



COMPOST FACILITY PERMIT APPLICATION GUIDANCE

The N.C. Compost Rules are located in 15A NCAC 13B .1400 et seq., and can be viewed online on our compost webpage: <http://portal.ncdenr.org/web/wm/sw/compost>. Other Solid Waste Section Rules and related General Statutes are also linked on the website, under “Rules.”

The completion of an application is required for the permitting or approval of all compost facilities, with a few exceptions. Permits are not required for backyard composting, certain farming operations, and certain small school projects (see Rule .1402 (g) and Rule .1409(d)).

For Small Type 1 facilities (see Rule .1402 (f)) producing mulch or compost, a permit is not required but a notification form must be submitted annually, instead of an application: <http://portal.ncdenr.org/web/wm/sw/yardwaste>.

Other special cases of compost permitting are residential and summer camps, urban farms, and community gardens. Specific guidance for these sites can be found on our compost webpage.

If the majority (more than 50%) of the material to be composted, not including bulking material, is animal manure or wastewater treatment sludge, the permitting process is regulated through the Division of Water Resources (DWR), instead of the Solid Waste Section. Contact the Solid Waste Section for more information.

For proposed new compost projects and first-time operators, the Section recommends beginning the process as a compost demonstration, if the operation will initially be less than two acres. Application guidance for a compost demonstration is a separate document and can be found on our compost webpage.

For compost facilities that require a permit, there are three types of permit actions:

A “new permit” means an application for a permit for a facility that has not been previously permitted by the Department.

A “permit amendment” means (1) an application for the five-year renewal of a permit for a permitted facility, or (2) an application that proposes a change in ownership or corporate structure of a permitted facility.

A “permit modification” means an application for a change to the plans approved in a permit for a compost facility, including an increase in facility capacity, or the addition of new feedstock materials. The addition of a new feedstock would not normally require a permit fee, unless that feedstock is unusual in nature and requires additional research as to its acceptability.

A significant expansion or change in the boundaries of a permitted facility may be considered a new permit for permit fee purposes.

A complete application for a compost facility permit shall consist of drawings and other required information submitted in report format in a binder. Tabbed pages should separate the Sections in the report.

One paper copy and one electronic (pdf) copy of the application report should be submitted. The electronic copy can be sent by email, FTP, or on a CD. The drawings must be included in the electronic copy.

Permit fees are required for large compost facilities, not for small facilities (see Rule .1402 (f)(6) and (7) for definition). The permit fees are as follows:

New Permit	\$1,750
Permit Amendment (renewal)	\$1,250
Permit Modification	\$500
Annual Fee	\$500

An invoice will be mailed to the applicant when an application is received.

For a new permit application or permit amendment/renewal application, a compliance history review will be required of the owner and operator of the facility, in accordance with State statutes. After the application is submitted, the owner and operator will be sent a letter requesting compliance history information, and parent, subsidiary, or other affiliate information, which is required in order to complete the application.

The Solid Waste Section reserves the right to ask for additional information as determined necessary.

Questions regarding an application should be directed to the Solid Waste Section, Phone 919-707-8200.

Applications should be sent or brought to the following address:

By Mail or Delivery Service:

NC DENR, Division of Waste Management
Solid Waste Section
1646 Mail Service Center
Raleigh, NC 27699-1646

In Person:

NC DENR, Division of Waste Management
Solid Waste Section
217 West Jones St.
Raleigh, NC 27603

An application for a new permit must address all Sections as listed below.

An application for a permit amendment (permit renewal) must address Sections 1, 3 (updated as necessary), 4, 5, and other Sections as applicable (including drawings), in which any information contained in the original permit application is incomplete or has changed.

An application for a permit modification must address Sections 1, 3, 4, 5, and other Sections as applicable (including drawings), in which any information contained in the original permit application has or will change due to the proposed modification.

Applications for a Large Type 3, Small Type 4, or Large Type 4 facility, or a facility proposed to be located over a closed out disposal area, must be prepared and signed/sealed by a N.C. registered professional engineer.

