

STATE OF UTAH
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY

UTAH STATE PLAN FOR
EXISTING DESIGNATED FACILITIES

Establishing a mechanism and schedules for setting,
implementing, and enforcing standards of
performance for existing designated facilities
throughout the State of Utah pursuant to
Section 111(d) of the Federal Clean Air Act

UTAH STATE PLAN
FOR
IMPLEMENTATION OF EMISSION CONTROLS FOR
EXISTING DESIGNATED FACILITIES

SECTION I
MUNICIPAL SOLID WASTE LANDFILLS

Adopted by the Utah Air Quality Board
September 3, 1997

**UTAH STATE PLAN
FOR IMPLEMENTATION OF EMISSION
CONTROLS FOR EXISTING
MUNICIPAL SOLID WASTE LANDFILLS**

TABLE OF CONTENTS

A.	INTRODUCTION	1
	(1) Background on landfill gas	2
	(2) Landfill Plan overview	3
B.	APPLICABILITY DETERMINATION OF PLAN	4
C.	EMISSION STANDARDS FOR MUNICIPAL SOLID WASTE LANDFILL EMISSIONS	5
	(1) Small landfill requirements	5
	(2) Control Determination Procedures	6
	(3) Control Device Specifications	6
	(4) Required gas collection technology	7
D.	COLLECTION AND CONTROL DESIGN PLAN	7
E.	COLLECTION AND CONTROL SYSTEMS.	7
	(1) Active collection system	8
	(2) Alternative Passive Collection Systems	8
F.	TEST METHODS AND PROCEDURES	8
G.	OPERATIONAL STANDARDS	9
H.	SPECIAL COMPLIANCE PROVISIONS	10
I.	MONITORING OF OPERATIONS	10
	(1) Active Collection Device	10
	(2) Enclosed Combustor or flare	11
	(3) Other Types of Collection and Control Equipment	12

J.	REPORTING AND RECORD KEEPING	12
	(1) Records	12
	(a) Landfill and Control System Design Records	12
	(b) Gas Collection and Control System Monitoring Data Records	13
	(c) Initial Performance Test Records	13
	(2) Reports	14
	(a) Initial Design Capacity Report	14
	(b) NMOC Emission Rate Report	15
	(c) Collection and Control System Design Plan	15
	(d) Notification of Awarding of Contracts or Orders for Purchases of Components ..	16
	(e) Notification of Initiating On-Site Construction or Installation of Collection and Control System	16
	(f) Notification of Initial Performance Test	16
	(g) Closure Report	17
	(h) Equipment Removal Report	17
	(i) Annual Compliance Report	17
	(j) Initial Performance Test Report	18
	(k) Fugitive Dust Control Plan	18
K.	COMPLIANCE SCHEDULE	18
L.	REMOVAL OF GAS COLLECTION AND CONTROL SYSTEMS	21
M.	LANDFILLS CONTAINING ASBESTOS.....	21
N.	INVENTORY	21
	(1) Actual Emissions	21
	(2) Design Capacity of Landfills	22
	(3) Discovered Affected Landfills	22
O.	PROCESSING OF INFORMATION	22

List of Tables

Table 1	Requirements of Plans for Existing Landfills	3
Table 2	Compliance Schedule	20

A. INTRODUCTION

Technical Support Document (TSD), Volume 1-A

The Environmental Protection Agency (EPA) has issued standards and guidelines for regulating landfill gas (LFG) emissions from municipal solid waste (MSW) landfills. New Source Performance Standards (NSPS) and Emission Guidelines (EG) were proposed in the *Federal Register* on May 10, 1991 (58 FR 24468). On June 21, 1993, the EPA published a notice in the *Federal Register* (58 FR 33791) providing information on additional data used in developing the final NSPS and EG for MSW landfills. The final standards and guidelines appeared in the *Federal Register* on March 12, 1996, (61 FR 9905). The NSPS is found in Subpart WWW of 40 CFR 60 sections 60.750 - 60.759. This regulation is hereafter referred to as Subpart WWW. The EG is found in Subpart Cc of 40 CFR 60 sections 60.30c - 60.36c. This regulation is hereafter referred to as the "EG" or "Subpart Cc."

Subpart Cc stipulates requirements to be included in state plans regulating existing MSW landfills; Rule R307-21 specifies those requirements for Utah. Utah is an approved state under the Resource Conservation Recovery Act Subtitle D, and therefore, MSW landfills are subject to the requirements of Rules R315-301 through 320. In addition, MSW landfills also must comply with air quality rules in addition to R307-21. These include: Subsection R307-1-2.4.1 (Open Burning - Community Waste Disposal); R307-1-3.1, Notice of Intent and Approval Order; Subsection R307-1-3.5 except for Subsection R307-1-3.5(3) (Emission Inventories); and Rule R307-12 (Fugitive Emissions and Fugitive Dust) of the Utah Administrative Code.

Subsection R307-1-2.4.1 prohibits open burning at sites used for disposal of community trash, garbage and other wastes except as authorized through a variance or as authorized for a specific period of time by the Air Quality Board on the basis of justifiable circumstances reviewed and weighed in terms of pollution effects and other relevant considerations at an appropriate hearing following written application.

Sources subject to R307-1-3.1 must submit a Notice of Intent and receive approval to operate.

Subsection R307-1-3.5 requires that any Part 70 source submit an annual emissions inventory report. The annual emission inventory for each landfill will be due March 1 of each year. The report shall include the rate and period of emission, excess or breakdown emissions, specific source of air pollution, composition of air contaminant, type and efficiency of air pollution control equipment and other information necessary to quantify operation and pollution emissions and to evaluate pollution control.

The control of fugitive dust at a landfill is required under R315-303-5(2)(a), and a plan to minimize dust on site becomes part of the Solid Waste Permit when issued. Opacity from the dust must be no greater than 20 percent. The plan must include control strategies to reduce dust from roads, construction, operations and covering wastes. The steps to minimize fugitive dust may include but are not limited to watering and/or chemical stabilization, providing vegetative or synthetic cover and windbreaks.

The State of Utah has developed the following plan for implementing collection and control provisions for existing landfills in accordance with section 111(d) of the 1990 Clean Air Act Amendments (referred to as "the Act")(42 U.S.C. 7411(d)and 40 CFR 60 Subpart B, Adoption and Submittal of State Plans for Designated Facilities. The implementation requirements for landfill gas established for the State of Utah shall hereafter be referred to as the "Plan." The emission standards for existing MSW landfills in the State of Utah are found in R307-21.

