned the detection limit for each sample and this value was used for non-detects instead of the previously used "reporting limit" of 0.005 mg/L. For additional details on the approach used by WNI to evaluate background selenium levels in the Sweetwater River, DOE may request to review the State Decision Document and WNI's submitted ACL materials. LQD has determined that in increasing the ACL from its current level of 0.05 mg/L to 0.3 mg/L, the ACL retains the protectiveness of the 0.05 mg/L selenium in the river. The ACL would not be in conflict with the State's anti-degradation policy for surface water.

#### *Uranium ACL for the Northwest Valley Flow Regime*

In their letter, the DOE expressed concerns that the Uranium ACL (4.75mg/L) may not be protective of Wyoming surface water regulations based on the current understanding of the site as compared to the understanding of the site which was acceptable at the time of the ACL's approval. The DOE recommends developing an updated technical justification for the current uranium ACL. The DOE states that their concern is justified by an observed concentration of 0.022 mg/L in SW-3 (September 2012).

While the LQD appreciates DOE's concerns, the LQD has reviewed the historical data and no recent exceedances of the uranium ACL have been observed at the downgradient monitoring wells. The DOE's concern that an exceedance could happen at some future date is speculative and unwarranted based on the past few decades of groundwater and surface water sampling at the site. The vast majority of the source term, i.e. the groundwater plume, has largely entered the river in the past through the alluvium and now loading of uranium from Split Rock into the river has entered the long term phase predicted by WNI in their 1999 submittal.

Furthermore, the LQD will not begin a practice of opening and re-evaluating previous NRC decisions based on the remote possibility of a future non-compliance. In fact, prior to becoming an Agreement State the NRC and the LQD entered into a Memorandum of Understanding that we would recognize previously made NRC decisions and that the NRC would find these decisions acceptable upon requests for license termination.

Lastly an exceedance in the river does not automatically signify non-compliance. The Water Quality Division (WQD) at WDEQ utilizes the principles of credible data and weight of evidence in determining non-compliance. Credible data is defined by the Wyoming Environmental Quality Act W.S. §35-11-103(c)(xix) as scientifically valid chemical, physical, and biological monitoring data collected under an accepted sampling and analysis plan including quality control, quality assurance procedures and available historical data. Section 35(b) of Chapter 1 requires that credible data be collected on each water body, and shall be considered for purposes of characterizing the integrity of the water body including consideration of soil, geology, hydrology, geomorphology, climate, stream succession and the influences of man upon the system. These data, in combination with other available and applicable information, shall be used through a weight-of-evidence approach to designate uses and determine whether those uses

are being attained. Wyoming's weight-of-evidence approach evaluates all relevant data and other information and uses scientific deduction to assess the designated use support of surface waters. In using this approach, WDEQ may utilize statistical tests, analytical procedures and evaluate additional data to ensure the validity, representativeness and objectiveness of data. Additional information on how WQD implements these strategies are contained in Appendix A "Wyoming's Methods for Determining Surface Water Quality Conditions."

Using WQD's methodologies, a single event would not necessarily indicate a non-compliance. The sample would need to be validated as being credible. If the data point is deemed credible, the WDEQ would use a weight of evidence approach in determining corrective actions. This would include looking at upstream influences which could cause an exceedance. Additionally, as the LQD found the ACL acceptable, if non-compliance were to occur, the LQD would actively advocate a solution with WQD, which would not impact the DOE.