

April 19, 2024

Tennessee Valley Authority  
1101 Market Street  
Chattanooga, Tennessee 37402

**Groundwater Monitoring System, Revision 3  
North Rail Loop Landfill  
TVA Gallatin Fossil Plant  
Gallatin, Tennessee**

**1.0 Introduction**

This letter documents AECOM's updated certification of the groundwater monitoring system for the Tennessee Valley Authority (TVA) Gallatin Fossil Plant North Rail Loop (NRL) Landfill. The NRL Landfill consists of three landfill cells: existing Cells 1 and 2 and proposed/future Cell 3. Based on CCR Rule definitions (40 CFR § 257.53), NRL Landfill Cell 2 is a lateral expansion of an existing CCR landfill (the NRL Landfill (Cell 1)). The groundwater monitoring system at the NRL Landfill is a multiunit system (40 CFR § 257.91(d)) designed to monitor all three of the constructed (Cells 1 and 2) and proposed (Cell 3) landfill cells.

The monitoring system was originally certified on October 16, 2017, and revised on June 13, 2018 (Rev 1), and January 25, 2023 (Rev 2). This update (Rev 3) reflects the addition of two upgradient monitoring wells (GAF-433L and GAF-437L) to the groundwater monitoring system (see Figure 1 and Table 1). These wells were recently added to the monitoring program for compliance with the solid waste permit for the landfill issued by the state of Tennessee. With this update, they are also being added to the CCR Rule monitoring network for consistency. This update reflects the current well construction specifications for the NRL Landfill CCR Rule monitoring network.

**2.0 Summary of Findings**

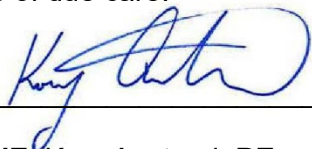
In establishing the groundwater monitoring system for the NRL Landfill at the Gallatin Fossil Plant in Gallatin, Tennessee, AECOM developed a hydrogeologic characterization of the site, designed and reviewed the installation of the monitoring wells, and evaluated available groundwater data. Based upon review of the available information, the groundwater monitoring system at the NRL Landfill meets the performance standard specified in 40 CFR § 257.91, based on the following criteria:

- There are a sufficient number of wells installed at appropriate locations and depths to yield groundwater samples that accurately represent the quality of background groundwater unaffected by CCR and the quality of groundwater at the downgradient waste boundary (257.91(a)(1) and (2)).

- The wells provide samples from the uppermost aquifer (257.91(a) and 257.53).
- The system contains four background wells (GAF-412L, GAF-414L, GAF-426L, GAF-427L) representing conditions unaffected by CCR (257.91(a)(1) and (c)(1)).
- The system contains three wells located upgradient of the NRL Landfill (GAF-433L, GAF-437L, and NRL221).
- The system contains five wells located downgradient of the NRL Landfill Cells 1 and 2 and future Cell 3 (NRL015, NRL220, NRL227, NRL230, and NRL301B) to monitor groundwater near the waste boundary (257.91(a)(2) and (c)(1)).
- Wells are constructed appropriately (257.91(e)).

### 3.0 Qualified Professional Engineer Certification

I, Kory Anstead, PE, being a Registered Professional Engineer in good standing in the State of Tennessee, do hereby certify, to the best of my knowledge, information, and belief that the information contained in this certification is prepared in accordance with the accepted practice of engineering; that the information contained herein is accurate as of the date of my signature below; and that the design and construction of the groundwater monitoring system as described above meets the requirements of 40 CFR § 257.91. Opinions relating to environmental, geologic, and hydrogeologic conditions or other estimates are based on available data; actual conditions may vary from those encountered at the times and locations where data are obtained, despite the use of due care.