The Plan specifies implementation procedures for MSW landfill gas emissions, which is generally referred to as landfill gas (LFG). Landfill gas is composed of many air contaminants, including methane and

nonmethane organic compounds (NMOC). Since it would be difficult to measure all compounds in LFG, the EPA has specified NMOC as a surrogate for LFG.

Test methods and procedures for determining compliance with applicability determination, emission standards, operational standards, compliance provisions, and monitoring provisions that are different from those outlined in this plan may be applied to a landfill if certain criteria are met as specified in 40 CFR 60.24(f). These criteria include unreasonable costs, physical impossibility, or other factors specific to a landfill that makes application of a less stringent standard significantly more reasonable. The owner or operator of the landfill is responsible for demonstrating the reason for specifying less stringent emission standards. A revision to this plan which has been approved by EPA is required before less stringent deviations from test methods and procedures will be allowed. Minor revisions to EPA approved test methods and deviations incorporated into a collection and control system design plan may be approved by the Executive Secretary without modifications to the plan.

(1) Background on landfill gas

Landfill gas is generated by bacterial decomposition of organic materials in solid waste. General practice at landfills is to provide a daily cover of soil over the refuse. Therefore, refuse is insulated from the atmosphere and decomposition occurs anaerobically (without oxygen). However, air is always present initially and, in some circumstances, may never be fully expelled by anaerobic gases.

The composition of LFG is approximately 50 percent methane, 50 percent carbon dioxide, and less than 1 percent of many different "nonmethane" organic gases, described as NMOC. The NMOC originate from organic chemicals present in municipal waste that has been placed in a landfill and from products of refuse decomposition. Municipal wastes may include waste items such as paints, solvents, pesticides, and adhesives which contain numerous organic compounds. These organic compounds are stripped from the refuse by the generation of methane, carbon dioxide, and other gases from decomposing refuse.

Evidence from EPA indicates that LFG has adverse effects on both public health and welfare. These adverse effects include:

- (a) Ground-level ozone formation from NMOC
- (b) Cancer and noncancer health effects
- (c) Odor nuisance
- (d) Methane migration (fire hazard) potential
- (e) Global warming from CO₂ emissions

Landfills are different from other stationary sources in that a landfill may continue to generate and emit a significant quantity of emissions for more than ten years after the landfill has closed or has ceased to accept waste. A typical stationary source (e.g., a utility boiler) generates emissions only while it is in operation. Therefore, the Plan applies to existing landfills including some closed landfills.

Control of emissions requires both an effective gas collection system and a control device. Landfill gas collection systems can be categorized as either active or passive gas collection systems. Active systems use mechanical blowers or compressors to create a vacuum that draws LFG through deposited refuse and into gas collection wells. Passive systems rely on the natural LFG pressure within the landfill which creates a positive pressure gradient so that LFG flows from the landfill into the gas collection wells.

Once LFG enters a collection well, via either an active or passive collection system, the gas is directed to a control device through a network of piping. Landfill gas may be controlled by recovering the gas as a fuel source or by destroying the organic content of the gas.

(2) Landfill Plan overview

A federally approved plan is required. Subpart B of 40 CFR Part 60 requires that the Plan satisfy several prerequisites in order to be federally approvable. If the State of Utah does not develop an approvable plan, the EPA may develop a plan for Utah. Table 1 identifies the requirements of the Plan.

Table 1. Requirements of Plan for Existing Landfills

Category	Requirement	Reference 40 CFR	Addressed in Section
Public Input	Verification of a public hearing prior to adoption of the State plan	60.23(f)(1)	Administrative Documentation
Public Input	List of attendees at the hearing and summary of presentations	60.23(f)(2)	Administrative Documentation
Emission Standards	Allowable emission rates or equipment specifications	60.24(b)(1)	Section I.C of this Plan and R307-21
Compliance Methods	Test methods and procedures used for determining compliance with the emission standards	60.24(b)(2)	Section I.F of this Plan and R307-21
Applicability	Emission standards shall apply to all designated landfills within the State	60.24(b)(3)	Section I.C of this Plan and R307-21
Compliance Schedule	Legally enforceable increments of progress for landfills to achieve compliance.	60.24(e)(1)	Section I.K of this Plan and R307-21
Compliance Schedule Alternative	Procedures to follow to formulate compliance schedules for individual landfills after plan submittal	60.24(e)(2)	Section I.N(3) of this Plan
Alternative Standards and Compliance times	A site-specific basis for less stringent standards or compliance for particular landfills	60.24(f)	Section I.A of this Plan and R307-21
Inventory	An inventory of all designated landfills, including emission data for the designated pollutants and information related to emissions.	60.25(a)	Section I.N of this Plan and R307-3.5

Category	Requirement	Reference 40 CFR	Addressed in Section
Monitoring	Provide for monitoring a landfill's compliance status as follows: 1. Legally enforceable procedures for requiring the maintenance of records and periodic reporting to the State for the determination of compliance, and 2. Periodic inspections and testing.	60.25(b)	Section I. Parts F, I, and J of this Plan and R307-21
Analysis and information access	Information obtained under 40 CFR 60.25(b) shall be correlated with applicable emission standards and made available to the public	60.25(c)	Section I.O of this Plan and R307-1-2.2
Legal Authority	The State must show it has legal authority to carry out the Plan.	60.26	Utah Code 19-2-101 and 104 (See Administrative Documentation)

B. APPLICABILITY DETERMINATION OF PLAN

Technical Support Document, Volume 1

The Plan applies to all existing MSW landfills for which construction, reconstruction or modification was commenced before May 30, 1991 unless closed prior to November 8, 1987.

Definitions

Terms used but not defined in this Plan have the meaning given them in the Act and in 40 CFR 60 Subparts A, B, and WWW.

CLOSED LANDFILL means a landfill in which solid waste is no longer being placed, and in which no additional solid wastes will be placed. If a new solid waste permit is issued under Rule R315-310 for the landfill and additional solid waste is placed in the landfill, the landfill is no longer closed. A landfill is considered closed after meeting the criteria specified in Subsection R315-301-2(12).

MINOR REVISIONS means those items that have isolated consequences, affect a single source, and do not affect the stringency of the emissions limitation or standard.

MODIFICATION, as defined in R307-21-3, means an increase in the landfill design capacity through a physical or operational change, as reported in the initial Design Capacity Report.

The Division of Air Quality will determine whether proposed changes in landfill operations, after promulgation of this Plan, meet the definition of construction, reconstruction, or modification.

For MSW landfills, the only physical or operational change that results in increased landfill emissions is an increase in the landfill design capacity. Design capacity of a landfill is increased only with the addition of new disposal areas. New disposal areas can result by increasing the depth of refuse deposition, increasing refuse compaction, or by constructing additional disposal cells.

