

# **Air Permit Reviewer Reference Guide**

**APD-ID 14**

# **Municipal Solid Waste Landfills (MSWLF) And Transfer Stations**

**Air Permits Division  
Texas Commission on Environmental Quality  
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## Overview

This document will assist the owners or operators MSWLF and Transfer Stations in obtaining authorization to emit air contaminants from their sites. This document will discuss two possible air permitting authorizations under state regulations in Title 30 Texas Administrative Code (30 TAC):

1. Permit by Rule (PBR) under 30 TAC Chapter (§) 106.534, and
2. Standard Permit (SP) under 30 TAC § 330.981

Depending on complexity and emissions, sites may not be able to meet these requirements and may need other air authorizations available but not discussed here, including a New Source Review permit under 30 TAC § 116.110 and a Site Operating Permit under 30 TAC § 122.

The PBR 30 TAC § 106.534 was amended to state the specific activities that are permitted under the authorization. Those activities are cell construction, waste disposal, and waste transfer. Landfill cell construction activities include unloading, spreading, or compacting of waste and applying daily, immediate, or final cover. The rule now excludes authorization of industrial landfills, in addition to other waste operations such as bioreactors, experimental type landfills, and special landfill gas to energy projects that did not include any waste disposal activities. The amended PBR, 30 TAC § 106.534 limits the type of applicable landfill, in order to exclude those types of activities, because they were beyond the intended scope of the original rule.

To simplify the authorization process for the landfill owners or operators, the Standard Permit for Municipal Solid Waste Landfills (MSWLF) under 30 TAC § 116.621 was rewritten and incorporated in the Waste Rules under 30 TAC § 330, Subchapter U. The authorization process no longer requires the submittal of the PI-1S form, permitting fee, and other documentation, but will only require a Certification Form submitted by the landfill's Responsible Official or Duly Authorized Representative. Effective September 1, 2006, the new Standard Permit replaced the old Standard Permit for MSWLF in 30 TAC § 116.621 (relating to Municipal Solid Waste Landfills) and is located in 30 TAC § 330, Subchapter U, and it serves as a Standard Permit for air contaminant emissions to the atmosphere from MSWLF sites. This Standard Permit includes various facilities commonly found at landfill and waste transfer sites, and will not be limited to sites that only perform landfill cell construction and waste disposal. The Standard Permit also covers the authorization of beneficial use of landfill gas.

This information document contains discussions, flow charts, checklists, and forms for the PBR, the new SP, as well as federal emission standards under 40 Code of Federal Regulations (CFR) Parts 60 and 63, a.k.a. NSPS Subpart WWW, XXX and MACT AAAA. This information is provided in order to assist MSWLFs and Transfer Station's in qualifying for these authorizations, as well as an aid in determining compliance with state and federal air rules and regulations. There are also a number of acronyms commonly used throughout this document, the PBR, and SP, which apply to MSWLFs and Transfer Stations. A quick reference list can be found in the Acronym Appendix to this document

## Background Information

### New and Amended State Rules

To clarify its scope, the air PBR for MSWLFs and Transfer Stations under 30 TAC § 106.534 was amended to state the specific activities permitted under the section. Those activities are cell construction, waste disposal, and waste transfer. Landfill cell construction activities also include unloading, spreading, or compacting of waste and applying daily, immediate, or final cover. The previous rule language stated that municipal solid waste landfills and waste transfer stations operating in compliance with the *Texas Solid Waste Disposal Act* were permitted by rule. This language was misleading to landfill owners and operators and the general public because the language implied that any and all activities at a landfill were permitted by this rule. The only facility authorized under that PBR was the landfill itself. Some landfill sites may also conduct various activities that would require separate authorizations. The previous PBR did not limit the type of landfill authorized, so long as the landfill complied with the *Texas Solid Waste Disposal Act*. Reference to *the Texas Solid Waste Disposal Act* was removed from this section of the PBR as it included the authorization of industrial landfills, in addition to other waste operations such as bioreactors, experimental type landfills, and special landfill gas to energy projects, which did not include any waste disposal activities. The amended PBR, 30 TAC § 106.534 limits the type of applicable landfills, in order to exclude those types of activities, as they were beyond the intended scope of the original rule.

