

Attachment 1

Postclosure Inspection Schedule

**FORM EQP 5111 ATTACHMENT TEMPLATE A5
INSPECTION REQUIREMENTS**

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), being R 299.9504, R 299.9508, R 299.9605 and Title 40 of the Code of Federal Regulations (CFR) §§264.15 and 270.14(b)(5), establish requirements for inspections at hazardous waste management facilities. All references to 40 CFR citations specified herein are adopted by reference in R 299.11003

This license application template addresses requirements for inspections at the following hazardous waste management facility: Woodland Meadows North Landfill in Canton, Michigan. (Check as appropriate)

Applicant for Operating License for Existing Facility

Applicant for Operating License for New, Altered, Enlarged, or Expanded Facility

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Table A5.C.1 Container Storage Area Inspection Log Example

INTRODUCTION

The Post – Closure Monitoring and Inspection Plan incorporates monthly and semiannual inspection of the landfill components as described below. Inspection forms are included with this plan and identify the inspection frequency, components to be inspected, observations and maintenance required. The following presents a summary of the landfill components and inspection program.

A5.A WRITTEN SCHEDULE

[R 299.9605 and 40 CFR §264.15(b)(1)]

A5.A.1 Types of Problems

[R 299.9605 and 40 CFR §264.15(b)(3)]

A5.A.2 Frequency of Inspection

[R 299.9605 and 40 CFR §§264.15(b)(4), 264.174, 264.193, 264.195, 264.226, 264.254, 264.278, 264.303, 264.347, 264.602, 264.1033, 264.1052, 264.1053, 264.1058, and 264.1083 through 264.1089, where applicable]

Final Cover

The final cover system was constructed of a five foot thick layer compacted clay with a permeability no greater than 1×10^{-7} cm/sec, and a topsoil layer with vegetative cover. The final cover was graded to promote drainage of storm water from the closed landfill.

The final cover will be inspected on a semiannual basis. A visual inspection to identify areas of significant settlement, stressed or inadequate vegetation or any physical damage will be performed.

The landfill cover consists of two distinct areas: the fairly steep side slopes, and the gently sloped top. The side slopes will be inspected by walking along the slope near the toe, approximately at the mid-point, and near the top. This will result in an inspection path interval of approximately 25 yards, and will ensure complete coverage of the slope. The top area will also be inspected by walking it at approximately 25 yard intervals.

The location of any required repairs will either be located by GPS, or will be marked with a flag. If using GPS methods, the coordinates will be recorded on the inspection form, to ensure that the area can be re-located and repaired. If flags are used, each flag will have a distinct item number written on it in permanent ink, and the location of each flag will be recorded on a site map.

Leachate Collection System

The landfill has a perimeter leachate collection system that directs leachate to three sumps. A pneumatic pump is located in each sump. An internal float in the pump activates the pump whenever a pump-able quantity of leachate is present.

The volume of leachate pumped is measured with a flow meter located at the aeration/treatment tank. Records of the leachate volumes are maintained at the facility.

The sump risers and exposed piping will be inspected on a monthly basis for indications of leaks or spills, and general condition of the equipment. The inspection will include a measurement of the liquid height in each riser. Observations and maintenance requirements will be recorded on the monthly inspection form.

The semiannual inspection will include a review of the leachate pumping records and liquid level measurements. Based on this review, an assessment of the overall condition of the leachate collection system will be made. Observations and maintenance requirements will be recorded on the semiannual inspection form.

The secondary containment of the double wall piping system will be checked on a monthly basis to identify liquid in the interstitial space and observations recorded on the inspection form. The air compressor and valves associated with the leachate pumps will be inspected and operating status or required maintenance noted on the inspection form.

Groundwater Monitoring Wells

The Woodland Meadows North Landfill has a system of groundwater monitoring wells. The facility's Ground Water Sampling and Analysis Plan (SAP) describes the frequency for sample

collection and laboratory analysis. The SAP is part of the facility operating record. The groundwater monitoring wells are inspected when the groundwater samples are collected from the wells. The results of the inspection are reported with the groundwater laboratory analytical results.

Landfill Gas Collection System

The landfill has an active gas control/recovery system consisting of approximately 26 gas recovery wells, a header system, blower, control panel, and flare. The flare station is located outside the closed landfill area. The system is capable of removing and controlling gases generated at the facility during the post-closure period.

The landfill gas collection system monitoring and maintenance requirements are specified by the New Source Performance Standards in the Clean Air Act, and are contained in the facility's Renewable Operating Permit. Monitoring results and maintenance activities are reported to the MDEQ Air Quality Division on a semiannual basis. Copies of these reports and records are maintained at the Woodland Meadows office at 5900 Hannan Road in Wayne Michigan.