For facilities not enclosed in a building, surface water run-off from the site will most likely require a stormwater and/or wastewater permit. It is important to contact Ken Pickle, Division of Energy,

Mineral, and Land Resources (DEMLR), early in the permitting process to determine if a permit is required, and to begin the stormwater/wastewater permitting process. He can be reached at 919-807-6376 or ken.pickle@ncdenr.org. The main number for the DEMLR Permitting Unit is 919-807-6300.

Compost Facility Application Report Format and Contents

Letter of transmittal, which states desired Department action (including whether the request is for a new permit, permit amendment, or permit modification)

Title page, signed by a professional engineer, if applicable

Table of Contents

Section 1 – General Information - Provide a narrative discussion, including the following:

1. The name of the facility or proposed facility. Street address of the facility. Include the facility type: large or small, and Type 1, 2, 3, or 4.
2. Name, address, telephone number, and email address of the applicant/owner and contact person.
3. Name, address, telephone number, and email address of the landowner, if not the applicant. A landowner authorization form must be signed and notarized if the facility owner/operator is not the landowner (see attached form).
4. Name, address, telephone number, and email address of the engineer and/or composting consultant (if applicable).
5. Name, address, telephone number, and email address of person to receive permit fee invoices and annual fee invoices, if applicable.

Section 2 – Siting Requirements – Provide a narrative discussion that includes the following items:

1. Location of the facility. Include the county location, and proximity to nearest town or city. If the property was previously used for solid waste management activities, provide a description of the operation including permit information and a map with boundaries. Describe the history of any solid waste permits and approvals issued. Provide a map showing the property parcel boundaries and parcel ID information (this can usually be obtained from the County's GIS website). Describe any other commercial or industrial use of the property.
2. Total acreage of the property and the size of the actual compost area. The compost area includes unloading areas, mixing/processing areas, composting and curing areas, and feedstock storage areas.
3. In an appendix, provide a legal description of the property and a complete copy of the current land deed. Also provide a copy of any available current plats or survey drawings of the property. Reference these items in the text of this section.
4. Provide a copy of the USGS topographic quadrangle map of the area. The property boundaries of the site and the approximate composting and storage areas should be drawn onto the map. The map may be a high quality color photocopy and should show at least 0.5 mile surrounding the property boundary.
5. In an appendix, provide a letter from the appropriate City or County official confirming that the siting of the facility will be in conformance with all zoning and local laws, regulations, and

ordinances, or that no such zoning, laws, regulations, or ordinances are applicable. Reference the letter in the text of this section.

6. Provide a copy of the FEMA Flood Insurance floodplains map for the area, with the site property marked on the map (appendix or within the section). Discuss compliance with Rule .1404 (a)(1).
7. For sites that potentially contain wetlands, provide a letter from the Army Corps of Engineers that addresses the wetlands determination for the property, and compliance with requirements, if applicable. Include letter in an appendix and reference the letter in the text of the section.
8. Discuss compliance with the buffer requirements of the Compost Rules, Section .1404 (a)(2) through (5), and (8). Buffer requirements apply to unloading areas, composting and curing areas, mixing/processing areas, and feedstock storage areas. Final product may be stored within the buffer. Provide distance from the compost boundary to the nearest offsite residence, and nearest perennial stream or water body.
9. Address compliance with Rule .1404 (a)(7), concerning sites located over a closed out disposal area.
10. Address compliance with the soil texture requirements or pad requirements of Rule .1404 (a)(10)(B) through (E). For outdoor facilities, provide a soil evaluation of the site conducted by a soil scientist down to a depth of four feet, or to bedrock or evidence of a seasonal high water table, to evaluate all chemical and physical soil properties and depth of the seasonal high water table. Include the report in an appendix, and reference the report in the text of the Section.

