

User Guide for Landfill Methane Regulation Annual Reporting Templates

Report templates are provided to facilitate annual reporting of information to the California Air Resources Board (CARB) under the [Regulation to Reduce Methane Emissions from Municipal Solid Waste Landfills](#) (Cal. Code Regs., tit. 17, §§ 95460 et seq.) (Landfill Methane Regulation, or LMR). Under the LMR, certain municipal solid waste (MSW) landfills are required to submit information to CARB or their local air district by March 15 each year. In addition, pursuant to the [California State Plan for Compliance with U.S. EPA Landfill Emission Guidelines](#) CARB submits annual LMR reports to United States Environmental Protection Agency (U.S. EPA) to satisfy the State's obligations under the U.S. EPA's Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills (Emission Guidelines).

The report templates are provided to simplify compliance and to assist landfill owners or operators to ensure accurate and complete information is submitted annually to CARB. Landfill owner/operators utilizing the templates will use one of the two report templates provided, depending on each landfill's regulatory status. The first template is for uncontrolled landfills required to submit an annual [Waste-in-Place \(WIP\) Report](#) or a [Heat Input Capacity \(HIC\) Report](#) (requirements for these report types are set forth in LMR section 95470(b)(4)) and section 95470(b)(5), respectively). The second template is for controlled landfills (sites with a gas collection and control system, or "GCCS") required to submit an [Annual Report](#) (requirements for this report type are set forth in LMR section 95470(b)(3)).

The Annual Report template includes fields to submit additional information required pursuant to the [Federal Plan](#) to implement the U.S. EPA Emission Guidelines. Although this information is not required for compliance with LMR, it is included in the template to further streamline reporting for landfill owner/operators. However, if this information is not reported to CARB, entities must provide that information to U.S. EPA to comply with the federal requirements. Landfill owner/operators are solely responsible for compliance with U.S. EPA Emission Guidelines, the Federal Plan, and any other applicable requirements.

Report Templates are available for download on the [Landfill Methane Regulation Reporting](#) webpage

Each report template is an Excel workbook containing multiple worksheets or tabs. This user guide is divided into two main parts, corresponding to the two report templates:

Part 1: [Instructions for uncontrolled landfills to complete the Waste-in-Place and Heat Input Capacity Report template](#)

Part 2: [Instructions for controlled landfills to complete the Annual Report template](#)

General Instructions for using the Report Templates

- Underlined text in this user guide correspond to the label of each input box or table in the template. Regulatory citations, e.g., **[95470(b)(3)(A)]** are provided in this user guide for required information.
- Enter mandatory LMR-required information and data in the
- Enter additional information, which is commonly reported to support the interpretation of the required data, in the
- Enter additional information, which is not specifically required by the LMR but is required by the U.S. EPA, in the
- Use the dropdown lists when available. Additional rows may be inserted in data tables if needed; otherwise, enter information only in specified fields and do not insert or delete columns. Avoid entering text or symbols (acres, tons, %, >, etc.) in data fields requiring a numerical value.
- Any other required or supporting documentation that is not included in the workbook (e.g., topographic maps, Alternative Compliance Option (ACO) requests and approval letters, Design Plans, or surface demonstration records) should be submitted as a separate document in addition to the completed report template.
- Please note that the absence of an input box or tab for a certain piece of information does not relieve any regulatory requirements; while staff has made every effort to provide an input box for each piece of required information, unforeseeable events or atypical situations may warrant additional information. CARB reserves the right to revise or update the templates at any time.
- The templates are intended solely to assist landfill owner/operators with their reporting obligations. The templates are not intended to be and do not constitute legal advice. The templates are not intended and should not be construed as defining the legal relationship between CARB and reporting entities. The templates are not a regulation and do not create, expand, limit, waive, modify, or interpret any legal rights or obligations. Reporting entities are responsible for knowing and complying with all applicable regulatory requirements; using these templates does not alleviate reporting entities from their responsibility to read and comply with LMR or any other legal requirements or their responsibility to submit complete and accurate information.

