



**e-GGRT Training Webinar on
Updates to Reporting GHG Data for Subpart HH**

U.S. Environmental Protection Agency
Greenhouse Gas Reporting Program (GHGRP)
February 2013



This training is provided by EPA solely for informational purposes. It does not provide legal advice, have legally binding effect, or expressly or implicitly create, expand, or limit any legal rights, obligations, responsibilities, expectations, or benefits in regard to any person.

2

This training is provided by EPA solely for informational purposes. It does not provide legal advice, have legally binding effect or expressly or implicitly create, expand or limit any legal rights, obligations, responsibilities, expectations, or benefits in regard to any person.

For today's webinar please only submit questions regarding e-GGRT functionality, particularly on the updates covered in this webinar. Question on other topics (rule requirements, legal issues, etc.) should be submitted to GHGReporting@epa.gov.

Overview



- Inputs to equations whose reporting was deferred until 2013 must be reported to EPA by **April 1, 2013**, for reporting years **2010, 2011, and 2012**
 - Listed in Table A-6 of the rule by subpart
 - Incorporated into e-GGRT
- Walk through changes made to e-GGRT
 - For reporting of inputs to equations
 - System now performs many of the calculations

3

There are some substantial changes to the e-GGRT system for this reporting cycle.

The inputs to equations whose reporting was deferred until 2013 must be reported to EPA by April 1, 2013 for reporting years 2010, 2011, and 2012.

For the complete list of inputs that were deferred, refer to Table A-6 of the rule. The inputs are listed by subpart.

The inputs have been incorporated into e-GGRT.

The purpose of this webinar is to walk through e-GGRT to highlight the changes as a result of adding the inputs. Because these inputs are reported, the system can now do many of the calculations for reporters.

What is Not Covered in this Webinar



- Basics of system navigation
 - SAVE at bottom of the page, even if you didn't change anything on that page!!!
- How to get into/add subpart HH
- Anything within the module that has not changed
- Validation messages
- Calculation spreadsheets
- Signing, certifying, or submitting your finished report
- Please refer to past webinar for these basics:
http://www.epa.gov/ghgreporting/documents/pdf/2012/training/Subpart-HH_e-ggrr.pdf

4

As was said, this webinar is going to focus on the changes to e-GGRT as a result of the equation inputs deferral having expired.

Therefore, there are a number of items this webinar will not cover that were covered in previous webinars. You can refer back to the previous webinar by going to the link on the last bullet of this slide.

What is not covered are the basic navigation of the system. However, it should be noted, that reporters should click SAVE at the bottom of all pages, where there is a SAVE button. This is even if you did not change anything on the page.

Also not covered is how to get into the subpart HH module or how to add or remove subparts, the validation messages, calculation spreadsheets that are still accessible from the Help link, how to sign, certify, and submit a report. Also not covered is anything that has not changed in the module, for example, the questions about active aeration at your facility if you used a number other than the default of 1 for MCF, have not changed, so this will not be covered.

Please note that data entered in past years reports on items such as historical waste details will continue to carry over from past reports. For the inputs that are newly reported this year, you will have to enter that data and it will then be carried over into future reports.

For more information about update to e-GGRT in modules other than subpart HH, please go to the Training and Testing section of our website to download other webinars.

Inputs to be Reported – All Landfills



- Waste disposal quantity for each year of landfilling and the quantities of waste determined using scales and working capacities each year those methods were used
 - The first and last year the landfill accepted waste and the landfill capacity (if used in Equation HH-3 to estimate waste quantities)
 - The population served by the landfill for each year, and the landfill capacity's value (if used Equation HH-2 to estimate waste quantities)
- Waste composition for each waste category listed in Table HH-1 of this subpart used to calculate the annual modeled CH_4 generation using Equation HH-1
- Degradable organic carbon (DOC), methane correction factor (MCF), fraction of DOC dissimilated (DOC_F), and decay rate (k) values
- Fraction of CH_4 in landfill gas (F)
- Surface area associated with each cover type
- Modeled annual methane generation rate calculated using Equation HH-1

5

This is a detailed list of items whose deferral has expired for all landfills.

Just about all of the inputs on this list are inputs to Equation HH-1, the first order decay model, as you see waste quantities, DOC and k-values among other data elements on this list.

Inputs to be Reported – Landfills with GCS



- Annual operating hours for the primary and backup destruction devices, and their destruction efficiency
- Annual quantity of recovered CH₄ using Equation HH-4
- Surface area for each area specified in Table HH-3, estimated gas collection system efficiency, and annual operating hours of the gas collection system
- CH₄ generation value used in Equation HH-6

6

This is a detailed list of items whose deferral has expired for landfills with gas collection systems.

The screenshot displays the e-GGRT interface for Subpart HH reporting. At the top, a blue banner reads "Subpart HH: Subpart OVERVIEW" next to the EPA logo. Below this, a sidebar on the left contains "e-GGRT Help" and "Using e-GGRT for Subpart HH reporting". The main content area is titled "HH-C Landfill 2" and "Subpart HH: Municipal Solid Waste Landfills (2012)". A "Subpart Overview" section includes an "OVERVIEW OF SUBPART REPORTING REQUIREMENTS" and a "Subpart HH: No Validation Messages" notification. A "Reporting Information" section features a link for "Landfill Details - Reporting Years" with a green arrow pointing to an "OPEN" button. A "Facility Overview" link is also visible.

You can begin to see differences in the module for Subpart HH from the first look at the Subpart Overview page.

Landfill details are now broken up by time period: from the first reporting year to the current reporting year, aka Reporting Years; then all years prior to the first reporting year, aka Historical Years. For most landfills, Reporting Years encompass 2010, 2011, and now 2012. But there were a few facilities that reported in 2011 for the first time. For those facilities, Reporting Years just mean 2011 and now 2012.

Click OPEN next to Landfill Details – Reporting Years to begin data entry.

Subpart HH: Landfill Details – Reporting Years (1)

e-GGRT Help

Using e-GGRT for Subpart HH reporting

HH-Landfill 1

Subpart HH: Municipal Solid Waste Landfills (2012)

[Subpart Overview](#) » [Landfill Details - Reporting Years](#)

LANDFILL DETAILS - REPORTING YEARS

The information in this form is necessary to determine which annual reporting requirements apply to your landfill. For example, additional questions and forms will appear if you select 'Yes' to the question, "Does the landfill have a gas collection system?". The answers you provide on this screen will determine what greenhouse gas reporting elements are made available on your Subpart HH Overview page. For additional information about the facility information required by Subpart HH, please use the e-GGRT Help link(s) provided.

* denotes a required field

In 2012, was the landfill open* Open (actively accepting waste)
 Closed (no longer accepting waste)

First year the landfill accepted waste (year)

Estimated year of landfill closure (year)

FIRST YEAR OF EMISSIONS REPORTING

Data reporting requirements vary slightly for years prior to the first year the landfill was required to report under Part 98. The system has automatically set the first year of emissions reporting to be equal to the first year an annual GHG report was submitted and certified for this facility. If for some reason you believe it to be incorrect, you can change the first year of emissions reporting and select the Apply Changes button. The tables that follow lower on the page will be refreshed accordingly.

First year of emissions reporting

This is the Landfill Details – Reporting Years page.

In this example, the landfill is open, so the next questions that need to be answered for all open landfills is when it first accepted waste and when it is expected to close. These are slightly different from past years' reporting.

Next e-GGRT asks for the first year that the landfill starting reporting to the Greenhouse Gas Reporting Program. As explained here, the data reporting requirements vary slightly for years prior to the first reporting year the landfill was required to report to the program. The system automatically sets the first reporting year to the first year an annual GHG report was submitted for this facility. But you are given the opportunity to change that value if you believe it is not correct. To correct it, select another year from the pull-down list and click Apply Changes and the rest of the page will refresh accordingly.

Subpart HH: Landfill Details – Reporting Years (2)



e-GGRT Help

Using e-GGRT for Subpart HH reporting

HH-Landfill 1

Subpart HH: Municipal Solid Waste Landfills (2012)

Subpart Overview » Landfill Details - Reporting Years

LANDFILL DETAILS - REPORTING YEARS

The information in this form is necessary to determine which annual reporting requirements apply to your landfill. For example, additional questions and forms will appear if you select 'Yes' to the question, "Does the landfill have a gas collection system?". The answers you provide on this screen will determine what greenhouse gas reporting elements are made available on your Subpart HH Overview page. For additional information about the facility information required by Subpart HH, please use the e-GGRT Help link(s) provided.

* denotes a required field

In 2012, was the landfill open * or closed? Open (actively accepting waste) Closed (no longer accepting waste)

First year the landfill accepted waste (year)

Last year the landfill accepted waste (year)

FIRST YEAR OF EMISSIONS REPORTING

Data reporting requirements vary slightly for years prior to the first year the landfill was required to report under Part 98. The system has automatically set the first year of emissions reporting to be equal to the first year an annual GHG report was submitted and certified for this facility. If for some reason you believe it to be incorrect, you can change the first year of emissions reporting and select the Apply Changes button. The tables that follow lower on the page will be refreshed accordingly.

