

ROCKY FLATS SITE REGULATORY CONTACT RECORD 2023-01

Purpose: Reportable condition for uranium at Point of Evaluation (POE) GS10

Contact Record Approval Date: June 27, 2023

Site Contacts and Affiliations: Andy Keim and Shawn Eichelberger, U.S. Department of Energy (DOE); Dana Santi and Ryan Wisniewski, RSI EnTech, LLC (RSI)

Regulatory Contacts and Affiliations: Brian Walker and Rick Mruz, Colorado Department of Public Health and Environment (CDPHE); David Connolly, U.S. Environmental Protection Agency (EPA)

Date of Consultation Meeting: June 8, 2023

Consultation Meeting Participants: Brian Walker and Rick Mruz, CDPHE; David Connolly, EPA; Andy Keim and Shawn Eichelberger, DOE; Kirk Briscoe, Ryan Wisniewski, John Boylan, and George Squibb, RSI

Related Contact Records: Contact Record (CR) 2021-02, CR 2022-03

Discussion:

DOE identified a reportable condition at POE GS10 upon receipt of recently available validated analytical results for uranium from the composite sample collected during the period from January 23, 2023, to April 10, 2023, at the Rocky Flats Site, Colorado. Validated results arrived on May 9, 2023; the uranium concentration in the sample was 24.9 micrograms per liter ($\mu\text{g/L}$).

DOE performed the evaluation in accordance with *Rocky Flats Legacy Management Agreement* (RFLMA), Attachment 2, Figure 6, "Points of Evaluation," which resulted in a calculated 12-month rolling average concentration for uranium on March 31, 2023, of 18.4 $\mu\text{g/L}$. This concentration exceeds the applicable RFLMA, Attachment 2, Table 1 standard of 16.8 $\mu\text{g/L}$. This 12-month rolling average includes sample results for the period from April 1, 2022, through March 31, 2023.¹

Subsequent uranium sample results for composite samples through May 29, especially during the recent high flows, are well below the standard. DOE anticipates that the 12-month rolling average for uranium at GS10 on May 31, 2023, will be below the standard once all May sample results are included in the evaluation, ending the reportable condition discussed herein. If the pending results do not lower the 12-month rolling average below the 16.8 $\mu\text{g/L}$ standard, DOE will notify the RFLMA Parties and provide a revised plan, as applicable.

¹ The 12-month rolling average is calculated for the last day of each month, using daily flow and concentration values for the previous twelve months. Twelve average values are calculated and evaluated each year.

The RFLMA Parties considered the following information in developing a path forward, as outlined in this CR:

- Recent uranium results for composite samples collected at the WALPOC Point of Compliance remained well below the 16.8 µg/L standard through May 29, 2023. DOE anticipates that all of the WALPOC 12-month rolling averages for uranium through May 31, 2023, will be below the 16.8 µg/L standard. If DOE identifies a reportable condition, it will notify the RFLMA Parties and take additional actions, as noted above.
- The most recent uranium concentrations at GS10 are consistent with concentrations observed during the 18 years since closure.
- Uranium in groundwater in the GS10 area is variable, and some monitoring wells have higher concentrations of naturally occurring uranium. Since closure, DOE has sent numerous samples from GS10 to Los Alamos National Laboratory (LANL) or Lawrence Berkeley National Laboratory (LBNL) for isotopic analysis to determine the percentages of natural and anthropogenic uranium. Historically, naturally occurring uranium has made up a much greater proportion of the concentration at GS10, averaging about 70%.²
- The elevated uranium concentrations observed since closure at GS10 are primarily the result of proportionally increased groundwater contributions to surface water base flow due to reduced surface runoff resulting from the removal of impervious surfaces (e.g., pavement, buildings) that were present before closure.
- Uranium concentrations in surface water are expected to fluctuate due to the natural variability in environmental conditions, such as precipitation runoff and groundwater recharge. Uranium concentrations at GS10 have periodically exceeded the RFLMA standard since Site closure.
- A study conducted by geochemistry experts describes the variability of the uranium concentrations at the site; the results of the study are published in the *Evaluation of Water Quality Variability for Uranium and Other Selected Parameters in Walnut Creek at the Rocky Flats Site* (September 2015). This report has been updated twice, most recently in 2021; the 2021 report is available at https://lmpublicsearch.lm.doe.gov/lmsites/rfs_evaluation_of_water_quality_variability_walnut_creek_dec_2021.pdf.

