

City of Albuquerque Interim Guidelines for Development within City Designated Landfill Buffer Zones (revised October 2013)

Through normal decomposition of buried refuse in former landfills, methane and possibly toxic gases including hydrogen sulfide gas may be produced as a byproduct. These gases collectively shall be called within this document as landfill gas (LFG). If production of LFG is significant, the landfill becomes pressurized forcing the LFG out beyond the boundaries of the landfill. LFG generally follows the path of least resistance when it migrates. Typical areas it migrates through are utility corridors, existing gravel and/or sand deposits below the surface or areas where prior excavations have occurred and the fill was not properly compacted. Because LFG may migrate onsite and to offsite areas surrounding a landfill, there is a potential danger to development and activities associated with development as the LFG may enter buildings through utility corridors or other means. Trenching during construction activities associated with development also has the potential to expose workers to LFG. LFG is explosive (primarily methane) when the concentration in air reaches a certain level. In addition, LFG may also be a health hazard due to other byproduct gases mentioned above - primarily hydrogen sulfide and volatile organic compounds.

As a result of the above concerns, the following Interim Guidelines for Development (Interim Guidelines) within city designated landfill buffer zones (Buffer Zones) are to be followed by all development within the City's jurisdiction. These guidelines apply to all active or inactive city designated landfill buffer zones of within the City, as well as private permitted landfills, unpermitted landfills, and/or illegal dumpsites.

1. All development, whether it proceeds through the Environmental Planning Commission (EPC), Development Review Board (DRB), Development Review Committee (DRC) or the building permit process shall be subject to the Interim Guidelines if the property falls on top of or within a City designated landfill buffer zone. The Albuquerque Environmental Health Department (AEHD) Environmental Services Division (ESD) or its consultant will review all documentation concerning development within each designated landfill buffer zone from professional engineers and the developers/owners/responsible parties to ensure that the Interim Guidelines provided herein have been followed.
2. Development projects will include input from a professional engineer, with expertise in landfills and LFG issues, to determine if LFG, as defined above, exists on the property in question and whether there is a potential for the migration of LFG to impact the property or other properties in the future.
3. If LFG is present at the property in question or there is a potential for the property to be impacted in the future, plans must include risk abatement measures, which are adequate to address any existing and/or future risk related to LFG.

The certification process shall include the following steps:

1. Preparation and approval of a LFG assessment and report.

2. A commitment by the owner/developer/responsible party to follow abatement measures and acknowledgment that the commitment is a condition of development approval.

3. Construction plans detailing the risk abatement measures shall be submitted with the building permit plans.

4. A stamped certification from a professional engineer licensed to practice in New Mexico certifying that the construction of the project has been completed in compliance with the risk abatement measures as detailed on original construction plans (any changes in the original design of the risk abatement measures shall be coordinated with the original signing LFG professional engineer and AEHD prior to implementation of the change).

5. Copies of landfill certification documentation will be submitted to the Planning Department and maintained in its development files.

6. If a determination is made that there is no LFG existing at the property and there is no future risk from LFG, the assessment report shall state how such determination was made and shall be certified by a professional engineer with landfill gas experience. The “no risk” certification process shall include the same steps outlined above.

7. Properties within City designated landfill buffer zones must note on the cover sheet of site plan/plats/as-builts a statement approved by AEHD disclosing the site is located on or within a landfill or landfill buffer zone.

8. The above Interim Guidelines are for the development process and are not intended to affect planning or administrative processes that are not associated with physical changes to sites on or within City designated landfill buffer zones other than to raise the awareness of procedures to be undertaken prior to development.

9. Any removal of landfill materials during development of the property must also be coordinated with the New Mexico Environment Department – Solid Waste Bureau.

10. Maps of the landfill and the buffer zones are shown in the City’s AGIS Mapping website at: <http://www.cabq.gov/gis/map-views/environmental-issues>. The Interim Guidelines apply to all active or inactive City designated landfill buffer zones of City and private permitted landfills, unpermitted landfills and/or illegal dumpsites. The following City designated landfill buffer zones are:

- Atrisco Landfill – 250 feet (ft.)
- Coronado LF Middle and South Cells –Site Specific – see City AGIS mapping
- Eubank Landfill – 500 ft.
- Kirtland AFB Landfills – 1000 ft.
- Los Angeles Landfill – 1000 ft.
- Menaul Area East Landfill – 1000 ft.
- Menaul Area West Landfill – 500 ft.
- Nazareth Landfill – 500 ft.