Storm Water Control Structures

Storm water control structures including ditches will be inspected semiannually. The inspection form is attached to this plan.

Security System

The security system at the site consists of a perimeter fence, signs and alarm system. The security system will be inspected semiannually and required maintenance recorded on the inspection form.

Site Benchmarks

The site benchmarks will be inspected semiannually and required maintenance recorded on the inspection form.

A5.B REMEDY SCHEDULE

[R 299.9605 and 40 CFR §264.15(c)]

In general, maintenance requirements identified during inspections will be completed prior to the next scheduled inspection. If this is not practical, an explanation and schedule will be recorded on the inspection form. Where a hazard is imminent, or has already occurred, remedial action will be initiated immediately.

Maintenance activities will normally be performed by facility staff. Maintenance that cannot be performed by facility staff will be performed by contractors employed for the specific tasks.

Leachate Collection System; Landfill Gas Collection and Monitoring System

Maintenance of the leachate collection system will consist of replacing or repairing pumps, piping, fittings and flow meters. Inspection and cleaning of the leachate lines will also be performed. Repairing and replacing pumps or control equipment will be on an as needed basis.

The landfill gas collection system maintenance requirements are specified by the New Source Performance Standards in the Clean Air Act, and are contained in the facility's Renewable Operating Permit. Routine maintenance includes activities such as tuning the well field and replacing hoses, valves and various fittings as needed. Significant maintenance includes activities such as replacing sections of piping or re-drilling wells.

Final Cover, Storm Water Control Structures, Security System and Site Benchmarks

The vegetative cover will be mowed at least once per year to promote the growth of grass and control plants that may disrupt the integrity of the cover system. Maintenance associated with the final cover generally concerns replacement of the vegetative cover as needed and repair of erosion damage. Areas experiencing settlement that results in ponding of surface water will be repaired by filling the area with clean soil and grading to promote surface drainage. The vegetative soil cover will be replaced (seeded) in all areas that have been repaired. Areas with insufficient vegetation to control erosion will be seeded or fertilized depending on the severity of the impacted areas. Facility staff and equipment will be employed to perform necessary repairs if available. Otherwise, contractors will be employed for the specific tasks

Storm water control structures will be replaced, ditches and the security system will be repaired as required. Facility staff and equipment are available and will be employed to perform most repairs. Repairs or replacements that cannot be handled by facility staff will be performed by qualified contractors.

Repair or replacement of the site benchmarks will be performed by a licensed surveyor under contract to Waste Management of Michigan, Inc.

5.3 Groundwater Monitoring Wells

Maintenance required for the groundwater monitoring wells is generally performed by the contractor that collects the groundwater samples. Specific maintenance and replacement procedures are identified in the Ground Water Sampling and Analysis Plan that is part of the facility operating record.

A5.C INSPECTION LOG OR SUMMARY [R 299.9605 and 40 CFR §264.15(d)]

Inspections will be recorded in an inspection log or summary. Copies of these records will be kept for at least three years from the date of inspection. Examples of the Monthly and Semi-annual inspection logs are attached.

ATTACHMENT A5.C

INSPECTION LOGS

**Woodland Meadows North
Monthly Inspection Form**

Inspection for (Month & Year): _____

Inspection Date(s): _____

Distribution of Completed Form

Name	Position/Title	Organization

Inspection Team

Name	Position/Title	Organization	Signature

Weather Conditions During Inspection

Sky Cover: _____

Precipitation: _____

Temperature: _____

Ground Conditions: _____

Other Weather Observations/Comments: _____

Inspection Report

For each inspection item below, write your initials in the appropriate box.

Adverse conditions requiring corrective action must be described in the 'Observations' section at the end of this form.

Corrective actions must be documented in the 'Date & Nature of Repairs' section at the end of this form.