The Air Quality Standard Permit for MSWLF under 30 TAC § 116.621 was previously updated and incorporated into the Municipal Solid Waste Rules under 30 TAC § 330, Subchapter U in order to simplify the authorization process for the landfill owners or operators. The Subchapter U Standard Permit replaced the Standard Permit for MSWLF in 30 TAC § 116.621 (relating to Municipal Solid Waste Landfills), effective September 1, 2006. Chapter 330 serves as the Standard Permit for air contaminant emissions to the atmosphere from MSWLF sites and is triggered upon new construction or modification at landfills. This standard permit also includes various facilities and equipment commonly found at landfill and waste transfer sites and will not be limited to sites that only perform landfill cell construction and waste disposal. The Standard Permit also covers the authorization of beneficial use of landfill gas. The authorization process no longer requires the submittal of a registration form (PI-1S form) nor paying separate fees but will only require a **Certification** submitted by the landfill's responsible official, or Duly Authorized Representative.

If the MSWLF site is major for the purposes of obtaining a federal operating permit, a separate certification, and application is needed for the federal General Operating Permit (GOP).

## Rationale of Definitions

This section discusses terms that are typically used in the rules of the commission that regulate emissions of air contaminants. Because the Standard Permit is an authorization to emit air contaminants, and it is in Chapter 330 (relating to Municipal Solid Waste, landfill emissions), it is necessary and appropriate that most of these terms be defined as they are used in and apply to the air rules. It is important for the owners/operators of MSWLF and transfer station sites to understand these definitions for compliance to the PBR and Standard Permit. Some of the terms may also have definitions in Waste Rules under 30 TAC § 330.3 (relating to Definitions), so it was necessary to add the definitions which will apply to air emissions in Subchapter U to clarify the air requirements. Because MSWLF and Transfer Stations can be subject to federal air regulations, these standards were used for some of the definitions, as well as the landfill gas control requirements.

The categories in the standard permit classify MSWLF into three sets:

Category 1: MSWLF site, which has a design capacity less than 2.5 million megagrams (MMg) or 2.5 million cubic meters (M3).

Category 2: MSWLF site, which has a design capacity greater than 2.5 MMg and 2.5 M3. These larger sites will continue to qualify for the Category 2 classification until the uncontrolled non-methane organic compound (NMOC) emission rate exceeds 50 megagrams per year (Mg/yr).

Category 3: Category 3 is the largest MSWLF that can be authorized by the Standard Permit and has a design capacity greater than 2.5 MMg and 2.5 M3, and a calculated uncontrolled NMOC emission rate greater than or equal to 50 Mg/yr.

These categories were determined based on potential applicability and control requirements of 40 CFR Part 60, Subpart WWW and 40 CFR Part 63, Subpart AAAA.

Note: Type IV (disposal of brush, construction-demolition waste, and/or rubbish that are free of Putrescible and free of household wastes) and Type IV-AE (AE means arid exempt) landfills do not accept household wastes, so these landfills would not be subject to Subpart WWW or XXX by definition; however, these sites could use this Subchapter U authorization if there were other operations present that could not qualify under PBR § 106.534, Municipal Solid Waste Landfills.

Under 30 TAC § 330.893, the definition of the term (6) facility under Waste rules in Chapter 330 refers to the entire MSWLF site, but as the term applies to air emissions, it is defined in Section 382.002 (6) of the Texas Health and Safety Code (THSC) Clean Air Act (TCAA), as a discrete or identifiable structure, device, item, equipment, or enclosure that constitutes or contains a stationary source, including appurtenances other than emission control equipment. A quarry, well test, road, or mine is not a facility.

Because the Waste rules in Chapter 330 have the same definition for “site” and “facility”, and in the Air Rules a site may contain many facilities, it is necessary to define (12) site so that it is understood it could contain additional (13) sources of emissions than just the Landfill mass itself.

NSPS Subpart WWW and XXX have definitions specific to landfill operations and air emissions so the definition of (7) modification, is defined as it applies to the landfill mass (that is, size and height of the landfill footprint).

Because of the possible conflict in the use of the term (9) process or processing between the two chapters, it was necessary to define that term as it applies to air emissions and not landfill operations. The terms (5) construction, (10) project, (8) modification of existing facility,

(11) receptor, (14) waste solidification, or (15) waste stabilization are not defined in waste rules of Chapter 330 but have unique meanings.

All of the new definitions were adopted with the Standard Permit in 30 TAC § 330.983 and may be found in the Definitions Appendix of this guidance.