Section 3 - Design Plan – Provide a narrative discussion, broken into appropriate sections, that includes the following items:

1. List the types of feedstocks, residuals, bulking materials, and amendments to be accepted (for example, yard waste, land clearing debris, pre-consumer food waste, post-consumer food waste, grease trap waste, agricultural waste, etc.). For each material, provide a description, list the sources, and indicate whether it will be accepted from the general public. Analytical data will be required for materials that could contain metals or other contaminants, such as commercial or industrial by-products. For wastewater treatment plant sludge/biosolids, provide analytical analysis of total metals by SW-846 methods, for arsenic, cadmium, copper, lead, mercury, molybdenum, nickel, selenium, and zinc, for each waste source.
2. Provide an estimate of the total amount of materials to be received at the facility per day, week, or month, in tons or cubic yards. Provide an approximate amount for each type of feedstock to be received, per day, week, or month. Describe any seasonal variation for any of the materials.
3. Design capacity of the facility. The site capacity is the incoming volume, or throughput, per year, and is based on the compost method, duration of the process, and the size of the facility. Show calculations for Large Type 3 and 4 facilities.
4. Describe and provide compost recipes.
 - a. For Type 1 and Type 2 operations, describe plan for balancing the carbon and nitrogen ratio (“browns” and “greens”).

- b. For Type 3 and Type 4 operations, provide carbon to nitrogen ratio (C:N) testing and calculations. There are compost recipe calculators online that can assist with this, balancing density, moisture, and C:N ratio.
5. Methods used for measuring, shredding, mixing, and proportioning feedstock materials, to insure the proper ratios are met.
6. A process flow diagram of the entire facility, including the type, size, and location of all major equipment, and feedstock flow streams. The flow streams should indicate the quantity of materials on a wet weight and volumetric basis. Also include plans and specifications for the facility, including manufacturer's performance data for all equipment selected.
7. Grading and sloping of site surface to prevent ponding of water.
8. Anticipated process duration for each stage of the process, including receiving, preparation, composting, curing, and distribution.
9. Describe the compost method (windrow, static aerated pile, in-vessel, etc.), and method for time and temperature monitoring.
10. For outdoor facilities, surface water control features, including run-on and run-off. Describe plan for operation of the facility in wet weather. Surface water must be diverted from the operational, compost curing, and storage areas. For sites that will have run-off from the facility operation, a stormwater/wastewater permit will most likely be required (see page 3 for contact information).
11. For Type 2, 3, and 4 facilities, process water or contact water (water and liquid that has come in contact with compost or feedstocks) may either be collected and disposed of separately, or for some facilities, it is possible that it may be combined with clean surface water run-off for discharge from the site with a stormwater/wastewater permit. Describe the collection, storage, and disposal of process water. Disposal could involve connection with a sanitary sewer line, or collection in a holding tank, with the liquid periodically pumped and removed from the site for proper disposal. Process water may also be added back to the compost; however, time and temperature requirements to reduce pathogens must begin again, and the text should describe this.
12. Describe any amendments to be added to the finished compost, if applicable, including the amount. For ash, provide analytical data. Describe storage of the amendments, maximum pile size, and methods to prevent surface water run-on and run-off, if applicable. It should be stated that samples for required compost metals analysis will be taken from the compost with the amendments added.
13. For Large Type 2, Large Type 3, and Type 4 facilities:
 - a. Description and sizing of the storage areas or containers for feedstocks, amendment, recyclables, finished compost, and waste.
 - b. A description of controls to address dust, odors, gas, and other air emissions. Examples include a spray mist for dust, and a biofilter or the application of three to six inches of finished compost cover over piles to control odors. For indoor facilities, describe how particulates are minimized.
 - c. A description of any recycling or other material handling processes used at the facility.

Section 4 - Operation Plan – Provide a narrative discussion, broken into appropriate sections, that includes the following items:

1. A list and description of the equipment, scales, structures, tipping floor, water source for cleaning, hopper, and any other feedstock or compost management devices. Also describe equipment maintenance.
2. Site security and access control. Large sites must be secured by gates, chains, berms, fences, or other measures to prevent unauthorized entry.
3. Confirm that an operator will be on duty at the site at all times while the facility is open for public use to ensure compliance with operational requirements.
4. Confirm that access roads will be of all-weather construction and maintained in good condition.
5. Days and hours of operation, preparations before opening, and procedures to be followed after closing for the day.
6. Signs to be posted at the entrance. Signs must provide a description of the types of feedstocks and residuals received, the types of waste prohibited, operating hours, permit number, and emergency contact phone numbers. The sign should state that no hazardous waste, asbestos containing waste, or medical waste can be received at the site. State whether the site will receive feedstocks or residuals from the general public.
7. Permanent boundary markers may be required, depending on the layout of the site, to maintain the operation's required setbacks to the property line or to other nearby residences, wells, floodplains, etc. If natural or existing benchmarks don't exist, include a description of the boundary markers, installed at intervals to allow for line of sight from one marker to the next.
8. List of personnel required and the responsibilities of each position. For Large Type 2, Large Type 3, and Type 4 facilities, describe personnel training (including site specific operating conditions, safety, procedures in the event of equipment failure) and recordkeeping of training records.
9. A narrative description of the compost process, from beginning to end, to include arrival of materials, unloading, processing, mixing, storage, composting, curing, testing, final product storage, and removal from site. Describe the location that each of the activities takes place, and the estimated time for composting and curing.
10. Method for screening loads for unacceptable waste. Describe plan for handling incoming loads that contain unacceptable waste. Describe storage of the unacceptable waste, the frequency of removal of the waste (at least weekly), and final disposition.
11. Any special feedstock or residual handling (e.g., odorous residuals, liquids, etc.).
12. Any amendment to be added to the compost, how it will be stored, when it will be added, testing of the amendment, and testing of the compost after amendment.
13. Processing activities to prepare materials for composting, such as grinding.
14. Pile sizes for feedstock, composting, curing, and final product storage (width and height). Length is unlimited within the permitted boundary of each area. Describe distance between rows, to provide vehicular access in the event of a fire. Storage of wood debris, mulch, and finished compost should be in rows no larger than 50 feet wide and 30 feet high.
15. Describe compliance with the time, temperature, and turning requirements in Rule .1406 (10), (11), or (12), as appropriate for the feedstock and compost method. Describe location of

monitoring points, probe depth (at least 24 to 36 inches), monitoring frequency, and recordkeeping. The thermometer should be a probe thermometer, and it should be stated that it will be calibrated at least once per year. If the site is designed to meet Rule (12)(A), then Rule (11) is automatically met.

16. Describe other monitoring, such as moisture content, oxygen level, porosity, carbon to nitrogen ratio testing, etc., including method and frequency.
17. The method of aeration provided, frequency, and the capacity of aeration equipment, for both composting and curing piles.
18. Provide an odor management plan, which describes odor control measures and steps to be taken in the event of unexpected offsite odors. If odorous feedstocks are managed, that may cause odors to be detected offsite, a layer of clean compost or other material should be placed over outdoor windrows, as necessary, to control odors.
19. Describe compost testing and the method for collecting samples, in accordance with Rule .1408(a). The sample that is collected for pathogens testing should not be collected and held over a six month period. The pathogens sample should be collected as a composite sample from finished compost onsite on the same day it is to be taken to the lab for analysis. The sample should be processed within the hold time required by the lab testing procedure, and this is usually six hours. The sample that is collected for metals analysis is to be collected and composited over a six month period (or every 20,000 tons produced) from each batch of compost. See Rule .1408(a)(2). Describe foreign matter/man-made inerts testing.
20. Describe distribution and ultimate use of the finished compost, in compliance with the classification requirements in Rule .1407. Describe method for removal from the site, and a contingency plan for disposal or alternative usage of residues or finished compost that cannot be used in the expected manner due to poor quality or change in market conditions. Describe the distribution label or other use instructions, in compliance with Rule .1407(g).
21. Describe recordkeeping and annual reporting in accordance with Rule .1408 (b), (c), and (d). Recordkeeping should also include personnel training, inspection reports, and odor complaints and actions taken. Plan should indicate that a copy of the permit, operations plan, and site drawings will be kept on site at all times. Provide a copy of the temperature log forms and other recordkeeping forms.
22. Describe operational activities for surface water and process water control features (for example, drain covers, pipes, ponds, tanks). For onsite tanks, frequency of pumping and removal.
23. Plan for fire prevention and actions to be taken in the event of an accidental fire. Describe equipment provided to control accidental fires and arrangements made with the local fire protection agency to provide services when needed.
24. Plan for maintaining facility property in a sanitary condition and actions to be taken to minimize noise, vectors, litter, dust, and other airborne particulates. It should be stated that at the end of each operating day, the unloading area will be clean and all feedstocks will be processed/mixed or properly stored. Describe procedures to prevent blowing litter and dust from leaving the compost area and from leaving the property.
25. Contingency plans for wind, heavy rain, snow, freezing weather and other extreme weather events, air pollution, equipment breakdown, spills, unusual traffic patterns, long-term power outages, cracks in concrete pads, etc.

