TITLE 20 ENVIRONMENTAL PROTECTION
CHAPTER 9 SOLID WASTE
PART 4 SOLID WASTE AND REGISTERED FACILITY MAXIMUM SIZE, SITING CRITERIA, AND DESIGN CRITERIA

20.9.4.1 ISSUING AGENCY. New Mexico Environmental Improvement Board.
[20.9.4.1 NMAC - Rp, 20 NMAC 9.1.I.001, 08/02/07]

20.9.4.2 SCOPE. This part applies to the transportation, storage, transfer, processing, transformation, recycling, composting, nuisance abatement and disposal of solid waste.
[20.9.4.2 NMAC - Rp, 20 NMAC 9.1.I.002, 08/02/07]

20.9.4.3 STATUTORY AUTHORITY. NMSA 1978, Sections 74-1-1 to 74-1-15, NMSA 1978, Sections 74-9-1 to 74-9-43, and NMSA 1978 Sections 74-13-1 to 74-13-20.
[20.9.4.3 NMAC - Rp, 20 NMAC 9.1.I.003, 08/02/07]

20.9.4.4 DURATION. Permanent.
[20.9.4.4 NMAC - Rp, 20 NMAC 9.1.I.004, 08/02/07]

20.9.4.5 EFFECTIVE DATE. August 2, 2007, unless a later date is cited at the end of a section.
[20.9.4.5 NMAC - Rp, 20 NMAC 9.1.I.005, 08/02/07]

20.9.4.6 OBJECTIVE. The objective of Part 4 of Chapter 9 is to establish regulations governing solid waste and registered facility size, siting criteria and design criteria.
[20.9.4.6 NMAC - Rp, 20 NMAC 9.1.I.006, 08/02/07]

20.9.4.7 DEFINITIONS. [RESERVED]
[See 20.9.2.7 NMAC for Definitions.]

20.9.4.8 MAXIMUM SIZE. The secretary shall not issue a permit for any solid waste facility larger than 500 acres.
[20.9.4.8 NMAC - Rp, 20 NMAC 9.1.III.301, 08/02/07]

20.9.4.9 SITING CRITERIA FOR MUNICIPAL, OR SPECIAL WASTE, CONSTRUCTION AND DEMOLITION LANDFILLS, AND MONOFILLS.

A. No municipal, construction and demolition, or special waste landfill or monofill shall be located where, on the date of the first public notice as required in 20.9.3 NMAC, any portion of the proposed disposal area is:

(1) in a floodplain, within 500 feet of a wetlands, or within 200 feet of a watercourse unless the watercourse has been altered pursuant to an approval from the army corps of engineers or other appropriate authority;

(2) where the top of the uppermost aquifer will be closer than 100 feet to the bottom of the fill, or for construction and demolition landfills that do not accept more than 25 tons per day annual average, where the top of the uppermost aquifer will be closer than 50 feet to the bottom of the fill;

(3) where new, abandoned, or exploration subsurface mines registered with the New Mexico department of energy, minerals and natural resources a may pose a risk of subsidence or instability;

(4) within 200 feet of a fault that has had a displacement within Holocene time (i.e., the past 11,000 years), unless the owner or operator demonstrates to the secretary that an alternative setback of less than 200 feet will prevent damage to the structural integrity of the facility and will be protective of public health, welfare and the environment;

(5) within historically or archaeologically significant sites, unless in compliance with the Cultural Properties Act, NMSA 1978, Sections 18-6-1 to 18-6-23 and the Prehistoric and Historic Sites Preservation Act, NMSA 1978, Sections 18-8-1 to 18-8-8;

(6) within 1,000 feet of a public water supply well or a private drinking water supply well with a sustainable yield of 100 gallons per minute or more, unless, in the case of registered unpermitted landfills, the well was constructed after the landfill began operations;

(7) within 350 feet of a public water supply well or private well with a maximum sustainable yield of less than 100 gallons per minute, unless the well was constructed after the landfill began operations or the well was installed by the landfill owner or operator for operational use;

(8) within the distance to airports set by the federal aviation administration unless the landfill owner or operator demonstrates that the federal aviation administration does not object to construction and operation of the landfill at the proposed site;