## I. Air Pre-construction Permits

### A. Permit by Rule 30 TAC § 106.534

**Discussion:** The amendments to PBR 30 TAC § 106.534 limit the MSWLF from having facilities other than landfill cell construction, waste disposal, or transfer station activities. Maintenance activities, or other types of facilities common at landfills are not included in the PBR, for example flares, engines, and storage tanks. If these types of facilities are located at a MSWLF or transfer station, then the owner or operator must meet the conditions of the MSWLF Air Quality Standard Permit under Chapter 330, Subchapter U, or apply for a New Source Review permit under 30 TAC Chapter 116, if they are not able to qualify for the Standard Permit. However, if the landfill site is not expected to exceed the design capacity of the PBR limits for its lifetime, the landfill owners/operators will still have the option of adding facilities authorized under other PBRs in 30 TAC Chapter § 106 at the landfill. If the site had no other sources initially and qualifies for the PBR, and the landfill site is not expected to exceed the design capacity or the emission limits of the 30 TAC § 106.534, then other sources can be added in the future with other PBRs. It is anticipated that this PBR would be used to authorize smaller landfills such as those meeting the arid exempt conditions as stated in 30 TAC § 330.14, Arid Exemption Process.

The previous PBR language of 30 TAC § 106.534 stated that MSWLFs and waste transfer stations operating in compliance with the Texas Solid Waste Disposal Act were permitted by rule. This language may have been misleading to landfill owners, operators, and the general public because it implied that any and all activities at a landfill are permitted by this rule. The only facility authorized under the permit by rule, is the landfill itself. Existing MSWLF and transfer station sites that met the old PBR (effective September 4, 2000 in 25 Tex Reg 8653) may continue to be authorized under that PBR for the landfill life, provided there have been no changes to their Municipal Solid Waste permit authorization under 30 TAC § 330 from the time the PBR was claimed. If the existing MSWLF or transfer station had other emission sources (facilities) at the time of the old PBR, that did not require registration at that time, for example tanks, or engines, and there have been no changes to the site, then they can continue to operate under the old PBRs until such time the site is modified. If there have been additional sources (facilities) added to the site, or there are permitted facilities which required registration at that time, then it will be necessary for the MSWLF or transfer stations to qualify under the Standard Permit.

The PBR 30 TAC § 106.534 rule language is available at the following website:  
[texreg.sos.state.tx.us/public/readtac\\$ext.TacPage?sl=R&app=9&p\\_dir=&p\\_rloc=&p\\_tloc=&p\\_ploc=&pg=1&p\\_tac=&ti=30&pt=1&ch=106&rl=534](http://texreg.sos.state.tx.us/public/readtac$ext.TacPage?sl=R&app=9&p_dir=&p_rloc=&p_tloc=&p_ploc=&pg=1&p_tac=&ti=30&pt=1&ch=106&rl=534)

The [PBR § 106.534 Qualification flow chart](#) can be used to aid in determining if a MSWLF site can qualify for the PBR 30 TAC § 106.534, the SP § 330.981, or it will require permitting under 30 TAC § 116.110.

The TCEQ has also developed a [PBR Quick Screen Checklist](#) to aid in determining if a MSWLF site can use the PBR.

## **B. Standard Permit 30 TAC § 330, Subchapter U**

**Discussion:** The Standard Permit enables landfill owners and operators to use a single authorization mechanism and certify federally enforceable emission limits and parameters for the facilities typically found at a MSWLF site and a transfer station. Whereas, the old Standard Permit under 30 TAC § 116.621 would have required the landfill to obtain multiple permits by rule, Standard Permits, or other NSR air authorizations for all activities occurring on the site, submit multiple applications, fees and paperwork for review and final authorizations under the Chapter 330 Rules, submitting the Certification Form will become the authorization to operate under standard air permit. This is the TCEQ's effort to aid the landfill owners and operators in streamlining their permitting process for MSWLF.

The following facilities are typically found at MSWLF sites and are authorized by permit by rule (PBR) and Standard Permits: Title 30 TAC § 106.181, Used-Oil Combustion Units; 30 TAC § 106.183, Boilers, Heaters, and Other Combustion Devices; various miscellaneous sources and recycling equipment that meet the requirements of 30 TAC § 106.261 Facilities (Emissions and Distance Limitations); 30 TAC § 106.433, Surface Coat Facility; 30 TAC § 106.436, Auto Body Refinishing Facility; 30 TAC § 106.451, Wet Blast Cleaning; 30 TAC § 106.452, Dry Abrasive Cleaning; 30 TAC § 106.454, Degreasing Units; 30 TAC § 106.472, Organic and Inorganic Liquid Loading and Unloading; 30 TAC § 106.473, Organic Liquid Loading and Unloading; 30 TAC § 106.478, Storage Tanks and Change of Service; 30 TAC § 106.492, Flares; 30 TAC § 106.496, Air Curtain Incinerators; 30 TAC § 106.512, Stationary Engines and Turbines; 30 TAC § 116.617, Standard Permits for Pollution Control Projects; Standard Permit for Temporary Rock Crushers; and Air Quality Standard Permits for Electric Generating Units. Certification under the MSWLF Standard Permit will enable the landfill owner/operator to construct and operate facilities covered under these, and any other PBRs, and Standard Permits. Permit by Rule and Standard Permits (SP) may be claimed as part of an initial or modified Certification under the MSWLF Standard Permit, and as such, they are exempt from the registration and fee requirements normally required by PBR's and SP's.

