



GUIDELINE 4 – RECORDKEEPING AND REPORTING BY OWNERS OR OPERATORS OF MUNICIPAL WASTE LANDFILLS

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Updated 6-2022

I. Introduction

The owners or operators of municipal solid waste landfills (MSWLs) are required to keep operating records and must comply with the recordkeeping requirements found in 40 CFR 258.29. The owner or operator is required to maintain records of demonstrations, inspections, monitoring results, design documents, plans, operational procedures, notices, cost estimates, and financial assurance documentation. A new facility is not allowed to accept waste until the North Dakota Department of Environmental Quality (Department) has received and approved a report, which includes a narrative, drawings and test results which certify that the facility was constructed in accordance with approved plans and specifications and as required by the permit. In addition, the owners or operators must maintain records on the categories and weights or volumes of solid waste received at the facility.

Appropriate maps, pictures and diagrams should be included with the regular reports to describe the site. Information with the pictures should include (1) the name of the facility; (2) the subject; (3) the location; (4) the date and time; (5) the photographer; (6) the weather conditions; and (7) pertinent comments and observations. It is beneficial to formalize the reporting requirements so that they are consistent and easily tracked. It is suggested that the owner and operators keep copies of all information for their facility files maintained at an approved site. In addition, it is often beneficial to file copies of the reports with any local governmental bodies, health districts, or other interested regulatory or governmental officials.

Note: The owners or operators of **all** waste management facilities, except those permitted by rule, are required to keep operating records and make routine reports to the Department. The Department has a separate guideline (Guideline 4a) for all other solid waste facility owners/operators.

Certain smaller facilities, such as small inert landfills and small community transfer stations also may not be required to address this specific guideline.

II. Recordkeeping Requirements

The operating record should be maintained in a single location. The location may be at the facility or at corporate headquarters or city hall, but should be near the facility within North Dakota. Records should be maintained throughout the life of the facility, including the postclosure care period. Upon completion of each document required in the operating record, the Department should be notified of its placement in the operating record. Recordkeeping at the landfill should include the following:

1. Location restriction demonstrations. Demonstrations are required for any location restrictions. The location restrictions apply to:
 - a. Airports
 - b. Floodplains
 - c. Faulted areas
 - d. Seismic impact zones

- e. Unstable areas
 - f. The General Location Standards of NDAC 33.1-20-04.1-01
2. Inspection records, training procedures and notification procedures. Inspection records should include:
- a. Date and time wastes were received during the inspection;
 - b. Names of the transporter and the driver;
 - c. Source of the wastes;
 - d. Vehicle identification numbers; and
 - e. All observations made by the inspector

Training records should include procedures used to train personnel for waste acceptance requirements, including the recognition of hazardous waste, PCB waste, asbestos, radioactive materials, and other problem or prohibited waste.

Notification to EPA, state and local agencies should be documented.

3. Gas monitoring results and any remediation plans. If gas levels exceed 25 percent of the lower explosive limit (LEL) for methane in any facility structures or exceed the LEL for methane at the facility boundary, the owner or operator must place in the operating record, within seven days, the methane gas levels detected, and a description of the steps taken to protect human health. Within sixty days of detection, the owner or operator must place a copy of the remediation plan used for gas releases in the operating record.
4. MSWL facility unit design documentation for placement of leachate or gas condensate in a MSWL facility.

If leachate and/or gas condensate are recirculated into the MSWL facility, documentation of a composite liner and a leachate collection system capable of maintaining a maximum of 30 cm of leachate head in the MSWL facility must be placed in the operating record.

5. Demonstration, certification, monitoring, testing, or analytical finding required by the groundwater criteria. Documents to be placed in the operating record include:
- a. Documentation of design, installation, development, and decommission of any monitoring wells, piezometers and other measurement, sampling and analytical devices;
 - b. Certification of the number, spacing and depths of the monitoring systems;
 - c. Documentation of sampling and analysis programs and statistical procedures;
 - d. Notice of finding a statistically significant increase over background for one or more of the constituents at any monitoring well at or the compliance boundary;
 - e. Certification that an error in sampling, analysis, statistical evaluation, or natural variation in groundwater caused an increase (false positive) of constituents, or that a source other than the MSWL facility unit cause the contamination (if appropriate);
 - f. A notice identifying any constituents that have been detected in groundwater and their concentrations;
 - g. A notice identifying the constituents that have exceeded the groundwater protection standard;

- h. A certification that a source other than a MSWL facility caused the contamination or an error in sampling, analysis, statistical evaluation, or natural groundwater variation caused the statistically significant increase (false positive) in constituents (if applicable);
 - i. The remedies selected to remediate groundwater contamination; and
 - j. Certification of remediation completion.
6. Closure and postclosure plans and any monitoring, testing, or analytical data associated with these plans.

