# SKYLINE LANDFILL CITY OF FERRIS DALLAS AND ELLIS COUNTIES, TEXAS TCEQ PERMIT APPLICATION NO. MSW 42D

# PERMIT AMENDMENT APPLICATION

**VOLUME 5 OF 5** 

Prepared for

Waste Management of Texas, Inc.

April 2012

August 2012

KENNELA J. WELCH

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Prepared by

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TEXAS BOARD OF PROFESSIONAL ENGINEERS FIRM REGISTRATION NO. F-256

TEXAS BOARD OF PROFESSIONAL GEOSCIENTISTS FIRM REGISTRATION NO. 50222

# SKYLINE LANDFILL CITY OF FERRIS DALLAS AND ELLIS COUNTIES, TEXAS TCEQ PERMIT APPLICATION NO. MSW 42D

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#### **VOLUME 5 OF 5**

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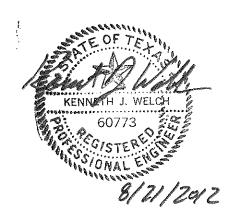
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# SKYLINE LANDFILL CITY OF FERRIS DALLAS AND ELLIS COUNTIES, TEXAS TCEQ PERMIT NO. MSW 42D

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# PART III – FACILITY INVESTIGATION AND DESIGN ATTACHMENT G LANDFILL GAS MANAGEMENT PLAN

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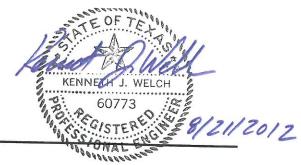
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30 TAC §§330.63(g), 330.371

#### 1.1 Scope

This landfill gas (LFG) management plan has been developed for the Skyline Landfill as required by 30 TAC §330.63(g). This LFG management plan is consistent with the requirements set forth in §330.371. The LFG management plan provides a site-specific approach to implementing LFG monitoring. This plan describes the existing and proposed LFG monitoring network and discusses the operation and monitoring of this network, the verification of monitoring results, notification procedures, and outlines possible remediation activities, if required.

The Skyline Landfill will comply with all applicable federal and state regulations. These include the Environmental Protection Agency's (EPA) – Clean Air Act, Section 111(b), New Source Performance Standards (NSPS) for municipal solid waste (MSW) landfills, and the <a href="mailto:applicable">applicable</a> requirements of the TCEQ Office of Air Quality, including standard permit requirements and 30 TAC Chapter 330, Subchapter U.

The NSPS for MSW landfills applies to landfills with design capacities greater than 2.5 million megagrams (2.75 million tons) or 2.5 million cubic meters. It is anticipated that the Skyline Landfill will operate per NSPS in April 2013 based on the following requirements:

- The design capacity exceeding 2.5 million megagrams and 2.5 million cubic meters
- The nonmethane organic compound (NMOC) emissions exceeding 50 megagrams per year

The site operates and monitors an active LFG collection and control system for completed waste disposal areas. Refer to Section 6 of this attachment for discussion on the active LFG collection and control system.

# 1.2 Purpose

Compliance with §330.371 requires landfills to implement a routine LFG monitoring program to verify that (1) the concentration of methane does not exceed 1.25 percent methane by volume in facility structures (excluding LFG collection and control system components), and that (2) the concentration of methane does not exceed 5 percent methane by volume in monitoring points, probes, subsurface soils, or other matrices at the facility permit boundary.

The lower explosive limit (LEL) and the upper explosive limit (UEL) are defined as the lowest and highest percent by volume of a mixture of explosive gases in air that will propagate a flame at 25 degrees Celsius and atmospheric pressure. Methane is explosive when present between 5 (LEL) and 15 (UEL) percent by volume in air.

The purpose of this LFG management plan is to provide guidance for management of LFG at the site. These guidelines cover the evaluation of LFG migration at the points of compliance (permit boundary) and in structures on the permitted site. This will be verified by monitoring LFG concentrations at or within the facility permit boundary and within on-site buildings. Various options for LFG migration mitigation are discussed in Section 5 of this attachment.