(9) within 50 feet of the facility property boundaries nor within 500 feet of a permanent residence, school, hospital, institution or church, or unless, in the case of registered unpermitted landfills, the permanent residence, school, hospital, institution or place of worship was constructed after the landfill began operations;

(10) in an active alluvial fan (i.e., areas being currently aggraded by either permanent or intermittent streams;

(11) within areas that will result in the destruction or adverse modification of the critical habitat of endangered or threatened species as identified in either 50 CFR Part 17 or by the New Mexico department of game and fish in its most recent biennial review;

(12) within seismic impact zones, unless the owner or operator demonstrates that all containment structures, including liners, leachate collection systems, and surface water control systems, are designed to resist the maximum horizontal acceleration in lithified earth material for the site; or

(13) within an unstable area, unless the owner or operator demonstrates that engineering measures have been incorporated into the landfill design to ensure that the integrity of the structural components of the landfill will not be disrupted.

B. Category 3 landfills that cannot make the demonstration specified in Paragraph (1) of Subsection A of this section pertaining to floodplains or Paragraph (8) of Subsection A of this section pertaining to airports, or Paragraph (13) of Subsection A of this section, pertaining to unstable areas, shall close in accordance with the closure and post-closure provisions in 20.9.6 NMAC.

[20.9.4.9 NMAC - Rp, 20 NMAC 9.1.III.302, 08/02/07]

20.9.4.10 SITING CRITERIA FOR COMPOSTING FACILITIES THAT ACCEPT SOLID WASTE.

No composting facility that accepts solid waste shall be located:

A. in a floodplain, within 500 feet of a wetland, or within 200 feet of a watercourse, unless the watercourse has been altered pursuant to an approval from the army corps of engineers or other appropriate authority; or

B. within 500 feet of any permanent residence, school, hospital, institution or place of worship in existence at the time the permit application for the facility is filed.

[20.9.4.10 NMAC - Rp, 20 NMAC 9.1.III.304, 08/02/07]

20.9.4.11 SITING CRITERIA FOR TRANSFORMATION FACILITIES.

A. No transformation facility shall be located:

(1) in a floodplain, within 500 feet of a wetland, or within 200 feet of a watercourse unless the watercourse has been altered pursuant to an approval from the army corps of engineers or other appropriate authority;

(2) where new, abandoned or exploration subsurface mines may pose a risk of subsidence, instability, or ground water contamination;

(3) within historically or archaeologically significant sites, unless in compliance with the Cultural Properties Act, NMSA 1978, Sections 18-6-1 to 18-6-23 and the Prehistoric and Historic Sites Preservation Act, NMSA 1978, Sections 18-8-1 to 18-8-8;

(4) within 150 feet of the facility property boundaries; nor

(5) within an unstable area, unless the owner or operator demonstrates that engineering measures have been incorporated into the facility design to ensure that the integrity of the structural components of the facility will not be disrupted.

B. No transformation facility having a throughput capacity of less than 1,000 pounds per hour shall be located within one mile of any residence, institution, school, place of worship, hospital or other transformation facility in existence on the date the initial permit application is filed with the department.

C. No transformation facility having a throughput capacity of 1,000 pounds per hour or greater shall be located within three miles of any residence, institution, school, place of worship, hospital or other transformation facility in existence on the date the initial permit application is filed with the department.

[20.9.4.11 NMAC - Rp, 20 NMAC 9.1.III.305, 08/02//07]

20.9.4.12 SITING CRITERIA FOR TRANSFER STATIONS AND PROCESSING FACILITIES. No transfer station or processing facility initially permitted after the effective date of these regulations shall be located in the following areas:

A. a floodplain, a watercourse, or a wetland, except:

(1) a transfer station property boundary may extend into or cross a floodplain, watercourse, or wetland if those areas will not be impacted by structures or activities of the facility; and

(2) engineering structures designed to prevent impacts to or from a floodplain, watercourse, or wetland may be constructed subject to prior approval of the secretary;

B. within 250 feet of a permanent residence, institution, school, place of worship, or hospital, that existed at the time the transfer station permit application was submitted, unless the applicant demonstrates that a shorter distance of no less than 50 feet has been affirmatively approved by the local government;

C. within an unstable area, except where the owner or operator demonstrates that engineering measures have been incorporated into the facility design to ensure that the integrity of the structural components of the facility will not be disrupted or unless otherwise approved by the secretary; or

D. within historically or archaeologically significant sites, unless in compliance with the Cultural Properties Act, NMSA 1978, Sections 18-6-1 to 18-6-23 and the Prehistoric and Historic Sites Preservation Act, NMSA 1978, Sections 18-8-1 to 18-8-8.

