GUIDANCE FOR TYPE I/II/III LANDFILLS AND SURFACE IMPOUNDMENTS CLOSURE AND POST-CLOSURE COST ESTIMATES

This guidance has been prepared to assist the Applicant in providing closure and post-closure cost estimates utilizing a cost estimating workbook developed by the LDEQ. This guidance will reduce time as well as establish accuracy and consistency when preparing closure and post-closure cost estimates. The Applicant should utilize the cost estimating workbook and guidance information provided when submitting Type I/II/III landfill and surface impoundment cost estimates to the Department for review and approval.

Assumptions were made regarding materials, methodologies, and designs for facility closure and post-closure. The workbook auto-populates costs based on the information provided by the user. Only costs associated with the selected closure methodology will be included in the closure/post-closure estimate (*e.g.*, close in place will not include costs to remove waste). For facilities with alternative methods of closure/post-closure, a space has been provided in the workbook to list alternative methods. Alternative closure/post-closure methods shall include documentation that the proposed methodology provides equivalent or greater protection to the environment than standard closer methods.

The instructions for completing the workbook are listed below:

1. Make sure to use the latest version of the permit application, permit guidance, cost estimate guidance, and cost estimate workbook.
2. Complete each section that is applicable to the facility on the “Facility Site Specific Info.” worksheet.
3. Information only needs to be provided on the “Facility Site Specific Info” worksheet and will automatically populate the other worksheets in the workbook.
4. In the section titled “LDEQ Cost Estimate Workbook”, fill in the following facility specific information:
5. Facility Name – Name of the facility as it appears in the permit
6. Workbook Completed by – Name of person completing workbook
7. Date of Estimate – Date workbook was completed
8. Date of Last Detailed Estimate – Date of previously completed workbook if available
9. Permit Number – Facility permit number
10. Agency Interest Number – Facility Agency Interest number
11. In the “Site Specific Information” section, on the “Facility Location Cost Adjustment Factor” row, select the LDEQ Region where the facility is located from the drop-down menu.
12. For each applicable section, provide information for each cell highlighted in PINK. Some cells require an option to be selected from a drop-down menu while others require information to be manually typed in.

**Type I/II Landfill Information**

1. Select “Yes” or “No” regarding whether the facility has a Type I or Type II Landfill.
2. Select “Yes” or “No” regarding whether the landfill is currently closed.
3. If the landfill is closed, input the number of years left for post-closure. If the cost estimate is for a closed facility, a copy of the closure certification must be included.
4. Input the current constructed area of the landfill (in acres) that does not have certified final cover.
5. Input the current area of the landfill (in acres) that has certified final cover.
6. Select “Yes” or “No” regarding whether final cover will be installed using soil. If soil will not be used for final cover, provide the following information on the “Alternatives Table” to the right; alternative name, quantity, units, and unit cost.
7. Select “Artificial Turf” or “Grass” to be used as part of final cover.
8. Select “Hydroseed”, Grass Seed”, or “Both” to be used for vegetative cover as part of the final cover.
9. Input the area (in acres) that will require a geomembrane.
10. Input the permitted final height (in feet) of the landfill.
11. Select “Yes” or “No” regarding whether soil is available on site to apply final cover.
12. If soil is not available on site, list the haul distance (in miles) from the borrow pit to the facility.
13. Select “Yes” or “No” regarding whether the facility will utilize geogrid for closure. If the facility is not utilizing geogrid for final cover, provide the following information on the “Alternatives Table” to the right; alternative name, quantity, units, and unit cost.
14. Select “Yes” or “No” regarding whether the facility is using an active or passive gas collection system. If the facility is not using an active or passive gas collection system, provide the following information on the “Alternatives Table” to the right; alternative name, quantity, units, and unit cost.
15. Input the value for the number of gas wells that will be installed during closure of the landfill. This value should be equal to the acres of unclosed portions of the landfill.

**Type I/II Surface Impoundment Information**

1. Select “Yes” or “No” regarding whether the facility has a surface impoundment.
2. Select “Yes” or “No” regarding whether the surface impoundment is currently closed.
3. If the surface impoundment was closed in place, input the time (in years) left of post closure.
4. Select “Yes” or “No” regarding whether the surface impoundment is clean or risk-based closing.
5. If the facility is planning to close in-place, select “Yes” or “No” regarding whether the facility has soil available on site to close.
6. If soil is not available on site, list the haul distance (in miles) from the borrow pit to the facility.
7. Select “Yes” or “No” regarding whether the facility will use a water pump for dewatering and fly ash for sludge solidification. If “No” is selected, provide the following information to the “Alternatives Table” to the right for dewatering and solidification; alternative name, quantity, units, and unit cost.
8. Input the time (in days) that it will take to complete closure activities
9. Input the surface area of the surface impoundment (in acres).
10. Input the depth (in feet) of the surface impoundment.
11. Input the depth (in feet) of sludge in the surface impoundment.
12. Select “Yes” or “No” regarding whether the facility has a geomembrane as part of the liner system.
13. If the surface impoundment will utilize clean or risk-based closure, provide the name of the location where the sludge will be disposed.
14. If the surface impoundment will utilize clean or risk-based closed, provide the distance (in miles) from the surface impoundment to where the sludge will be disposed.

**Type III Landfill Information**

1. Select “Yes” or “No” regarding whether the facility has a Type III Landfill.
2. Select “Yes” or “No” regarding whether the landfill is currently closed.
3. If the landfill is closed, input the number of years left for post-closure.
4. Select “Hydroseed”, Grass Seed”, or “Both” to be used for vegetative cover as part of the final cover.
5. Input the current constructed area of the landfill (in acres) that does not have certified final cover.
6. Input the current area of the landfill (in acres) that has certified final cover.
7. Select “Yes” or “No” regarding whether final cover will be installed using soil. If soil will not be used for final cover, provide the following information on the “Alternatives Table” to the right; alternative name, quantity, units, and unit cost.
8. Input the permitted final height (in feet) of the landfill.
9. Select “Yes” or “No” regarding whether soil is available on-site to apply final cover.
10. If soil is not available on site, list the haul distance (in miles) from the borrow pit to the facility.

**Geology Information**

1. Input the quantity of wells at the facility. This number includes piezometers and monitoring wells (both active and inactive).
2. Input the total sum of all well depths at the facility. This number includes piezometers and monitoring wells. Use the table to the right to list each monitoring well and/or piezometer with its total depth.
3. Using the table to the right, check the box for each constituent of concern the facility tests for in each sampling event.
4. Input the sampling frequency for constituents of concern at the facility.
	1. The frequency of sampling selected will determine the subtotal analytical costs on the Geology worksheet named “Geology Closure & Post-Closure.”
	2. If the constituents of concern are sampled annually then input “1”, if sampled semiannually input “2”.
5. Select “Yes” or “No” regarding the intent to clean or risk-based close a surface impoundment at the facility.
6. If Yes, then confirm that the facility has costs to sample groundwater beneath the impoundment.
7. Input the quantity of surface impoundments at the facility. The costs for sampling beneath the impoundment will change based on how many surface impoundments are at the facility.

**Attachment 1** shows the individual costs utilized for sampling, analytical, reporting, plugging and abandonment, and maintenance. These costs will be updated on a five year basis utilizing a market analysis of appropriate companies for each task.