

Mike



Department of Environmental Protection

Lawton Chiles
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Virginia B. Wetherell
Secretary

January 19, 1999

Mr. Donald L. Lockhart
Executive Director
Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility
6501 North Jog Road
West Palm Beach, Florida 33412

Re: Initial Title V Permit Application
North County Resource Recovery Facility

Dear Mr. Lockhart:

Thank you for the timely submittal of your initial Title V Air Operation Permit application for the North County Resource Recovery Facility. The Department will begin reviewing this application in the near future. Before we begin the review, we would like to extend the opportunity for you to examine the List of Applicable Regulations provided in your application. **This is not a letter of incompleton.**

The promulgation of the New Source Performance Standards (NSPS) 40 CFR 60, Subparts Cb, Cc, Ea, and Eb has occurred after the submittal of your initial Title V Air Operation Permit application. Based upon a review of the State's 111(d) Implementation Plan, these subparts *may* have applicability to your facility and they were not included in the List of Applicable Regulations. Please provide this office with updated listings of all applicable regulations, an updated statement of compliance, and the appropriate certifications, so that the permit shield can be extended to include the appropriate NSPS subpart. Should you wish to review the aforementioned State 111(d) Plan for your facility, please log on to the Florida Department of Environmental Protection's website at the following address: <http://www2.dep.state.fl.us/air/enhancd/regulate/project/rej.htm> and click on the "Municipal Waste Combustors (MWC) Rule", specifically the "State Plan" link.

Please submit this to my attention at the above letterhead address. If you have any other questions, please contact Michael P. Halpin, P.E. at 850/921-9530.

Sincerely,

Scott M. Sheplak, P.E.
Administrator
Title V Section

February 10, 1999

Mr. Scott Sheplak
Administrator, Title V Section
Florida Department of Env. Protection
Twin Towers Office Building
Tallahassee, Florida 32299-2400



YOUR PARTNER FOR
SOLID WASTE SOLUTIONS

RECEIVED

FEB 17 1999

BUREAU OF
AIR REGULATION

Subject: North County Resource Recovery Facility – Planned Title V Permit Revisions

Dear Mr. Sheplak:

In response to your letter to the Solid Waste Authority of Palm Beach County (SWA) dated January 19, 1999, the SWA is submitting this preliminary description of the needed changes to our Title V permit application for the subject facility. The SWA anticipates submittal of complete Title V application revisions to FDEP within 2 months of the date of this letter.

Our consultant, HDR Engineering, Inc., represented by Mr. Ed Liebsch, and Mr. Michael Halpin of your staff agreed to this schedule and the information to be provided in this preliminary response letter in a phone conversation on 12/28/99.

Attachment 1 of this letter provides a tabular listing of the emission units included in the original NCRRF Title V permit application, and briefly describes the types of corrections, including new applicable requirements, which will be part of the revised application.

The SWA appreciates the opportunity to make the needed corrections to the application so that the draft Title V permit which is issued for public comment will be as accurate as possible. We look forward to working with your staff to resolve any questions that may arise during this process.

Feel free to call Marc Bruner with the Solid Waste Authority at (561) 640-4000 ext 5607, or Ed Liebsch with HDR at (612) 591-5400 ext 5452 if you have any questions regarding this matter.

Sincerely,

Donald L. Lockhart
Executive Director

Attachment

cc: Mark Hammond, SWA
John Booth, SWA
Marc Bruner, SWA
Neal Poteet, HDR
Michael P. Halpin, P.E., FDEP

ATTACHMENT 1

The initial NCRRF Title V permit application identifies 17 emission units-anticipated revisions are as follows:

	Status	Authority for Status
A) Emission Unit	Primary Revision Needed	Action Description
1.RDF Fired Boiler #1	Replace 40 CFR Subpart CA with Subpart Cb requirements.	HDR to recalculate some pollutants, revise forms.
2. RDF Fired Boiler #2	Replace 40 CFR Subpart CA with Subpart Cb requirements.	HDR to recalculate some pollutants, revise forms.
3. RDF Processing Line A	Insignificant, possibly exempt	Rules 62-213.430(6)(b), and. 62-210.300(3)(a)(22) F.A.C
4. RDF Processing Line B	Insignificant, possibly exempt	Rules 62-213.430(6)(b), and. 62-210.300(3)(a)(22) F.A.C
5. RDF Processing Line C	Insignificant, possibly exempt	Rules 62-213.430(6)(b), and. 62-210.300(3)(a)(22) F.A.C
6. OBW Processing Line	Insignificant, possibly exempt	Rules 62-213.430(6)(b), and. 62-210.300(3)(a)(22) F.A.C
7. Fly Ash Storage Silo #1	Insignificant	Rule 62-213.430(6)(b), F.A.C.
8. Fly Ash Storage Silo #2	Insignificant	Rule 62-213.430(6)(b), F.A.C.
9. Lime Storage Silo #1	Insignificant	Rule 62-213.430(6)(b), F.A.C.
10. Lime Storage Silo #2	Insignificant	Rule 62-213.430(6)(b), F.A.C.
11. Ash Treatment Chemical Storage Silo	Currently not used, but would not emit anyway - vented to ash silo. Insignificant	HDR to remove from application form, Rule 62-213.430(6)(b), F.A.C.
12. Ashloading Building	Wet process-remove from source list.	HDR to remove from application form.
13. RDF Storage Dust Collection	Exempt	Rules 62-213.430(6)(b), and. 62-210.300(3)(a)(22) F.A.C
14. MRF	Solid Waste Authority Says this no longer in service-remove from source list.	HDR to remove from application form.
15. Auto Spray Booth	Exempt	Rule 62-210.300(3)(a)(23), F.A.C.
16. Composting Facility	Insignificant	Rules 62-213.430(6)(b) F.A.C
17. Landfill	Add Subpart WWW requirements and revise per PSD application.	Solid Waste Authority to coordinate any appropriate flare constr. Permit revisions with CDM (e.g CO rate, gas moisture)
* 18. Ferrous Processing Facility	Insignificant	Primary Purpose is product recovery, Rule 62-213.430(6)(b), F.A.C.

* Note #18 not a part of original application.

BEST AVAILABLE COPY



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

AUG 21 2001

RECEIVED

AUG 30 2001

4APT-ARB

Mr. Scott M. Sheplak
Administrator, Title V Section
Florida Department of Environmental Protection
Division of Air Resource Management
2600 Blair Stone Road
Tallahassee, FL 32399-2400

BUREAU OF AIR REGULATION

Dear Mr. Sheplak:

As requested in your memo dated February 17, 2000, we are hereby returning the title V permit applications listed below:

Solid Waste Authority of Palm Beach County
ID Number: 0990234
North County Resource Recovery Facility

City of Tampa
ID Number: 0570127
McKay Bay Refuse-to-Energy Facility

If you have any questions or comments concerning this matter, please contact Ms. Gracy Danois of the EPA Region 4 staff at (404)562-9119.

Sincerely,

A handwritten signature in black ink that reads "Gregg M. Worley".

Gregg Worley
Chief, Air Permits Section
Air Radiation and Technology Branch

Enclosures

- Title V permit file -
application

INTEROFFICE MEMORANDUM

Date: 07-Apr-2000 01:47pm
From: Mary Beth Mihalik
mmihalik@swa.org .
Dept:
Tel No:

To: 'Scott Sheplak' (Scott.Sheplak@dep.state.fl.us)

Subject: FW: Title V Proposed Permit - Correction of Equivalent Numbers in Table 1-1

Scott,

The first message was returned. I am trying this again!

Thanks,

Mary Beth

-----Original Message-----

From: Marybeth Mihalik ext. 4613
Sent: Friday, April 07, 2000 1:36 PM
To: 'Scott Sheplak'
Cc: Richard Statom ext. 4612; Marc Bruner ext. 4607
Subject: Title V Proposed Permit - Correction of Equivalent Numbers in Table 1-1

Scott,

After reviewing the calculations for the "equivalent numbers" from Table 1-1 Summary of Air Pollutant Standards and Terms in the proposed permit Title V, it was discovered in the permit application that an average dry standard flow rate, obtained from previous stack tests, was being used instead of the maximum dry standard flow rate for the boilers.

The following are the corrected "equivalent numbers" which need to be changed in Table 1-1 for Units 1 & 2 as part of the Solid Waste Authority's Title V Proposed Permit 0990234-001-AV:

Pollutant	lb/hr	TPY
S02	45.82	200.68
NOx	284.77	1247.29
PM	16.35	71.63
CO	137.8	603.56
HCl	28.08	122.98
Hg	4.16E-02	0.182
Pb	2.61E-01	1.14

Thanks,

Mary Beth



YOUR PARTNER FOR
SOLID WASTE SOLUTIONS

RECEIVED

OCT 01 1999

September 30, 1999

BUREAU OF AIR REGULATION

Mr. Scott Sheplak
Professional Engineer Administrator
Title V Section, Air Resources Division
Florida Department of Environmental Protection
2600 Blair Stone Road MS 5510
Tallahassee, FL 32399-2400

Re: Solid Waste Authority of Palm Beach County - North County Resource
Recovery Facility Title V Permit Application, submitted June 12, 1996.

Dear Mr. Sheplak,

The Solid Waste Authority of Palm Beach County (SWA) submitted a Title V permit application to the Department in June 1996 for the North County Resource Recovery Facility (NCRRF). Since that time the SWA has modified and expanded the landfill gas collection/flare system and received modifications to the PSD air permit for that work.

In order to assure that the proposed Title V permit for the SWA accurately reflects the facilities at the NCRRF; the SWA is submitting this amended permit application to the Department.

Enclosed are the following items for the amended Title V permit application prepared by HDR Engineering.

- One diskette containing the electronic submittal file generated by the ELSA 1.3c permit software,
- One copy of the signed Professional Engineer certification form,
- One copy of the signed Responsible Official certification form,
- One copy of the signed Compliance Statement, and
- Four copies of the Supplemental Information (Appendices) to the permit application.

During preparation of the amended Title V permit application, two issues arose that the SWA would like to bring to the attention of the Department for resolution when the permit is issued.

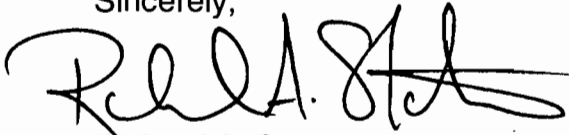
The first issue relates to the diluent monitors installed on the two combustion units. PSD - FL - 108A, the permit under which the units are currently operating, specifies the use of an oxygen monitor as the diluent monitor for the units. In a letter to Mr. Tom Tittle of the Department dated November 17, 1992 (attached), the SWA proposed to install carbon dioxide monitors to be used as the diluent monitors for the combustion units. No response was received from the Department and the CO₂ monitors were installed and have been used for reporting compliance since that time. Although the SWA has retained the oxygen monitors, the preference is to use the CO₂ monitors, which have been used for years for compliance demonstration with tacit approval by the Department. The requirements of 40 CFR Part 60, Subpart Cb allows the use of either O₂ or CO₂ monitors, therefore, the SWA requests that the Title V permit include only the requirement to operate and maintain the CO₂ monitors.

The second issue relates to the applicability of Title V permitting for Class III landfills. The SWA has recently received information from the Department relating to the applicability of Subpart WWW to Class III landfills. The attached emails indicate that although our current permit for the landfills (PSD -FL - 108D) does not exempt the Class III landfill from Subpart WWW, it may in fact not be subject to that subpart. In order to insure that the Title V permit application is complete, the Class III landfill is included, however, the SWA is asking for a determination from the Department on the applicability of Title V to Class III landfills. If it is determined that Title V does not apply to Class III landfills, just as Subpart WWW regulations do not apply, we request that the permit reflect that determination and exclude the Class III landfill and its landfill gas collection system from regulation.

We wish to work closely with you and your staff in the writing of this permit. To that end we request that a preliminary draft be transmitted to us when it is developed in order to allow for discussion and comment. We will make every effort to be timely with our comments in order to expedite the process and develop a permit that is acceptable to both the Department and the SWA.

If you have any questions or comments, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Richard A. Statom". The signature is fluid and cursive, with a large initial "R" and a long horizontal stroke at the end.

Richard A. Statom
Assistant Director
Environmental Programs

Cc. D. Lockhart, SWA w/o attachments
M. Hammond, SWA w/o attachments
J. Booth, SWA w/o attachments
J. Mesojedec, SWA w/o attachments
B. Worobel, SWA w/o attachments
K. Dunbar, HDR w/o attachments
D. Pelham, HDR w/o attachments
T. Long, FDEP, WPB w/o attachments

SOLID WASTE AUTHORITY

OF PALM BEACH COUNTY

7501 North Jog Road
West Palm Beach, Florida 33412
Telephone (407) 640-4000



FILE COPY

November 17, 1992

Tom Tittle
Environmental Manager, Air Programs
Florida Department of Environmental Regulation
1900 S. Congress Ave. Suite A
West Palm Beach, Florida 33406

Re: NCRRF Continuous Emission Monitors

Dear Mr. Tittle,

The Solid Waste Authority has completed an extensive review of the continuous emission monitoring (CEM) requirements set forth in the EPA guidelines for existing municipal waste combustors under 40 CFR, Part 60, Subpart Ca and how these requirements effect the present CEM system at the NCRRF. Based on our understanding of these Federal requirements it will be necessary to modify the CEM system currently in use at the North County Resource Recovery Facility. These modifications will exceed the minimum standards in the permit. Additionally, even though not required in the permit, the modifications will allow the SWA to achieve compliance with NSPS for CEMs.

After consulting with Enviropplan, Inc. the original CEM System supplier, the following modifications are proposed in order to comply with the current EPA monitoring and reporting.

1) Add(4) Milton Roy Model 3300 CO2 analyzers

Purpose: Modify the existing wet based measurement system to report emission concentrations on an equivalent dry volume basis corrected to 7% O2. (This would be accomplished using the conversion calculations presented in Attachment 1).

2) Add (2) TECO Model 43A SO2 Analyzers

Purpose: Provide dedicated SO2 analyzers at the inlet and outlet locations of each unit. This would improve the system response time and calibration accuracy by deleting the existing time - shared SO2 system.

3) Modify the (2) existing TECO Model 48 CO analyzers to add dual range capability.

Purpose: To satisfy the performance specification requirements under 40 CFR, Part 60, appendix B (PS-4A).

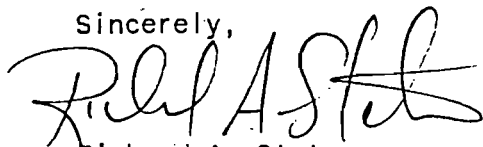
4) Upgrade the existing CEMDAS computer hardware and software to accommodate the required CEM system measurement and reporting requirements.

In order to assure that the proposed modifications constitute compliance with the permit PSD-FL-108A, the SWA request that the Department review the proposed modifications and contact us by December 1, 1992 if there are any problems.

The SWA has tentative plans to proceed with the implementation of these proposed modifications to the CEM system in February, 1993. However, in order to meet this schedule a formal equipment order needs to be placed with Enviorplan, Inc. by December.

If you have any questions or comments, please do not hesitate to contact me.

Sincerely,



Richard A. Statom
Assistant Director
Environmental Programs

RAS/ncrrfcm2

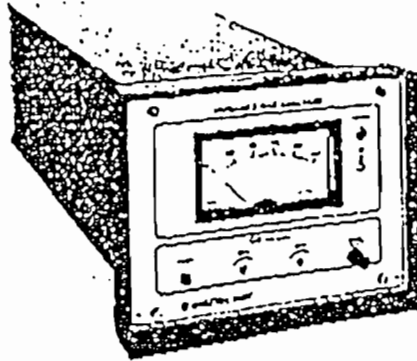
cc: Marc Bruner, SWA
Bob Worobel, SWA
John Booth, SWA
Bill Arvan, B&W
Doug Burnham, B&W



INFRARED GAS ANALYZER

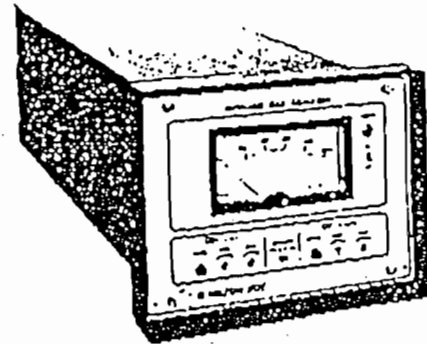
MODELS 3300 & 3400

No optical or
mechanical
adjustments



Model 3300
Single Component Dual Range

Single beam
optics



Model 3400
Dual Component Single Range

The simplicity of single beam optics design — made possible by the Microfil Detector — results in highly stable, reliable analyzers of unmatched analytical performance, requiring no optical adjustments and only the simplest maintenance.

Analog or
Digital Readout

Principle of Operation

The analyzer uses a technique based on the infrared absorption characteristics of gases to measure gas concentration. Use of an efficient single beam design results in good long-term stability.

A single beam of infrared energy is modulated and passed through a sample cell containing the gas to be measured. The beam emerges attenuated by the amount of energy absorbed by the gas(es) in the sample. Changes in the concentration of the gas(es) result in changes of the intensity of the beam. The remaining energy in the beam is passed serially through two cavities of an infrared detector, a mass-flow sensor filled with gas of the type to be measured.

Changes in the intensity of the beam change the pressure differential between the cavities and consequently the balance of the electrical bridge in the detector circuit.

Electronic processing and linearization of the imbalance signal are used to generate an electrical output signal linearly proportional to the concentration of the gas measured.

Standard Application

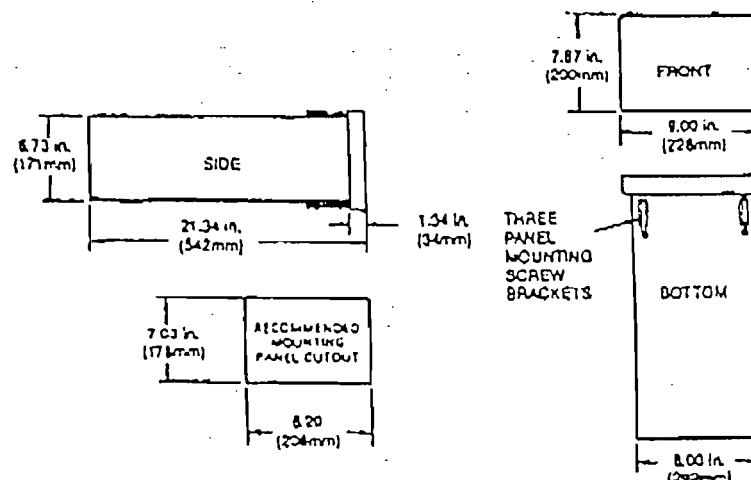
- Combustion Efficiency
 - Burners & Boilers (CO, CO₂)
 - Commercial Ovens (CO, CO₂)
- Controlled Atmospheres
 - Heat treating (CO, CO₂, CH₄)
 - Greenhouses (CO₂)
 - Fermentation (CO₂)
 - Air Liquefaction (CO₂)
- Process Chemical Gas Analysis
- Respiration Studies
 - Single Breath Lung Diffusion (CO₂)
- Stack Gases
- Total Organic Carbon Analysis (TOC)

Modular
construction for
easy maintenance

Low sensitivity to
vibration

Specifications:

- ANALYSIS METHOD:
Non-Dispersive Infrared (NDIR)
- COMPONENTS MEASURED:
CO, CO₂, CH₄, and HC (n-Hexane equivalent)
- SENSITIVITY:
Minimum of 400 ppm full scale
- AMBIENT HUMIDITY:
Less than 90% RH
- REPEATABILITY:
Less than 0.5% of full scale
- RESPONSE TIME: Selectable
90% of full scale in less than 1 sec.
- SAMPLE FLOW RATE:
0.5 - 2 liter/min.
- ZERO DRIFT:
Less than 1% of full scale per 24 hours
- SPAN DRIFT:
Less than 1% of full scale per 24 hours
- LINEARIZER (Standard):
± 2% of full scale
- NOISE:
Less than 0.5% of full scale
- DISPLAY:
Analog meter (Standard)
Digital Display (Optional)
- CALIBRATION CHECK:
Electronic - Push Button
- AMBIENT TEMPERATURE RANGE:
23 - 113 °F (-5 - 45 °C)
- SAMPLE TEMPERATURE RANGE:
32 - 122 °F (0 - 50 °C)
- WARM-UP TIME:
Approximately 2 hours
- ANALOG OUTPUTS:
.01, 0.1, 1.0, VDC simultaneous
4-20 mA DC
- RANGES:
2 Ranges 1 Component (model 3300)
1 Range 2 Components (model 3400)
400 ppm to 100%
Range Ratio - Maximum 5:1
- FITTINGS:
1/4 in. NPT pipe
- POWER REQUIREMENTS:
115/230 (±10%) VAC @ 50/60 Hz, 30 watts
- WEIGHT:
25 lbs. (11 kg)
- DIMENSIONS:



 **MILTON ROY**

1238 West Grove Avenue, Orange, California 92665-4134
Telephone: (714) 974-5560 Fax: (714) 921-2531

3172712804

ENVIROPLAN INC INDY

668 P02

SEP 18 '92 13:19

" ATTACHMENT 1 "

CEMDAS converts instantaneous pollutant concentrations in ppm to instantaneous concentrations, corrected to n% O₂ dry basis, in ppm(cor) by the following equations. These equations are based on the 40 CFR Pt. 60, App. A, Meth. 20, 7, Equation 20-5, 20-1, 20-3 and 20-2 (7-1-90 edition) respectively.

Equation 34

$$\text{POLLUTANT CONCENTRATION in ppm(cor)} = \frac{\text{POLLUTANT CONCENTRATION (PPM) WET} \times X_{\text{CO}_2} (\%) }{\text{CO}_2 \text{ CONCENTRATION } (\%) \text{ WET}}$$

where the dry concentrations are replaced by wet concentrations. The two moisture corrections (Equation 20-1) cancel each other out. The X_{CO_2} is the correction factor for correcting data to n percent oxygen and calculated by Equation 35.

Equation 35

$$X_{\text{CO}_2} \text{ in percent} = \frac{20.9 - n}{F_0}$$

where F_0 is calculated by Equation 36.

where $n = \text{dry } \% \text{ O}_2 \text{ base}$
(i.e. 7% O₂ dry)

3172712804

ENVIROPLAN INC INDY

668 P03

SEP 18 '92 13:20

Equation 36

$$F_o = 0.209 \times \frac{F_d}{F_c}$$

where F_d and F_c are respectively the calculated F_d and F_c Factors and 0.209 is the fraction of the air that is oxygen.

Marc Bruner ext. 4607

From: Mary Jean Yon TAL 850/488-0300 [Mary.Jean.Yon@dep.state.fl.us]
Sent: Tuesday, September 28, 1999 8:36 AM
To: Marc Bruner ext. 4607
Cc: 'Terri Long (E-mail)'; Michael Hewett TAL; Chris McGuire TAL
Subject: Re: Subpart WWW landfill gas regs and Class III landfills

Marc:

Sorry to take so long getting back to you. Chris and I discussed your Class III/Landfill Gas question as we drove to Orlando last week. And the answer is...

We in Solid Waste do not consider Class III landfills to be affected by the Federal requirements for either the Clean Air Act or Subtitle D. Why, you ask? Because Class III's are defined as landfills that receive only those wastes not expected to produce a leachate which poses a threat to public health or the environment and they are specifically prohibited from accepting putrescible household waste. This is not to imply that Class III's run amok and have no regs governing them. Chapter 62-701 still rules but the Federal rules don't. Hopefully Mike Hewett will agree!

M.J.

Marc Bruner ext. 4607

From: Venkata Panchakarla TAL 850/488-0114
[Venkata.Panchakarla@dep.state.fl.us]
Sent: Tuesday, September 28, 1999 11:01 AM
To: Marc Bruner ext. 4607
Cc: Michael Hewett TAL; Terri Long WPB; Mary Jean Yon TAL
Subject: "Subpart WWW landfill regs and Class III landfills"

Dear Marc:

Hi How are you?

Mike forwrded me your mail and requested me to answer your questions.

Here is my two cents worth.

If you have any further questions, please feel free to contact me.

Warm regards,

Venkata :)

=====

>Mary Jean and Mike,

>

>This email message is in follow-up to my call to Mary Jean yesterday, trying

>to make my message clearer, for I fear that I didn't explain it well. This

>involves the interaction (or lack thereof) between Florida's landfill

>classification system and EPA's landfill gas rules.

>

>The question in its most simple form is this: Do landfills that meet the

>waste acceptance and operational criteria for Class III landfills in 62-701,

>constitute municipal solid waste landfills according to the definition of 40

>CFR 60.751, and are they subject to the Federal Subpart WWW landfill gas

>emissions control regulations? The Federal regulations have been adopted by

>reference through 62-204.800. This question has come up through our LFG

>system operations staff who have asked whether they have to comply with the

>WWW requirements at the Class III landfill.

>

The answer in its most simple form is this:

If a landfill is permitted as a Class III landfill, it is not subject to the
Landfill Rule (40 CFR 60 subparts Cc and WWW).

>Several other definitions or terms may come into play. The first is the

>definition of Household Waste in 40 CFR 60.751, which is the same as 62-701.

> Do Class III landfills accept what would meet this definition of Household

>Waste?

>

A Class III landfill shall not accept putrescible household waste.

>The other term of concern is what constitutes "contiguous geographical

>space" as used in the Federal definition of MSW landfill. Our Class I and

>Class III landfills are on the same property, but are physically separated at

>this point, although they will abut one another eventually.

>

Are these Class I and Class III cells of a landfill or are these Class I and

Class III landfills individually permitted as such?

A landfill is considered a single landfill, if the cells are contiguous and
under common ownership or control, even if a road or golf course seperates the
cells.

>I decided to send this message to both of you since it overlaps both the solid
>waste and air aspects of our facility, and provided a copy to Terri Long at
>the Southeast District Office since she's the one tracking compliance at our
>facility.

>

>I hope you can assist me in clarifying this question. Thanks for your help.

>

>Marc Bruner

=====

Marc Bruner ext. 4607

From: Venkata Panchakarla TAL 850/488-0114
[Venkata.Panchakarla@dep.state.fl.us]
Sent: Tuesday, September 28, 1999 11:27 AM
To: Marc Bruner ext. 4607
Cc: Michael Hewett TAL; Terri Long WPB; Mary Jean Yon TAL
Subject: Re: FWD: Re: Subpart WWW landfill gas regs and Class III landfills

Dear Marc:

Hi, hope you have received my earlier reply. As explained in that and as stated below by Mary Jean, if a landfill is permitted as Class III landfill, it does not come under the purview of the Landfill Rule (40 CFR 60, Cc & WWW) since Class III landfills are not allowed to accept putrescible household waste.

Hope this helps to clarify the matter. If you have any further questions regarding this issue, please do not hesitate to contact me. Thank you.

Warm regards,
Venkata:)

>Marc:

> Sorry to take so long getting back to you. Chris and I discussed your Class
>III/Landfill Gas question as we drove to Orlando last week. And the answer

>is...

>

> We in Solid Waste do not consider Class III landfills to be affected by the
>Federal requirements for either the Clean Air Act or Subtitle D. Why, you ask?