How to Submit Reports

- Submit the completed template as an Excel Workbook (file type “.xlsx”) – please do not submit the workbook as a scanned image or convert the workbook to a PDF or any other file type.
- Save the completed template using a filename that includes the Reporting Year and Landfill Name, e.g., “**2021 ABC Landfill LMR Annual Report**” or “**2021 ABC Landfill LMR WIP_HIC Report**”
- If you have additional files, e.g., a topographic map or other supporting documentation, please submit these as separate attachments. Please include the Reporting Year and Landfill Name in the filename.

Part 1: Waste-in-Place (WIP) and Heat Input Capacity (HIC) Reports

Active, uncontrolled landfills with less than 450,000 short tons of waste-in-place that are required to submit a Waste-in-Place Report should complete the certification tab, the main site tab, and the annual wip tab.

Uncontrolled landfills with greater than 450,000 short tons of waste-in-place that are required to submit a Heat Input Capacity Report should complete the certification tab, the main site tab, and heat input capacity tab, and annual wip tab if required.

Certification (certification tab):

- 1) Any report, or information submitted to CARB pursuant to the LMR must contain certification by a responsible official identifying that the information submitted truthful, accurate, and complete. Select the checkbox and enter the Responsible Official Name and Date to certify that the statements and information in the document are true, accurate, and complete. **[95470(b)(6)]**
- 2) Preparer/consultant name and contact information: Enter the full name of the person who prepares the report in Preparer's Name. Enter the title of the preparer, or their position in the organization or company in Title/Relationship (e.g., Consultant or Lead Engineer, as relevant). Enter the name of the preparer's company or organization in Business Name. Provide contact information by entering the preparer's Email address, Phone number, and address of the preparer's office or place of business in Address 1, Address 2 (if applicable), City, and Zip/Postal Code.

Landfill Site and Status (main_site tab):

- 1) MSW Landfill Name: Use the dropdown list provided to select the landfill name. If the correct landfill name is not listed, please [contact LMR staff](#). **[95470(b)(4)(A)]**
- 2) Landfill Owner and Landfill Operator: Enter the full name of the landfill owner and operator, respectively. If the same entity owns and operates the landfill, please enter the same name in both boxes. **[95470(b)(4)(A)]**
- 3) Enter the Solid Waste Information System (SWIS) Identification Number (ID) 1. If the landfill contains more than one SWIS ID, use the following (ID2 and ID3) input boxes provided. Use dashes, e.g., 01-AA-0001. If you receive an error, please [contact LMR staff](#); SWIS ID1 field is restricted to the list of SWIS ID numbers CARB has on file. **[95470(b)(4)(A)]**
- 4) Use the dropdown list to select the Air District where the landfill is located. Enter the Air District Facility ID issued by the local air district (if applicable).
- 5) Enter the landfill physical address (location) in Landfill Address 1, Address 2 (if applicable), City, Zip/Postal Code, and County. Use the dropdown list provided to select the County in which the landfill is located. **[95470(b)(4)(A)]**
- 6) Landfill Operational Status: select active, inactive, or closed from the dropdown list. **[95470(b)(4)(B)]**

- 7) Enter Year Opened and Year Closed, reflecting the first and last year in which solid waste was deposited. For active landfills, the year closed may be left blank, or enter the anticipated future closure year.
- 8) Use the dropdown list under Collection System to select the collection system that best describes your landfill. For example, if the landfill has a collection system with carbon adsorption, select "Uncontrolled - with Carbon Adsorption System."
- 9) Date GCCS Installed and Operational: If applicable, enter the first year the collection system, if any (corresponding to the system selected in the previous box), was installed and initially in operation.