#### 1.3 General

Consistent with §330.371(d), the executive director may establish alternative schedules for demonstrating compliance with methane monitoring as required by §330.371(b), and with action plan activities as required by §330.371(c).

Consistent with §330.371(e), the landfill gas monitoring and control program will continue for a period of 30 years after certification of final closure of the facility, or until Waste Management of Texas, Inc. (WMTX) receives written authorization to reduce the program. Authorization to reduce gas monitoring and control shall be based on a demonstration by the owner or operator that there is no potential for gas migration beyond the permit boundary or into on-site structures. The demonstration will be supported by data collected and additional studies, as required.

Consistent with §330.371(f), gas monitoring and control systems will be revised as needed to maintain current and effective gas monitoring and control systems. Postclosure land use of the facility will not interfere with the function of gas monitoring and control systems.

#### 2 SITE CHARACTERISTICS

30 TAC §330.371

#### 2.1 Introduction

Twenty-four permanent LFG monitoring probes have been installed along the perimeter of the active waste fill area to detect potential LFG migration under the current permitted configuration. The proposed LFG monitoring network consists of a total of 38 probes. The installed and proposed LFG monitoring probes serve as the point of compliance regarding LFG migration. The existing and proposed LFG monitoring probe locations are shown on Drawing G1.1 – Landfill Gas Monitoring Probe Plan in Appendix G1. Existing gas probes GP-31R, GP-32R, and GP-33R,—will be relocated along the permit boundary; 30 TAC §330.371 identifies the permit boundary as the point of compliance for landfill gas monitoring. Existing gas probes GP-37R, and GP-38 will be relocated beyond the limits of the proposed northern perimeter drainage system since they are currently located in the proposed waste disposal footprint. and Existing gas probes GP-35, GP-39, GP-40, and GP-41 will be replaced and deepened consistent with the deepened excavation within 120 days from the issuance of the permit for this proposed expansion.

Proposed gas probes GP-50 through GP-73 include the added, replacement, and deepened gas probes. Each proposed gas monitoring probe is designed to monitor the soil strata above: 1) the lowest measured groundwater level at the monitoring point, 2) the top of the unweathered Taylor elevation at the monitoring point, and 3) the lowest current or planned future elevation of waste within 1,000 feet of the monitoring point.

Refer to Part III, Attachment E for the lowest measured groundwater level and the top of the unweathered Taylor elevation in the vicinity of each gas monitoring probe. Refer to Part III Attachment E, Appendix E3 for the geologic cross sections.

#### 2.2 Soil Conditions

The site geologic conditions present at the Skyline Landfill are discussed in Part III, Attachment  $\mathsf{E}$  – Geology Report.

# 2.3 Hydrogeologic Conditions

The hydrogeologic conditions present at the Skyline Landfill are discussed in detail in Part III, Attachment E – Geology Report.

# 2.4 Hydraulic Conditions

Hydraulic conditions at the Skyline Landfill are discussed in Part III, Attachment C1 – Permit Boundary Drainage Analysis and Design.

# 2.5 Facility Structures within the Property Boundary

The Skyline Landfill has a permit boundary encompassing approximately 662 acres, of which approximately 284 acres will be available for waste placement. There are several existing structures within the Skyline Landfill permit boundary. These structures include a gatehouse, maintenance and office facility, and Landfill Gas to Energy (LFGTE) facility. The gatehouse, maintenance and office facility, storage and powerwash building, and LFGTE facility are enclosed and have permanent methane monitors. There is a maintenance and office facility that houses the Waste Management Hauling Company and a training facility that is located within the permit boundary and has permanent methane monitors. All enclosed structures will be monitored for the presence of LFG as described in Section 3.2.1 of this attachment. Refer to Drawing G1.1 and G1.3 for location of structures.