>Because Class III's are defined as landfills that receive only those wastes
not

>expected to produce a leachate which poses a threat to public health or the
>environment and they are specifically prohibited from accepting putrescible
>household waste. This is not to imply that Class III's run amok and have no
>regs governing them. Chapter 62-701 still rules but the Federal rules don't.

>Hopefully Mike Hewett will agree!

>

M.J.

Marc Bruner ext. 4607

From: Marc Bruner ext. 4607
Sent: Wednesday, September 22, 1999 4:03 PM
To: 'Mary Jean Yon (E-mail)'; 'Mike Hewett (E-mail)'
Cc: 'Terri Long (E-mail)'
Subject: Subpart WWW landfill gas regs and Class III landfills

Mary Jean and Mike,

This email message is in follow-up to my call to Mary Jean yesterday, trying to make my message clearer, for I fear that I didn't explain it well. This involves the interaction (or lack thereof) between Florida's landfill classification system and EPA's landfill gas rules.

The question in its most simple form is this: Do landfills that meet the waste acceptance and operational criteria for Class III landfills in 62-701, constitute municipal solid waste landfills according to the definition of 40 CFR 60.751, and are they subject to the Federal Subpart WWW landfill gas emissions control regulations? The Federal regulations have been adopted by reference through 62-204.800. This question has come up through our LFG system operations staff who have asked whether they have to comply with the WWW requirements at the Class III landfill.

Several other definitions or terms may come into play. The first is the definition of Household Waste in 40 CFR 60.751, which is the same as 62-701. Do Class III landfills accept what would meet this definition of Household Waste? The other term of concern is what constitutes "contiguous geographical space" as used in the Federal definition of MSW landfill. Our Class I and Class III landfills are on the same property, but are physically separated at this point, although they will abut one another eventually.

I decided to send this message to both of you since it overlaps both the solid waste and air aspects of our facility, and provided a copy to Terri Long at the Southeast District Office since she's the one tracking compliance at our facility.

I hope you can assist me in clarifying this question. Thanks for your help.

Marc Bruner

KOFAX

SEPARATOR

APPLICATION

099-0234-001



YOUR PARTNER FOR
SOLID WASTE SOLUTIONS

June 12, 1996

John C. Brown, Jr., PE
Administrator, Title V Section
Division of Air Resources Management
Florida Department of Environmental Protection
Mail Station # 5505
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Re: Title V Permit Application - Solid Waste Authority of Palm Beach County
North County Resource Recovery Facility

Dear Mr. Brown,

Please find the attached four (4) copies of the Application for a Title V Permit for the Solid Waste Authority of Palm Beach County Florida North County Resource Recovery Facility as required by 62-213 FAC. The application is complete, however, the Solid Waste Authority may provide supplemental information (if necessary) at a later date.

If you have any questions or comments, please do not hesitate to call.

Sincerely,

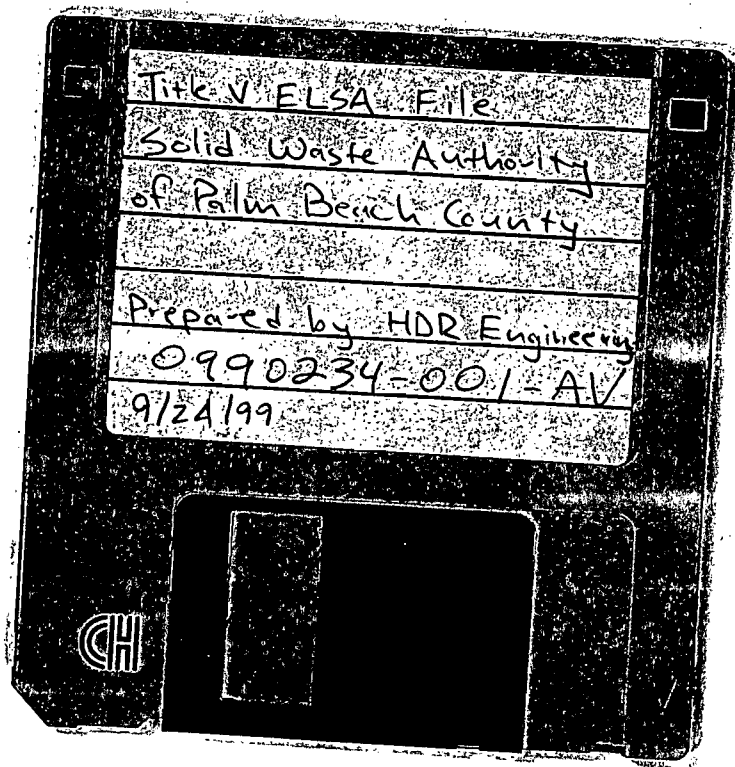
Marc C. Bruner, Ph.D.
Director
Planning & Environmental Programs

RECEIVED

JUN 13 1996

BUREAU OF
AIR REGULATION

cc. J. Kahn, DEP Southeast District (w/o attachments)
J. Lurix, DEP Southeast District (w/o attachments)



Title V ELSA File

Solid Waste Authority
of Palm Beach County

Prepared by HDR Engineering

0990234-001-AV

9/24/99

CH

Owner/Authorized Representative or Responsible Official

1. Name and Title of Owner/Authorized Representative or Responsible Official :

Name : Donald Lockhart
Title : Executive Director

2. Owner or Authorized Representative or Responsible Official Mailing Address :

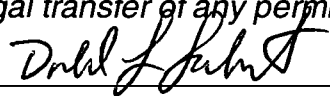
Organization/Firm : SWA of Palm Beach County
Street Address : 7501 North Jog Road
City : West Palm Beach
State : FL Zip Code : 33412

3. Owner/Authorized Representative or Responsible Official Telephone Numbers :

Telephone : (561)640-4000 Fax : (561)683-4067

4. Owner/Authorized Representative or Responsible Official Statement :

I, the undersigned, am the owner or authorized representative of the non-Title V source addressed in this Application for Air Permit or the responsible official, as defined in Rule 62-210.200, F.A.C., of the Title V source addressed in this application, whichever is applicable. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof. I understand that a permit, if granted by the Department, cannot be transferred without authorization from the Department, and I will promptly notify the Department upon sale or legal transfer of any permitted emissions units.*


Signature

Sept 30, 1999
Date

* Attach letter of authorization if not currently on file.

I. Part 2 - 1

DEP Form No. 62-210.900(1) - Form

Effective : 3-21-96

4. Professional Engineer Statement :

I, the undersigned, hereby certify, except as particularly noted herein, that :*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollutant control equipment described in this Application for Air Permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

If the purpose of this application is to obtain a Title V source air operation permit (check here] if so), I further certify that each emissions unit described in this Application for Air Permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance schedule is submitted with this application.

If the purpose of this application is to obtain an air construction permit for one or more proposed new or modified emissions units (check here] if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

If the purpose of this application is to obtain an initial air operation permit or operation permit revision for one or more newly constructed or modified emissions units (check here] if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

David M. Pelham
Signature 9-22-99
(seal) REGISTERED ENGINEER
STATE OF FLORIDA

9-22-99
Date

I. Part 6 - 1

DEP Form No. 62,210,900(1) - Form

Effective : 3-21-96

* Attach any exception to certification statement.

I. Part 6 - 2

DEP Form No. 62-210.900(1) - Form

Effective : 3-21-96

To the best of our knowledge at this time, the emission units operated by the facility are currently in compliance with all applicable requirements.

Compliance Statement

I, the undersigned, am the responsible official as defined in Chapter 62-210.200, F.A.C., of the Title V source for which this report is being submitted. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made and data contained in this report are true, accurate, and complete.



Donald Lockhart

Title: Executive Director Date: Sept 30, 1999

Solid Waste Authority of
Palm Beach County

Attachment 1
FDEP Title V Core List of Requirements

Title V Core List

Effective: 3/25/97

[NOTE:

The Title V Core List is intended to simplify the completion of the "List of Applicable Regulations" that apply facility-wide (see Subsection II.B. of DEP Form No. 62-210.900(1), Application for Air Permit - Long Form). The Title V Core List is a list of rules and regulations to which all Title V Sources are presumptively subject. The Title V Core List may be referenced in its entirety, or with specific exceptions. The Department may periodically update the Title V Core List.

Requirements that apply to emissions units must be identified in Subsection III.B. of DEP Form No. 62-210.900(1), Application for Air Permit - Long Form.

Applicants must identify all "applicable requirements" in order to claim the "permit shield" described at Rule 62-213.460, F.A.C. .]



Federal: (description)

40 CFR 61: National Emission Standards for Hazardous Air Pollutants (NESHAP)
40 CFR 61, Subpart M: National Emission Standard for Asbestos.

40 CFR 82: Protection of Stratospheric Ozone.
40 CFR 82, Subpart B: Servicing of Motor Vehicle Air Conditioners (MVAC).
40 CFR 82, Subpart F: Recycling and Emissions Reduction.

State: (description)

CHAPTER 62-4, F.A.C.: PERMITS, effective 10-16-95

- 62-4.030, F.A.C.: General Prohibition.
- 62-4.040, F.A.C.: Exemptions.
- 62-4.050, F.A.C.: Procedure to Obtain Permits; Application.
- 62-4.060, F.A.C.: Consultation.
- 62-4.070, F.A.C.: Standards for Issuing or Denying Permits; Issuance; Denial.
- 62-4.080, F.A.C.: Modification of Permit Conditions.
- 62-4.090, F.A.C.: Renewals.
- 62-4.100, F.A.C.: Suspension and Revocation.
- 62-4.110, F.A.C.: Financial Responsibility.
- 62-4.120, F.A.C.: Transfer of Permits.
- 62-4.130, F.A.C.: Plant Operation - Problems.
- 62-4.150, F.A.C.: Review.
- 62-4.160, F.A.C.: Permit Conditions.

Title V Core List

Effective: 03/25/96

62-4.210, F.A.C.: Construction Permits.

62-4.220, F.A.C.: Operation Permit for New Sources.

CHAPTER 62-103, F.A.C.: RULES OF ADMINISTRATIVE PROCEDURE,
effective 12-31-95

62-103.150, F.A.C.: Public Notice of Application and Proposed Agency Action.
62-103.155, F.A.C.: Petition for Administrative Hearing; Waiver of Right to
Administrative Proceeding.

**CHAPTER 62-210, F.A.C.: STATIONARY SOURCES - GENERAL
REQUIREMENTS,** effective 03-21-96

62-210.300, F.A.C.: Permits Required.
62-210.300(1), F.A.C.: Air Construction Permits.
62-210.300(2), F.A.C.: Air Operation Permits.
62-210.300(3), F.A.C.: Exemptions.
62-210.300(3)(a), F.A.C.: Full Exemptions.
62-210.300(3)(b), F.A.C.: Temporary Exemption.

62-210.300(5), F.A.C.: Notification of Startup.
62-210.300(6), F.A.C.: Emissions Unit Reclassification.

62-210.350, F.A.C.: Public Notice and Comment.
62-210.350(3), F.A.C.: Additional Public Notice Requirements for Facilities Subject to
Operation Permits for Title V Sources.

62-210.360, F.A.C.: Administrative Permit Corrections.

62-210.370(3), F.A.C.: Annual Operating Report for Air Pollutant Emitting Facility.

62-210.650, F.A.C.: Circumvention.

62-210.900, F.A.C.: Forms and Instructions.
62-210.900(1) Application for Air Permit - Long Form, Form and Instructions.
62-210.900(5) Annual Operating Report for Air Pollutant Emitting Facility, Form and
Instructions.

CHAPTER 62-213, F.A.C.: OPERATION PERMITS FOR MAJOR SOURCES OF AIR POLLUTION, effective 03-20-96

- 62-213.205, F.A.C.: Annual Emissions Fee.
- 62-213.400, F.A.C.: Permits and Permit Revisions Required.
- 62-213.410, F.A.C.: Changes Without Permit Revision.
- 62-213.412, F.A.C.: Immediate Implementation Pending Revision Process.
- 62-213.420, F.A.C.: Permit Applications.
- 62-213.430, F.A.C.: Permit Issuance, Renewal, and Revision.
- 62-213.440, F.A.C.: Permit Content.
- 62-213.460, F.A.C.: Permit Shield.

- 62-213.900, F.A.C.: Forms and Instructions.
- 62-213.900(1) Major Air Pollution Source Annual Emissions Fee Form, Form and Instructions.

CHAPTER 62-256, F.A.C.: OPEN BURNING AND FROST PROTECTION FIRES, effective 11-30-94

CHAPTER 62-257, F.A.C.: ASBESTOS NOTIFICATION AND FEE, effective 03/24/96

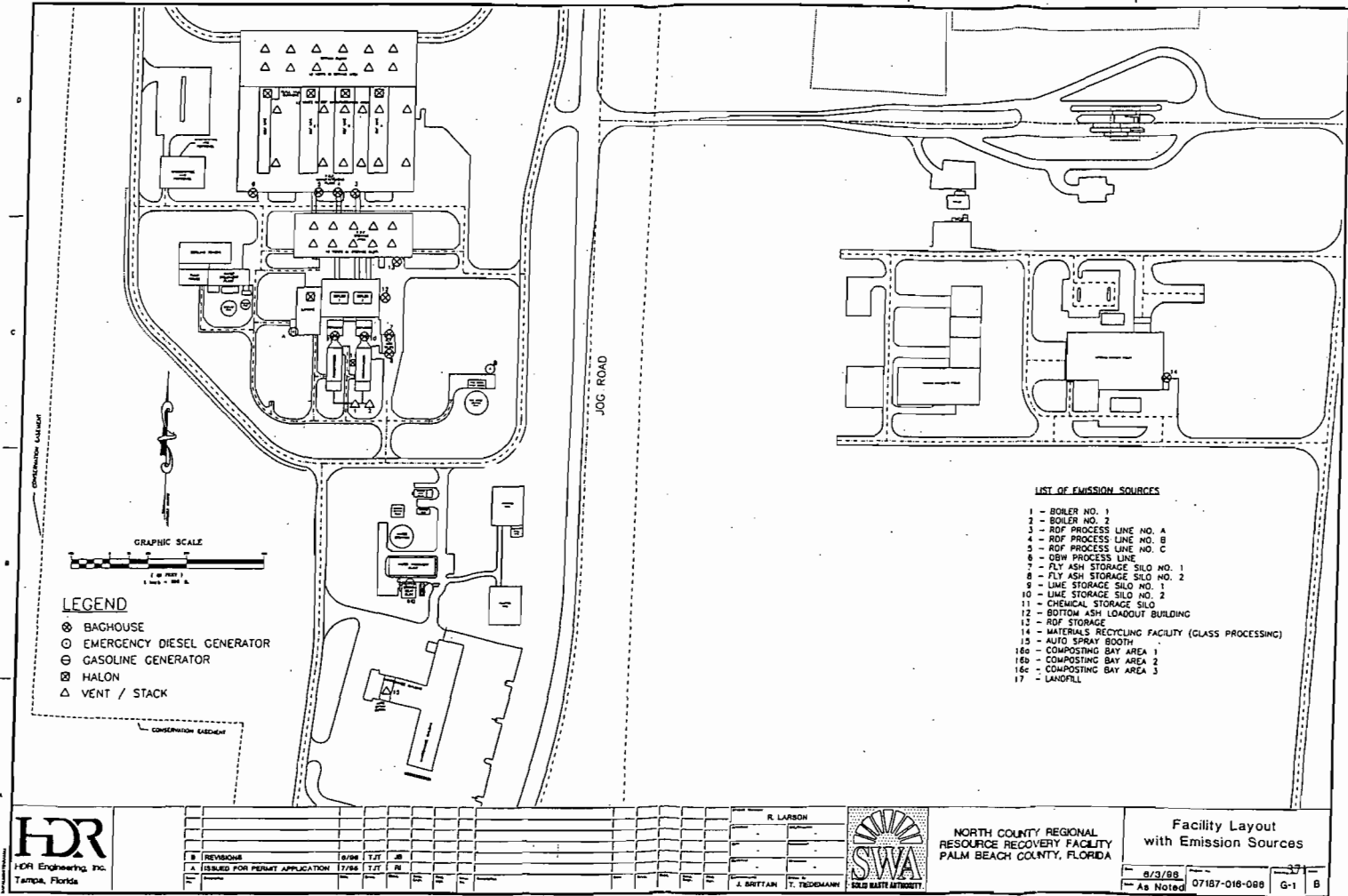
CHAPTER 62-281, F.A.C.: MOTOR VEHICLE AIR CONDITIONING REFRIGERANT RECOVERY AND RECYCLING, effective 03-07-96

CHAPTER 62-296, F.A.C.: STATIONARY SOURCES - EMISSION STANDARDS, effective 03-13-96

- 62-296.320(2), F.A.C.: Objectionable Odor Prohibited.
- 62-296.320(3), F.A.C.: Industrial, Commercial, and Municipal Open Burning Prohibited.
- 62-296.320(4)(c), F.A.C.: Unconfined Emissions of Particulate Matter.

**Attachment 2
Facility Location**

**Attachment 3
Facility Plot Plan**



FDR
FDR Engineering, Inc.
Tampa, Florida

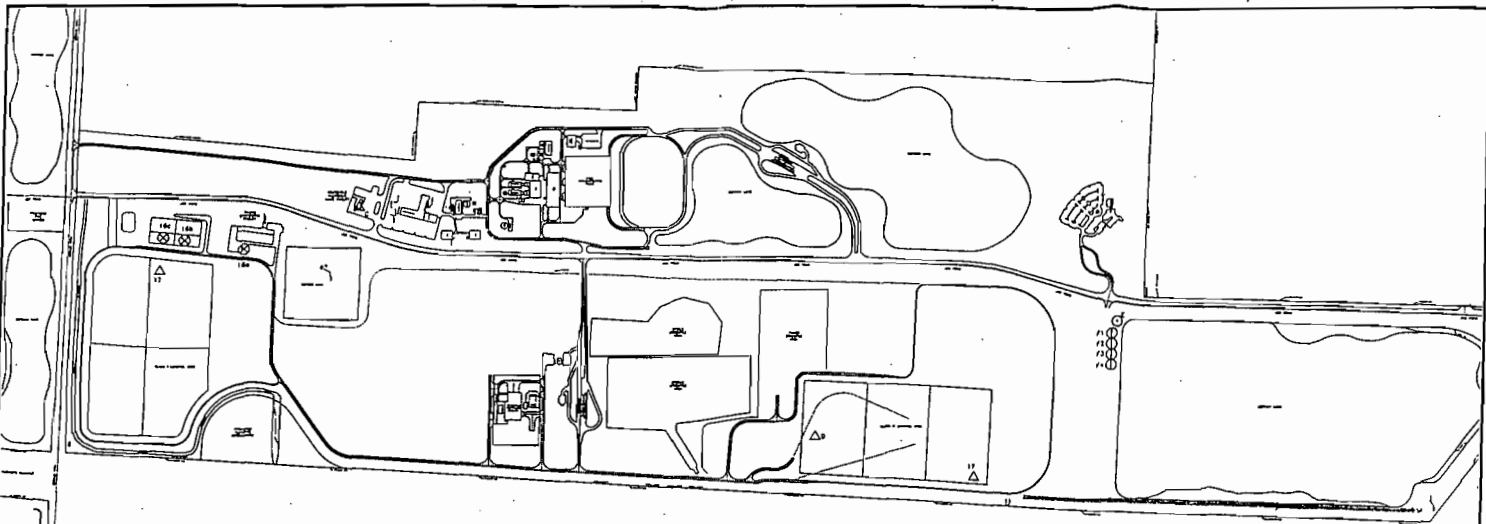
REVISIONS	DATE	BY	APP
B	8/98	TJT	JR
A	ISSUED FOR PERMIT APPLICATION	7/84	TJT

R. LARSON
A. BRETTAN T. FREDMANN
SOLID WASTE AUTHORITY



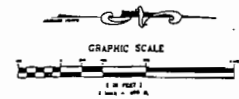
NORTH COUNTY REGIONAL
RESOURCE RECOVERY FACILITY
PALM BEACH COUNTY, FLORIDA

Facility Layout
with Emission Sources
9/3/88
As Noted 07187-018-088 G-1 B



LIST OF EMISSION SOURCES

- 1 - BOILER NO. 1
- 2 - BOILER NO. 2
- 3 - RDF PROCESS LINE NO. A
- 4 - RDF PROCESS LINE NO. B
- 5 - RDF PROCESS LINE NO. C
- 6 - OBW PROCESS LINE
- 7 - FLY ASH STORAGE SILO NO. 1
- 8 - FLY ASH STORAGE SILO NO. 2
- 9 - LIME STORAGE SILO NO. 1
- 10 - LIME STORAGE SILO NO. 2
- 11 - CHEMICAL STORAGE SILO
- 12 - BOTTOM ASH LOADOUT BUILDING
- 13 - RDF STORAGE
- 14 - MATERIALS RECYCLING FACILITY (GLASS PROCESSING)
- 15 - AUTO SPRAY BOOTH
- 16a - COMPOSTING BAY AREA 1
- 16b - COMPOSTING BAY AREA 2
- 16c - COMPOSTING BAY AREA 3
- 17 - LANDFILL



LEGEND

- ⊗ BAGHOUSE
- ⊙ EMERGENCY DIESEL GENERATOR
- ⊕ GASOLINE GENERATOR
- ⊗ HALON
- △ VENT / STACK

HDR
HDR Engineering, Inc.
Tampa, Florida

NO.	REVISIONS	DATE	BY	CHKD.	APP'D.
B	REVISIONS	6/98	TJT	JL	
A	ISSUED FOR PERMIT APPLICATION	9/94	TJT	RB	

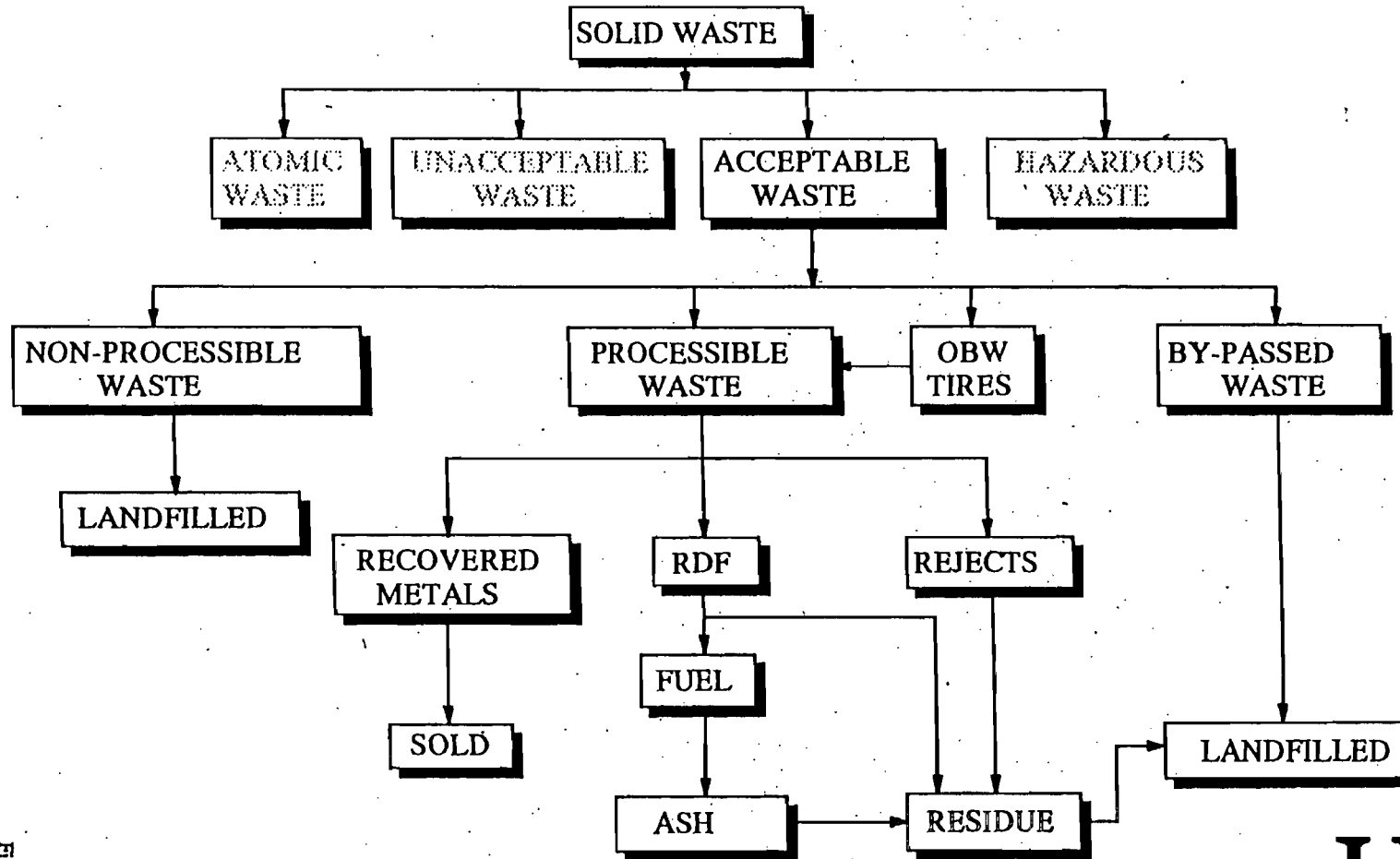
R. LARSON
A. BRITTON
T. TREDMANN
S.W.A. SOLID WASTE AUTHORITY

SWA
NORTH COUNTY REGIONAL
RESOURCE RECOVERY FACILITY
PALM BEACH COUNTY, FLORIDA

Facility Layout
with Emission Sources
4/3/98
As Noted
07187-018-098
G-2 B

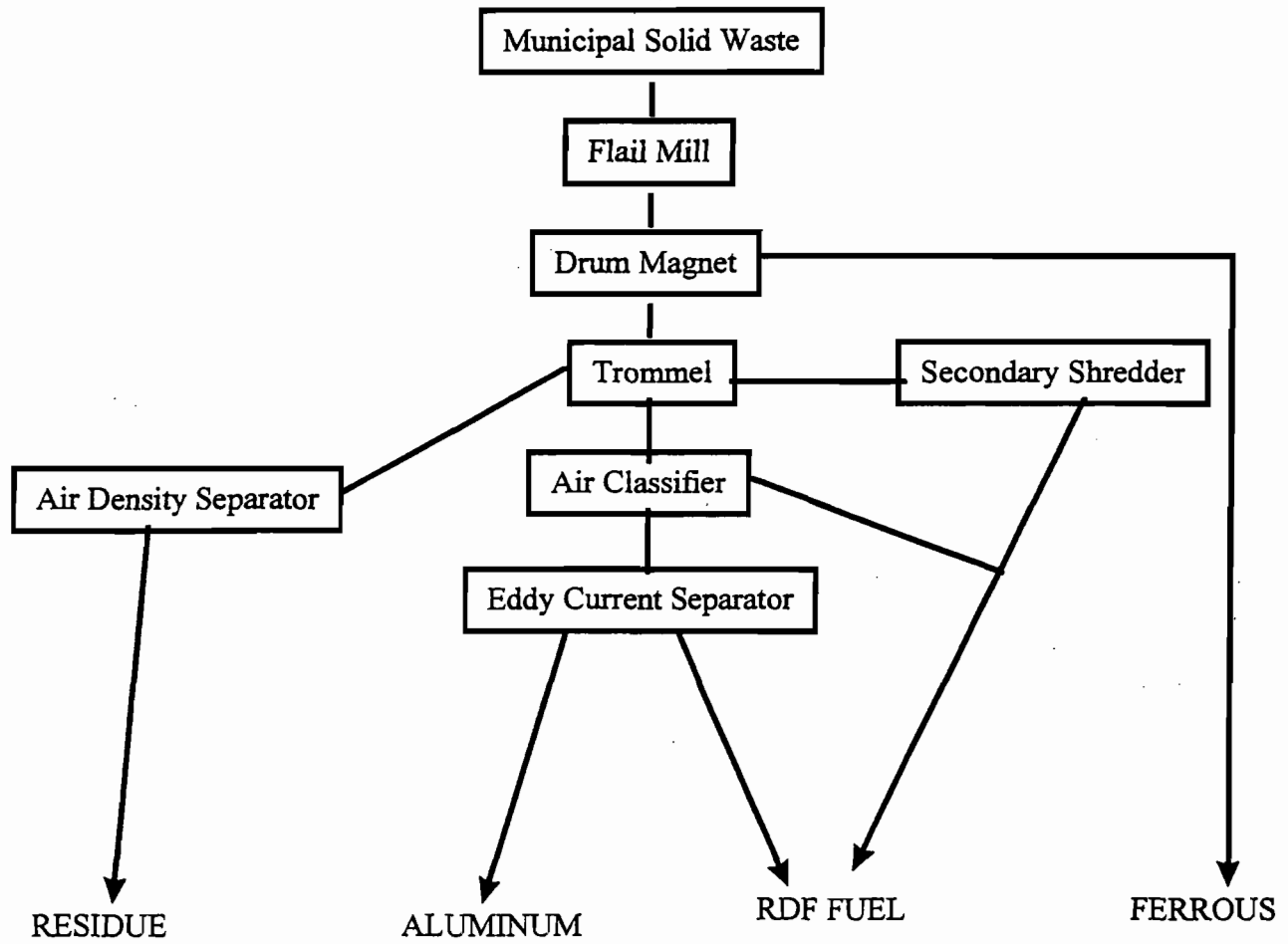
Attachment 4
Process Flow Diagrams

Figure 3-1
SOLID WASTE FLOW DIAGRAM
 BASED ON CONTRACT DEFINITIONS
 NCRRRF



NOTE: Atomic Waste, Unacceptable Waste and Hazardous Waste are not accepted at the NCRRRF.