[20.9.4.12 NMAC - N, 08/02/07]

20.9.4.13 DESIGN CRITERIA FOR MUNICIPAL LANDFILLS, SPECIAL WASTE LANDFILLS AND MONOFILLS.

A. Except as specified in 20.9.2.14 NMAC and Subsection C of this section, all new municipal and special waste landfills and lateral expansions to existing municipal and special waste landfills shall provide a containment layer beneath the solid waste which is constructed:

(1) with a composite liner consisting of two components;

(a) the upper component shall consist of a minimum 30-mil flexible or a 60-mil high density polyethylene (HDPE) geomembrane liner or equivalent material; the geomembrane component shall be installed in direct and uniform contact with the lower component; and

(b) the lower component shall consist of a geosynthetic clay liner (GCL) or a minimum 24-inch thick layer of compacted soil having a saturated hydraulic conductivity of no more than $1x10^{-7}$ centimeters per second (cm/sec) throughout its thickness; the soil must be free of particles greater than one inch in any dimension; or

(2) with an alternative liner in accordance with a design, which provides protection equivalent to the composite liner defined in Paragraph (1) of this subsection.

B. When approving an alternative liner design under this section, the secretary shall consider at least the following factors:

(1) the climatic factors of the area; and

(2) the volume and physical and chemical characteristics of the leachate.

C. Asbestos waste monofills and scrap tire monofills may be exempted from the design criteria in this section if the owner or operator demonstrates to the secretary in the permit application that the waste will not generate leachate which poses a threat to ground water quality, but shall still comply with Subparagraph (h) of Paragraph (1) of Subsection A of 20.9.6.9 NMAC.

D. Scrap tire monofills shall be designed with trenches not to exceed a maximum depth of 15 feet, a maximum width of 50 feet, and a maximum length of 100 feet. A distance of 40 feet shall be maintained between trenches. Trenches shall be filled to original grade.

E. The design and construction of all liners shall conform to the following criteria:

(1) general requirements:

(a) all liners must be able to withstand the projected loading stresses and disturbances from overlying waste, waste cover materials, and equipment operation;

(b) all liners shall incorporate a leachate collection system that meets the requirements of 20.9.4.15 NMAC; and

(c) all liners must be constructed with a minimum two percent slope to promote positive drainage and facilitate leachate collection;

(2) requirements for geosynthetic components:

(a) geosynthetic components of a liner system must be compatible with the waste to be contained; they must be able to resist chemical attack from the waste or leachate; this shall be demonstrated by means of manufacturer's test reports, or laboratory analyses;

(b) any geosynthetic materials installed on slopes greater than 25 percent, or on any slope where waste is projected to be more than 100 feet deep, must be designed to withstand the calculated tensile forces acting upon the geosynthetic materials; the design must consider the maximum friction angle of the geosynthetic with regard to any soil-geosynthetic or geosynthetic-geosynthetic interface and must ensure that overall slope stability is maintained; and

(c) field seams in geosynthetic material shall be oriented parallel to the line of maximum slope (i.e., oriented along, not across the slope); the number of field seams in corners and irregular shaped areas shall be minimized; there shall be no horizontal seam within five feet of the toe of the slope;

(3) requirements for the soil component of all liners:

(a) the bottom geosynthetic layer, shall be placed on a prepared subgrade consisting of, at a minimum, of a 6-inch layer of in-situ soil or select fill compacted to 90 percent standard Proctor density;

(b) the surface of the soil upon which a geosynthetic liner will be installed must be free of stones greater than 1/2-inch in any dimension, organic matter, local irregularities, protrusions, loose soil, and any abrupt changes in grade that could damage the geosynthetic liner; and