26. Site safety procedures concerning onsite equipment (especially grinders), safety during unloading and loading of materials, and safety to address other possible site hazards to workers or the public.
27. Describe closure procedures for the site, if the operation should close or become inactive for at least 60 days (other than seasonal reasons). Plan should indicate that all feedstocks, waste, and compost will be removed from the site within 60 days.

Section 5 – Signature Pages

Place signature page(s) at the end of the application text, before the appendices.

1. Applicant signature page (see attached).
2. If the landowner of the property is not the applicant, the attached certification form by the land owner is required.

Section 6 – Stormwater Discharge and Sedimentation and Erosion Control Plan

For new facilities or existing facilities with proposed construction modifications, provide:

1. A copy of the sedimentation and erosion control plan and permit as required by local governments and/or the NC Division of Land Resources. Include summary, maps, and informational pages, but do not include calculation pages.
2. A copy of the DWR stormwater/process discharge application and permit. Include summary, maps, and informational pages, but do not include calculation pages.

Section 7 – Drawings

Provide drawings for a new facility or an existing facility with proposed modifications that would change the previously submitted drawing(s). For Large Type 3, Small Type 4, and Large Type 4 facilities, engineering drawings should be prepared and sealed by a NC professional engineer.

Drawings should be drawn to scale and include:

1. An aerial photograph, where one inch is less than or equal to 400 feet, accurately showing the area within one-fourth mile of the proposed site's boundaries. It may be included in the Siting Requirements Section, if it can be appropriately sized 11x17. The following should be drawn onto the map:
 - a. Boundaries of entire property owned or leased by the person proposing the facility;
 - b. Location of all homes, wells, industrial buildings, public or private utilities, roads, streams, water bodies, intermittent streams/ditches, and other applicable information regarding the general topography within 500 feet of the facility.
2. Site plan drawing(s) where one inch is less than or equal to 100 feet that delineates the following:
 - a. Buffers from the compost area to property lines, residences, wells, and perennial streams/rivers and water bodies. The compost area includes unloading, mixing, storage, composting, grinding/processing, and curing areas.
 - b. Gates/fences or other access control features.
 - c. Existing and proposed contours, at intervals appropriate to the topography.
 - d. Location and elevations of berms, ditches, basins, and other water control features for the diversion and management of surface water and process water.

- e. Labeled areas for unloading, mixing, processing, composting, curing, material storage, and final product storage. Illustrate the location of all piles and windrows onsite, including feedstocks, active compost, curing, finished compost, and amendments. Drawings should show that all sides of storage areas for flammable feedstocks and compost will be clear and drivable, to provide vehicular access in the event of a fire.
 - f. Utilities and structures/buildings, existing and proposed.
 - g. Other physical characteristics of the site, as applicable.
3. For Large Type 2, Large Type 3, and Type 4 facilities, the site plan drawing should also show:
- a. Access roads, existing and proposed, and details on traffic patterns.
 - b. Proposed surface and groundwater monitoring locations, if applicable.
 - c. Floodplains and wetlands located on the property.
 - d. Benchmarks.
 - e. Labeled ground cover (gravel, soil pad, concrete, asphalt, etc.).
4. If applicable, detail drawings of the following:
- a. Mixing pit, plan and profile.
 - b. Compost bins, bays, or vessels.
 - c. For indoor operations, plan and profile drawings of the buildings, with areas and features labeled. Note whether walls or roof are open or partially open.
 - d. Other site specific features of the compost operation.

