

# POST CLOSURE PLAN

Edinburg Regional Disposal Facility

Edinburg, Hidalgo County, Texas

TCEQ Permit MSW-956C



**Prepared for:** City of Edinburg  
Department of Solid Waste Management  
8601 North Jasman Road  
Edinburg, Texas 78542 USA

Golder Associates Inc.  
Professional Engineering Firm  
Registration Number F-2578

INTENDED FOR PERMITTING  
PURPOSES ONLY

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## **EXECUTIVE SUMMARY**

30 TAC §330.63(i) & §330.463(b)(3)(B)

This post-closure plan is prepared in accordance with 30 TAC Chapter 330 Subchapter K and the City shall place a copy of this plan in the operating record upon issuance of this permit. The post-closure plan includes a description of the monitoring and maintenance activities required and the frequency at which these activities will be performed. The City is the responsible for overseeing and conducting post-closure care activities.

City of Edinburg  
Department of Solid Waste Management  
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Also included in this post-closure plan is a description of the planned uses of any portion of the closed unit during the post-closure period in accordance with 30 TAC §330.465. A detailed written estimate, in current dollars, of the cost of post-closure care maintenance and any corrective action as described in this post-closure care plan or required by the TCEQ is included in Part III9B, Post-Closure Cost Estimate.

## **1.0 POST-CLOSURE CARE REQUIREMENTS**

30 TAC §330.463(b)(3)(A)

Monitoring and maintenance activities are required in post-closure care period. A description of these activities and the frequency at which these activities will be performed are included in the following sections.

### **1.1 Post-Closure Period**

30 TAC §330.463(a)(1), §330.463(b)(1), & §330.463(b)(2)

After professional engineer certification of the completion of closure requirements for a municipal solid waste management unit as accepted by the TCEQ, the City shall conduct post-closure care for the unit for 30 years, unless revised by the TCEQ. The post-closure care period may be decreased by the TCEQ if the City submits to the TCEQ for review and approval a documented certification, signed by a licensed professional engineer and including all applicable documentation necessary to support the certification, which demonstrates that the reduced period is sufficient to protect human health and the environment. The TCEQ may also reduce the post-closure period for the unit if all wastes and waste residues have been removed during closure. The post-closure period care period may be increased by the TCEQ if it is determined that the lengthened period is necessary to protect human health and the environment. If there is evidence of a release from a municipal solid waste unit, the TCEQ may require an investigation into the nature and extent of the release and an assessment of measures necessary to correct an impact to groundwater.

### **1.2 Inspection Activities and Correction of Problems**

30 TAC §330.463(a)(1)

The site operator will conduct periodic inspection of the closed units to identify and document deficiency conditions and conduct maintenance and corrective action to maintain compliance. Tables III8-1 through III8-6 provide information on the inspection items and deficiency conditions that the site operator will look for during inspection of the major components of the landfill and the site during the post-closure care period. The City shall correct, as needed, erosion of cover material, lack of vegetative growth, leachate or methane migration, and subsidence or ponding of water on the unit. If any of these problems occur after the end of the five-year post-closure period or persist for longer than the first five years of post-closure care, the City shall be responsible for their correction until the TCEQ determines that all problems have been adequately resolved. Other inspection and maintenance provisions that apply during the post-closure care period as specified in the facility's site operating plan, site development plan, or applicable rules will remain in effect.

**1.2.1 Right of Entry and Rights-of-way**

30 TAC §330.463(a)(1) & (b)(1)(A)

The City shall retain the right of entry to and maintain all rights-of-way of a closed municipal solid waste management unit in order to conduct periodic inspections of the closed unit, conduct maintenance and/or remediation activities, as needed, in order to maintain the integrity and effectiveness of all final cover, facility vegetation, and drainage control system, to correct any effects of settlement, subsidence, ponded water, erosion, or other events or failures detrimental to the integrity of the closed unit and to prevent any surface run-on and run-off from eroding or otherwise damaging the final cover system.

During the post-closure monitoring and maintenance period of the site, the facility access and Rights-of-way will be inspected quarterly. At a minimum, maintenance will be performed as needed prior to the next scheduled inspection.