The landfill owner or operator is required to place a copy of the closure plan, postclosure plan and a notice of intent to close the facility in the operating record. Monitoring, testing, or analytical data associated with closure and postclosure information generated from groundwater, landfill gas, and any other required monitoring must be placed in the operating record. A copy of the notation on the deed to the MSWL facility property, as required following closure along with certification and verification that closure and postclosure activities have been completed in accordance with their respective plans, also must be placed in the operating record.

7. Estimates and financial assurance documentation require. The following documents must be placed in the operating record:
- a. An estimate of the cost of hiring a third party to close the largest area of all MSWL facility units ever requiring final cover;
 - b. Justification for the reduction of the closure cost estimate and the amount of financial assurance (if appropriate);
 - c. A cost estimate cost of hiring a third party to conduct postclosure care;
 - d. An estimate and financial assurance for the cost of a third party to conduct corrective action; and
 - e. A copy of each financial assurance mechanism.

III. Reporting Requirements

MSWL facilities in North Dakota are required to submit regular reports to the Department as required in the North Dakota Solid Waste Management Rules, approved plans and/or permit conditions. Some facilities are required to submit quarterly reports; however, some facilities may be required to submit reports on a different schedule.

Electronic Record Submittal: To help reduce paper, save time and ensure more orderly management of records, unless otherwise requested, routine reports should be submitted to the Department in a digital or electronic format such as a readable and searchable PDF format, Excel Tables for data or similar format consistent with the Department's recordkeeping system. Pursuant to NDAC 33.1-20-04.1-04, the original signed report must be retained with the facility operating record, which must be kept at the facility or at a location near the facility within North Dakota and approved by the Department. In some cases, the Department may require printed copies in addition to electronic format.

The information and a suggested format for the regular reports are as follows:

A. Waste Accepted, Disposed, Handled, Recycled, and/or Rejected at Facility.

Disposal facilities must keep records on the types and amounts of waste accepted; the generators of the waste; waste analysis and characteristics; where it is disposed in the facility; and any waste rejected or not accepted. For waste types and amounts of waste disposed, recycled or composted at the facility, computer spreadsheet (Excel) or table summarizing information could be used; a suggested format would be as follows:

Date	Source of Waste	Waste Hauler	Waste Type	Loads	Yardage	Weight (tons)

For facilities that receive regular shipments of waste from a specific generator, the waste record could be reported as a weekly or monthly summary. Facilities that receive small amounts of waste from numerous generators (i.e., individual homeowners in pickups, trailers, etc.) could provide a simple summary of the quantities. Any additional information on the waste characteristics, analysis, liquid content, waste rejection, or other issues should be provided as well as an identification of the disposal area for the wastes. Waste management areas should be identified by general dates on a map or diagram. In addition, any special handling for any wastes disposed or allowed to be disposed or otherwise managed at the facility (i.e., asbestos waste, oil contaminated soil, yard wastes, etc.) should be explained and appropriately identified. Any specific problems in the types of wastes or the inclusion of hazardous materials, liquids, ignitable materials, radioactive materials, or other issues with the waste stream should be clearly identified.

Waste Reduction and Recycling information as appropriate should also be included in a spreadsheet or table as above on any wastes or recyclable material segregated, stockpiled, composted, or otherwise handled (i.e., scrap metal, appliances, clean or reusable wood, compost piles, etc.). The Department encourages permittees to work with their customers and haulers to encourage recycling and waste reduction activities.