SIGNATURE:  \_\_\_\_\_

DATE: 4/19/2024

PRINTED NAME: Kory Anstead, PE

ADDRESS: AECOM  
10 Patewood Dr, Suite 500  
Greenville, SC 29615

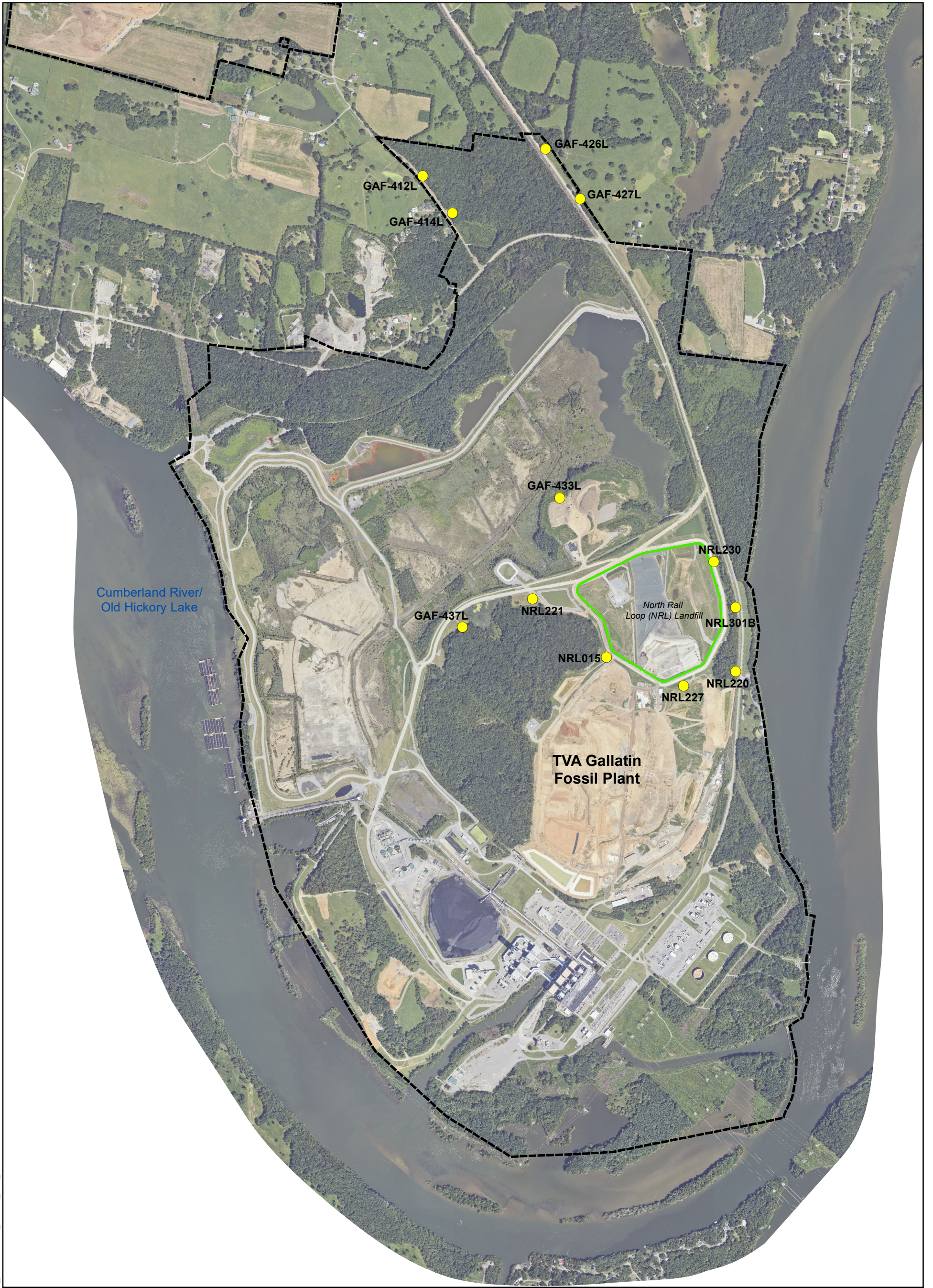
TELEPHONE: 513-651-3440

Attachments:

Figure 1 – CCR Rule Monitoring System, NRL Landfill  
Table 1 – Well Construction Information