**Table III8-1: Access and Right-of-way Inspection Items**

Inspection Item	Types of Deficiency Conditions
Gates, Gate Locks and Barriers	Damaged, gates unlocked/locks missing, signs of site entry detected
Fence and other Access Control Barriers	Damaged, broken, signs of entry detected
Vegetation Control in Areas of the Facility other than the Final Cover	Vegetative stress, overgrowth, vegetation other than what was designated in that area

**1.2.2 Final Cover**

During the post-closure monitoring and maintenance period of the site, the final cover will be inspected quarterly. Monitoring and maintenance activities will be performed to maintain the integrity and effectiveness of the final cover system. Items included in the quarterly assessment will include inspection of the final cover for vegetation, erosion, and functionality of the surface water drainage system. Erosion, cuts, and depressions in the final cover will be noted, as will damage and debris and sediment build-up in the drainage system. Maintenance will include performing final cover repairs to fill erosion cuts and low areas. Drainage systems will be regraded as necessary and cleared of debris and sediment, as needed, to facilitate continued performance. At a minimum, maintenance will be performed as needed prior to the next scheduled inspection.

**Table III8-2: Final Cover Inspection Items**

Inspection Item	Types of Deficiency Conditions
Vegetation and other Ground Cover Materials	Vegetative stress, vegetation height and whether mowing is required, presence of weeds or sprouting saplings that may develop root systems capable of compromising the final cover, erosion and functionality of the surface water drainage system
Settlement	Settlement or other problems developed between inspections
Subsidence	Cuts and depressions
Ponded Water	Damage, debris or sediment buildup, potential for ponding
Erosion	Rills and depressions, soil loss, gullies

### 1.2.3 Drainage Control System

During the post-closure monitoring and maintenance period of the site, the drainage control system will be inspected quarterly. Monitoring and maintenance activities will be performed to maintain the integrity and effectiveness of the drainage control system. Items included in the quarterly assessment will include functionality of the surface water drainage system. Drainage systems will be regraded as necessary and cleared of debris and sediment, as needed, to facilitate continued performance. At a minimum, maintenance will be performed as needed prior to the next scheduled inspection.

**Table III8-3: Drainage Control System Inspection Items**

Inspection Item	Types of Deficiency Conditions
Vegetation within Drainage Control Structures	Vegetative stress or overgrowth, sediment buildup, damage to the control structures, cracks in the channel lining, impairment of flow
Component Failures	Outlet structure damage or clogging, other structural damages, impairment of flow
Wash Outs	Erosion, depressions or cuts, ponded areas
Sediment Build Up	Presence of obstructions in the flow paths erosion, settlement and ponding

### 1.2.4 Leachate Collection and Removal System

30 TAC §330.463(b)(1)(B)

The City shall maintain and operate the leachate collection and removal system throughout the post-closure care period in accordance with the requirements of 30 TAC §330.331 and §330.333 and Part III3, Waste Management Unit Design Report. The components of the leachate collection and removal system will be routinely inspected to maintain its integrity and effectiveness. The need for maintenance will be assessed based on performance during routine monitoring. At a minimum, maintenance will be performed as needed prior to the next scheduled inspection. The TCEQ may allow the City to stop managing leachate if the City

demonstrates to the approval of the TCEQ that leachate no longer poses a threat to human health and the environment.

**Table III8-4: Leachate Collection and Removal System Inspection Items**

Inspection Item	Types of Deficiency Conditions
Leachate Pumps	Visible damage to pumps, abnormal flow rates or odors.
Leachate Forcemain	Visible damage to forcemains, abnormal flow rates or odors.
Leachate Collection Lines	Abnormal flow rates or odors. Leachate collection lines may need periodic cleaning or flushing to dislodge biological mass or fines than may have clogged the pipe perforations.

### 1.2.5 Landfill Gas Management System

The City shall maintain and operate the landfill gas management system throughout the post-closure care period in accordance with the requirements of Part III6, Landfill Gas Management Plan. The components of the landfill gas management system will be routinely inspected to maintain its integrity and effectiveness. The need for maintenance will be assessed based on performance during routine monitoring. At a minimum, maintenance will be performed as needed prior to the next scheduled inspection.

**Table III8-5: Landfill Gas Management System Inspection Items**

Inspection Item	Types of Deficiency Conditions
Gas Wells	Visible damage and landfill gas extraction performance.
Lateral and header piping	Cracks, bends, breakage or blockage of landfill gas flow
Condensate Sumps	Visible damage and performance.
Flare Station	Visible damage and performance. May need calibration.

### 1.2.6 Groundwater and Gas Monitoring Systems

During the post-closure monitoring and maintenance period of the site, the groundwater and gas monitoring systems will be routinely inspected to maintain their integrity and effectiveness. Particular attention will be paid to ensure that monitoring equipment is calibrated according to the manufacturers' recommendations. Maintenance of the groundwater and gas monitoring systems will be performed prior to or during the next scheduled sampling or monitoring event, depending on the extent of the repairs or maintenance required.

