


**FORM EQP 5111 ATTACHMENT TEMPLATE A12**  
**CLOSURE AND POSTCLOSURE CARE COST ESTIMATES**

This document is an attachment to the Michigan Department of Environment, Great Lakes, and Energy's *Instructions for Completing Form EQP 5111, Operating License Application Form for Hazardous Waste Treatment, Storage, and Disposal Facilities*. See Form EQP 5111 for details on how to use this attachment.

The administrative rules promulgated pursuant to Part 111, Hazardous Waste Management, of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451), R 299.9702 and Title 40 of the Code of Federal Regulations (CFR), Part 264, Subpart H, establishes requirements for providing financial assurance for closure and, if necessary, postclosure care. Specifically, R 299.9702(1) requires the preparation of associated cost estimates. This license application template addresses the requirement for preparing a closure cost estimate and, if necessary, a postclosure care cost estimate. The cost estimates provided in this attachment are based on the closure and postclosure care activities detailed in Template A11. All references to 40 CFR citations specified herein are adopted by reference in R 299.11003.

This template is organized as follows:

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A12.B	POSTCLOSURE COST ESTIMATE
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 *Renumber tables in Section A12.A as necessary based on the type of units at the facility. Present units in order noted.*

**A12.A CLOSURE COST ESTIMATE**  
[R 299.9702(1) and 40 CFR §264.142]

The closure cost estimate covers the corresponding closure activities in the approved closure plan. These activities may include, but are not limited to, removal of waste inventory, decontamination, sampling and analysis, and closure certification. Unless otherwise specified in Section A11.A.3 of Template A11, the date of closure of the hazardous waste management units has not been determined. As such, it is not possible to predict, with any high degree of certainty, actual facility conditions or regulatory requirements at time of closure. Therefore, this closure cost estimate is based on closure of the unit within the next six months and includes a contingency estimate to account for media sampling and analysis, and removal based on current conditions.

The estimate assumes closure procedures are completed by a third party at the time facility closure would be most expensive (e.g., with a maximum inventory). The cost estimate for disposal assumes wastes will be treated and contaminated equipment disposed rather than recovered or salvaged. The total closure cost for the closure of the Wayne Disposal Inc. is estimated at \$56,172,778. The closure cost estimate breakdown by unit is provided in Section A12.A.1. Unit-specific work sheets are provided, as applicable, in Tables A12.A.1 through A12.A.[\_].

Additional cost estimate assumptions are listed below.

1. All hazardous waste will be transported off site to a licensed facility in accordance with all applicable state and federal regulations.
2. Costs are based on current year costs. All labor rates reflect commercial rates and include fringe benefits, payroll burden, and taxes.
3. Total costs include a 20 percent contingency for administrative and a 20 percent contingency for miscellaneous operating costs.

This closure cost estimate will be maintained at the facility. It will be revised whenever a change in the closure plan affects the cost of closure. It will be adjusted annually as required by pertinent regulations or when the types and quantity of wastes received at the facility change.

#### **A12.A.1 Closure Cost Estimate Breakdown**



Provide a breakdown of the closure cost estimate for the facility by completing the following tables, as appropriate.

**Table A12.A.1 Facility Closure Cost Estimate Breakdown by Unit\***

1.	Container Storage Areas	\$ See Landfill Cost
5.	Landfills	\$ 43,551,642.51
<b>Total Facility Closure and Postclosure Care Estimate</b> (add lines 1 through 11)		\$ 43,551,642.51

\* Tables not included at this time for Land Treatment Units, Drip Pads, and Hazardous Waste Munitions and Explosives Storage Units

**Table A12.A.2 Container Storage Areas Closure Cost Estimate**

Wayne Disposal Inc.

<b>Activity</b> If certain activities are not expected to be performed, enter "NA" as the Estimated Cost.		<b>Estimated Cost</b>
1.	Demolition and Removal of Containment	\$ NA
2.	Removal of Soil	\$ NA
3.	Backfill	\$ NA
4.	Decontamination	\$ See landfill
5.	Sampling and Analysis	\$ See landfill
6.	Monitoring Well Installation	\$ NA
7.	Transportation	\$ Included in waste cost
8.	Treatment and Disposal of Waste Inventory and Other Cleanup Wastes	\$ See landfill
9.	<b>Subtotal of Closure Costs</b> (Add lines 1 through 8)	\$ See landfill
10.	Engineering Expenses (typically 10% of closure costs, excluding certification of closure.)	\$ See landfill
11.	Certification of Closure	\$ See landfill
12.	<b>Subtotal</b> (Add Lines 9, 10, and 11])	\$ See landfill
13.	Contingency Allowance (typically 20% of closure costs, engineering expenses, and cost of certification of closure.)	\$ See landfill
14.	Landfill Closure	\$ See landfill
<b>Total Closure Cost</b> (Add Lines 12, 13, and 14)		\$ See landfill

WDI's proposed container storage area is within the access road and transfer area footprint already included in the closure requirements. Therefore, the cost estimates including disposal of remaining waste are included in the Landfill estimates provided in Table A12.A.6.

**Table A12.A.6 Landfills Closure and Postclosure Cost Estimate**

Wayne Disposal Inc.