First year of emissions reporting

9

Back tracking a step, if the landfill is closed, then you must enter the first year the landfill accepted waste and the last year waste was accepted. And then again you see the question about the first year of emissions reporting.

Subpart HH: Landfill Details – Reporting Years (3)



First year the landfill accepted waste: 1970 (year)

Estimated year of landfill closure: 2025 (year)

FIRST YEAR OF EMISSIONS REPORTING

Data reporting requirements vary slightly for years prior to the first year the landfill was required to report under Part 98. The system has automatically set the first year of emissions reporting to be equal to the first year an annual GHG report was submitted and certified for this facility. If for some reason you believe it to be incorrect, you can change the first year of emissions reporting and select the Apply Changes button. The tables that follow lower on the page will be refreshed accordingly.

First year of emissions reporting: 2010

WASTE QUANTITIES/METHODS SINCE FIRST YEAR OF REPORTING

Please select each method used to determine the total annual waste disposal quantity for each year since the first year of emissions reporting, and enter the quantity of waste determined using each method. If you used scales or working capacities to estimate waste quantities, the quantity of waste estimated by either method must be separately reported. The system will automatically calculate the total annual waste quantity by summing reported values across all methods. Please note that 'Other Method' is only applicable for certain facilities in RY2010 that obtained approval to use best available monitoring methods (BAMM) to determine their waste quantities. After RY2010, either scales or working capacity must have been used to determine annual waste quantities.

RY	Used Scales? (metric tons)	Used Working Capacity? (metric tons)	Other Method? (metric tons)	Total Waste Quantity (metric tons)
2012	<input checked="" type="checkbox"/> 350000	<input type="checkbox"/>		350000
2011	<input checked="" type="checkbox"/> 300000	<input type="checkbox"/>		300000
2010	<input checked="" type="checkbox"/> 300000	<input type="checkbox"/>	<input type="checkbox"/>	300000

10

Next you are asked about the methods used to determine waste quantities for the first year of reporting and after. One change to the system is the tabular way in which some questions are asked. This grid appears covering all of the years that the facility reported starting with the first emission reporting year or RY (in the first column). If your first year of emission reporting was 2011, then only 2011 and 2012 would appear in the grid.

Note that after 2010 there are only two allowable options for how to determine waste quantities – scales or working capacities. The third option, Other, refers to best available monitoring methods or BAMM, and these were only available for those subpart HH facilities in 2010 that were approved by EPA to use BAMM. For 2011, and each year after, scales or working capacities must be used to determine waste quantities.

Also note that if you check the box that you used a method, a box appears in which you must enter the waste quantity measured using that method. Per the rule language, the quantities for scales and working capacities must be reported separately. The system will automatically add up the values entered in each row for a total which appears in the last column “Total Waste Quantity.”

While similar questions were asked in previous versions of e-GGRT, the reporting of annual waste quantities by method is new, as is this grid structure and the automatic summing of values for total annual waste quantity.



Subpart HH: Landfill Details – Reporting Years (4)

waste quantities:

Landfill capacity (metric tons) 1

Passive vents and/or flares are present (vents or flares that are not considered part of the gas collection system) (check if true)

Leachate recirculation was used during the reporting year (check if true) 2

Typical frequency of use for leachate recirculation system 3

Used several times a year for the past 10 years
 Select
 Used several times a year for the past 10 years
 Used at least once a year for the past 10 years
 Used occasionally (but not every year) over the past 10 years
 Not used for the past 10 years

COVER MATERIALS

Identify each cover material used and report the surface area in square meters for each cover type selected.

Identify each type of cover material used

Organic cover (square meters)

Sand cover

Clay cover (square meters)

Other soil mixture

Total surface area of the landfill containing waste 50000 (square meters)

LANDFILL GAS COLLECTION SYSTEM

Does the landfill have a landfill gas collection system Yes No

If the landfill has a landfill gas collection system, indicate the manufacturer of the gas collection system, the capacity of the system in actual cubic feet per minute (acfm), and the number of wells present at the landfill. For manufacturer of the gas collection system, indicate the entity that designed the gas collection system and the entity that installed the gas collection system. If this information is not available, report the manufacturer of the blower. Do not use this space to indicate the manufacturer of the flares in place at the landfill. Also do not use this space to indicate the brand of measurement equipment used to monitor landfill gas flow or methane concentration.

11

Three additional changes down at the bottom of the Landfill Details page for Reporting Years.

First, the landfill capacity must be reported for all landfills (Arrow #1), whereas before it was reported only if certain estimation methods were used.

Second, you must indicate the typical frequency of use for leachate recirculation at your landfill regardless of whether you used leachate recirculation during the reporting year. The list of possible frequencies has been expanded to include the possibility that leachate recirculation was “Not used for the past 10 years.” (Arrow #2)

Third, when you identify each cover material that is used, you must also report the surface area in square meters for each cover type selected (Arrow #3). The system will add them together for the total surface area of the landfill containing waste.

Subpart HH: Landfill Details – Reporting Years (5)



<input type="checkbox"/> Sand cover	
<input checked="" type="checkbox"/> Clay cover	25000 (square meters)
<input type="checkbox"/> Other soil mixture	
Total surface area of the landfill containing waste	50000 (square meters)

LANDFILL GAS COLLECTION SYSTEM

Does the landfill have a landfill gas collection system? Yes No

If the landfill has a landfill gas collection system, indicate the manufacturer of the gas collection system, the capacity of the system in actual cubic feet per minute (acfm), and the number of wells present at the landfill. For manufacturer of the gas collection system, indicate the entity that designed the gas collection system and the entity that installed the gas collection system. If this information is not available, report the manufacturer of the blower. Do not use this space to indicate the manufacturer of the flares in place at the landfill. Also do not use this space to indicate the brand of measurement equipment used to monitor landfill gas flow or methane concentration.

Manufacturer of the gas collection system	LFG Engineers Inc.
Capacity of the gas collection system	35000 (acfm)
Number of wells	25 (wells)
Annual operating hours	8760 (hours)

[Subpart Overview](#) [CANCEL](#) [SAVE](#)

12

The last change on this landfill details page is an additional question that must be answered if you indicate that your landfill has a gas collection system. You must now report the annual operating hours of the gas collection system in addition to the information that was previously reported about the gas collection system.

Subpart HH: Landfill Details – Historical Years (1)

e-GGRT Help

Using e-GGRT for Subpart HH reporting

HH-C Landfill 2

Subpart HH: Municipal Solid Waste Landfills (2012)

Subpart Overview

OVERVIEW OF SUBPART REPORTING REQUIREMENTS

Subpart HH requires municipal solid waste landfills to report methane (CH₄) generation and emissions quantities. First, provide the information requested in the two Landfill Details pages and e-GGRT will determine what additional information is required for reporting based on the information you provide about your landfill. For additional information about Subpart HH reporting, please use the e-GGRT Help link(s) provided.

✓

Subpart HH: No Validation Messages


Reporting Information	
Landfill Details - Reporting Years	OPEN
Landfill Details - Historical Years	OPEN
Waste Characterization Information	OPEN
Annual Waste Type Details	OPEN
Estimated Waste Depths	OPEN
Methane Generation and Emissions for Landfills with LFG Collection Systems	OPEN

[← Facility Overview](#)

13

After you clicked SAVE and returned to the subpart OVERVIEW page, you will see additional pages. As before, what you see here is based on how you answered the questions on the Landfill details page. For example, the last line is Methane Generation and Emissions for Landfills with LFG Collection Systems because the question on the Landfill Details-Reporting Years page about whether the landfill has gas collection was answered yes. If the answer was no, then a different page would be shown here.

As mentioned previously, Landfill Details is broken up into two parts, click OPEN next to Landfill Details – Historical Years to continue data entry for the second part.



Subpart HH: Landfill Details – Historical Years (2)

HH-C Landfill 2

Subpart HH: Municipal Solid Waste Landfills (2012)

[Subpart Overview](#) » [Landfill Details - Historical Years](#)

LANDFILL DETAILS - HISTORICAL YEARS

The information in this form contains questions about the annual quantities of waste disposed of at your landfill and the methods used to determine those quantities. Historical years include any years prior to 2010, the first year reporting was required under Part 98. * denotes a required field

HISTORICAL WASTE QUANTITY ESTIMATION METHOD AND PERIOD (YEARS PRIOR TO RY2010)

Please provide the following information regarding the methods used to determine historical annual waste disposal quantities.

Were scales used to determine the annual waste quantity for any years prior to 2010 (for loads other than cars, light duty trucks, and loads that cannot be measured with scales due to physical or operational limitations)? Yes No ← 1

Please indicate the first and last year of the period that scales were used prior to 2010.

Scales period start* (year) ← 2

Scales period end* (year)

Please provide the following information regarding the methods used to determine historical annual waste disposal quantities prior to the first reporting year.

Were working capacities used to determine waste disposal quantity for any years prior to 2010? Yes No

Working capacities period start* (year)

Working capacities period end* (year)

The Landfill Details-Historical Years page contains all of the questions about what methods were used to determine or estimate waste quantities for each year the landfill accepted waste up to the first year of emissions reporting under Part 98.