Helpful checklists are available for most of the PBRs and can be found on the TCEQ web page at: [www.tceq.texas.gov/permitting/air/nav/pbr\\_forms.html](http://www.tceq.texas.gov/permitting/air/nav/pbr_forms.html)

Checklist and Guidance is available for some of the other Standard Permits, along with the current rules are located at: [www.tceq.texas.gov/permitting/air/nav/standard.html](http://www.tceq.texas.gov/permitting/air/nav/standard.html).

### *Caution Using PBR 30 TAC§ 106.492, Flares at MSWLF*

Often a flare is installed to control odor when no GCCS is required by a State Rule or Federal regulation. The GCCS can be authorized under the MSWLF Standard Permit, by meeting the requirements of PBR 30 TAC § 106.492. However, a § 106.492 flare cannot be used to satisfy the GCCS requirements under NSPS subpart WWW or XXX, because NSPS requires a flare to conform to the standards of 40 CFR § 60.18. A Flare under 40 CFR § 60.18 requires monitoring of a continuous pilot light flame, whereas a 30 TAC § 106.492 flare may not meet this requirement. Consequently, if the landfill becomes subject to the GCCS requirements of NSPS WWW or XXX at a later date, the 30 TAC §106.492 flare

may have to be modified or replaced to be in compliance with 40 CFR § 60.18 standards.

The new SP 30 TAC § 330.981-995 language is available through:

[texreg.sos.state.tx.us/public/readtac\\$ext.ViewTAC?tac\\_view=5&ti=30&pt=1&ch=330&sch=U&rl=Y](http://texreg.sos.state.tx.us/public/readtac$ext.ViewTAC?tac_view=5&ti=30&pt=1&ch=330&sch=U&rl=Y)

The [SP §§ 330.981-995 MSWLF and Transfer Station flow chart](#) can be used to aid in determining if a MSWLF site can qualify for the PBR 30 TAC § 106.534, the SP 30 TAC § 330.981, or require permitting under 30 TAC § 116.110.

The TCEQ has also developed [SP Quick Screen Checklist](#) to aid in determining if a MSWLF site can use the SP.

### **C. Federal Pre-construction Permits**

If a MSWLF site cannot meet the PBR or SP conditions, it must obtain a regular New Source Review pre-construction permit. When that happens, it is likely that the site has triggered the need to obtain a federal preconstruction permit as a Site Operating Permit (SOP). There are two types of federal pre-construction permitting requirements, Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NNSR).

#### **PSD Guidance**

Under federal PSD rules, MSWLF or transfer station sites are not named sources. The SP limits the MSWLF site to only minor sources subject to the PSD limit of 250 tons per year of any National Ambient Air Quality Standard criteria pollutant, before PSD review is triggered. If PSD or NA review is triggered, the MSWLF site would be ineligible for this Standard Permit. MSWLF sites with facilities that are new major sources or major modifications that exceed the PSD and NA thresholds shall have a separate review in accordance with 30 TAC Chapter 116, Subchapter B, Divisions 5 and 6, Nonattainment Review and Prevention of Significant Deterioration Review, respectively. A separate authorization under 30 TAC Chapter 116, Subchapter B, New Source Review Permits, shall be obtained for these activities. PSD Guidance can be found on the TCEQ website:

[www.tceq.texas.gov/permitting/air/nav/air\\_docs\\_newsourc.html](http://www.tceq.texas.gov/permitting/air/nav/air_docs_newsourc.html)

#### **Nonattainment (NNSR) Guidance**

Nonattainment guidance is available on the TCEQ website at:

[www.tceq.texas.gov/permitting/air/nav/air\\_docs\\_newsourc.html](http://www.tceq.texas.gov/permitting/air/nav/air_docs_newsourc.html)

The NNSR thresholds, which trigger review vary based on the location (county) in which the MSWLF site is located. Any project under this Standard Permit shall **NOT** cause the site to become a new major source or the project shall NOT cause a major modification to site, as defined in Federal Clean Air Act, Part D (Requirements for Nonattainment Areas (NA)). If these thresholds are exceeded for any new project, an NA review is required by 30 TAC Chapter 116, Subchapter B, Divisions 5 and 6, Nonattainment Review. A project is considered the construction or the modification of a facility under the same authorization.