Waste Acceptance and Rejection issues should be tracked in the routine reports (similar to waste accepted as described above); however, in the event that hazardous, radioactive, ignitable, explosive, or other unacceptable wastes are brought to the facility, or if liquid wastes are likely to have been released or spilled on roads, such issues should be reported as soon as practicable and a waste rejection report must be filed to inform the Department of the issue within five days of the rejection of the waste. The Waste Rejection Form is available on the Department’s website at [Waste Rejection Report](#).

B. Capacity of Solid Waste Units.

It is important for the Department to have knowledge of solid waste capacity for operating solid waste units, the anticipated dates of closure and a discussion of significant permit modifications. Capacity or airspace questions in this section relate to all cells/units of the approved facility operated under the current permit regardless of whether the cells/units are closed or are not contiguous at the time of this report. If there are more than one type of solid waste units covered under this permit (i.e., an inert waste landfill, waste pile or compost unit, transfer station, etc.), please provide estimations for each separate unit. Landfill units that are formally closed may also be identified as separate units in the report.

Tonnage questions must be based on scale records or, if approved, a reasonable conversion factor for converting cubic yards of waste **as placed (compacted) in the unit** to tons (or vice versa). For landfills, the Total Airspace Filled estimation must cover the period between the opening date (onset of disposal) of the unit and the end of the reporting year of the report (11:59:59 p.m. or 24:00 hours, December 31). The Airspace Used of Reporting Year must be for the calendar year of the reporting year. If an aerial or ground survey has not been completed within the calendar year, an updated survey must be completed the next year. Airspace measurements include daily and intermediate cover, but not final cover.

FOR EACH SOLID WASTE DISPOSAL UNIT OR ACTIVITY (Landfill, Surface Impoundment, Surface Impoundment Being Closed with Waste In Place, Waste Pile, Compost Unit, etc.):

1. Total (maximum) airspace (original or initial capacity) approved in permit (cubic yards).
2. Total airspace filled or used (cubic yards) by the end of the reporting year?
3. Total airspace filled or used (cubic yards) at the end of the previous year?
4. Amount of airspace filled or used (cubic yards) during the reporting year?
5. Remaining airspace or capacity?
6. Anticipated date when the facility will be full?
7. Tonnage disposed during reporting period:
 - a. If conversion factors are used to convert waste tonnage to cubic yards, what are the factors?
8. Average density of waste disposed in place (tons/cubic yard) and how calculated?
9. Do you plan on constructing any new lined areas, cells or expansions (including vertical expansions) within the next year?
10. Do you foresee applying for a major permit modification in the near future?
 - a. If so, please describe what and when?
11. Date facility last surveyed (most facilities should do an annual survey or assessment).
12. Attach copy of last survey, if not already on file.

C. Operators and Training.

Please list the operating staff, their duties, a description of training they have received, and if they are certified or trained by the state of North Dakota, the last date of such training/certification:

Name:

Duties (operator, gate monitor, manager, etc.):

Years of experience – On this facility:

At other facilities:

Training or certification type and expiration date (NDDEQ, SWANA, stormwater, composting, etc.) – list on separate sheet if needed:

Will this employee be attending training during the oncoming year?

If so, please describe:

D. Equipment.

Describe routine equipment used on the site, the condition and repair issues, and the source and type of equipment used as backup or contingency management of the site in the event of equipment breakdown, unusual circumstances and/or emergencies.

E. Control of Spillage, Windblown Debris, Dusts, Odors, Flies and Vermin.

Assess any waste spillage and subsequent cleanup, decontamination of access roads, haul roads and/or in waste management areas and solid waste units. Discuss any significant release of windblown waste, dust and/or debris to the surrounding area and

subsequent cleanup of windblown debris. The generation of dust, odors, flies, or vermin should also be regularly assessed and appropriate control measures detailed. Corrective measures to prevent or minimize spillage, dust, debris, etc., can also be addressed.

F. Condition of Berms, Small Stormwater Impoundments, Dams and Noncontact Surface Water Containment Structures.

This section should address the construction, repair, maintenance or replacement of any berms, dams, ponds or other containment structures around the waste management areas and any water contained in them. Inspection procedures may adapt some of the measures discussed below for large surface impoundments.