# 2.6 Underground Utilities

There are no underground utility lines or easements that enter or exit the Skyline Landfill permit boundary within the vicinity of the perimeter of the active waste fill area that require monitoring or venting. As shown on Drawing G1.1 in Appendix G1, the Atmos Energy underground utility line enters and exits the northeast portion of the Skyline Landfill permit boundary. Monitoring or venting of this underground utility is currently not required since it is located approximately 2,600 feet from the active waste fill area (Phases I and 2).

Utility vents will be installed within the Atmos Energy easement within 60 days of Cell 16 construction since waste placement will be within 1,000 feet of the easement at this point in landfill development. The utility vents will be installed within the portions of the Atmos Energy easement that are within 1,000 feet of the landfill footprint. The utility vents will be installed at a maximum spacing of 600 feet. Refer to Drawing G1.1 for proposed utility vent locations and Drawing G1.2A for details of the utility vents.

Monitoring or venting is not required for the sanitary sewer easement that enters and exits the northeast portion of the Skyline Landfill permit boundary since it is not within 1,000 feet of the landfill footprint.

# 2.7 Offsite Structures

All Skyline Landfill facility structures are located within the permit boundary. All known habitable structures located off site within 1/4 mile (1,320 feet) of the waste disposal area permit boundary are depicted on Drawing G1.4 in Appendix G1.

# 3.1 Perimeter Monitoring

# 3.1.1 Perimeter Monitoring Network

The LFG monitoring probe network at the landfill includes a total of 24 existing LFG monitoring probes located along the perimeter of the active waste fill area. The proposed LFG monitoring probe network includes a total of 38 LFG monitoring probes. Locations of the existing and proposed LFG monitoring probes are shown in Appendix G1, Drawing G1.1 – Landfill Gas Monitoring Probe Plan. Copies of the available installation logs for the existing permanent LFG monitoring probes are included in Appendix G3.

The existing LFG monitoring probes GP-35, GP-36, GP-39, GP-40, and GP-41 will be replaced and deepened consistent with the deepened excavation. Existing gas probes GP-37R and GP-38 will be relocated beyond the limits of the proposed northern perimeter drainage system since they are currently located in the proposed waste disposal footprint. Proposed gas probes GP-29, GP-30, GP-31RR-A, and GP-32RR-A will be added and existing Existing gas probes GP-31R, GP-32R, and GP-33R will be relocated along the permit boundary; 30 TAC §330.371 identifies the permit boundary as the point of compliance for landfill gas monitoring. The remaining existing gas probes will remain in place for the proposed configuration.

Proposed gas probes GP-50 through 73 include the added, relocated, and deepened gas probes. The proposed gas probes are spaced to provide for the detection of any landfill gas migration towards structures beyond the permit boundary. The proposed maximum gas probe spacing does not exceed: 1) 600 feet along the southern half of the permit boundary between gas probes GP-44 through GP-64 and 2) 1,000 feet along the remaining northern portion of the permit boundary.

Refer to Appendix G1, Drawing G1.1 for the proposed LFG monitoring probe network. As discussed in Section 2.1, the proposed LFG monitoring probes will be installed within 120 days from the issuance of the permit for this proposed expansion.

# 3.1.2 Landfill Gas Monitoring Probes

LFG monitoring probes have been installed along the perimeter of the waste fill area.

Boring logs and typical construction details for the LFG probes were submitted to the TCEQ as part of the Gas Monitoring Probe Installation Report. Copies of the available installation logs for the existing permanent LFG monitoring probes are included in Appendix G3. Proposed LFG monitoring probes will be installed in accordance with the detail shown on Drawing G1.2 – Monitoring Probe Detail.