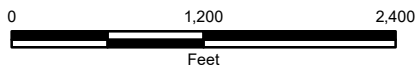






**LEGEND**

- CCR Rule Monitoring System Wells
- TVA Gallatin Fossil Plant Property Boundary (Approximate)
- North Rail Loop (NRL) Landfill



**AECOM**

**Figure 1**

**CCR RULE MONITORING SYSTEM  
NORTH RAIL LOOP (NRL) LANDFILL**

DRAWN BY: A.DUECASTER	REVIEWED BY: C.GARLINGTON	APPROVED BY: E.PERRY	REVISION NUMBER: REV. 2
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**GALLATIN FOSSIL PLANT  
TENNESSEE VALLEY AUTHORITY**

DATE: 4/9/2024	DEPT: FOSSIL AND HYDRO ENGINEERING
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NOTE: Aerial image dated August 2023



**Table 1**  
**Well Construction Information - North Rail Loop Landfill**  
**CCR Rule Groundwater Monitoring**  
**TVA Gallatin Fossil Plant**  
**Gallatin, Tennessee**

Well ID	UNID #	Position Relative to CCR Unit	Top of Casing Elevation (ft)	Ground Elevation (ft)	Screened Interval (ft btoc)	Screened Formation	Pump Intake Depth (ft btoc)	Well Diameter (in) / Material	Well Coordinates	
									TN State Plane NAD27 Northing (ft)	TN State Plane NAD27 Easting (ft)
GAF-412L	GAF-00-GW-43-019	Background	477.58	473.7	109.5 - 129.5	Lebanon Limestone	123	4-in PVC	710,930.63	1,880,028.39
GAF-414L	GAF-00-GW-43-021	Background	481.45	478.6	93.2 - 103.2	Lebanon Limestone	98	4-in PVC	710,439.64	1,880,406.18
GAF-426L	GAF-00-GW-43-030	Background	506.83	502.6	176.7 - 186.7	Lebanon Limestone	181	2-in PVC	711,283.43	1,881,641.44
GAF-427L	GAF-00-GW-43-032	Background	488.41	484.2	144.4 - 159.4	Lebanon Limestone	152	4-in PVC	710,607.73	1,882,087.46
GAF-433L	GAF-00-GW-43-066	Upgradient	487.47	480.5	127.0 - 137.0	Lebanon Limestone	131	4-in PVC	706,677.58	1,881,840.61
GAF-437L	GAF-00-GW-43-071	Upgradient	484.15	479.1	121.1 - 131.1	Lebanon Limestone	126	4-in PVC	704,988.72	1,880,568.06
NRL015	GAF-00-GW-43-042	Downgradient	550.07	543.7	184.9 - 194.9	Lebanon Limestone	186	2-in PVC	704,591.25	1,882,452.49
NRL220	GAF-00-GW-43-044	Downgradient	505.98	500.0	167.5 - 187.5	Lebanon Limestone	172	2-in PVC	704,405.75	1,884,142.78
NRL221	GAF-00-GW-43-045	Upgradient	481.54	476.0	117.0 - 137.0	Lebanon Limestone	125	2-in PVC	705,358.82	1,881,485.21
NRL227	GAF-00-GW-43-046	Downgradient	562.47	557.2	186.8 - 196.8	Lebanon Limestone	190	2-in PVC	704,220.14	1,883,459.69
NRL230	GAF-00-GW-43-052	Downgradient	511.80	507.8	161.8 - 181.8	Lebanon Limestone	165	4-in PVC	705,841.91	1,883,858.54
NRL301B	GAF-00-GW-43-048	Downgradient	502.19	495.3	144.0 - 174.0	Lebanon Limestone	172	2-in PVC	705,245.24	1,884,140.90

**Notes:**

Survey information from DDS Survey; elevation in National Geodetic Vertical Datum (NGVD) 1929, coordinates based on North America Datum (NAD) 1927.

ft btoc - feet below top of casing

in - inches (inside diameter)

The information presented here represents current conditions and the most up-to-date information, which may have changed since the initial well installation.

(e.g., modified TOC, well re-survey, well construction updates based on video survey, etc.).