

(s) A solid waste facility classified as a level 1 facility pursuant to (f)3i above may be eligible for a facility wide permit if the Department formally adopts a facility wide permit program.

R.1982 d.433, effective December 6, 1982.

See: 14 N.J.R. 1138(a), 14 N.J.R. 1367(a).

Repealed by R.1987 d.235, effective June 1, 1987.

See: 18 N.J.R. 883(a), 19 N.J.R. 928(b).

This section was applicability.

New Rule, R.1996 d.578, effective December 16, 1996.

See: 28 N.J.R. 2114(a), 28 N.J.R. 5248(a).

Administrative change.

See: 30 N.J.R. 3948(a).

Amended by R.2002 d.181, effective June 17, 2002.

See: 33 N.J.R. 4218(a), 34 N.J.R. 2049(a).

In (a), deleted "sanitary landfill," following "thermal destruction facility,"

SUBCHAPTER 2A. ADDITIONAL, SPECIFIC DISPOSAL REGULATIONS FOR SANITARY LANDFILLS

7:26-2A.1 Scope and applicability

(a) This subchapter shall constitute the rules of the Department governing the design, construction, operation, maintenance, closure and post-closure care of sanitary landfills.

(b) The requirements of this subchapter are in addition to the general engineering design submission requirements in N.J.A.C. 7:26-2.10 and the general operational requirements in N.J.A.C. 7:26-2.11.

(c) This subchapter shall apply to the following facilities:

1. All newly proposed sanitary landfills and all existing sanitary landfills proposing to expand their existing operations onto previously unfilled permitted areas; and

2. Any existing sanitary landfills operating as an open dump or in an environmentally unsound manner which the Department determines needs to be environmentally upgraded.

(d) This subchapter does not apply to hazardous waste landfills. See N.J.A.C. 7:26G.

(e) The provision of this subchapter and N.J.A.C. 7:26-2 shall not be interpreted as permitting the disposal of domestic sewage, sewage sludge, or septage in any manner other than that prescribed by law.

Amended by R.1996 d.500, effective October 21, 1996.

See: 28 N.J.R. 1693(a), 28 N.J.R. 4606(a).

Amended by R.1996 d.578, effective December 16, 1996.

See: 28 N.J.R. 2114(a), 28 N.J.R. 5248(a).

7:26-2A.2 Construction

These rules shall be liberally construed to permit the Department to discharge its statutory functions.

Case Notes

Solid Waste Management Act and regulations preempt municipal zoning ordinance with respect to construction of sanitary landfill access road; construction approval by Department proper. *Chester Twp. v. Dept. of Environmental Protection*, 181 N.J.Super. 445, 438 A.2d 334 (App.Div.1981).

7:26-2A.3 Purpose

(a) This subchapter is promulgated for the following purpose:

1. To establish additional engineering design submission requirements for sanitary landfills;

2. To establish requirements and standards for the design and construction of sanitary landfills to insure that adverse impacts are minimized and controlled and that pollution of the environment is prevented; and

3. To establish additional requirements for the operation, maintenance, inspection and monitoring of sanitary landfills to ensure the proper operation of the sanitary landfill so as to minimize and control adverse impacts and prevent pollution of the environment.

7:26-2A.4 General prohibitions and requirements

(a) Open dumps are declared to be a nuisance, hazardous to human health, and are prohibited.

(b) No new sanitary landfill shall be constructed or any existing landfill continue to operate where solid waste is or would be in contact with the surface or ground waters. This provision shall not apply to cleanfill.

(c) Leachate from any sanitary landfill shall not be allowed to drain or discharge into the surface water or groundwater except as permitted pursuant to the NJPDES regulations, N.J.A.C. 7:14A.

(d) No sanitary landfill shall be operated in a manner that would result in the impairment of the quality of the surface or groundwaters to a degree that would degrade the quality of either the surface or ground waters beyond the classification established by the Department in the Surface Water Quality Standards, N.J.A.C. 7:9-4, or the Ground Water Quality Standards, N.J.A.C. 7:9-6.

(e) No sanitary landfill shall be operated in a manner that would result in the degradation of the ambient air quality beyond the standards established by the Department pursuant to N.J.A.C. 7:27.

(f) No sanitary landfill shall be operated in a manner that would result in soil erosion and sedimentation beyond the standards established by the Department of Agriculture pursuant to N.J.A.C. 2:90.