- Nine Mile Hill Landfill (Bernalillo County) – 1000 ft.
- Riverside Landfill – 1000 ft.
- Russ Pitney Landfill – 1000 ft.
- Sacramento Landfill – 500 ft.
- San Antonio Landfill – 500 ft.
- San Francisco Drive Landfill – 500 ft.
- Seay Brothers Landfill – 1000 ft.
- South Broadway Landfill – 1000 ft.
- Southwest Landfill – 1000 ft.
- Schwartzman Landfill – 1000 ft.
- W.W. Cox Landfill – 1000 ft.
- Yale Landfill – 500 ft.
- All other Private permitted landfills* – 1000 ft.
- All other Private unpermitted landfills* – 1000 ft.
- Illegal dumpsites (surface debris) – 1000 ft.

*Note – private permitted landfills have been permitted by the New Mexico Environment Department (NMED) Solid Waste Bureau, while private unpermitted landfills have not been permitted by the NMED Solid Waste Bureau.

11. The City has developed Guidance for Compliance with these Interim Guidelines which provides direction to meet the Interim Guidelines attached in Appendix I. AEHD is available to provide assistance in this process.

Contact the Albuquerque Environmental Health Department (AEHD), Environmental Services Division (ESD) for further information.

Appendix I

Guidance for Compliance with the City of Albuquerque Environmental Health Department Interim Guidelines for Development within City Designated Landfill Buffer Zones

This guidance is intended to assist developers, and their agents, through the City's approval process required by the City of Albuquerque Interim Guidelines for Development within City Designated Landfill Buffer Zones (*Interim Guidelines*). This Guidance for Compliance document provides additional detail and guidance for the process in order to comply with the *Interim Guidelines*.

Definitions:

Professional Engineer (PE) Requirement: PE with Landfill Gas Expertise:

Development projects subject to the *Interim Guidelines* are required to be stamped by a New Mexico Professional Engineer (PE) licensed to practice in New Mexico with expertise in landfills and landfill gas issues, to determine if landfill gas (including but not limited to methane) exists on the property in question and whether there is a potential for the migration of landfill gas to impact the property or other adjacent properties in the future. PEs with expertise in landfill gas are referred to as "qualified PEs" throughout this document. AEHD maintains a list of qualified PEs dealing with landfill gas issues; however, this list is not inclusive of all PEs with landfill gas expertise. PEs not shown on the attached list must contact AEHD prior to starting work on the project. The most current version of this list is attached (Appendix III).

In addition, the City's landfill gas consultant refers to the qualified PE that the City has under contract to participate in the City's planning process on behalf of the AEHD.

NM PEs:

Other licensed New Mexico PEs (no landfill gas expertise) working on other aspects of development for the project other than landfill gas (e.g., certifying that a facility was constructed as designed) are referred to as "NM PEs" throughout this document.

Site-Plan

This document refers to a Site Development Plan throughout. This term is used to refer to Site Plans, Site Plans for Building Permit, Site Plan for Development and Site Plan for Subdivision, and construction documents as required by the City's Planning Department.

Approval and Certification Process:

I. Landfill Gas Assessment and Report. As required by the Interim Guidelines, a Landfill Gas assessment and report shall be performed by the qualified PE to determine the current presence and/or potential for future presence and extent of landfill gas at the property.

A. Requirements of the Landfill Gas Assessment and Report:

1. The scope of work undertaken concerning the assessment of landfill gases and/or risk abatement measures at the property must be sufficient for the qualified PE to render an *unqualified opinion* concerning the current presence and/or potential for future presence and extent of landfill gases at the property or adjacent properties and the sufficiency of the risk abatement measures to eliminate any hazards or potential hazards associated with landfill gases. No qualifications or disclaimers in the PE's opinion of the existence of landfill gas shall be accepted by AEHD.
2. The LFG assessment and report must be signed and stamped by the qualified PE.
3. The LFG assessment and report shall include a copy of the Site Development Plan required by the City Planning Department (see No. 5 below). In addition, a location site map must be included which shows the proposed development and the adjacent impacting landfill(s). The location site map should, at a minimum, contain a scale (1"=20' minimum), at least two bounding streets, a north arrow, vicinity map, and legal description.
4. The LFG assessment report shall include a description of the proposed development, including the proposed use of the development. A statement regarding whether the property is on the landfill or within the landfill designated buffer zone is required. The LFG assessment report should give a full description of what structures are to be built on the site, along with dimensions of each structure; whether the structure is a slab on grade; whether basements will be installed; where parking will be available on site; and what the intended use of the structures will be when development is completed.
5. The Site Development Plan and/or the site map must depict the proposed development and the locations of all utilities (including dry utilities and proposed City Infrastructure). Properties within City designated, landfill designated buffer zones must note on the Site Development Plan the following disclosure statement with no additions or alterations (other than selection of the appropriate word: "on or near", or "former/existing" and deletion of the other word, where an option is presented):