Waste-in-Place and Cover Types (annual_wip tab):

- 1) Reporting Year: Enter the calendar year for which data are being reported.
- 2) Enter the Estimated waste-in-place, as of December 31 of the reporting year, in short tons. **[95470(b)(4)(B)]** For example, if the report is being submitted March 15, 2022, the reporting year is 2021 and the estimated waste in place would be from December 31, 2021.
- 3) Annual solid waste acceptance rate: Enter the quantity of waste deposited during the reporting year, in short tons. The reporting year is from January 1 until December 31. If the landfill is closed or inactive and no solid waste was accepted during the reporting period, enter the number zero ("0").
- 4) Total Disposal (Acres): Enter the size of the area permitted for waste disposal. This area may be greater than the total area in which waste has been deposited to date and should not include the entire property size if some areas are not intended or permitted for disposal.
- 5) Daily Cover (Acres), Intermediate Cover (Acres), and Final Cover (Acres): Enter the area in acres under each type of cover.
- 6) Select (Yes/No) using the dropdown list to indicate whether a Topographic Map is supplied with this report. **[95470(b)(4)(C)]**
- 7) Enter the Percent area of landfill with final cover and a geomembrane and Percent area of landfill without a geomembrane corresponding to areas indicated on the topographic map. **[95470(b)(4)(C)]**

Heat Input Capacity (heat_input_capacity tab):

- 1) Reporting Year: Enter the calendar year for which data are being reported.
- 2) Enter Heat Input Capacity in million British thermal units per hour (MMBtu/hr). If more than one determination method is used (e.g., as required for landfills with passive venting), enter the greater of the two results. **[95470(b)(5)]**

- 3) If Heat Input Capacity (HIC) is determined by measuring the actual total landfill gas flow rate and methane concentration, enter Total LFG Flow Rate in standard cubic feet per minute (scfm) and Average Methane Concentration (in percent by volume). **[95471(b)(2), 95471(b)(3)(B)]**
- 4) Under HIC Determination Method, use the dropdown list to indicate whether the landfill has a Carbon Adsorption or Passive Venting system, no collection or controls of any kind (None), or Other. If "Other" is selected, please provide an explanation in the yellow cells below row 15. **[95471(b)(3)]**
- 5) Select (Yes/No) using the dropdown list to indicate if the HIC was Modeled using LMR Appendix I or, equivalently, CARB's Landfill Gas Tool. **[95471(b)(1)]**
- 6) Surface Emissions Monitoring Demonstration: Indicate using the dropdown list whether surface emission monitoring records are submitted with this report, if required. **[95463(b)(2)(B)]**
- 7) Supporting Information: If the measured landfill gas flow rate(s), in standard cubic feet per minute (scfm) were used to calculate landfill gas heat input capacity as specified in section 95471(b)(2) or 95471(b)(3)(B) for landfills with carbon absorption or passive venting systems, please provide the data and calculation. This space may also be used to explain "other" responses selected above.

Part 2: Annual Reports

Owners and operators of controlled landfills subject to LMR sections 95464 through 95476 should complete all tabs in the template.

Certification (certification tab):

- 1) Any report, or information submitted to CARB pursuant to the LMR must contain certification by a responsible official identifying that the information submitted truthful, accurate, and complete. Select the checkbox and enter the Responsible Official Name and Date to certify that the statements and information in the document are true, accurate, and complete. **[95470(b)(6)]**
- 2) Preparer/consultant name and contact information: Enter the full name of the person who prepares the report in Preparer's Name. Enter the title of the preparer, or their position in the organization or company in Title/Relationship (e.g., Consultant or Lead Engineer, as relevant). Enter the name of the preparer's company or organization in Business Name. Provide contact information by entering the preparer's Email address, Phone number, and address of the preparer's office or place of business in Address 1, Address 2 (if applicable), City, and Zip/Postal Code

Landfill Site and Status (main_site tab):