(g) No new sanitary landfill shall begin construction without first applying for a NJPDES permit pursuant to N.J.A.C. 7:14A and approval of its Soil Erosion and Sediment Control Plan pursuant to N.J.A.C. 2:90. No new sanitary landfill shall begin operation without first obtaining a NJPDES permit and approval of its Soil Erosion and Sediment Control Plan.

(h) No existing sanitary landfill shall continue to operate without obtaining a NJPDES permit, and approval of its Soil Erosion and Sediment Control plan in accordance with N.J.A.C. 2:90.

(i) No new sanitary landfill shall begin construction or operation if located within the following distances of an airport, as measured from the nearest runway to the nearest property line without the design and implementation of an effective bird deterrent plan approved by this Department and the New Jersey Department of Transportation.

1. Within 10,000 feet of any airport runway which is equal to or greater than 3,000 feet in length and that services turbo-engine planes; or

2. Within 5,000 feet of any airport runway which is less than 3,000 feet in length and that services prop-engine planes.

(j) The owner and/or operator proposing a new landfill or lateral expansion within a five-mile radius of any airport runway end used by turbojet or piston-type aircraft shall notify the affected airport and the appropriate Federal Aviation Administration (FAA) office.

(k) No existing sanitary landfill shall continue to operate, within the restricted zone of an airport as set forth in N.J.A.C. 7:26-2A.6(g)11, when it is determined by the Department and the Bureau of Aviation of the Department of Transportation to present a real or potential attraction for birds, until an effective deterrent plan is implemented.

(l) No person shall engage in the disposal of solid waste at a facility that does not meet the operational and maintenance requirements of this subchapter and N.J.A.C. 7:26-2. In addition, each permittee shall comply with any condition, limitation, or discharge requirement which may be specified in the SWF permit for that facility;

(m) The owner or operator of an existing sanitary landfill shall be required to design in accordance with N.J.A.C. 7:26-2A.7(f)3 or 4, and after Departmental approval of the design, construct, operate and maintain, a gas collection, venting and monitoring system when gas is detected at the points set forth at N.J.A.C. 7:26-2A.7(f)3 or 4;

(n) The owner or operator of an existing sanitary landfill shall install a groundwater monitoring system in accordance with the requirements of N.J.A.C. 7:14A-6.

(o) The owner or operator of an existing sanitary landfill shall be required to design and after Departmental approval of the design, construct, operate and maintain a leachate control collection and treatment system when leachate is determined to be impacting the quality of the surface and groundwaters of the area.

(p) The owner or operator of an existing sanitary landfill shall install a groundwater monitoring system in accordance with the requirements of N.J.A.C. 7:14A.

(q) The following waste types as defined in N.J.A.C. 7:26-2.13(h) and (i) shall not be disposed of in sanitary landfills:

1. Hazardous waste as defined by N.J.A.C. 7:26G;
2. Septic tank clean-out wastes, waste ID number 73;
3. Liquid sewage sludge, waste ID number 74;
4. Radioactive materials regulated by the Atomic Energy Act of 1954, 42 U.S.C. §§ 2011 et seq.;
5. Regulated medical waste, Class 1 through 7, as defined in N.J.A.C. 7:26-3A.5, unless as otherwise provided at N.J.A.C. 7:26-3A.20; and
6. Bulk liquid and semiliquids, waste ID number 72.

Amended by R.1996 d.500, effective October 21, 1996.

See: 28 N.J.R. 1693(a), 28 N.J.R. 4606(a).

Amended by R.1996 d.578, effective December 16, 1996.

See: 28 N.J.R. 2114(a), 28 N.J.R. 5248(a).

Deleted (b) through (d); recodified existing (e) through (l) as (b) through (i); inserted new (j); recodified existing (m) through (s) as (k) through (q); in (q), amended N.J.A.C. references; and added (q)5 and (q)6.

Administrative change.

See: 30 N.J.R. 3948(a).

Case Notes

Denial of claim due to failure to demonstrate impact of landfill affirmed. *Sheridan v. Environmental Claims Administration*, Department of Environmental Protection, 97 N.J.A.R.2d (EPE) 40.

Use variance and site plan approval for enlargement of solid waste facility required submission of application to modify solid waste management plan. *Ippolito v. Tenafly Board of Adjustment*, 95 N.J.A.R.2d (EPE) 17.