So first is the question about scales (Arrow #1). As before, if you click Yes that this method was used, then additional questions will pull down asking for the first and last year or start and end years for using this method (Arrow #2).

There are 4 series of these questions and they are broken out slightly differently from the last reporting cycle: 1) scales; 2) working capacities; 3) tipping receipts and other company records; and 4) the other estimation methods (Methods #1, #2, and #3 in the rule). For each click yes or no, and if yes, enter the first year the method was used and the last year it was used.

As can be seen at the bottom of this slide, the difference with this version of e-GGRT is that working capacities is asked separately, whereas before they were lumped together with tipping receipts. This will be explained more in a later slide.

Subpart HH: Landfill Details – Historical Years (3)



If, prior to the years in which the methods identified above were used, historical annual waste disposal quantities were estimated using one of the three methods outlined in 98.343(a)(4), i.e., constant quantity, Equation HH-2, or Equation HH-3, please select the method used to estimate those historical annual waste disposal quantities, specify the range of years the method was used, and describe the reason the method was used. Otherwise, select "None."

Indicate the method used for estimating all annual waste quantities that are not determined with the methods above or through tipping receipts or company records

- Method #1: Assume all prior year's waste disposal quantities are the same as the waste quantity in the first year for which waste quantities are available.
- Method #2: Use the estimated population served by the landfill in each year, the values for national average per capita waste generation, and fraction of generated waste disposed of in solid waste disposal sites (Equation HH-2)
- Method #3: Use the landfill capacity or, for operating landfills, the amount of waste-in-place to estimate a constant average waste disposal quantity (Equation HH-3)
- None

Estimation method period start * (year)

Estimation method period end * (year)

Reason for using the estimation method selected

WASTE QUANTITIES AND METHODS

Press the Generate Grid button (below) to generate a table based on the information entered above so that waste disposal quantities and associated estimation methodologies for each historical year of disposal can be reported.

[Generate Grid](#)

ESTIMATED POPULATION SERVED BY LANDFILL

Because you have indicated that Method #2 (Equation HH-2) was used to estimate annual waste quantities, please provide the estimated population served by the landfill in each year the method was used. To change the year(s) displayed below edit the Method #2 start and/or end date above and use the Generate Grid button.

Year 2009

Year 2008

Year 2007



15

If Method #2 is selected, you will need to enter the same information as was entered in previous versions of e-GGRT (e.g., start/end years and reason used), and will now have to enter the estimated population served by the landfill for each year Method 2 was used.

Subpart HH: Landfill Details – Historical Years (4)



If, prior to the years in which the methods identified above were used, historical annual waste disposal quantities were estimated using one of the three methods outlined in 98.343(a)(4), i.e., constant quantity, Equation HH-2, or Equation HH-3, please select the method used to estimate those historical annual waste disposal quantities, specify the range of years the method was used, and describe the reason the method was used. Otherwise, select "None."

Indicate the method used for estimating all annual waste quantities that are not determined with the methods above or through tipping receipts or company records

- Method #1: Assume all prior year's waste disposal quantities are the same as the waste quantity in the first year for which waste quantities are available.
- Method #2: Use the estimated population served by the landfill in each year, the values for national average per capita waste generation, and fraction of generated waste disposed of in solid waste disposal sites (Equation HH-2).
- Method #3: Use the landfill capacity or, for operating landfills, the amount of waste-in-place to estimate a constant average waste disposal quantity (Equation HH-3).
- None

Estimation method period start * (year)

Estimation method period end * (year)

Reason for using the estimation method selected

Because you have indicated that Method #3 (Equation HH-3) was used to estimate annual waste quantities, please provide the value of landfill capacity (LFC) used in the calculation.

Landfill capacity or, for operating landfills, capacity of the landfill used (or the total quantity of waste-in-place)



16

If Method #3 is selected, you will need to enter the same information as was entered in previous versions of e-GGRT (e.g., start/end years and reason used), and will now have to enter the landfill capacity term used in Equation HH-3.

Subpart HH: Landfill Details – Historical Years (5)



quantity or waste-in-place)

WASTE QUANTITIES AND METHODS
Press the Generate Grid button (below) to generate a table based on the information entered above so that waste disposal quantities and associated estimation methodologies for each historical year of disposal can be reported.

METHOD(S) USED TO DETERMINE HISTORICAL WASTE STREAM QUANTITY
Use the table below to enter waste disposal quantities for the associated estimation methodologies used for each historical year of disposal. To change the year(s) that a specific method was used, edit the appropriate start and/or end date in the Historical Waste Quantity Estimation Method and Period (Years Prior to RY2010) section above and then press the Generate Grid button.

If you used more than one method to estimate waste quantities within the same year, the quantity of waste estimated must be reported separately for scales and working capacity. For all other methods used in a given year, report the combined annual waste disposal quantity as "All Other Methods". The system will automatically calculate the total annual waste quantity by summing reported values across all three method categories.

RY	Methods	Clear All Quantities	Clear All Quantities	Clear All Quantities	Total Waste Quantity (metric tons)
		Scales Quantity (metric tons)	Working Capacity Quantity (metric tons)	All Other Methods (metric tons)	
2009	Scales	<input type="text" value="15000"/>			15000
		<input type="button" value="↓"/>			
2008	Scales	<input type="text" value="15500"/>			15500
2007	Scales	<input type="text" value="14500"/>			14500
2006	Working Capacities		<input type="text" value="13500"/>		13500
			<input type="button" value="↓"/>		
2005	Working Capacities		<input type="text" value="13000"/>		13000
2004	Other			<input type="text" value="10000"/>	10000
2003	Other			<input type="text" value="10000"/>	10000
2002	Other			<input type="text" value="10000"/>	10000
2001	Other			<input type="text" value="10000"/>	10000
2000	Other			<input type="text" value="10000"/>	10000

17

After all methods used have been indicated as well as the years those methods were used, click the Generate Grid button (Arrow #1) so that the corresponding waste quantities may be entered.

Once that button is clicked, the grid appears showing methods used by year broken out by scales, working capacities, and then all of the other estimation methods are lumped together (Arrow #2). This is per the rule language which requires waste quantities determined by scales or working capacities to be reported separately (98.346(b)). So if both scales and working capacities were used in a given year, those must be entered separately. The system will then sum across the row and the total waste quantity for that year is shown in the last column.

Two features to point out on the grid. First the Clear All Quantities feature under the title of each column. Second if the same value needs to be entered for all years that method was used, click the little blue arrow underneath the first box in that column to automatically populate all values in the column with the same number.

Multiple methods may be indicated in a particular year. In this case, two boxes will appear and you will have to enter separate values in each box, which will be summed across for the total.

If you enter waste quantities and then realize you made a mistake in the start and end years for a method, you should scroll up to change the start and end years for that particular method and then press the Generate Grid button again to re-generate the grid. The waste quantities already entered will remain, but the grid will be regenerated to show the revised range of years.

Subpart HH: Waste Characterization Information (1)



[e-GGRT Help](#)
Using e-GGRT for Subpart HH reporting

HH-C Landfill 2
Subpart HH: Municipal Solid Waste Landfills (2012)
Subpart Overview

OVERVIEW OF SUBPART REPORTING REQUIREMENTS
Subpart HH requires municipal solid waste landfills to report methane (CH₄) generation and emissions quantities. First, provide the information requested in the two Landfill Details pages and e-GGRT will determine what additional information is required for reporting based on the information you provide about your landfill. For additional information about Subpart HH reporting, please use the e-GGRT Help link(s) provided.

Subpart HH: No Validation Messages

Reporting Information	
Landfill Details - Reporting Years	OPEN
Landfill Details - Historical Years	OPEN
Waste Characterization Information	OPEN
Annual Waste Type Details	OPEN
Estimated Waste Depths	OPEN
Methane Generation and Emissions for Landfills with LFG Collection Systems	OPEN

[↑ Facility Overview](#)

18

Back to Subpart Overview. The next page to go to is Waste Characterization Information

Subpart HH: Waste Characterization Information (2)



e-GGRT Help

Using e-GGRT for Subpart HH reporting

HH-C Landfill 2

Subpart HH: Municipal Solid Waste Landfills (2012)

[Subpart Overview](#) » [Waste Characterization Information](#)

WASTE CHARACTERIZATION INFORMATION

Use this page to provide information about (1) missing data procedures used to determine the annual waste quantities disposed for waste quantities determined according to the methods described by 98.343(a)(3), and (2) the types of waste disposed. For additional information about the data reported on this page, please use the e-GGRT Help link(s) provided.

2012 WASTE QUANTITY

Total annual waste disposal quantity for 2012 25000

A missing data procedure was used to determine 2012 waste quantity (check if true)

Number of days substitute data was used to determine the 2012 waste quantity (days)

Identify the option used (from Table HH-1) to select the waste type(s) disposed of at the landfill:

- Bulk waste option
- Modified bulk MSW option
- Waste composition option

To enter the percentage by weight of the 2012 annual waste quantity for each of waste type selected, and to enter additional Equation HH-1 parameters for each waste type selected (DOC, DOCF, F, MCF, and decay rate), use the [Annual Waste Type Details](#) page.