As shown on Drawing G1.2 and installation logs included in Appendix G3, the existing and proposed gas monitoring probes are designed to consist of solid piping within a concrete pad, bentonite seal, and filter sand packs for a depth of approximately 5 to 10 feet below ground surface. Below this depth, the gas monitoring probes are designed to consist of screened piping within gravel or sand packs through the remaining depth of the probes to intercept migrating gas.

Each proposed gas monitoring probe is designed to monitor the soil strata above: 1) the lowest measured groundwater level at the monitoring point, 2) the top of the unweathered Taylor elevation at the monitoring point, and 3) the lowest current or planned future elevation of waste within 1,000 feet of the monitoring point.

Refer to Part III, Attachment E for the lowest measured groundwater level and the top of the unweathered Taylor elevation in the vicinity of each gas monitoring probe. Refer to Part III, Attachment E, Appendix E3 for the geologic cross sections.

#### 3.1.3 Utility Vents

Utility vents will be installed within the Atmos Energy easement within 60 days of Cell 16 construction since waste placement will be within 1,000 feet of the easement at this point in landfill development. The utility vents will be installed within the portions of the Atmos Energy easement that are within 1,000 feet of the landfill footprint. The utility vents will be installed at a maximum spacing of 600 feet. Refer to Drawing G1.1 for proposed utility vent locations and Drawing G1.2A for details of the utility vents.

# 3.1.33.1.4 Monitoring Procedures

Monitoring will be conducted by a qualified landfill representative or a qualified consultant. To avoid artificially impacting the probe static pressure during the induction of the gas sample into the instrument, the static pressure will be measured and recorded prior to measuring gas composition. Static gas pressure will be measured and recorded in inches of water column. The operation of the monitoring equipment will be as recommended by the instrument manufacturer.

During each monitoring event, the probes will be monitored for the following parameters:

- Static pressure, as measured in inches of water column, gauge
- Methane concentration, as measured in percent by volume
- Oxygen concentration, as measured in percent by volume
- •Static pressure, as measured in inches of water column, gauge
- Depth to groundwater, as measured in feet

<u>During each monitoring event, the utility vents will be monitored for methane concentration, as measured in percent by volume.</u>

Monitoring for gas composition and gas pressure, and ambient temperature will be performed using a portable Landtec® GEM-2000, or equivalent instrument, capable of measuring the required parameters. Ambient air temperature outside the probe will also be measured. The instrument will be calibrated against known methane and oxygen standards prior to each monitoring event. The instrument may also be checked against known gas standards in the event of encountering methane concentrations at or near regulatory compliance levels, or questionable or suspicious monitoring results. The monitoring equipment will be calibrated and maintained in accordance with the manufacturer's recommended procedures. Manufacturer's maintenance and calibration requirements for the monitoring instruments will be maintained on site with the LFG monitoring records described in Section 3.3.

After these parameters are measured, the probe of a liquid level indicator will be lowered into the LFG probe through an opening located on the top of the LFG probe to measure water level (if any) inside the LFG probe. If no water is present, the level indicator will be used to verify and report total depth of probe to assure that a probe is not obstructed.

# 3.1.43.1.5 Maintenance Procedures

Each time LFG monitoring is conducted, the sampler will inspect the integrity of the LFG monitoring probes or utility vents. The sampler will record pertinent information on the Quarterly Landfill Gas Monitoring Report (see Appendix G2 – Reporting and Recording Forms) or similar forms. The Quarterly Landfill Gas Monitoring Report will be kept in the Site Operating Record. The sampler will perform the following at each monitoring event:

- Verify that the LFG monitoring probe or utility vent is clearly labeled on the outer casing or lid.
- Verify that the protective casing is intact and is not bent or excessively corroded.
- Verify that the concrete pad is intact (no evidence of cracking or heaving).
- Verify that the padlock is functional.
- Verify that the inner casing is intact.