7:26-2A.5 Additional engineering design submittal requirements for sanitary landfills

(a) In addition to the requirements of N.J.A.C. 7:26-2.10, the engineering design submission requirements for sanitary landfills shall include the following:

1. A regional map prepared and submitted in accordance with N.J.A.C. 7:26-2.10(b)4 which shall include, but not be limited to, the following additional information:

- (2) The frequency of field testing;
- (3) The frequency of sampling for laboratory testing;
- (4) The sampling and field testing procedures to be utilized;
- (5) The sampling and field testing equipment to be utilized;
- (6) The calibration of field testing equipment;
- (7) The frequency of system or performance audits;
- (8) The sampling size;
- (9) The soils or geotechnical laboratory to be used;
- (10) The laboratory procedures to be utilized; and
- (11) The calibration of laboratory equipment and QA/QC of laboratory procedures.

vi. The QC testing and inspections shall include, but not limited to, the following:

- (1) N.J.A.C. 7:26-2A.7(b)4viii and x;
- (2) N.J.A.C. 7:26-2A.7(c)2v, vii, x and xi;
- (3) N.J.A.C. 7:26-2A.7(c)5iii through ix.
- (4) N.J.A.C. 7:26-2A.7(c)6v;
- (5) N.J.A.C. 7:26-2A.7(c)7vi;
- (6) N.J.A.C. 7:26-2A.7(c)9vii and viii;
- (7) N.J.A.C. 7:26-2A.7(c)10x, xi, xii, and xvii;
- (8) N.J.A.C. 7:26-2A.7(d)2vii and viii;
- (9) N.J.A.C. 7:26-2A.7(d)3viii and xxi;
- (10) N.J.A.C. 7:26-2A.7(g)6 and 7; and
- (11) N.J.A.C. 7:26-2A.7(i)9iv and 10i.

vii. The QA and QC plan shall include a report listing technical specifications for all materials to be used in the construction of the sanitary landfill. The report shall describe the product specifications for the materials used, and state the acceptable range of tolerances, if any. The QA and QC plan shall contain a construction contingency plan for the construction phase which shall describe procedures for responding to construction deficiencies resulting from circumstances including, but not limited to, inclement weather, defective materials or construction inconsistent with specifications as demonstrated by quality control testing. The plan shall provide a description of the criteria to be utilized in evaluating deficiencies, selecting corrective action methodology and implementing corrective action.

viii. For liner systems using a geomembrane, the QA and QC plan shall provide for an electrical leak location test of the primary geomembrane, or other equivalent post-construction test method, required at N.J.A.C. 7:26-2A.7(a)19.

8. The O and M manual for the sanitary landfill shall include the following, in addition to the O and M requirements set forth in the general engineering requirements, N.J.A.C. 7:26-2.10(b)9:

i. A description of how the operations and maintenance of the sanitary landfill will meet the requirements set forth in N.J.A.C. 7:26-2A.8;

ii. An occupational health and safety plan established in conformance with the safety and health standards of the Federal Department of Labor, Occupational Safety and Health Administration pursuant to 29 CFR 1926 and 1910 Safety and Health Standards and Industrial Standards;

iii. A community relations plan for facilities with a design capacity of 500 tons per day or greater, identifying the steps that the owner and/or operator will take to transfer information and solicit input from the community in which the facility is located. The community relations plan should contain the following:

(1) An opportunity for two open meetings with local officials, or their representatives, and the general public of the district affected by the proposed facility prior to and during facility construction. The purpose of such meetings will be to inform the community of the nature of operations proposed for the facility, including the progress of construction and projected initial tipping fees;

(2) An opportunity for an annual open meeting with the community or its representatives subsequent to the initial startup of operations. The purpose of these meetings is to allow community input and to provide a forum for exchanging ideas; and

(3) A notification procedure, whereby the community is provided a report of findings in the case of an emergency incident at the facility;

iv. A facility staffing plan containing the following:

(1) A written job description for each position, including duties and performance standards. The description shall include the requisite skills, education, and other qualifications deemed necessary for employees assigned to each position; and

(2) An explanation of the criteria and reasons used in selecting the required number and types of positions;

v. A written training plan which shall include the type and amount of both the initial and annual follow-up training to be provided to facility personnel;

vi. An emergency contingency plan which delineates procedures for responding to fire, explosions or any unplanned sudden or non-sudden releases of harmful constituents to the air, soil or surface water. The emergency contingency plan shall be submitted to the local police and fire departments, and to the local and county health departments or other offices of emergency management. The emergency contingency plan shall contain:

(1) A description of the actions facility personnel shall take in the event of various emergency situations;

(2) A description of arrangements made with the Department and local police and fire departments which allow for immediate entry into the facility by their authorized representatives should the need arise, such as in the case of personnel responding to an emergency situation; and

(3) A list of names, addresses and phone numbers (office and home) of all persons qualified to act as emergency coordinator for the facility. This list shall be kept up to date. Where more than one person is listed, one shall be named as primary emergency coordinator and the others shall be listed in the order in which they will assume responsibility as alternates; and

vii. A table that summarizes all inspection and maintenance programs, frequencies and reporting requirements for the landfill.

Amended by R.1996 d.578, effective December 16, 1996.

See: 28 N.J.R. 2114(a), 28 N.J.R. 5248(a).

Substantially amended (a).

Amended by R.2001 d.86, effective March 5, 2001.

See: 32 N.J.R. 2536(a), 33 N.J.R. 880(a).

In (a)2ii, rewrote the second sentence.

Amended by R.2002 d.181, effective June 17, 2002.

See: 33 N.J.R. 4218(a), 34 N.J.R. 2049(a).

In (a)5, deleted the footnote and its reference and inserted "shall include" in the second sentence of i, rewrote iii(6) and added iii(19); in (a)7, rewrote vi(3) and added viii; in (a)8, added vii.

7:26-2A.6 Sanitary landfill environmental performance standards

(a) Any sanitary landfill subject to regulation pursuant to N.J.A.C. 7:26-2A.1(c) shall contain a leachate containment system, leachate collection system, leachate treatment/disposal system, gas venting system, surface drainage control system, monitoring system, a final capping system and any other system or environmental control measure required by the Department, and shall be designed and constructed in accordance with the performance standards set forth in this section.

(b) In the design and construction of a sanitary landfill subject to regulation pursuant to N.J.A.C. 7:26-2A.1(c), consideration shall be given to ground and surface water conditions, geology, soils, topographic features, solid waste types and quantities, social, geographic and economic factors, and esthetic and environmental impacts in order to protect the environment and to minimize and control adverse impacts.

(c) The following are the performance standards for sanitary landfills:

1. The sanitary landfill shall not cause or result in any decrease in the quality of the ground or surface water over background at the relevant point of compliance of the sanitary landfill, within the uppermost aquifer or surface water adjacent to the sanitary landfill, beyond that allowed by N.J.A.C. 7:9B, Ground Water Quality Standards or N.J.A.C. 7:9-6, Surface Water Quality Standards, as applicable. The relevant point of compliance means the property boundary of the sanitary landfill, or 150 meters from the toe of slope of the landfilled area, whichever is less.

(d) For a sanitary landfill located in a stable low permeable defined geologic formation having a hydraulic conductivity of less than 1×10^{-6} cm/sec., the standard for the design for the containment and leachate collection systems shall consist, at a minimum, of the following:

1. An impervious liner consisting of three feet of clay or soil admixture having a hydraulic conductivity equal to or less than 1×10^{-7} cm/sec. designed and constructed in accordance with N.J.A.C. 7:26-2A.7(c); and

2. A leachate collection system consisting of a one foot sand drainage layer having a hydraulic conductivity equal to or greater than 1×10^{-2} cm/sec. The collection pipe spacing and liner slope shall be designed to ensure that the leachate head on the liner does not exceed one foot at any time based on actual flows from the area of drainage at real time events. The leachate collection system shall be constructed as specified in N.J.A.C. 7:26-2A.7(d);

3. An applicant may submit an alternate design for the containment and leachate collection system. The Department will only approve such alternate design if the applicant is able to demonstrate, to the satisfaction of the Department, that the alternate system design is an equivalent system in terms of structural integrity as (d)1 and 2 above, meets or exceeds the performance and efficiency requirements of (d)1 and 2 above and meets the performance standard established in (c) above.

(e) The standard design for all sanitary landfills, except as noted in (e)1 below, not located in stable low permeable geologic formations of sufficient thickness, having a hydraulic conductivity of less than 1×10^{-6} cm/sec., shall, at a minimum, construct a composite liner system consisting of a geomembrane liner in compressive contact with a two-foot layer of compacted clay or admixture liner with a hydraulic conductivity of no more than 1×10^{-7} cm/sec. The design and performance of the sanitary landfill shall insure an environmentally sound operation with consideration given to the geology, groundwater quality and groundwater usage of the area.