2011 WASTE QUANTITY

19

This page is very much like the Waste Disposal Information page from the previous iterations of e-GGRT. Information on each year in which scales were used must be entered here just as before. The one difference is that the waste disposal quantity for each year is displayed. It is the same value that was entered on either the Landfill Details – Reporting Years page for the years in which the facility reported to the GHGRP or the Landfill Details – Historical Years page for all years prior to the first year of emissions reporting.

Subpart HH: Annual Waste Type Details (1)



e-GGRT Help
Using e-GGRT for Subpart HH reporting

HH-C Landfill 2
Subpart HH: Municipal Solid Waste Landfills (2012)
Subpart Overview

OVERVIEW OF SUBPART REPORTING REQUIREMENTS
Subpart HH requires municipal solid waste landfills to report methane (CH₄) generation and emissions quantities. First, provide the information requested in the two Landfill Details pages and e-GGRT will determine what additional information is required for reporting based on the information you provide about your landfill. For additional information about Subpart HH reporting, please use the e-GGRT Help link(s) provided.

Subpart HH: No Validation Messages

Reporting Information	
Landfill Details - Reporting Years	OPEN
Landfill Details - Historical Years	OPEN
Waste Characterization Information	OPEN
Annual Waste Type Details	OPEN
Estimated Waste Depths	OPEN
Methane Generation and Emissions for Landfills with LFG Collection Systems	OPEN

[↑ Facility Overview](#)

The next page is Annual Waste Type Details.

Subpart HH: Annual Waste Type Details (2)



HH-C Landfill 2
Subpart HH: Municipal Solid Waste Landfills (2012)
Subpart Overview » Waste Characterization Information » Annual Waste Type Details

WASTE TYPE DETAILS
Please provide the following information for each waste type disposed in each year. Waste quantities were determined according to the methods described by 98.344(a) (3). The data entered for each year will be automatically imported into the next reporting year's GHG report so that you do not have to re-enter this data annually. The option to revise a previous year's data will be available. For additional information, please use the e-GGRT Help link(s) provided. The information entered on this page will be saved each time you select the Save, Previous Year, or Next Year buttons.

2012

ANNUAL WASTE COMPOSITION
Use the table below to report the percent by weight (expressed as a decimal fraction) for each waste type disposed in this year. Please be sure all percent by weight values entered sum to 1. If you wish to edit the waste type reported for this year of disposal, return to the [Waste Characterization Information](#) page.

Waste Type	Percent by weight	Quantity (metric tons)
Bulk MSW waste (excluding inerts and C&D waste)	<input type="text" value=".75"/>	18750
Inerts	<input type="text" value=".25"/>	6250
Total:	1	25000

User entered total annual waste disposal quantity (metric tons): 25000


WASTE TYPE : BULK MSW WASTE (EXCLUDING INERTS AND C&D WASTE)
Degradable organic carbon (DOC) (decimal fraction)

21

Per the rule, for each year required by Equation HH-1, you must enter the waste composition in percentage by weight (Arrow #1).

Enter the data expressed as a decimal fraction. If it is 100% be sure to enter 1.0 or you will get an error message.

The system does the math for the last column (Arrow #2) to get a quantity for each waste type and then totals it, so it matches the quantity entered on previous screens.



Subpart HH: Annual Waste Type Details (3)

User entered total annual waste disposal quantity (metric tons): 25000

WASTE TYPE : BULK MSW WASTE (EXCLUDING INERTS AND C&D WASTE)

Degradable organic carbon (DOC) (decimal fraction)

Fraction of DOC dissimilated (DOCF) (decimal fraction)

Decay Rate(k) (yr⁻¹)

The fraction of CH₄ in landfill gas (F) is based on a measured value (not the default value of 0.5) (check if true)

Fraction by volume of CH₄ in landfill gas (fraction by volume)

An MCF value other than the default of 1 was used (check if true)

Methane correction factor (fraction)

WASTE TYPE : INERTS

Degradable organic carbon (DOC) (decimal fraction)

Fraction of DOC dissimilated (DOCF) (decimal fraction)

Decay Rate(k) (yr⁻¹)

The fraction of CH₄ in landfill gas (F) is based on a measured value (not the default value of 0.5) (check if true)

Fraction by volume of CH₄ in landfill gas (fraction by volume)

An MCF value other than the default of 1 was used (check if true)

Methane correction factor (fraction)

[← Subpart Overview](#)
 [CANCEL](#)
 [SAVE](#)
 [Next Year →](#)

This next slide shows where you enter all of the inputs to Equation HH-1 by waste type. Recall that Equation HH-1 is the First Order Decay Model that is used to calculate methane generation from the landfill.

You must enter the values for DOC, DOC_p , and k. The values for DOC_p is automatically entered as 0.5, since that is the default that must be used per the rule.

Next are the same check boxes as before for the values of F and MCF. However, this time the values used for these terms must also be reported. The defaults are automatically entered. But if you check either of the boxes for MCF or F to say that you used values other than the defaults, those numbers will go away and you must enter the values you used for the calculation.

As before, if you say you used an MCF other than the default, you have to enter information about active aeration at your landfill. Again, this was covered in the previous webinars and has not changed so detail is not being provided here. The one difference is that the questions on aeration are shown on this page instead of on a separate page.

This data on this slide must be entered for each waste type. When you are done entering all the information, click SAVE at the bottom, then click Next Year.

Subpart HH: Annual Waste Type Details (4)



The option to revise a previous year's data will be available. For additional information, please use the e-GGRT Help link(s) provided. The information entered on this page will be saved each time you select the Save, Previous Year, or Next Year buttons.

2011

ANNUAL WASTE COMPOSITION

Use the table below to report the percent by weight (expressed as a decimal fraction) for each waste type disposed in this year. Please be sure all percent by weight values entered sum to 1. If you wish to edit the waste types selected for this year of disposal, return to the [Waste Characterization Information](#) page.

Waste Type	Percent by weight	Quantity (metric tons)
Bulk waste	<input type="text"/>	<input type="text"/>
Total:		0

User entered total annual waste disposal quantity (metric tons): 30000

WASTE TYPE : BULK WASTE

Degradable organic carbon (DOC) (decimal fraction)

Fraction of DOC dissimilated (DOCF) (decimal fraction)

Decay Rate(k) (yr⁻¹)

The fraction of CH₄ in landfill gas (F) is based on a measured value (not the default value of 0.5) (check if true)

Fraction by volume of CH₄ in landfill gas (fraction by volume)

An MCF value other than the default of 1 was used (check if true)

Methane correction factor (fraction)

[Subpart Overview](#) [CANCEL](#) [SAVE](#) [Previous Year](#) [Next Year](#)

23

This slide shows the data entry required for the year prior.

Now at the bottom, see buttons for both Next Year and Previous Year. Use those to navigate the system until data on the waste types for all years is complete.

When you are done entering data for all years required, the Next Year button will no longer appear at the bottom and so you will know to hit SAVE and then go back to Subpart Overview.

Subpart HH: Estimated Waste Depths (1)



e-GGRT Help

Using e-GGRT for Subpart HH reporting

HH-Landfill 1

Subpart HH: Municipal Solid Waste Landfills (2012)

Subpart Overview

OVERVIEW OF SUBPART REPORTING REQUIREMENTS

Subpart HH requires municipal solid waste landfills to report methane (CH₄) generation and emissions quantities. First, provide the information requested in the two Landfill Details pages and e-GGRT will determine what additional information is required for reporting based on the information you provide about your landfill. For additional information about Subpart HH reporting, please use the e-GGRT Help link(s) provided.



Subpart HH: No Validation Messages

Reporting Information	
Landfill Details - Reporting Years	OPEN
Landfill Details - Historical Years	OPEN
Waste Characterization Information	OPEN
Annual Waste Type Details	OPEN
Estimated Waste Depths	OPEN
Methane Generation and Emissions for Landfills with LFG Collection Systems	OPEN

[Facility Overview](#)

24

There are also changes on the screen regarding waste depths. From the Subpart Overview page, click OPEN next to "Estimated Waste Depths."

Subpart HH: Estimated Waste Depths (2)



e-GGRT Help
Using e-GGRT for Subpart HH reporting

HH-Landfill 1
Subpart HH: Municipal Solid Waste Landfills (2012)
Subpart Overview » **Estimated Waste Depth**

WASTE DEPTH ESTIMATIONS
Please provide the estimated waste depth and surface area of each area of the landfill (A1 through A5) as defined in Table HH-3 and explained below.

A1:
Estimated waste depth of area with no waste in place (meters)
Surface area of area with no waste in place (square meters)

A2:
Estimated waste depth of area without active gas collection, regardless of cover type (meters)
Surface area of area without active gas collection, regardless of cover type (square meters)

A3:
Estimated waste depth of area with daily soil cover and active gas collection (meters)
Surface area of area with daily soil cover and active gas collection (square meters)

A4:
Estimated waste depth of area with an intermediate soil cover, or a final soil cover not meeting the criteria for A5 (meters)
Surface area of area with an intermediate soil cover, or a final soil cover not meeting the criteria for A5 (square meters)

A5:

25

For landfills with gas collection, you must now enter the estimated waste depths (in meters) and the surface area (in square meters) for each of the areas listed in Table HH-3 of the rule for areas A1 through A5.