Physical or operational changes made to an existing MSW landfill solely to comply with this Plan are not considered a modification or reconstruction and would not subject an existing MSW landfill to the requirements of 40 CFR 60 Subpart WWW (New Source Performance Standards for Municipal Solid Waste Landfills).

An existing MSW landfill may be active, i.e., currently accepting waste, or may be closed, i.e., no longer accepting waste.

The Plan does not apply to landfills which closed prior to November 8, 1987.

C. EMISSION STANDARDS FOR MUNICIPAL SOLID WASTE LANDFILL EMISSIONS

Technical Support Document (TSD), Volume 1-C

(1) Small landfill requirements

Each existing landfill with a maximum design capacity below 2.5 million megagrams (Mg) or 2.5 million cubic meters (m³) is exempt from most of the requirements in this Plan and most of Rule R307-21. This is equal to 2,755,750 tons or 3,270,000 cubic yards. An owner or operator of a small landfill with a capacity below the exemption level is required only to submit an initial Design Capacity Report to the Executive Secretary. The contents and submittal date of an initial Design Capacity Report are discussed later in Sections I.J(2)(a) and I.N.

If the maximum design capacity of a small landfill is ever increased, the owner or operator of the landfill must amend the initial Design Capacity Report (Amended Design Capacity Report), submit it to the Executive Secretary, and meet the applicable requirements.

(2) Control Determination Procedures

Control of MSW landfill emissions is required at each existing MSW landfill meeting the following three conditions:

- (a) The landfill has accepted waste at any time since November 8, 1987.
- (b) The landfill has a design capacity greater than or equal to 2.5 million megagrams (2,755,750 tons) or 2.5 million cubic meters (3,270,000 cubic yards). The landfill owner or operator may calculate design capacity in either megagrams or cubic meters for comparison with the exemption values. Any density conversions shall be documented and submitted with the report; and
- (c) The landfill has a nonmethane organic compound emission rate of 50 megagrams per year or more calculated as outlined in Subpart WWW Sec. 60.754.

The amount of nondegradable cover material used daily may be subtracted from the total design capacity. Documentation of the amount of this material shall be submitted with the Design Capacity Report.

The owner or operator of an existing landfill meeting the above conditions shall install a collection and control system that meets the conditions in Section R307-21-3.

If the landfill NMOC emission rate is determined to be less than 50 Mg/year (55 tons/year) (see Section I.C(2)(c)), the owner or operator of the landfill needs to calculate and report its NMOC emission rate annually or every 5 years as specified in Section I.J(2)(b). An NMOC Emission Rate Report is required to be submitted to the Executive Secretary until such time as the recalculated NMOC emission rate is greater than or equal to 50 Mg/year (55 tons/year) or the landfill ceases to accept waste.

(3) Control Device Specifications

Technical Support Document, Volume 1

Control devices meeting the following requirements shall be used to control collected MSW landfill emissions:

- (a) An open flare designed and operated in accordance with the parameters established in 40 CFR 60.18; or
- (b) A control system designed and operated to reduce NMOC by 98 weight percent; or
- (c) An enclosed combustor designed and operated to reduce the outlet NMOC concentration to 20 parts per million as hexane by volume, dry basis at 3 percent oxygen, or less.

(4) Required gas collection technology

A well-designed and well-operated gas collection system is required to be located in a landfill to collect LFG effectively from all disposal areas requiring control. Disposal areas requiring control are defined as active areas where the first refuse deposited in the area has reached an age of 5 years or more or areas closed or at the final grade where the first refuse deposited in the area has reached an age of 2 years or more.

Collected LFG is required to be vented through a network of piping to a control device. The control device shall be operated at all times when collected LFG is routed into the control system except during times of start up, shut down, or malfunction. This exception is allowed as long as the operational disruption for the collection system is 5 consecutive days or less. In the event the collection system or control device become inoperable, the gas mover system must be shut down. All valves leading to atmospheric venting of LFG in the gas collection and control system also must be closed.

Gas collection systems may rely on active or alternative passive techniques for extracting LFG from landfill areas requiring control. A wide variety of collection systems are allowed. Because of the many site-specific factors involved with landfill gas system design, alternative systems may be necessary. System designs could include vertical wells, combination horizontal and vertical collection systems, or horizontal trenches only; leachate collection systems; and passive systems.

D. COLLECTION AND CONTROL DESIGN PLAN

If a landfill meets the conditions in Section I.C(2), the owner or operator is required to submit a collection and control system design plan prepared by a licensed engineer to the Executive Secretary within 15 months after EPA approval of the state Plan, or one year after reporting NMOC emissions greater than or equal to 50 Mg/yr (55 tons/yr). Submittal of the NMOC emission report shall be made according to the compliance schedule specified in Section I.K of this Plan.

The collection and control system design plan shall either conform with specifications for active collection systems specified in Subpart WWW Sec. 60.759 or include a demonstration to the Executive Secretary's satisfaction of the sufficiency of the alternative provisions to Subpart WWW Sec. 60.759.

The collection and control system design plan shall include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, record keeping or reporting provisions proposed by the owner or operator.

The Executive Secretary shall review the submitted design plan and either approve it, disapprove it, or request that additional information be submitted.

E. COLLECTION AND CONTROL SYSTEMS.

For landfills which have an emission rate greater than or equal to 50 Mg/yr (55 tons/yr) of NMOC on the date EPA approves this Plan, the system shall be installed and in operation no later than 30 months after EPA approval of this Plan. For landfills not emitting 50 Mg/yr (55 tons/yr) of NMOC on the date EPA approves this Plan, the system shall be installed and in operation no later than 30 months after the first NMOC emission report equals or exceeds 50 Mg/yr (55 tons/yr)

(1) Active collection system

For an active system, the collection and control system design plan must show that the collection system is designed to:

- (a) Handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment;
- (b) Collect gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of 5 years or more if active or 2 years or more if closed or at final grade;
- (c) Collect gas at a sufficient extraction rate (an active gas collection system is sufficient if a negative pressure is maintained at each wellhead except as noted in 40 CFR§ 60.753(b));
- (d) Minimize off-site migration of subsurface gas.

To aid in selecting a design plan that will meet the above control requirements, design criteria for installing active collection systems specified in Subpart WWW Sec. 60.759 are acceptable.

(2) Alternative Passive Collection Systems

A passive collection system must satisfy the same criteria and must have liners on the bottom and all sides of the areas in which gas is collected. The liners shall be installed as required under Subsection R315-303-4(3)(a), or as approved by the Executive Secretary.