RDF Process Flow Diagram



Attachment 5
Precautions for Unconfined Particulate Matter

The facility performs the following procedures to minimize the emissions of unconfined particulate matter.

- e. Landfill roads are sprayed with a water truck
- f. Ash is quenched with water prior to landfilling
- g. Material transfer trucks are tarped

Items e, f, g. : proposed by the applicant

Attachment 6
Fugitive Emissions Identification

Fugitive emissions of nonmethane organic compounds (a subset of which are VOCs) are expected from the Class I and Class III landfills. The fugitive emissions are the portions of gas produced in the landfill that are not collected by the gas collection system installed on each of the landfills. These emissions are included in emission unit information sections 9 and 10.

Fugitive emissions of particulate matter resulting from the operation of truck traffic at the facility are discussed in emission unit information section 11.

The facility proposes to classify the following activities/sources as insignificant for Title V permitting purposes.

Source Listed in Original (May 6, 1996) Title V Permit Application

<u>Location</u>	<u>Activity</u>
Resource Recovery Facility	Emergency diesel generator Diesel fire water pump
Utilities Facility	Emergency diesel generator
Household hazardous waste	Laboratory hood
Trash processing, wood waste	Grinder, fugitive dust from
Mulch processing, yard waste	Grinder, fugitive dust from
Tire cutting operations	Diesel generator for segmentizer

Additional Sources Identified as Insignificant

- Two ash storage silos, four lime storage silos, and an ash treatment chemical storage silo (included as emission units 7-11 in May 6, 1996 document). Each of the silos is equipped with a vent filter, which is considered to be an integral part of the equipment and, therefore, not pollution control equipment. The maximum volumetric flow rate from each of the silos is less than 1500 cfm. Assuming full time operation (although the silos only vent to the atmosphere during filling operations) and a filter outlet loading of 0.02 gr/acf (based on experience at other similar facilities), the annual potential to emit for each silo is at most:

$$1500 \text{ cfm} * 0.02 \text{ gr/acf} * 60 \text{ min/hr} * \text{lb}/7000 \text{ gr} * 8760 \text{ hr/yr} * \text{ton}/2000 \text{ lb} \\ = 1.13 \text{ ton PM/yr}$$

Because the potential emissions are less than the 5.0 ton/yr significance threshold, each of the silos is considered to be an insignificant source of particulate matter.

- Bottom ash loadout building (included as emission unit 12 in May 6, 1996 document). The bottom ash is quenched with water prior to loadout to the trucks. Because the ash is wet, little or no emissions of particulate matter are expected.
- Ferrous processing facility. Operational information shows potential emissions are less than significance threshold.
- Materials recycling facility (included as emission unit 14 in May 6, 1996 document). This activity no longer occurs.
- Composting facility (included as emission units 16a-16c in May 6, 1996 document). Revised emissions information showed potential emissions are less than significance threshold. This information is available upon request.

Attachment 8
List of Equipment/Activities
Regulated Under Title VI

Appliance Inventory

Solid Waste Authority

Administration Bldg.	7501 North Jog Road	West Palm Beach, FL 33412	Phone: (561) 640-4000						
Appliance	Location	Model	Serial Number	V/Ph/Hz	Charge lbs	Ref. Type	Lubricant	Capacity	Upgrades
Chiller - 01	North East Chiller	CGACD104RANKK60F	J89F71624	460 / /	83.0	HCFC-22	Unknown	200 Tons	NO
Chiller - 02	South West Chiller	CGACD104RANKK60F	J89F71623		83.0	HCFC-22	Unknown	200 Tons	NO

Attachment 9
Compliance Report and Certification

To the best of our knowledge at this time, the emission units operated by the facility are currently in compliance with all applicable requirements.

Compliance Statement

I, the undersigned, am the responsible official as defined in Chapter 62-210.200, F.A.C., of the Title V source for which this report is being submitted. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made and data contained in this report are true, accurate, and complete.

Donald Lockhart

Title: Executive Director Date: _____

Attachment 10
Landfill Gas Emissions Information

NCRRF Emissions Calculations
 Title V Permit Application
 Emissions information obtained from Landfill Gas Emissions Model, Version 2.01
 Maximum emissions occur in the year 2024.

Class I Landfill

Pollutant	Uncontrolled		Fugitive Plus Controlled*		Less than 1000 lb/yr?	Controlled Flare Emissions		Fugitive Emissions		
	Mg/yr	ton/yr	ton/yr	lb/yr		lb/hr**	ton/yr	lb/hr**	ton/yr	lb/hr**
NMOC	151.7	167	44.3	88,627	10.1	NA	2.51	0.573	41.8	9.54
1,1,1-Trichloroethane	0.1894	0.21	0.06	111		YES				
1,1,2-Trichloroethane	0.03946	0.04	0.01	23		YES				
1,1,2,2-Tetrachloroethane	0.5510	0.61	0.16	322		YES				
1,1-Dichloroethane	0.6878	0.76	0.20	402		YES				
1,1-Dichloroethene	0.05734	0.06	0.02	33		YES				
1,2-Dichloroethane	0.1200	0.13	0.04	70		YES				
1,2-Dichloropropane	0.06015	0.07	0.02	35		YES				
Acrylonitrile	0.9933	1.09	0.29	580		YES				
Benzene	0.4413	0.49	0.13	258		YES				
Carbon Disulfide	0.1306	0.14	0.04	76		YES				
Carbon Tetrachloride	0.001820	0.00	0.00	1		YES				
Carbonyl Sulfide	0.08705	0.10	0.03	51		YES				
Chlorobenzene	0.08322	0.09	0.02	49		YES				
Chloroethane	0.2385	0.26	0.07	139		YES				
Chloroform	0.008474	0.01	0.00	5		YES				
Chloromethane	0.1807	0.20	0.05	106		YES				
Dichlorobenzene	0.09130	0.10	0.03	53		YES				
Dichloromethane (H128)	3.592	3.96	1.05	2,099	0.240	NO	0.0594	0.0136	0.990	0.226
Ethylbenzene	1.448	1.60	0.42	846		YES				
Ethylene Dibromide	0.0005557	0.00	0.00	0		YES				
Hexane	1.675	1.85	0.49	979		YES				
Mercury	0.0001501	0.00	0.00	0		YES				
Methyl Ethyl Ketone	1.512	1.67	0.44	883		YES				
Methyl Isobutyl Ketone	0.5539	0.61	0.16	324		YES				
Perchloroethylene (H167)	1.829	2.02	0.53	1,069	0.122	NO	0.0302	0.00690	0.504	0.115
Toluene (H169)	10.71	11.8	3.1	6,257	0.714	NO	0.177	0.0404	2.95	0.674
Trichloroethene	1.096	1.21	0.32	640		YES				
Vinyl Chloride	1.357	1.50	0.40	793		YES				
Xylene (H186)	3.799	4.19	1.11	2,219	0.253	NO	0.0628	0.0143	1.05	0.239
Total HAPS (HAPS)		34.8	9.2	18,423	1.33		0.521	0.119	8.69	1.98

* Calculated based on assumed 75% collection and 98% destruction of collected gas.

** Calculated based on 8760 hours per year.

NOTE: Bold denotes that the emission unit (fugitive plus controlled) pollutant emissions are greater than the Title V inclusion thresholds and so were included in the permit application. Total HAP threshold is 2500 lb/yr.

NCRRF Emissions Calculations
 Title V Permit Application
 Emissions information obtained from Landfill Gas Emissions Model, Version 2.01
 Maximum emissions occur in the year 2024.

Class I Landfill

Maximum methane generation rate = 35,550,000 m³/yr

Obtained from Landfill Gas Emissions Model, version 2.01

Potential SO₂ Sample Calculation

Volume emission rate of sulfur (equation 3 from AP-42, Chapter 2.4, Supplement E) is:

$$Q_S = 1.82 Q_{CH_4} \cdot C_g / (1 \times 10^6)$$

where:

Q_S = Emission rate of sulfur, m³/yr

Q_{CH₄} = Methane generation rate, m³/yr (see above)

C_S = Concentration of sulfur compounds in landfill gas, m³/yr (46.9 ppm, from AP-42, Chapter 2.4, Supplement E)

1.82 = Multiplication factor (assumes landfill gas is 55% methane)

$$Q_S = 1.82 \cdot 35,550,000 \cdot 46.9 / 1,000,000 = 3034 \text{ m}^3/\text{yr}$$

Uncontrolled mass emission rate of sulfur is (equation 4 from AP-42, Chapter 2.4, Supplement E) is:

$$UM_S = Q_S \cdot MW_S \cdot 1 \text{ atm} / [8.205 \times 10^{-5} \text{ m}^3 \cdot \text{atm} / \text{gmol} \cdot \text{K} \cdot 1000 \text{ g/kg} \cdot (273 + T \text{ } ^\circ\text{K})]$$

where:

UM_S = Uncontrolled mass emission rate of sulfur, kg/yr

MW_S = Molecular weight of sulfur, m³/yr (32 g/g-mol)

T = Temperature of landfill gas, °C (assumed as 25 °C, per AP-42, Chapter 2.4, Supplement E)

$$UM_S = 3034 \cdot 32 / [8.205 \times 10^{-5} \cdot 1000 \cdot (273 + 25)] = 3971 \text{ kg}/\text{yr}$$

Controlled mass emission rate of sulfur dioxide is (equation 7 from AP-42, Chapter 2.4, Supplement E) is:

$$CM_{SO_2} = UM_S \cdot \eta_{col} / 100 \cdot 2.0 \cdot 2.2046 \text{ lb/kg} \cdot \text{ton}/2000 \text{ lb}$$

where:

CM_{SO₂} = Controlled mass emission rate of sulfur dioxide, ton/yr

η_{col} = Collection efficiency of system (assumed 75%, per AP-42, Chapter 2.4, Supplement E)

2.0 = Ratio of the molecular weight of SO₂ to the molecular weight of S. (Note - the ratio for HCl to Cl is 1.03.)

$$CM_S = 3971 \cdot 75 / 100 \cdot 2.0 \cdot 2.2046 / 2000 = 6.57 \text{ ton}_{SO_2}/\text{yr}$$

Compound	Molecular Weight (of constituent atom)	Median Conc (ppm)	Volume Emissions (constituent atom) (m ³ /yr)	Uncontrolled Emissions (constituent atom) (kg/yr)	Controlled Emissions (compound) (ton/yr)	Controlled Emissions (compound) (lb/hr)
Sulfur dioxide	32.00	46.9	3034	3971	6.57	1.50
Hydrogen chloride	34.45	42.0	2717	3829	3.26	0.74

387

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Refuse In Place (Mg)	Methane Emission Rate	
		(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	6.201E+02	9.295E+05
1992	4.648E+05	1.216E+03	1.823E+06
1993	7.083E+05	1.818E+03	2.725E+06
1994	9.049E+05	2.271E+03	3.405E+06
1995	1.056E+06	2.587E+03	3.878E+06
1996	1.212E+06	2.901E+03	4.348E+06
1997	1.394E+06	3.274E+03	4.907E+06
1998	1.539E+06	3.532E+03	5.294E+06
1999	1.717E+06	3.867E+03	5.796E+06
2000	1.917E+06	4.249E+03	6.369E+06
2001	2.140E+06	4.677E+03	7.011E+06
2002	2.385E+06	5.148E+03	7.717E+06
2003	2.650E+06	5.653E+03	8.474E+06
2004	2.919E+06	6.151E+03	9.219E+06
2005	3.193E+06	6.640E+03	9.953E+06
2006	3.472E+06	7.123E+03	1.068E+07
2007	3.754E+06	7.598E+03	1.139E+07
2008	4.041E+06	8.066E+03	1.209E+07
2009	4.333E+06	8.527E+03	1.278E+07
2010	4.628E+06	8.982E+03	1.346E+07
2011	4.928E+06	9.431E+03	1.414E+07
2012	5.233E+06	9.874E+03	1.480E+07
2013	5.542E+06	1.031E+04	1.545E+07
2014	5.855E+06	1.074E+04	1.610E+07
2015	6.173E+06	1.117E+04	1.674E+07
2016	6.495E+06	1.159E+04	1.737E+07
2017	6.822E+06	1.201E+04	1.800E+07
2018	7.153E+06	1.242E+04	1.862E+07
2019	7.488E+06	1.283E+04	1.923E+07
2020	7.828E+06	1.323E+04	1.984E+07
2021	8.173E+06	1.363E+04	2.044E+07
2022	8.517E+06	1.402E+04	2.101E+07
2023	8.862E+06	1.439E+04	2.157E+07
2024	9.206E+06	1.474E+04	2.210E+07
2025	9.206E+06	1.417E+04	2.123E+07

Source: D:\LANDFI~2.01\SWAC1.PRM

Model Parameters

Lo : 100.00 m³ / Mg
k : 0.0400 1/yr
NMOC : 595.00 ppmv
Methane : 50.0000 % volume
Carbon Dioxide : 50.0000 % volume

Landfill Parameters

Landfill type : No Co-Disposal
Year Opened : 1990 Current Year : 2027 Closure Year: 2027
Capacity : 14699900 Mg
Average Acceptance Rate Required from
Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Refuse In Place (Mg)	NMOC Emission Rate	
		(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	5.456E+00	1.522E+03
1992	6.396E+05	1.070E+01	2.985E+03
1993	9.302E+05	1.524E+01	4.251E+03
1994	1.236E+06	1.985E+01	5.538E+03
1995	1.624E+06	2.570E+01	7.169E+03
1996	1.961E+06	3.044E+01	8.493E+03
1997	2.302E+06	3.507E+01	9.783E+03
1998	2.664E+06	3.987E+01	1.112E+04
1999	3.022E+06	4.441E+01	1.239E+04
2000	3.376E+06	4.871E+01	1.359E+04
2001	3.725E+06	5.276E+01	1.472E+04
2002	4.070E+06	5.658E+01	1.578E+04
2003	4.413E+06	6.021E+01	1.680E+04
2004	4.770E+06	6.393E+01	1.784E+04
2005	5.140E+06	6.775E+01	1.890E+04
2006	5.525E+06	7.166E+01	1.999E+04
2007	5.923E+06	7.564E+01	2.110E+04
2008	6.334E+06	7.969E+01	2.223E+04
2009	6.759E+06	8.382E+01	2.338E+04
2010	7.198E+06	8.801E+01	2.455E+04
2011	7.650E+06	9.228E+01	2.574E+04
2012	8.116E+06	9.661E+01	2.695E+04
2013	8.596E+06	1.010E+02	2.818E+04
2014	9.089E+06	1.055E+02	2.942E+04
2015	9.596E+06	1.100E+02	3.068E+04
2016	1.012E+07	1.146E+02	3.196E+04
2017	1.065E+07	1.192E+02	3.325E+04
2018	1.120E+07	1.239E+02	3.456E+04
2019	1.176E+07	1.286E+02	3.588E+04
2020	1.234E+07	1.334E+02	3.721E+04
2021	1.293E+07	1.382E+02	3.856E+04
2022	1.352E+07	1.429E+02	3.986E+04
2023	1.411E+07	1.474E+02	4.111E+04
2024	1.470E+07	1.517E+02	4.231E+04
2025	1.470E+07	1.457E+02	4.065E+04

Source: D:\LANDFI~2.01\SWAC1.PRM

Model Parameters

Lo : 100.00 m³ / Mg
k : 0.0400 1/yr
NMOC : 595.00 ppmv
Methane : 50.0000 % volume
Carbon Dioxide : 50.0000 % volume
Air Pollutant : 1,1,1-Trichloroethane (HAP)
Molecular Wt = 133.41 Concentration = 0.480000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
Year Opened : 1990 Current Year : 2027 Closure Year: 2027
Capacity : 14699900 Mg
Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	1,1,1-Trichloroethane (HAP) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	6.814E-03	1.228E+00
1992	6.396E+05	1.336E-02	2.408E+00
1993	9.302E+05	1.903E-02	3.429E+00
1994	1.236E+06	2.479E-02	4.468E+00
1995	1.624E+06	3.209E-02	5.784E+00
1996	1.961E+06	3.802E-02	6.852E+00
1997	2.302E+06	4.379E-02	7.893E+00
1998	2.664E+06	4.980E-02	8.974E+00
1999	3.022E+06	5.547E-02	9.996E+00
2000	3.376E+06	6.083E-02	1.096E+01
2001	3.725E+06	6.589E-02	1.187E+01
2002	4.070E+06	7.065E-02	1.273E+01
2003	4.413E+06	7.519E-02	1.355E+01
2004	4.770E+06	7.984E-02	1.439E+01
2005	5.140E+06	8.461E-02	1.525E+01
2006	5.525E+06	8.949E-02	1.613E+01
2007	5.923E+06	9.446E-02	1.702E+01
2008	6.334E+06	9.952E-02	1.794E+01
2009	6.759E+06	1.047E-01	1.886E+01
2010	7.198E+06	1.099E-01	1.981E+01
2011	7.650E+06	1.152E-01	2.077E+01
2012	8.116E+06	1.207E-01	2.174E+01
2013	8.596E+06	1.261E-01	2.273E+01
2014	9.089E+06	1.317E-01	2.373E+01
2015	9.596E+06	1.373E-01	2.475E+01
2016	1.012E+07	1.431E-01	2.578E+01
2017	1.065E+07	1.488E-01	2.682E+01
2018	1.120E+07	1.547E-01	2.788E+01
2019	1.176E+07	1.606E-01	2.894E+01
2020	1.234E+07	1.666E-01	3.002E+01
2021	1.293E+07	1.726E-01	3.111E+01
2022	1.352E+07	1.784E-01	3.216E+01
2023	1.411E+07	1.840E-01	3.316E+01
2024	1.470E+07	1.894E-01	3.413E+01
2025	1.470E+07	1.820E-01	3.279E+01

Source: D:\LANDFI-2.01\SWACI.PRM

Model Parameters

Lo : 100.00 m³ / Mg
k : 0.0400 1/yr
NMOC : 595.00 ppmv
Methane : 50.0000 % volume
Carbon Dioxide : 50.0000 % volume
Air Pollutant : 1,1,2-Trichloroethane (HAP/VOC)
Molecular Wt = 133.41 Concentration = 0.100000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
Year Opened : 1990 Current Year : 2027 Closure Year: 2027
Capacity : 14699900 Mg
Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	1,1,2-Trichloroethane (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	1.420E-03	2.558E-01
1992	6.396E+05	2.783E-03	5.016E-01
1993	9.302E+05	3.965E-03	7.145E-01
1994	1.236E+06	5.165E-03	9.308E-01
1995	1.624E+06	6.686E-03	1.205E+00
1996	1.961E+06	7.921E-03	1.427E+00
1997	2.302E+06	9.124E-03	1.644E+00
1998	2.664E+06	1.037E-02	1.870E+00
1999	3.022E+06	1.156E-02	2.082E+00
2000	3.376E+06	1.267E-02	2.284E+00
2001	3.725E+06	1.373E-02	2.474E+00
2002	4.070E+06	1.472E-02	2.653E+00
2003	4.413E+06	1.566E-02	2.823E+00
2004	4.770E+06	1.663E-02	2.998E+00
2005	5.140E+06	1.763E-02	3.177E+00
2006	5.525E+06	1.864E-02	3.360E+00
2007	5.923E+06	1.968E-02	3.547E+00
2008	6.334E+06	2.073E-02	3.737E+00
2009	6.759E+06	2.181E-02	3.930E+00
2010	7.198E+06	2.290E-02	4.127E+00
2011	7.650E+06	2.401E-02	4.327E+00
2012	8.116E+06	2.514E-02	4.530E+00
2013	8.596E+06	2.628E-02	4.736E+00
2014	9.089E+06	2.744E-02	4.945E+00
2015	9.596E+06	2.861E-02	5.156E+00
2016	1.012E+07	2.980E-02	5.371E+00
2017	1.065E+07	3.101E-02	5.588E+00
2018	1.120E+07	3.223E-02	5.808E+00
2019	1.176E+07	3.346E-02	6.030E+00
2020	1.234E+07	3.470E-02	6.254E+00
2021	1.293E+07	3.596E-02	6.481E+00
2022	1.352E+07	3.718E-02	6.700E+00
2023	1.411E+07	3.834E-02	6.909E+00
2024	1.470E+07	3.946E-02	7.111E+00
2025	1.470E+07	3.791E-02	6.832E+00

Source: D:\LANDFI~2.01\SWAC1.PRM

Model Parameters

Lo : 100.00 m³ / Mg
k : 0.0400 l/yr
NMOC : 595.00 ppmv
Methane : 50.0000 % volume
Carbon Dioxide : 50.0000 % volume
Air Pollutant : 1,1,2,2-Tetrachloroethane (HAP/VOC)
Molecular Wt = 167.85 Concentration = 1.110000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
Year Opened : 1990 Current Year : 2027 Closure Year: 2027
Capacity : 14699900 Mg
Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	1,1,2,2-Tetrachloroethane (HAP/VOC) Emission Rat		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	1.982E-02	2.840E+00
1992	6.396E+05	3.887E-02	5.568E+00
1993	9.302E+05	5.537E-02	7.931E+00
1994	1.236E+06	7.213E-02	1.033E+01
1995	1.624E+06	9.337E-02	1.337E+01
1996	1.961E+06	1.106E-01	1.584E+01
1997	2.302E+06	1.274E-01	1.825E+01
1998	2.664E+06	1.449E-01	2.075E+01
1999	3.022E+06	1.614E-01	2.312E+01
2000	3.376E+06	1.770E-01	2.535E+01
2001	3.725E+06	1.917E-01	2.746E+01
2002	4.070E+06	2.056E-01	2.944E+01
2003	4.413E+06	2.188E-01	3.133E+01
2004	4.770E+06	2.323E-01	3.327E+01
2005	5.140E+06	2.462E-01	3.526E+01
2006	5.525E+06	2.604E-01	3.730E+01
2007	5.923E+06	2.748E-01	3.937E+01
2008	6.334E+06	2.896E-01	4.148E+01
2009	6.759E+06	3.045E-01	4.362E+01
2010	7.198E+06	3.198E-01	4.581E+01
2011	7.650E+06	3.353E-01	4.803E+01
2012	8.116E+06	3.510E-01	5.028E+01
2013	8.596E+06	3.670E-01	5.257E+01
2014	9.089E+06	3.832E-01	5.489E+01
2015	9.596E+06	3.996E-01	5.724E+01
2016	1.012E+07	4.162E-01	5.962E+01
2017	1.065E+07	4.331E-01	6.203E+01
2018	1.120E+07	4.501E-01	6.447E+01
2019	1.176E+07	4.673E-01	6.693E+01
2020	1.234E+07	4.847E-01	6.942E+01
2021	1.293E+07	5.023E-01	7.194E+01
2022	1.352E+07	5.192E-01	7.437E+01
2023	1.411E+07	5.354E-01	7.669E+01
2024	1.470E+07	5.510E-01	7.893E+01
2025	1.470E+07	5.294E-01	7.583E+01

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : 1,1-Dichloroethane (HAP/VOC)
 Molecular Wt = 98.96 Concentration = 2.350000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2027 Closure Year: 2027
 Capacity : 14699900 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	1,1-Dichloroethane (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	2.475E-02	6.012E+00
1992	6.396E+05	4.852E-02	1.179E+01
1993	9.302E+05	6.911E-02	1.679E+01
1994	1.236E+06	9.003E-02	2.187E+01
1995	1.624E+06	1.165E-01	2.832E+01
1996	1.961E+06	1.381E-01	3.355E+01
1997	2.302E+06	1.590E-01	3.864E+01
1998	2.664E+06	1.808E-01	4.393E+01
1999	3.022E+06	2.014E-01	4.894E+01
2000	3.376E+06	2.209E-01	5.367E+01
2001	3.725E+06	2.393E-01	5.814E+01
2002	4.070E+06	2.566E-01	6.234E+01
2003	4.413E+06	2.731E-01	6.634E+01
2004	4.770E+06	2.899E-01	7.044E+01
2005	5.140E+06	3.073E-01	7.465E+01
2006	5.525E+06	3.250E-01	7.896E+01
2007	5.923E+06	3.430E-01	8.334E+01
2008	6.334E+06	3.614E-01	8.781E+01
2009	6.759E+06	3.801E-01	9.235E+01
2010	7.198E+06	3.992E-01	9.698E+01
2011	7.650E+06	4.185E-01	1.017E+02
2012	8.116E+06	4.382E-01	1.065E+02
2013	8.596E+06	4.581E-01	1.113E+02
2014	9.089E+06	4.783E-01	1.162E+02
2015	9.596E+06	4.988E-01	1.212E+02
2016	1.012E+07	5.195E-01	1.262E+02
2017	1.065E+07	5.405E-01	1.313E+02
2018	1.120E+07	5.618E-01	1.365E+02
2019	1.176E+07	5.832E-01	1.417E+02
2020	1.234E+07	6.050E-01	1.470E+02
2021	1.293E+07	6.269E-01	1.523E+02
2022	1.352E+07	6.480E-01	1.574E+02
2023	1.411E+07	6.683E-01	1.624E+02
2024	1.470E+07	6.878E-01	1.671E+02
2025	1.470E+07	6.608E-01	1.605E+02

