February 10, 2025

Casey Jackson, Inspector
Arkansas Department of Environmental Quality
Solid Waste Management Division
5301 Northshore Drive
North Little Rock, AR 72118-5317

RE: Notice of Explosive Gas perimeter monitoring lower levels on 3 locations December 17, 2024

Dear Mr. Jackson:

In response to Explosive Gas Monitoring of December 17 , 2024 for the Third Quarter, Gas remediation plan:

- ***Gas Probe Exceedances***
  The City of Little Rock installed permanent gas probes in 2023. Since installation there has been evidence of gas migration from the waste mass to the probes and toward the property boundary on the east side and the southeast corner of the landfill. The gas probes in this area were not installed on the property boundary. There is room on City property to move most of the affected probes to the east.

- ***Option #1*** *is to relocate the affected probes to the actual property boundary (which is the actual point of regulatory compliance). Providing additional distance may help with the compliance issue.*

- ***Option #2*** *is to expand the landfill gas collection and control system (GCCS). Based upon federal regulations and the age of the waste in Cell 4, several wells were required to be installed in 2023. Cell 5 east has a deadline for installation of additional wells in 2024, Cell 5 west has one more year for installation. Additionally, there are a number of currently installed gas extraction wells which are showing signs of being watered in with leachate build up impacting the screened interval and limiting the amount of gas that can be collected. Olsson recommends replacing extraction wells 8 and 9 with a new deep well in that area that could improve gas collection along the east boundary of the landfill. The City*

has executed a contract with Olsson to design an expansion of the GCCS. Upon ***deign*** *completion, the City intends to prepare bid documents and procure a contractor to install the additional wells.*

- ***Option #3*** *is to install leachate pumps in some of the existing gas wells to assist with liquids removal from the waste mass. The pumping systems and piping could be designed and installed with the new wells.*

- ***Gas System Operational Issues***
  The initial ten extractions wells of the GCCS were installed in 2007 into waste that has been on place since 1999 and the volume of landfill gas available to the GCCS is waning due to the age of the waste. The current GGCS was designed according to the facility's NSPS permit to provide destruction capabilities for the maximum volume of gas collected at any time, which was projected to be 1300-1600 cubic feet per minute (cfm). The system is currently only able to collect between 130-150 cfm due to the age of the waste mass where current extraction wells are and liquid impacts to the wells. This flow of gas is at the absolute bottom of the current GCCS's ability to sustain operation. Any large swing in atmospheric pressure or heavy winds are causing the flare to lose its temperature and shutdown. Additionally, pulling too much gas from the ten older wells puts the facility at risk for an overpull situation which could draw air into the wells thereby introducing oxygen to the waste mass which will kill the methanogenic bacteria and reduce landfill gas production further. A prolonged overpull could cause a subsurface oxidation as well. Simply pulling harder on the older wells is not an option.

The City has an RFP developed for Landfill Gas Collection System Services to increase our gas extraction outside of design of expansion spoke about earlier. The City is working with Terracon on the RFP hoping to get this out to bid before the end of September. This should improve more wells as well as possible new flare system with potential reuse of the methane. In the meantime, if there are continuing issues with existing flare system, we have these two options we will pursue below. The Flare is currently running.

- ***Option #1 Engage*** *the manufacturer of the flare (John Zink Hamworthy) and have them design and install a restrictor plate in the flare stack which would increase the stack pressure and velocity and make operations more stable. This restrictor plate may have to be removed in the future as gas volumes increase with the installation of the new wells.*

- ***Option #2*** *John Zink Hamworthy has a number of rental flare units of varying sizes that can be rented short term. The City could rent a smaller flare system to operate until the new wells are installed. This would improve up time on the system and increase the ability to operate in compliance with the current air permit.*

The Timeline for events:

<u>Gas Probe</u>

1. ***Gas Probe Option #2*** *would be first designed in September 2024*
2. ***Install as soon as design complete the process will proceed in City guidelines***
3. ***The City will pursue Option #1 possible include in design of extraction well install should start install before the end second quarter of 2025***

<u>Gas System Operational Issues</u>

1. ***RFP Bid to go out by September 2024***
2. ***Have Landfill Gas Collection System Services from a company to potential energy by 2025***
3. ***Maintain existing system with Option #1 until new system is designed and built***

Measures the City pursued in August were to flush out well 12 that had minimum vacuum at the time on 8/6/2024 we were able to clear this well from blockage. The design is not complete, but the initial plan is to install 10 new wells in Cell 5 West by 2024. I will submit design once complete.

Contract for design is fully executed as January 10th 2025 with consultant Olsson/FTN. Once design is completed the City will execute construction after selecting contractor. The City is in the process of bidding RFP for Landfill to gas energy project as of January 2025. This will allow for a company to extract our gas by putting more wells into our class I Cell and turn our gas into a product to disperse while keeping the City in compliance.

Sincerely,

Bernard Owens

City of Little Rock
Solid Waste Services Manager