"The subject property is located (near, on) a (former, existing) landfill. Due to the subject property being (near, on) a (former, existing) landfill, certain precautionary measures may need to be taken to ensure the health and safety of the public. Recommendations made by a professional engineer with expertise in landfills and landfill gas issues (as required by the most current version of the Interim Guidelines for Development within City Designated Landfill Buffer Zones) shall be consulted prior to development of the site."

In addition, the Site Development Plan must contain a signature block for AEHD and/or its consultant contractor).

6. If the LFG assessment includes sampling and analysis of LFG from monitoring probes or permanent wells at the proposed development property, all sampling and analysis methodologies, sampling equipment, calibration methods, and laboratory detection limits should be described fully in the LFG assessment report.
7. The qualified PE may, in lieu of performing sampling and analysis of LFG from monitoring probes or permanent wells at the proposed development property, rely upon existing reports available in AEHD's files. These reports should only be relied upon if, in the opinion of the qualified PE, the reports contain adequate and relevant LFG analysis data, and if this reliance is clearly specified in the LFG assessment report.
8. A Phase I Environmental Site Assessment report prepared in accordance with American Society for Testing and Materials (ASTM) Standards is NOT adequate in and of itself to meet the LFG assessment report requirements of the Interim Guidelines.
9. The LFG assessment report should include a conceptual plan to mitigate landfill gas, if in the opinion of the qualified PE, LFG is determined to be present at the property in question or there is a potential for the property to be impacted in the future. The conceptual plan should include a thorough description, including conceptual design details and/or cross sections, of the mitigation systems proposed.
10. A statement concerning whether City Infrastructure will be required at/near the proposed development should also be discussed in the LFG assessment report. If infrastructure is required, a description of the infrastructure and what LFG risk mitigation / remediation measures are needed should be discussed. Preliminary conceptual design plans should be included in the LFG assessment report for the mitigation of LFG in the proposed infrastructure.
11. If there are landfill materials on-site, and anticipated to be on-site after site development, the LFG assessment report must discuss the proposed site drainage and how the drainage will be diverted away from the landfill materials. No ponding of water shall be allowed to occur in areas where landfill materials exist or remain in place without proper mitigation measures acceptable to AEHD.
12. If there are landfill materials on-site, and anticipated to be on-site after site development, the LFG assessment report must also discuss proposed landscaping for the site and watering controls to prevent water from entering the landfill materials.

13. “Wet utilities” should not be constructed over landfill materials, if possible, due to possible settlement and wetting of the landfill materials by broken utility lines. If “wet utilities” cannot be placed away from landfill materials, then adequate measures must be taken to ensure minimal settlement of utilities and total control of any leakage from pipe ruptures. In addition, if the property is to include a pool and/or spa, these structures should be located away from any landfill materials. “Dry utilities” also should not be constructed over landfill materials, if possible, due to possible settlement of the landfill materials.
14. All publically/ABCWUA owned or maintained infrastructure improvements will require that all landfill materials be removed in their entirety from beneath the structure and solid bedding fill be constructed from native/non-waste soil.
15. If a determination is made by the qualified PE that there is no LFG existing at the property and there is no future risk from LFG, the LFG assessment report shall state how such determination was made and shall be certified by the qualified PE. The “no risk” certification process shall include the same steps, where appropriate, outlined above.

B. Landfill Gas Assessment Report Submittal: The LFG assessment report shall be submitted to AEHD. AEHD or its consultant shall review the LFG assessment report and provide either: 1) a review comment letter to the LFG assessment report, or 2) a letter approving the LFG assessment report as submitted. The approval letter shall only be issued after receipt of the Letter of Commitment described below.