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : 1,1-Dichloroethene (HAP/VOC)
 Molecular Wt = 96.94 Concentration = 0.200000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2027 Closure Year: 2027
 Capacity : 14699900 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	1,1-Dichloroethene (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	2.063E-03	5.116E-01
1992	6.396E+05	4.045E-03	1.003E+00
1993	9.302E+05	5.762E-03	1.429E+00
1994	1.236E+06	7.506E-03	1.862E+00
1995	1.624E+06	9.716E-03	2.410E+00
1996	1.961E+06	1.151E-02	2.855E+00
1997	2.302E+06	1.326E-02	3.289E+00
1998	2.664E+06	1.508E-02	3.739E+00
1999	3.022E+06	1.679E-02	4.165E+00
2000	3.376E+06	1.842E-02	4.567E+00
2001	3.725E+06	1.995E-02	4.948E+00
2002	4.070E+06	2.139E-02	5.305E+00
2003	4.413E+06	2.276E-02	5.646E+00
2004	4.770E+06	2.417E-02	5.995E+00
2005	5.140E+06	2.562E-02	6.353E+00
2006	5.525E+06	2.709E-02	6.720E+00
2007	5.923E+06	2.860E-02	7.093E+00
2008	6.334E+06	3.013E-02	7.473E+00
2009	6.759E+06	3.169E-02	7.860E+00
2010	7.198E+06	3.328E-02	8.253E+00
2011	7.650E+06	3.489E-02	8.654E+00
2012	8.116E+06	3.653E-02	9.060E+00
2013	8.596E+06	3.819E-02	9.472E+00
2014	9.089E+06	3.987E-02	9.889E+00
2015	9.596E+06	4.158E-02	1.031E+01
2016	1.012E+07	4.331E-02	1.074E+01
2017	1.065E+07	4.506E-02	1.118E+01
2018	1.120E+07	4.683E-02	1.162E+01
2019	1.176E+07	4.862E-02	1.206E+01
2020	1.234E+07	5.043E-02	1.251E+01
2021	1.293E+07	5.227E-02	1.296E+01
2022	1.352E+07	5.403E-02	1.340E+01
2023	1.411E+07	5.572E-02	1.382E+01
2024	1.470E+07	5.734E-02	1.422E+01
2025	1.470E+07	5.509E-02	1.366E+01

Source: D:\LANDFI-2.01\SWAC1.PRM

Model Parameters

Lo : 100.00 m³ / Mg
k : 0.0400 1/yr
NMOC : 595.00 ppmv
Methane : 50.0000 % volume
Carbon Dioxide : 50.0000 % volume
Air Pollutant : 1,2-Dichloroethane (HAP/VOC)
Molecular Wt = 98.96 Concentration = 0.410000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
Year Opened : 1990 Current Year : 2027 Closure Year: 2027
Capacity : 14699900 Mg
Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	1,2-Dichloroethane (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	4.317E-03	1.049E+00
1992	6.396E+05	8.465E-03	2.057E+00
1993	9.302E+05	1.206E-02	2.929E+00
1994	1.236E+06	1.571E-02	3.816E+00
1995	1.624E+06	2.033E-02	4.940E+00
1996	1.961E+06	2.409E-02	5.853E+00
1997	2.302E+06	2.775E-02	6.742E+00
1998	2.664E+06	3.155E-02	7.665E+00
1999	3.022E+06	3.514E-02	8.538E+00
2000	3.376E+06	3.854E-02	9.363E+00
2001	3.725E+06	4.175E-02	1.014E+01
2002	4.070E+06	4.477E-02	1.088E+01
2003	4.413E+06	4.764E-02	1.157E+01
2004	4.770E+06	5.059E-02	1.229E+01
2005	5.140E+06	5.361E-02	1.302E+01
2006	5.525E+06	5.670E-02	1.378E+01
2007	5.923E+06	5.985E-02	1.454E+01
2008	6.334E+06	6.306E-02	1.532E+01
2009	6.759E+06	6.632E-02	1.611E+01
2010	7.198E+06	6.964E-02	1.692E+01
2011	7.650E+06	7.302E-02	1.774E+01
2012	8.116E+06	7.645E-02	1.857E+01
2013	8.596E+06	7.992E-02	1.942E+01
2014	9.089E+06	8.344E-02	2.027E+01
2015	9.596E+06	8.702E-02	2.114E+01
2016	1.012E+07	9.064E-02	2.202E+01
2017	1.065E+07	9.431E-02	2.291E+01
2018	1.120E+07	9.801E-02	2.381E+01
2019	1.176E+07	1.018E-01	2.472E+01
2020	1.234E+07	1.055E-01	2.564E+01
2021	1.293E+07	1.094E-01	2.657E+01
2022	1.352E+07	1.131E-01	2.747E+01
2023	1.411E+07	1.166E-01	2.833E+01
2024	1.470E+07	1.200E-01	2.915E+01
2025	1.470E+07	1.153E-01	2.801E+01

Source: D:\LANDFI-2.01\SWAC1.PRM

Model Parameters

Lo : 100.00 m³ / Mg
k : 0.0400 1/yr
NMOC : 595.00 ppmv
Methane : 50.0000 % volume
Carbon Dioxide : 50.0000 % volume
Air Pollutant : 1,2-Dichloropropane (HAP/VOC)
Molecular Wt = 112.99 Concentration = 0.180000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
Year Opened : 1990 Current Year : 2027 Closure Year: 2027
Capacity : 14699900 Mg
Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	1,2-Dichloropropane (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	2.164E-03	4.605E-01
1992	6.396E+05	4.243E-03	9.029E-01
1993	9.302E+05	6.044E-03	1.286E+00
1994	1.236E+06	7.874E-03	1.675E+00
1995	1.624E+06	1.019E-02	2.169E+00
1996	1.961E+06	1.208E-02	2.569E+00
1997	2.302E+06	1.391E-02	2.960E+00
1998	2.664E+06	1.582E-02	3.365E+00
1999	3.022E+06	1.762E-02	3.748E+00
2000	3.376E+06	1.932E-02	4.111E+00
2001	3.725E+06	2.093E-02	4.453E+00
2002	4.070E+06	2.244E-02	4.775E+00
2003	4.413E+06	2.388E-02	5.081E+00
2004	4.770E+06	2.536E-02	5.396E+00
2005	5.140E+06	2.687E-02	5.718E+00
2006	5.525E+06	2.842E-02	6.048E+00
2007	5.923E+06	3.000E-02	6.384E+00
2008	6.334E+06	3.161E-02	6.726E+00
2009	6.759E+06	3.324E-02	7.074E+00
2010	7.198E+06	3.491E-02	7.428E+00
2011	7.650E+06	3.660E-02	7.788E+00
2012	8.116E+06	3.832E-02	8.154E+00
2013	8.596E+06	4.006E-02	8.524E+00
2014	9.089E+06	4.183E-02	8.900E+00
2015	9.596E+06	4.362E-02	9.282E+00
2016	1.012E+07	4.544E-02	9.668E+00
2017	1.065E+07	4.727E-02	1.006E+01
2018	1.120E+07	4.913E-02	1.045E+01
2019	1.176E+07	5.101E-02	1.085E+01
2020	1.234E+07	5.291E-02	1.126E+01
2021	1.293E+07	5.483E-02	1.167E+01
2022	1.352E+07	5.667E-02	1.206E+01
2023	1.411E+07	5.845E-02	1.244E+01
2024	1.470E+07	6.015E-02	1.280E+01
2025	1.470E+07	5.779E-02	1.230E+01

Source: D:\LANDFI-2.01\SWAC1.PRM

Model Parameters

Lo : 100.00 m³ / Mg
k : 0.0400 1/yr
NMOC : 595.00 ppmv
Methane : 50.0000 % volume
Carbon Dioxide : 50.0000 % volume
Air Pollutant : Acrylonitrile (HAP/VOC)
Molecular Wt = 53.06 Concentration = 6.330000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
Year Opened : 1990 Current Year : 2027 Closure Year: 2027
Capacity : 14699900 Mg
Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Acrylonitrile (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	3.574E-02	1.619E+01
1992	6.396E+05	7.008E-02	3.175E+01
1993	9.302E+05	9.981E-02	4.523E+01
1994	1.236E+06	1.300E-01	5.892E+01
1995	1.624E+06	1.683E-01	7.627E+01
1996	1.961E+06	1.994E-01	9.036E+01
1997	2.302E+06	2.297E-01	1.041E+02
1998	2.664E+06	2.612E-01	1.183E+02
1999	3.022E+06	2.909E-01	1.318E+02
2000	3.376E+06	3.190E-01	1.446E+02
2001	3.725E+06	3.456E-01	1.566E+02
2002	4.070E+06	3.706E-01	1.679E+02
2003	4.413E+06	3.944E-01	1.787E+02
2004	4.770E+06	4.188E-01	1.897E+02
2005	5.140E+06	4.438E-01	2.011E+02
2006	5.525E+06	4.694E-01	2.127E+02
2007	5.923E+06	4.954E-01	2.245E+02
2008	6.334E+06	5.220E-01	2.365E+02
2009	6.759E+06	5.490E-01	2.488E+02
2010	7.198E+06	5.765E-01	2.612E+02
2011	7.650E+06	6.045E-01	2.739E+02
2012	8.116E+06	6.328E-01	2.867E+02
2013	8.596E+06	6.616E-01	2.998E+02
2014	9.089E+06	6.908E-01	3.130E+02
2015	9.596E+06	7.203E-01	3.264E+02
2016	1.012E+07	7.503E-01	3.400E+02
2017	1.065E+07	7.807E-01	3.537E+02
2018	1.120E+07	8.113E-01	3.676E+02
2019	1.176E+07	8.424E-01	3.817E+02
2020	1.234E+07	8.737E-01	3.959E+02
2021	1.293E+07	9.054E-01	4.103E+02
2022	1.352E+07	9.359E-01	4.241E+02
2023	1.411E+07	9.652E-01	4.374E+02
2024	1.470E+07	9.933E-01	4.501E+02
2025	1.470E+07	9.544E-01	4.325E+02

Source: D:\LANDFI-2.01\SWAC1.PRM

Model Parameters

Lo : 100.00 m³ / Mg
k : 0.0400 1/yr
NMOC : 595.00 ppmv
Methane : 50.0000 % volume
Carbon Dioxide : 50.0000 % volume
Air Pollutant : Benzene (HAP/VOC)
Molecular Wt = 78.12 Concentration = 1.910000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
Year Opened : 1990 Current Year : 2027 Closure Year: 2027
Capacity : 14699900 Mg
Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Refuse In Place (Mg)	Benzene (HAP/VOC) Emission Rate	
		(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	1.588E-02	4.886E+00
1992	6.396E+05	3.113E-02	9.581E+00
1993	9.302E+05	4.434E-02	1.365E+01
1994	1.236E+06	5.776E-02	1.778E+01
1995	1.624E+06	7.478E-02	2.301E+01
1996	1.961E+06	8.859E-02	2.726E+01
1997	2.302E+06	1.020E-01	3.141E+01
1998	2.664E+06	1.160E-01	3.571E+01
1999	3.022E+06	1.292E-01	3.978E+01
2000	3.376E+06	1.417E-01	4.362E+01
2001	3.725E+06	1.535E-01	4.725E+01
2002	4.070E+06	1.646E-01	5.067E+01
2003	4.413E+06	1.752E-01	5.392E+01
2004	4.770E+06	1.860E-01	5.725E+01
2005	5.140E+06	1.971E-01	6.067E+01
2006	5.525E+06	2.085E-01	6.417E+01
2007	5.923E+06	2.201E-01	6.774E+01
2008	6.334E+06	2.319E-01	7.137E+01
2009	6.759E+06	2.439E-01	7.506E+01
2010	7.198E+06	2.561E-01	7.882E+01
2011	7.650E+06	2.685E-01	8.264E+01
2012	8.116E+06	2.811E-01	8.652E+01
2013	8.596E+06	2.939E-01	9.045E+01
2014	9.089E+06	3.069E-01	9.444E+01
2015	9.596E+06	3.200E-01	9.849E+01
2016	1.012E+07	3.333E-01	1.026E+02
2017	1.065E+07	3.468E-01	1.067E+02
2018	1.120E+07	3.604E-01	1.109E+02
2019	1.176E+07	3.742E-01	1.152E+02
2020	1.234E+07	3.881E-01	1.195E+02
2021	1.293E+07	4.022E-01	1.238E+02
2022	1.352E+07	4.158E-01	1.280E+02
2023	1.411E+07	4.288E-01	1.320E+02
2024	1.470E+07	4.413E-01	1.358E+02
2025	1.470E+07	4.240E-01	1.305E+02

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Carbon Disulfide (HAP/VOC)
 Molecular Wt = 76.14 Concentration = 0.580000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2027 Closure Year: 2027
 Capacity : 14699900 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Carbon Disulfide (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	4.699E-03	1.484E+00
1992	6.396E+05	9.214E-03	2.909E+00
1993	9.302E+05	1.312E-02	4.144E+00
1994	1.236E+06	1.710E-02	5.399E+00
1995	1.624E+06	2.213E-02	6.988E+00
1996	1.961E+06	2.622E-02	8.279E+00
1997	2.302E+06	3.020E-02	9.537E+00
1998	2.664E+06	3.434E-02	1.084E+01
1999	3.022E+06	3.825E-02	1.208E+01
2000	3.376E+06	4.195E-02	1.325E+01
2001	3.725E+06	4.544E-02	1.435E+01
2002	4.070E+06	4.872E-02	1.539E+01
2003	4.413E+06	5.185E-02	1.637E+01
2004	4.770E+06	5.506E-02	1.739E+01
2005	5.140E+06	5.835E-02	1.842E+01
2006	5.525E+06	6.171E-02	1.949E+01
2007	5.923E+06	6.514E-02	2.057E+01
2008	6.334E+06	6.863E-02	2.167E+01
2009	6.759E+06	7.218E-02	2.279E+01
2010	7.198E+06	7.580E-02	2.393E+01
2011	7.650E+06	7.948E-02	2.510E+01
2012	8.116E+06	8.321E-02	2.627E+01
2013	8.596E+06	8.699E-02	2.747E+01
2014	9.089E+06	9.082E-02	2.868E+01
2015	9.596E+06	9.471E-02	2.991E+01
2016	1.012E+07	9.866E-02	3.115E+01
2017	1.065E+07	1.026E-01	3.241E+01
2018	1.120E+07	1.067E-01	3.369E+01
2019	1.176E+07	1.108E-01	3.497E+01
2020	1.234E+07	1.149E-01	3.628E+01
2021	1.293E+07	1.190E-01	3.759E+01
2022	1.352E+07	1.231E-01	3.886E+01
2023	1.411E+07	1.269E-01	4.007E+01
2024	1.470E+07	1.306E-01	4.124E+01
2025	1.470E+07	1.255E-01	3.962E+01

Source: D:\LANDFI~2.01\SWAC1.PRM

Model Parameters

Lo : 100.00 m³ / Mg
k : 0.0400 1/yr
NMOC : 595.00 ppmv
Methane : 50.0000 % volume
Carbon Dioxide : 50.0000 % volume
Air Pollutant : Carbon Tetrachloride (HAP/VOC)
Molecular Wt = 153.84 Concentration = 0.004000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
Year Opened : 1990 Current Year : 2027 Closure Year: 2027
Capacity : 14699900 Mg
Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Carbon Tetrachloride (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	6.548E-05	1.023E-02
1992	6.396E+05	1.284E-04	2.006E-02
1993	9.302E+05	1.829E-04	2.858E-02
1994	1.236E+06	2.382E-04	3.723E-02
1995	1.624E+06	3.084E-04	4.820E-02
1996	1.961E+06	3.653E-04	5.710E-02
1997	2.302E+06	4.208E-04	6.577E-02
1998	2.664E+06	4.785E-04	7.478E-02
1999	3.022E+06	5.330E-04	8.330E-02
2000	3.376E+06	5.845E-04	9.135E-02
2001	3.725E+06	6.332E-04	9.895E-02
2002	4.070E+06	6.789E-04	1.061E-01
2003	4.413E+06	7.225E-04	1.129E-01
2004	4.770E+06	7.672E-04	1.199E-01
2005	5.140E+06	8.130E-04	1.271E-01
2006	5.525E+06	8.600E-04	1.344E-01
2007	5.923E+06	9.077E-04	1.419E-01
2008	6.334E+06	9.564E-04	1.495E-01
2009	6.759E+06	1.006E-03	1.572E-01
2010	7.198E+06	1.056E-03	1.651E-01
2011	7.650E+06	1.107E-03	1.731E-01
2012	8.116E+06	1.159E-03	1.812E-01
2013	8.596E+06	1.212E-03	1.894E-01
2014	9.089E+06	1.266E-03	1.978E-01
2015	9.596E+06	1.320E-03	2.063E-01
2016	1.012E+07	1.375E-03	2.148E-01
2017	1.065E+07	1.430E-03	2.235E-01
2018	1.120E+07	1.486E-03	2.323E-01
2019	1.176E+07	1.543E-03	2.412E-01
2020	1.234E+07	1.601E-03	2.502E-01
2021	1.293E+07	1.659E-03	2.593E-01
2022	1.352E+07	1.715E-03	2.680E-01
2023	1.411E+07	1.768E-03	2.764E-01
2024	1.470E+07	1.820E-03	2.844E-01
2025	1.470E+07	1.749E-03	2.733E-01

Source: D:\LANDFI-2.01\SWAC1.PRM

Model Parameters

Lo : 100.00 m³ / Mg
k : 0.0400 1/yr
NMOC : 595.00 ppmv
Methane : 50.0000 % volume
Carbon Dioxide : 50.0000 % volume
Air Pollutant : Carbonyl Sulfide (HAP/VOC)
Molecular Wt = 60.07 Concentration = 0.490000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
Year Opened : 1990 Current Year : 2027 Closure Year: 2027
Capacity : 14699900 Mg
Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Refuse In Place (Mg)	Carbonyl Sulfide (HAP/VOC) Emission Rate	
		(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	3.132E-03	1.254E+00
1992	6.396E+05	6.141E-03	2.458E+00
1993	9.302E+05	8.747E-03	3.501E+00
1994	1.236E+06	1.140E-02	4.561E+00
1995	1.624E+06	1.475E-02	5.904E+00
1996	1.961E+06	1.748E-02	6.994E+00
1997	2.302E+06	2.013E-02	8.057E+00
1998	2.664E+06	2.289E-02	9.161E+00
1999	3.022E+06	2.549E-02	1.020E+01
2000	3.376E+06	2.796E-02	1.119E+01
2001	3.725E+06	3.029E-02	1.212E+01
2002	4.070E+06	3.248E-02	1.300E+01
2003	4.413E+06	3.456E-02	1.383E+01
2004	4.770E+06	3.670E-02	1.469E+01
2005	5.140E+06	3.889E-02	1.557E+01
2006	5.525E+06	4.113E-02	1.646E+01
2007	5.923E+06	4.342E-02	1.738E+01
2008	6.334E+06	4.574E-02	1.831E+01
2009	6.759E+06	4.811E-02	1.926E+01
2010	7.198E+06	5.052E-02	2.022E+01
2011	7.650E+06	5.297E-02	2.120E+01
2012	8.116E+06	5.546E-02	2.220E+01
2013	8.596E+06	5.798E-02	2.321E+01
2014	9.089E+06	6.053E-02	2.423E+01
2015	9.596E+06	6.313E-02	2.527E+01
2016	1.012E+07	6.576E-02	2.632E+01
2017	1.065E+07	6.842E-02	2.738E+01
2018	1.120E+07	7.110E-02	2.846E+01
2019	1.176E+07	7.382E-02	2.955E+01
2020	1.234E+07	7.657E-02	3.065E+01
2021	1.293E+07	7.935E-02	3.176E+01
2022	1.352E+07	8.202E-02	3.283E+01
2023	1.411E+07	8.459E-02	3.386E+01
2024	1.470E+07	8.705E-02	3.484E+01
2025	1.470E+07	8.364E-02	3.348E+01

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Chlorobenzene (HAP/VOC)
 Molecular Wt = 112.56 Concentration = 0.250000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2027 Closure Year: 2027
 Capacity : 14699900 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Chlorobenzene (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	2.994E-03	6.396E-01
1992	6.396E+05	5.871E-03	1.254E+00
1993	9.302E+05	8.362E-03	1.786E+00
1994	1.236E+06	1.089E-02	2.327E+00
1995	1.624E+06	1.410E-02	3.012E+00
1996	1.961E+06	1.671E-02	3.569E+00
1997	2.302E+06	1.924E-02	4.111E+00
1998	2.664E+06	2.188E-02	4.674E+00
1999	3.022E+06	2.437E-02	5.206E+00
2000	3.376E+06	2.673E-02	5.709E+00
2001	3.725E+06	2.895E-02	6.185E+00
2002	4.070E+06	3.105E-02	6.632E+00
2003	4.413E+06	3.304E-02	7.057E+00
2004	4.770E+06	3.508E-02	7.494E+00
2005	5.140E+06	3.718E-02	7.941E+00
2006	5.525E+06	3.933E-02	8.400E+00
2007	5.923E+06	4.151E-02	8.866E+00
2008	6.334E+06	4.373E-02	9.341E+00
2009	6.759E+06	4.600E-02	9.825E+00
2010	7.198E+06	4.830E-02	1.032E+01
2011	7.650E+06	5.064E-02	1.082E+01
2012	8.116E+06	5.302E-02	1.132E+01
2013	8.596E+06	5.543E-02	1.184E+01
2014	9.089E+06	5.787E-02	1.236E+01
2015	9.596E+06	6.035E-02	1.289E+01
2016	1.012E+07	6.287E-02	1.343E+01
2017	1.065E+07	6.541E-02	1.397E+01
2018	1.120E+07	6.798E-02	1.452E+01
2019	1.176E+07	7.057E-02	1.507E+01
2020	1.234E+07	7.320E-02	1.564E+01
2021	1.293E+07	7.586E-02	1.620E+01
2022	1.352E+07	7.841E-02	1.675E+01
2023	1.411E+07	8.087E-02	1.727E+01
2024	1.470E+07	8.322E-02	1.778E+01
2025	1.470E+07	7.996E-02	1.708E+01

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Chloroethane (HAP/VOC)
 Molecular Wt = 64.52 Concentration = 1.250000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2027 Closure Year: 2027
 Capacity : 14699900 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Refuse In Place (Mg)	Chloroethane (HAP/VOC) Emission Rate	
		(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	8.582E-03	3.198E+00
1992	6.396E+05	1.683E-02	6.270E+00
1993	9.302E+05	2.397E-02	8.931E+00
1994	1.236E+06	3.122E-02	1.163E+01
1995	1.624E+06	4.042E-02	1.506E+01
1996	1.961E+06	4.788E-02	1.784E+01
1997	2.302E+06	5.516E-02	2.055E+01
1998	2.664E+06	6.271E-02	2.337E+01
1999	3.022E+06	6.986E-02	2.603E+01
2000	3.376E+06	7.661E-02	2.855E+01
2001	3.725E+06	8.298E-02	3.092E+01
2002	4.070E+06	8.898E-02	3.316E+01
2003	4.413E+06	9.470E-02	3.529E+01
2004	4.770E+06	1.006E-01	3.747E+01
2005	5.140E+06	1.066E-01	3.971E+01
2006	5.525E+06	1.127E-01	4.200E+01
2007	5.923E+06	1.190E-01	4.433E+01
2008	6.334E+06	1.253E-01	4.671E+01
2009	6.759E+06	1.318E-01	4.912E+01
2010	7.198E+06	1.384E-01	5.158E+01
2011	7.650E+06	1.451E-01	5.409E+01
2012	8.116E+06	1.520E-01	5.662E+01
2013	8.596E+06	1.589E-01	5.920E+01
2014	9.089E+06	1.659E-01	6.181E+01
2015	9.596E+06	1.730E-01	6.445E+01
2016	1.012E+07	1.802E-01	6.714E+01
2017	1.065E+07	1.875E-01	6.985E+01
2018	1.120E+07	1.948E-01	7.260E+01
2019	1.176E+07	2.023E-01	7.537E+01
2020	1.234E+07	2.098E-01	7.818E+01
2021	1.293E+07	2.174E-01	8.102E+01
2022	1.352E+07	2.247E-01	8.374E+01
2023	1.411E+07	2.318E-01	8.636E+01
2024	1.470E+07	2.385E-01	8.888E+01
2025	1.470E+07	2.292E-01	8.540E+01

Source: D:\LANDFI~2.01\SWAC1.PRM

Model Parameters

Lo : 100.00 m³ / Mg
k : 0.0400 1/yr
NMOC : 595.00 ppmv
Methane : 50.0000 % volume
Carbon Dioxide : 50.0000 % volume
Air Pollutant : Chloroform (HAP/VOC)
Molecular Wt = 119.38 Concentration = 0.024000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
Year Opened : 1990 Current Year : 2027 Closure Year: 2027
Capacity : 14699900 Mg
Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Refuse In Place (Mg)	Chloroform (HAP/VOC) Emission Rate	
		(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	3.049E-04	6.140E-02
1992	6.396E+05	5.978E-04	1.204E-01
1993	9.302E+05	8.514E-04	1.715E-01
1994	1.236E+06	1.109E-03	2.234E-01
1995	1.624E+06	1.436E-03	2.892E-01
1996	1.961E+06	1.701E-03	3.426E-01
1997	2.302E+06	1.959E-03	3.946E-01
1998	2.664E+06	2.228E-03	4.487E-01
1999	3.022E+06	2.482E-03	4.998E-01
2000	3.376E+06	2.721E-03	5.481E-01
2001	3.725E+06	2.948E-03	5.937E-01
2002	4.070E+06	3.161E-03	6.366E-01
2003	4.413E+06	3.364E-03	6.775E-01
2004	4.770E+06	3.572E-03	7.194E-01
2005	5.140E+06	3.785E-03	7.624E-01
2006	5.525E+06	4.004E-03	8.064E-01
2007	5.923E+06	4.226E-03	8.512E-01
2008	6.334E+06	4.453E-03	8.968E-01
2009	6.759E+06	4.683E-03	9.432E-01
2010	7.198E+06	4.918E-03	9.904E-01
2011	7.650E+06	5.156E-03	1.038E+00
2012	8.116E+06	5.398E-03	1.087E+00
2013	8.596E+06	5.644E-03	1.137E+00
2014	9.089E+06	5.892E-03	1.187E+00
2015	9.596E+06	6.145E-03	1.238E+00
2016	1.012E+07	6.401E-03	1.289E+00
2017	1.065E+07	6.660E-03	1.341E+00
2018	1.120E+07	6.921E-03	1.394E+00
2019	1.176E+07	7.186E-03	1.447E+00
2020	1.234E+07	7.453E-03	1.501E+00
2021	1.293E+07	7.724E-03	1.556E+00
2022	1.352E+07	7.984E-03	1.608E+00
2023	1.411E+07	8.234E-03	1.658E+00
2024	1.470E+07	8.474E-03	1.707E+00
2025	1.470E+07	8.141E-03	1.640E+00

