

ATTACHMENT 6  
POSTCLOSURE PLAN



**A11.B POSTCLOSURE PLAN**  
[R 299.9613 and 40 CFR, Section 264.118]

**A11.B.1 Applicability**

*(Check as appropriate)*

**Not applicable:** Hazardous waste will not be left behind at closure. A survey plat, postclosure care, postclosure certifications, and other notices are not required.

**Applicable:**

- Contingent plan  
 Landfill unit

**A11.B.2 Postclosure Care Objectives**

The Dow Corning facility will complete the activities listed in Table A11-2 in order to achieve the following:

1. Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events;
2. Operate the leachate collection and removal system until leachate is no longer generated by landfill or concentrations of constituents in the leachate are less than applicable Part 201 criteria;
3. Maintain and monitor the leak detection system in accordance with R 299.9613 and 40 CFR §§264.301(c)(3)(iv) and (4) and 264.303(c), and comply with all other applicable leak detection system requirements of this part. This landfill was constructed prior to January 29, 1992 and has had no horizontal expansions since that date. The landfill is therefore exempt from the requirements of 40 CFR 264.301(c) for use of a double synthetic liner and leak detection system;
4. Maintain and monitor the groundwater monitoring system and comply with all other applicable requirements of R 299.9612 and 40 CFR, Part 264, Subpart F;
5. Prevent run-on and run-off from eroding or otherwise damaging the final cover; and
6. Protect and maintain surveyed benchmarks used in complying with R 299.9613 and 40 CFR §264.309.

**A11.B.3 Postclosure Care Period Point of Contact**

The planned monitoring and maintenance activities and the associated frequencies are designed to ensure the integrity of the cap and final cover system and the proper functioning of the monitoring system for each unit listed in Table A11-1.

Because closure of the landfill is not planned, the contact person or office for the post-closure care period will not be designated at this time. Prior to closure of the landfill, at the time of the filing of the notification of closure and final, updated closure plan, the contact person or office for post-closure care will be designated.

#### **A11.B.4 Postclosure Care Activities**

The following table identifies, for each unit requiring postclosure care, planned monitoring and maintenance activities and the frequency at which these activities will be performed.

#### **Planned Monitoring Activities [40 CFR 270.14(b)(13), 264.118(b)(1), MAC R 299.9613(1)]**

Post-closure monitoring of the landfill will be carried out by sampling a series of groundwater monitoring wells, the leachate collection system, and Lingle Drain, which is the nearest surface water. Monitoring plans for each are described below. The condition of the landfill final cover and perimeter drainage ditches will also be monitored by inspection, as described below.

##### **1. Groundwater Monitoring**

The purpose of the groundwater monitoring program is to detect the migration of hazardous waste or hazardous waste constituents from materials disposed in the landfill so that actions can be taken to halt the release. Parameters chosen for monitoring are based on knowledge of the types of wastes previously disposed in the landfill and/or present in the landfill leachate. The current monitoring program is described in Module B5, "Environmental Monitoring Programs", of this license application. Post-closure groundwater monitoring will be a continuation of the monitoring program, with appropriate revisions. Groundwater monitoring wells and equipment will be maintained during the post-closure care period.

##### **2. Leachate Monitoring**

The purpose of the leachate monitoring program is to detect changes in concentrations of hazardous waste or hazardous waste constituents in the leachate before those wastes or constituents can reach groundwater, so that appropriate remedial action can be taken. The groundwater monitoring program is described in Module B5, "Environmental Monitoring Programs", of this license application. Post-closure leachate monitoring will be a continuation of the current monitoring program with appropriate revisions. The leachate collection system and sampling points will be maintained during the post-closure care period.

##### **3. Surface Water Monitoring**

The purpose of the surface water monitoring program is to detect the migration of hazardous waste or hazardous waste constituents from the landfill to the nearest surface water, so that appropriate remedial action can be taken. The surface water monitoring program is described in Module B5, "Environmental Monitoring Programs", of this license application. Post-closure monitoring will be a continuation of the monitoring program with appropriate revisions.

##### **4. Landfill Final Cover Inspection**

The condition of the final cover will be inspected twice each year for the first 3-5 years of the post-closure period. If the cover and sidewalls are well maintained and show good stability, and the volume of leachate collected is reduced by 80-90% from average

volumes collected prior to closure, then a proposal will be submitted to the DNRE for approval requesting the inspection frequency be reduced to once each year. The inspection frequency change will not be implemented until approval is received by DNRE. Detailed inspection procedures are described in Appendix A11-8. Survey benchmarks used in establishing monitoring well and landfill elevations will also be maintained during the post-closure care period. Dow Corning maintains a record of wastes placed in the landfill and their location with respect to permanently surveyed benchmarks in accordance with 40 CFR 264.309 & 310, as described in Module C3, Use and Management of Landfill, Section C3.G.