If damage to the LFG monitoring probe or utility vent is observed, it will be reported to the landfill manager. If it is not possible to repair the LFG monitoring probe or utility vent and the damage can potentially affect the accuracy of future monitoring results, the LFG monitoring probe or utility vent will be decommissioned and replaced with a new LFG monitoring probe in accordance with Sections 3.1.2, 3.1.3, and 3.4 of this attachment.

The combustible gas monitoring instrument will be calibrated and maintained in accordance with the manufacturer's instructions.

# 3.2 Facility Structures Monitoring

#### 3.2.1 Monitoring Procedures

On-site buildings and structures designed for human occupation will be monitored, at a minimum, quarterly with either a portable combustible gas indicator or a continuous LFG monitor/alarm that will provide an audible alarm if methane concentrations exceed 1.25 percent methane by volume.

If allowable methane concentration limits are exceeded within structures, the building will be immediately evacuated and ventilated by opening doors and windows. Notification consistent with procedures in Section 4.2 of this attachment will be implemented immediately.

#### 3.2.2 Maintenance Procedures

If continuous LFG monitors/alarms are used, they will be calibrated and maintained in accordance with the manufacturer's recommendations. Continuous LFG monitors/alarms will be tested, following the manufacturer's testing specifications.

# 3.3 Recordkeeping/Reporting

Field monitoring data records will be maintained for the methane monitoring and kept in the Site Operating Record. Field data will be recorded on the Quarterly Landfill Gas Monitoring Report form (or similar form) as shown in Appendix G2 – Reporting and Recording Forms.

Quarterly monitoring results will be placed in the Site Operating Record. LFG monitoring points, probes, subsurface soils, or other matrices will be monitored quarterly. The LFG monitoring program will continue for a period of 30 years after the final closure of the facility or until the owner or operator receives written authorization from the TCEQ to revise or discontinue the program. Gas monitoring records will be maintained in the site operating record.

# 3.4 Backup Plan for Monitoring Probes, <u>Utility Vents</u> and Continuous Monitors

The following is a back-up plan to be used if any installed LFG monitoring probes or continuous monitoring devices become unusable or inoperative.

# Stationary Perimeter Probes/Utility Vents

- Damaged or inoperative perimeter probes or utility vents will be repaired within 30 days of the date of damage or replaced within 60 days from the TCEQ approval date of the permit modification requesting replacement.
- Upon completion of the replacement probe or utility vents, an installation report including boring logs and construction details will be submitted to the TCEQ.
- 3. Should a monitoring event occur prior to replacement of a damaged probe or utility vent, a barhole will be placed next to the damaged probe or vent and a portable gas monitor used until the probe or vent is replaced.

# Stationary Combustible Gas Monitor

- Damaged or inoperative stationary combustible gas monitors will be repaired within 30 days of the date of damage.
- A portable gas indicator will be used until the damaged or inoperative stationary unit is replaced.

# 3.5 Monitoring Frequency

LFG monitoring points, probes, subsurface soils, or other matrices and facility structures are monitored quarterly, at a minimum. The facility will monitor more frequently those locations where monitoring results indicate that LFG migration is occurring or is accumulating in structures.

30 TAC §330.371

# 4.1 Initial Response Measures

As required under 30 TAC §330.371, this action plan has been prepared for the protection of human health in the event concentrations of methane exceed allowable limits either within on-site buildings or at the permit boundary of the site. The appropriate emergency response is different for each situation; therefore, this plan addresses buildings and permit boundaries separately.

This plan also recognizes that a single event exceedance of allowable limits on a gas indicator or alarm does not necessarily mean that the concentration of methane has actually exceeded allowable levels.

#### 4.1.1 Emergency Action

The initial action in the event methane is detected at levels above regulatory limits is to protect human health. The specific response depends on the circumstances of the situation.