The control device is required to be operated at all times when collected LFG is routed into the control system except during times of start up, shut down, or malfunction. This exception is allowed as long as the operational disruption for the control device is 1 hour or less. In the event that the collection or control system becomes inoperable, the gas mover system must be shut down. All valves leading to atmospheric venting of LFG in the gas collection and control system also must be closed.

Alternative designs for a gas control system may be used if the owner or operator can demonstrate that an alternative system is able to achieve an equivalent level of control and emission reduction. The alternative designs, operating practices, and compliance provisions shall be incorporated into the collection and control system design plan submitted under 40 CFR Sec. 60.752(b)(2)(l) which requires approval of the Executive Secretary.

F. TEST METHODS AND PROCEDURES

CALCULATION PROCEDURES

The calculation of the landfill NMOC emission rate shall be determined according to the provisions listed in 40 CFR Sec. 60.754, as applicable, to determine whether the landfill meets the conditions in Section I.C(2) of the Plan, the operational standards in Section I.G, the compliance provisions in Section I.H, and the monitoring provisions in Section I.I.

The required procedures for calculating NMOC emissions from landfills are specified in Subpart WWW Sec. 60.754. The procedure consists of a three-tiered approach, with Tier 1 being the simplest. All "tier" calculations provide an estimate of NMOC emissions, as a function of site-specific information such as age of landfill and waste acceptance rate and the following three variables:

1. Methane generation rate constant, (k);
2. Refuse methane generation potential, (L_0); and
3. NMOC concentration in LFG (C_{NMOC})

Tier 1 calculations use default values for the three variables. If Tier 1 calculations indicate emissions greater than or equal to 50 Mg/year (55 tons/year), a landfill owner or operator has two compliance options. The first option requires the landfill owner or operator to initiate control of NMOC emissions from the landfill by submitting a design plan for a gas collection and control system (Collection and Control Design Plan). The second option requires the landfill owner or operator to recalculate the NMOC emission rate using Tier 2 or Tier 3 procedures. These additional tier procedures determine site-specific data through testing. However, a landfill owner or operator may elect to skip any or all of the additional tier procedures and install landfill controls at any time after the NMOC emission rate has been calculated to exceed the emission limit.

Tier 2 calculations are based on site-specific NMOC concentrations and yield a more accurate estimate of the NMOC emission rate. The NMOC concentrations are determined by performing EPA Method 25C or Method 18. If Tier 2 calculations result in NMOC emissions greater than or equal to 50 MG/year (55 tons/year), Tier 3 calculations may be performed.

Tier 3 calculations are based on both site-specific NMOC concentrations and a site-specific methane generation rate constant. Tier 3 calculations yield the most accurate determination of NMOC emission rate. The NMOC concentrations are determined by following the Tier 2 procedures. The methane generation rate is determined by performing EPA Method 2E in conjunction with EPA Method 25C or Method 18.

Test methods and procedures for determining compliance with applicability determination, emission standards, operational standards, compliance provisions, and monitoring provisions that are different from those outlined above may be applied to a landfill if certain criteria are met as specified in 40 CFR 60.24(f). The landfill owner or operator must demonstrate that these alternatives are “equivalent methods,” or acceptable “methods” as defined in 40 CFR 60.2. A revision to this plan approved by EPA is required before any deviations will be allowed unless the deviations are incorporated into a collection and control system design plan or are minor revisions. Minor revisions and deviations within the collection and control system design plan must be approved by the Executive Secretary.

G. OPERATIONAL STANDARDS

Operational requirements are used to ensure that the collection system is performing in accordance with its design and that the design criteria are met on a continuing basis. In cases where an alternative design is used in place of the active collection system specifications in Subpart WWW Sec 60.759, it may be appropriate to use alternative operating and compliance provisions that are consistent with the site-specific design.

To ensure that the collection system is designed to handle the maximum expected gas generation rate, Subpart WWW Sec. 60.755(a) procedures for calculating the gas generation flow rate shall be followed.

Each owner or operator of an MSW landfill gas collection and control system used to comply with the provision of the Plan shall operate the collection system as outlined in Subpart WWW Sec. 60.753.

Landfill gas is effectively collected from the landfill when gas collectors are operated at a sufficient gas extraction rate. A negative pressure must be maintained at each wellhead. Other collection system parameters, pressure, nitrogen concentration, oxygen concentration, or surface methane monitoring and compliance provisions as specified in 40 CFR 60.753 shall be followed. The collection and control system design plan can outline alternatives, such as a passive system, to these provisions for specific sites. The design plan must provide a justification for the alternative; with proper justification the Executive Secretary shall approve the alternative.

H. SPECIAL COMPLIANCE PROVISIONS

Except as provided in approved alternative compliance provisions, the specified methods in Subpart WWW Sec 60.755 shall be used to determine whether the gas collection system is in compliance with the collection system requirement of an active or passive system (See Section I.D of this plan). The landfill owner or operator must abide by all applicable R307 rules.

I. MONITORING OF OPERATIONS

Monitoring of operations shall be done as specified in Subpart WWW Sec. 60.756 unless an alternative is approved.

(1) Active Collection Device

For an active gas collection system that meets design criteria published in Subpart WWW Sec. 60.759, the gauge pressure, nitrogen or oxygen concentration, and temperature of LFG within each extraction wellhead must be monitored once a month as specified in WWW Sec. 60.755.

After the installation of extraction wells, the landfill surface must be monitored for methane concentrations to keep the concentrations less than 500 ppm above background levels. Methane concentrations are measured within 5 to 10 cm (2 to 4 in) of the landfill surface using a portable organic vapor analyzer (OVA), flame ionization detector (FID), or other similar monitoring device. Methane concentrations are measured following the procedures in EPA Method 21, except that "methane" replaces all references to "volatile organic compounds" (VOC) and the calibration gas is 500 ppm methane in air 40 CFR 60.755(d). Methane surface concentrations are monitored around the perimeter of the collection area, along a pattern that traverses the landfill at 30 meter intervals, and where visual observations indicate elevated concentrations of landfill gas (e.g., distressed vegetation, cracks or seeps in the cover). The owner or operator may establish an alternative traversing pattern that ensures equivalent coverage. Methane surface concentrations indicate whether gas extraction rates are sufficient to minimize the amount of LFG escaping through the landfill cover.

Methane concentrations at the landfill surface must be monitored quarterly. These parameters indicate whether the gas extraction rates for the extraction wells are adequate. When the methane surface concentration monitoring for a closed landfill shows no exceedances for three consecutive quarters, the landfill owner or operator may "skip" to annual monitoring. However, if an exceedance is detected, monitoring shall resume on a quarterly schedule until no exceedances are observed for three consecutive quarters.