1. A sanitary landfill located in a geologic area in which the bedrock is at or near the surface and that serves as a direct source for a public community water system, shall, at a minimum, have a containment system consisting of a double composite liner system. The primary and secondary geomembrane liners in the double composite liner system shall be in compressive contact with a clay or admixture liner below the geomembrane liner. A leak detection/collection system shall be located between the primary composite liner and the secondary composite liner.

(f) The evaluation of the performance of the sanitary landfill in the geologic formation within which it is located shall be analyzed with a three-dimensional mass transport model. A two-dimensional mass transport model may be utilized, if approved by the Department, after the applicant demonstrates that the configuration of the site specific geology of vertical versus horizontal extent allows for an evaluation equal to an evaluation resulting from a three-dimensional mass transport model. The mass transport model shall have the capacity to represent the real world situation in accordance with the requirements set forth at Appendix A. Sanitary landfills that employ a double composite liner system are exempt from the requirements of this subsection.

(g) All sanitary landfills regulated pursuant to N.J.A.C. 7:26-2A.1(c) shall be designed and constructed, in accordance with (h) below, to protect environmentally sensitive areas including, but not limited to, the following:

1. The flood fringe areas of the flood hazard area as identified by the Department pursuant to the State Flood Hazard Area Control Act, N.J.S.A. 58:16A-50 et seq.;

2. Wetland buffer areas as identified by the Department pursuant to the Wetlands Coastal Resource and Development Policies, N.J.A.C. 7:7E;

3. Lands in municipally approved farmland preservation programs, farmland preservation programs or lands which have been dedicated to agricultural use by the purchase of their development easements pursuant to the provisions of the Agriculture Retention and Development Act, N.J.S.A. 4:1C-11 et seq., or equivalent independent county/municipal programs;

4. The watershed area for waters classified by the Department as FW-1 waters or FW-2 Trout Protection Water pursuant to the Surface Water Quality Standards, N.J.A.C. 7:9-4;

5. Areas within 1000 feet of any lake or pond and 500 feet of any river or stream;

6. The Pinelands Area as established by N.J.S.A. 13:18A-11a of the Pinelands Protection Act, N.J.S.A. 13:18A-1 et seq.;

7. Areas directly underlain by cavernous limestone, dolomite, or marble;

8. Areas directly overlying past or present subsurface mining activities;

9. Areas within three miles from either end of the nearest runway of any public-use airport owned by a public agency or designated by the Federal Aviation Administration as a reliever airport as determined by the Division of Aeronautics of the New Jersey Department of Transportation;

10. Areas which will encroach upon, damage or destroy any area, site, structure, or object included in the Register of Historic Places established by N.J.S.A. 13:1B-15.128 et seq.;

11. Within the buffer zone area of specimen trees as determined and defined by the Division of Parks and Forestry; and

12. Areas with slopes exceeding 15 percent.

(h) In order to protect the environmentally sensitive areas identified in (g) above, the Department shall require the design, construction and operation of additional control systems or increased performance of the required systems to minimize and control adverse impacts and prevent pollution. The Department will consider documentation, submitted by the applicant, demonstrating that the topographical and geological conditions, in conjunction with the design, construction, operation and maintenance of the sanitary landfill in accordance with this subchapter, will adequately prevent pollution of the environmentally sensitive area.

1. The additional environmental control systems or increased performance of the systems required to protect the environmentally sensitive areas identified in (g) above shall at a minimum include the following for the particular identified area:

| | Environmentally Sensitive Area Impacted | Type of System Upgrading Required |
|------|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| i. | Flood fringe areas of flood hazard area, N.J.A.C. 7:26-2A.6(g)1; | Upgrading of the surface drainage system. Increase in the design storm size; |
| ii. | Wetlands buffer areas, N.J.A.C. 7:26-2A.6(g)2; | Upgrading of the surface drainage system. Increase in the design storm size; |
| iii. | Lands in farmland preservation programs or municipally approved farmland preservation programs, N.J.A.C. 7:26-2A.6(g)3; | Site configuration restrictions; Operational restrictions; |
| iv. | Watershed areas of FW-1 water or FW-2 Trout Production Waters, N.J.A.C. 7:26-2A.6(g)4; | Upgrading of the surface drainage system. Increase in the design storm size; |
| v. | 1000 feet of lakes or ponds and 500 feet of rivers or streams, N.J.A.C. 7:26-2A.6(g)5; | Upgrading of the surface drainage system. Increase in the design storm size; |
| vi. | Pinelands Protection Area, N.J.A.C. 7:26-2A.6(g)6; | Upgrading of the surface drainage system. Increase in the design storm size; |
| vii. | Cavernous limestone, dolomite and marble, N.J.A.C. 7:26-2A.6(g)7; | Site configuration restrictions; Upgrading of the subgrade support; Upgrading of the surface drainage system; |