**Buildings/Structures.** If the monitoring device in a facility building/structure is triggered, or if gas monitoring equipment indicates that the methane concentration has exceeded the regulatory limit, the building/structure is to be evacuated of all personnel immediately and the landfill manager will be notified. Personnel (except for authorized monitoring personnel) will not be allowed to re-enter the affected building/structure until additional measures are taken. Notification consistent with procedures in Section 4.2 of this attachment will be conducted immediately.

**Permit Boundary.** If methane levels above the regulatory limit are detected at the permit boundary in the LFG monitoring points, probes, subsurface soils, or other matrices, the landfill manager will be notified. The immediate emergency response measure will be for the landfill manager to determine if any nearby buildings or structures (including off-site) are at risk and if evacuation of the buildings or structures should be requested.

Once immediate actions have been completed to protect human health, notification consistent with procedures in Section 4.2 of this attachment will be conducted immediately.

#### 4.1.2 Verification Procedures

Once emergency measures have been taken to protect human health, the landfill manager will require monitoring personnel to begin verification procedures. Such

procedures are intended to determine if the methane levels detected are accurate, or if erroneous levels have been detected due to equipment malfunction or other reasons. The methane detection will be considered verified if the verification procedures detect methane levels above the regulatory limit. Field monitoring data records will be maintained for the methane verification monitoring and kept on site as part of the site operating record.

**Buildings/Structures.** Verification of detected methane levels in the facility structures will be conducted within 24 hours by properly trained monitoring personnel using the following procedures:

- Monitor methane levels throughout the building/structure using a calibrated portable gas indicator. In particular, readings will be taken in each room and in confined spaces (i.e., closets). If there are natural gas appliances in the building/structure, they should be checked for leaks.
- Determine if continuous monitoring equipment, if installed, is working properly.

If concentrations of explosive gases above the regulatory limit are not detected (i.e., a malfunction or erroneous reading is suspected), personnel may return to the building/structure. Methane monitoring using a portable combustible gas detector will continue daily for one week after the incident. If levels of methane above the regulatory limit are not detected during that week, daily monitoring will cease and routine monitoring will resume.

In the event concentrations of methane above the regulatory limit are detected during initial verification procedures or during the follow-up procedures in the ensuing week, notification and remediation procedures must be implemented, as described in Sections 4.2 and 5 of this attachment.

**Permit Boundary.** Verification of methane levels above the regulatory limit in LFG monitoring points, probes, subsurface soils, or other matrices will be conducted within 24 hours by monitoring personnel using the following procedures:

- Recalibrate gas detection equipment according to recommended procedures.
- Immediately recheck the methane concentration in the LFG monitoring probe.
- Recheck the methane concentration again within 7 days on a day of operation.

If concentrations of methane above the regulatory limit are not detected in the above verification procedure, routine monitoring procedures will resume.

In the event concentrations of methane above regulatory limits are detected during the above verification procedures, notification and remediation procedures must be implemented, as described in Sections 4.2 and 5 of this attachment.

# 4.2 Notification Procedures

When methane concentrations above the regulatory limit have been verified in the monitoring points, probes, subsurface soils, or other matrices, or within any on-site structures, the monitoring personnel will notify the landfill manager, who in turn will immediately take steps to ensure the protection of human health. Notification will be made immediately in accordance with §330.371. Notification will be made to the executive director of the TCEQ; the TCEQ Region 4 Office; city, county, local government officials; emergency officials; and any residents, tenants, and owners of property within 500 feet of the reading. notification will be made immediately in accordance with §330.371. Notification will be made to the executive director of the TCEQ, county and local officials, emergency officials, and the public.

When methane levels above the regulatory limit have been verified (refer to Section 4.1.2 of this attachment), the landfill manager will place in the site operating record documentation of the methane gas levels detected and a description of the steps taken to ensure protection of human health within seven days of detection in accordance with §330.371. Written notification will also be sent to the TCEQ Region 4 Office within seven days outlining the steps taken.