If an exceedance is detected, corrective action must be taken by performing cover maintenance or adjusting the collection system operating parameters. The location of the exceedance(s) must be rechecked for surface methane concentration within 10 days. If there are three exceedances at a location within a quarterly period, a new well or collection device must be installed within 120 days of the initial exceedance. An alternate remedy and time line may be proposed to the Executive Secretary. It should be noted that an exceedance of the 500 ppm surface methane concentration standard is NOT a violation of the rule, provided the proper correction procedures, as specified in Subpart WWW Sec. 60.755, are carried out.

Each extraction well installed in an active collection system must include a sampling port and a temperature measuring device. The sampling port allows easy access for gauge pressure and nitrogen concentration measurements. An extraction well with an adequate gas extraction rate will maintain a negative gauge pressure in the wellhead. A negative pressure indicates that a negative pressure gradient exists within the landfill and LFG is being extracted. Exceptions to the negative pressure requirement are listed in Subpart WWW Sec. 60.753(b).

Collected LFG must have a nitrogen concentration less than 20 percent or an oxygen level less than 5 percent, and a maximum temperature of 55°C (131°F). Nitrogen concentration levels are measured following the procedures in EPA Method 3C. Oxygen concentration levels are measured following the procedures in EPA Method 3A. Nitrogen concentration rates less than 20 percent or oxygen concentration values less than 5 percent indicate well extraction rates are not causing ambient air infiltration into a landfill through its surface and sides. Increased LFG temperatures indicate that subsurface fires or aerobic conditions exist within the landfill. The maximum allowable LFG temperature is 55°C (131°F), unless a landfill owner or operator can demonstrate adequately that a higher temperature is appropriate and does not hinder the anaerobic decomposition process.

(2) Enclosed Combustor or flare

For gas control systems using an open flare or an enclosed combustion device, the gas flow entering the control device and the operating parameters that indicate performance of the combustion device must be monitored. The gas flow rate to the control device from the collection system is monitored at least once every 15 minutes or the bypass lines must be secured in the closed position using a car-seal or lock-and-

key type configuration. This monitoring frequency is needed to identify periods when the gas flow has been diverted from the control device or periods of no flow from the collection system. Combustion device operating parameters must be monitored continuously. For open flares, a heat sensing device such as an ultraviolet beam sensor or thermocouple, located at the flare pilot light or flare flame, is used to indicate the continuous presence of a flame. For enclosed combustion devices, a temperature measuring device equipped with a continuous recorder is used to monitor the combustion temperature so that an adequate temperature is maintained. Boilers greater than or equal to 44 MW are excluded from the requirement to install a temperature monitor and recorder.

(3) Other Types of Collection and Control Equipment

Gas collection and control systems based on design criteria other than those specified in the Plan are allowed. For alternative systems, the landfill owner or operator must provide information in the collection and control system design plan describing the system design, the operation of the system, operating parameters that would indicate proper performance, and appropriate monitoring procedures. The Executive Secretary will review the submitted information and decide whether to approve it, request additional information, or specify additional monitoring procedures. The Executive Secretary shall be notified and shall approve these activities prior to any construction or any installation of equipment.

J. REPORTING AND RECORD KEEPING

Technical Support Document (TSD), Volume 1-I

The record keeping and reporting provisions listed in Subpart WWW Sec 60.757 and 60.758, as applicable, are required, except for the submittal date of the initial Design Capacity Report and the initial NMOC emission rate report. The submittal date shall be 90 days after EPA approval of this Plan.

(1) Records

The landfill owner or operator must keep up-to-date, readily accessible records to document that controlled landfill operations comply with the requirements of this standard. These records must be maintained in electronic or hard-copy format for at least 5 years, unless otherwise specified.

Records must be maintained to document three major operations at a controlled landfill. A discussion of the record keeping requirements for each of these operations is provided below. If alternative collection system designs are used as discussed in Section I.E of this Plan, it may be necessary to specify alternative monitoring, record keeping, and reporting procedures in the collection and control system design plan that are more appropriate for the site-specific design.

(a) Landfill and Control System Design Records

A number of records shall be kept to document the general design and operation of the landfill. These records include current landfill design capacity, current amount of refuse-in-place, and year-by-year refuse accumulation rates. These data are used to estimate potential NMOC emissions from the landfill. If areas of a landfill have been excluded from emission estimating calculations and control because the areas contain nondegradable refuse, records must be available to support the area exclusions. All areas storing nondegradable refuse such as asbestos and demolition refuse must be identified on a location map. In addition, a description of the nondegradable refuse must be recorded along with the amount and date of placement in the landfill.

A plot map is needed to document that LFG is being collected from all gas-producing areas in a landfill. This map shall show each existing and planned extraction well in the gas collection system and must provide a unique identifying label for each well. In addition, the installation date and location of all newly installed wells must be indicated and documented.

(b) Gas Collection and Control System Monitoring Data Records

All monitoring data gathered during the operation of a gas collection and control system must be recorded. These data include:

- (i) Gauge pressure, nitrogen concentration or oxygen concentration, and temperature of LFG within each wellhead;
- (ii) Methane surface concentrations;
- (iii) Gas flow rate from the collection system to the control device;
- (iv) Adequate combustion conditions (e.g., combustion temperature, presence of flare flame or pilot flame) for the control device; and
- (v) Any other data specified by the Executive Secretary.

Records also must be kept of periods when the monitored control device operating parameter (e.g., temperature) exceeds the established boundaries.

If any of the monitored readings for gauge pressure, nitrogen or oxygen concentration, temperature of LFG in wellheads, or methane concentration exceed the operational standards as established in Subpart WWW Sec. 60.753, the location and value of the reading must be documented as such an occurrence. For each exceedance, the reading from the subsequent monitoring period must also be recorded regardless of whether the subsequent value is an exceedance.

(c) Initial Performance Test Records

Measurements gathered during the initial performance test of the gas collection and control system must be maintained by the landfill owner or operator for the life of the control equipment. Further, measurements gathered during the initial test and any subsequent tests or monitoring must be kept for a minimum of 5 years. Measurements recorded from the gas collection system during the initial performance test include the maximum expected gas generation flow rate and the density of wells, horizontal collectors, surface collectors, or other gas extraction devices.

Measurements recorded from the gas control system during the initial performance test depend on the type of control device used. For enclosed combustion devices, the average combustion temperature must be recorded at least every 15 minutes and averaged over the performance test duration. The percent reduction of NMOC's achieved by the control device must also be recorded. Temperature monitoring is not required for boilers and process heaters with design heat input capacities greater than 44 MW (150 million Btu/hr). For boilers and process heaters (of any size), a description of the location where LFG is introduced into the boiler flame zone must be recorded. For open flares, operating parameters that shall be recorded are the type of flare, all visible emission readings, heat content determination, gas flow rate or bypass measurements, exit velocity determinations, continuous pilot flame or flare flame monitoring, and all periods when pilot flame or flare flame is absent. If any of the monitored control device readings exceed limits set by the most recent performance test, the period when these readings were observed must be documented.