## D. Emissions Estimates

### 1. EPA Emission Guidance Documents for MSWLF

Emission estimates for all landfill emission methods are calculated using either the **LandGEM** (landfill gas emission model) or the equations from the *AP-42* section on landfills. TCEQ prefers using the **LandGEM** (landfill gas emission model) for determining emissions. The LandGEM is a personal computer-based model that uses the same equation as that in *AP-42* but provides the advantages of automated calculation and utilities. The LandGEM can be accessed from the EPA's website at:

[www.epa.gov/ttn/catc/products.html#software](http://www.epa.gov/ttn/catc/products.html#software)

*AP-42* is considered more of a background information document for MSWLF. Check the EPA Technology Transfer Network (TTN) web for the most current version of the *AP-42* section when preparing landfill emission estimates. The EPA updates both the LandGEM model and *AP-42* as new information becomes available. *AP-42* can be accessed from the EPA's website: [www.epa.gov/ttn/chief/ap42/index.html](http://www.epa.gov/ttn/chief/ap42/index.html).

### 2. Landfill Gas Emissions

MSWLF are significant sources of methane (CH<sub>4</sub> ~50%) and carbon dioxide (CO<sub>2</sub> ~49%). In addition to CH<sub>4</sub> and CO<sub>2</sub>, smaller amounts of nonmethane organic compounds (NMOCs ~1%) are produced. NMOCs include volatile organic compounds (VOCs), and hazardous air pollutants (HAPs). Each landfill may emit significant amounts of pollutants. Landfills differ from air sources typically categorized as point sources in that pollutants are emitted over the area of the landfill, not at a specific point or points, except in the situations where the LFG is collected by GCCS. Landfills normally have other air sources located on the landfill site.

Total landfill gas, (methane, carbon dioxide, and NMOC) can be calculated using the equations in *AP-42*, LandGEM, or by the equations in § 60.754(a)(1)(i or ii) or § 60.764(a)(1)(i or ii). The *AP-42* section and the LandGEM use three equations to calculate (1) methane generation rate; (2) NMOCs or other pollutants expressed as cubic meters per year, and (3) convert the volume estimate of each pollutant to a mass estimate (kilograms per year). Reactive VOCs and air toxics can be calculated using default concentration values that are also provided. Reductions in emissions resulting from the use of controls can be calculated with control efficiency factors that default at 75%. The emissions calculations for landfill gas require several steps and a combination of site-specific information and default values. The following site-specific information is required:

- The design capacity of the landfill;
- The potential methane generation capacity (Lo);
- Landfill has Co-disposal or no Co-Disposal of commercial waste.

In addition, the following default values are available in LandGEM and AP-42:

- The methane generation rate (k);
- The potential methane generation capacity (Lo);
- The concentration of NMOCs found in the landfill gas;

The LandGEM provides two sets of default values for k, Lo, and NMOCs. One set is based on the requirements of the NSPS and Emission Guidelines. This set of default values produces conservative emission estimates and should be used to determine whether the landfill is subject to the control requirements of the NSPS and Emission Guidelines. In all cases, landfill-specific values are preferred over the use of default values. AP-42 Section 2.4, *MSWLF*, recommended default values, and estimating emissions methodology are available on the EPA website for the AP-42 link. In addition, the TCEQ has developed an [Excel spreadsheet](#) to assist in estimating emissions.

## II. Federal Performance Regulations

### A. New Source Performance Standards (NSPS) Subpart WWW and XXX

Landfills constructed, reconstructed, modified, physical or operational changes made to existing landfills after May 30, 1991 but before July 17, 2014, become applicable to federal regulations 40 CFR 60, New Source Performance Standards (NSPS) Subpart WWW, § 60.750-759. Landfills constructed, reconstructed, modified, physical or operational changes made to existing landfills after July 17, 2014, become applicable to federal regulations 40 CFR 60, New Source Performance Standards (NSPS) Subpart XXX, § 60.760-769. To prevent duplication, the air Standard Permit incorporates some of the definitions, the landfill gas control requirements, the reporting, the monitoring, and the recordkeeping requirements in NSPS WWW and XXX. The Standard Permit also covers the authorization of beneficial use of landfill gas. Under NSPS WWW and XXX, a number of reports require submittal to the administrator. Forms to assist submitting these NSPS WWW or XXX reports to the proper location are available here: NSPS WWW Reporting and Submittal Form or NSPS XXX Reporting and Submittal Form. The agency has also developed a NSPS WWW checklist and a NSPS XXX checklist to aid in determining applicability and preparing submittals. Particularly important is that the GCCS design plans and any AMOC require approval before proceeding, and the use of the forms will help expedite the approval process. The certification and application form also includes the opportunity for submitting these reports.

