

ODOR MITIGATION & ABATEMENT ACTION ITEMS, SCHEDULE, & PERIODIC ASSESSMENT

The total number of Odor Reports submitted to the South Wake Landfill through the Envirosuite platform on a weekly basis (Sunday through Saturday) during a duration of 18 weeks (from 6/28/20 through 10/31/20) was recorded as well as the number of these Reports assessed to be “valid”, meaning those Reports reasonably likely to be attributed to the Landfill. The historical data, as well as the average weekly number of Reports, is presented in the graph below.

The Landfill has compiled the following inventory of parameters and metrics related to odors to measure and record for purposes of periodic assessments of the effectiveness of odor mitigation and abatement efforts and action items. The schedule for accomplishing certain action items, as well as the frequency for recording and evaluating ongoing odor control efforts, are noted as well.

The primary objective, which is to reduce the frequency and intensity of detectable odors beyond the facility boundary, is proposed to be assessed based on the receipt of “valid” Odor Reports from the surrounding communities via the Envirosuite platform (or other mechanisms that may be established in the future).

OBJECTIVE: Reduce Frequency and Intensity of Off-site Odor Detections	Metric
1. <u>Odor Reports</u> : record and track number of “valid” Odor Reports compiled by <i>Envirosuite</i> platform, and calculate number of reports within certain radii of the landfill.	<p>Close Proximity Goal: < 35 “valid” reports per week originating within 0.5 mile radius, which is equivalent to 5 reports per 100 addresses (700 addresses as of October 2020)</p> <p>Mid-Range Proximity Goal: < 25 “valid” reports per week originating between 0.5 and 1.0 mile radius, which is equivalent to 1 report per 100 addresses (2,600 addresses as of October 2020)</p> <p>Long-Range Proximity Goal: < 35 “valid” reports per week originating between 1 and 2 mile radius, which is equivalent to 1 report per 200 addresses (7,000 addresses as of October 2020)</p>

Refer to Inventory of Addresses exhibit, which depicts number and location of addresses within various radii of the Landfill limits.

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The next steps identified during the Wake County Board of Commissioners Work Session conducted on 9/14/20 are noted in the table below. Furthermore, the short-term community engagement, outreach, and public communication efforts anticipated to be executed by the Outreach Coordinator are highlighted as well.

Immediate Next Steps Identified During BOC Work Session on 9/14/20	Commence By	Complete By
LFG System Expansion (Part I – Vertical LFG Extraction Wells)	11/10/20	1/31/21
LFG System Expansion (Part II – Horizontal Collectors, etc.)	1/1/21	4/30/21
Hire an Outreach Coordinator		11/2/20
Expand SEM into Phase 2A		9/30/20
Evaluate Use of Drone Technology	11/1/20	Ongoing
Piloting of Odor Masking/Neutralizing Products	10/1/20	Ongoing
Evaluation of Interim Covers	1/1/21	3/31/21
Incorporate Bottom-of-Cell Infrastructure in Phase 2B	Initiated	12/31/20
Immediate Community Engagement, Outreach, and Communication Actions	Commence By	Complete By
<ul style="list-style-type: none"> ◆ <u>Community Survey Creation, Dissemination and Completion:</u> collecting more information about how community members would prefer to be communicated with. Duties include: ◆ Objective: Launch survey to be shared widely within the Holly Springs community and with communities in closest proximity to the landfill. ◆ Goal: To ascertain which channels, platforms would best be suited for an ongoing communications strategy focused on public outreach and education, as well as gain insight into the types of information residents are curious about. ◆ Survey completion goal: 125 respondents by January 15. ◆ Once launched, the survey will be shared through a variety of channels, which may include, but not limited to county and town social media and digital means; signage at key town facilities and community buildings; direct mail; word of mouth; email communications. ◆ Deliver findings of survey in final report, along with recommendations for moving forward in implementing strategic communications plan 	12/9/20 (Launch)	1/15/21 (Close)
		2/5/21

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The means and methods for achieving this objective are discussed in the table below, which is organized by various categories that correspond to the environmental control systems and operational protocols that are outlined in the OMCP.

Category A: Metrics and Schedule for LFG Collection and Control System		<u>Metric</u>
1. <u>LFG System Runtime/Downtime</u> : record and track number of hours that entire LFG system is entirely shutdown on a quarterly basis as an indicator of system performance.		Goal of 95% operational hours
2. <u>Average LFG Methane Content</u> : record and track average methane concentration of the LFG delivered to the blower/flare station on a daily (or monthly/quarterly) basis as an indicator of system performance for odor control.		Goal = CH ₄ < 48% to 50% (varies based on LFG recovery quantity)
3. <u>Average LFG Recovery (Flow) Rate</u> : record and track average LFG quantities delivered to the blower/flare station on a daily (or monthly/quarterly) basis as an indicator of system performance for odor control, and compare to collection projections in GCCS Design Plan.		2020 Target = 2,756 cfm 2021 Target = 2,983 cfm 2022 Target = 3,197 cfm (90% of LFG Generation per 2019 AEI LandGEM Model)
4. <u>LFG System Efficiency/Wellfield Coverage</u> : Calculate theoretical radius of influence (ROI) and compare to current ROI calculated with liquid level data.		Goal of 85% theoretical wellfield coverage, and 70% coverage considering liquid levels
Category B: Metrics and Schedule for Odor Neutralizing System		
1. <u>Quantity of Neutralizing/Masking Product Consumed</u> : record and track quantity of product that has been utilized on a quarterly basis as an indicator of system performance.		
Category C: Metrics and Schedule for Odor/Air Monitoring		<u>Metric</u>
1. <u>Surface Emissions Monitoring</u> : record and track number of locations exhibiting an exceedance of the regulatory threshold and the average and mean concentrations recorded during quarterly events as an indicator of potential fugitive LFG emissions.		Goal is no more than 2 exceedances per 100 sampling points; Goal = average/mean value < 200 ppm
2. <u>LFG Constituent Monitoring</u> : record and track hydrogen sulfide concentration of LFG at blower/flare station on a semi-annual basis.		Compare measured value with published default values in AP-42 and WIAC
3. <u>Odor Investigations</u> : record and track number and frequency of odor monitoring events and document corrective actions and responses (commencing on 12/1/20).		Investigation (and completion of form) trigger when there are 24 odor reports in a day (valid or invalid) or 5 in an hour. Report to be started by GFL and County completes and files the report.

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Category D: Landfill Surface Observations	<u>Metric</u>
1. <u>Cover Integrity</u> : observe and repair issues with landfill cover (i.e., leachate seeps, exposed areas, rills/cracks, washouts, etc.) on a weekly basis and after any precipitation event exceeding 1.0 inch within a 24-hour period.	GFL will utilize an inspection sheet to assess site cover integrity and erosion. Any area requiring remediation will be documented with an anticipated completion date of the repair and when the repair was completed.
2. <u>Working Face Dimensions and Cover Practices</u> : record and track approximate dimensions of active waste placement operations area ("working face") and estimate ratio of soil daily cover to approved ADC (tarps, etc.).	Closure procedures will not exceed utilization of 5 tarps, (Approx. 1 acre in area). Nightly photos of closure to be taken and provided to the County. If GFL exceeds 1 acre of open waste area for closure, documentation will be provided on the cause (ex. multiple day rain event).
3. <u>Equipment Runtime</u> : record and track number of loads for hauling vehicles engaged in placement and spreading daily cover soil on daily basis.	Internal and 3 rd party dirt hauling load county logs will be maintained on a daily basis and provided monthly.