G. Surface Water Run-on and Runoff Control, Stormwater Management and Erosion Control.

This section should discuss any significant surface water run-on or runoff events, including flow into the solid waste management areas, flow out of the management area, surface water interception and erosion control by berms, dams and other stormwater management measures and any other pertinent information. To help monitor surface water run-on and runoff controls, all facilities should keep regular track of how much rain falls in the area of the facility and during spring thaws as well as any appreciable run-on/runoff from snowmelt. Appropriate maps or diagrams should be provided to show the areas of management activity and the surface water management/erosion control features. If appreciable amounts of water accumulate onsite or around the site, some surface water analysis may be required to document water quality. Any controlled or uncontrolled release of water should be addressed. Departmentally approved procedures must be followed if any water is to be released from the site. Surface water quality and management information, as required or necessary, should also be submitted in this section of the report. A copy of any information required for a Stormwater Pollution Prevention Plan should also be provided to the Division of Waste Management in addition to the Division of Water Quality.

H. Removal and Stockpiling of Suitable Plant Growth Topsoil and Subsoil.

Disposal facilities must remove all suitable topsoil material (soil A and upper part of the B horizons) from areas to be disturbed. This should include the material in the disposal area and any other areas disturbed by operation activities, including haul roads, equipment storage, parking areas, etc. The report and maps should address suitable plant growth material (SPGM) removal and stockpiling, revegetation of stockpiles, erosion controls, and any removal of topsoil SPGM or subsoil SPGM from stockpiles for management or respreading on reclaimed areas. Topsoil SPGM and subsoil SPGM stockpiles must be protected and adequate signs placed at the piles to inform others that the piles are not to be disturbed or material removed without authorization. The signs must include a contact name and telephone number should any questions arise. For newly stripped areas, monuments should be left as necessary to document the depths of SPGM topsoil and subsoil removal. The stockpiles, revegetation, signage, and any removal, erosion or other issues should be routinely inspected and discussed in the routine reports.

I. Liner Protection and Integrity, Geologic and Soil Conditions in the Solid Waste Management Areas.

Facilities with liners and leachate management/collection systems should routinely assess the condition of these construction features, looking for erosion. Cracking of soil liners, tears in synthetic materials, erosion or vegetation in clay liners, and any other significant features. Desiccation and freeze-thaw conditions significantly affect clay liners. Unprotected liners may need to be assessed and/or rebuilt in part or in whole.

As appropriate for the disposal facility, this section should address the types of geologic materials or soils encountered in the solid waste management area.

This section should especially address any significant variations in normal operating procedures or conditions. This might include interception of any lignite, sand, gravel, or fractured materials; any interception of groundwater, any breaching or damage to the liner, and the general condition of the liners underlying the facility. For any liner construction or repair, appropriate Departmentally approved Quality Assurance/Quality Control procedures must be followed and appropriate plans and detailed reports filed with the Department.

J. The Condition, Operation and Maintenance of Leachate Collection or Management Systems.

Owners/operators of facilities with leachate collection or extraction systems need to regularly inspect and maintain such systems. This would include, but not be limited to an assessment of the condition of leachate collection sand bedding, gravel sumps, piping, pumping equipment, manholes and other structures should be provided. Any damage to such facilities and/or subsequent repair should be addressed. A quantification and schedule or frequency of the leachate removed from the site, the level of leachate within the facility, the quality of the leachate and its management should be addressed. Piping and access points need to be jetted or cleaned, at minimum, on an annual basis. Leachate must be analyzed and the results submitted annually.

K. The Status of Disposal Operations.

This section should address a description of the condition of the operation or disposal area and the filling of the facility. Sequential partial closure must be implemented as necessary to keep the disposal area as small as practicable and to close filled areas in a timely manner to facilitate final reclamation and closure. At minimum, the report should include a summary of routine inspections and inspection checklists.

For landfills, the report should evaluate and discuss (1) the square footage of the working face or open area of a landfill (which normally must be limited in size to as small an area as practicable); (2) the slope of the working face (nearly level is best, but should not exceed 25% slope) to ensure optimal access and compaction; (3) waste placement and spreading (placement at the base of the working face with spreading and compaction working upslope) to ensure adequate placement and compaction; (4) waste compaction (routine compaction with three to five passes of heavy equipment over each square foot of waste) helps maximize usage of landfill space and minimize water infiltration and windblown waste; (5) placement of routine cover and interim cover; (6) water management, including measures to minimize concentration of water on the waste, to prevent ponding of surface water, to minimize infiltration of surface water, to control erosion, to prevent runoff off-site and other considerations; (7) as necessary, discuss any fires and measures to control fires; (8) any settlement, slumping or erosion of filled areas; (9) control windblown dust; and (10) other issues necessary or required to keep the Department informed of operational issues.