Subpart HH: Methane Generation and Emissions for Landfills with Gas Collection (1)



e-GGRT Help
Using e-GGRT for Subpart HH reporting

HH-Landfill 1
Subpart HH: Municipal Solid Waste Landfills (2012)
Subpart Overview

OVERVIEW OF SUBPART REPORTING REQUIREMENTS
Subpart HH requires municipal solid waste landfills to report methane (CH₄) generation and emissions quantities. First, provide the information requested in the two Landfill Details pages and e-GGRT will determine what additional information is required for reporting based on the information you provide about your landfill. For additional information about Subpart HH reporting, please use the e-GGRT Help link(s) provided.

Subpart HH: No Validation Messages

Reporting Information	
Landfill Details - Reporting Years	OPEN
Landfill Details - Historical Years	OPEN
Waste Characterization Information	OPEN
Annual Waste Type Details	OPEN
Estimated Waste Depths	OPEN
Methane Generation and Emissions for Landfills with LFG Collection Systems	OPEN

[↑ Facility Overview](#)

Back at Subpart Overview, next click OPEN next to Methane Generation and Emissions for Landfills with LFG Collection Systems

Subpart HH: Methane Generation and Emissions for Landfills with Gas Collection (2)



e-GGRT Help

Using e-GGRT for Subpart HH reporting

HH-C Landfill 2

Subpart HH: Municipal Solid Waste Landfills (2012)

Subpart Overview » GHG Reporting

CH₄ EMISSIONS (FOR LANDFILLS WITH A GAS COLLECTION SYSTEM)

Landfills that have a landfill gas collection system are required to report two sets of CH₄ generation and CH₄ emissions values. CH₄ generation, adjusted for oxidation, must be reported as calculated using both Equations HH-5 and HH-7, and CH₄ emissions must be reported as calculated using both Equations HH-6 and HH-8. For additional information, please use the e-GGRT Help link(s) provided.

Select a specific equation below to review the equation summary and result that will appear in your annual GHG report. Alternatively, select the NEXT or BACK buttons at the bottom of each equation summary and result page to move consecutively through the equations.

- ▷ [Equation HH-1 Summary and Result](#)
- ▷ [Equation in table HH-3 Summary and Result](#)
- ▷ [Equation HH-4 Summary and Result](#)
- ▷ [Equation HH-5 Summary and Result](#)
- ▷ [Equation HH-6 Summary and Result](#)
- ▷ [Equation HH-7 Summary and Result](#)
- ▷ [Equation HH-8 Summary and Result](#)

SUMMARY AND RESULT

Equation	CH ₄
Total annual modeled CH ₄ generation (HH-1)	876.81
Annual quantity of recovered CH ₄ generation (HH-3)	0.56
Total annual modeled CH ₄ generation (HH-4)	
Modeled CH ₄ generation, adjusted for oxidation (HH-5)	789.13
CH ₄ emissions from the landfill in the reporting year (HH-6)	
Measured CH ₄ generation, adjusted for oxidation (HH-7)	
CH ₄ emissions from the landfill in the reporting year (HH-8)	

27

This section is all about the Subpart HH equations, all of which are listed here. The numbers in the Summary and Result section, under the column CH₄, are automatically calculated by e-GGRT based on previously entered data.

Subpart HH: Methane Generation and Emissions for Landfills with Gas Collection (3)



SUMMARY AND RESULT		
Equation	CH ₄	
Total annual modeled CH ₄ generation (HH-1)	876.81	
Annual quantity of recovered CH ₄ generation (HH-3)	0.56	
Total annual modeled CH ₄ generation (HH-4)		
Modeled CH ₄ generation, adjusted for oxidation (HH-5)	789.13	
CH ₄ emissions from the landfill in the reporting year (HH-6)		
Measured CH ₄ generation, adjusted for oxidation (HH-7)		
CH ₄ emissions from the landfill in the reporting year (HH-8)		

LANDFILL GAS COLLECTED FOR DESTRUCTION

Annual volume of landfill gas collected for destruction (scf)

A missing data procedure was used to determine the volume of landfill gas collected for destruction (check if true)

Number of days substitute data procedure was used to determine the volume of landfill gas collected for destruction (days)

Annual average CH₄ concentration of landfill gas collected for destruction (percent)

A missing data procedure was used to determine CH₄ concentration of landfill gas collected for destruction (check if true)


If CH₄ is monitored daily, the number of days substitute data was used to determine the annual average CH₄ concentration of landfill gas collected for destruction (days)

If CH₄ is monitored weekly, the number of weeks substitute data was used to determine the annual average CH₄ concentration of landfill gas collected for destruction (weeks)

28

Underneath the Summary and Result table for the equations is a section that has been covered in previous webinars and has not changed. This is where you enter the annual volume of landfill gas collected, the annual average methane concentration and whether substitute data was used for either of those and how many times substitute data was used.

Subpart HH: Methane Generation and Emissions for Landfills with Gas Collection (4)



If landfill gas collected for destruction

If CH₄ is monitored daily, the number of days substitute data was used to determine the annual average CH₄ concentration of landfill gas collected for destruction (days)

If CH₄ is monitored weekly, the number of weeks substitute data was used to determine the annual average CH₄ concentration of landfill gas collected for destruction (weeks)

Was temperature incorporated into internal calculations run by the collection system's monitoring equipment? Yes No

Was pressure incorporated into internal calculations run by the collection system's monitoring equipment? Yes No

Was landfill gas flow measured on a wet or dry basis? Wet basis Dry basis

Was CH₄ concentration measured on a wet or dry basis? Wet basis Dry basis

Destruction occurred at the facility or off-site At the facility (on-site) Off-site Both

← Subpart Overview
CANCEL
SAVE
NEXT →

29

Below that is more that is similar to the structure in previous years in terms of entering information about temperature, pressure, and moisture. This functionality is as before.

What is new relates to where landfill gas destruction occurred. If all destruction occurs off-site then nothing has changed. If destruction occurred on-site at the facility or occurred both on-site and off-site, additional data must be entered.

Subpart HH: Methane Generation and Emissions for Landfills with Gas Collection (5)



of weeks substitute data was used to determine the annual average CH₄ concentration of landfill gas collected for destruction

Was temperature incorporated into internal calculations run by the collection system's monitoring equipment? Yes No

Was pressure incorporated into internal calculations run by the collection system's monitoring equipment? Yes No

Was landfill gas flow measured on a wet or dry basis? Wet basis Dry basis

Was CH₄ concentration measured on a wet or dry basis? Wet basis Dry basis

Destruction occurred at the facility or off-site At the facility (on-site) Off-site Both

A back-up destruction device is present (check if true)

Annual operating hours for the primary destruction device (hours)

Destruction efficiency used (report the lesser of manufacturer's specified destruction efficiency and 0.99) 1 (decimal fraction)

[← Subpart Overview](#) [CANCEL](#) [SAVE](#) [NEXT →](#)

30

If destruction occurred either on-site or both on-site and off-site, in addition to entering whether a back-up device is present, you must also enter the annual operating hours of the primary destruction device and the destruction efficiency used.

Subpart HH: Methane Generation and Emissions for Landfills with Gas Collection (6)



of weeks substitute data was used to determine the annual average CH₄ concentration of landfill gas collected for destruction

Was temperature incorporated into internal calculations run by the collection system's monitoring equipment? Yes No

Was pressure incorporated into internal calculations run by the collection system's monitoring equipment? Yes No

Was landfill gas flow measured on a wet or dry basis? Wet basis Dry basis

Was CH₄ concentration measured on a wet or dry basis? Wet basis Dry basis

Destruction occurred at the facility or off-site? At the facility (on-site) Off-site Both

A back-up destruction device is present (check if true)

Annual operating hours for the primary destruction device (hours)

Annual operating hours for the back-up destruction device (hours)


Destruction efficiency used (report the lesser of manufacturer's specified destruction efficiency and 0.99) (decimal fraction)

[← Subpart Overview](#) [CANCEL](#) [SAVE](#) [NEXT →](#)

31

Then if a back-up destruction device is present, enter annual operating hours of that back-up device.

Click SAVE and then NEXT



Subpart HH: Methane Generation and Emissions for Landfills with Gas Collection (7)

must be reported as calculated using both Equations HH-5 and HH-7, and CH₄ emissions must be reported as calculated using both Equations HH-6 and HH-8. For additional information, please use the e-GGRT Help link(s) provided.

Select a specific equation below to review the equation summary and result that will appear in your annual GHG report. Alternatively, select the NEXT or BACK buttons at the bottom of each equation summary and result page to move consecutively through the equations.

- Equation HH-1 Summary and Result** ← 1
- Equation HH-3 Summary and Result
- Equation HH-4 Summary and Result
- Equation HH-5 Summary and Result
- Equation HH-6 Summary and Result
- Equation HH-7 Summary and Result
- Equation HH-8 Summary and Result

EQUATION HH-1 SUMMARY AND RESULT

$$G_{CH_4} = \sum_{x=S}^{T-1} \left\{ W_x \times MCF \times DOC \times DOC_F \times F \times \frac{16}{12} \times (e^{-k(T-x-1)} - e^{-k(T-x)}) \right\}$$

Hover over an element in the equation above to reveal a definition of that element.

