



2023
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Part 115
Amendments
and LFG

Part 115 Amendments and Landfill Gas Management



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Part 115 Amendments

Includes adding 11512b – 11512h

Effective March 29, 2023



Landfill Gas Amendments

Overall philosophy

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Align with current AQD requirements where possible to reduce redundancy

Allow/design plans and requirements to meet more than 1 programs objectives.

Begin requirements after plan approvals to allow for certainty

Allow innovation and alternate approaches where appropriate

Recognize shared goals and values



Landfill Gas Amendments

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New monitoring requirements

Landfill Gas Migration Plans – Applicable to all sites 11512b(3)

Surface Emission Monitoring Plans – Applicable to all sites
11512d(5&6)

Wellhead Monitoring Plans – Applicable to sites with active
gas collection systems 11512d(2&3)



Landfill Gas Amendments

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Include LFG Collection System Design Requirements

Revised/Updated Engineering Plans

Construction Plans prior to LFG Collection System Expansion projects

LFG Collection System Certification Reports



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LFG Migration Plans

At least one gas probe on each side of the facility.
Based on soil conditions, hydrogeologic conditions, hydraulic conditions, and location of nearby structures and property lines.

Properly sealed, fully screened probes extend to the water table or at least 10 ' below the depth of waste in the landfill.

Quarterly monitoring as required by Rule 433

Most sites already have approved plans which comply with this standard.

Monitoring to continue with current plans and commencing the next quarter after approvals of changes to the current plan.



Surface Monitoring Plan

30 m traverse.

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Around Perimeter of installed system.

Visual Indicators of migration (distressed vegetation, cracks, seeps)

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Penetrations must be monitored

Must include cells within 180 days of first waste acceptance



Surface Monitoring Plan

Any reading of 500 ppm or more above background at any location must be marked and recorded as a monitored exceedance and follow up actions are required:

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At the location of the exceedance, the owner or operator must initiate corrective action. These actions can be to repair cracks or areas of differential settlement, placement of less permeable cover materials, repair of ripped geomembrane, repair of seals around vertical penetrations, or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance. The owner or operator has 10 days to take one of the possible actions and re-monitor the location of the detected exceedance.



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Surface Monitoring Plan

If the re-monitoring of the location shows a second exceedance, additional corrective action must be taken and the location must be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, a new well or other collection device must be installed within 120 days of the initial exceedance.

Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10-day re-monitoring, must be re-monitored 1 month from the initial exceedance. If the 1-month re-monitoring shows a concentration less than 500 ppm above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month re-monitoring shows an exceedance, the 10-day corrective action re-monitoring cycle starts again.



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Surface Monitoring Plan

If the exceedance can not be cleared up within 1 calendar quarter the system must be expanded to cover the area or a new system must be designed if no current system is installed.

Results must be submitted to EGLE upon request



Surface Monitoring Plan

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NSPS WWW including FIP sites and NSPS XXX sites continue required monitoring according to currently approved plans until a new plan is approved.

Commence monitoring under changed plans beginning the next calendar quarter.

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Non-NSPS/FIP sites commence monitoring the next calendar quarter after SEM Plan approval.



Wellhead Monitoring Plan

All sites with active gas collection.

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Monthly minimum frequency

Must include monitoring for O₂ or N₂, CH₄, pressure, temperature, liquid level and if equipped flow rate. Plus other parameters included in plan (eg CO₂)

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No standards are established for parameters but results must be submitted to EGLE upon request



Wellhead Monitoring Plan

Liquid level frequency is based on results.

If levels are below 50% of the screened interval length for two consecutive events a petition for annual monitoring can be requested. A monitoring event prior to the amendments may also be utilized for petition.

If results are >50% but <75% semi-annual monitoring but a liquids removal and corrective actions report is required for the well.

If liquid levels are >75% screened interval monitoring is required to be quarterly and a liquids pump must be installed in the well.

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LFG Collection System Design Standards

Vertical/Horizontal Extraction Wells

Include a sampling access port, control valve and a means of estimating or measuring liquids removed.

Maximum Radius of influence of 150' and overlapping

Target depth of at least 75% of waste depth

Do not extend closer than 10' from liner system

At least 6" in diameter, PVC, CPVC, HDPE or approved alternates. (EGLE will maintain a list of alternates.)

Lower 2/3 to 3/4 of pipe must be perforated/slotted.

Well specific variance allowed.

36" borehole, backfilled with 3/4" - 3" washed stone,
Top 10' sealed

Horizontal collectors that are sloped to drain liquids and withstand expected overburden pressures



LFG Collection System Design Standards

Collection/Control

Gas Header lateral system designed to convey projected amounts of gas and liquid

Sloped to allow removal of condensate and prevent sags (2% min on waste mass)

Designed to allow looping/alternative flow paths during interim and final development.

Designed to withstand expected loading during use.

Made from polyethylene or approved alternate (EGLE will maintain a list of alternates.)

Blower, header and lateral sized to provide at least 10" of w.c. at well located furthest from blower.

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LFG Collection System Design Standards

Collection/Control

A drip leg or equivalent installed immediately before blow to allow maximum suction at the wells.

A means of collection and management of condensate removed.

Dual containment for condensate and liquid transfer piping if the piping is installed outside of the limits of waste.

A control devices that is designed and operated to comply with Part 55 or the NSPS standards in 40 cfr Part 60.

Available backup equipment to prevent system from not meeting design operational requirements for a period of more than 5 consecutive days.



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Revised/Updated Engineering Plans

Sites Subject to NSPS XXX and New Expansions -
Within 90 days of effective date

Sites with Current Active Gas including old WWW but
now FIP – Within 1 year of effective date.

Sites with documented odor violations/SEM hits that
can not be corrected – Within 1 year of documented
issues unless an extension is granted.

Updated Engineering Plans which have been changed
for future construction within 45 days after the end of
the state fiscal year. Future changes must meet
construction standards.



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Construction plans prior to expansion projects.

The plans shall identify gas extraction well locations, include a schedule of extraction well depths, and identify gas well pump locations, compressed air and pump force main locations, header and lateral vacuum pipe locations, condensate drip leg and sump locations, and any other relevant infrastructure, as well as construction details for these items.

If, during construction, conditions require that any of the approved or proposed extraction well locations deviate more than 50 feet from the proposed location or more than 25% from the proposed depth submit either a PE statement that the changes will still provide adequate control or a schedule for installation of the components.



LFG Construction Certification Reports

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Sites which construct expansion to their Landfill Gas System – Within 180 after project completion.

Daily Activity Log Rule 921(3)

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Landfill gas well logs

As built engineering plan views



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New Landfill Cells

Sites With Current Gas Collection Systems

All new landfill cells including lateral extensions must include a method to hook them up to collect landfill gas upon detection of landfill gas pressure within the new cell.

New construction projects meet the design standards of 11512b. For existing sites multiple variances are available if applicable.



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Questions?