(2) Reports

The landfill owners or operators must submit a series of reports to the Executive Secretary to demonstrate compliance with this Plan. These reports are based on information maintained by the landfill's record keeping efforts. The reporting sequence begins with the Initial Design Capacity Report and concludes with the Landfill Closure and Control Equipment Removal Reports. Following is a description of each report that is required by this Plan and the schedule for each report submittal.

(a) Initial Design Capacity Report

A landfill owner or operator must submit a report that adequately documents the landfill maximum design capacity. This report establishes whether a landfill is subject to the control requirements of this Plan or is excluded because of the landfill design capacity exemption. An Initial Design Capacity Report must include:

- (i) A map or plot of the landfill that provides the location and size of the landfill, and identifies all areas where refuse may be disposed of as specified in any applicable state, local, or RCRA permits; and
- (ii) The maximum design capacity of the landfill.

If the maximum design capacity of the landfill is documented in a solid waste permit, a copy of the permit specifying the maximum design capacity may be submitted as part of this report. If the landfill design capacity is not specified in a permit, the capacity must be calculated using good engineering practices. All calculations and assumptions used in estimating the landfill design capacity must be included in the report for review by the Executive Secretary. The maximum design capacity of a landfill can be determined from the total area available for refuse disposal. The amount of nondegradable material used to cover the waste may be subtracted out of the total capacity if the amount can be documented. Alternative information that could be used to determine design capacity includes operating parameters such as depth of refuse placement, refuse acceptance rates, and refuse compaction practices.

The Initial Design Capacity Report must be submitted to the Executive Secretary within 90 days after EPA approval of this Plan.

An example Initial Design Capacity Report is included in TSD Volume 1(I)(1).

If an Initial Design Capacity Report adequately documents that a landfill has a maximum design capacity less than 2.5 million Mg (2,755,750 tons) or 2.5 million m³ (3,270,000 cubic yards) of refuse, the owner or operator of the landfill is exempt from the remaining record keeping and reporting requirements of this standard. However, if the maximum design capacity of the landfill is ever increased, an amended initial Design Capacity Report (Amended Design Capacity Report) must be submitted. The Amended Design Capacity Report must adequately describe the nature of the landfill design capacity increase. The Amended Design Capacity Report must be submitted to the Executive Secretary within 90 days after submitting an application pursuant to R315-301-5 for a Solid Waste Permit, or changing operating procedures, whichever occurs first.

(b) NMOC Emission Rate Report

Owner or operator of landfills with a maximum design capacity greater than or equal to 2.5 million Mg (2,755,750 tons) or 2.5 million m³ (3,270,000 cubic yards) of refuse must submit annual calculations of the NMOC emission rate. The report must include an annual estimate of NMOC emissions from the landfill using the tier equations and calculation procedures outlined in Subpart WWW Sec. 60.754. These

equations and calculation procedures are included in TSD Volume 1(C)(1). An example NMOC Emission Rate Report is included in TSD Volume 1.

If the estimated NMOC emissions from a landfill are less than 50 Mg/yr (55 tons/yr) in each of 5 consecutive years, the landfill owner or operator may elect to submit a 5-year estimate of NMOC emissions from the landfill instead of an Annual Report. For each of the next 5 years, the landfill NMOC emission rate is estimated following the same procedures used for the annual estimates. A 5-year NMOC Emission Rate Report is based on the current amount of refuse in the landfill and the estimated waste acceptance rate for each of the 5 years covered by the report. If an actual waste acceptance rate exceeds the estimated waste acceptance rate used in a 5-year report, a revised 5-year report must be submitted to the Executive Secretary. The revised 5-year estimate must begin with the year in which the actual waste acceptance rate exceeded the estimated waste acceptance rate. All data, calculations, and measurements used in preparation of a 5-year report must be submitted for review by the Executive Secretary.

The initial Annual or 5-Year NMOC Emission Rate Report must be submitted within 90 days after the date on which EPA approves this Plan. Subsequent NMOC Emission Rate Reports must be submitted annually or every 5 years, respectively. The Initial NMOC Emission Rate Report may be submitted with the Initial Design Capacity Report.

(c) Collection and Control System Design Plan

A landfill owner or operator that report an NMOC emission rate greater than or equal to 50 Mg/yr (55 tons/yr) must take one of the following actions:

- (i) Submit a design plan for a gas collection and control system; or
- (ii) Recalculate the NMOC emission rate estimate using Tier 2 and Tier 3 calculating procedures.

If a landfill owner or operator elects to submit a design plan, the plan must be submitted to the Executive Secretary within 1 year after a landfill owner or operator first reports an NMOC emission rate greater than or equal to 50 Mg/yr (55 tons/yr). A landfill owner or operator can install either a gas collection and control system that meets the design criteria in Subpart WWW Sec. 60.759, or an alternative design which is approved by the Executive Secretary.

The owner or operator of each landfill is required to submit design plans to the Executive Secretary for approval.

The Executive Secretary must approve the design of a gas collection and control system prior to installation. The review and comment interval for approving a design plan is expected to take approximately 3 months from the date the plan is submitted, leaving approximately 12 months for installing the alternative gas collection and control system.

The second option for a landfill with a Tier 1 NMOC emission rate equal to or greater than 50 Mg/yr (55 tons/yr) is to recalculate the NMOC emission rate. This calculation is made after determining site-specific landfill characteristics through Tier 2 and Tier 3 sampling and analysis. If a landfill owner or operator recalculates an NMOC emission rate less than 50 Mg/yr (55 tons/yr) using a site-specific NMOC concentration determined from the Tier 2 procedures, the annual reporting of the NMOC emission rate resumes using the site-specific NMOC concentrations. The recalculated Tier 2 NMOC Emission Rate Report must be submitted to the Executive Secretary within 180 days after calculating the initial NMOC emission rate exceedance. The site-specific NMOC concentration is verified through testing once every 5

years. Subsequent reports using the site-specific NMOC concentration continue until the NMOC emission rate cut-off is exceeded or the landfill ceases to accept waste.