## **5. Perimeter Drainage Ditch**

The perimeter drainage ditches are used to control run-on and runoff of water at the landfill. In order to ensure proper functioning, the drainage ditches will be inspected quarterly for any potential drainage problems, such as ditch erosion or blockage. Detailed inspection procedures are described in Appendix A11-8.

### **Planned Maintenance Activities [40 CFR 270.14(b)(13), 264.118(b)(2), MAC R 299.9613(1)]**

Maintenance activities in the post-closure period will be performed as needed, based on the results of monitoring and inspection activities described above. Expected maintenance activities are described below.

#### **Landfill Cover Maintenance [40 CFR 270.14(b)(13), 264.118(b)(2)(i), MAC R 299.9613(1)]**

Based on the results of the landfill final cover, sidewall and perimeter ditch inspections, as described in Appendix A11-8, repairs will be made as needed during the post-closure care period to maintain the integrity of the closed unit. Maintenance activities may include seeding and mulching, erosion repair, cleaning of ditches and catch basins and the use of erosion control mats on the landfill sidewalls, if needed.

#### **Monitoring Equipment Maintenance [40 CFR 270.14(b)(13), 264.118(b)(2)(ii), MAC R 299.9613(1)]**

Routine maintenance for this system will include cleaning of the leachate collection pipes and manholes. Repairs to leachate piping, the flow measuring system, and manholes will be performed as needed, based on observations made during sampling and at regular landfill inspections.

Shallow and deep groundwater monitoring wells will be maintained throughout the post-closure care period to permit continued monitoring as required. The Waste Management Division will be notified if any wells must be replaced due to damage. Survey benchmarks used in establishing monitoring well and landfill elevations will also be maintained during the post-closure care period.

#### **A11.B.5 Postclosure Care Plan Amendment [R 299.9613 and 40 CFR §264.118(d)]**

The Postclosure Care Plan will be amended whenever:

1. Changes in the operations or facility design will affect closure and postclosure care;
2. There is a change in the expected year of closure, if applicable;
3. Unexpected events during closure require a modification to the plan, or
4. The monitoring is ineffective or inefficient.

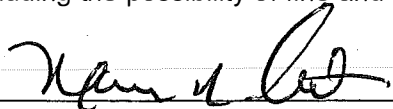
Amendments to the Postclosure Care Plan must be approved by the director before implementation.

**A11.B.6 Certification of Postclosure**  
[R 299.9613]

Within 60 days of completion of postclosure care Dow Corning will submit to the Director, by registered mail, a certification that postclosure care for the hazardous waste management unit or facility, as applicable, has been completed in accordance with the specifications in the approved postclosure plan. The certification will be signed by the owner/operator of Dow Corning and by an independent registered professional engineer. Documentation supporting the independent registered engineer's certification will be furnished to the Director in accordance with R 299.9613(5). The Dow Corning facility will maintain financial assurance for postclosure until the Director releases the Dow Corning facility from the financial assurance requirements for postclosure under R 299.9703 and 40 CFR §264.143(i).

**CERTIFICATION OF POSTCLOSURE**

I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: 

Name: Mark Arent

Title: Senior Environmental Specialist

Date: July 6, 2011





**Table A11-1  
Hazardous Waste Management Units Information**

<b>Unit Designation</b>	<b>Maximum Inventory (Include Units)</b>	<b>Waste Codes of Hazardous Wastes Managed</b>	<b>Scheduled Closure Date</b>	<b>Estimated Duration of Closure</b>
801 Container Storage Area	85,000-gallons – No hazardous materials is stored in this building.	N/A	N/A	180 Days
809 Container Storage Area	85,000-gallons	See Table A2-1 in Module A2 (Chemical and Physical Analyses)	N/A	180 Days
806 Tank Storage Area	60,000-gallons	See Table A2-1 in Module A2 (Chemical and Physical Analyses)	N/A	180 Days
Landfill	No hazardous waste disposal currently occurs in the landfill. Non-regulated wastes staged at the landfill for disposal will be placed in the active cell prior to closure, or removed for shipment off-site.	See Table A2-1 in Module A2 (Chemical and Physical Analyses)	N/A	180 Days