L. Composting, Land Treatment, Waste Treatment Activities – NDAC Section 33.1-20-04.1-07.

For waste treatment, compost facilities, land farms, or other treatment units or facilities or solid waste facilities that maintain an operation for treating oil, gasoline or other hydrocarbon contaminated soil, the report should document appropriate activities as outlined in the permit, rules and guidelines. This should include the summary of waste accepted, handled and/or disposed, the adequacy of treatment, materials removed, the amount of materials in the process, and any spillage, release, runoff or run-on controls, dust or other issues in the operation. Additional information specific to treatment

activities would include the inspection schedule; rates of waste application or treatment; appropriate waste characterization; the application of any fertilizer, water, amendments, inoculants, or other additives; treatment or tillage activities; material sampling and waste breakdown rates; stormwater control; dust control; and any other pertinent information.

For facilities that operate and maintain compost units for yard wastes, manure, sludge, or other biodegradable wastes, general information should be provided as outlined in this guideline as well as the monitoring of compost pile odors, moisture, temperature, and general condition. A summary of the pile size, frequency of turning, moisture conditions, and maintenance should be provided. Include a summary of any admixtures or other waste materials (food waste, car wash sump waste, sewage sludge, manure, animal remains, etc.) that are co-composted. The results of any routine analysis of the compost material should be included in the report. Marketing or use of compost should also be addressed to help meet state waste reduction goals.

M. Surface Impoundments – NDAC Chapter 33.1-20-08.1.

Any impoundments onsite for managing regulated waste materials, leachate, and/or water that has been in contact with or degraded by solid waste materials, or for stormwater management, should be assessed in the regular reports. Inspection procedures and checklists shall be developed to address, at minimum, appropriate design, operation, inspection, evaluation and maintenance measures as outlined in the following publications and guidelines:

- [North Dakota Dam Design Handbook](#)
- [Technical Manual for Dam Owners – Impacts of Plants on Earthen Dams \(FEMA 534\)](#)
- [Technical Manual for Dam Owners – Impacts of Animals on Earthen Dams \(FEMA 473\)](#)
- [Federal Guidelines for Dam Safety – Glossary of Terms \(FEMA\)](#)
- [Technical Manual: Conduits through Embankment Dams \(FEMA\)](#)
- [Filters for Embankment Dams – Best Practices for Design and Construction \(FEMA\)](#)
- [Technical Manual: Outlet Works Energy Dissipators \(FEMA\)](#)
- [Guidance Document for Coal Waste Impoundment Facilities & Coal Waste Impoundment Inspection Form](#), West Virginia Water Research Institute, West Virginia University, Prepared for: National Technology Transfer Center, Wheeling Jesuit University; Dec. 2005.

An inspection procedures manual and checklist should be developed pursuant to referenced guidance, facility plans and state law and rules. An electronic copy of the manual and checklists shall be submitted to the North Dakota State Water Commission and the Department who reserve the right to require modifications or additions, if deemed necessary.

Identified issues regarding the erosion evaluation, assessment of piping, animal burrowing, evaluation of valves, inspection procedures, vegetation control, evaluation and maintenance of piping and valves, any repair, and any other prudent measures to maintain the surface impoundments shall be incorporated into the routine inspection, training and recordkeeping requirements and shall be summarized in routine reports for this facility.

Reports shall also include, but not be limited to the volume in the pond; remaining capacity (excepting the two feet of freeboard); the amount of freeboard; the condition of any liners, piping, spillways, or other features; any leakage, spillage, overtopping, or other unforeseen events; and other appropriate management measures.

The report shall include, at minimum, annual representative analysis of water and/or waste contained in the impoundment for the parameters reasonably expected to be contained in the waste or water, the parameters for the approved groundwater monitoring plan and/or a list of parameters approved by the Department.