A landfill owner or operator may also elect to recalculate the NMOC emission rate after determining a site-specific methane gas generation rate through Tier 3 sampling and analysis. If a landfill owner or operator recalculates an NMOC emission rate less than 50 Mg/yr (55 tons/yr) using a methane gas generation rate determined from Tier 3 procedures, the annual reporting of the NMOC emission rate resumes using the site-specific value. The recalculated NMOC Emission Rate Report, based on the Tier 3 sampling and analysis, must be submitted to the Executive Secretary within 1 year after calculating the initial NMOC emission rate exceedance. Subsequent reports using the site-specific NMOC concentration continue until the NMOC emission rate cut-off is exceeded. If using site-specific factors results in a landfill owner or operator recalculating the NMOC emission rate as being greater than or equal to 50 Mg/yr (55 tons/yr), a notification of intent to install a collection system and control device and a Collection System Design Plan Report must be submitted to the Executive Secretary within 1 year after reporting an NMOC emission rate exceeding the cut-off.

(d) Notification of Awarding of Contracts or Orders for Purchases of Components

The owner or operator of a landfill requiring controls shall notify the Executive Secretary of the awarding of contracts for the construction of the collection and control system or the ordering of purchases of components for the system. This notification shall be submitted within 18 months after reporting an NMOC emission rate greater than or equal to 50 Mg/yr (55 tons/yr).

(e) Notification of Initiating On-Site Construction or Installation of Collection and Control System

The owner or operator shall notify the Executive Secretary of the initiation of construction or installation of the collection and control system. This notification shall be submitted to the Executive Secretary within 22 months after reporting an NMOC emission rate greater than or equal to 50 Mg/yr (55 tons/yr).

(f) Notification of Initial Performance Test

The owner or operator shall perform an initial compliance test within 180 days after the start up of the collection and control system. Written notification of the test date shall be submitted to the Executive Secretary at least 45 days before the test. If directed by the Executive Secretary, a pretest conference shall be held, at least 30 days before the test among the owner or operator, the tester, and the Executive Secretary or the Division of Air Quality staff.

(g) Closure Report

The owner or operator of a controlled landfill that is preparing for permanent closure must submit a closure report to the Executive Secretary within 30 days of waste acceptance cessation. The report acknowledges that the landfill will no longer accept or dispose of refuse in the landfill unless a notification of modification is filed. The Executive Secretary may request additional information to verify that permanent closure of the landfill has taken place. An example of a Closure Report is included in TSD Volume 1(I)(1).

(h) Equipment Removal Report

An equipment removal report must be submitted to the Executive Secretary within 30 days prior to the removal or cessation of operation of a gas collection and control system. The report must include the following:

- (i) A copy of the Landfill Closure Report;
- (ii) A copy of the Initial Performance Test Report, to demonstrate that the gas collection and control system has controlled emissions from the landfill for at least 15 years; and
- (iii) Copies of three successive NMOC Emission Rate Reports which document the NMOC emission rate as less than 50 Mg/yr (55 tons/yr). The test dates should be no closer than 90 days apart and no farther than 180 days apart.

(i) Annual Compliance Report

The initial Annual Report for a gas collection and control system must be submitted to the Executive Secretary within 180 days after installation and start-up of the system. The Compliance Report must be submitted once every 12 months. The report is required to include the following information:

- (i) Value and length of time for exceedances of monitored parameters. This would include reporting of monthly measurements of nitrogen or oxygen concentration, temperature within a well that exceeds 20 percent or 55°C (131°F), and methane concentrations in excess of 500 ppm above background. Reportable exceedances for control device operating parameters include 3-hour periods when combustor temperatures are outside the ranges established in the most recent performance tests, and periods when the pilot flame to a flare or flare flame is absent;
- (ii) Description and duration of all periods when the gas stream from the collection system was diverted from the control device through a bypass line or had no flow;
- (iii) Description and duration of all periods when the gas control device was not operational for more than 1 hour and length of time the control device was not operational in excess of 5 days;
- (iv) All periods when the gas collection system was not operational;
- (v) Each location where the landfill surface exceeded a methane concentration of 500 ppm, and the methane concentration measured at each location for which an exceedance was recorded in the previous month; and
- (vi) Date and location of all newly installed wells or collection system expansions.

(j) Initial Performance Test Report

The landfill owner or operator is required to submit a performance test report for the gas collection and control system. This report must be submitted to the Executive Secretary within 180 days after installation and start-up of the control system. The report must include the following information:

- (i) A diagram of the gas collection system showing collection system positioning including all wells, horizontal collectors, surface collectors, or other gas extraction devices; landfill areas excluded from control; and proposed sites for future collection system expansion.
- (ii) Data upon which the sufficient density of gas extraction devices and gas mover sizing are based.
- (iii) Documentation of the presence of asbestos or nondegradable material in areas where extraction wells have been excluded.

- (iv) Calculations and the sum of LFG gas generation rates for areas where extraction wells have been excluded.
- (v) Provisions for increasing gas mover capacity if future gas generation rates exceed current equipment limits.
- (vi) Documentation to demonstrate the control of off-site gas migration.

(k) Fugitive Dust Control Plan

All MSW landfill owners or operators are required under R315-202-5(2)(a) to submit a plan to minimize dust on site which becomes part of the Solid Waste Permit when issued. Opacity from the dust must be no greater than 20 percent. The plan must include control strategies to reduce dust from roads, construction, operations, and covering wastes. The steps to minimize fugitive dust may include but are not limited to watering and/or chemical stabilization, providing vegetative or synthetic cover and windbreaks.

K. COMPLIANCE SCHEDULE

Landfill owners or operators are required to accomplish specific tasks within 30 months after the date on which EPA approves this Plan. These tasks include planning, awarding of contracts, and installation of MSW landfill air emission collection and control equipment capable of meeting the requirements of this Plan.

Table 2 specifies the timetable for submitting the above reports and required tasks:

Table 2: COMPLIANCE SCHEDULE

COMPLIANCE ACTION	TIME FRAME
Initial Design Capacity Report	Submit report within 90 days after this Plan is approved by EPA.
Amended Design Capacity Report	If design capacity is increased, the landfill owner or operator must submit an Amended Design Capacity Report within 90 days after submitting application for a modified solid waste permit, or increasing maximum design capacity of landfill, whichever occurs first.
Annual OR Five-year ^a NMOC Emission Rate Report (Tier 1)	Submit initial report within 90 days after this Plan is approved by EPA. May submit with Initial Design Capacity Report. Repeat either once a year OR once every 5 years.
Revised NMOC Emission Rate Report (Tier 2)	If Tier 1 analysis results in NMOC emissions greater than or equal to 50 Mg/yr (55 tons/yr), a revised NMOC emission rate report using data gathered from Tier 2 analysis can be submitted within 180 days of the initial calculated exceedance.
Revised NMOC Emission Rate Report (Tier 3)	If Tier 2 analysis results in NMOC emissions greater than or equal to 50 Mg/yr (55 tons/yr), a revised NMOC Emission Rate Report using data gathered from Tier 3 analysis can be submitted within 1 year of the initial calculated exceedance.
Inventory	Initial report submitted by April 1, 1997. Landfills of a design capacity of greater than or equal to 2.5 million Mg (2,755,750 tons) shall submit an annual inventory by March 1 thereafter.
Collection and Control System Design Plan	Within 1 year after reporting NMOC emissions greater than or equal to 50 Mg/yr (55 tons/yr) (NMOC Emission Rate Report). Plans must be approved prior to installation.
Awarding of Contracts or Orders for Purchases of Components	Within 18 months after reporting NMOC emissions greater than or equal to 50 Mg/yr (55 tons/yr) (NMOC Emission Rate Report).
Initiating On-Site Construction or Installation of Collection and Control System	Within 22 months after reporting NMOC emissions greater than or equal to 50 Mg/yr (55 tons/year)(NMOC Emission Report).
Emission Control System Installation and Start-up	Control system based on approved design for landfills with greater than or equal to 50 Mg/yr (55 tons/yr) of NMOC on the date of EPA approval of the Plan shall start up no later than 30 months after that approval date. Other control systems shall start up no later than 30 months after the first NMOC emission report equals or exceeds 50 Mg/yr (55 tons/yr) and not more than 18 months after submitting design plan.

COMPLIANCE ACTION	TIME FRAME
Initial Control System Performance Test Report	Submit report within 180 days after emission collection and control system start-up per 40 CFR 60.8. Results can be included in the initial Annual Report.
Annual Compliance Report	Submit initial report within 180 days of emission collection and control system start-up. Report once every 12 months.
Landfill Closure Report	Submit report within 30 days of refuse acceptance cessation.
Control Equipment Removal Report	Submit report within 30 days prior to shutting down and removing of control system operations. Controls can be removed after meeting all of these criteria: (1) Landfill Closure Report has been submitted, (2) Control system was operated for at least 15 years, and (3) Three consecutive NMOC Emission Rate Reports with values less than 50 Mg/yr (55 tons/yr) achieved.

- a The owner or operator may elect to submit an estimate of the NMOC emission rate for the next 5 years in lieu of the annual report if the estimated NMOC emission rate is less than 50 Mg/yr (55 tons/yr) in each of the 5 years.

L. REMOVAL OF GAS COLLECTION AND CONTROL SYSTEMS

Before the gas collection and control devices can be capped or removed all of the following conditions must be satisfied:

- (a) The landfill is no longer accepting waste and is permanently closed as described in Subsection R315-302-2(12).
- (b) The landfill owner or operator notifies the Executive Secretary by submitting a Landfill Closure Report.
- (c) The gas collection and control system has been operating continuously for at least 15 years.
- (d) Following the procedures in 40 CFR 60.754(b), the landfill NMOC emission rate has been calculated to be less than 50 Mg/yr (55 tons/yr) on three successive test dates. The test dates can be no closer than 90 days apart and no more than 180 days apart.

M. LANDFILLS CONTAINING ASBESTOS

Technical Support Document (TSD), Volume 1-L

Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under 60.758(d). The documentation shall describe the nature, date of deposition, location and amount of asbestos or nondegradable material deposited in the area, and shall be provided to the Executive Secretary upon request. The total area excluded from control cannot exceed 1 percent of the total NMOC emissions from the entire landfill.

The Collection and Control System Design Plan for any landfills in which asbestos is comingled with MSW is required to address how collection of these areas shall be accomplished without release of asbestos. If alternative collection system designs are used, alternative monitoring, record keeping, and reporting procedures that are more appropriate for the site-specific design may be required and specified in the Collection and Control System Design Plan. The Collection and Control System Design Plan must be approved by the Executive Secretary prior to installation of the system.

N. INVENTORY

Technical Support Document (TSD), Volume 1-M

(1) Actual Emissions

Each owner or operator of an existing landfill of a design capacity greater than or equal to 2.5 million Mg (2,755,750 tons) and 2.5 million cubic meters (3,270,000 cubic yards) was required to submit an inventory of NMOC emissions to the Executive Secretary by April 1, 1997. Commencing March 1 after the date on which EPA approves the Plan, landfills of a design capacity of greater than or equal to 2.5 million Mg (2,755,750 tons) shall submit an annual inventory. The calculations for this inventory should be made using emission factors that obtain the most representative actual emissions from the landfills. No emission inventory data for landfills is available on the Air Information Retrieval System (AIRS). The initial inventory

data will be submitted to the AIRS database and is incorporated into the Technical Support Document for this plan.

(2) Design Capacity of Landfills

During an examination of the landfills in the State of Utah, it was found that the following landfills have a design capacity of 2.5 million megagrams or over.

Bayview Landfill
Bountiful City Landfill
Utah Department of Natural Resources Landfill
Davis County Solid Waste Landfill
East Carbon Development Corporation
Salt Lake Valley Landfill
Trans Jordan Landfill
Washington County Landfill
Weber County Landfill

(3) Discovered Affected Landfills

The applicability of this Plan to the above landfills shall be confirmed when the required initial Design Capacity Report is received. If any additional existing landfill is found to be affected by this Plan, the source will be required to comply with Rule R307-21 and this Plan. The compliance schedule for these landfills will be similar to the schedule in Section I.K of this Plan except that the initial Design Capacity Report, initial inventory, and initial NMOC Emission Rate Report will be submitted 90 days after the landfill owner or operator is informed of the reporting requirements.

O. PROCESSING OF INFORMATION

Technical Support Document (TSD), Volume 1-N

As each report is received, the Executive Secretary shall determine if it is complete, accurate, and fulfills the requirements of Rule R307-21. Each landfill to which this Plan applies will be identified and compliance with Rule R307-21 will be determined.

Each existing landfill which is required to install collection and control devices shall have an initial inspection. This inspection shall be done through the coordination of the Utah Division of Solid and Hazardous Waste and the Utah Division of Air Quality.

The reports, test results, inspection reports, etc. for each landfill shall be available to the public by appointment upon request to the Division of Air Quality.

Annual progress reports on the progress of plan enforcement shall be submitted to EPA. The first progress report shall be submitted no later than one year after this plan is approved or promulgated by EPA. Included in this report shall be such items as enforcement actions, achievement of increments of progress made by landfills, identification of landfills that have closed, landfills that have ceased to operate collection and control systems and compliance data, emission inventory for landfills not identified at the time of plan development, updated information or emission data, and test reports including control device operating conditions.