**Table III8-5: Groundwater and Gas Monitoring Inspection Items**

Inspection Item	Types of Deficiency Conditions
Groundwater Monitoring Wells	Visible damage to protective casing, well locks, or concrete pads.
Landfill Gas Monitoring Probes	Visible damage to protective casing, well locks, or concrete pads.

### 1.3 Continuation of Monitoring Programs

30 TAC §330.463(a)(2)&(3)

Groundwater and gas monitoring programs in effect during the life of the unit shall be continued during the post-closure care period. If there is evidence of a release from a municipal solid waste unit, the TCEQ may require an investigation into the nature and extent of the release and an assessment of measures necessary to correct an impact to groundwater.

#### 1.3.1 Groundwater Monitoring System

30 TAC §330.463(b)(1)(C)

Groundwater monitoring activities will continue throughout the post-closure care period in accordance the requirements of 30 TAC Chapter 330 Subchapter J and Part III5B, Groundwater Sampling and Analysis Plan (GWSAP). All groundwater monitoring wells including in the groundwater monitoring network will be monitored semi-annually unless otherwise approved by the TCEQ. If there is evidence of a confirmed statistically significant increase over constituent background values, the City shall implement an assessment monitoring plan outlined in Part III5B, GWSAP.

#### 1.3.2 Gas Monitoring System

30 TAC §330.463(b)(1)(D)

Landfill gas monitoring activities will continue throughout the post-closure care period, in accordance with the requirements of 30 TAC Chapter 330 Subchapter I and Part III 6, Landfill Gas Management Plan, as conducted during the active facility operations. All structures and permanent gas monitoring probes will be sampled quarterly unless otherwise approved by the TCEQ. If there is evidence of confirmed landfill gas migration from the waste management units at the facility, the City shall implement the contingency plan in Part III6, Landfill Gas Management Plan.

### 1.4 Documentation and Record Keeping

The City will document and maintain detailed records of all inspection results and schedules, maintenance, monitoring results and schedules, or remediation activities of any other actions to be taken to maintain compliance in the site operating record.

### 1.5 Post-Closure Land Use

30 TAC §330.463(b)(3)(C)

Currently, post-closure land use is anticipated to be open space, and will be in accordance with 30 TAC §330, Subchapter T, related to Use of Land Over Closed Municipal Solid Waste Landfills.



## **2.0 COMPLETION OF POST-CLOSURE CARE**

### **2.1 Certification of Post-Closure Care Completion**

30 TAC §330.465(a)

Following completion of the post-closure care maintenance period for each municipal solid waste landfill unit, the City shall submit to the TCEQ for review and approval a certification, signed by an independent licensed professional engineer, verifying that post-closure care has been completed in accordance with this post-closure plan. The submittal to the TCEQ shall include all applicable documentation necessary for the certification of completion of post-closure care. Once approved, the certification and all applicable documentation will be included in the site's operating record.

### **2.2 Voluntary Revocation**

30 TAC §330.465(b)

Upon completion of the post-closure care period for the final unit at a facility, the City shall also submit to the TCEQ a request for voluntary revocation of the facility permit. Once approved, the voluntary revocation and will be included in the site's operating record.

**APPENDIX III8A**

**TCEQ POST CLOSURE CARE FORM**



# Texas Commission on Environmental Quality

## Post-Closure Care Plan for Municipal Solid Waste Type I Landfill Units and Facilities

This form is for use by applicants or site operators of Municipal Solid Waste (MSW) Type I landfills to provide landfill unit or final facility post-closure care closure plans to meet the requirements in 30 TAC Chapter 330, §330.63(h) and as set out under 30 TAC Chapter 330 Subchapter K for a MSW Type I facility.

If you need assistance in completing this form, please contact the MSW Permits Section in the Waste Permits Division at (512) 239-2335.

### **I. General Information**

Facility Name: Edinburg Regional Disposal Facility

MSW Permit No.: 956C

Site Operator/Permittee Name: City of Edinburg

### **II. Party Responsible for Overseeing and Conducting Post Closure Care Activities**

Name (Person or Office Responsible): Ramiro L. Gomez, Jr.

Position or Title: Director of Solid Waste Management, Department of Solid Waste

Mailing Address: 8601 North Jasman Road

City: Edinburg

State: Texas

Zip Code: 78541

Telephone Number: 956-381-5635

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**III. Post-Closure Care Status of Landfill Units at the Facility**

Check the applicable box for the post-closure care status of the units at the facility and complete the applicable tables as indicated:

- A.  No landfill unit is in post-closure care in this facility at the time this application is submitted (skip Table 1 and complete Table 2 below if you check this item)
- B.  This facility includes landfill units currently in post-closure care and landfill units that are not yet in post-closure care (complete Tables 1 and 2 below if you check this item).
- C.  This facility contains only landfill units currently in post-closure care (complete Table 1 below if you check this item; do not complete Table 2).