30 TAC §330.371

#### 5.1 Remediation Plan

If verification procedures have confirmed that methane levels are above regulatory limits in the buildings/structures or in one or more LFG monitoring points, probes, subsurface soils, or other matrices, remediation actions will be implemented within 60 days. The first remediation action will be an investigation of the cause of the methane levels. The investigation may include some or all of the following elements, depending on the circumstances:

- Bar-hole probe or hydropunch testing in the vicinity of the impacted monitoring probe
- Sampling and laboratory analysis of LFG monitoring probe samples to determine concentration of methane and trace compounds
- Additional LFG probe monitoring
- Installation of additional monitoring probes
- Additional utility vent monitoring
- Installation of additional utility vents

Using accumulated data, an assessment will be made to determine an appropriate course of action to mitigate the migration of LFG. Such actions will vary with the specific incident. A remediation plan will be submitted as a permit modification in accordance with 30 TAC §330.371, if required for changes in the LFGMP, in monitoring frequency, installation of additional gas probes, construction of trenches or wells, or other changes required for modification. The incident specific remediation plan, based on results of the investigation, will be submitted within 60 days of detection. Copies of the remediation plan will be placed in the operating record and provided to the executive director of the TCEQ along with notification that the plan has been implemented. The executive director may establish an alternative schedule for demonstrating compliance.

# 5.2 Elevated Methane Readings (2008 - Present)

Methane levels above the regulatory limit have been detected in landfill gas monitoring probes GP-5 and GP-32R during monitoring events since 2008. The remaining 22 existing landfill gas monitoring probes have not experienced methane levels above the regulatory limit.

The exceedance for gas probe GP-5 occurred in the first quarter of 2008 and from the second quarter of 2009 through the first quarter of 2010. Monthly landfill gas monitoring occurred from June 2009 to June 2010. Quarterly monitoring continued in September 2010 once the methane levels were consistently below the regulatory limit on a monthly basis from February to June 2010. No methane has been detected in gas probe GP-5 since March 2010.

The exceedance for gas probe GP-32R occurred from the first quarter of 2008 through the second quarter of 2010. Monthly landfill gas monitoring occurred from March 2008 to September 2010. Quarterly monitoring continued in December 2010 once the methane levels were consistently below the regulatory limit on a monthly basis from March 2010 to September 2010. An active landfill gas trench was installed in response to the elevated methane readings for gas probe GP-32R. No methane has been detected in gas probe GP-32R since May 2010.

#### 6 LFG CONTROL SYSTEM

30 TAC §330.371

The Skyline Landfill is required to install, operate, and monitor an active LFG collection and control system in accordance with the applicable TCEQ and federal air rules and regulations. These include: 1) 40 CFR Part 60, Subpart WWW – Standards of Performance for Municipal Solid Wastes, 2) 40 CFR Part 63, Subpart A, 63.3(e)(3) – Startup, Shutdown, and Malfunction Plan, and 3) 30 TAC §330.371(e) and (f).

An active LFG control system has been installed over the: 1) Pre-Subtitle D area with final cover and 2) Phase 1 portion of the active waste disposal area, Phase 1A and portions of Phase 1B. This existing system consists of extraction wells, and extraction trench, collection and header piping and condensate sumps. In addition, a LFG flare and a Landfill Gas to Energy (LFGTE) facility with TCEQ Type IX Registration No. MSW 48018 (registration-by-rule) and a LFG flare have been installed, consistent with TCEQ Type IV IX Registration No. 48018 (registration by rule). Refer to Appendix G4 for information related to the existing active LFG system.

The Skyline Landfill will expand the existing active LFG system as the remaining waste disposal areas are developed and filled. The timing for installation of the active LFG control system will depend on fill patterns. The future active LFG control system will be expanded into future areas as documented in Appendix G5. Upon completion of each phase of LFG system expansion, as-built record drawings documenting LFG system construction will be maintained in the site operating record and submitted to TCEQ as a permit modification to Attachment G- Landfill Gas Management Plan.