### B. Maximum Achievable Control Technology (MACT) for Hazardous Air Pollutants (HAP) Sub Part AAAA

Additional federal regulations in 40 CFR Part 63, Subpart AAAA (40 CFR § 63.1930-1990) may apply to a MSWLF site if it:

1. accepted waste since November 8, 1987, or has additional capacity for waste deposition, and
2. is a major source defined in 40 CFR § 63.2, or
3. is co-located with a major source, or

4. has a design capacity greater than 2.5 MMg and 2.5M<sup>3</sup> and uncontrolled NMOC equal to or greater than 50 Mg/yr, or
5. includes a bioreactor as defined in 40 CFR § 63.1990, or
6. has a design capacity greater than 2.5 MMg and 2.5M<sup>3</sup> and is not permanently closed as of January 16, 2003

Forms to assist submitting [MACT AAAA reports](#) to the proper location are available, as well as a [MACT AAAA flowchart](#) and [MACT AAAA checklists](#) to aid in determining applicability and preparing submittals. The certification and application form also includes the opportunity for submitting these reports

**C. State Regulations for Hazardous Air Pollutants, Chapter 113**

Landfills that were constructed, reconstructed, or modified before May 30, 1991 (before NSPS WWW applicability), and accepted waste on or after October 9, 1993 or have additional design capacity (not full or filled to design capacity) regardless whether the MSWLF is open or closed, are subject to provisions of 30 TAC §§ 113.2060-2069. The [30 TAC § 113 flowchart](#) can aid in determining Chapter 113 applicability.

**III. Federal Operating Permits**

There are two situations that will trigger the need for a MSWLF to obtain a federal operating permit under 30 TAC § 122. First, if a site has combined emissions from all facilities at the MSWLF site equal to or over for any of the pollutant limits shown in the table below:

VOC	SO <sup>2</sup>	PM10	NO <sub>x</sub>	CO	Pb	HAP <sub>single</sub>	HAPs <sub>combined</sub>	Other
100	100	100	100	100	100	10	25	100

The MSWLF site can be authorized by the PBR or by the SP, and when these emission limits are exceeded for any of the pollutant the site will need to obtain a GOP authorized under the federal operating permit under 30 TAC § 122. Second, when a MSWLF have a design capacity equal to or greater than 2.5 MMg **and** 2.5 M3 the site will need to obtain a GOP authorized under the federal operating permit under 30 TAC § 122.

**A. Site Operating Permit**

Landfills with large VOC or NO<sub>x</sub> emissions that are classified as major for air emissions and trigger either or both federal PSD or NNSR major source criteria will have to obtain a case-by-case authorization under 30 TAC § 116.110. For either of these situations, the MSWLF will be required to have a federal Site Operating Permit (SOP), under § 122, instead of the GOP. To address U. S. Environmental Protection Agency (EPA) concerns about including case-by-case NSR authorizations in GOPs, the MSWLF GOP qualification criteria has been changed to only allow sites authorized by PBR's and/or SP's to operate under a GOP.

**B. General Operating Permit Discussion**

If the site can be authorized by the PBR or SP, and also triggers the need to obtain a federal operating permit, prior to operation, the site needs to obtain a GOP under 30 TAC Chapter (§) 122, *MSWLF General Operating Permit 517*. The GOP language is available through:

[www.tceq.texas.gov/permitting/air/titlev/generalpermits/gop\\_no\\_517.html](http://www.tceq.texas.gov/permitting/air/titlev/generalpermits/gop_no_517.html)

# Appendices

## IV. Terms

### A. Acronym List

A list of acronyms commonly used by the Texas Commission on Environmental Quality (TCEQ) is listed on the TCEQ website at:

<https://www.tceq.texas.gov/agency/acron.html>. Acronyms commonly used throughout this document, the PBR, and the Standard Permit, which apply to MSWLFs and Transfer Stations:

2.5 million Mg	2.5 million megagrams
2.5 MMg	2.5 million megagrams
2.5 M <sup>3</sup> or 2.5M3	2.5 million cubic meters
50 Mg/yr	50 megagrams per year
AMOC	Alternate Means of Control, requires Agency approval AP-42 <i>Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources</i>
APD	Air Permits Division
ATO	Authorization to Operate, Federal Operating Permit
BACT	Best Available Control Technology
CFR	Code of Federal Regulations
CH <sub>4</sub>	Methane in the gas state
CO <sub>2</sub>	Carbon Dioxide in the gas state
DAR	Duly Authorized Representative (of the Responsible Official)
EG	Emission Guidelines subject to 30 TAC Chapter 113, subchapter D, applicable to landfills constructed, reconstructed, or modified before May 30, 1991 and has excepted waste after October 9, 1993, or has additional design capacity.
EGU	Electric Generating Unit Standard Permit 30 TAC § 116.610-615 <a href="http://www.tceq.texas.gov/permitting/air/newsourcereview/combustion/egu_sp.html">www.tceq.texas.gov/permitting/air/newsourcereview/combustion/egu_sp.html</a> and <a href="http://www.tceq.texas.gov/assets/public/permitting/air/NewSourceReview/Combustion/segu_permitonly.pdf">www.tceq.texas.gov/assets/public/permitting/air/NewSourceReview/Combustion/segu_permitonly.pdf</a>
EPA	United States Environmental Protection Agency
FOP	Federal Operating Permit
GCCS	Landfill Gas Collection and Control System
GCCSDP	Landfill Gas Collection and Control System Design Plan
GOP	General Operating Permit
HAP	Hazardous Air Pollutant
LandGEM	Landfill Gas Emissions Model
LFG	Landfill gas, typically 50% CH <sub>4</sub> , 49% CO <sub>2</sub> and 1% NMOC
MMBtu	Million British thermal units per hour
MSS	Maintenance, Start-Up, and Shut-Down Emissions
MSW	Municipal Solid Waste
MSWLF	Municipal Solid Waste Landfill
MSWLFTS	Municipal Solid Waste Transfer Station
NA	Nonattainment areas of Texas as define by EPA
NESHAP	Parts 61 and 63-National Emission Standards for Hazardous Air Pollutants for Source Categories

NMOC	Non Methane Organic Compound (includes ethane as a volatile organic Compound, but ethane is currently an exempt VOC under §101 (111))
NNSR	Nonattainment New Source Review
NSPS	Part 60-Standards of Performance for New Stationary Sources
NSPS WWW	Refers to NSPS 40 CFR Part 60, subpart WWW (40 CFR § 60.750-759), Standard of Performance for Municipal Solid Waste Landfills. NSR New Source Review Permit under 30 TAC § 116.110
NSPS XXX	Refers to NSPS 40 CFR Part 60, subpart XXX (40 CFR § 60.760-769), Standard of Performance for Municipal Solid Waste Landfills. NSR New Source Review Permit under 30 TAC § 116.110
PBR	Permit by Rule under 30 TAC Chapter 106
PCP	Pollution Control Project Standard Permit 30 TAC § 116.610-617 and <a href="http://www.tceq.texas.gov/permitting/air/newsourcereview/pollution_controls.html">www.tceq.texas.gov/permitting/air/newsourcereview/pollution_controls.html</a>
PSD	Prevention of Significant Deterioration
RO	Responsible Official
ROI	Radius of Influence
SOP	Site Operating Permit
SP	Standard Permit, Air Quality
TAC	Texas Administrative Code
Title V	Federal Operating Permit Program tpy tons per year
VOC	volatile organic compounds as defined in 40 CFR § 51.110(s)
30 TAC	Title 30 of the Title 30 Texas Administrative Code
40 CFR	Title 40-Protection of Environment, Code of Federal Regulations

#### B. Definitions under § 330.983

**Bioremediation** - The biological breakdown of waste occurring at a landfill (LF) prior to placing the waste in a landfill cell. Processing may include adding supplements and oxygen to speed the natural biological processes, after which the material will meet landfill acceptance standards and can be placed in a cell. Common sources of material requiring bioremediation are transportation or pipeline accidents and spills.