(c) the soil component of the composite liner defined in Subparagraph (b) of Paragraph (1) of Subsection A of this section shall be compacted to a minimum of 90 percent standard Proctor density and shall have the following physical characteristics unless otherwise specifically approved by the department:

(i) plasticity index greater than 10 percent;

(ii) liquid limit between 25 percent and 50 percent;

(iii) portion of material passing the No. 200 sieve (0.074 mm and less fraction) greater than 40 percent (by weight); and

(iv) clay content greater than 18 percent (by weight);

(4) all liners shall have a top protective cover of at least two feet of granular soil or other material specifically approved by the department; the protective cover shall, in addition to providing physical protection for the liner, facilitate the collection of leachate in the leachate collection system; materials used to construct the protective cover must ensure the hydraulic leachate head on the liner does not exceeds one foot; the soil material shall be free of any organic matter and have the following physical characteristics unless otherwise specifically approved by the secretary:

(a) portion of material passing the No. 200 sieve (0.074 mm and less fraction) no greater than 5 percent by weight; and

(b) uniformity coefficient (Cu) less than 6 where Cu is defined as D60/D10.

[20.9.4.13 NMAC - Rp, 20 NMAC 9.1.III.306, 08/02/07]

20.9.4.14 TESTING AND QUALITY CONTROL FOR LINERS AND FINAL COVERS.

A. All testing of geosynthetic and soil materials shall be performed in accordance with applicable American society of testing materials (ASTM) standards.

B. The construction and installation of all liners and final covers shall be done in accordance with a quality control plan approved in the permit. All testing and evaluation of liners shall be certified by a professional engineer licensed in New Mexico and experienced in liner installation, and shall be completed prior to the placement of the protective cover. All field testing of liners and final covers shall be the responsibility of an individual experienced in liner or cover installation and soils or geotextile engineering, as appropriate. The quality control plan shall:

(1) define the procedures required for obtaining samples and testing and reporting the test results for the installation of the liner and final cover;

(2) describe and illustrate to operating personnel all necessary procedures for maintaining the integrity of the liner, leachate collection systems, and final cover;

(3) for the soil component, prescribe the following minimum frequency of testing for the soil component of all liners and final covers, unless otherwise specifically approved by the department:

(a) soil from the borrow source shall be tested as follows:

(i) grain size shall be tested once every 1,000 cubic yards;

(ii) Atterberg limits shall be tested once every 5,000 cubic yards;

(iii) Proctor compaction moisture-density curve conformance shall be tested once every 5,000 cubic yards; and

(iv) laboratory permeability shall be tested once every 5,000 cubic yards; and

(b) during construction of the liner or cover, the soil shall be tested as follows:

(i) density and moisture content tested by nuclear desiometer shall be tested four times per acre per lift;

(ii) laboratory or in-situ permeability shall be tested once per 2 acres and laboratory samples shall be undisturbed or recompacted to the site-specific field conditions; and

(iii) total thickness (by survey) shall be tested once per acre (on grid);

(4) for the prot ective cover component of liners, when used to facilitate leachate drainage, prescribe the following minimum frequency of testing of the granular drainage layer, unless specifically approved by the department:

(a) grain size of the soil shall be tested once every 1,500 cubic yards; and

(b) total thickness of the drainage layer shall be tested five times per acre; and

(5) for the geomembrane component of all liners and final covers as defined in Subsection A of 20.9.4.13 NMAC and Subsection A of 20.9.6.9 NMAC, all testing, both shop and field, shall be as recommended by the manufacturer unless otherwise specifically approved by the department; the minimum frequency of taking seam samples for destructive testing shall be one per 500 feet of seam length, with a portion of each test sample tested in the field and another in the laboratory; seam samples shall be tested for peel adhesion and bonded seam strength; non-destructive testing shall be performed for all seams, seam repairs, and liner repairs.