- 1) MSW Landfill Name: Use the dropdown list provided to find the landfill name. If the correct landfill name is not listed, please *contact LMR staff*. **[95470(b)(3)(A)]**
- 2) In Landfill Owner and Landfill Operator, enter the full name of the landfill owner and landfill operator, respectively. If the landfill owner and operation are the same, please enter the same name in both boxes. **[95470(b)(3)(A)]**
- 3) Enter the Solid waste information system (SWIS) identification number (ID) 1: If the landfill contains more than one SWIS ID use following (ID2 and ID3) input boxes provided. Use dashes, e.g., 01-AA-0001. If you receive an error, please *contact LMR staff*; SWIS ID1 field is restricted to the list of SWIS ID numbers CARB has on file. **[95470(b)(3)(A)]**
- 4) Use the dropdown list to select the Air District where the landfill is located. Enter the Air District Facility ID issued by the local air district (if applicable).
- 5) Enter the landfill physical address (location) under Landfill Address 1, Address 2 (if applicable), City, Zip/Postal Code, and County. Use the dropdown list provided to select the County in which the landfill is located. **[95470(b)(3)(A)]**
- 6) Landfill Operational Status: select active, inactive, or closed from the dropdown list.
- 7) Enter Year Opened and Year Closed, reflecting the first and last year in which solid waste was deposited. For active landfills, the year closed may be left blank, or enter the anticipated future closure year.

- 8) Use the dropdown list for Collection System to select the gas collection and control system (GCCS) that best describes your landfill.
- 9) Date Gas Collection and Control System Installed and Operational: Enter the year in which the gas collection and control system was installed and in full operation. **[95470(b)(3)(E)]**
- 10) Select (Yes/No) using the dropdown list to indicate is the landfill operating under an Alternative Compliance Option per 95468?

Waste-in-Place and Cover Types (annual_wip tab):

- 1) Reporting Year: Enter the calendar year for which data are being reported.
- 2) Enter the Estimated waste-in-place as of December 31 of the reporting year, in short tons. **[95470(a)(1)(F), 95470(b)(3)(J)]** For example, if the report is being submitted March 15, 2022, the reporting year is 2021 and the estimated waste in place would be from December 31, 2021. Waste density of 1,300 pounds per cubic yard should be used to convert volumetric estimates of waste-in-place. **[95475(a)(30)]**
- 3) Annual solid waste acceptance rate: Enter the quantity of waste deposited during the reporting year, in short tons. The reporting year is from January 1 until December 31. If the landfill is closed or inactive and no solid waste was accepted during the reporting period, enter the number zero ("0"). **[95470(b)(3)(J)]**
- 4) Select (Yes/No) using the dropdown list for Topographic map(s) meeting the requirements of section 95469(a)(1)(A) and (2)(A), and section 95470(b)(3)(I) are supplied with this report to indicate if one or more maps are submitted with the report which clearly identify the locations of: each surface emission monitoring exceedance; the monitoring grids; the gas collection system; and areas with final cover, with and without a geomembrane. **[95469(a)(1)(A) and (2)(A), and 95470(b)(3)(I)]**
- 5) Enter the Percent area of landfill with final cover and a geomembrane and Percent area of landfill with final cover and without a geomembrane corresponding to areas indicated on the topographic map. **[95470(b)(3)(I)]**
- 6) Total Disposal (Acres): Enter the size of the area permitted for waste disposal. This total area may be greater than the area in which waste has been deposited to date and should not include the entire property size if some areas are not intended or permitted for disposal.
- 7) Daily Cover (Acres), Intermediate Cover (Acres), and Final Cover (Acres): Enter the area under each type of cover.
- 8) Enter Total Number of Grids.
- 9) Enter Total Number of Active Wells as of December 31 of the reporting year.

Landfill Gas Collection (gas_collection tab):

- 1) Enter the Expected Gas Flow Rate in standard cubic feet per minute (scfm). This value refers to the expected gas flow rates to the gas control device, which is 75 percent of expected gas generation (i.e., enter the expected recovery or collection rate, not the total expected generation rate). CARB's *Landfill Gas Tool* meets the regulation's requirement to use the method prescribed by the International Panel on Climate Change (IPCC) 2006 Guidelines. **[95470(a)(1)(C), 95470(b)(3)(J)]**
- 2) Under Landfill gas (LFG) collected over the reporting period, enter the following information: **[95470(b)(3)(B) and (C)]**
 - a. Total Volume of LFG Collected in standard cubic feet (scf).
 - b. Average Methane Composition of LFG Collected in percent by volume.
 - c. Average Carbon Dioxide Composition of LFG Collected in percent by volume.
- 3) LFG was shipped off-site: Indicate (Yes/No) using the dropdown list. If "No," leave the fields below blank. If Yes,
 - a. Enter Recipients(s) of LFG, Volume of LFG shipped off-site (scf), Methane (percent by volume), and Carbon Dioxide (percent by volume). **[95470(b)(3)(H)]**
 - b. Enter the Application or End Use of LFG. For example, gas shipped offsite may be used to generate electricity, upgraded to renewable natural gas for pipeline injection, or used for transportation vehicles.