**Category 1 MSW landfills** - Landfills with a design capacity less than 2.5 million megagrams (Mg) by mass or 2.5 million cubic meters by volume, and operates in accordance with Title 40 Code of Federal Regulations (40 CFR) Part 60, Subpart WWW, XXX or EG in 30 TAC Chapter 113, subchapter D, as applicable;

**Category 2 MSW landfills** - Landfills with a design capacity greater than or equal to 2.5 million Mg and 2.5 million cubic meters and a calculated uncontrolled non-methane organic compound (NMOC) emission rate less than 50 Mg per year, and operates in accordance with 40 CFR Part 60, Subpart WWW or EG in 30 TAC Chapter 113, subchapter D, as applicable;

**Category 3 MSW landfills** - Landfills with a design capacity greater than or equal to 2.5 million Mg and 2.5 million cubic meters and a calculated uncontrolled NMOC emission rate greater than or equal to 50 Mg per year, and operates in accordance with 40 CFR Part 60, Subpart WWW or EG in 30 TAC Chapter 113, Subchapter D, and 40 CFR Subpart AAAA, as applicable.

**Construction** - Any physical change or change in the method of operation (including fabrication, erection, installation, demolition, or modification of an emissions unit) which would result in a change in actual emissions.

**Facility** - A discrete or identifiable structure, device, item, equipment, or enclosure that constitutes or contains a stationary source, including appurtenances other than emission control equipment. A mine, quarry, well test, or road is not a facility.

**Process** - Any action, operation, or treatment embracing chemical, commercial, industrial, or manufacturing factors such as combustion units, kilns, stills, dryers, roasters, and equipment used in connection therewith, and all other methods or forms of manufacturing or processing that may emit smoke, particulate matter, gaseous matter, or visible emissions.

**Project** - As pertaining to a MSW landfill defined in 40 CFR § 60.751 for NSPS WWW or 40 CFR § 60.761 for NSPS XXX, for the purposes of this subchapter means the construction or modification of a facility or a group of facilities submitted under the same registration

**Modification** - As pertaining to a MSW landfill defined in 40 CFR § 60.751 or 40 CFR § 60.761, means an increase in the permitted volume design capacity of the landfill by either horizontal or vertical expansion based on its permitted design capacity after May 30, 1991 but before July 17, 2014 for sites subject to NSPS WWW or after July 17, 2014 for sites subject to NSPS XXX. Modification does not occur until the owner or operator commences construction on the horizontal or vertical expansion.

**Modification of existing facility** - Any physical change in, or change in the method of operation of, a facility in a manner that increases the amount of any air contaminant emitted by the facility into the atmosphere or that results in the emission of any air contaminant not previously emitted. The term does not include conditions listed under § 116.10(11) of this title (relating to General Definitions).

**Receptor** - Any off-property recreational area, commercial/industrial structure, residence, or other normally occupied structures not used solely by the owner and/or operator of the MSW landfill site.

**Site** - All regulated units, facilities, equipment, structures, or sources at one street address or location that are owned or operated by the same person. Site includes any property identified in the permit or used in connection with the regulated activity at the same street address or location. The definition of property is found in § 101.1(84) and is defined as: All land under common control or ownership coupled with all improvements on such land, and all fixed or movable objects on such land, or any vessel on the waters of this state.

**Source** - A point of origin of air contaminants, whether privately or publicly owned or operated.

**Waste solidification** - The physical process used to reduce the mobility of constituents in a waste or to eliminate free liquids.

**Waste stabilization** - The chemical process used to stabilize the volatility of the constituents in a waste

## **V. Emissions**

### **A. AP-42**

The following web page link is to the AP-42 Document [Chapter 2.4](#)

### **B. Excel Spreadsheet**

The following web page link is to Excel® spreadsheets that can be used to calculate MSWLF NMOC emissions and other pollutants from landfill sites, as well as other facilities located at these sites:

[www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/mswlf\\_emcalc.xls](http://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/mswlf_emcalc.xls)

## **VI. Forms**

### **A. Standard Permit Certification and General Operating Permit Application Form and Instructions**

1. Permit by rule § 106.534 MSWLF and Transfer Stations ([MSWLF PBR Checklist](#))
2. Standard Permit §§ 330.891-998 MSWLF and Transfer Stations ([MSWLF SP Checklist](#))
3. [MSWLF NSPS WWW Checklist](#)
4. [MSWLF NSPS XXX Checklist](#)
5. Landfill NESHAP Part 63, Subpart ([MSWLF MACT\) AAAA](#) MSWLF Checklist

### **B. Federal Regulations Submittal Forms**

1. [MSWLF NSPS WWW](#) and [MACT Recordkeeping and Submittal Forms](#)
2. [MSWLF NSPS XXX](#) and [MACT Recordkeeping and Submittal Forms](#)