*Table 1: Landfill Units Currently in Post-Closure Care*

Landfill Unit Name	Drawing Number Showing the Landfill Unit	Date TCEQ Acknowledged Closure of Unit	Date Post-Closure Care Commenced	Projected Date of End of Post-Closure Care
None	NA	NA	NA	NA

*Table 2: Landfill Units Not yet in Post-Closure Care*

Category of Landfill Unit (Regarding Status of Waste Receipt)	Landfill Unit Names or Descriptors	Site Development Plan Drawing Titles and Numbers Showing the Units
Stopped Receiving Waste Prior to October 9, 1993	<b>NA</b>	<b>NA</b>
Received Waste on or after October 9, 1993	<b>Pre-Subtitle D Units 1-4, Unit 5, and Unit 6</b>	<b>Site Layout Plan Part II Figure II-17</b>
Proposed to be Constructed	<b>Unit 7 and Unit 8 / Overliner</b>	<b>Site Layout Plan Part II Figure II-17</b>
Other (enter as applicable)	<b>NA</b>	<b>NA</b>

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### IV. Post-Closure Care Maintenance Requirements and Activities to be Conducted

#### A. Categories of Landfill Units and Applicable Post-Closure Care Maintenance Requirements and Activities

Check the appropriate boxes to indicate the categories of landfill units at the facility and complete the applicable section of the post-closure care maintenance requirements and activities below.

This facility includes landfill units that:

- Stopped receiving waste prior to October 9, 1993

If you check this item, complete the post-closure care maintenance requirements and activities specified in Subsection IV.B below. Skip Subsection IV.B if this item does not apply to your facility.

- Received waste on or after October 9, 1993

If you check this item, complete the post-closure care maintenance requirements and activities specified in Subsection IV.C below. Skip Subsection IV.C if this item does not apply to your facility.

- Are proposed to be constructed

If you check this item, complete the post-closure care maintenance requirements and activities specified in Subsection IV.C below. Skip Subsection IV.B, unless your facility also contains units that stopped receiving waste prior to October 9, 1993.

#### B. Post-Closure Care Maintenance Requirements and Activities for the Landfill Units that Stopped Receiving Waste Prior to October 9, 1993

The site operator will commence and conduct post-closure care maintenance of the units that stopped receiving waste prior to October 9, 1993 for a minimum of the first **five years** following commencement of post-closure care as specified below and in accordance with applicable rules under 30 TAC §330.463(a). Post-closure care maintenance will start on the date the professional engineer's certification of the completion of closure is accepted in writing by the TCEQ executive director and the site operator will carry out the following activities and operations during the period.

##### 1. Maintenance of Right of Entry and Rights of Way

The site operator will retain the right of entry to and maintain all rights-of-way of the closed units in order to conduct periodic inspections of the units

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throughout the post-closure care period. TCEQ staff will have access to the site to conduct inspection or investigation that may be necessary during the period.

**2. Inspection Activities and Correction of Problems**

The site operator will conduct inspection of the closed landfill units at the frequencies indicated in Table 3 below, utilizing the inspection protocol maintained in the site operating record, and will correct all identified problems as needed.

*Table 3: Inspection Activities Schedule*

Post-Closure Care Inspection Item	Frequency of Inspection	Types of Deficiency Conditions to be looked for during Inspection
Final Cover Condition	<b>Quarterly</b>	<b>Inspection for vegetation, erosion, and functionality of the surface water drainage system</b>
Vegetation	<b>Quarterly</b>	<b>Inspect site for Erosion, cuts, and depressions, Vegetation stress</b>
Leachate Management Systems	<b>Will be assessed based on performance during routine monitoring and as needed</b>	<b>In accordance with the requirements of 30 TAC §330.331 and §330.333 and Part III3, Waste Management Unit Design Report</b>
Landfill Gas Monitoring and Control Systems	<b>Will be assessed based on performance during routine monitoring</b>	<b>In accordance with the requirements of Part III6, Landfill Gas Management Plan</b>
Groundwater Monitoring Systems	<b>Will be assessed based on performance during routine monitoring</b>	<b>Will be paid to ensure that monitoring equipment is calibrated according to the manufacturers' recommendations. Maintenance of the groundwater and gas monitoring systems will be performed prior to or during the next scheduled sampling or monitoring</b>