| | Environmentally Sensitive Area Impacted | Type of System Upgrading Required |
|-------|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| viii. | Subsurface mining, N.J.A.C. 7:26-2A.6(g)8; | Site configuration restrictions; Upgrading of the subgrade support; |
| ix. | Three miles to public use airport, N.J.A.C. 7:26-2A.6(g)9; | Operational restrictions; |
| x. | Historic site preservation, N.J.A.C. 7:26-2A.6(g)10; | Site configuration restrictions; |
| xi. | Buffer zones of specimen trees, N.J.A.C. 7:26-2A.6(g)11; | Site configuration restrictions; |
| xii. | Slopes exceeding 15 percent, N.J.A.C. 7:26-2A.6(g)12; | Site configuration restrictions; Upgrading of the surface drainage system. Increase in the designed storm size. |

(i) Sanitary landfill setback areas and buffer zones shall be designed and constructed in accordance with the following:

1. In areas in which the groundwater flow velocity, in the geologic formation in which the proposed sanitary landfill will be located, is equal to or greater than one foot per day, the minimum setback area shall be 300 feet from the toe of the slope of the landfill to the property boundary line.

2. In areas in which the groundwater flow velocity, in the geologic formation in which the proposed sanitary landfill will be located, is less than one foot per day, the setback may be reduced based on the geology and topography of the area, the groundwater quality and usage, and the performance standards set forth in (c) above and as determined in accordance with (f) above, but in no case shall the setback area be less than 150 feet.

3. A greater separation than that required by (i)1 or 2 above may be required based on the geology and topography of the area, the groundwater quality, usage, and proximity of potable water wells and the performance standards set forth at (c) above and as determined in accordance with (f) above to prevent pollution within the aquifers.

4. A minimum of 50 feet of buffer zone within the setback area shall be maintained at all landfills.

(j) Reductions in the performance of the sanitary landfill set forth in (d) and (e) above and the design standards and construction requirements set forth in N.J.A.C. 7:26-2A.7 for Class II and III sanitary landfills shall be permitted by the Department based upon the following:

1. The performance required of Class II sanitary landfills shall be based upon the waste type to be disposed of at the sanitary landfill and shall be in accordance with the following analyses:

i. Historical data of the waste type proposed to be disposed of at the sanitary landfill demonstrating the degradation and immobilization of the waste within the soil matrix under similar conditions; or

ii. An analysis, by a New Jersey certified laboratory, of a composite sample of the waste, which shall include, but not be limited to, the following:

(1) A total analysis of metals listed in N.J.A.C. 7:26G-5 (40 C.F.R. 261.24), performed in accordance with the most current version of the American Water Works Association, AWWA Standard Method, Part 300;

(2) Extraction procedures for the metals listed in N.J.A.C. 7:26G-5 (40 C.F.R. 261.24) using an extractant at a pH of 5 and with site water shall be performed in accordance with the most current version of the USEPA "Test Methods for Evaluating Solid Waste," SW 846 USEPA, Section 2 and USEPA "Solid Waste Leaching Procedure SW 924;"

(3) Steam distillation of any suspected organic shall be performed in accordance with the most current version of the USEPA "Test Methods for Evaluating Solid Waste SW 846;" Section 4.

iii. Background analysis shall be performed on soils taken from the proposed site in accordance with (j)ii(1) and (2) above.

iv. Split sampling, if required, shall be performed concurrently with the Department at a time and place to be agreed upon by the applicant and the Department. A certified copy of the bill for the Department's analysis of the waste and soils for split sampling performed in accordance with (j)lii and iii above, shall be forwarded to the applicant, who shall pay the bill within 30 days thereafter. Payment of the bill in full shall be a condition of the final permit approval; and

v. A mass transport model meeting the requirements of (f) above shall be used to analyze the extent of any possible potential contaminant migration based on the site geology and groundwater flow at a maximum discharge rate.