Control Device and Source Test Information (control_devices tab):

- 1) Enter the following information for each device (one device per row):
 - a. Enter the Device ID and use the dropdown list to select Device Type; enter the Installation Year, Rating, Select Rating Units using the dropdown list. Enter Fuel Type and Volume of LFG Combusted (scf). Fuel type is the main operating fuel for your device, which is typically landfill gas; if so, enter "LFG." **[95470(b)(3)(D)]**
 - b. Enter Supplemental Fuel Type and Supplemental Fuel Amount (gallons), including any pilot or start-up fuel used. If no supplemental fuel was used, leave both boxes blank. **[95470(b)(3)(G)]**
 - c. Enter Source Test Date (mm/dd/yyyy) and Methane Destruction Efficiency (%). Do not enter text or symbols (e.g., percent, % or greater than, >), numeric values only.
 - d. If applicable, enter Lean Burn Engine Outlet Concentration (ppmv). For enclosed flares, enter Average Combustion Temperature Established During Source Test (° F); the template calculates the minimum temperature limit, which is 50 degrees Fahrenheit below the average combustion temperature during the source test. **[95470(a)(1)(H), 95470(b)(3)(J)]**
 - e. Use the dropdown list to select Source Test Result; if applicable, provide an Explanation (if Source Test "Out of compliance with permit" or "Exempt").
 - f. If source test is not required annually, provide the Next source test due date (mm/dd/yyyy).

Control Device Operating Parameters (control_device_parameters tab):

- 1) Select "No" if the landfill does not use an enclosed flare, or if there were no periods of enclosed flare operation below the minimum temperature for a period exceeding 3 hours. If "Yes," complete the table under Enclosed Flare Below Minimum Temperature (3-hour periods) for each occurrence: **[95470(a)(1)(K), 95470(b)(3)(J)]**
 - a. Enter the Device ID, Low Temperature Start Date (mm/dd/yyyy) and Start time, Low Temperature End Date (mm/dd/yyyy) and End time, Duration of Low Temperature Event (hours), the Average or Lowest Temperature Recorded During Event (° F), and the Minimum Temperature Limit (° F) that was in effect on the date of the low temperature event.
- 2) Select "Yes" if the landfill uses a control device other than an enclosed flare, and provide operating parameter records (the parameter ranges established during the initial or most recent source test, and records of any exceedances of those parameters) in the space provided under Operating parameter ranges for any control device other than an enclosed flare **[95469(b)(2), 95470(b)(3)(J)]**
- 3) Select "Yes" if the landfill uses a boiler or process heater and provide monitoring data in the space provided under Boiler or Process Heater **[95470(a)(1)(K)2., 3., and 95470(b)(3)(J)]**

Instantaneous Surface Emissions Monitoring (SEM_instantaneous tab):

- 1) Use the dropdown list to select the Surface emission monitoring schedule and Surface emissions monitoring walking pattern (25- or 100-foot spacing interval). These responses are applicable to both instantaneous and integrated surface emissions monitoring (SEM). Select "mixed" if some areas are required to be monitored on a quarterly- and others on an annual-basis, or if monitoring is permitted with 100-foot spacing only in certain areas.
- 2) Select "No" if there were no instantaneous surface emissions monitoring exceedances greater than 500 ppmv or surface readings equal to or greater than 200 ppmv during the reporting period. If "Yes," complete the table under Records of all instantaneous surface readings of 200 ppmv or greater: **[95469(a)(1), 95470(a)(1)(D), and 95470(b)(3)(J)]**

Note that Surface Emissions Monitoring records should include any exceedances detected during a compliance inspection.