C. Letter of Commitment:

1. As required by the Interim Guidelines, a Letter of Commitment shall be submitted to AEHD by the owner/developer/responsible party that documents the owner’s/ developer’s/responsible party’s commitment to follow abatement measures as determined by the qualified PE, and acknowledges that the commitment is a condition of development and/or building permit approval. (In the case of a large corporation, the certification letter will be signed by a representative, who has the authority to commit the corporation to implement the risk abatement measures.).
2. AEHD or its consultant shall review the Letter of Commitment and issue an acknowledgement of the Letter of Commitment and the LFG Assessment report, to the owner/developer/ responsible party and the appropriate section of the Planning Department.
3. LFG Assessment reports that contain NO mitigation/remediation requirements do not need to submit Letters of Commitment. In these cases, AEHD or its consultant will submit to the owner/developer/responsible party and the appropriate section of the Planning Department a memorandum that recommends that the development continue through the Planning Department development process.

II. Construction Plans. As required by the Interim Guidelines, if the qualified PE determines that LFG remediation measures need to be implemented at the site, the construction plans must include the risk abatement measures required by the qualified PE. Plans for a building permit **MUST** be submitted to AEHD PRIOR to submission to the City's Building Permit and Plan Review Section.

A. Requirements for Construction Plan Submittal

1. The entire building permit plan sets shall be submitted to AEHD for review and approval prior to their submittal to the City Building Permit and Plan Review Section. These building plan sets shall include the construction plans dealing with LFG abatement measures. The portion of the construction plans dealing with LFG abatement measures shall be: 1) signed and stamped by the qualified PE, 2) the cover sheet of the entire building permit plan set shall contain the disclosure statement (as stated above in paragraph I.A.5) and a signature block for AEHD.
2. Although only a relatively small subset of the entire building permit set of plans are expected to contain LFG mitigation details, the entire building permit set of plans must be submitted to AEHD to facilitate its review. The qualified PE should ensure that the entire set of plans (i.e., civil, electrical, mechanical, etc.) is consistent with respect to LFG mitigation details.
3. Upon approval of entire building permit plan set by AEHD: Development Review Board (DRB), Environmental Planning Commission (EPC), and/or the Building Permit and Plan Review Section will be notified by AEHD of the approval and the building permit process may start.
4. Any changes in the original design of the risk abatement measures shall be coordinated with the design engineer and AEHD or its consultant prior to implementation of the change.
5. Infrastructure improvement plans that contain infrastructure improvements to be owned or maintained by the City/ ABCWUA shall be reviewed and approved by AEHD or its consultant during scheduled Design Review Committee (DRC) review meetings. The cover sheet to the DRC plans shall include the above described Disclosure Statement in Section I, Paragraph 5 and shall contain a signature block for AEHD.
6. Any removal of landfill materials during development of the property must also be coordinated with the NMED Solid Waste Bureau, as well as AEHD. Please contact the NMED Solid Waste Bureau Permit Section at (505) 827-0197 to obtain information about the required health & safety/operation plan that must be approved by the Bureau prior to the commencement of any waste excavation

III. Certificates of Occupancy (CO).

A. Certificates of Occupancy will be issued by the City's Planning Department after AEHD has received from the NM PE or the qualified PE a certification letter on whether the construction of the LFG remediation measures have been built as shown on the design plans. The construction of these landfill gas measures must be in substantial compliance with the qualified PE's design.

B. After receipt of the NM PEs or the qualified PE certification letter, AEHD or its consultant shall issue to the Planning Department a release for the issuance of a Certificate of Occupancy.

C. An "Operation, Maintenance, and Monitoring Plan" (OM&M Plan) for any landfill gas mitigation system(s), if warranted in the judgment of the qualified PE, must be prepared and submitted to AEHD for review and approval. AEHD or its consultant shall review the OM&M Plan and provide either: a) a review comment letter to the plans, or b) a letter accepting the plans. This step must be completed before AEHD can recommend that a Certificate of Occupancy be released. Appendix II attached provides guidance for the preparation of the OM&M Plan.

Specific Engineering Guidance for Construction Plans

Specific engineering details, as reflected on construction plans and other documents prepared by the PE are the responsibility of the certifying qualified PE. The following engineering guidance provides some information developed by AEHD in its review of construction plans previously submitted in accordance with the Interim Guidelines. This information is intended to inform the qualified PE of the general standard of care expected by AEHD in order to obtain its approval. This information is not intended to represent comprehensive guidance, but rather is intended to provide points for consideration by the qualified PE.