2. The design standards and construction requirements set forth at N.J.A.C. 7:26A-2.7 may be reduced in as approved by the Department for Class II sanitary landfills as determined based upon the waste analysis performed in accordance with (j)1 above and the following:

i. Site access control and security;

ii. Length and scale of the operation; and

iii. Location of the proposed sanitary landfill in regards to the following:

(1) Geologic location in accordance with (d) and (e) above;

(2) Impacts on environmentally sensitive areas in accordance with (g) and (h) above;

(3) Groundwater flow velocity in accordance with (i)1 and 2 above; and

(4) The geologic and groundwater impacts and the geotechnical analysis needed for the two-dimensional model shall be determined based upon a preliminary investigation performed in accordance with N.J.A.C. 7:26-2A.5(a)6.

3. The performance required for Class III sanitary landfills may be reduced and Class III sanitary landfills may be exempted from one or more of the design standards or construction requirements of N.J.A.C. 7:26-2A.7 based on the following:

- i. Site access control and security;
- ii. Length and scale of the disposal operation; and
- iii. Location of the landfill in regards to the following:

(1) Geologic location in accordance with (d) and (e) above;

(2) Impacts on environmentally sensitive areas in accordance with (g) and (h) above; and

(3) Groundwater flow velocity in accordance with (i)1 and 2 above.

Amended by R.1990 d.578, effective November 19, 1990.

See: 22 N.J.R. 2882(a), 22 N.J.R. 3514(a).

Design requirement changed from 200 feet to 20 feet at (g)15.

Amended by R.1996 d.500, effective October 21, 1996.

See: 28 N.J.R. 1693(a), 28 N.J.R. 4606(a).

Amended by R.1996 d.578, effective December 16, 1996.

See: 28 N.J.R. 2114(a), 28 N.J.R. 5248(a).

Substantially amended (c), (e), (g) and (h); in (d), inserted text "The alternative design"; in (d)1, inserted reference to soil admixture; and in (f), added last sentence.

Administrative correction.

See: 29 N.J.R. 127(a).

Amended by R.2002 d.181, effective June 17, 2002.

See: 33 N.J.R. 4218(a), 34 N.J.R. 2049(a).

In (c)1, substituted "of" for "or" following "from the toe"; in (d), substituted "For" for "The alternate design for".

7:26-2A.7 Sanitary landfill engineering design standards and construction requirements

(a) The following are the general sanitary landfill engineering design standards and construction requirements:

1. All sanitary landfills regulated by N.J.A.C. 7:26-2A.1(c) shall be designed and constructed with a leachate containment system, leachate collection system, leachate treatment/disposal system, monitoring system, a surface drainage control system, gas venting system, a final capping system and any other systems or control measures required pursuant to the design standards and construction requirements set forth in this subchapter, unless exempted by N.J.A.C. 7:26-2A.6(j)3;

2. An on-site baseline consisting of two vertical and horizontal control monuments shall be constructed and installed in accordance with the New Jersey Map Filing

Law, N.J.S.A. 46:23-9, and Department specifications, as provided in "Guidelines for Establishing Vertical and Horizontal Control Monuments on a Sanitary Landfill" contained in the technical manual entitled Division of Solid Waste Management, Bureau of Landfill Engineering, Landfill Permits, prepared and made available by the Department.

i. The control monuments shall be installed with, at a minimum, Second Order accuracy in accordance with the "Classification, Standards of Accuracy, and General Specifications of Geodetic Control Survey" published by the U.S. Department of Commerce 1980. The control monuments shall be tied into the national or state geodetic survey network and keyed into the North American Datum of 1983.

ii. Sanitary landfills equal to or greater than 50 acres may be required to construct and install secondary control points in accordance with the Department's specifications listed in "Guidelines for Establishing Vertical and Horizontal Control Monuments on a Sanitary Landfill".

3. The sanitary landfill shall be constructed with a modular design. Each section of the modular design shall be hydraulically isolated from the adjoining section.