Inspected - OK

Inspected - Corrective Action Required

N/A

Inspect for:

1.0 Leachate Collection and Removal

- | | | | | |
|--------------------------|--------------------------|--------------------------|-----|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 1.1 | LEACHATE SUMP RISERS: Must be intact and functioning properly, free of deterioration or damage. Covers must be intact. Surrounding soil must be free of evidence of leakage, such as damp, saturated, or discolored soil, and distressed vegetation. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 1.2 | PUMPS: Must be intact and functioning properly, free of deterioration or damage. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 1.3 | AIR HOSE & REGULATOR: Must be intact and functioning properly, free of deterioration or damage. Must not leak excessively. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 1.4 | PIPE AND HOSE: Must be intact and functioning properly, free of leaks, deterioration or damage. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 1.5 | LEACHATE LEVEL: Measure the depth to liquid from the top of each leachate sump riser. Record the measurement in the 'Observations' section. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 1.6 | UNDERGROUND PIPE: Must be intact and functioning properly, free of deterioration or damage. Surrounding soil must be free of evidence of leakage, such as damp, saturated, or discolored soil, and distressed vegetation. Secondary containment pipe monitoring points must be inspected for evidence of leakage. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 1.7 | AIR COMPRESSOR: Must be functioning properly. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 1.8 | LEACHATE STORAGE TANK, PUMP AND CONTROLS: Inspect tank containment riser for accumulation of liquid. Verify operation of the shut-off float in the containment riser. Inspect tank area for signs of leakage. |

**Woodland Meadows North
Semiannual Inspection Form**

Page ____ of ____

Inspection for (circle one): 1st 2nd Half of 20____ Inspection Date(s):

Distribution of Completed Form

Name	Position/Title	Organization
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Inspection Team

Name	Position/Title	Organization	Signature
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Weather Conditions During Inspection

Sky Cover:

Precipitation:

Temperature:

Ground Conditions:

Other Weather Observations/Comments:

Inspection Report

For each inspection item below, write your initials in the appropriate box.

Adverse conditions requiring corrective action must be described in the 'Observations' section at the end of this form.

Corrective actions must be documented in the 'Date & Nature of Repairs' section at the end of this form.

Inspected - OK

Inspected - Corrective Action Required

N/A

Inspect for:

1.0 Final Cover

- | | | | | |
|--------------------------|--------------------------|--------------------------|-----|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 1.1 | EROSION: Cover must be free of erosion that may cause increased surface water infiltration or waste exposure. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 1.2 | SETTLING: Cover must be free of settling that may cause surface water ponding, cracking, and increased water infiltration. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 1.3 | VEGETATION: Disturbed areas must be properly re-vegetated. Cover must be free of inappropriate vegetation, such as trees or other plants with deep root structures. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 1.4 | BURROWS: Cover must be free of vermin burrows that may cause increased surface water infiltration. |

2.0 Perimeter Dikes

- | | | | | |
|--------------------------|--------------------------|--------------------------|-----|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2.1 | LEACHATE SEEPS: Outside slope of dikes must be free of leachate seeps. Leachate seeps require immediate corrective action. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2.2 | EROSION: Outside slope of dikes must be free of erosion rills that may cause leachate seeps ar... waste exposure. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | 2.3 | STABILITY: Dikes must be intact and free of evidence of instability, such as cracking, slumping, excessive slope, etc. |

3.0 Run-On / Run-Off Control

- 3.1 EROSION: Ditches must be free of erosion that may interfere with drainage of the site.
- 3.2 SEDIMENTATION: Ditches and structures must be free of sediments that may impair flow and lead to overflow conditions.
- 3.3 DEBRIS: Ditches must be free of debris such as dead or excessive vegetation, litter, etc., that may impair flow and lead to overflow conditions.
- 3.4 STRUCTURES: Drainage structures must be intact and functioning properly, free of deterioration or damage.

4.0 Security

- 4.1 GATES AND LOCKS: Must be intact and functioning properly, free of vandalism, deterioration or damage that could allow unauthorized entry.
- 4.2 FENCING: Must be intact and free of vandalism, deterioration or damage that could allow unauthorized entry.
- 4.3 SIGNS: Must be intact, legible, and free of vandalism, deterioration or damage that makes sign illegible.
- 4.4 LITTER: Remove debris from unauthorized dumping. Action taken where possible to prevent recurrence.

5.0 Survey Control

- 5.1 BENCHMARKS / STATIONS: Must be intact and in good condition, free of deterioration and damage.

6.0 Leachate Collection and Removal

- 6.1 LEACHATE LEVELS REVIEW: Liquid levels measured in leachate sump risers and condensate tank riser must not show increasing trend.
- 6.2 LEACHATE REMOVAL VOLUME REVIEW: Leachate removal records must indicate consistent operation of the leachate collection system.

Observations

Describe below all observations of conditions that are adverse to the integrity of the landfill. Be specific as to the nature, extent, and location of the adverse conditions, and reference the Inspection Item Number. Use GPS coordinates to specify locations when possible. Attach additional narrative pages and site map as necessary. Describe action necessary to correct the adverse conditions.

If adverse conditions observed in a previous inspection still exist, they must be noted and reference made to the report in which the condition was first noted and described.