Activity—Traditional Cover		Estimated Cost
If certain activities are not expected to be performed, enter “NA” as the Estimated Cost.		
1	Installation of Clay Layer	\$13,975,641
2	Installation of Geomembrane	\$8,526,870
3	Installation of Drainage Layer/Structures	\$7,406,527
4	Installation of Topsoil	\$4,492,125
5	Establishment of Vegetative Cover	\$337,500
6	Installation of Colloid Clay Liner	NA
7	Installation of Asphalt Cover	NA
8	Decontamination	\$47,247
9	Sampling and Analysis	\$71,040
10	Monitoring Well Installation	NA
11	Transportation	Included in treatment and disposal cost
12	Treatment and Disposal of Waste Inventory and Cleanup Wastes	\$45,587
13	<b>Subtotal of Closure Costs</b> (Add Lines 1 through 12)	\$34,902,537
14	Engineering Expenses	\$2,345,000
15	Survey Plat	\$165,425
16	Certification of Closure	\$337,500
17	<b>Subtotal</b> (Add Lines 13 through 16)	\$37,750,462
18	Contingency Allowance (typically 20% of closure costs, engineering expenses, and cost of certification of closure.)	\$7,550,092
19	Postclosure Care	\$10,872,224
<b>Total Cost of Closure</b> (Add lines 17, 18, and 19)		\$56,172,778

Activity—Artificial Turf		Estimated Cost
If certain activities are not expected to be performed, enter “NA” as the Estimated Cost.		
1	Artificial Final Cover Installation	\$33,154,287
8	Decontamination	\$47,247
9	Sampling and Analysis	\$71,040
10	Monitoring Well Installation	NA
11	Transportation	Included in treatment and disposal cost
12	Treatment and Disposal of Waste Inventory and Cleanup Wastes	\$45,587
13	<b>Subtotal of Closure Costs</b> (Add Lines 1 through 12)	\$33,318,161
14	Engineering Expenses	\$ 1,400,000
15	Survey Plat	\$165,425
16	Certification of Closure	\$337,500
17	<b>Subtotal</b> (Add Lines 13 through 16)	\$35,221,086
18	Contingency Allowance (typically 20% of closure costs, engineering expenses, and cost of certification of closure.)	\$7,044,217
19	Postclosure Care	\$10,020,644
<b>Total Cost of Closure</b> (Add lines 17, 18, and 19)		\$52,285,947

The cost estimate assumes the use of artificial closure turf as the final cover system. This was done because it is the most likely cover system to be installed given the maintenance benefits it provides.

#### **A12.B POSTCLOSURE COST ESTIMATE** [R 299.9702(1) and 40 CFR §264.144]

The postclosure care cost estimate covers activities that will be performed after closure of the landfill unit or any unit with waste left in place. These activities include maintaining the integrity of the containment system and the monitoring system and performing postclosure monitoring. The postclosure care activities are presented in Section A11.B.4 of Template A11. The associated cost estimate breakdown is provided in Table A12.B.1.

##### **A12.B.1 Postclosure Care Cost Estimate Breakdown**

**Table A.12.B Annual Postclosure Care Cost Estimate**

**Note:** This estimate should be multiplied by the number of years of expected postclosure care for the facility.

Wayne Disposal Inc.

Activity—Traditional Cover		Estimated Cost
If certain activities are not expected to be performed, enter “NA” as the Estimated Cost.		
1	Removal of Leachate	\$141,128.67
2	Site Security	\$281.55
3	Maintenance of Traditional cover	\$35,160.00
4	Maintenance and Inspection	\$74,800.00
5	Environmental Monitoring	\$50,636.00
6	Deed Notation	N/A
7	Maintenance and Inspection of Cap	Included in line 3 and 4
8	<b>Subtotal of Postclosure Costs</b> (Add lines 1 through 7)	<b>\$302,006.22</b>
9	Engineering Expenses	Included in line 4
10	Certification of Postclosure	Accounted for in line 8 of closure cost
11	<b>Subtotal (Add lines 8, 9, and 10)</b>	<b>\$302,006.22</b>
12	Contingency Allowance (20% of postclosure care costs, engineering expenses, and cost of certification of postclosure.)	\$60,401.24
<b>Total Annual Cost of Postclosure Care (Add lines 11 and 12)</b>		<b>\$362,407.47</b>

Activity—Artificial Turf		Estimated Cost
If certain activities are not expected to be performed, enter “NA” as the Estimated Cost.		
1	Removal of Leachate	\$141,128.67
2	Site Security	\$281.55
3	Maintenance of Artificial Cover	\$11,505.00

4	Maintenance and Inspection	\$74,800
5	Environmental Monitoring	\$50,636.00
6	Deed Notation	N/A
7	Maintenance and Inspection of Cap	Included in line 3 and 4
8	<b>Subtotal of Postclosure Costs (Add lines 1 through 7)</b>	<b>\$278,351.22</b>
9	Engineering Expenses	Included in line 4
10	Certification of Postclosure	Accounted for in line 8 of closure cost
11	<b>Subtotal (Add lines 8, 9, and 10)</b>	<b>\$278,351.22</b>
12	Contingency Allowance (20% of postclosure care costs, engineering expenses, and cost of certification of postclosure.)	\$55,670.24
<b>Total Annual Cost of Postclosure Care (Add lines 11 and 12)</b>		<b>\$334,021.47</b>

Deeds to the facility area already filed and therefore not applicable. Engineering and project management inspections are included in the monitoring, maintenance and inspection estimates. Post closure certification is assumed under the closure cost estimate.

Environmental monitoring includes groundwater, leak detection, lysimeter and surface water monitoring, inspections and reporting costs.