When a malfunction occurs in the waste containment system which can cause a release to land or water, a surface impoundment must be removed from service and the owner or operator must take the following actions: (1) Immediately shutdown the flow of additional waste into the impoundment; (2) Immediately stop the leak and contain the waste which has been released; (3) Take steps to prevent catastrophic failure; (4) If a leak cannot be stopped, empty the impoundment; (5) Cleanup all released waste and any contaminated materials; and (6) Notify the Department of the problem within twenty-four hours after detecting the problem.

N. Site Reclamation.

For disposal facilities, this section should address the final covering as it is completed and, as appropriate, as identified in the Facility Operation and Closure Plan. This should include the condition of the final slope of the site as identified in the plans and as provided in closure guidance; the construction of a low permeability cap over the landfilled wastes utilizing compacted clay or other material as approved by the Department; the placement of additional fill soil or drainage media; the replacement of any buffer soil and suitable plant growth material; and the final revegetation of filled areas of the site. A description of the Quality Assurance/Quality Control procedures for site capping and reclamation should be addressed and appropriate plans and reports filed with the Department.

Closed facilities must be periodically inspected to address vegetation establishment and condition, weed control, plant coverage, and any significant surface water erosion, settling, repair of settled areas, cover repair, drop structures, or any other pertinent issues. Drainage swales and the condition of berms, diversions, etc., must be evaluated. Some steeper facilities may have additional requirements to monitor erosion and vegetation.

O. Ground Water and Surface Water Monitoring and Assessment of any Leachate Seepage.

The report should include a section on groundwater and surface water monitoring for the reporting period or this could be in a separate report. This information should include water levels and laboratory analysis as required in the facility permit. The inspection procedures should also evaluate the condition of the wells and any springs or leachate seepage in or around the site.

P. Methane Generation.

For municipal waste facilities, especially those with methane collection or venting system, a regular assessment of methane generation should be completed and recorded. Some closed areas of landfills may note methane bubbles in areas of seepage. Other sites may observe dead vegetation or no vegetation in areas where methane is seeping or building up. Such information should be assessed regularly and reported in the regular report.

Q. General Site Operation Standard.

The report should include a summary of the general disposal standards. An example for a municipal landfill would be the standards as stated in the North Dakota Solid Waste Management Rules 33.1-20-04.1-03 Plan of Operation, and/or as outlined on a specific facility checklist. The owner or operator shall inspect the facility to ensure compliance

with this article, a permit, and approved plans. The owner or operator shall keep an inspection log including information such as the date of inspection, the name of the inspector, a notation of observations made, and the date and nature of any repairs or corrective action taken. The assessment should be made on a regular basis as required in the permit or operating plans or, at a minimum, on a weekly basis for inert waste sites. Most facilities should monitor these conditions every day the site is open; however, the checklist could be completed weekly. An assessment for a municipal landfill site would include, but is not limited to waste compacting, covering, windblown paper problems, and access control. A checklist should be adapted and developed for the various types of units. The appropriate checklist should be completed, maintained with the facility records, and a summary of the inspection reports should be filed with the Department. Department staff can assist in developing appropriate checklists.

R. Permit and Site Development and Operating Plan.

A facility owner/operator should regularly review the site development plans, operating plans, contingency plans and other specific facility plans as well as the permit and the North Dakota Solid Waste Management Rules to ensure that the facility is in compliance with all necessary requirements. Any anticipated or necessary changes may necessitate a change in the plans and/or the permit. Copies of all necessary documents, the permit and the state rules should be readily available at the site and site personnel should be well trained in their requirements. Any updates of the contingency plans or site plans are subject to Departmental approval. Significant changes in or changes in the method of operation of a facility may necessitate a formal modification of the permit.

IV. Conclusion

The Department appreciates the work and effort to adequately inspect facilities, keep records and provide routine reports. **Again, submittal of electronic reports and submittals in a readable and searchable PDF format, Excel Tables for data or similar format consistent with the Department's recordkeeping system is strongly encouraged to help reduce paper, save time and ensure more orderly management of records.** Should you have any questions or comments, please feel free to contact the Department.

For further information on other issues, please contact the Department at 701-328-5166 or refer to the [Publications](#) page of the Division's website.