1. If the qualified PE determines that there is the potential for LFG to migrate into buildings and their associated infrastructure, then LFG ventilations systems and/or methane/hydrogen sulfide sensors with alarm capability should be considered for placement in those buildings and their associated infrastructure, particularly in confined spaces. OMM Plans should be submitted for methane and/or hydrogen sulfide sensors.
2. If the qualified PE determines that there is the potential for LFG to migrate into buildings and their associated infrastructure, then one or more methane monitoring probe should be considered, as well as a long-term monitoring and maintenance plan for their use.
3. Design specifications for LFG ventilations systems should include details for the venting layers, including conservative compaction and gravel specifications, as well as details for any LFG venting lines and riser pipe.

4. All underground utilities should be constructed so as to prevent the migration of LFG into proposed structures. Details of any proposed LFG barrier(s) such as plugs and boots that will be installed around all on-site utility lines and public infrastructure must be provided.
5. Any penetrations into the ground (such as light poles) should be sealed or vented above the breathing zone so that any existing landfill gas does not exit the ground surface to cause a risk to the public.
6. If landfill materials are present on site (and the structure cannot be relocated away from landfill materials), then design of structures with subsurface elements such as a pool or a spa should be designed by a qualified PE to ensure that these features do not leak into the underlying landfill materials.
7. If landfill materials are present on site, then ponding of water on the site shall be immediately conveyed off site (avoiding areas underlain by landfill materials) or must be contained in a waterproof liner system, which prohibits the introduction of water into the landfill materials.
8. “Wet utilities” should not be constructed over landfill materials, if possible, due to possible settlement and wetting of the landfill materials by broken utility lines. If “wet utilities” cannot be placed away from landfill materials, then adequate measures must be taken to ensure minimal settlement of utilities and total control of any leakage from pipe ruptures. In addition, if the property is to include a pool and/or spa, these structures should be located away from any landfill materials. “Dry utilities” also should not be constructed over landfill materials, if possible, due to possible settlement of the landfill materials.
9. If landfill materials are present on site, then any proposed landscape plan should be reviewed by a qualified PE to determine whether the watering of each proposed type of vegetation, including the turf areas, may exacerbate introduction of irrigation water into the underlying landfill materials. All landscaping that requires medium to high water use and that is located on landfill materials should be contained so that water does not enter the landfill materials. Use of low water use vegetation may be required.
10. Engineered risk abatement features should be designed and constructed for low operation and maintenance and long-term (e.g., 30 year or greater) reliability.

Appendix II

Operation, Maintenance and Monitoring Plan

If the recommendations by a New Mexico licensed PE in the LFG assessment include actions to be taken by the owner or its agent after the construction of LFG mitigation measures, or in lieu of constructing LFG mitigation measures, the owner/developer must submit an OMMP to the AEHD for approval during the development process. A typical OMMP contains monitoring procedures, regulatory requirements, engineering specifications, equipment lists, maintenance and inspection instructions, lists of contacts, safety and risk management protocols, and stipulations for ensuring that the information in the OMMP is kept current and technically accurate.

AEHD's objective in requiring the preparation and implementation of an OMMP is the protection of human health, the environment, and public and private property. For users and occupants of properties developed over a landfill or within a City-designated landfill buffer zone, the OMMP may provide the only available description of the LFG risks associated with the property and the ongoing requirements of the measures implemented to mitigate those risks. For this reason, AEHD views proper preparation and use of the OMMP as a critical LFG mitigation measure.

An OMMP should include the following content:

- Property description
- Property use description
- Description of the YALF and relationship to the development
- A plan showing the location of all existing and/or proposed LFG mitigation features at the site, inclusive of mitigation features not specifically covered under the OMMP (e.g., passive trench vent barriers).
- Summary of LFG conditions and risk
- Description of LFG mitigation measures employed at the facility
- Safety and risk management protocols including action levels, detailed response protocols, notification requirements, mitigation measures, evacuation procedures, measures to mitigate ignition sources, identification of key personnel, and reentry procedures
- Regulatory requirements and mitigation milestones
- Contact information for property owner, AEHD, Albuquerque Fire Department/emergency services, occupant, etc.
- Training requirements
- OMMP review and revision protocols

- LFG Monitoring Plan (as necessary)
- Variance from LFG assessment recommendations
- Maintenance Plan (as necessary)

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APPENDIX III
List of Approved Consultants

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