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Chloromethane (HAP/VOC)
 Molecular Wt = 50.49 Concentration = 1.210000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2027 Closure Year: 2027
 Capacity : 14699900 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Chloromethane (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	6.501E-03	3.095E+00
1992	6.396E+05	1.275E-02	6.070E+00
1993	9.302E+05	1.815E-02	8.645E+00
1994	1.236E+06	2.365E-02	1.126E+01
1995	1.624E+06	3.062E-02	1.458E+01
1996	1.961E+06	3.627E-02	1.727E+01
1997	2.302E+06	4.178E-02	1.990E+01
1998	2.664E+06	4.751E-02	2.262E+01
1999	3.022E+06	5.292E-02	2.520E+01
2000	3.376E+06	5.803E-02	2.763E+01
2001	3.725E+06	6.286E-02	2.993E+01
2002	4.070E+06	6.741E-02	3.210E+01
2003	4.413E+06	7.173E-02	3.416E+01
2004	4.770E+06	7.617E-02	3.627E+01
2005	5.140E+06	8.072E-02	3.844E+01
2006	5.525E+06	8.538E-02	4.065E+01
2007	5.923E+06	9.012E-02	4.291E+01
2008	6.334E+06	9.495E-02	4.521E+01
2009	6.759E+06	9.986E-02	4.755E+01
2010	7.198E+06	1.049E-01	4.993E+01
2011	7.650E+06	1.099E-01	5.236E+01
2012	8.116E+06	1.151E-01	5.481E+01
2013	8.596E+06	1.203E-01	5.730E+01
2014	9.089E+06	1.256E-01	5.983E+01
2015	9.596E+06	1.310E-01	6.239E+01
2016	1.012E+07	1.365E-01	6.499E+01
2017	1.065E+07	1.420E-01	6.762E+01
2018	1.120E+07	1.476E-01	7.027E+01
2019	1.176E+07	1.532E-01	7.296E+01
2020	1.234E+07	1.589E-01	7.568E+01
2021	1.293E+07	1.647E-01	7.842E+01
2022	1.352E+07	1.702E-01	8.106E+01
2023	1.411E+07	1.756E-01	8.360E+01
2024	1.470E+07	1.807E-01	8.604E+01
2025	1.470E+07	1.736E-01	8.266E+01

Source: D:\LANDFI-2.01\SWAC1.PRM

Model Parameters

Lo : 100.00 m³ / Mg
k : 0.0400 1/yr
NMOC : 595.00 ppmv
Methane : 50.0000 % volume
Carbon Dioxide : 50.0000 % volume
Air Pollutant : Dichlorobenzene (VOC/HAP for 1,4 isomer)
Molecular Wt = 147.00 Concentration = 0.210000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
Year Opened : 1990 Current Year : 2027 Closure Year: 2027
Capacity : 14699900 Mg
Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Dichlorobenzene (VOC/HAP for 1,4 isomer) Emission R		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	3.285E-03	5.372E-01
1992	6.396E+05	6.441E-03	1.053E+00
1993	9.302E+05	9.174E-03	1.500E+00
1994	1.236E+06	1.195E-02	1.955E+00
1995	1.624E+06	1.547E-02	2.530E+00
1996	1.961E+06	1.833E-02	2.998E+00
1997	2.302E+06	2.111E-02	3.453E+00
1998	2.664E+06	2.400E-02	3.926E+00
1999	3.022E+06	2.674E-02	4.373E+00
2000	3.376E+06	2.932E-02	4.796E+00
2001	3.725E+06	3.176E-02	5.195E+00
2002	4.070E+06	3.406E-02	5.571E+00
2003	4.413E+06	3.625E-02	5.928E+00
2004	4.770E+06	3.849E-02	6.295E+00
2005	5.140E+06	4.079E-02	6.671E+00
2006	5.525E+06	4.314E-02	7.056E+00
2007	5.923E+06	4.554E-02	7.448E+00
2008	6.334E+06	4.798E-02	7.847E+00
2009	6.759E+06	5.046E-02	8.253E+00
2010	7.198E+06	5.299E-02	8.666E+00
2011	7.650E+06	5.556E-02	9.086E+00
2012	8.116E+06	5.816E-02	9.513E+00
2013	8.596E+06	6.081E-02	9.945E+00
2014	9.089E+06	6.349E-02	1.038E+01
2015	9.596E+06	6.621E-02	1.083E+01
2016	1.012E+07	6.896E-02	1.128E+01
2017	1.065E+07	7.175E-02	1.174E+01
2018	1.120E+07	7.457E-02	1.220E+01
2019	1.176E+07	7.742E-02	1.266E+01
2020	1.234E+07	8.030E-02	1.313E+01
2021	1.293E+07	8.322E-02	1.361E+01
2022	1.352E+07	8.602E-02	1.407E+01
2023	1.411E+07	8.871E-02	1.451E+01
2024	1.470E+07	9.130E-02	1.493E+01
2025	1.470E+07	8.772E-02	1.435E+01

Source: D:\LANDFI-2.01\SWAC1.PRM

Model Parameters

Lo : 100.00 m³ / Mg
k : 0.0400 l/yr
NMOC : 595.00 ppmv
Methane : 50.0000 % volume
Carbon Dioxide : 50.0000 % volume
Air Pollutant : Dichloromethane (HAP)
Molecular Wt = 84.93 Concentration = 14.300000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
Year Opened : 1990 Current Year : 2027 Closure Year: 2027
Capacity : 14699900 Mg
Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Refuse In Place (Mg)	Dichloromethane (HAP) Emission Rate	
		(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	1.292E-01	3.658E+01
1992	6.396E+05	2.534E-01	7.173E+01
1993	9.302E+05	3.609E-01	1.022E+02
1994	1.236E+06	4.702E-01	1.331E+02
1995	1.624E+06	6.086E-01	1.723E+02
1996	1.961E+06	7.211E-01	2.041E+02
1997	2.302E+06	8.306E-01	2.351E+02
1998	2.664E+06	9.444E-01	2.673E+02
1999	3.022E+06	1.052E+00	2.978E+02
2000	3.376E+06	1.154E+00	3.266E+02
2001	3.725E+06	1.250E+00	3.538E+02
2002	4.070E+06	1.340E+00	3.793E+02
2003	4.413E+06	1.426E+00	4.037E+02
2004	4.770E+06	1.514E+00	4.287E+02
2005	5.140E+06	1.605E+00	4.542E+02
2006	5.525E+06	1.697E+00	4.805E+02
2007	5.923E+06	1.792E+00	5.072E+02
2008	6.334E+06	1.887E+00	5.343E+02
2009	6.759E+06	1.985E+00	5.620E+02
2010	7.198E+06	2.085E+00	5.901E+02
2011	7.650E+06	2.186E+00	6.187E+02
2012	8.116E+06	2.288E+00	6.478E+02
2013	8.596E+06	2.392E+00	6.772E+02
2014	9.089E+06	2.498E+00	7.071E+02
2015	9.596E+06	2.605E+00	7.374E+02
2016	1.012E+07	2.713E+00	7.681E+02
2017	1.065E+07	2.823E+00	7.991E+02
2018	1.120E+07	2.934E+00	8.305E+02
2019	1.176E+07	3.046E+00	8.623E+02
2020	1.234E+07	3.159E+00	8.944E+02
2021	1.293E+07	3.274E+00	9.268E+02
2022	1.352E+07	3.384E+00	9.580E+02
2023	1.411E+07	3.490E+00	9.880E+02
2024	1.470E+07	3.592E+00	1.017E+03
2025	1.470E+07	3.451E+00	9.769E+02

Source: D:\LANDFI-2.01\SWAC1.PRM

Model Parameters

Lo : 100.00 m³ / Mg
k : 0.0400 1/yr
NMOC : 595.00 ppmv
Methane : 50.0000 % volume
Carbon Dioxide : 50.0000 % volume
Air Pollutant : Ethylbenzene (HAP/VOC)
Molecular Wt = 106.17 Concentration = 4.610000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
Year Opened : 1990 Current Year : 2027 Closure Year: 2027
Capacity : 14699900 Mg
Average Acceptance Rate Required from
Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Ethylbenzene (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	5.208E-02	1.179E+01
1992	6.396E+05	1.021E-01	2.312E+01
1993	9.302E+05	1.454E-01	3.294E+01
1994	1.236E+06	1.895E-01	4.291E+01
1995	1.624E+06	2.453E-01	5.555E+01
1996	1.961E+06	2.906E-01	6.581E+01
1997	2.302E+06	3.347E-01	7.580E+01
1998	2.664E+06	3.806E-01	8.619E+01
1999	3.022E+06	4.239E-01	9.600E+01
2000	3.376E+06	4.649E-01	1.053E+02
2001	3.725E+06	5.036E-01	1.140E+02
2002	4.070E+06	5.400E-01	1.223E+02
2003	4.413E+06	5.747E-01	1.301E+02
2004	4.770E+06	6.102E-01	1.382E+02
2005	5.140E+06	6.467E-01	1.464E+02
2006	5.525E+06	6.840E-01	1.549E+02
2007	5.923E+06	7.220E-01	1.635E+02
2008	6.334E+06	7.607E-01	1.723E+02
2009	6.759E+06	8.000E-01	1.812E+02
2010	7.198E+06	8.401E-01	1.902E+02
2011	7.650E+06	8.808E-01	1.995E+02
2012	8.116E+06	9.222E-01	2.088E+02
2013	8.596E+06	9.641E-01	2.183E+02
2014	9.089E+06	1.007E+00	2.279E+02
2015	9.596E+06	1.050E+00	2.377E+02
2016	1.012E+07	1.093E+00	2.476E+02
2017	1.065E+07	1.138E+00	2.576E+02
2018	1.120E+07	1.182E+00	2.677E+02
2019	1.176E+07	1.228E+00	2.780E+02
2020	1.234E+07	1.273E+00	2.883E+02
2021	1.293E+07	1.319E+00	2.988E+02
2022	1.352E+07	1.364E+00	3.088E+02
2023	1.411E+07	1.407E+00	3.185E+02
2024	1.470E+07	1.448E+00	3.278E+02
2025	1.470E+07	1.391E+00	3.149E+02

Source: D:\LANDFI~2.01\SWAC1.PRM

Model Parameters

Lo : 100.00 m³ / Mg
k : 0.0400 1/yr
NMOC : 595.00 ppmv
Methane : 50.0000 % volume
Carbon Dioxide : 50.0000 % volume
Air Pollutant : Ethylene Dibromide (HAP/VOC)
Molecular Wt = 187.88 Concentration = 0.001000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
Year Opened : 1990 Current Year : 2027 Closure Year: 2027
Capacity : 14699900 Mg
Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Ethylene Dibromide (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	1.999E-05	2.558E-03
1992	6.396E+05	3.920E-05	5.016E-03
1993	9.302E+05	5.583E-05	7.145E-03
1994	1.236E+06	7.274E-05	9.308E-03
1995	1.624E+06	9.416E-05	1.205E-02
1996	1.961E+06	1.115E-04	1.427E-02
1997	2.302E+06	1.285E-04	1.644E-02
1998	2.664E+06	1.461E-04	1.870E-02
1999	3.022E+06	1.627E-04	2.082E-02
2000	3.376E+06	1.785E-04	2.284E-02
2001	3.725E+06	1.933E-04	2.474E-02
2002	4.070E+06	2.073E-04	2.653E-02
2003	4.413E+06	2.206E-04	2.823E-02
2004	4.770E+06	2.342E-04	2.998E-02
2005	5.140E+06	2.482E-04	3.177E-02
2006	5.525E+06	2.626E-04	3.360E-02
2007	5.923E+06	2.771E-04	3.547E-02
2008	6.334E+06	2.920E-04	3.737E-02
2009	6.759E+06	3.071E-04	3.930E-02
2010	7.198E+06	3.225E-04	4.127E-02
2011	7.650E+06	3.381E-04	4.327E-02
2012	8.116E+06	3.540E-04	4.530E-02
2013	8.596E+06	3.701E-04	4.736E-02
2014	9.089E+06	3.864E-04	4.945E-02
2015	9.596E+06	4.029E-04	5.156E-02
2016	1.012E+07	4.197E-04	5.371E-02
2017	1.065E+07	4.367E-04	5.588E-02
2018	1.120E+07	4.539E-04	5.808E-02
2019	1.176E+07	4.712E-04	6.030E-02
2020	1.234E+07	4.887E-04	6.254E-02
2021	1.293E+07	5.065E-04	6.481E-02
2022	1.352E+07	5.235E-04	6.700E-02
2023	1.411E+07	5.399E-04	6.909E-02
2024	1.470E+07	5.557E-04	7.111E-02
2025	1.470E+07	5.339E-04	6.832E-02

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Hexane (HAP/VOC)
 Molecular Wt = 86.18 Concentration = 6.570000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2027 Closure Year: 2027
 Capacity : 14699900 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Refuse In Place (Mg)	Hexane (HAP/VOC) Emission Rate	
		(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	6.025E-02	1.681E+01
1992	6.396E+05	1.181E-01	3.296E+01
1993	9.302E+05	1.683E-01	4.694E+01
1994	1.236E+06	2.192E-01	6.115E+01
1995	1.624E+06	2.838E-01	7.916E+01
1996	1.961E+06	3.362E-01	9.378E+01
1997	2.302E+06	3.872E-01	1.080E+02
1998	2.664E+06	4.403E-01	1.228E+02
1999	3.022E+06	4.904E-01	1.368E+02
2000	3.376E+06	5.378E-01	1.500E+02
2001	3.725E+06	5.826E-01	1.625E+02
2002	4.070E+06	6.247E-01	1.743E+02
2003	4.413E+06	6.648E-01	1.855E+02
2004	4.770E+06	7.059E-01	1.969E+02
2005	5.140E+06	7.481E-01	2.087E+02
2006	5.525E+06	7.913E-01	2.207E+02
2007	5.923E+06	8.352E-01	2.330E+02
2008	6.334E+06	8.800E-01	2.455E+02
2009	6.759E+06	9.255E-01	2.582E+02
2010	7.198E+06	9.718E-01	2.711E+02
2011	7.650E+06	1.019E+00	2.843E+02
2012	8.116E+06	1.067E+00	2.976E+02
2013	8.596E+06	1.115E+00	3.111E+02
2014	9.089E+06	1.164E+00	3.249E+02
2015	9.596E+06	1.214E+00	3.388E+02
2016	1.012E+07	1.265E+00	3.529E+02
2017	1.065E+07	1.316E+00	3.672E+02
2018	1.120E+07	1.368E+00	3.816E+02
2019	1.176E+07	1.420E+00	3.962E+02
2020	1.234E+07	1.473E+00	4.109E+02
2021	1.293E+07	1.526E+00	4.258E+02
2022	1.352E+07	1.578E+00	4.402E+02
2023	1.411E+07	1.627E+00	4.539E+02
2024	1.470E+07	1.675E+00	4.672E+02
2025	1.470E+07	1.609E+00	4.488E+02

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Mercury (HAP)
 Molecular Wt = 200.61 Concentration = 0.000253 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2027 Closure Year: 2027
 Capacity : 14699900 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Refuse In Place (Mg)	Mercury (HAP) Emission Rate	
		(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	5.400E-06	6.472E-04
1992	6.396E+05	1.059E-05	1.269E-03
1993	9.302E+05	1.508E-05	1.808E-03
1994	1.236E+06	1.965E-05	2.355E-03
1995	1.624E+06	2.544E-05	3.048E-03
1996	1.961E+06	3.013E-05	3.611E-03
1997	2.302E+06	3.471E-05	4.160E-03
1998	2.664E+06	3.947E-05	4.730E-03
1999	3.022E+06	4.396E-05	5.269E-03
2000	3.376E+06	4.821E-05	5.778E-03
2001	3.725E+06	5.222E-05	6.259E-03
2002	4.070E+06	5.600E-05	6.711E-03
2003	4.413E+06	5.959E-05	7.142E-03
2004	4.770E+06	6.328E-05	7.584E-03
2005	5.140E+06	6.706E-05	8.037E-03
2006	5.525E+06	7.093E-05	8.501E-03
2007	5.923E+06	7.487E-05	8.973E-03
2008	6.334E+06	7.888E-05	9.453E-03
2009	6.759E+06	8.296E-05	9.943E-03
2010	7.198E+06	8.711E-05	1.044E-02
2011	7.650E+06	9.134E-05	1.095E-02
2012	8.116E+06	9.563E-05	1.146E-02
2013	8.596E+06	9.997E-05	1.198E-02
2014	9.089E+06	1.044E-04	1.251E-02
2015	9.596E+06	1.089E-04	1.305E-02
2016	1.012E+07	1.134E-04	1.359E-02
2017	1.065E+07	1.180E-04	1.414E-02
2018	1.120E+07	1.226E-04	1.469E-02
2019	1.176E+07	1.273E-04	1.526E-02
2020	1.234E+07	1.320E-04	1.582E-02
2021	1.293E+07	1.368E-04	1.640E-02
2022	1.352E+07	1.414E-04	1.695E-02
2023	1.411E+07	1.459E-04	1.748E-02
2024	1.470E+07	1.501E-04	1.799E-02
2025	1.470E+07	1.442E-04	1.728E-02

Source: D:\LANDFI-2.01\SWAC1.PRM

Model Parameters

Lo : 100.00 m³ / Mg
k : 0.0400 1/yr
NMOC : 595.00 ppmv
Methane : 50.0000 % volume
Carbon Dioxide : 50.0000 % volume
Air Pollutant : Methyl Ethyl Ketone (HAP/VOC)
Molecular Wt = 72.11 Concentration = 7.090000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
Year Opened : 1990 Current Year : 2027 Closure Year: 2027
Capacity : 14699900 Mg
Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Methyl Ethyl Ketone (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	5.440E-02	1.814E+01
1992	6.396E+05	1.067E-01	3.556E+01
1993	9.302E+05	1.519E-01	5.066E+01
1994	1.236E+06	1.979E-01	6.599E+01
1995	1.624E+06	2.562E-01	8.543E+01
1996	1.961E+06	3.035E-01	1.012E+02
1997	2.302E+06	3.497E-01	1.166E+02
1998	2.664E+06	3.976E-01	1.326E+02
1999	3.022E+06	4.428E-01	1.476E+02
2000	3.376E+06	4.856E-01	1.619E+02
2001	3.725E+06	5.261E-01	1.754E+02
2002	4.070E+06	5.641E-01	1.881E+02
2003	4.413E+06	6.003E-01	2.001E+02
2004	4.770E+06	6.374E-01	2.125E+02
2005	5.140E+06	6.755E-01	2.252E+02
2006	5.525E+06	7.145E-01	2.382E+02
2007	5.923E+06	7.542E-01	2.515E+02
2008	6.334E+06	7.946E-01	2.649E+02
2009	6.759E+06	8.357E-01	2.786E+02
2010	7.198E+06	8.775E-01	2.926E+02
2011	7.650E+06	9.201E-01	3.068E+02
2012	8.116E+06	9.633E-01	3.212E+02
2013	8.596E+06	1.007E+00	3.358E+02
2014	9.089E+06	1.051E+00	3.506E+02
2015	9.596E+06	1.096E+00	3.656E+02
2016	1.012E+07	1.142E+00	3.808E+02
2017	1.065E+07	1.188E+00	3.962E+02
2018	1.120E+07	1.235E+00	4.118E+02
2019	1.176E+07	1.282E+00	4.275E+02
2020	1.234E+07	1.330E+00	4.434E+02
2021	1.293E+07	1.378E+00	4.595E+02
2022	1.352E+07	1.425E+00	4.750E+02
2023	1.411E+07	1.469E+00	4.899E+02
2024	1.470E+07	1.512E+00	5.041E+02
2025	1.470E+07	1.453E+00	4.844E+02

Source: D:\LANDFI-2.01\SWAC1.PRM

Model Parameters

Lo : 100.00 m³ / Mg
k : 0.0400 1/yr
NMOC : 595.00 ppmv
Methane : 50.0000 % volume
Carbon Dioxide : 50.0000 % volume
Air Pollutant : Methyl Isobutyl Ketone (HAP/VOC)
Molecular Wt = 100.16 Concentration = 1.870000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
Year Opened : 1990 Current Year : 2027 Closure Year: 2027
Capacity : 14699900 Mg
Average Acceptance Rate Required from
Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Methyl Isobutyl Ketone (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	1.993E-02	4.784E+00
1992	6.396E+05	3.908E-02	9.380E+00
1993	9.302E+05	5.566E-02	1.336E+01
1994	1.236E+06	7.251E-02	1.741E+01
1995	1.624E+06	9.387E-02	2.253E+01
1996	1.961E+06	1.112E-01	2.669E+01
1997	2.302E+06	1.281E-01	3.075E+01
1998	2.664E+06	1.456E-01	3.496E+01
1999	3.022E+06	1.622E-01	3.894E+01
2000	3.376E+06	1.779E-01	4.271E+01
2001	3.725E+06	1.927E-01	4.626E+01
2002	4.070E+06	2.067E-01	4.961E+01
2003	4.413E+06	2.199E-01	5.279E+01
2004	4.770E+06	2.335E-01	5.605E+01
2005	5.140E+06	2.475E-01	5.940E+01
2006	5.525E+06	2.617E-01	6.283E+01
2007	5.923E+06	2.763E-01	6.632E+01
2008	6.334E+06	2.911E-01	6.987E+01
2009	6.759E+06	3.062E-01	7.349E+01
2010	7.198E+06	3.215E-01	7.717E+01
2011	7.650E+06	3.371E-01	8.091E+01
2012	8.116E+06	3.529E-01	8.471E+01
2013	8.596E+06	3.689E-01	8.856E+01
2014	9.089E+06	3.852E-01	9.246E+01
2015	9.596E+06	4.017E-01	9.642E+01
2016	1.012E+07	4.184E-01	1.004E+02
2017	1.065E+07	4.353E-01	1.045E+02
2018	1.120E+07	4.524E-01	1.086E+02
2019	1.176E+07	4.697E-01	1.128E+02
2020	1.234E+07	4.872E-01	1.170E+02
2021	1.293E+07	5.049E-01	1.212E+02
2022	1.352E+07	5.219E-01	1.253E+02
2023	1.411E+07	5.382E-01	1.292E+02
2024	1.470E+07	5.539E-01	1.330E+02
2025	1.470E+07	5.322E-01	1.278E+02

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Perchloroethylene (HAP/VOC)
 Molecular Wt = 165.83 Concentration = 3.730000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2027 Closure Year: 2027
 Capacity : 14699900 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Perchloroethylene (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	6.582E-02	9.542E+00
1992	6.396E+05	1.291E-01	1.871E+01
1993	9.302E+05	1.838E-01	2.665E+01
1994	1.236E+06	2.395E-01	3.472E+01
1995	1.624E+06	3.100E-01	4.494E+01
1996	1.961E+06	3.672E-01	5.324E+01
1997	2.302E+06	4.230E-01	6.133E+01
1998	2.664E+06	4.810E-01	6.973E+01
1999	3.022E+06	5.358E-01	7.768E+01
2000	3.376E+06	5.875E-01	8.518E+01
2001	3.725E+06	6.365E-01	9.228E+01
2002	4.070E+06	6.825E-01	9.895E+01
2003	4.413E+06	7.263E-01	1.053E+02
2004	4.770E+06	7.712E-01	1.118E+02
2005	5.140E+06	8.172E-01	1.185E+02
2006	5.525E+06	8.644E-01	1.253E+02
2007	5.923E+06	9.124E-01	1.323E+02
2008	6.334E+06	9.613E-01	1.394E+02
2009	6.759E+06	1.011E+00	1.466E+02
2010	7.198E+06	1.062E+00	1.539E+02
2011	7.650E+06	1.113E+00	1.614E+02
2012	8.116E+06	1.165E+00	1.690E+02
2013	8.596E+06	1.218E+00	1.766E+02
2014	9.089E+06	1.272E+00	1.844E+02
2015	9.596E+06	1.327E+00	1.923E+02
2016	1.012E+07	1.382E+00	2.003E+02
2017	1.065E+07	1.438E+00	2.084E+02
2018	1.120E+07	1.494E+00	2.166E+02
2019	1.176E+07	1.551E+00	2.249E+02
2020	1.234E+07	1.609E+00	2.333E+02
2021	1.293E+07	1.667E+00	2.418E+02
2022	1.352E+07	1.724E+00	2.499E+02
2023	1.411E+07	1.778E+00	2.577E+02
2024	1.470E+07	1.829E+00	2.652E+02
2025	1.470E+07	1.758E+00	2.548E+02

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Toluene (HAP/VOC)
 Molecular Wt = 92.14 Concentration = 39.300000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2027 Closure Year: 2027
 Capacity : 14699900 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Toluene (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	3.853E-01	1.005E+02
1992	6.396E+05	7.555E-01	1.971E+02
1993	9.302E+05	1.076E+00	2.808E+02
1994	1.236E+06	1.402E+00	3.658E+02
1995	1.624E+06	1.815E+00	4.735E+02
1996	1.961E+06	2.150E+00	5.610E+02
1997	2.302E+06	2.476E+00	6.462E+02
1998	2.664E+06	2.816E+00	7.347E+02
1999	3.022E+06	3.136E+00	8.184E+02
2000	3.376E+06	3.440E+00	8.975E+02
2001	3.725E+06	3.726E+00	9.722E+02
2002	4.070E+06	3.995E+00	1.043E+03
2003	4.413E+06	4.252E+00	1.109E+03
2004	4.770E+06	4.515E+00	1.178E+03
2005	5.140E+06	4.784E+00	1.248E+03
2006	5.525E+06	5.060E+00	1.320E+03
2007	5.923E+06	5.342E+00	1.394E+03
2008	6.334E+06	5.628E+00	1.468E+03
2009	6.759E+06	5.919E+00	1.544E+03
2010	7.198E+06	6.215E+00	1.622E+03
2011	7.650E+06	6.517E+00	1.700E+03
2012	8.116E+06	6.823E+00	1.780E+03
2013	8.596E+06	7.133E+00	1.861E+03
2014	9.089E+06	7.447E+00	1.943E+03
2015	9.596E+06	7.766E+00	2.026E+03
2016	1.012E+07	8.090E+00	2.111E+03
2017	1.065E+07	8.417E+00	2.196E+03
2018	1.120E+07	8.747E+00	2.282E+03
2019	1.176E+07	9.082E+00	2.370E+03
2020	1.234E+07	9.420E+00	2.458E+03
2021	1.293E+07	9.762E+00	2.547E+03
2022	1.352E+07	1.009E+01	2.633E+03
2023	1.411E+07	1.041E+01	2.715E+03
2024	1.470E+07	1.071E+01	2.794E+03
2025	1.470E+07	1.029E+01	2.685E+03

