

Date: April 7, 2023

To: Tennessee Valley Authority

From: A. Elizabeth Perry, PG
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Subject: Statistically Significant Levels (SSLs), January 2023 Assessment Monitoring
CCR Rule Groundwater Monitoring
Gallatin Fossil Plant, North Rail Loop Landfill

In accordance with federal regulations for management of coal combustion residuals (the CCR Rule; 40 CFR 257), the Tennessee Valley Authority (TVA) is monitoring groundwater at the North Rail Loop (NRL) Landfill at its Gallatin Fossil Plant (GAF) in Gallatin, Tennessee. The NRL Landfill groundwater monitoring system has been designed as a multi-unit monitoring system covering all three of the constructed/proposed landfill cells (existing Cells 1 and 2, and proposed Cell 3).

The NRL Landfill transitioned to the Assessment phase of monitoring in 2022. The second Assessment monitoring event (257.95(d)(1)) at the NRL Landfill took place in January 2023. Pursuant to 40 CFR 257.95(g), this memorandum serves as notification to identify the constituents in Appendix IV that have statistically significant levels (SSLs) above groundwater protection standards (GWPSs; see **Table 1**). SSLs were identified using the certified statistical methods.

The identified SSL(s) above GWPSs based on the certified statistical methods are presented on **Table 1** below. There are no new SSLs; this is the same SSL at the same well as previously identified. TVA has prepared an Alternate Source Demonstration showing that the lithium in NRL301B pre-dates the NRL Landfill and therefore is not related to a release from the landfill.

Table 1: Statistically Significant Levels (SSLs) Above GWPSs, January 2023**GAF NRL Landfill**

Appendix IV Parameter	GWPS (a)	Downgradient wells with results above GWPSs (b)	Statistically significant trend (c)	Calculated LCL on the mean (d)	SSL (e)
Antimony (ug/l)	6	None	NA	NA	NA
Arsenic (ug/l)	10	None	NA	NA	NA
Barium (ug/l)	2,000	None	NA	NA	NA
Beryllium (ug/l)	4	None	NA	NA	NA
Cadmium (ug/l)	5	None	NA	NA	NA
Chromium (ug/l)	100	None	NA	NA	NA
Cobalt (ug/l)	6	None	NA	NA	NA
Fluoride (mg/l)	4	NRL301B	No	3.70	No
Lead (ug/l)	15	None	NA	NA	NA
Lithium (ug/l)	307	NRL301B	No	1470	Yes (f)
Mercury (ug/l)	2	None	NA	NA	NA
Molybdenum (ug/l)	100	None	NA	NA	NA
Radium-226+228 (pCi/l)	5	None	NA	NA	NA
Selenium (ug/l)	50	None	NA	NA	NA
Thallium (ug/l)	2	None	NA	NA	NA

NA – Not applicable

(a) GWPSs documented in notice dated 1/11/2023.

(b) Assessment monitoring event in January 2023.

(c) As described in the statistical method certification, if a statistically significant trend is present, a confidence band approach is used to identify SSLs. No statistically significant trends identified.

(d) As described in the statistical method certification, if no statistically significant trend is identified, an SSL is identified when both the upper and lower confidence limits (UCL and LCL) on the mean of all sampling events (i.e., April 2015 through January 2023) is above the GWPS. UCL not shown as it is greater than LCL.

(e) SSL is statistically significant level over GWPS.

(f) Successful Alternate Source Demonstration completed; see 2022 Annual Report.