- a. Enter the Latitude and Longitude in decimal degrees of the location where the exceedance is detected.
- b. Enter the grid number or other identifying location description for Location/Grid ID.
- c. Enter Sampling Date (mm/dd/yyyy), Time, and Wind Speed (mph).
- d. Enter Methane Concentration (ppmv).
- e. Enter the Date of Corrective Action (mm/dd/yyyy) for each exceedance. If corrective action(s) occurred on multiple dates and the leak was ultimately repaired, enter the date when the final action was completed to bring the affected area into compliance.

- If the leak was **not** repaired within the reporting period, leave the date box blank—do not enter an anticipated future date of resolution.
- f. Describe all Corrective Action(s) taken to repair each exceedance/leak. An SEM exceedance means a reading greater than the Surface Methane Emission Standards given in section 95465. If an exceedance was not able to be corrected within 120 days, explain why. A separate document may be submitted with the template to further describe or explain corrective actions, re-monitoring and repair timelines, or other issues.
 - g. For each exceedance, enter the Date Re-monitored (within 10 days of the first exceedance) and the Re-monitored Methane Concentration (ppmv).
 - h. If the re-monitoring of the location shows a second exceedance, enter the Date Re-monitored (within 10 days of the second exceedance) and Re-monitored Methane Concentration (ppmv).
 - i. If the re-monitoring of the location shows a third exceedance, enter the Date Re-Monitored (within 120 days of the third exceedance or post-well installation) and Post-Well Installation: Re-monitored Methane Concentration (ppmv).
 - j. Well Installation Deadline is automatically calculated as 120 calendar days after the date of the third exceedance. **[95469(a)(1)(B)2]**

Integrated Surface Emissions Monitoring (SEM_integrated tab):

- 1) Select “No” if there were no integrated surface emissions monitoring exceedances greater than 25 ppmv during the reporting period. If “Yes,” complete the table under Records of all integrated surface readings averaging greater than 25 ppmv: **[95469(a)(2), 95470(a)(1)(D), and 95470(b)(3)(J)]**
 - a. Enter the grid number or other identifying location description for Location/Grid ID.
 - b. Enter Sampling Date (mm/dd/yyyy), Time, and Wind Speed (mph).
 - c. Enter Methane Concentration (ppmv).
 - d. Enter the Date of Corrective Action (mm/dd/yyyy) for each exceedance. If corrective action(s) occurred on multiple dates and the leak was ultimately repaired, enter the date when the final action was completed to bring the affected area into compliance. If the leak was **not** repaired within the reporting period, leave the date box blank—do not enter an anticipated future date of resolution.
 - e. Describe all Corrective Action(s) taken to repair each exceedance. An SEM exceedance means a reading greater than the Surface Methane Emission Standards given in section 95465. If an exceedance was not able to be corrected within 120 days, explain why. A separate document may be submitted with the template to further describe or explain corrective actions, re-monitoring and repair timelines, or other issues.
 - f. For each exceedance, enter the Date Re-monitored (within 10 days of the first exceedance) and the Re-monitored Methane Concentration (ppmv).
 - g. If the re-monitoring of the location shows a second exceedance, enter the Date Re-monitored (within 10 days of the second exceedance) and Re-monitored Methane Concentration (ppmv).
 - h. If the re-monitoring of the location shows a third exceedance, enter the Date Re-monitored (within 120 days of the third exceedance or post-well installation) and Post-Well Installation: Re-monitored Methane Concentration (ppmv).