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Trichloroethene (HAP/VOC)
 Molecular Wt = 131.38 Concentration = 2.820000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2027 Closure Year: 2027
 Capacity : 14699900 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Trichloroethene (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	3.942E-02	7.214E+00
1992	6.396E+05	7.730E-02	1.415E+01
1993	9.302E+05	1.101E-01	2.015E+01
1994	1.236E+06	1.434E-01	2.625E+01
1995	1.624E+06	1.857E-01	3.398E+01
1996	1.961E+06	2.200E-01	4.025E+01
1997	2.302E+06	2.534E-01	4.637E+01
1998	2.664E+06	2.881E-01	5.272E+01
1999	3.022E+06	3.209E-01	5.873E+01
2000	3.376E+06	3.519E-01	6.440E+01
2001	3.725E+06	3.812E-01	6.976E+01
2002	4.070E+06	4.088E-01	7.481E+01
2003	4.413E+06	4.350E-01	7.961E+01
2004	4.770E+06	4.619E-01	8.453E+01
2005	5.140E+06	4.895E-01	8.958E+01
2006	5.525E+06	5.178E-01	9.475E+01
2007	5.923E+06	5.465E-01	1.000E+02
2008	6.334E+06	5.758E-01	1.054E+02
2009	6.759E+06	6.056E-01	1.108E+02
2010	7.198E+06	6.359E-01	1.164E+02
2011	7.650E+06	6.668E-01	1.220E+02
2012	8.116E+06	6.981E-01	1.277E+02
2013	8.596E+06	7.298E-01	1.335E+02
2014	9.089E+06	7.620E-01	1.394E+02
2015	9.596E+06	7.946E-01	1.454E+02
2016	1.012E+07	8.277E-01	1.515E+02
2017	1.065E+07	8.611E-01	1.576E+02
2018	1.120E+07	8.950E-01	1.638E+02
2019	1.176E+07	9.292E-01	1.700E+02
2020	1.234E+07	9.638E-01	1.764E+02
2021	1.293E+07	9.988E-01	1.828E+02
2022	1.352E+07	1.032E+00	1.889E+02
2023	1.411E+07	1.065E+00	1.948E+02
2024	1.470E+07	1.096E+00	2.005E+02
2025	1.470E+07	1.053E+00	1.927E+02

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Vinyl Chloride (HAP/VOC)
 Molecular Wt = 62.50 Concentration = 7.340000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2027 Closure Year: 2027
 Capacity : 14699900 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Vinyl Chloride (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	4.881E-02	1.878E+01
1992	6.396E+05	9.571E-02	3.682E+01
1993	9.302E+05	1.363E-01	5.244E+01
1994	1.236E+06	1.776E-01	6.832E+01
1995	1.624E+06	2.299E-01	8.844E+01
1996	1.961E+06	2.724E-01	1.048E+02
1997	2.302E+06	3.137E-01	1.207E+02
1998	2.664E+06	3.567E-01	1.372E+02
1999	3.022E+06	3.974E-01	1.529E+02
2000	3.376E+06	4.357E-01	1.676E+02
2001	3.725E+06	4.720E-01	1.816E+02
2002	4.070E+06	5.062E-01	1.947E+02
2003	4.413E+06	5.386E-01	2.072E+02
2004	4.770E+06	5.720E-01	2.200E+02
2005	5.140E+06	6.061E-01	2.332E+02
2006	5.525E+06	6.411E-01	2.466E+02
2007	5.923E+06	6.767E-01	2.603E+02
2008	6.334E+06	7.130E-01	2.743E+02
2009	6.759E+06	7.499E-01	2.885E+02
2010	7.198E+06	7.874E-01	3.029E+02
2011	7.650E+06	8.256E-01	3.176E+02
2012	8.116E+06	8.643E-01	3.325E+02
2013	8.596E+06	9.036E-01	3.476E+02
2014	9.089E+06	9.435E-01	3.629E+02
2015	9.596E+06	9.839E-01	3.785E+02
2016	1.012E+07	1.025E+00	3.942E+02
2017	1.065E+07	1.066E+00	4.102E+02
2018	1.120E+07	1.108E+00	4.263E+02
2019	1.176E+07	1.151E+00	4.426E+02
2020	1.234E+07	1.193E+00	4.591E+02
2021	1.293E+07	1.237E+00	4.757E+02
2022	1.352E+07	1.278E+00	4.917E+02
2023	1.411E+07	1.318E+00	5.071E+02
2024	1.470E+07	1.357E+00	5.219E+02
2025	1.470E+07	1.304E+00	5.015E+02

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 l/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Xylene (HAP/VOC)
 Molecular Wt = 106.17 Concentration = 12.100000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2027 Closure Year: 2027
 Capacity : 14699900 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Xylene (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	1.367E-01	3.095E+01
1992	6.396E+05	2.680E-01	6.070E+01
1993	9.302E+05	3.818E-01	8.645E+01
1994	1.236E+06	4.973E-01	1.126E+02
1995	1.624E+06	6.438E-01	1.458E+02
1996	1.961E+06	7.627E-01	1.727E+02
1997	2.302E+06	8.786E-01	1.990E+02
1998	2.664E+06	9.990E-01	2.262E+02
1999	3.022E+06	1.113E+00	2.520E+02
2000	3.376E+06	1.220E+00	2.763E+02
2001	3.725E+06	1.322E+00	2.993E+02
2002	4.070E+06	1.417E+00	3.210E+02
2003	4.413E+06	1.508E+00	3.416E+02
2004	4.770E+06	1.602E+00	3.627E+02
2005	5.140E+06	1.697E+00	3.844E+02
2006	5.525E+06	1.795E+00	4.065E+02
2007	5.923E+06	1.895E+00	4.291E+02
2008	6.334E+06	1.997E+00	4.521E+02
2009	6.759E+06	2.100E+00	4.755E+02
2010	7.198E+06	2.205E+00	4.993E+02
2011	7.650E+06	2.312E+00	5.236E+02
2012	8.116E+06	2.420E+00	5.481E+02
2013	8.596E+06	2.530E+00	5.730E+02
2014	9.089E+06	2.642E+00	5.983E+02
2015	9.596E+06	2.755E+00	6.239E+02
2016	1.012E+07	2.870E+00	6.499E+02
2017	1.065E+07	2.986E+00	6.762E+02
2018	1.120E+07	3.103E+00	7.027E+02
2019	1.176E+07	3.222E+00	7.296E+02
2020	1.234E+07	3.342E+00	7.568E+02
2021	1.293E+07	3.463E+00	7.842E+02
2022	1.352E+07	3.580E+00	8.106E+02
2023	1.411E+07	3.692E+00	8.360E+02
2024	1.470E+07	3.799E+00	8.604E+02
2025	1.470E+07	3.650E+00	8.266E+02

NCRRF Emissions Calculations

Title V Permit Application

Emissions information obtained from Landfill Gas Emissions Model, Version 2.01

Maximum emissions occur in the year 2024.

Class III Landfill

Pollutant	Uncontrolled		Fugitive Plus Controlled*			Less than 1000 lb/yr?	Controlled Flare Emissions		Fugitive Emissions	
	Mg/yr	ton/yr	ton/yr	lb/yr	lb/hr**		ton/yr	lb/hr**	ton/yr	lb/hr**
NMOC	94.26	104	27.5	55,069	6.3	NA	1.56	0.356	26.0	5.93
1,1,1-Trichloroethane	0.1177	0.13	0.03	69		YES				
1,1,2-Trichloroethane	0.02452	0.03	0.01	14		YES				
1,1,2,2-Tetrachloroethane	0.3425	0.38	0.10	200		YES				
1,1-Dichloroethane	0.4275	0.47	0.12	250		YES				
1,1-Dichloroethene	0.03564	0.04	0.01	21		YES				
1,2-Dichloroethane	0.07459	0.08	0.02	44		YES				
1,2-Dichloropropane	0.03739	0.04	0.01	22		YES				
Acrylonitrile	0.6174	0.68	0.18	361		YES				
Benzene	0.2743	0.30	0.08	160		YES				
Carbon Disulfide	0.08118	0.09	0.02	47		YES				
Carbon Tetrachloride	0.001131	0.00	0.00	1		YES				
Carbonyl Sulfide	0.05411	0.06	0.02	32		YES				
Chlorobenzene	0.05173	0.06	0.02	30		YES				
Chloroethane	0.1483	0.16	0.04	87		YES				
Chloroform	0.005267	0.01	0.00	3		YES				
Chloromethane	0.1123	0.12	0.03	66		YES				
Dichlorobenzene	0.05675	0.06	0.02	33		YES				
Dichloromethane (H128)	2.233	2.46	0.65	1,305	0.149	NO	0.0369	0.00843	0.615	0.140
Ethylbenzene	0.8997	0.99	0.26	526		YES				
Ethylene Dibromide	0.0003454	0.00	0.00	0		YES				
Hexane	1.041	1.15	0.30	608		YES				
Mercury	0.00009330	0.00	0.00	0		YES				
Methyl Ethyl Ketone	0.9398	1.04	0.27	549		YES				
Methyl Isobutyl Ketone	0.3443	0.38	0.10	201		YES				
Perchloroethylene	1.137	1.25	0.33	664		YES				
Toluene (H169)	6.657	7.3	1.9	3,889	0.444	NO	0.110	0.0251	1.83	0.419
Trichloroethene	0.6811	0.75	0.20	398		YES				
Vinyl Chloride	0.8433	0.93	0.25	493		YES				
Xylene (H186)	2.362	2.60	0.69	1,380	0.158	NO	0.0391	0.00892	0.651	0.149
Total HAPS (HAPS)		21.6	5.7	11,451	0.75		0.324	0.0740	5.40	1.23

* Calculated based on assumed 75% collection and 98% destruction of collected gas.

** Calculated based on 8760 hours per year.

NOTE: Bold denotes that the emission unit (fugitive plus controlled) pollutant emissions are greater than the Title V inclusion thresholds and so were included in the permit application. Total HAP threshold is 2500 lb/yr.

NCRRF Emissions Calculations
 Title V Permit Application
 Emissions information obtained from Landfill Gas Emissions Model, Version 2.01
 Maximum emissions occur in the year 2024.

Class III Landfill

Maximum methane generation rate = 22,100,000 m³/yr Obtained from Landfill Gas Emissions Model, version 2.01

Potential SO₂ Sample Calculation

Volume emission rate of sulfur (equation 3 from AP-42, Chapter 2.4, Supplement E) is:

$$Q_s = 1.82 Q_{CH_4} \cdot C_s / (1 \times 10^6)$$

where:

- Q_s = Emission rate of sulfur, m³/yr
- Q_{CH₄} = Methane generation rate, m³/yr (see above)
- C_s = Concentration of sulfur compounds in landfill gas, m³/yr (46.9 ppm, from AP-42, Chapter 2.4, Supplement E)
- 1.82 = Multiplication factor (assumes landfill gas is 55% methane)

$$Q_s = 1.82 \cdot 22,100,000 \cdot 46.9 / 1,000,000 = 1886 \text{ m}^3/\text{yr}$$

Uncontrolled mass emission rate of sulfur is (equation 4 from AP-42, Chapter 2.4, Supplement E) is:

$$UM_s = Q_s \cdot MW_s \cdot 1 \text{ atm} / [8.205 \times 10^{-5} \text{ m}^3 \cdot \text{atm} / \text{g} \cdot \text{mol} \cdot \text{K} \cdot 1000 \text{ g} / \text{kg} \cdot (273 + T \text{ } ^\circ\text{K})]$$

where:

- UM_s = Uncontrolled mass emission rate of sulfur, kg/yr
- MW_s = Molecular weight of sulfur, m³/yr (32 g/g-mol)
- T = Temperature of landfill gas, °C (assumed as 25 °C, per AP-42, Chapter 2.4, Supplement E)

$$UM_s = 1886 \cdot 32 / [8.205 \times 10^{-5} \cdot 1000 \cdot (273 + 25)] = 2469 \text{ kg}/\text{yr}$$

Controlled mass emission rate of sulfur dioxide is (equation 7 from AP-42, Chapter 2.4, Supplement E) is:

$$CM_{SO_2} = UM_s \cdot \eta_{col} / 100 \cdot 2.0 \cdot 2.2046 \text{ lb} / \text{kg} \cdot \text{ton} / 2000 \text{ lb}$$

where:

- CM_{SO₂} = Controlled mass emission rate of sulfur dioxide, ton/yr
- η_{col} = Collection efficiency of system (assumed 75%, per AP-42, Chapter 2.4, Supplement E)
- 2.0 = Ratio of the molecular weight of SO₂ to the molecular weight of S. (Note - the ratio for HCl to Cl is 1.03.)

$$CM_{SO_2} = 2469 \cdot 75 / 100 \cdot 2.0 \cdot 2.2046 / 2000 = 4.08 \text{ ton}_{SO_2}/\text{yr}$$

Compound	Molecular Weight (of constituent atom)	Median Conc (ppm)	Volume Emissions (constituent atom) (m ³ /yr)	Uncontrolled Emissions (constituent atom) (kg/yr)	Controlled Emissions (compound) (ton/yr)	Controlled Emissions (compound) (lb/yr)
Sulfur dioxide	32.00	46.9	1886	2469	4.08	(note that the ton/yr value is less than the 5 ton/yr inclusion level.)
Hydrogen chloride	34.45	42.0	1689	2380	2.03	0.46

Source: D:\LANDFI~2.01\SWAC1.PRM

Model Parameters

Lo : 100.00 m³ / Mg
k : 0.0400 1/yr
NMOC : 595.00 ppmv
Methane : 50.0000 % volume
Carbon Dioxide : 50.0000 % volume

Landfill Parameters

Landfill type : No Co-Disposal
Year Opened : 1990 Current Year : 2027 Closure Year: 2027
Capacity : 14699900 Mg
Average Acceptance Rate Required from
Current Year to Closure Year : 0.00 Mg/year

Model Results

Methane Emission Rate

Year	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	3.198E+05	8.534E+02	1.279E+06
1992	6.396E+05	1.673E+03	2.508E+06
1993	9.302E+05	2.383E+03	3.572E+06
1994	1.236E+06	3.105E+03	4.654E+06
1995	1.624E+06	4.019E+03	6.025E+06
1996	1.961E+06	4.762E+03	7.137E+06
1997	2.302E+06	5.485E+03	8.221E+06
1998	2.664E+06	6.236E+03	9.348E+06
1999	3.022E+06	6.947E+03	1.041E+07
2000	3.376E+06	7.618E+03	1.142E+07
2001	3.725E+06	8.252E+03	1.237E+07
2002	4.070E+06	8.849E+03	1.326E+07
2003	4.413E+06	9.417E+03	1.411E+07
2004	4.770E+06	9.999E+03	1.499E+07
2005	5.140E+06	1.060E+04	1.588E+07
2006	5.525E+06	1.121E+04	1.680E+07
2007	5.923E+06	1.183E+04	1.773E+07
2008	6.334E+06	1.246E+04	1.868E+07
2009	6.759E+06	1.311E+04	1.965E+07
2010	7.198E+06	1.377E+04	2.063E+07
2011	7.650E+06	1.443E+04	2.163E+07
2012	8.116E+06	1.511E+04	2.265E+07
2013	8.596E+06	1.580E+04	2.368E+07
2014	9.089E+06	1.649E+04	2.472E+07
2015	9.596E+06	1.720E+04	2.578E+07
2016	1.012E+07	1.792E+04	2.686E+07
2017	1.065E+07	1.864E+04	2.794E+07
2018	1.120E+07	1.937E+04	2.904E+07
2019	1.176E+07	2.011E+04	3.015E+07
2020	1.234E+07	2.086E+04	3.127E+07
2021	1.293E+07	2.162E+04	3.241E+07
2022	1.352E+07	2.235E+04	3.350E+07
2023	1.411E+07	2.305E+04	3.455E+07
2024	1.470E+07	2.372E+04	3.555E+07
2025	1.470E+07	2.279E+04	3.416E+07

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Refuse In Place (Mg)	NMOC Emission Rate	
		(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	3.965E+00	1.106E+03
1992	4.648E+05	7.774E+00	2.169E+03
1993	7.083E+05	1.162E+01	3.243E+03
1994	9.049E+05	1.452E+01	4.052E+03
1995	1.056E+06	1.654E+01	4.614E+03
1996	1.212E+06	1.855E+01	5.174E+03
1997	1.394E+06	2.093E+01	5.839E+03
1998	1.539E+06	2.258E+01	6.300E+03
1999	1.717E+06	2.472E+01	6.898E+03
2000	1.917E+06	2.717E+01	7.579E+03
2001	2.140E+06	2.990E+01	8.343E+03
2002	2.385E+06	3.292E+01	9.183E+03
2003	2.650E+06	3.615E+01	1.008E+04
2004	2.919E+06	3.932E+01	1.097E+04
2005	3.193E+06	4.246E+01	1.184E+04
2006	3.472E+06	4.554E+01	1.271E+04
2007	3.754E+06	4.858E+01	1.355E+04
2008	4.041E+06	5.157E+01	1.439E+04
2009	4.333E+06	5.452E+01	1.521E+04
2010	4.628E+06	5.743E+01	1.602E+04
2011	4.928E+06	6.030E+01	1.682E+04
2012	5.233E+06	6.313E+01	1.761E+04
2013	5.542E+06	6.592E+01	1.839E+04
2014	5.855E+06	6.868E+01	1.916E+04
2015	6.173E+06	7.141E+01	1.992E+04
2016	6.495E+06	7.411E+01	2.068E+04
2017	6.822E+06	7.678E+01	2.142E+04
2018	7.153E+06	7.941E+01	2.215E+04
2019	7.488E+06	8.202E+01	2.288E+04
2020	7.828E+06	8.461E+01	2.360E+04
2021	8.173E+06	8.717E+01	2.432E+04
2022	8.517E+06	8.963E+01	2.500E+04
2023	8.862E+06	9.199E+01	2.566E+04
2024	9.206E+06	9.426E+01	2.630E+04
2025	9.206E+06	9.057E+01	2.527E+04

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : 1,1,1-Trichloroethane (HAP)
 Molecular Wt = 133.41 Concentration = 0.480000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	1,1,1-Trichloroethane (HAP) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	4.951E-03	8.923E-01
1992	4.648E+05	9.709E-03	1.750E+00
1993	7.083E+05	1.452E-02	2.616E+00
1994	9.049E+05	1.814E-02	3.269E+00
1995	1.056E+06	2.066E-02	3.722E+00
1996	1.212E+06	2.316E-02	4.174E+00
1997	1.394E+06	2.614E-02	4.711E+00
1998	1.539E+06	2.820E-02	5.082E+00
1999	1.717E+06	3.088E-02	5.564E+00
2000	1.917E+06	3.393E-02	6.115E+00
2001	2.140E+06	3.735E-02	6.730E+00
2002	2.385E+06	4.111E-02	7.408E+00
2003	2.650E+06	4.514E-02	8.135E+00
2004	2.919E+06	4.911E-02	8.850E+00
2005	3.193E+06	5.302E-02	9.555E+00
2006	3.472E+06	5.688E-02	1.025E+01
2007	3.754E+06	6.067E-02	1.093E+01
2008	4.041E+06	6.440E-02	1.161E+01
2009	4.333E+06	6.809E-02	1.227E+01
2010	4.628E+06	7.172E-02	1.292E+01
2011	4.928E+06	7.530E-02	1.357E+01
2012	5.233E+06	7.884E-02	1.421E+01
2013	5.542E+06	8.233E-02	1.484E+01
2014	5.855E+06	8.577E-02	1.546E+01
2015	6.173E+06	8.918E-02	1.607E+01
2016	6.495E+06	9.255E-02	1.668E+01
2017	6.822E+06	9.588E-02	1.728E+01
2018	7.153E+06	9.918E-02	1.787E+01
2019	7.488E+06	1.024E-01	1.846E+01
2020	7.828E+06	1.057E-01	1.904E+01
2021	8.173E+06	1.089E-01	1.962E+01
2022	8.517E+06	1.119E-01	2.017E+01
2023	8.862E+06	1.149E-01	2.070E+01
2024	9.206E+06	1.177E-01	2.121E+01
2025	9.206E+06	1.131E-01	2.038E+01

Source: D:\LANDFI-2.01\SWACIII.PRM

Model Parameters

Lo : 100.00 m³ / Mg
k : 0.0400 1/yr
NMOC : 595.00 ppmv
Methane : 50.0000 % volume
Carbon Dioxide : 50.0000 % volume
Air Pollutant : 1,1,2-Trichloroethane (HAP/VOC)
Molecular Wt = 133.41 Concentration = 0.100000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
Year Opened : 1990 Current Year : 2025 Closure Year: 2025
Capacity : 9206108 Mg
Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

1,1,2-Trichloroethane (HAP/VOC) Emission Rate

Year	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	1.032E-03	1.859E-01
1992	4.648E+05	2.023E-03	3.645E-01
1993	7.083E+05	3.024E-03	5.451E-01
1994	9.049E+05	3.778E-03	6.809E-01
1995	1.056E+06	4.303E-03	7.755E-01
1996	1.212E+06	4.825E-03	8.696E-01
1997	1.394E+06	5.446E-03	9.814E-01
1998	1.539E+06	5.875E-03	1.059E+00
1999	1.717E+06	6.433E-03	1.159E+00
2000	1.917E+06	7.069E-03	1.274E+00
2001	2.140E+06	7.780E-03	1.402E+00
2002	2.385E+06	8.564E-03	1.543E+00
2003	2.650E+06	9.404E-03	1.695E+00
2004	2.919E+06	1.023E-02	1.844E+00
2005	3.193E+06	1.105E-02	1.991E+00
2006	3.472E+06	1.185E-02	2.135E+00
2007	3.754E+06	1.264E-02	2.278E+00
2008	4.041E+06	1.342E-02	2.418E+00
2009	4.333E+06	1.418E-02	2.556E+00
2010	4.628E+06	1.494E-02	2.693E+00
2011	4.928E+06	1.569E-02	2.827E+00
2012	5.233E+06	1.642E-02	2.960E+00
2013	5.542E+06	1.715E-02	3.091E+00
2014	5.855E+06	1.787E-02	3.220E+00
2015	6.173E+06	1.858E-02	3.348E+00
2016	6.495E+06	1.928E-02	3.475E+00
2017	6.822E+06	1.998E-02	3.600E+00
2018	7.153E+06	2.066E-02	3.724E+00
2019	7.488E+06	2.134E-02	3.846E+00
2020	7.828E+06	2.201E-02	3.967E+00
2021	8.173E+06	2.268E-02	4.087E+00
2022	8.517E+06	2.332E-02	4.202E+00
2023	8.862E+06	2.393E-02	4.313E+00
2024	9.206E+06	2.452E-02	4.420E+00
2025	9.206E+06	2.356E-02	4.246E+00

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : 1,1,2,2-Tetrachloroethane (HAP/VOC)
 Molecular Wt = 167.85 Concentration = 1.110000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	1,1,2,2-Tetrachloroethane (HAP/VOC) Emission Rat		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	1.441E-02	2.064E+00
1992	4.648E+05	2.825E-02	4.046E+00
1993	7.083E+05	4.224E-02	6.050E+00
1994	9.049E+05	5.277E-02	7.558E+00
1995	1.056E+06	6.010E-02	8.608E+00
1996	1.212E+06	6.739E-02	9.653E+00
1997	1.394E+06	7.605E-02	1.089E+01
1998	1.539E+06	8.205E-02	1.175E+01
1999	1.717E+06	8.983E-02	1.287E+01
2000	1.917E+06	9.872E-02	1.414E+01
2001	2.140E+06	1.087E-01	1.556E+01
2002	2.385E+06	1.196E-01	1.713E+01
2003	2.650E+06	1.313E-01	1.881E+01
2004	2.919E+06	1.429E-01	2.047E+01
2005	3.193E+06	1.543E-01	2.210E+01
2006	3.472E+06	1.655E-01	2.370E+01
2007	3.754E+06	1.765E-01	2.528E+01
2008	4.041E+06	1.874E-01	2.684E+01
2009	4.333E+06	1.981E-01	2.837E+01
2010	4.628E+06	2.087E-01	2.989E+01
2011	4.928E+06	2.191E-01	3.138E+01
2012	5.233E+06	2.294E-01	3.286E+01
2013	5.542E+06	2.395E-01	3.431E+01
2014	5.855E+06	2.496E-01	3.575E+01
2015	6.173E+06	2.595E-01	3.717E+01
2016	6.495E+06	2.693E-01	3.857E+01
2017	6.822E+06	2.790E-01	3.996E+01
2018	7.153E+06	2.885E-01	4.133E+01
2019	7.488E+06	2.980E-01	4.269E+01
2020	7.828E+06	3.074E-01	4.403E+01
2021	8.173E+06	3.167E-01	4.537E+01
2022	8.517E+06	3.257E-01	4.665E+01
2023	8.862E+06	3.342E-01	4.788E+01
2024	9.206E+06	3.425E-01	4.906E+01
2025	9.206E+06	3.291E-01	4.714E+01

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : 1,1-Dichloroethane (HAP/VOC)
 Molecular Wt = 98.96 Concentration = 2.350000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	1,1-Dichloroethane (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	1.798E-02	4.369E+00
1992	4.648E+05	3.526E-02	8.566E+00
1993	7.083E+05	5.272E-02	1.281E+01
1994	9.049E+05	6.586E-02	1.600E+01
1995	1.056E+06	7.501E-02	1.822E+01
1996	1.212E+06	8.411E-02	2.044E+01
1997	1.394E+06	9.493E-02	2.306E+01
1998	1.539E+06	1.024E-01	2.488E+01
1999	1.717E+06	1.121E-01	2.724E+01
2000	1.917E+06	1.232E-01	2.994E+01
2001	2.140E+06	1.356E-01	3.295E+01
2002	2.385E+06	1.493E-01	3.627E+01
2003	2.650E+06	1.639E-01	3.983E+01
2004	2.919E+06	1.783E-01	4.333E+01
2005	3.193E+06	1.925E-01	4.678E+01
2006	3.472E+06	2.065E-01	5.018E+01
2007	3.754E+06	2.203E-01	5.353E+01
2008	4.041E+06	2.339E-01	5.682E+01
2009	4.333E+06	2.473E-01	6.007E+01
2010	4.628E+06	2.604E-01	6.328E+01
2011	4.928E+06	2.735E-01	6.644E+01
2012	5.233E+06	2.863E-01	6.956E+01
2013	5.542E+06	2.990E-01	7.264E+01
2014	5.855E+06	3.115E-01	7.568E+01
2015	6.173E+06	3.239E-01	7.869E+01
2016	6.495E+06	3.361E-01	8.166E+01
2017	6.822E+06	3.482E-01	8.460E+01
2018	7.153E+06	3.602E-01	8.750E+01
2019	7.488E+06	3.720E-01	9.038E+01
2020	7.828E+06	3.837E-01	9.323E+01
2021	8.173E+06	3.953E-01	9.605E+01
2022	8.517E+06	4.065E-01	9.876E+01
2023	8.862E+06	4.172E-01	1.014E+02
2024	9.206E+06	4.275E-01	1.039E+02
2025	9.206E+06	4.107E-01	9.979E+01