Proposed Plan and Path Forward:

The following actions are consistent with the response to previous reportable conditions for uranium at GS10 and serve as the plan and schedule for the evaluation:

- DOE will continue sampling in accordance with RFLMA, Table 2
- DOE will routinely analyze flow-paced composite samples from GS10, on an accelerated 2-week turnaround
- DOE will make available, upon CDPHE's request, a split sample from an upcoming composite sample collected at GS10
- DOE will report the results of continued monitoring and of the subsequent evaluation in RFLMA quarterly and annual reports of surveillance and monitoring activities

² LBNL and LANL data are included as appendixes to the Rocky Flats Site annual reports for the years when these isotopic analyses were completed.

Resolution:

CDPHE, after consultation with EPA, approves this CR.

Action Complete:

The actions approved in this CR will continue as part of routine surface water monitoring and reporting, as identified in the sections above and documented within the RFLMA. Any future changes to these steps will be documented separately.

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Rocky Flats Contact Record File

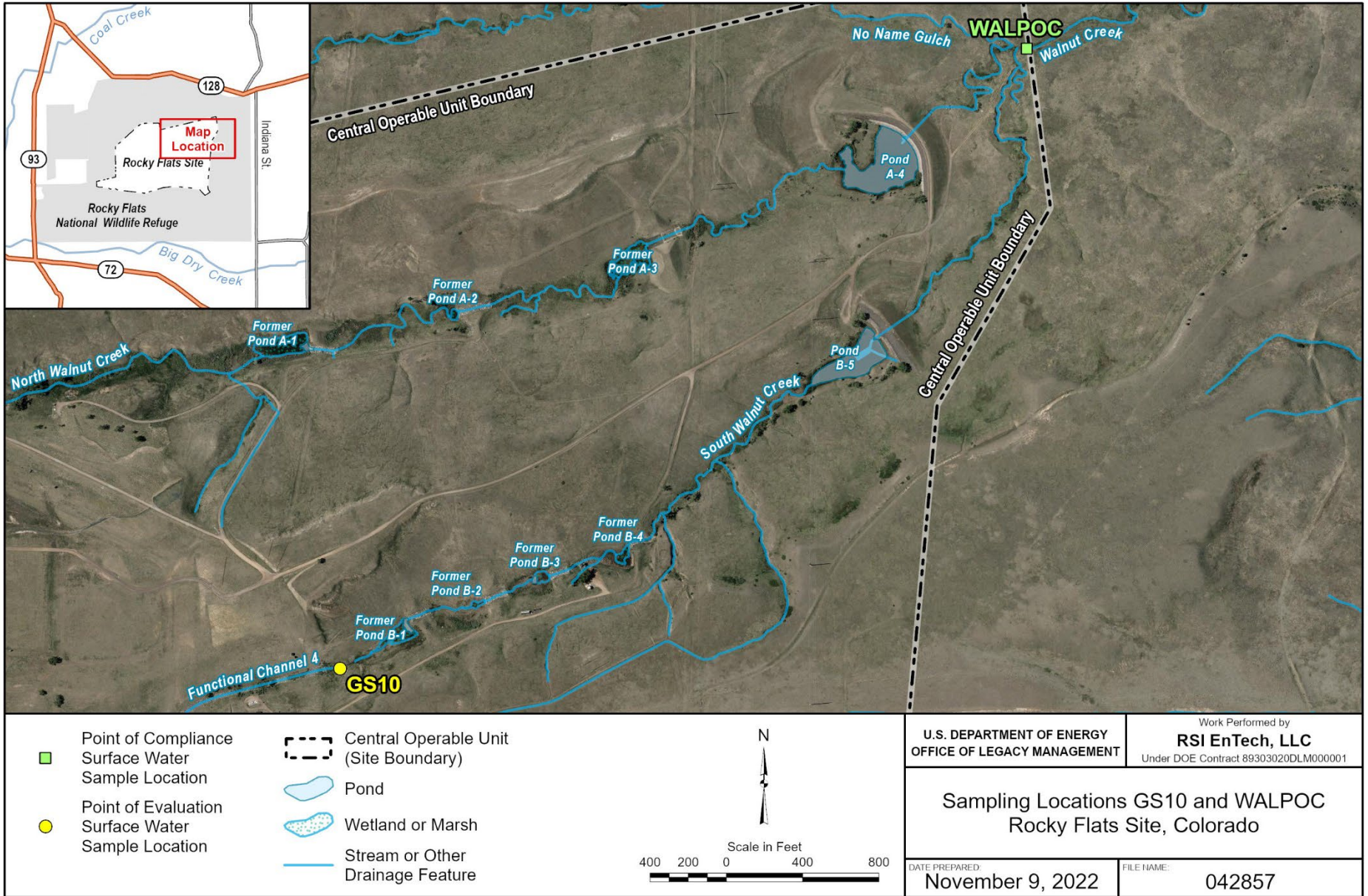


Figure 1. POE GS10 Location