Note: The information reported on the Landfill Details, Historical Landfill Details, Waste Disposal Information, and Annual Waste Type Details pages are used by e-GGRT to automatically calculate the Equation HH-1 result.

S (start year)	T (current reporting year)	Calculated Result
1960	2012	876.81

What result do you want to report to EPA?

Use the calculated result rounded ← 3
 Enter my own result (value will be rounded)

← BACK NEXT →

Then what happens, is e-GGRT walks you through the results of each of the equations, starting with Equation HH-1. You can see in the gray box that Equation HH-1 is bolded (Arrow #1).

As is stated in the yellow box, the information reported on the Landfill details pages, the Waste Disposal Information page, and the Annual Waste Type Details page are used by e-GGRT to calculate the Equation HH-1 result.

The calculated result is displayed in the table as well as some, if not all, of the inputs (Arrow #2).

You are then asked whether you want this calculated result reported or you want to instead report a different value. You may want a different value because you did the calculation separately and got a different result for some reason.

The page will default to using the calculated value but it is recommended that if you want the calculated value, you should still click the radio button to accept the calculated value, even though it is already checked. This will ensure that your response is registered in the system.

Subpart HH: Methane Generation and Emissions for Landfills with Gas Collection (8)



must be reported as calculated using both Equations HH-5 and HH-7, and CH₄ emissions must be reported as calculated using both Equations HH-6 and HH-8. For additional information, please use the e-GGRT Help link(s) provided.

Select a specific equation below to review the equation summary and result that will appear in your annual GHG report. Alternatively, select the NEXT or BACK buttons at the bottom of each equation summary and result page to move consecutively through the equations.

Equation HH-1 Summary and Result

- ▶ Equation in table HH-3 Summary and Result
- ▶ Equation HH-4 Summary and Result
- ▶ Equation HH-5 Summary and Result
- ▶ Equation HH-6 Summary and Result
- ▶ Equation HH-7 Summary and Result
- ▶ Equation HH-8 Summary and Result

EQUATION HH-1 SUMMARY AND RESULT

$$G_{CH_4} = \sum_{y=S}^{T-1} \left\{ W_{y,k} \times MCF \times DOC \times DOC_F \times F \times \frac{16}{12} \times (e^{-k(T-y-1)} - e^{-k(T-y)}) \right\}$$

Hover over an element in the equation above to reveal a definition of that element.

Note: The information reported on the Landfill Details, Historical Landfill Details, Waste Disposal Information, and Annual Waste Type Details pages are used by e-GGRT to automatically calculate the Equation HH-1 result.

S (start year)	T (current reporting year)	Calculated Result
1960	2012	876.81

What result do you want to report to EPA?

Use the calculated result rounded
 Enter my own result (value will be rounded)

Report this value (metric tons CH₄)

←BACK NEXT→

33

If you click to enter you own value, you are then provided a box in which to do so.

Keep in mind that it is likely if you do enter your own value, that EPA will follow up with you during the verification process with an e-GGRT message asking for an explanation as to why you used a different value.

After you enter your value, click NEXT

Subpart HH: Methane Generation and Emissions for Landfills with Gas Collection (9)



e-GGRT Help

HH-C Landfill 2

Subpart HH: Municipal Solid Waste Landfills (2012)

Subpart Overview » **GHG Reporting**

CH₄ EMISSIONS (FOR LANDFILLS WITH A GAS COLLECTION SYSTEM)

Landfills that have a landfill gas collection system are required to report two sets of CH₄ generation and CH₄ emissions values. CH₄ generation, adjusted for oxidation, must be reported as calculated using both Equations HH-5 and HH-7, and CH₄ emissions must be reported as calculated using both Equations HH-6 and HH-8. For additional information, please use the e-GGRT Help link(s) provided.

Select a specific equation below to review the equation summary and result that will appear in your annual GHG report. Alternatively, select the NEXT or BACK buttons at the bottom of each equation summary and result page to move consecutively through the equations.

- ▷ Equation HH-1 Summary and Result
- ▷ **Equation in table HH-3 Summary and Result**
- ▷ Equation HH-4 Summary and Result
- ▷ Equation HH-5 Summary and Result
- ▷ Equation HH-6 Summary and Result
- ▷ Equation HH-7 Summary and Result
- ▷ Equation HH-8 Summary and Result

Estimated gas collection system efficiency — Eq. in table HH-3 (decimal fraction)

0.56

EQUATION IN TABLE HH-3 SUMMARY AND RESULT

$$CE_{ave} = (A2 \times CE2 + A3 \times CE3 + A4 \times CE4 + A5 \times CE5 +) / A2 + A3 + A4 + A5$$

Hover over an element in the equation above to reveal a definition of that element.

A2	A3	A4	A5	Calculated Result
25,000.00	25,000.00	25,000.00	20,000.00	0.56

34

You are taken to the Equation in Table HH-3 which is for the average collection efficiency. This is also based on previously entered values on surface area by area type from the Estimated Waste Depths page.

Subpart HH: Methane Generation and Emissions for Landfills with Gas Collection (10)



CH₄ EMISSIONS (FOR LANDFILLS WITH A GAS COLLECTION SYSTEM)

Landfills that have a landfill gas collection system are required to report two sets of CH₄ generation and CH₄ emissions values. CH₄ generation, adjusted for oxidation, must be reported as calculated using both Equations HH-5 and HH-7, and CH₄ emissions must be reported as calculated using both Equations HH-6 and HH-8. For additional information, please use the e-GGRT Help link(s) provided.

Select a specific equation below to review the equation summary and result that will appear in your annual GHG report. Alternatively, select the NEXT or BACK buttons at the bottom of each equation summary and result page to move consecutively through the equations.

- ▶ Equation HH-1 Summary and Result
- ▶ **Equation in table HH-3 Summary and Result**
- ▶ Equation HH-4 Summary and Result
- ▶ Equation HH-5 Summary and Result
- ▶ Equation HH-6 Summary and Result
- ▶ Equation HH-7 Summary and Result
- ▶ Equation HH-8 Summary and Result

EQUATION IN TABLE HH-3 SUMMARY AND RESULT

$$CE_{ave1} = (A2 \times CE2 + A3 \times CE3 + A4 \times CE4 + A5 \times CE5) / A2 + A3 + A4 + A5$$

Hover over an element in the equation above to reveal a definition of that element.

A2	A3	A4	A5	Calculated Result
25,000.00	25,000.00	25,000.00	20,000.00	0.56

What result do you want to report to EPA?

Use the calculated result rounded
 Enter my own result (value will be rounded)

◀ BACK NEXT ▶

35

Again you can accept the calculated value or enter your own.

Then click NEXT

Subpart HH: Methane Generation and Emissions for Landfills with Gas Collection (11)



e-GGRT Help

HH-C Landfill 2

Subpart HH: Municipal Solid Waste Landfills (2012)

Subpart Overview » GHG Reporting

CH₄ EMISSIONS (FOR LANDFILLS WITH A GAS COLLECTION SYSTEM)

Landfills that have a landfill gas collection system are required to report two sets of CH₄ generation and CH₄ emissions values. CH₄ generation, adjusted for oxidation, must be reported as calculated using both Equations HH-5 and HH-7, and CH₄ emissions must be reported as calculated using both Equations HH-6 and HH-8. For additional information, please use the e-GGRT Help link(s) provided.

Select a specific equation below to review the equation summary and result that will appear in your annual GHG report. Alternatively, select the NEXT or BACK buttons at the bottom of each equation summary and result page to move consecutively through the equations.

- ▷ Equation HH-1 Summary and Result
- ▷ Equation in table HH-3 Summary and Result
- ▷ **Equation HH-4 Summary and Result**
- ▷ Equation HH-5 Summary and Result
- ▷ Equation HH-6 Summary and Result
- ▷ Equation HH-7 Summary and Result
- ▷ Equation HH-8 Summary and Result

Recovered CH₄ — Eq. HH-4 (metric tons)

EQUATION HH-4 SUMMARY AND RESULT

$$R = \sum_{n=1}^N \left((V)_n \times (K_{MC})_n \times \frac{(C)_n}{100\%} \times 0.0423 \times \frac{520^{\circ}R}{(T)_n} \times \frac{(P)_n}{1 \text{ atm}} \times \frac{0.454}{1,000} \right)$$

Hover over an element in the equation above to reveal a definition of that element.

gov/ghg/datareporting/subparthh/hh_equation_hh1.do

GGRT system cannot calculate the result of Equation HH-4 because the input parameters to Equation HH-4 are not

Next is the page for Eq HH-4. This is the one equation that is not automatically calculated because e-GGRT does not collect all of the inputs.

Subpart HH: Methane Generation and Emissions for Landfills with Gas Collection (12)



CH₄ EMISSIONS (FOR LANDFILLS WITH A GAS COLLECTION SYSTEM)

Landfills that have a landfill gas collection system are required to report two sets of CH₄ generation and CH₄ emissions values. CH₄ generation, adjusted for oxidation, must be reported as calculated using both Equations HH-5 and HH-7, and CH₄ emissions must be reported as calculated using both Equations HH-6 and HH-8. For additional information, please use the e-GGRT Help link(s) provided.