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : 1,1-Dichloroethene (HAP/VOC)
 Molecular Wt = 96.94 Concentration = 0.200000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	1,1-Dichloroethene (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	1.499E-03	3.718E-01
1992	4.648E+05	2.939E-03	7.290E-01
1993	7.083E+05	4.395E-03	1.090E+00
1994	9.049E+05	5.491E-03	1.362E+00
1995	1.056E+06	6.254E-03	1.551E+00
1996	1.212E+06	7.013E-03	1.739E+00
1997	1.394E+06	7.914E-03	1.963E+00
1998	1.539E+06	8.538E-03	2.118E+00
1999	1.717E+06	9.348E-03	2.319E+00
2000	1.917E+06	1.027E-02	2.548E+00
2001	2.140E+06	1.131E-02	2.804E+00
2002	2.385E+06	1.245E-02	3.087E+00
2003	2.650E+06	1.367E-02	3.390E+00
2004	2.919E+06	1.487E-02	3.688E+00
2005	3.193E+06	1.605E-02	3.981E+00
2006	3.472E+06	1.722E-02	4.271E+00
2007	3.754E+06	1.837E-02	4.556E+00
2008	4.041E+06	1.950E-02	4.836E+00
2009	4.333E+06	2.061E-02	5.113E+00
2010	4.628E+06	2.171E-02	5.385E+00
2011	4.928E+06	2.280E-02	5.654E+00
2012	5.233E+06	2.387E-02	5.920E+00
2013	5.542E+06	2.493E-02	6.182E+00
2014	5.855E+06	2.597E-02	6.441E+00
2015	6.173E+06	2.700E-02	6.697E+00
2016	6.495E+06	2.802E-02	6.950E+00
2017	6.822E+06	2.903E-02	7.200E+00
2018	7.153E+06	3.003E-02	7.447E+00
2019	7.488E+06	3.101E-02	7.692E+00
2020	7.828E+06	3.199E-02	7.934E+00
2021	8.173E+06	3.296E-02	8.174E+00
2022	8.517E+06	3.389E-02	8.405E+00
2023	8.862E+06	3.478E-02	8.627E+00
2024	9.206E+06	3.564E-02	8.840E+00
2025	9.206E+06	3.424E-02	8.493E+00

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : 1,2-Dichloroethane (HAP/VOC)
 Molecular Wt = 98.96 Concentration = 0.410000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	1,2-Dichloroethane (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	3.137E-03	7.622E-01
1992	4.648E+05	6.151E-03	1.495E+00
1993	7.083E+05	9.198E-03	2.235E+00
1994	9.049E+05	1.149E-02	2.792E+00
1995	1.056E+06	1.309E-02	3.180E+00
1996	1.212E+06	1.468E-02	3.565E+00
1997	1.394E+06	1.656E-02	4.024E+00
1998	1.539E+06	1.787E-02	4.341E+00
1999	1.717E+06	1.956E-02	4.753E+00
2000	1.917E+06	2.150E-02	5.223E+00
2001	2.140E+06	2.366E-02	5.749E+00
2002	2.385E+06	2.604E-02	6.328E+00
2003	2.650E+06	2.860E-02	6.949E+00
2004	2.919E+06	3.112E-02	7.560E+00
2005	3.193E+06	3.359E-02	8.162E+00
2006	3.472E+06	3.604E-02	8.755E+00
2007	3.754E+06	3.844E-02	9.339E+00
2008	4.041E+06	4.081E-02	9.914E+00
2009	4.333E+06	4.314E-02	1.048E+01
2010	4.628E+06	4.544E-02	1.104E+01
2011	4.928E+06	4.771E-02	1.159E+01
2012	5.233E+06	4.995E-02	1.214E+01
2013	5.542E+06	5.216E-02	1.267E+01
2014	5.855E+06	5.435E-02	1.320E+01
2015	6.173E+06	5.651E-02	1.373E+01
2016	6.495E+06	5.864E-02	1.425E+01
2017	6.822E+06	6.075E-02	1.476E+01
2018	7.153E+06	6.284E-02	1.527E+01
2019	7.488E+06	6.490E-02	1.577E+01
2020	7.828E+06	6.695E-02	1.626E+01
2021	8.173E+06	6.897E-02	1.676E+01
2022	8.517E+06	7.092E-02	1.723E+01
2023	8.862E+06	7.279E-02	1.768E+01
2024	9.206E+06	7.459E-02	1.812E+01
2025	9.206E+06	7.166E-02	1.741E+01

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : 1,2-Dichloropropane (HAP/VOC)
 Molecular Wt = 112.99 Concentration = 0.180000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	1,2-Dichloropropane (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	1.573E-03	3.346E-01
1992	4.648E+05	3.084E-03	6.561E-01
1993	7.083E+05	4.611E-03	9.811E-01
1994	9.049E+05	5.760E-03	1.226E+00
1995	1.056E+06	6.560E-03	1.396E+00
1996	1.212E+06	7.356E-03	1.565E+00
1997	1.394E+06	8.302E-03	1.767E+00
1998	1.539E+06	8.957E-03	1.906E+00
1999	1.717E+06	9.806E-03	2.087E+00
2000	1.917E+06	1.078E-02	2.293E+00
2001	2.140E+06	1.186E-02	2.524E+00
2002	2.385E+06	1.306E-02	2.778E+00
2003	2.650E+06	1.434E-02	3.051E+00
2004	2.919E+06	1.560E-02	3.319E+00
2005	3.193E+06	1.684E-02	3.583E+00
2006	3.472E+06	1.806E-02	3.844E+00
2007	3.754E+06	1.927E-02	4.100E+00
2008	4.041E+06	2.045E-02	4.353E+00
2009	4.333E+06	2.162E-02	4.601E+00
2010	4.628E+06	2.278E-02	4.847E+00
2011	4.928E+06	2.392E-02	5.089E+00
2012	5.233E+06	2.504E-02	5.328E+00
2013	5.542E+06	2.615E-02	5.564E+00
2014	5.855E+06	2.724E-02	5.797E+00
2015	6.173E+06	2.832E-02	6.027E+00
2016	6.495E+06	2.939E-02	6.255E+00
2017	6.822E+06	3.045E-02	6.480E+00
2018	7.153E+06	3.150E-02	6.702E+00
2019	7.488E+06	3.253E-02	6.923E+00
2020	7.828E+06	3.356E-02	7.141E+00
2021	8.173E+06	3.457E-02	7.357E+00
2022	8.517E+06	3.555E-02	7.564E+00
2023	8.862E+06	3.649E-02	7.764E+00
2024	9.206E+06	3.739E-02	7.956E+00
2025	9.206E+06	3.592E-02	7.644E+00

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Acrylonitrile (HAP/VOC)
 Molecular Wt = 53.06 Concentration = 6.330000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Acrylonitrile (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	2.597E-02	1.177E+01
1992	4.648E+05	5.092E-02	2.307E+01
1993	7.083E+05	7.614E-02	3.450E+01
1994	9.049E+05	9.513E-02	4.310E+01
1995	1.056E+06	1.083E-01	4.909E+01
1996	1.212E+06	1.215E-01	5.505E+01
1997	1.394E+06	1.371E-01	6.212E+01
1998	1.539E+06	1.479E-01	6.702E+01
1999	1.717E+06	1.619E-01	7.338E+01
2000	1.917E+06	1.780E-01	8.064E+01
2001	2.140E+06	1.959E-01	8.876E+01
2002	2.385E+06	2.156E-01	9.769E+01
2003	2.650E+06	2.368E-01	1.073E+02
2004	2.919E+06	2.576E-01	1.167E+02
2005	3.193E+06	2.781E-01	1.260E+02
2006	3.472E+06	2.983E-01	1.352E+02
2007	3.754E+06	3.182E-01	1.442E+02
2008	4.041E+06	3.378E-01	1.531E+02
2009	4.333E+06	3.571E-01	1.618E+02
2010	4.628E+06	3.762E-01	1.704E+02
2011	4.928E+06	3.950E-01	1.790E+02
2012	5.233E+06	4.135E-01	1.874E+02
2013	5.542E+06	4.318E-01	1.957E+02
2014	5.855E+06	4.499E-01	2.039E+02
2015	6.173E+06	4.678E-01	2.119E+02
2016	6.495E+06	4.854E-01	2.200E+02
2017	6.822E+06	5.029E-01	2.279E+02
2018	7.153E+06	5.202E-01	2.357E+02
2019	7.488E+06	5.373E-01	2.434E+02
2020	7.828E+06	5.542E-01	2.511E+02
2021	8.173E+06	5.710E-01	2.587E+02
2022	8.517E+06	5.871E-01	2.660E+02
2023	8.862E+06	6.026E-01	2.730E+02
2024	9.206E+06	6.174E-01	2.798E+02
2025	9.206E+06	5.932E-01	2.688E+02

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Benzene (HAP/VOC)
 Molecular Wt = 78.12 Concentration = 1.910000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Benzene (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	1.154E-02	3.551E+00
1992	4.648E+05	2.262E-02	6.962E+00
1993	7.083E+05	3.383E-02	1.041E+01
1994	9.049E+05	4.226E-02	1.301E+01
1995	1.056E+06	4.813E-02	1.481E+01
1996	1.212E+06	5.397E-02	1.661E+01
1997	1.394E+06	6.091E-02	1.874E+01
1998	1.539E+06	6.571E-02	2.022E+01
1999	1.717E+06	7.194E-02	2.214E+01
2000	1.917E+06	7.906E-02	2.433E+01
2001	2.140E+06	8.702E-02	2.678E+01
2002	2.385E+06	9.578E-02	2.948E+01
2003	2.650E+06	1.052E-01	3.237E+01
2004	2.919E+06	1.144E-01	3.522E+01
2005	3.193E+06	1.235E-01	3.802E+01
2006	3.472E+06	1.325E-01	4.079E+01
2007	3.754E+06	1.414E-01	4.351E+01
2008	4.041E+06	1.501E-01	4.618E+01
2009	4.333E+06	1.586E-01	4.883E+01
2010	4.628E+06	1.671E-01	5.143E+01
2011	4.928E+06	1.755E-01	5.400E+01
2012	5.233E+06	1.837E-01	5.654E+01
2013	5.542E+06	1.918E-01	5.904E+01
2014	5.855E+06	1.999E-01	6.151E+01
2015	6.173E+06	2.078E-01	6.395E+01
2016	6.495E+06	2.157E-01	6.637E+01
2017	6.822E+06	2.234E-01	6.876E+01
2018	7.153E+06	2.311E-01	7.112E+01
2019	7.488E+06	2.387E-01	7.346E+01
2020	7.828E+06	2.462E-01	7.577E+01
2021	8.173E+06	2.536E-01	7.806E+01
2022	8.517E+06	2.608E-01	8.027E+01
2023	8.862E+06	2.677E-01	8.238E+01
2024	9.206E+06	2.743E-01	8.442E+01
2025	9.206E+06	2.635E-01	8.111E+01

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Carbon Disulfide (HAP/VOC)
 Molecular Wt = 76.14 Concentration = 0.580000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year : 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Carbon Disulfide (HAP/VOC) Emission Rate

Year	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	3.415E-03	1.078E+00
1992	4.648E+05	6.695E-03	2.114E+00
1993	7.083E+05	1.001E-02	3.161E+00
1994	9.049E+05	1.251E-02	3.949E+00
1995	1.056E+06	1.424E-02	4.498E+00
1996	1.212E+06	1.597E-02	5.044E+00
1997	1.394E+06	1.803E-02	5.692E+00
1998	1.539E+06	1.945E-02	6.141E+00
1999	1.717E+06	2.129E-02	6.724E+00
2000	1.917E+06	2.340E-02	7.388E+00
2001	2.140E+06	2.575E-02	8.132E+00
2002	2.385E+06	2.835E-02	8.951E+00
2003	2.650E+06	3.113E-02	9.830E+00
2004	2.919E+06	3.387E-02	1.069E+01
2005	3.193E+06	3.656E-02	1.155E+01
2006	3.472E+06	3.922E-02	1.239E+01
2007	3.754E+06	4.184E-02	1.321E+01
2008	4.041E+06	4.441E-02	1.402E+01
2009	4.333E+06	4.695E-02	1.483E+01
2010	4.628E+06	4.946E-02	1.562E+01
2011	4.928E+06	5.193E-02	1.640E+01
2012	5.233E+06	5.437E-02	1.717E+01
2013	5.542E+06	5.677E-02	1.793E+01
2014	5.855E+06	5.915E-02	1.868E+01
2015	6.173E+06	6.150E-02	1.942E+01
2016	6.495E+06	6.383E-02	2.015E+01
2017	6.822E+06	6.612E-02	2.088E+01
2018	7.153E+06	6.839E-02	2.160E+01
2019	7.488E+06	7.064E-02	2.231E+01
2020	7.828E+06	7.287E-02	2.301E+01
2021	8.173E+06	7.507E-02	2.371E+01
2022	8.517E+06	7.719E-02	2.437E+01
2023	8.862E+06	7.923E-02	2.502E+01
2024	9.206E+06	8.118E-02	2.563E+01
2025	9.206E+06	7.800E-02	2.463E+01

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Carbon Tetrachloride (HAP/VOC)
 Molecular Wt = 153.84 Concentration = 0.004000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Carbon Tetrachloride (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	4.758E-05	7.436E-03
1992	4.648E+05	9.330E-05	1.458E-02
1993	7.083E+05	1.395E-04	2.180E-02
1994	9.049E+05	1.743E-04	2.724E-02
1995	1.056E+06	1.985E-04	3.102E-02
1996	1.212E+06	2.226E-04	3.478E-02
1997	1.394E+06	2.512E-04	3.926E-02
1998	1.539E+06	2.710E-04	4.235E-02
1999	1.717E+06	2.967E-04	4.637E-02
2000	1.917E+06	3.260E-04	5.095E-02
2001	2.140E+06	3.589E-04	5.609E-02
2002	2.385E+06	3.950E-04	6.173E-02
2003	2.650E+06	4.338E-04	6.779E-02
2004	2.919E+06	4.719E-04	7.375E-02
2005	3.193E+06	5.095E-04	7.963E-02
2006	3.472E+06	5.465E-04	8.542E-02
2007	3.754E+06	5.830E-04	9.111E-02
2008	4.041E+06	6.189E-04	9.672E-02
2009	4.333E+06	6.543E-04	1.023E-01
2010	4.628E+06	6.892E-04	1.077E-01
2011	4.928E+06	7.236E-04	1.131E-01
2012	5.233E+06	7.576E-04	1.184E-01
2013	5.542E+06	7.911E-04	1.236E-01
2014	5.855E+06	8.242E-04	1.288E-01
2015	6.173E+06	8.570E-04	1.339E-01
2016	6.495E+06	8.894E-04	1.390E-01
2017	6.822E+06	9.214E-04	1.440E-01
2018	7.153E+06	9.530E-04	1.489E-01
2019	7.488E+06	9.843E-04	1.538E-01
2020	7.828E+06	1.015E-03	1.587E-01
2021	8.173E+06	1.046E-03	1.635E-01
2022	8.517E+06	1.076E-03	1.681E-01
2023	8.862E+06	1.104E-03	1.725E-01
2024	9.206E+06	1.131E-03	1.768E-01
2025	9.206E+06	1.087E-03	1.699E-01

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Carbonyl Sulfide (HAP/VOC)
 Molecular Wt = 60.07 Concentration = 0.490000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Carbonyl Sulfide (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	2.276E-03	9.109E-01
1992	4.648E+05	4.463E-03	1.786E+00
1993	7.083E+05	6.673E-03	2.671E+00
1994	9.049E+05	8.336E-03	3.337E+00
1995	1.056E+06	9.494E-03	3.800E+00
1996	1.212E+06	1.065E-02	4.261E+00
1997	1.394E+06	1.201E-02	4.809E+00
1998	1.539E+06	1.296E-02	5.188E+00
1999	1.717E+06	1.419E-02	5.680E+00
2000	1.917E+06	1.560E-02	6.242E+00
2001	2.140E+06	1.717E-02	6.871E+00
2002	2.385E+06	1.889E-02	7.562E+00
2003	2.650E+06	2.075E-02	8.304E+00
2004	2.919E+06	2.257E-02	9.035E+00
2005	3.193E+06	2.437E-02	9.754E+00
2006	3.472E+06	2.614E-02	1.046E+01
2007	3.754E+06	2.789E-02	1.116E+01
2008	4.041E+06	2.960E-02	1.185E+01
2009	4.333E+06	3.130E-02	1.253E+01
2010	4.628E+06	3.296E-02	1.319E+01
2011	4.928E+06	3.461E-02	1.385E+01
2012	5.233E+06	3.624E-02	1.450E+01
2013	5.542E+06	3.784E-02	1.515E+01
2014	5.855E+06	3.943E-02	1.578E+01
2015	6.173E+06	4.099E-02	1.641E+01
2016	6.495E+06	4.254E-02	1.703E+01
2017	6.822E+06	4.407E-02	1.764E+01
2018	7.153E+06	4.559E-02	1.825E+01
2019	7.488E+06	4.708E-02	1.884E+01
2020	7.828E+06	4.857E-02	1.944E+01
2021	8.173E+06	5.004E-02	2.003E+01
2022	8.517E+06	5.145E-02	2.059E+01
2023	8.862E+06	5.281E-02	2.114E+01
2024	9.206E+06	5.411E-02	2.166E+01
2025	9.206E+06	5.199E-02	2.081E+01

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Chlorobenzene (HAP/VOC)
 Molecular Wt = 112.56 Concentration = 0.250000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Chlorobenzene (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	2.176E-03	4.648E-01
1992	4.648E+05	4.266E-03	9.113E-01
1993	7.083E+05	6.379E-03	1.363E+00
1994	9.049E+05	7.970E-03	1.702E+00
1995	1.056E+06	9.077E-03	1.939E+00
1996	1.212E+06	1.018E-02	2.174E+00
1997	1.394E+06	1.149E-02	2.454E+00
1998	1.539E+06	1.239E-02	2.647E+00
1999	1.717E+06	1.357E-02	2.898E+00
2000	1.917E+06	1.491E-02	3.185E+00
2001	2.140E+06	1.641E-02	3.505E+00
2002	2.385E+06	1.806E-02	3.858E+00
2003	2.650E+06	1.984E-02	4.237E+00
2004	2.919E+06	2.158E-02	4.610E+00
2005	3.193E+06	2.330E-02	4.977E+00
2006	3.472E+06	2.499E-02	5.338E+00
2007	3.754E+06	2.666E-02	5.695E+00
2008	4.041E+06	2.830E-02	6.045E+00
2009	4.333E+06	2.992E-02	6.391E+00
2010	4.628E+06	3.152E-02	6.732E+00
2011	4.928E+06	3.309E-02	7.068E+00
2012	5.233E+06	3.464E-02	7.400E+00
2013	5.542E+06	3.618E-02	7.727E+00
2014	5.855E+06	3.769E-02	8.051E+00
2015	6.173E+06	3.919E-02	8.371E+00
2016	6.495E+06	4.067E-02	8.687E+00
2017	6.822E+06	4.213E-02	9.000E+00
2018	7.153E+06	4.358E-02	9.309E+00
2019	7.488E+06	4.501E-02	9.615E+00
2020	7.828E+06	4.643E-02	9.918E+00
2021	8.173E+06	4.784E-02	1.022E+01
2022	8.517E+06	4.919E-02	1.051E+01
2023	8.862E+06	5.048E-02	1.078E+01
2024	9.206E+06	5.173E-02	1.105E+01
2025	9.206E+06	4.970E-02	1.062E+01

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Chloroethane (HAP/VOC)
 Molecular Wt = 64.52 Concentration = 1.250000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Refuse In Place (Mg)	Chloroethane (HAP/VOC) Emission Rate	
		(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	6.236E-03	2.324E+00
1992	4.648E+05	1.223E-02	4.556E+00
1993	7.083E+05	1.828E-02	6.813E+00
1994	9.049E+05	2.284E-02	8.512E+00
1995	1.056E+06	2.601E-02	9.694E+00
1996	1.212E+06	2.917E-02	1.087E+01
1997	1.394E+06	3.292E-02	1.227E+01
1998	1.539E+06	3.552E-02	1.324E+01
1999	1.717E+06	3.889E-02	1.449E+01
2000	1.917E+06	4.273E-02	1.592E+01
2001	2.140E+06	4.703E-02	1.753E+01
2002	2.385E+06	5.177E-02	1.929E+01
2003	2.650E+06	5.685E-02	2.118E+01
2004	2.919E+06	6.185E-02	2.305E+01
2005	3.193E+06	6.678E-02	2.488E+01
2006	3.472E+06	7.163E-02	2.669E+01
2007	3.754E+06	7.641E-02	2.847E+01
2008	4.041E+06	8.111E-02	3.023E+01
2009	4.333E+06	8.575E-02	3.195E+01
2010	4.628E+06	9.032E-02	3.366E+01
2011	4.928E+06	9.484E-02	3.534E+01
2012	5.233E+06	9.929E-02	3.700E+01
2013	5.542E+06	1.037E-01	3.864E+01
2014	5.855E+06	1.080E-01	4.025E+01
2015	6.173E+06	1.123E-01	4.185E+01
2016	6.495E+06	1.166E-01	4.344E+01
2017	6.822E+06	1.208E-01	4.500E+01
2018	7.153E+06	1.249E-01	4.654E+01
2019	7.488E+06	1.290E-01	4.807E+01
2020	7.828E+06	1.331E-01	4.959E+01
2021	8.173E+06	1.371E-01	5.109E+01
2022	8.517E+06	1.410E-01	5.253E+01
2023	8.862E+06	1.447E-01	5.392E+01
2024	9.206E+06	1.483E-01	5.525E+01
2025	9.206E+06	1.424E-01	5.308E+01

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Chloroform (HAP/VOC)
 Molecular Wt = 119.38 Concentration = 0.024000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Refuse In Place (Mg)	Chloroform (HAP/VOC) Emission Rate	
		(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	2.215E-04	4.462E-02
1992	4.648E+05	4.344E-04	8.748E-02
1993	7.083E+05	6.495E-04	1.308E-01
1994	9.049E+05	8.115E-04	1.634E-01
1995	1.056E+06	9.242E-04	1.861E-01
1996	1.212E+06	1.036E-03	2.087E-01
1997	1.394E+06	1.170E-03	2.355E-01
1998	1.539E+06	1.262E-03	2.541E-01
1999	1.717E+06	1.381E-03	2.782E-01
2000	1.917E+06	1.518E-03	3.057E-01
2001	2.140E+06	1.671E-03	3.365E-01
2002	2.385E+06	1.839E-03	3.704E-01
2003	2.650E+06	2.020E-03	4.067E-01
2004	2.919E+06	2.197E-03	4.425E-01
2005	3.193E+06	2.372E-03	4.778E-01
2006	3.472E+06	2.545E-03	5.125E-01
2007	3.754E+06	2.714E-03	5.467E-01
2008	4.041E+06	2.882E-03	5.803E-01
2009	4.333E+06	3.046E-03	6.135E-01
2010	4.628E+06	3.209E-03	6.462E-01
2011	4.928E+06	3.369E-03	6.785E-01
2012	5.233E+06	3.527E-03	7.104E-01
2013	5.542E+06	3.683E-03	7.418E-01
2014	5.855E+06	3.838E-03	7.729E-01
2015	6.173E+06	3.990E-03	8.036E-01
2016	6.495E+06	4.141E-03	8.340E-01
2017	6.822E+06	4.290E-03	8.640E-01
2018	7.153E+06	4.437E-03	8.936E-01
2019	7.488E+06	4.583E-03	9.230E-01
2020	7.828E+06	4.727E-03	9.521E-01
2021	8.173E+06	4.871E-03	9.809E-01
2022	8.517E+06	5.008E-03	1.009E+00
2023	8.862E+06	5.140E-03	1.035E+00
2024	9.206E+06	5.267E-03	1.061E+00
2025	9.206E+06	5.060E-03	1.019E+00

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Chloromethane (HAP/VOC)
 Molecular Wt = 50.49 Concentration = 1.210000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Chloromethane (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	4.724E-03	2.249E+00
1992	4.648E+05	9.262E-03	4.411E+00
1993	7.083E+05	1.385E-02	6.595E+00
1994	9.049E+05	1.730E-02	8.239E+00
1995	1.056E+06	1.971E-02	9.384E+00
1996	1.212E+06	2.210E-02	1.052E+01
1997	1.394E+06	2.494E-02	1.188E+01
1998	1.539E+06	2.690E-02	1.281E+01
1999	1.717E+06	2.946E-02	1.403E+01
2000	1.917E+06	3.237E-02	1.541E+01
2001	2.140E+06	3.563E-02	1.697E+01
2002	2.385E+06	3.922E-02	1.867E+01
2003	2.650E+06	4.306E-02	2.051E+01
2004	2.919E+06	4.685E-02	2.231E+01
2005	3.193E+06	5.058E-02	2.409E+01
2006	3.472E+06	5.426E-02	2.584E+01
2007	3.754E+06	5.788E-02	2.756E+01
2008	4.041E+06	6.144E-02	2.926E+01
2009	4.333E+06	6.496E-02	3.093E+01
2010	4.628E+06	6.842E-02	3.258E+01
2011	4.928E+06	7.184E-02	3.421E+01
2012	5.233E+06	7.521E-02	3.582E+01
2013	5.542E+06	7.854E-02	3.740E+01
2014	5.855E+06	8.183E-02	3.897E+01
2015	6.173E+06	8.508E-02	4.051E+01
2016	6.495E+06	8.830E-02	4.205E+01
2017	6.822E+06	9.147E-02	4.356E+01
2018	7.153E+06	9.462E-02	4.505E+01
2019	7.488E+06	9.772E-02	4.654E+01
2020	7.828E+06	1.008E-01	4.800E+01
2021	8.173E+06	1.039E-01	4.945E+01
2022	8.517E+06	1.068E-01	5.085E+01
2023	8.862E+06	1.096E-01	5.219E+01
2024	9.206E+06	1.123E-01	5.348E+01
2025	9.206E+06	1.079E-01	5.138E+01

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Dichlorobenzene (VOC/HAP for 1,4 isomer)
 Molecular Wt = 147.00 Concentration = 0.210000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Dichlorobenzene (VOC/HAP for 1,4 isomer) Emission R		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	2.387E-03	3.904E-01
1992	4.648E+05	4.680E-03	7.655E-01
1993	7.083E+05	6.998E-03	1.145E+00
1994	9.049E+05	8.743E-03	1.430E+00
1995	1.056E+06	9.957E-03	1.629E+00
1996	1.212E+06	1.117E-02	1.826E+00
1997	1.394E+06	1.260E-02	2.061E+00
1998	1.539E+06	1.359E-02	2.223E+00
1999	1.717E+06	1.488E-02	2.434E+00
2000	1.917E+06	1.636E-02	2.675E+00
2001	2.140E+06	1.800E-02	2.945E+00
2002	2.385E+06	1.982E-02	3.241E+00
2003	2.650E+06	2.176E-02	3.559E+00
2004	2.919E+06	2.367E-02	3.872E+00
2005	3.193E+06	2.556E-02	4.180E+00
2006	3.472E+06	2.742E-02	4.484E+00
2007	3.754E+06	2.925E-02	4.783E+00
2008	4.041E+06	3.105E-02	5.078E+00
2009	4.333E+06	3.282E-02	5.368E+00
2010	4.628E+06	3.457E-02	5.655E+00
2011	4.928E+06	3.630E-02	5.937E+00
2012	5.233E+06	3.801E-02	6.216E+00
2013	5.542E+06	3.969E-02	6.491E+00
2014	5.855E+06	4.135E-02	6.763E+00
2015	6.173E+06	4.299E-02	7.031E+00
2016	6.495E+06	4.462E-02	7.297E+00
2017	6.822E+06	4.622E-02	7.560E+00
2018	7.153E+06	4.781E-02	7.819E+00
2019	7.488E+06	4.938E-02	8.076E+00
2020	7.828E+06	5.094E-02	8.331E+00
2021	8.173E+06	5.248E-02	8.583E+00
2022	8.517E+06	5.396E-02	8.825E+00
2023	8.862E+06	5.538E-02	9.058E+00
2024	9.206E+06	5.675E-02	9.281E+00
2025	9.206E+06	5.452E-02	8.918E+00

