

September 5, 2023

Ms. Cindy Koepke
Wisconsin Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg, WI 53711

Re: DNR BRRTS Activity #02-33-582970
Landfill Gas Monitoring, Darlington City Historic Landfill
149 Wells Street, Darlington, WI
Monitoring Results, August 2023

Dear Ms. Koepke:

Ayres Associates Inc (Ayres), on behalf of the City of Darlington (City), is providing the results of the August 2023 landfill gas monitoring conducted at 149 Wells Street and recommendations for continued operation and monitoring of the extraction system. This is the fourth round of quarterly monitoring conducted since the Wisconsin Department of Natural Resources (WDNR) requested quarterly monitoring at the site in an email correspondence dated October 10, 2022.

Results Discussion

Landfill gas monitoring was conducted on August 24, 2023, at 11 sampling locations using a calibrated Landtec GEM 5000 landfill gas meter. Six of the locations are gas extraction wells designated with the GW identifier. The other five locations are soil gas probes designated with the identifier of GP. This round of monitoring indicated no detectable concentrations of methane except for gas probe GP-106. The methane measured at this location was 6.3% which was above the lower explosive limit (LEL) of 5% methane by volume. Gas probe GP-106 has historically had periodic elevated methane concentrations dating back to July 2011. Therefore, the elevated methane condition at this location is not considered a changed condition. The attached data sheet summarizes the August 24, 2023, gas monitoring results.

Indoor Air Alarms

The three alarms located within the Piggly Wiggly grocery were tested for an audible alert. All three alarms were operating properly when tested. Another alarm located in an office on the northeast end of the strip mall building could not be tested as the space was unoccupied and could not be accessed. To date, no audible alarms have been noted within the building from tenants or the landlord.

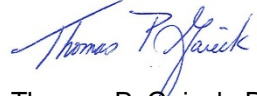
Recommendations

Since the gas extraction system at the site became active in June 2022, only four sampling locations have indicated detectable methane readings greater than 0.3%. The number of sampling locations with detectable methane readings has fluctuated over the past year including no detectable readings in June 2023. Since the beginning of 2023, methane readings have shown a decreasing trend. This data indicates that the active extraction system is operating as designed to reduce subsurface methane concentrations. It is recommended that the active extraction system continue to be operated and monitored. Because of the favorable monitoring results since the extraction system was activated, Ayres is requesting that methane gas readings be conducted on a semi-annual basis. The indoor air alarms inside the building should also be checked at the same time the methane readings are being collected.

Cindy Koepke
September 5, 2023
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Sincerely,

Ayres Associates Inc



Thomas P. Gaieck, PG
Hydrogeologist

Enclosure

cc: Jeremy Williams – City of Darlington



Darlington
24-Aug-23

Table 1: Methane Gas Monitoring Results

ID	Sampler	Time	CH4 %	CO2 %	O2 %	Balance Gas	Barometric Pressure (inHg)	Barometric Trend	Relative Humidity	Wind Speed / Direction	Air Temp. (°F)	Cloud Cover	Precipitation	Valve Open (%)	Comments
GW-9R	TG	11:05	0.0	0.0	20.3	79.7	28.70	Steady	65%	15 mph/WSW	92	10%	0.0	100%	
GW-13R	TG	11:15	0.0	0.1	19.2	30.5	28.70	Steady	65%	15 mph/WSW	92	10%	0.0	100%	
GW-14R	TG	2:24	0.0	0.0	19.9	80.1	28.70	Steady	65%	15 mph/WSW	92	10%	0.0	100%	
GW-106R	TG	12:09	0.0	0.0	18.4	81.6	28.70	Steady	65%	15 mph/WSW	92	10%	0.0	100%	
GW-20R	TG	11:37	0.0	2.8	11.8	85.3	28.70	Steady	65%	15 mph/WSW	92	10%	0.0	100%	
GW-22R	TG	11:48	0.0	6.0	9.3	85.7	28.70	Steady	65%	15 mph/WSW	92	10%	0.0	100%	
GP-101	TG	11:55	0.0	0.0	18.1	81.9	28.70	Steady	65%	15 mph/WSW	92	10%	0.0	100%	
GP-104	TG	11:41	0.0	0.0	18.4	81.6	28.70	Steady	65%	15 mph/WSW	92	10%	0.0	100%	
GP-105	TG	11:31	0.0	2.8	15.8	81.3	28.70	Steady	65%	15 mph/WSW	92	10%	0.0	100%	
GP-106	TG	11:22	6.3	0.3	12.1	81.8	28.70	Steady	65%	15 mph/WSW	92	10%	0.0	100%	
GP-108	TG	12:02	0.0	0.1	18.2	81.7	28.70	Steady	65%	15 mph/WSW	92	10%	0.0	100%	
BLOWER Port	TG	12:12	0.0	0.1	18.5	81.4	28.70	Steady	65%	15 mph/WSW	92	10%	0.0	N/A	