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Post-Closure Care Inspection Item	Frequency of Inspection	Types of Deficiency Conditions to be looked for during Inspection
		<b>event, depending on the extent of the repairs or maintenance required</b>
Drainage Structures	<b>Quarterly</b>	<b>Will be regraded as necessary and cleared of debris and sediment, as needed, to facilitate continued performance</b>
Ponding of Water	<b>Quarterly</b>	<b>Inspect site for damage, debris or sediment buildup, and potential for ponding</b>
<b>Other: Access Road Maintenance</b>	<b>Quarterly</b>	<b>Inspect site for facility vegetation, and drainage control system, to correct any effects of settlement, subsidence, ponded water, erosion, or other events or failures detrimental to the integrity of the closed unit and to prevent any surface run-on and run-off from eroding or otherwise damaging the final cover system</b>

**3. Continuation of Monitoring Programs during Post-Closure Care Period**

The site operator will continue the monitoring programs listed in Table 4 during the post-closure care period. The monitoring programs will be conducted as specified in the applicable section of the facility’s Site Development Plan and applicable rules.

*Table 4: Monitoring and Reporting Schedule*

Monitoring Program	Frequency of Monitoring	Frequency of Reporting of Results
Groundwater monitoring	Semi-Annually	<b>In accordance the requirements of 30 TAC Chapter 330 Subchapter J and Part III5B, Groundwater Sampling and Analysis Plan (GWSAP)</b>

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Monitoring Program	Frequency of Monitoring	Frequency of Reporting of Results
Landfill gas monitoring	Quarterly	<b>In accordance with the requirements of 30 TAC Chapter 330 Subchapter I and Part III 6, Landfill Gas Management Plan, as conducted during the active facility operations</b>
Other:	NA	NA

**4. Detection of a Release, Nature and Extent Investigation, and Corrective Action to Address Release from the MSW Unit**

Upon detection of any evidence of a release from the landfill or other associated waste management units at the facility, the site operator will:

- Notify the executive director of the TCEQ of the condition detected;
- Investigate, if so directed by the executive director of the TCEQ, whether a release from the landfill or other associated waste management units at the facility has occurred;
- Investigate the nature and extent of the release, if a release is confirmed;
- Assess measures necessary to correct any impact to groundwater;
- Submit a corrective action plan via a permit modification for TCEQ executive director’s review and approval; and
- Conduct corrective action as approved by the TCEQ executive director.

**5. Extension of Post-Closure Care Period**

If any of the problems listed in Table 3 occurs, or corrective action as indicated in Subsection IV.B.4 above continues, after the end of the five-year post-closure care period or persists for longer than the first five years of post-closure care, the site operator will be responsible for their correction and will continue to conduct post-closure care maintenance until the TCEQ executive director determines that all problems have been adequately resolved.



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### 6. Reduction of Post-Closure Care Period

The site operator may request in writing for the TCEQ executive director to reduce the post-closure care period for the units if all wastes and waste residues have been removed during closure and any new or on-going corrective action to address confirmed releases from the landfill have been completed as acknowledged in writing by the executive director.

### C. Post-Closure Care Requirements and Activities for Municipal Solid Waste Landfill Units that Receive Waste on or after October 9, 1993 and for New Units

The site operator will commence and conduct post-closure care maintenance of the units that receive waste on or after October 9, 1993 and new units constructed under this permit as follows and in accordance with applicable rules under 30 TAC §330.463.

#### 1. Commencement of Post-Closure Care

Post-closure care maintenance will start on the date the professional engineer's certification of the completion of closure is accepted in writing by the TCEQ executive director and the site operator will carry out the following activities and operations during the period.

#### 2. Period of Post-Closure Care

The site operator will conduct post-closure care for the landfill units for a period of **30 years**, unless this time period is increased or reduced by the executive director as discussed in Subsection IV.C.11.

#### 3. Maintenance of Right of Entry and Rights of Way

The site operator will retain the right of entry to the closed units and the facility and will maintain all rights-of-way of the closed units in order to conduct periodic inspection and maintenance of the closed units until the end of the post-closure care period.

#### 4. Inspection Activities

The site operator will conduct periodic inspection of the closed units to identify and document deficiency conditions and conduct maintenance and corrective action to maintain compliance. Sections IV.C. 8.(a)-(c) provide information on the inspection items and deficiency conditions that the site operator will look for during inspection of the major components of the

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landfill and the site during the post-closure care period. Other inspection and maintenance provisions that apply during the post-closure care period as specified in the facility's site operating plan, site development plan, or applicable rules will remain in effect.