[20.9.4.14 NMAC - Rp, 20 NMAC 9.1.III.307, 08/02/07]

20.9.4.15 LEACHATE COLLECTION SYSTEMS FOR LANDFILLS.

A. Except as specified in 20.9.2.14 NMAC and Subsection C of 20.9.4.13 NMAC, all new municipal and special waste landfills and lateral expansions shall include a leachate collection system, which shall be designed by a professional engineer licensed to practice in New Mexico, and which shall incorporate a piping collection network comprised of perforated pipe having a minimum diameter of 6 inches and a minimum wall thickness of schedule 80 PVC or equivalent and shall be designed and constructed to:

(1) maintain less than a one-foot depth of leachate on the liner;

(2) maintain a minimum of two percent slope throughout the system, within the lined landfill cell; an alternate slope may be specifically approved by the secretary for leachate conveyance piping outside the disposal cell footprint;

(3) withstand chemical attack from waste and leachate; and

(4) withstand the loads, stresses, and disturbances from overlying waste, waste cover materials, and equipment operation.

B. Any geosynthetic materials such as geonets and geotextiles, if used as components of the leachate collection system, must have a hydraulic conductivity, transmissivity and chemical and physical qualities that will not be adversely affected by waste placement, equipment, operation, or leachate generation. These geosynthetics, if used and operating in conjunction with the soil protective cover for the liner as described in Paragraph (4) of Subsection E of 20.9.4.13 NMAC, must have a hydraulic conductivity and transmissivity designed to ensure the hydraulic head on the liner never exceeds one foot.

C. A written leachate management plan shall be submitted for approval by the secretary. The plan shall describe anticipated amounts of leachate, duration of generation and final disposal options for the leachate and shall include:

(1) a description of the means of analysis; and

(2) a description of the type of treatment and proposed disposal method.

D. Leachate storage and collection ponds shall be designed to meet the requirements of 20.9.4.13 NMAC. A pond may be designed to maintain greater than one foot of leachate, provided it is equipped with a double, composite liner as specified in 20.9.4.13 NMAC, or an alternative design providing equivalent protection and approved in the permit.

[20.9.4.15 NMAC - Rp, 20 NMAC 9.1.III.308, 08/02/07]

20.9.4.16 LANDFILL GAS CONTROL SYSTEMS.

A. Owners and operators of landfills who install a landfill gas control system in order to conform with the requirements of Subsection B of 20.9.5.9 NMAC shall submit a description of the physical and chemical characteristics of expected condensates or residues that are generated and a plan for their disposal. The disposal plan shall be submitted with a permit application or as a request for a specific approval. In addition, if the gas

control system is not subject to the Air Quality Control Act, NMSA Sections 74-2-1, et seq., the owner or operator shall include the following information in its submission:

(1) the design of the system, indicating the location and design of vents, barriers, collection piping and manifolds and other control measures that will be installed; and

(2) if gas recovery is proposed, the design of the proposed gas recovery system and the major on-site components of the system including storage, transportation, processing, treatment or disposal measures required in the management of the generated gases, condensates or other residues.

B. If a gas processing system is proposed, it shall be designed:

(1) so that it will not interfere with activities on the site or required control measures; and

(2) so that it will not create a nuisance, endanger or cause harm to persons or property.

C. If a gas disposal system is proposed, it shall be designed:

(1) so that it will not interfere with activities on the site or required control measures;

(2) so that it will not create a nuisance, endanger or cause harm to persons or property; and

(3) with active forced ventilation, using vents located at least one foot above the landfill surface at the location of each gas vent.

[20.9.4.16 NMAC - Rp, 20 NMAC 9.1.III.309, 08/02/07]

20.9.4.17 RESEARCH, DEVELOPMENT, AND DEMONSTRATION PERMITS.

A. The secretary may issue a research, development, and demonstration permit in conjunction with a new solid waste facility permit for a municipal or special waste landfill, or as a permit modification for an already permitted municipal or special waste landfill, under the following conditions:

(1) the owner or operator proposes to utilize innovative and new methods which vary from either or both of the following criteria:

(a) the run-on control systems required by Subsection E of 20.9.5.9 NMAC; and

(b) if sludge is used, the liquids restrictions in Paragraph (9) of Subsection A of 20.9.2.10 NMAC and 20.9.8.16 NMAC;

(2) the landfill has a leachate collection system designed and constructed to maintain less than a one foot depth of leachate on the liner; and

(3) the landfill is not operating under an exemption set forth in 20.9.2.14 NMAC.