- i. Well Installation Deadline is automatically calculated as 120 calendar days after the date of the third exceedance. **[95469(a)(2)(B)2]**

Areas excluded from Surface Emissions Monitoring (SEM_excluded tab):

For each area of the landfill surface that is not monitored during any required quarterly or annual surface emission monitoring event, provide Records of landfill surface areas not monitored:

- 1) Use the dropdown list to select if the Area Excluded is a full or partial monitoring grid.
- 2) Enter the grid number or other identifying location description in Location/Grid ID.
- 3) Use the dropdown list to indicate whether the Period Excluded was a single quarter or a full year. If an area was excluded for more than one quarterly monitoring event, but less than the full reporting year, use multiple rows for the same area to indicate which quarters the area was excluded.
- 4) Describe Reason Excluded; provide Alternative Compliance Option (ACO) request or approval date, if applicable.

Component Leak Monitoring (component_leaks tab):

- 1) Select "No" if there were no component leaks during the reporting period. A component leak is defined in section 95464(b)(1)(B). If "Yes," complete the table under Records of all component leaks greater than 500 ppmv: **[95470(a)(1)(D), 95470(b)(3)(J)]**
 - a. Enter Component ID and Component Location/Description.
 - b. Enter Sampling Date (mm/dd/yyyy) and Time.
 - c. Enter Methane Leak Concentration (ppmv).
 - d. Enter Date of Corrective Action (mm/dd/yyyy). If corrective action(s) occurred on multiple dates and the leak was ultimately repaired, enter the date when the final action was completed to bring the component into compliance. If the leak was **not** repaired within the reporting period, leave the date box blank—do not enter an anticipated future date of resolution.
 - e. Describe all Corrective Action(s) taken to repair the leak. A separate document may be submitted with the template to further describe or explain corrective actions, re-monitoring and repair timelines, or other issues.
 - f. Enter the Date Re-monitored (within 10 days of the initial leak detection) and the Re-monitored Methane Leak Concentration (ppmv).

Gas Collection System Downtime (gccs_downtime_5day tab):

- 1) Select "No" if there were no instances of gas collection downtime exceeding five calendar days. If "Yes," complete the table under Gas collection system downtime exceeding five calendar days, including individual well shutdown: **[95470(a)(1)(A), 95470(b)(3)(J)]**
 - a. Enter Well ID or System to identify the affected component: enter "SYSTEM" if the entire gas collection system was shut down for a period exceeding 5 days; otherwise, enter the well identification number or other description of the individual component.
 - b. Enter Shutdown Date (mm/dd/yyyy).

- c. Enter Start-up Date (mm/dd/yyyy). If the start-up date is still pending (component is not in operation) at the time of report submission, leave this field blank.
- d. Enter Duration of event (hours). If the start-up date is still pending, leave this field blank.
- e. Select Reason for downtime from the dropdown list. If the dropdown list does not provide an applicable reason, choose "Other."
- f. Describe the Reason(s) for downtime.

Gas Control System Downtime (gccs_downtime_1-hour tab):

- 1) Select "No" if there were no instances of gas control system downtime exceeding one hour. Select "Yes" if there were instances where the gas control system was not operating for greater than one hour and complete the table under Gas control system downtime in excess of one hour: [\[95470\(a\)\(1\)\(B\), 95470\(b\)\(3\)\(J\)\]](#)

Note that if multiple control devices are used, report only instances when there were no devices operating.

- a. Enter Shutdown Date (mm/dd/yyyy) and Shutdown time.
- b. Enter Start-up Date (mm/dd/yyyy) and Start-up time. If the start-up date and time is still pending (device is not in operation) at the time of report submission, leave these fields blank.
- c. Enter Duration of event (hours). If the start-up date is still pending, leave these fields blank.
- d. Select Reason for downtime from the dropdown list. If the dropdown list above does not provide an applicable reason, choose "Other."
- e. Describe the Reason(s) for downtime.