### 5. Documentation of Inspection

The site operator will document and maintain records of the post-closure care inspections in the site operating record. The records will include:

- The date of inspection;
- Components and items inspected;
- Problems detected or observed; and
- The name of the personnel who conducted the inspection.

### 6. Corrective Actions

Based on the results of the inspection activities, the site operator will conduct needed restoration and remediation actions on the closed unit no later than the next scheduled inspection event. Also, the site operator will conduct maintenance action on regular periodic schedule in order to:

- Maintain the integrity and effectiveness of all final cover, facility vegetation, and drainage control systems;
- Correct any effects of settlement, subsidence, ponded water, erosion, or other events or failures detrimental to the integrity of the closed unit; and
- Prevent any surface run-on and run-off from eroding or otherwise damaging the final cover system during the post-closure care period.

### 7. Documentation of Corrective Actions

The site operator will document and maintain, in the facility's site operating record, records of the restoration, remediation, and maintenance activities performed, including the date of completion of the activities.

### 8. Inspection Activities Schedules

#### (a) Final Cover Inspection

Inspection Frequency: Quarterly

Other Inspection Occasions/Events:NA

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*Table 5: Final Cover Inspection Items*

Inspection Item	Types of Deficiency Conditions to be looked for during Inspection
Vegetation and other Ground Cover Materials	Vegetative stress, vegetation height and whether mowing is required, presence of weeds or sprouting saplings that may develop root systems capable of compromising the final cover, erosion and functionality of the surface water drainage system
Settlement	Settlement or other problems developed between inspections
Subsidence	Cuts and depressions
Ponded Water	Damage, debris or sediment buildup, potential for ponding
Erosion	Rills and depressions, soil loss, gullies
Other (enter other events or failures detrimental to the integrity and effectiveness of the final cover):	NA
Other (enter other events or failures detrimental to the integrity and effectiveness of the final cover):	NA

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**(b) Drainage Control System Inspection**

Inspection Frequency: Quarterly

Other Inspection Occasions/Events: NA

*Table 6: Drainage Control System Inspection Items*

Inspection Item	Types of Deficiency Conditions to be looked for during Inspection
Vegetation within Drainage Control Structures	Vegetative stress or overgrowth, sediment buildup, damage to the control structures, cracks in the channel lining, impairment of flow
Component Failures	Outlet structure damage or clogging, other structural damages, impairment of flow
Wash Outs	Erosion, depressions or cuts, ponded areas
Sediment Build Up	Presence of obstructions in the flow paths erosion, settlement and ponding
Other(enter other events or failures detrimental to the integrity and effectiveness of drainage structures):	NA

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**(c) Access and Rights-of-Way**

Inspection Frequency: Quarterly

Other Inspection Occasions/Events: NA

*Table 7: Access and Rights of Way Inspection Items*

Inspection Item	Types of Deficiency Conditions to be looked for During Inspection
Gates, Gate Locks and Barriers	Damaged, gates unlocked/locks missing, signs of site entry detected
Fence and other Access Control Barriers	Damaged, broken, signs of entry detected
Vegetation Control in Areas of the Facility other than the Final Cover	Vegetative stress, overgrowth, vegetation other than what was designated in that area
Other (enter other access control and rights-of-way inspection items):	NA

**9. Continuation of Operation and Maintenance of the Leachate Collection and Removal Systems (LCRS)**

The site operator will continue the operation and maintenance of the LCRS and disposal of leachate during the post-closure care period in accordance with the facility’s leachate management plan found in Attachment/Appendix/Section (Part III, Attachment 3, Waste Management Unit Design, Section 4.0) Report of the Site Development Plan and consistent with applicable provisions under 30 TAC Sections 330.331 and 330.333.

**(a) Performance Monitoring and Inspection of the LCRS**

During the post-closure care period, the site operator will monitor the performance of the LCRS on a (routinely) basis to assure continuous compliance with the design criteria and inspect the LCRS components on a (routine) basis, at a minimum, to determine the need for repair or maintenance. Inspection and monitoring will follow the procedure described in the facility’s leachate management plan found in Attachment/Appendix/Section (Part III, Attachment 3, Waste Management Unit Design, Section 4.0) of the Site Development Plan or

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in the written inspection protocol maintained in the facility's site operating record. Results of the monitoring and inspection activities will be documented in the site operating record. The items and components of the leachate collection and removal system to be inspected will include but are not limited to the items in Table 8 below.