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Dichloromethane (HAP)
 Molecular Wt = 84.93 Concentration = 14.300000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Dichloromethane (HAP) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	9.391E-02	2.658E+01
1992	4.648E+05	1.841E-01	5.213E+01
1993	7.083E+05	2.753E-01	7.794E+01
1994	9.049E+05	3.440E-01	9.737E+01
1995	1.056E+06	3.917E-01	1.109E+02
1996	1.212E+06	4.393E-01	1.244E+02
1997	1.394E+06	4.958E-01	1.403E+02
1998	1.539E+06	5.348E-01	1.514E+02
1999	1.717E+06	5.856E-01	1.658E+02
2000	1.917E+06	6.435E-01	1.822E+02
2001	2.140E+06	7.083E-01	2.005E+02
2002	2.385E+06	7.796E-01	2.207E+02
2003	2.650E+06	8.561E-01	2.424E+02
2004	2.919E+06	9.314E-01	2.637E+02
2005	3.193E+06	1.006E+00	2.847E+02
2006	3.472E+06	1.079E+00	3.054E+02
2007	3.754E+06	1.151E+00	3.257E+02
2008	4.041E+06	1.221E+00	3.458E+02
2009	4.333E+06	1.291E+00	3.655E+02
2010	4.628E+06	1.360E+00	3.850E+02
2011	4.928E+06	1.428E+00	4.043E+02
2012	5.233E+06	1.495E+00	4.233E+02
2013	5.542E+06	1.561E+00	4.420E+02
2014	5.855E+06	1.627E+00	4.605E+02
2015	6.173E+06	1.691E+00	4.788E+02
2016	6.495E+06	1.755E+00	4.969E+02
2017	6.822E+06	1.818E+00	5.148E+02
2018	7.153E+06	1.881E+00	5.325E+02
2019	7.488E+06	1.943E+00	5.500E+02
2020	7.828E+06	2.004E+00	5.673E+02
2021	8.173E+06	2.065E+00	5.845E+02
2022	8.517E+06	2.123E+00	6.010E+02
2023	8.862E+06	2.179E+00	6.168E+02
2024	9.206E+06	2.233E+00	6.320E+02
2025	9.206E+06	2.145E+00	6.072E+02

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Ethylbenzene (HAP/VOC)
 Molecular Wt = 106.17 Concentration = 4.610000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Ethylbenzene (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	3.784E-02	8.570E+00
1992	4.648E+05	7.421E-02	1.680E+01
1993	7.083E+05	1.110E-01	2.513E+01
1994	9.049E+05	1.386E-01	3.139E+01
1995	1.056E+06	1.579E-01	3.575E+01
1996	1.212E+06	1.770E-01	4.009E+01
1997	1.394E+06	1.998E-01	4.524E+01
1998	1.539E+06	2.155E-01	4.881E+01
1999	1.717E+06	2.360E-01	5.344E+01
2000	1.917E+06	2.593E-01	5.873E+01
2001	2.140E+06	2.854E-01	6.464E+01
2002	2.385E+06	3.142E-01	7.115E+01
2003	2.650E+06	3.450E-01	7.813E+01
2004	2.919E+06	3.754E-01	8.500E+01
2005	3.193E+06	4.052E-01	9.177E+01
2006	3.472E+06	4.347E-01	9.844E+01
2007	3.754E+06	4.637E-01	1.050E+02
2008	4.041E+06	4.923E-01	1.115E+02
2009	4.333E+06	5.204E-01	1.178E+02
2010	4.628E+06	5.481E-01	1.241E+02
2011	4.928E+06	5.755E-01	1.303E+02
2012	5.233E+06	6.026E-01	1.365E+02
2013	5.542E+06	6.292E-01	1.425E+02
2014	5.855E+06	6.556E-01	1.485E+02
2015	6.173E+06	6.816E-01	1.544E+02
2016	6.495E+06	7.074E-01	1.602E+02
2017	6.822E+06	7.328E-01	1.660E+02
2018	7.153E+06	7.580E-01	1.717E+02
2019	7.488E+06	7.829E-01	1.773E+02
2020	7.828E+06	8.076E-01	1.829E+02
2021	8.173E+06	8.320E-01	1.884E+02
2022	8.517E+06	8.555E-01	1.937E+02
2023	8.862E+06	8.781E-01	1.988E+02
2024	9.206E+06	8.997E-01	2.038E+02
2025	9.206E+06	8.645E-01	1.958E+02

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Ethylene Dibromide (HAP/VOC)
 Molecular Wt = 187.88 Concentration = 0.001000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Ethylene Dibromide (HAP/VOC) Emission Rate

Year	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	1.453E-05	1.859E-03
1992	4.648E+05	2.849E-05	3.645E-03
1993	7.083E+05	4.259E-05	5.451E-03
1994	9.049E+05	5.321E-05	6.809E-03
1995	1.056E+06	6.060E-05	7.755E-03
1996	1.212E+06	6.796E-05	8.696E-03
1997	1.394E+06	7.669E-05	9.814E-03
1998	1.539E+06	8.274E-05	1.059E-02
1999	1.717E+06	9.059E-05	1.159E-02
2000	1.917E+06	9.955E-05	1.274E-02
2001	2.140E+06	1.096E-04	1.402E-02
2002	2.385E+06	1.206E-04	1.543E-02
2003	2.650E+06	1.324E-04	1.695E-02
2004	2.919E+06	1.441E-04	1.844E-02
2005	3.193E+06	1.556E-04	1.991E-02
2006	3.472E+06	1.669E-04	2.135E-02
2007	3.754E+06	1.780E-04	2.278E-02
2008	4.041E+06	1.890E-04	2.418E-02
2009	4.333E+06	1.998E-04	2.556E-02
2010	4.628E+06	2.104E-04	2.693E-02
2011	4.928E+06	2.209E-04	2.827E-02
2012	5.233E+06	2.313E-04	2.960E-02
2013	5.542E+06	2.415E-04	3.091E-02
2014	5.855E+06	2.517E-04	3.220E-02
2015	6.173E+06	2.617E-04	3.348E-02
2016	6.495E+06	2.715E-04	3.475E-02
2017	6.822E+06	2.813E-04	3.600E-02
2018	7.153E+06	2.910E-04	3.724E-02
2019	7.488E+06	3.005E-04	3.846E-02
2020	7.828E+06	3.100E-04	3.967E-02
2021	8.173E+06	3.194E-04	4.087E-02
2022	8.517E+06	3.284E-04	4.202E-02
2023	8.862E+06	3.371E-04	4.313E-02
2024	9.206E+06	3.454E-04	4.420E-02
2025	9.206E+06	3.318E-04	4.246E-02

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Hexane (HAP/VOC)
 Molecular Wt = 86.18 Concentration = 6.570000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Refuse In Place (Mg)	Hexane (HAP/VOC) Emission Rate	
		(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	4.378E-02	1.221E+01
1992	4.648E+05	8.584E-02	2.395E+01
1993	7.083E+05	1.284E-01	3.581E+01
1994	9.049E+05	1.604E-01	4.474E+01
1995	1.056E+06	1.826E-01	5.095E+01
1996	1.212E+06	2.048E-01	5.713E+01
1997	1.394E+06	2.311E-01	6.448E+01
1998	1.539E+06	2.493E-01	6.956E+01
1999	1.717E+06	2.730E-01	7.616E+01
2000	1.917E+06	3.000E-01	8.369E+01
2001	2.140E+06	3.302E-01	9.212E+01
2002	2.385E+06	3.635E-01	1.014E+02
2003	2.650E+06	3.991E-01	1.113E+02
2004	2.919E+06	4.342E-01	1.211E+02
2005	3.193E+06	4.688E-01	1.308E+02
2006	3.472E+06	5.029E-01	1.403E+02
2007	3.754E+06	5.364E-01	1.497E+02
2008	4.041E+06	5.695E-01	1.589E+02
2009	4.333E+06	6.020E-01	1.679E+02
2010	4.628E+06	6.341E-01	1.769E+02
2011	4.928E+06	6.658E-01	1.857E+02
2012	5.233E+06	6.971E-01	1.945E+02
2013	5.542E+06	7.279E-01	2.031E+02
2014	5.855E+06	7.584E-01	2.116E+02
2015	6.173E+06	7.885E-01	2.200E+02
2016	6.495E+06	8.183E-01	2.283E+02
2017	6.822E+06	8.478E-01	2.365E+02
2018	7.153E+06	8.769E-01	2.446E+02
2019	7.488E+06	9.057E-01	2.527E+02
2020	7.828E+06	9.342E-01	2.606E+02
2021	8.173E+06	9.625E-01	2.685E+02
2022	8.517E+06	9.897E-01	2.761E+02
2023	8.862E+06	1.016E+00	2.834E+02
2024	9.206E+06	1.041E+00	2.904E+02
2025	9.206E+06	1.000E+00	2.790E+02

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Mercury (HAP)
 Molecular Wt = 200.61 Concentration = 0.000253 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Refuse In Place (Mg)	Mercury (HAP) Emission Rate	
		(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	3.924E-06	4.703E-04
1992	4.648E+05	7.695E-06	9.222E-04
1993	7.083E+05	1.151E-05	1.379E-03
1994	9.049E+05	1.437E-05	1.723E-03
1995	1.056E+06	1.637E-05	1.962E-03
1996	1.212E+06	1.836E-05	2.200E-03
1997	1.394E+06	2.072E-05	2.483E-03
1998	1.539E+06	2.235E-05	2.679E-03
1999	1.717E+06	2.447E-05	2.933E-03
2000	1.917E+06	2.689E-05	3.223E-03
2001	2.140E+06	2.960E-05	3.547E-03
2002	2.385E+06	3.258E-05	3.905E-03
2003	2.650E+06	3.578E-05	4.288E-03
2004	2.919E+06	3.892E-05	4.665E-03
2005	3.193E+06	4.202E-05	5.036E-03
2006	3.472E+06	4.508E-05	5.403E-03
2007	3.754E+06	4.808E-05	5.763E-03
2008	4.041E+06	5.105E-05	6.118E-03
2009	4.333E+06	5.396E-05	6.467E-03
2010	4.628E+06	5.684E-05	6.812E-03
2011	4.928E+06	5.968E-05	7.153E-03
2012	5.233E+06	6.249E-05	7.489E-03
2013	5.542E+06	6.525E-05	7.820E-03
2014	5.855E+06	6.798E-05	8.148E-03
2015	6.173E+06	7.068E-05	8.471E-03
2016	6.495E+06	7.335E-05	8.791E-03
2017	6.822E+06	7.599E-05	9.108E-03
2018	7.153E+06	7.860E-05	9.421E-03
2019	7.488E+06	8.119E-05	9.730E-03
2020	7.828E+06	8.374E-05	1.004E-02
2021	8.173E+06	8.628E-05	1.034E-02
2022	8.517E+06	8.871E-05	1.063E-02
2023	8.862E+06	9.105E-05	1.091E-02
2024	9.206E+06	9.330E-05	1.118E-02
2025	9.206E+06	8.964E-05	1.074E-02

Source: Y:\096PROJ\07187037\MKD\LANDFI-1\CLASSI-2\SWACIII.PRM

Model Parameters

Lo : 100.00 m³ / Mg
k : 0.0400 1/yr
NMOC : 595.00 ppmv
Methane : 50.0000 % volume
Carbon Dioxide : 50.0000 % volume
Air Pollutant : Methyl Ethyl Ketone (HAP/VOC)
Molecular Wt = 72.11 Concentration = 7.090000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
Year Opened : 1990 Current Year : 2025 Closure Year: 2025
Capacity : 9206108 Mg
Average Acceptance Rate Required from
Current Year to Closure Year : 0.00 Mg/year

Model Results

Methyl Ethyl Ketone (HAP/VOC) Emission Rate

Year	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	3.953E-02	1.318E+01
1992	4.648E+05	7.751E-02	2.584E+01
1993	7.083E+05	1.159E-01	3.864E+01
1994	9.049E+05	1.448E-01	4.828E+01
1995	1.056E+06	1.649E-01	5.498E+01
1996	1.212E+06	1.849E-01	6.166E+01
1997	1.394E+06	2.087E-01	6.958E+01
1998	1.539E+06	2.252E-01	7.507E+01
1999	1.717E+06	2.465E-01	8.219E+01
2000	1.917E+06	2.709E-01	9.032E+01
2001	2.140E+06	2.982E-01	9.941E+01
2002	2.385E+06	3.282E-01	1.094E+02
2003	2.650E+06	3.604E-01	1.202E+02
2004	2.919E+06	3.921E-01	1.307E+02
2005	3.193E+06	4.233E-01	1.411E+02
2006	3.472E+06	4.541E-01	1.514E+02
2007	3.754E+06	4.844E-01	1.615E+02
2008	4.041E+06	5.142E-01	1.714E+02
2009	4.333E+06	5.436E-01	1.812E+02
2010	4.628E+06	5.726E-01	1.909E+02
2011	4.928E+06	6.012E-01	2.005E+02
2012	5.233E+06	6.294E-01	2.099E+02
2013	5.542E+06	6.573E-01	2.192E+02
2014	5.855E+06	6.848E-01	2.283E+02
2015	6.173E+06	7.120E-01	2.374E+02
2016	6.495E+06	7.389E-01	2.464E+02
2017	6.822E+06	7.655E-01	2.552E+02
2018	7.153E+06	7.918E-01	2.640E+02
2019	7.488E+06	8.178E-01	2.727E+02
2020	7.828E+06	8.436E-01	2.813E+02
2021	8.173E+06	8.691E-01	2.898E+02
2022	8.517E+06	8.936E-01	2.980E+02
2023	8.862E+06	9.172E-01	3.058E+02
2024	9.206E+06	9.398E-01	3.134E+02
2025	9.206E+06	9.030E-01	3.011E+02

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Methyl Isobutyl Ketone (HAP/VOC)
 Molecular Wt = 100.16 Concentration = 1.870000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Methyl Isobutyl Ketone (HAP/VOC) Emission Rate

Year	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	1.448E-02	3.476E+00
1992	4.648E+05	2.840E-02	6.816E+00
1993	7.083E+05	4.246E-02	1.019E+01
1994	9.049E+05	5.305E-02	1.273E+01
1995	1.056E+06	6.041E-02	1.450E+01
1996	1.212E+06	6.775E-02	1.626E+01
1997	1.394E+06	7.645E-02	1.835E+01
1998	1.539E+06	8.248E-02	1.980E+01
1999	1.717E+06	9.031E-02	2.168E+01
2000	1.917E+06	9.924E-02	2.382E+01
2001	2.140E+06	1.092E-01	2.622E+01
2002	2.385E+06	1.202E-01	2.886E+01
2003	2.650E+06	1.320E-01	3.169E+01
2004	2.919E+06	1.436E-01	3.448E+01
2005	3.193E+06	1.551E-01	3.723E+01
2006	3.472E+06	1.664E-01	3.993E+01
2007	3.754E+06	1.774E-01	4.259E+01
2008	4.041E+06	1.884E-01	4.522E+01
2009	4.333E+06	1.991E-01	4.780E+01
2010	4.628E+06	2.098E-01	5.035E+01
2011	4.928E+06	2.202E-01	5.287E+01
2012	5.233E+06	2.306E-01	5.535E+01
2013	5.542E+06	2.408E-01	5.780E+01
2014	5.855E+06	2.509E-01	6.022E+01
2015	6.173E+06	2.608E-01	6.261E+01
2016	6.495E+06	2.707E-01	6.498E+01
2017	6.822E+06	2.804E-01	6.732E+01
2018	7.153E+06	2.901E-01	6.963E+01
2019	7.488E+06	2.996E-01	7.192E+01
2020	7.828E+06	3.090E-01	7.418E+01
2021	8.173E+06	3.184E-01	7.643E+01
2022	8.517E+06	3.274E-01	7.859E+01
2023	8.862E+06	3.360E-01	8.066E+01
2024	9.206E+06	3.443E-01	8.265E+01
2025	9.206E+06	3.308E-01	7.941E+01

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Perchloroethylene (HAP/VOC)
 Molecular Wt = 165.83 Concentration = 3.730000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Perchloroethylene (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	4.783E-02	6.934E+00
1992	4.648E+05	9.378E-02	1.360E+01
1993	7.083E+05	1.402E-01	2.033E+01
1994	9.049E+05	1.752E-01	2.540E+01
1995	1.056E+06	1.995E-01	2.893E+01
1996	1.212E+06	2.237E-01	3.244E+01
1997	1.394E+06	2.525E-01	3.661E+01
1998	1.539E+06	2.724E-01	3.949E+01
1999	1.717E+06	2.982E-01	4.324E+01
2000	1.917E+06	3.277E-01	4.752E+01
2001	2.140E+06	3.607E-01	5.230E+01
2002	2.385E+06	3.971E-01	5.757E+01
2003	2.650E+06	4.360E-01	6.322E+01
2004	2.919E+06	4.744E-01	6.878E+01
2005	3.193E+06	5.121E-01	7.425E+01
2006	3.472E+06	5.494E-01	7.965E+01
2007	3.754E+06	5.860E-01	8.496E+01
2008	4.041E+06	6.221E-01	9.019E+01
2009	4.333E+06	6.577E-01	9.535E+01
2010	4.628E+06	6.927E-01	1.004E+02
2011	4.928E+06	7.274E-01	1.055E+02
2012	5.233E+06	7.615E-01	1.104E+02
2013	5.542E+06	7.952E-01	1.153E+02
2014	5.855E+06	8.285E-01	1.201E+02
2015	6.173E+06	8.614E-01	1.249E+02
2016	6.495E+06	8.940E-01	1.296E+02
2017	6.822E+06	9.261E-01	1.343E+02
2018	7.153E+06	9.580E-01	1.389E+02
2019	7.488E+06	9.894E-01	1.435E+02
2020	7.828E+06	1.021E+00	1.480E+02
2021	8.173E+06	1.051E+00	1.524E+02
2022	8.517E+06	1.081E+00	1.568E+02
2023	8.862E+06	1.110E+00	1.609E+02
2024	9.206E+06	1.137E+00	1.649E+02
2025	9.206E+06	1.092E+00	1.584E+02

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Toluene (HAP/VOC)
 Molecular Wt = 92.14 Concentration = 39.300000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Toluene (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	2.800E-01	7.306E+01
1992	4.648E+05	5.490E-01	1.433E+02
1993	7.083E+05	8.209E-01	2.142E+02
1994	9.049E+05	1.026E+00	2.676E+02
1995	1.056E+06	1.168E+00	3.048E+02
1996	1.212E+06	1.310E+00	3.418E+02
1997	1.394E+06	1.478E+00	3.857E+02
1998	1.539E+06	1.595E+00	4.161E+02
1999	1.717E+06	1.746E+00	4.556E+02
2000	1.917E+06	1.919E+00	5.006E+02
2001	2.140E+06	2.112E+00	5.510E+02
2002	2.385E+06	2.324E+00	6.065E+02
2003	2.650E+06	2.553E+00	6.661E+02
2004	2.919E+06	2.777E+00	7.246E+02
2005	3.193E+06	2.998E+00	7.823E+02
2006	3.472E+06	3.216E+00	8.392E+02
2007	3.754E+06	3.431E+00	8.952E+02
2008	4.041E+06	3.642E+00	9.503E+02
2009	4.333E+06	3.850E+00	1.005E+03
2010	4.628E+06	4.055E+00	1.058E+03
2011	4.928E+06	4.258E+00	1.111E+03
2012	5.233E+06	4.458E+00	1.163E+03
2013	5.542E+06	4.655E+00	1.215E+03
2014	5.855E+06	4.850E+00	1.266E+03
2015	6.173E+06	5.043E+00	1.316E+03
2016	6.495E+06	5.234E+00	1.366E+03
2017	6.822E+06	5.422E+00	1.415E+03
2018	7.153E+06	5.608E+00	1.463E+03
2019	7.488E+06	5.792E+00	1.511E+03
2020	7.828E+06	5.975E+00	1.559E+03
2021	8.173E+06	6.156E+00	1.606E+03
2022	8.517E+06	6.329E+00	1.652E+03
2023	8.862E+06	6.496E+00	1.695E+03
2024	9.206E+06	6.657E+00	1.737E+03
2025	9.206E+06	6.396E+00	1.669E+03

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Trichloroethene (HAP/VOC)
 Molecular Wt = 131.38 Concentration = 2.820000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Trichloroethene (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	2.865E-02	5.242E+00
1992	4.648E+05	5.617E-02	1.028E+01
1993	7.083E+05	8.399E-02	1.537E+01
1994	9.049E+05	1.049E-01	1.920E+01
1995	1.056E+06	1.195E-01	2.187E+01
1996	1.212E+06	1.340E-01	2.452E+01
1997	1.394E+06	1.512E-01	2.768E+01
1998	1.539E+06	1.632E-01	2.986E+01
1999	1.717E+06	1.786E-01	3.269E+01
2000	1.917E+06	1.963E-01	3.592E+01
2001	2.140E+06	2.161E-01	3.954E+01
2002	2.385E+06	2.378E-01	4.352E+01
2003	2.650E+06	2.612E-01	4.779E+01
2004	2.919E+06	2.841E-01	5.200E+01
2005	3.193E+06	3.068E-01	5.614E+01
2006	3.472E+06	3.291E-01	6.022E+01
2007	3.754E+06	3.510E-01	6.423E+01
2008	4.041E+06	3.726E-01	6.819E+01
2009	4.333E+06	3.939E-01	7.209E+01
2010	4.628E+06	4.149E-01	7.593E+01
2011	4.928E+06	4.357E-01	7.973E+01
2012	5.233E+06	4.561E-01	8.347E+01
2013	5.542E+06	4.763E-01	8.717E+01
2014	5.855E+06	4.963E-01	9.081E+01
2015	6.173E+06	5.160E-01	9.442E+01
2016	6.495E+06	5.355E-01	9.799E+01
2017	6.822E+06	5.547E-01	1.015E+02
2018	7.153E+06	5.738E-01	1.050E+02
2019	7.488E+06	5.926E-01	1.085E+02
2020	7.828E+06	6.113E-01	1.119E+02
2021	8.173E+06	6.298E-01	1.153E+02
2022	8.517E+06	6.476E-01	1.185E+02
2023	8.862E+06	6.647E-01	1.216E+02
2024	9.206E+06	6.811E-01	1.246E+02
2025	9.206E+06	6.544E-01	1.197E+02

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Vinyl Chloride (HAP/VOC)
 Molecular Wt = 62.50 Concentration = 7.340000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Vinyl Chloride (HAP/VOC) Emission Rate		
	Refuse In Place (Mg)	(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	3.547E-02	1.365E+01
1992	4.648E+05	6.955E-02	2.676E+01
1993	7.083E+05	1.040E-01	4.001E+01
1994	9.049E+05	1.299E-01	4.998E+01
1995	1.056E+06	1.480E-01	5.692E+01
1996	1.212E+06	1.659E-01	6.383E+01
1997	1.394E+06	1.873E-01	7.204E+01
1998	1.539E+06	2.020E-01	7.772E+01
1999	1.717E+06	2.212E-01	8.509E+01
2000	1.917E+06	2.431E-01	9.350E+01
2001	2.140E+06	2.675E-01	1.029E+02
2002	2.385E+06	2.945E-01	1.133E+02
2003	2.650E+06	3.234E-01	1.244E+02
2004	2.919E+06	3.518E-01	1.353E+02
2005	3.193E+06	3.798E-01	1.461E+02
2006	3.472E+06	4.074E-01	1.567E+02
2007	3.754E+06	4.346E-01	1.672E+02
2008	4.041E+06	4.614E-01	1.775E+02
2009	4.333E+06	4.878E-01	1.876E+02
2010	4.628E+06	5.138E-01	1.976E+02
2011	4.928E+06	5.395E-01	2.075E+02
2012	5.233E+06	5.648E-01	2.173E+02
2013	5.542E+06	5.898E-01	2.269E+02
2014	5.855E+06	6.145E-01	2.364E+02
2015	6.173E+06	6.389E-01	2.458E+02
2016	6.495E+06	6.630E-01	2.551E+02
2017	6.822E+06	6.869E-01	2.642E+02
2018	7.153E+06	7.105E-01	2.733E+02
2019	7.488E+06	7.338E-01	2.823E+02
2020	7.828E+06	7.569E-01	2.912E+02
2021	8.173E+06	7.798E-01	3.000E+02
2022	8.517E+06	8.019E-01	3.085E+02
2023	8.862E+06	8.230E-01	3.166E+02
2024	9.206E+06	8.433E-01	3.244E+02
2025	9.206E+06	8.103E-01	3.117E+02

Model Parameters

Lo : 100.00 m³ / Mg
 k : 0.0400 1/yr
 NMOC : 595.00 ppmv
 Methane : 50.0000 % volume
 Carbon Dioxide : 50.0000 % volume
 Air Pollutant : Xylene (HAP/VOC)
 Molecular Wt = 106.17 Concentration = 12.100000 ppmV

Landfill Parameters

Landfill type : No Co-Disposal
 Year Opened : 1990 Current Year : 2025 Closure Year: 2025
 Capacity : 9206108 Mg
 Average Acceptance Rate Required from
 Current Year to Closure Year : 0.00 Mg/year

Model Results

Year	Refuse In Place (Mg)	Xylene (HAP/VOC) Emission Rate	
		(Mg/yr)	(Cubic m/yr)
1991	2.324E+05	9.933E-02	2.249E+01
1992	4.648E+05	1.948E-01	4.411E+01
1993	7.083E+05	2.912E-01	6.595E+01
1994	9.049E+05	3.638E-01	8.239E+01
1995	1.056E+06	4.144E-01	9.384E+01
1996	1.212E+06	4.647E-01	1.052E+02
1997	1.394E+06	5.244E-01	1.188E+02
1998	1.539E+06	5.657E-01	1.281E+02
1999	1.717E+06	6.194E-01	1.403E+02
2000	1.917E+06	6.807E-01	1.541E+02
2001	2.140E+06	7.492E-01	1.697E+02
2002	2.385E+06	8.246E-01	1.867E+02
2003	2.650E+06	9.056E-01	2.051E+02
2004	2.919E+06	9.852E-01	2.231E+02
2005	3.193E+06	1.064E+00	2.409E+02
2006	3.472E+06	1.141E+00	2.584E+02
2007	3.754E+06	1.217E+00	2.756E+02
2008	4.041E+06	1.292E+00	2.926E+02
2009	4.333E+06	1.366E+00	3.093E+02
2010	4.628E+06	1.439E+00	3.258E+02
2011	4.928E+06	1.511E+00	3.421E+02
2012	5.233E+06	1.582E+00	3.582E+02
2013	5.542E+06	1.652E+00	3.740E+02
2014	5.855E+06	1.721E+00	3.897E+02
2015	6.173E+06	1.789E+00	4.051E+02
2016	6.495E+06	1.857E+00	4.205E+02
2017	6.822E+06	1.924E+00	4.356E+02
2018	7.153E+06	1.990E+00	4.505E+02
2019	7.488E+06	2.055E+00	4.654E+02
2020	7.828E+06	2.120E+00	4.800E+02
2021	8.173E+06	2.184E+00	4.945E+02
2022	8.517E+06	2.245E+00	5.085E+02
2023	8.862E+06	2.305E+00	5.219E+02
2024	9.206E+06	2.362E+00	5.348E+02
2025	9.206E+06	2.269E+00	5.138E+02