Select a specific equation below to review the equation summary and result that will appear in your annual GHG report. Alternatively, select the NEXT or BACK buttons at the bottom of each equation summary and result page to move consecutively through the equations.

- ▷ Equation HH-1 Summary and Result
- ▷ Equation in table HH-3 Summary and Result
- ▷ **Equation HH-4 Summary and Result**
- ▷ Equation HH-5 Summary and Result
- ▷ Equation HH-6 Summary and Result
- ▷ Equation HH-7 Summary and Result
- ▷ Equation HH-8 Summary and Result

EQUATION HH-4 SUMMARY AND RESULT

$$R = \sum_{n=1}^N \left((V)_n \times (K_{MC})_n \times \frac{(C)_n}{100\%} \times 0.0423 \times \frac{520^\circ R}{(T)_n} \times \frac{(P)_n}{T_{atm}} \times \frac{0.454}{1,000} \right)$$

Hover over an element in the equation above to reveal a definition of that element.

Note: The e-GGRT system cannot calculate the result of Equation HH-4 because the input parameters to Equation HH-4 are not required to be reported. Therefore, you must calculate the value of Equation HH-4 and enter the result below.

Annual quantity of recovered CH₄ (metric tons CH₄)

Use Subpart HH-4 equation spreadsheets to calculate

Spreadsheets are also available for calculating inputs to Equation HH-4.

Recovered CH₄ — Eq. HH-4 (metric tons)

◀ BACK NEXT ▶

37

This Equation is handled similarly to the previous version of e-GGRT. You must calculate it yourself. You may use the calculation spreadsheet via the link on this page to calculate the result which you must then enter into the red box.

Subpart HH: Methane Generation and Emissions for Landfills with Gas Collection (13)



e-GGRT Help

HH-C Landfill 2

Subpart HH: Municipal Solid Waste Landfills (2012)

[Subpart Overview](#) » [GHG Reporting](#)

CH₄ EMISSIONS (FOR LANDFILLS WITH A GAS COLLECTION SYSTEM)

Landfills that have a landfill gas collection system are required to report two sets of CH₄ generation and CH₄ emissions values. CH₄ generation, adjusted for oxidation, must be reported as calculated using both Equations HH-5 and HH-7, and CH₄ emissions must be reported as calculated using both Equations HH-6 and HH-8. For additional information, please use the e-GGRT Help link(s) provided.

Select a specific equation below to review the equation summary and result that will appear in your annual GHG report. Alternatively, select the NEXT or BACK buttons at the bottom of each equation summary and result page to move consecutively through the equations.

- ↳ [Equation HH-1 Summary and Result](#)
- ↳ [Equation in table HH-3 Summary and Result](#)
- ↳ [Equation HH-4 Summary and Result](#)
- ↳ [Equation HH-5 Summary and Result](#)**
- ↳ [Equation HH-6 Summary and Result](#)
- ↳ [Equation HH-7 Summary and Result](#)
- ↳ [Equation HH-8 Summary and Result](#)

CH₄ generation — Eq. HH-5 (metric tons) **789.13**

EQUATION HH-5 SUMMARY AND RESULT

$$MG = G_{CH_4} \times (1 - OX)$$


Hover over an element in the equation above to reveal a definition of that element.

GCH ₄	OX	Calculated Result
876.81	0.1	789.13

38

The system continues to walk through the rest of the calculations which are handled the same way as Equation HH-1. The system calculates the result and you can either accept the result or enter your own result. At the bottom of each page, click NEXT until you finish with Equation HH-8.

Subpart HH: Methane Generation and Emissions for Landfills with Gas Collection (14)



For additional information, please use the e-GGRT Help links(s) provided.

Select a specific equation below to review the equation summary and result that will appear in your annual GHG report. Alternatively, select the NEXT or BACK buttons at the bottom of each equation summary and result page to move consecutively through the equations.

- ↳ Equation HH-1 Summary and Result
- ↳ Equation in table HH-3 Summary and Result
- ↳ Equation HH-4 Summary and Result
- ↳ Equation HH-5 Summary and Result
- ↳ **Equation HH-6 Summary and Result**
- ↳ Equation HH-7 Summary and Result
- ↳ Equation HH-8 Summary and Result

EQUATION HH-6 SUMMARY AND RESULT

Emissions = $[(GCH_4 - R) \times (1 - OX) + R \times (1 - (DE \times F_{Dest}))]$

Hover over an element in the equation above to reveal a definition of that element.

Note: The Equation HH-6 input GCH₄ is determined by the system to be the larger of the Equation HH-1 result or the Equation HH-4 result.

Equation HH-1 result : 876.81 (metric tons CH₄)

Equation HH-4 result : 550.00 (metric tons CH₄)

GCH ₄	R	OX	DE	F _{Dest}	Calculated Result
876.81	550.00	0.1	0.99	1	299.63

What result do you want to report to EPA?

Use the calculated result rounded
 Enter my own result (value will be rounded)

←BACK
NEXT→

One note on the page displaying the result of Equation HH-6 for methane emissions.

The page displays the results of both Equation HH-1 and Equation HH-4. Recall that Equation HH-6 is constructed so that you are required to use either with the modeled methane generation rate from Equation HH-1 or the quantity of recovered methane from Equation HH-4 for GCH₄, whichever is greater. E-GGRT automatically chooses the larger of the two. This is so that the result of Equation HH-6 is not a negative value.

Again, you can accept the calculated result or enter your own.

Then click NEXT.

Subpart HH: Methane Generation and Emissions for Landfills with Gas Collection (15)



CH₄ EMISSIONS (FOR LANDFILLS WITH A GAS COLLECTION SYSTEM)

Landfills that have a landfill gas collection system are required to report two sets of CH₄ generation and CH₄ emissions values. CH₄ generation, adjusted for oxidation, must be reported as calculated using both Equations HH-5 and HH-7, and CH₄ emissions must be reported as calculated using both Equations HH-6 and HH-8. For additional information, please use the e-GGRT Help link(s) provided.

Select a specific equation below to review the equation summary and result that will appear in your annual GHG report. Alternatively, select the NEXT or BACK buttons at the bottom of each equation summary and result page to move consecutively through the equations.

- ↳ [Equation HH-1 Summary and Result](#)
- ↳ [Equation in table HH-3 Summary and Result](#)
- ↳ [Equation HH-4 Summary and Result](#)
- ↳ [Equation HH-5 Summary and Result](#)
- ↳ [Equation HH-6 Summary and Result](#)
- ↳ [Equation HH-7 Summary and Result](#)
- ↳ **Equation HH-8 Summary and Result**

396.85
CH₄ emissions — Eq. HH-8 (metric tons)

EQUATION HH-8 SUMMARY AND RESULT

$$\text{EMISSIONS} = \left[\left(\frac{R}{CE \times f_{Rec}} - R \right) \times (1 - OX) + R \times (1 - (DE \times f_{Dest})) \right]$$

Hover over an element in the equation above to reveal a definition of that element.

R	CE	f _{Rec}	OX	DE	f _{Dest}	Calculated Result
550.00	0.56	0.997	0.1	0.99	1	396.85

What result do you want to report to EPA?
 Use the calculated result rounded
 Enter my own result (value will be rounded)

[←BACK](#) [FINISHED](#)

40

When you are done with the page for Equation HH-8, which is the last equation, click FINISHED

Subpart HH: Methane Generation and Emissions for Landfills with Gas Collection (16)



CH₄ EMISSIONS (FOR LANDFILLS WITH A GAS COLLECTION SYSTEM)

Landfills that have a landfill gas collection system are required to report two sets of CH₄ generation and CH₄ emissions values. CH₄ generation, adjusted for oxidation, must be reported as calculated using both Equations HH-5 and HH-7, and CH₄ emissions must be reported as calculated using both Equations HH-6 and HH-8. For additional information, please use the e-GGRT Help link(s) provided.

Select a specific equation below to review the equation summary and result that will appear in your annual GHG report. Alternatively, select the NEXT or BACK buttons at the bottom of each equation summary and result page to move consecutively through the equations.

- ↳ [Equation HH-1 Summary and Result](#)
- ↳ [Equation in table HH-3 Summary and Result](#)
- ↳ [Equation HH-4 Summary and Result](#)
- ↳ [Equation HH-5 Summary and Result](#)
- ↳ [Equation HH-6 Summary and Result](#)
- ↳ [Equation HH-7 Summary and Result](#)
- ↳ [Equation HH-8 Summary and Result](#)



SUMMARY AND RESULT

Equation	CH ₄
Total annual modeled CH ₄ generation (HH-1)	876.81
Annual quantity of recovered CH ₄ generation (HH-3)	0.56
Total annual modeled CH ₄ generation (HH-4)	550
Modeled CH ₄ generation, adjusted for oxidation (HH-5)	789.13
CH ₄ emissions from the landfill in the reporting year (HH-6)	299.63
Measured CH ₄ generation, adjusted for oxidation (HH-7)	886.35
CH ₄ emissions from the landfill in the reporting year (HH-8)	396.85

LANDFILL GAS COLLECTED FOR DESTRUCTION

Annual volume of landfill gas collected for destruction (scf)


A missing data procedure was used to determine the volume (check if true)

41


You are taken you back to this page to view all of your equation results.