**Table A11-2  
Postclosure Monitoring and Maintenance**

<b>Unit</b>	<b>Planned Monitoring Activities</b>	<b>Frequency</b>	<b>Planned Maintenance Activities</b>	<b>Frequency</b>
Landfill, 806 Tank Farm, 801 & 809 Container Storage Areas	Groundwater Monitoring	Semiannual	As Needed (see Module A11, Section A11.B.4)	As Needed
Landfill	Leachate Monitoring	Quarterly	As Needed (see Module A11, Section A11.B.4)	As Needed
Lingle Drain upstream & downstream from the regulated unit	Surface Water Monitoring	Annual for minimum of five years	As Needed (see Module A11, Section A11.B.4)	As Needed
Landfill	Landfill Cover Inspection	Twice each year for the first 3-5 years	As Needed (see Module A11, Section A11.B.4)	As Needed
Drainage Ditch	Perimeter Drainage Ditch Inspection	Quarterly	As Needed (see Module A11, Section A11.B.4)	As Needed

**Postclosure Cap Inspection Procedure**



## Postclosure Landfill Cap Inspection Procedure

### 1. Grid System

A simple grid system will be established to divide the cap into discrete areas for inspection by using small stakes and the following procedure to establish a grid system:

- a. Place one stake at each corner of the top of the cap (drive the stake 2-3 inches into the topsoil to avoid puncturing the geomembrane). Label one of the stakes as coordinate 0,0 as shown in Figure 1 (typically the southwest corner).
- b. Measure the area of the top of the cap around the perimeter (area 'abcd,' Figure 1).
- c. Sketch the area in your field book and establish a reasonable grid interval (i.e. 200 feet along the perimeter and 400 feet within the top of the cap as shown in Figure 1). Record the staking information in your field book (stake locations and coordinates).
- d. Transfer the grid system established in c. to the top of the cap (using stakes and a measuring tap). Label the areas you have delineated as shown in Figure 1.
- e. Establish a grid system for the side slopes. The grid system for the side slopes should be constructed by placing stakes along the toe of the slopes. Use the same procedure outlined in 1.a. through 1.d. and Figure 1.

### 2. Procedure for Visual Inspection

Once the grid system has been established, the top of the cap and side slopes are ready for inspection. Now use the inspection log (Figure 2) to record the visual observation of the cap conditions. Note that on the top of the inspection log staff are asked to fill in the coordinates inspected and recorded in inspection log. Inspection of each is to include the observation and identification of the following:



- a. Identify undesirable plant species (species that are capable of developing deep roots and adversely affect the integrity of the cover).
- b. Identify vegetative cover that is damaged or destroyed.
- c. Identify patches of sparse growth.
- d. Identify areas of surface erosion, erosion rifts, and/or surface cracks.
- e. Identify evidence of burrowing by animals
- f. Identify disruption of original grade.
- g. Identify settlement, ponding, and/or localized subsidence.

- h. Identify areas with inadequate thickness of topsoil (areas with less than six inches of loamy topsoil).
- i. Identify areas of slope instability or failure.
- j. Inspect the base (toe) of the slope for saturation.
- k. Identify areas of exposed liner.
- l. Identify seepage of leachate from the side slopes.
- m. Identify damage to spillways and diversion berms; look for excessive sediment build-up or other blockage that could restrict flow and cause erosion of the final cover.
- n. Review records of leachate volume removed from the leachate collection and removal system (LCRS) to evaluate the behavior of leachate collection versus time; look for any unusual increase.

### 3. Final Cover Inspection Log and Company's Documentation

The Final Cover Inspection Log, Figure 2, will be completed during the final cover inspections. Unacceptable conditions will be identified in the remarks or comments section. The cause of damage will be investigated and determined. Corrective action will be performed immediately on minor repairs. If major corrective action is necessary, a written report summarizing the corrective action will be provided to the Waste Management Division for their approval.

Following a final cover inspection Dow Corning will send a letter to the Waste Management Division indicating the date of the inspection, identifying any problems or damage, suspected cause of the problem, and the appropriate course of action to remedy the problem or repair the damage. The letter will include the amount of time it took or the amount of time necessary to complete repairs. Inspection logs and/or inspection check list must be submitted with the letter.