Well Pressure Monitoring (well_pressure tab):

- 1) Select "No" if there were no instances of positive wellhead pressure detected during the reporting period, or if positive pressures occurred only under one of the conditions provided in the regulation. If "Yes," complete the table under Positive wellhead gauge pressure for each event: [\[95469\(e\), 95470\(a\)\(1\)\(E\), 95470\(b\)\(3\)\(J\)\]](#)
 - a. Enter Well ID.
 - b. Enter Measurement Date (mm/dd/yyyy).
 - c. Enter the Initial Positive Gauge Pressure Measurement and Measurement Units (e.g., "in H₂O").
 - d. Enter the Date of Corrective Action. If corrective action(s) occurred on multiple dates, enter the date when the final action was completed to bring the well into compliance.
 - e. Describe all Corrective Action(s) taken, including but not limited to, any necessary expansion of the gas collection system. If pressure was not able to be corrected within 120 days, explain why. A separate document may be submitted with the template to further describe or explain corrective actions, re-monitoring and repair timelines, or other issues. and
 - f. If Corrected within 15 days, select "Yes" using the dropdown list.

- g. Select (Yes/No) to indicate whether the positive pressure was Corrected within 60 days after the initial measurement date.

Note that this information is not specifically required by the LMR but is required under the Federal Plan to implement the U.S. EPA Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills, 40 CFR 60.38f(k). CARB has incorporated these federal requirements into the LMR reporting template and will provide information reported to CARB to U.S. EPA (see page 1).

For corrective actions that are not completed within 60 days, the reporting entity is solely responsible for ensuring that timely notifications are submitted to the U.S. EPA Administrator, and for obtaining needed approvals.

- h. Select (Yes/No) to indicate whether the positive pressure was Corrected within 120 days after the initial measurement date.

Wellhead Temperature and Nitrogen or Oxygen Monitoring (well_temperature tab):

Note that the information on this tab is not specifically required by the LMR but is required under the Federal Plan to implement the U.S. EPA Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills, 40 CFR 60.34f(c), 60.36f(a)(5), 60.37f(a)(2), 60.38f(k), and 60.39f(e)(2). CARB has incorporated these federal requirements into the LMR reporting template and will provide information reported to CARB to U.S. EPA (see page 1).

For corrective actions that are not completed within 60 days, the reporting entity is solely responsible for ensuring that timely notifications are submitted to the U.S. EPA Administrator, and for obtaining needed approvals.

- 1) Select "No" if there were no instances of wellhead temperature that are 55 degrees C (131 degrees F) or above during the report period. If there were instances of wellhead temperature exceedance requiring corrective action, select "Yes" and complete the table under Wellhead Temperature Exceedances for each event.
- 2) Select "Yes" to confirm compliance with U.S. EPA requirements to monitor Nitrogen or Oxygen monthly.

For each wellhead temperature event:

- a. Enter Well ID.
- b. Enter Measurement Date (mm/dd/yyyy).
- c. Enter the Temperature Measurement and Measurement Unit (degrees C or F).
- d. Enter the Date of Corrective Action (mm/dd/yyyy) and Describe Corrective Action(s) taken to mitigate the temperature exceedance.
- e. If Corrected within 15 days, select "Yes" using the dropdown list.
- f. Select (Yes/No) using the dropdown list to indicate whether the temperature exceedance was Corrected within 60 days after the initial measurement date.

- g. Select (Yes/No) using the dropdown list to indicate whether the temperature exceedance was Corrected within 120 days after the initial measurement date.

Gas Collection System Expansion (well_expansion tab):

- 1) Select "No" if no new wells installations or collection system expansion were required nor occurred during the reporting period. If "Yes," complete the table under Well installation as part of a gas collection system expansion for each new well installed:
 - a. Enter Well ID/Name, Location/Grid ID, and the Installation Date (mm/dd/yyyy). **[95470(a)(1)(D), 95470(b)(3)(J)]**
 - b. If expansion was required, enter the 120-day installation deadline (mm/dd/yyyy) to confirm whether the installation occurred by the deadline. **[95469(a)(1), (a)(2), or (c)(3)]**
 - c. If well expansion was required as a corrective action in response to an SEM exceedance or wellhead monitoring, space is provided for an explanation, such as to identify which grid or well issue was resolved by the expansion.

Recordkeeping Requirements

All landfill owner/operators are required to maintain the records identified in section 95470(a) for five years.