If you want, you can click on any of the Equation links in the top box to go back to the page for that Equation.

If all is OK, click SAVE and then Subpart Overview at the bottom of the page. There is still the NEXT button at the bottom of this page but if you keep clicking NEXT it will take you through all of the individual equation pages again.



Subpart HH: Methane Generation and Emissions for Landfills with Gas Collection (17)

 e-GGRT Help
 Using e-GGRT for Subpart HH reporting


HH-C Landfill 2

Subpart HH: Municipal Solid Waste Landfills (2012)


Subpart Overview

OVERVIEW OF SUBPART REPORTING REQUIREMENTS

Subpart HH requires municipal solid waste landfills to report methane (CH₄) generation and emissions quantities. First, provide the information requested in the two Landfill Details pages and e-GGRT will determine what additional information is required for reporting based on the information you provide about your landfill. For additional information about Subpart HH reporting, please use the e-GGRT Help link(s) provided.


Subpart HH: View Validation

Reporting Information	
Landfill Details - Reporting Years	OPEN
Landfill Details - Historical Years	OPEN
Waste Characterization Information	OPEN
Annual Waste Type Details	OPEN
Estimated Waste Depths	OPEN
Methane Generation and Emissions for Landfills with LFG Collection Systems	OPEN


[← Facility Overview](#)


42

That is all that is required for landfills with gas collection. You can view your validation messages, which is recommended, but has already been covered.

Then click Facility Overview to add another subpart as needed or take steps to submit your report.

Subpart HH: Methane Generation and Emissions for Landfills without Gas Collection (1)



e-GGRT Help

Using e-GGRT for Subpart HH reporting

HH-C Landfill 2

Subpart HH: Municipal Solid Waste Landfills (2012)

Subpart Overview

OVERVIEW OF SUBPART REPORTING REQUIREMENTS

Subpart HH requires municipal solid waste landfills to report methane (CH₄) generation and emissions quantities. First, provide the information requested in the two Landfill Details pages and e-GGRT will determine what additional information is required for reporting based on the information you provide about your landfill. For additional information about Subpart HH reporting, please use the e-GGRT Help link(s) provided.

Subpart HH: [View Validation](#)

Reporting Information	
Landfill Details - Reporting Years	OPEN
Landfill Details - Historical Years	OPEN
Waste Characterization Information	OPEN
Annual Waste Type Details	OPEN
Methane Generation and Emissions for Landfills without LFG Collection Systems	OPEN

[↑ Facility Overview](#)

43

Back track to show the steps for landfills without gas collection.

If on the Landfill Details – Reporting Years page you said that the landfill did not have gas collection, this is what the Subpart Overview page will look like. It is the same except there is no Estimated Waste Depths line and the last line says Methane Generation and Emissions for Landfills without LFG collection systems.

Click OPEN next to this last line to proceed.

Subpart HH: Methane Generation and Emissions for Landfills without Gas Collection (2)



e-GGRT Help

Using e-GGRT for Subpart HH reporting

HH-C Landfill 2

Subpart HH: Municipal Solid Waste Landfills (2012)

[Subpart Overview](#) » [GHG Reporting](#)

CH₄ EMISSIONS (FOR LANDFILLS WITHOUT A GAS COLLECTION SYSTEM)

Landfills that do not have a landfill gas collection system, are required to report annual CH₄ emissions (i.e., the CH₄ generation, adjusted for oxidation, calculated using Equation HH-5 of this subpart), reported in metric tons of CH₄. For additional information, please use the e-GGRT Help link(s) provided.

- ↳ [Equation HH-1 Summary and Result](#)
- ↳ [Equation HH-5 Summary and Result](#)

SUMMARY AND RESULTS

Equation	CH ₄
Total annual modeled CH ₄ generation (HH-1)	876.81
Modeled CH ₄ generation, adjusted for oxidation (HH-5)	769.13

[← Subpart Overview](#) [NEXT →](#)

44

The page has the same set up as for landfills with gas collection but is simplified because there are only two equations. Only Eq. HH-1 and HH-5 are required to be performed for landfills without gas collection. These will be automatically calculated because all of the inputs have already been entered.

Click NEXT and the system will take you through the two equations. The pages for these two equations look the same as for landfills with GCS.

As before, you may accept the calculated values or enter your own. When you are done click Subpart Overview. If you keep clicking NEXT it will circle back through the calculations.

Subpart HH: Methane Generation and Emissions for Landfills without Gas Collection (3)



e-GGRT Help
Using e-GGRT for Subpart HH reporting

HH-C Landfill 2
Subpart HH: Municipal Solid Waste Landfills (2012)
Subpart Overview

OVERVIEW OF SUBPART REPORTING REQUIREMENTS
Subpart HH requires municipal solid waste landfills to report methane (CH₄) generation and emissions quantities. First, provide the information requested in the two Landfill Details pages and e-GGRT will determine what additional information is required for reporting based on the information you provide about your landfill. For additional information about Subpart HH reporting, please use the e-GGRT Help link(s) provided.

 **Subpart HH:** [View Validation](#)


Reporting Information	
Landfill Details - Reporting Years	OPEN
Landfill Details - Historical Years	OPEN
Waste Characterization Information	OPEN
Annual Waste Type Details	OPEN
Methane Generation and Emissions for Landfills without LFG Collection Systems	OPEN

[↑ Facility Overview](#) 

45

Then from the Subpart Overview page click Facility Overview to add a subpart or generate, review, and submit your report.

That is all that is required for landfills without gas collection.



Subpart A – General Provisions

If all subparts are completed and Validation Messages addressed to your satisfaction, you are ready to prepare and submit an Annual Report.

SUBMIT ANNUAL REPORT

Report	Uploaded File Name	Status	Submitted Date	Certification Date
GENERATE / RESUBMIT				

VIEW REPORTS: Annual Report reviewable formats (including public, non-CBI versions and trend reports) for all submissions this reporting year can be accessed on the View Reports page.

NOTIFICATION TO DISCONTINUE

If you will discontinue complying with Part 98 after this reporting year for the following reason(s), you are required to notify EPA by checking the appropriate box(es).

Cessation of operations: All applicable GHG-emitting processes and operations ceased to operate in 2012 [98.2(i)(3)]. You discontinued complying with Part 98 monitoring requirements in 2012 when operations ceased, and you intend to discontinue complying with Part 98 reporting requirements after this reporting year. Note that this notification does not impact your reporting obligation for the current reporting year, and you must resume compliance with Part 98 for any calendar year during which your operations resume.

Exiting the program: Reported under 15,000 mtCO₂e/year for 3 consecutive years [98.2(i)(2)]. You discontinued complying with Part 98 reporting requirements after this reporting year. Note that this notification does not impact your reporting obligation for the current reporting year, and you must resume compliance with Part 98 if emissions in any future calendar year increase to 25,000 mtCO₂e or more.

Please note this selection is not applicable to facilities who reported for the first time in RY2011.

NOT SUBMITTING AN ANNUAL REPORT FOR 2012

If you are registered in e-GGRT but not submitting a report for the following reason(s), you may notify EPA by selecting the radio button.

Not subject: This facility/supplier was registered in e-GGRT but has not been subject to Part 98 in any year starting in 2010 [98.2]. This selection indicates that you are not required to comply with Part 98 monitoring or reporting requirement at this time. Note that you must comply with Part 98 if you meet the applicability requirements of the rule in any future calendar year.

(clear all)

[SAVE](#) [CANCEL](#)

There are two new items at the bottom of the Facility Overview page to note because they may impact subpart HH reporters specifically this year:

First, if you meet the “off-ramp” provisions in section 98.2 of the rule, that is your reported emissions have been less than 15,000 metric CO₂e for three years in a row, 2012 being the third year, you may stop reporting to the program after this year. If this is the case, click the box next to “Exiting the Program” (Arrow #1)

Second, if you registered your facility in e-GGRT but have never had to report because this facility has not met the threshold for reporting, click the “Not subject” box (Arrow #2). As long as the facility continues to be below the reporting threshold, you will not need to go back into e-GGRT each year to do a negative declaration of reporting for it. If, in some future year, the facility does meet the reporting threshold, then you will be able to go back into this screen to un-click this box and then submit a report for this facility.

Questions?



- e-GGRT Information & Help
 - <http://www.ccdsupport.com>
 - Email: GHGreporting@epa.gov
- GHG Reporting Rule Information & Help
 - <http://www.epa.gov/climatechange/emissions/ghgrulemaking.html>
 - Email: GHGreporting@epa.gov
- Read more about XML Upload Option
 - http://www.epa.gov/climatechange/emissions/e-ggrrt_xml.html

47

This last slide contains important websites at which you may find an enormous amount of information about the GHG Reporting Program, on e-GGRT, as well as the XML option for uploading GHG emissions reports. Also listed is the email address – for both questions or help requests for e-GGRT specifically and also for technical questions about the GHG Reporting Rule itself.

This concludes the update on the e-GGRT module for subpart HH.