 S  
 D. (STATIONS)  
 ON OF SLOPE

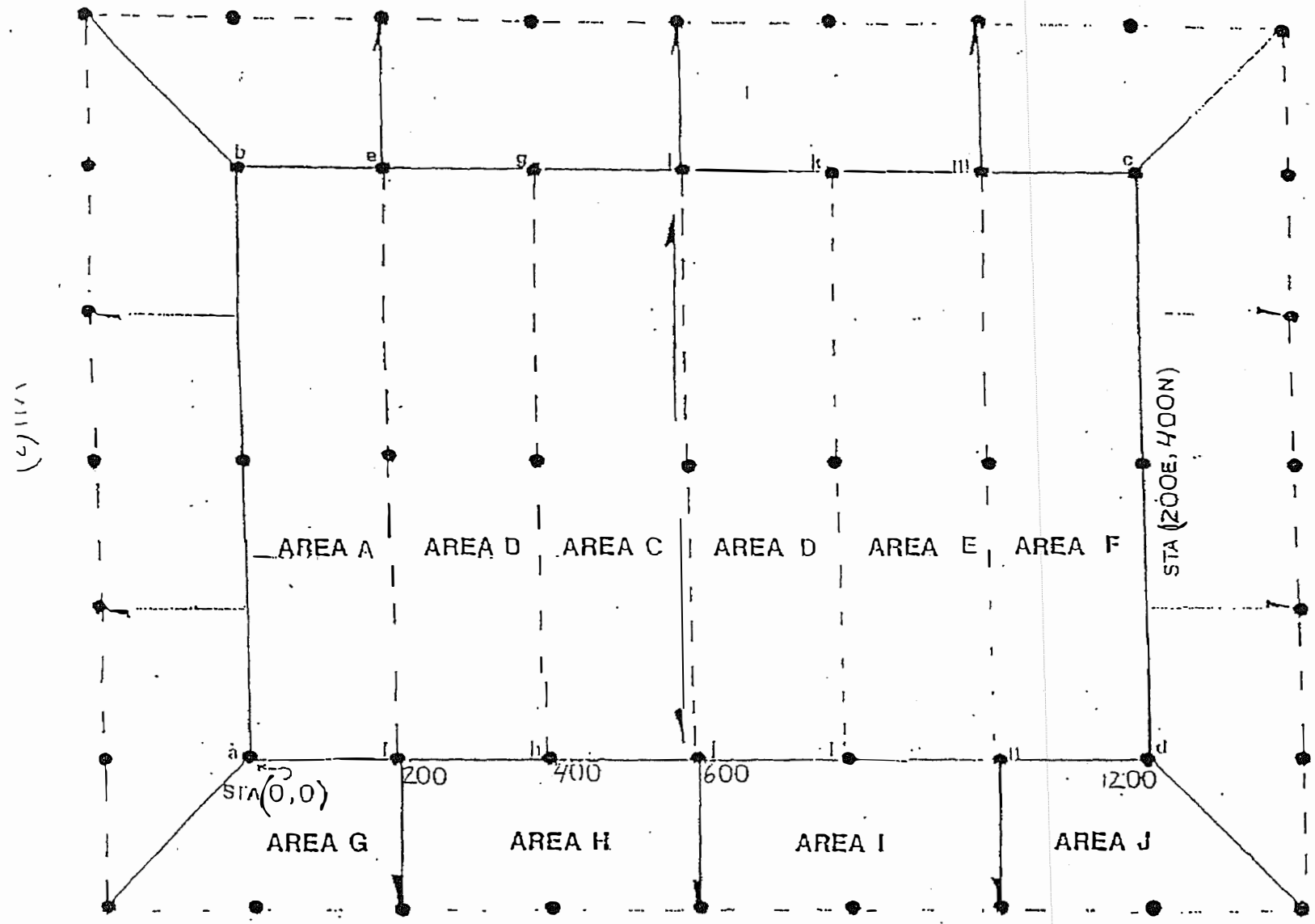


Figure 1. Top of cap and side slopes.

Final Cover (Cap) Inspection Log

Date:            Time:            Inspector:            Weather:

Facility:                            MID:                            Coordinates:

Location(s)    Remarks    Location(s)    Remarks

Undesirable plant species				
Patches of sparse growth				
Distraction in the vegetative cover				
Burrowing by animals				
Destruction of original grade				
Evidence of ponding				
Effect of settlement on surface run-off				
Erosion rifts or surface cracks				
Inadequate thickness of top layer to support grass growth				
Clay/Geomembrane liner exposure				
Sediment problems				
Saturation at the base of the slope				
Conditions of ditches and swales (are they adequately conveying the storm water)				
Other comments				