*Table 8: Leachate Collection and Removal System Inspection*

Inspection Item/Component	Types of Deficiency Conditions to be looked for during Inspection
<b>Leachate Pumps</b>	<b>Visible damage to pumps, abnormal flow rates or odors.</b>
<b>Leachate Forcemain</b>	<b>Visible damage to forcemains, abnormal flow rates or odors.</b>
<b>Leachate Collection Lines</b>	<b>Abnormal flow rates or odors. Leachate collection lines may need periodic cleaning or flushing to dislodge biological mass or fines than may have clogged the pipe perforations.</b>

### **(b) LCR Maintenance and Repairs**

During the post-closure care period, the site operator will perform routine and needed maintenance or repairs of the LCRS items and components based on the monitoring and inspection results. Maintenance and repair will be completed prior to the next scheduled monitoring event and documented within the site operating record.

### **(c) Discontinuation of Leachate Management**

The site operator may submit data and information from the closed units to the TCEQ executive director to demonstrate that leachate no longer poses a threat to human health and the environment. Upon the executive director's approval of the demonstration, the site operator will be allowed to stop managing leachate at the closed unit.

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**10. Continuation of Monitoring Systems Operation and Maintenance:**

The site operator will continue to conduct monitoring systems operation and maintenance activities to ensure the integrity of the containment system and to promptly detect and control releases to the environment during the post-closure care period as follows.

**(a) Groundwater Monitoring System**

The site operator will continue groundwater monitoring activities (including sampling, analysis, reporting, etc.) in accordance with the approved site-specific Groundwater Sampling and Analysis Plan (GWSAP) found in (Part III5B, Groundwater Sampling and Analysis Plan (GWSAP)) of the Site Development Plan, the Groundwater Monitoring System Design found in (Part III5B, Groundwater Sampling and Analysis Plan (GWSAP)) of the Site Development Plan and consistent with the provisions under 30 TAC Chapter 330 Subchapter J. Groundwater monitoring will be conducted semiannually or as otherwise approved by the TCEQ executive director during the post-closure care period.

**i. Inspection of the Groundwater Monitoring System**

During each groundwater monitoring event, the site operator will perform inspection of all the groundwater monitoring wells that are part of the groundwater monitoring system and other items discussed in the GWSAP or the Groundwater Monitoring System Design. The items and components of the groundwater monitoring system to be inspected are included in Table 9:

*Table 9: Groundwater Monitoring Systems Inspection*

Inspection Item/Component	Types of Deficiency Conditions to be looked for during Inspection
Groundwater Monitoring Wells	Visible damage to protective casing, well locks, or concrete pads

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Inspection Item/Component	Types of Deficiency Conditions to be looked for during Inspection

**ii. Maintenance and Repair of the Groundwater Monitoring System**

The site operator will perform needed maintenance and/or repairs of the groundwater monitoring system items and components based on the inspection results. Maintenance and/or repairs will be performed no later than the next scheduled monitoring event.

**iii. Documentation of Inspection, Maintenance, and Repairs**

The site operator will document and discuss the results of the groundwater monitoring system inspection, maintenance, and repair activities in the groundwater monitoring report submitted to the TCEQ executive director, and maintain the documents in the site operating record.

**(b) Landfill Gas Management System**

During the post-closure care, the site operator will continue landfill gas monitoring operations and activities, documentation, and reporting in accordance with the facility’s landfill gas management plan and consistent with the requirements under 30 TAC Chapter 330, Subchapter I.

**i. LFG Monitoring and Monitoring System Inspection**

All structures and perimeter gas monitoring probes will be sampled quarterly or more frequently as approved by the TCEQ executive director. The site operator will conduct routine inspections of the landfill gas management system components as provided in the landfill gas management plan during the post-closure care period. The items and components to be inspected are included in Table 10.



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*Table 10: Landfill Gas Management System Inspection*

Inspection Item/Component	Types of Deficiency Conditions to be looked for during Inspection
Landfill Gas Monitoring Probes	Visible damage to protective casing, well locks, or concrete pads
Gas Wells	Visible damage and landfill gas extraction performance.
Lateral and header piping	Cracks, bends, breakage or blockage of landfill gas flow
Condensate Sumps	Visible damage and performance.
Flare Station	Visible damage and performance. May need calibration.

**ii. LFG Management System Maintenance**

The site operator will perform routine and needed maintenance of the landfill gas management system including calibration of the monitoring equipment. Needed maintenance and/or repair work will be performed based on the inspection and monitoring results no later than the next scheduled monitoring event.

**(c) Continuation of Earth Electrical Resistivity Survey**

The site operator will, if applicable, continue earth electrical resistivity surveys as applicable at the frequency stated in the approved site development plan or as otherwise approved by the TCEQ executive director.