4. The degree of hydraulic isolation shall be determined based on the location of the landfill, and shall at a minimum include the following:

i. Sanitary landfills located in areas described in N.J.A.C. 7:26-2A.6(d) and (e), shall, at a minimum, include a temporary berm capable of isolating run-on from adjoining areas and run-off from the active landfill area and contain leachate generated within the sanitary landfill section.

ii. Sanitary landfills located in areas described in N.J.A.C. 7:26-2A.6(e)1 which require, at a minimum, a double composite liner system and a leak detection system shall be designed so that each section drains, at a minimum, to separate sumps capable of isolating any potential leaks from that section.

5. The construction and operation of the modular sanitary landfill design should be initiated in the section which is most down gradient in relation to groundwater flow. Alternative designs to meet this requirement are acceptable in areas where the topography, such as steep surrounding slopes, make this requirement environmentally unsound.

6. The size of each section shall be designed to minimize the exposed active areas.

7. A quality assurance inspector, independent of the quality control inspector, approved by the Department and reporting directly to the Department, shall be at the site at all times during the initial construction phase of the containment and leachate collection systems to observe and perform all required systems audits of the

quality control inspections, as set forth at (a)8, 9 and 10 below, to insure proper implementation of the design and permit requirements. For the purposes of this section, quality assurance means the periodic testing and observations performed by the owner and/or operator of a landfill as a check on the construction contractor's quality control activities.

8. A meeting shall be held between the quality assurance inspectors and the Department to establish reporting procedures and frequency, in accordance with the construction scheduling.

9. Quality control inspectors shall be at the site during all phases of construction to ensure and verify that the approved sanitary landfill design and SWF permit landfill construction requirements are properly implemented. The quality control inspectors shall, at a minimum, be at the site at all times during the construction of the containment and leachate collection systems. For the purposes of this section, quality control means those activities and responsibilities assigned to the construction contractor, manufacturer, installer or supplier to measure and regulate the characteristics or properties of an item in order to ensure that the applicable landfill construction requirements at N.J.A.C. 7:26-2A.7, SWF permit conditions and the requirements of (a)12 and 13 below are met. This includes those actions taken before, during, or after construction to ensure that the materials used and the completed workmanship are in conformance with the construction requirements at N.J.A.C. 7:26-2A.7 and the SWF permit.

10. The quality control measures and tests required by this subchapter and described in the QA and QC plan submitted in accordance with N.J.A.C. 7:26-2A.5(a)7 shall be employed to ensure that the construction requirements are properly implemented and that the design and performance standards are achieved.

11. The quality control inspector shall inspect those aspects of the subgrade preparation including, but not limited to, the following:

- i. Site preparation, clearing, and grubbing;
- ii. Excavation of subgrade to required elevations;
- iii. Subgrade preparation to eliminate incompatibilities with the liner system;
- iv. Proper application of vegetation suppressant;
- v. Compaction of subgrade to design density at proper moisture content to achieve required strength and stability to support the liner;
- vi. Moisture content density and field strength tests performed as required;
- vii. Compacted lift thickness;
- viii. Compaction equipment, weight, speed, and number of passes;

ix. Method of moisture addition;

x. Proof-rolling of subgrade;

xi. Fine finishing of the subgrade to required grades; and

xii. Final inspection of the subgrade for acceptability of area to be lined.

12. The quality control inspector shall inspect those aspects of the containment system including, but not limited to the following:

i. Liner material to ensure that the material being used meets specifications;

ii. Liner material stockpiling, storage, and handling to prevent damage;

iii. Inlet/outlet structure or penetration through the liner to ensure compatibility with the liner system;

iv. Final grades of liner to ensure that they are within acceptable tolerances;

v. Final inspection of liner for acceptability prior to backfill placement;

vi. Backfill placement;

vii. Geotextile placement;

viii. Compacted liners with respect to the following:

(1) Compaction of liner to design density at the proper moisture content to achieve the required hydraulic conductivity and maintain strength and stability;

(2) Uniformity of compactive effort;

(3) Compacted lift thickness;

(4) Compacted liner thickness;

(5) Compaction equipment weight, speed, and number of passes;

(6) Moisture content, density, hydraulic conductivity and field infiltration tests to ensure that they are performed as required;

(7) Mixing and blending of liner material to ensure that the activity is being performed as required; and

(8) Repairs and corrective or remedial action performed as required.

ix. Geomembranes with respect to the following:

(1) Liner panel placement is in accordance with required configuration;

(2) Permanent and temporary anchoring procedures are followed;

(3) The overlap and seam width are in accordance with the design;