B. The following requirements shall apply to any landfill that is issued a research, development, and demonstration permit under Subsection A of this section:

(1) the liquids to be used at the landfill shall be pre-approved by the department in accordance with Paragraph (9) of Subsection A of 20.9.2.10 NMAC and 20.9.8.16 NMAC;

(2) the landfill shall install a landfill gas collection and control system in accordance with emission control requirements as specified in 40 CFR Part 60; and

(3) the fluids to be used at the landfill shall be pre-approved by the department.

C. The secretary may issue a research, development, and demonstration permit for a permitted landfill for which the owner or operator proposes to utilize innovative and new methods which vary from the final cover criteria of Subparagraphs (b) and (c) of Paragraph (1) of Subsection A of 20.9.6.9 NMAC or Subparagraph (a) of Paragraph (2) of Subsection A of 20.9.6.9 NMAC provided the landfill owner or operator demonstrates that the infiltration of liquid through the alternative cover system will not cause contamination of ground water or surface water, or cause leachate depth on the liner to exceed one foot.

D. Any permit issued under Subsection C of this section shall include terms and conditions at least as protective as the criteria for municipal solid waste landfills to assure protection of human health and the environment. Such permits shall:

(1) provide for the construction and operation of such facilities as necessary, for not longer than two and one-half years, unless renewed as provided in Subsection F of this section;

(2) provide that the landfill must receive only those types and quantities of municipal solid waste and non-hazardous wastes which the secretary deems appropriate for the purposes of determining the efficacy and performance capabilities of the technology or process;

(3) include such requirements as necessary to protect human health and the environment, including such requirements as necessary for testing and providing information to the secretary with respect to the operation of the facility;

(4) require the owner or operator of a landfill permitted under this section to submit an annual report to the secretary showing whether and to what extent the site is progressing in attaining project goals; the report shall

also include a summary of all monitoring and testing results, as well as any other operating information specified by the secretary in the permit; and

(5) require compliance with all criteria in 20.9.2 - 20.9.10 NMAC, except as permitted under this section.

E. The secretary may order an immediate termination of all operations at the facility allowed under this section or other corrective measures at any time the secretary determines that imminent danger exists to human health or the environment. The owner or operator may appeal the secretary's order by filing a request for hearing within 30 days of the date of the secretary's order. The appeal shall be conducted in accordance with the procedures in 20.1.5 NMAC, Adjudicatory Procedures - Environment Department.

F. Any permit issued under this section shall not exceed two and one-half years and each renewal of a permit shall not exceed two and one-half years.

(1) The total term for a permit for a project including renewals shall not exceed twelve years.

(2) During permit renewal, the applicant shall provide a detailed assessment of the project showing the status with respect to achieving project goals, a list of problems and status with respect to problem resolutions, and any other information requested by the secretary.

[20.9.4.17 NMAC - N, 08/02/07]

HISTORY OF 20.9.4 NMAC:

Pre-NMAC History: The material in this part was derived from that previously filed with the commission of public records - state records center.

EIB 74-1, Solid Waste Management Regulations, filed 5/3/74.

EIB/SWMR-2, Solid Waste Management Regulations, filed 4/14/89.

EIB/SWMR-3, Solid Waste Management Regulations, filed 12/31/91.

EIB/SWMR-4, Solid Waste Management Regulations, filed 7/18/94.

History of Repealed Material: 20 NMAC 9.1, Solid Waste Management Regulations (filed 10/27/95) repealed 08/02/07.

Other History:

EIB/SWMR-4, Solid Waste Management Regulations (filed 7/18/94) was **renumbered** into first version of the New Mexico Administrative Code as 20 NMAC 9.1, Solid Waste Management Regulations, effective 11/30/95.

That pertinent portion of 20 NMAC 9.1, Subpart III, Solid Waste Management Regulations, Maximum Size, Siting Criteria; Design Criteria, (filed 10/27/95), was **renumbered, reformatted and replaced** by 20.9.4 NMAC, Solid Waste and Registered Facility Maximum Size, Siting Criteria, and Design Criteria, effective 08/02/07.