**11. Detection of a Release, Nature and Extent Investigation, and Corrective Action to Address Release from the MSW Unit**

If there is evidence of a release from the landfill or other associated waste management units at the facility, the site operator will:

- Notify the executive director of the TCEQ of the condition detected;
- Investigate, if so directed by the executive director of the TCEQ, whether a release from the landfill or other associated waste management units at the facility has occurred;

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- Investigate the nature and extent of the release, if a release is confirmed;
- Assess measures necessary to correct any impact to groundwater;
- Submit a corrective action plan via a permit modification for TCEQ executive director's review and approval; and
- Conduct corrective action as approved by the TCEQ executive director.

### 12. Revision of the Length of Post-Closure Care Period

#### (a) The Post-Closure Care Period May Be Decreased

The length of the post-closure care period may be decreased by the TCEQ executive director if the site operator submits a documented certification signed by a licensed professional engineer and including all applicable supporting documentation that demonstrates that the reduced period is sufficient to protect human health and the environment, and the executive director approves the decrease in writing after review.

#### (b) The Post-Closure Care Period May be Increased

The length of the post-closure care period may be increased by the TCEQ executive director if it is determined that the longer period is necessary to protect human health and the environment.

## V. Recordkeeping

The site operator will place a copy of this post-closure plan in the facility's site operating record by the initial receipt of waste at the units proposed at the time of this application. Also, the site operator will document and maintain records of all inspection, monitoring, maintenance, repair, or remediation activities, and detail the results of any inspection and schedules of any other actions to be taken to maintain compliance, in the site operating record.

## VI. Planned Use of the Land during and after the Post-Closure Care Period

Post-closure use of the property will not disturb the final cover, liners, or other containment or monitoring systems unless such disturbance is necessary for the proposed use or to protect human health and the environment and is authorized by the TCEQ executive director consistent with provisions under 30 TAC Chapter 330 Subchapter T.

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Description of the Planned Use of the Land during or after the Post-Closure Care Period  
(describe the planned use of the land during or after the post-closure care period; if not known at this time, enter "NOT KNOWN"):

NOT KNOWN

### **VII. Post-Closure Care and Corrective Action Cost Estimates**

A detailed written cost estimate in current dollars for conducting post closure care is provided in (enter location of the post-closure care cost estimate in the application/permit document):

Part III, Attachment 9, Closure Cost Estimate

The cost estimate for corrective action will be provided as needed, via a permit modification, during the life and/or post-closure care period of the unit or facility.

### **VIII. Certification of Completion of Post-Closure Care**

Upon completion of the post-closure care maintenance period for each municipal solid waste landfill unit, the site operator will submit to the TCEQ executive director for review and approval a certification, signed by an independent licensed professional engineer, verifying that post-closure care has been completed in accordance with the approved post-closure plan. The submittal to the executive director shall include all applicable documentation necessary for the certification of completion of post-closure care. These will include information relating to the condition and status of:

- The final cover integrity and stability, including the condition of the soil, vegetation, drainage structures, etc.
- Groundwater quality at the site, as determined from on-going groundwater detection or assessment monitoring or corrective measures data during the period.
- Landfill gas (methane) migration, as determined from on-going landfill gas monitoring and remediation data during the period.
- Leachate generation rate and quantity as determined from on-going leachate management data over the period.
- The surface water management system.
- Access control structures.

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The engineer's certification of post-closure will show that, based on a summary of monitoring and inspection results, the final cover system continues to maintain its integrity, stability, and function; groundwater remains uncontaminated and monitoring is no longer required; landfill gas is not migrating beyond the facility boundary or accumulating in structures at action levels and monitoring is no longer required; leachate generation rate and quantity will not result in greater than 12 inches of head above the liner, no breakouts have occurred, and all slopes remain as approved and leachate management is no longer required; the surface water management system continues to function as designed; and the access control structures remain intact.

Documentation supporting the professional engineer's certification will be furnished to the TCEQ executive director upon request and will be maintained in the site operating record until the executive director acknowledges termination of post-closure in writing.

### **IX. Voluntary Revocation Request**

Upon completion of the post-closure care period for the final unit at the facility, the site operator will submit to the executive director a request for voluntary revocation of the facility permit.

### **X. Attachments**

The following figures and documents are attached as part of this post-closure care plan:

Part III, Attachment 8, Post Closure Plan

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**XII. Engineer's Seal and Signature**

Name: Chad E. Ireland Title: Senior Project Geological Engineer

Date:

Company Name: Golder Associates Inc. Firm Registration Number: F-2578

Professional Engineer's Seal



*Chad E. Ireland*

Signature