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Department of Environmental Quality
Office of Environmental Assessment

ADVANCED NOTICE OF RULEMAKING

The Louisiana Department of Environmental Quality is requesting comments on the draft proposed regulation for the new sewage sludge program. This draft proposal was developed by the department in partial response to the state's assumption of the federal National Pollutant Discharge Elimination System (NPDES) program and R.S. 2074.B.(3)(e). The Department is requesting comments on the draft regulation prior to preparing an official proposed regulation. This is a preliminary step in the rulemaking process. Official rulemaking will be initiated after review and consideration of the comments received on this advance notice. At proposal time, the rule will be presented as separate federal and state packages as required by the Administrative Procedure Act. All interested persons are invited to submit written comments on the draft proposal.

The draft proposed regulation establishes standards, which consist of general and other requirements, pollutant limits, general and other management practices, and operational standards, for the final use or disposal of sewage sludge generated during the treatment of domestic sewage in a treatment works. Standards are included in this draft proposed regulation for sewage sludge applied to the land, placed on a surface disposal site, or fired in a sewage sludge incinerator. Also included are pathogen and alternative vector attraction reduction requirements for sewage sludge applied to the land or placed on a surface disposal site. The standards in this draft proposed regulation include the frequency of monitoring, recordkeeping, and reporting requirements. The reporting requirements apply to the person who prepares sewage sludge or a material derived from sewage sludge that is applied to the land or placed on a surface disposal site, the person who applies or places domestic septage, sewage sludge, or a material derived from sewage sludge to the land or on a surface disposal site, the owner/operator of a surface disposal site, the person who prepares the sewage sludge that is fired in a sewage sludge incinerator, and the owner/operator of a sewage sludge incinerator. In addition to the proposed sewage sludge regulation, changes will occur in LAC 33:IX.Chapter 23 comparable to the changes made by EPA to 40 CFR Parts 122, 124, and 403.

The basis for drafting this regulation is to adopt a set of regulations that would be more in line with the regulations that are presently being used by EPA for the final use and disposal of sewage sludge. Changes are being proposed to the EPA regulations that the Department considers necessary for the protection of human health and the environment. An important change was made to encourage the beneficial use of exceptional quality sludge. The adoption of this regulation will also prepare the Department for future assumption of the Sewage Sludge Program.

All interested persons are invited to submit written comments on the draft proposal.

Commentors should reference this draft proposal by WP034. Such comments must be received no later than September 20, 1999, at 4:30 p.m., and should be sent to Patsy Deaville, Environmental Planning Division, Box 82178, Baton Rouge, LA 70884 or to fax number (504) 765-0486. If you have any questions regarding the content of this draft proposed regulation, please contact Mr. J. Kilren Vidrine, Office of Environmental Assistance, at (225) 765-0534. Copies of this draft proposal can be purchased at the above referenced address. You may contact the Environmental Planning Division at (504) 765-0399 for pricing information. Check or money order is required in advance for each copy of the draft proposal WP034.

This draft proposal is available for inspection at the following DEQ office locations from 8 a.m. until 4:30 p.m.: 7290 Bluebonnet Boulevard, Fourth Floor, Baton Rouge, LA 70810; 804 Thirty-First Street, Monroe, LA 71203; State Office Building, 1525 Fairfield Avenue, Shreveport, LA 71101; 3519 Patrick Street, Lake Charles, LA 70605; 3501 Chateau Boulevard, West Wing, Kenner, LA 70065; 100 Asma Boulevard, Suite 151, Lafayette, LA 70508; 104 Lococo Drive, Raceland, LA 70394 . This draft proposed regulation is also available on the Internet at http://www.deq.state.la.us/planning/regs/addition/addto99.htm.

James Brent
Assistant Secretary

Subchapter X: STANDARDS FOR THE USE OR DISPOSAL OF SEWAGE SLUDGE

§3101: General Provisions

§3103 Land Application

§3105 Surface Disposal

Title 33
ENVIRONMENTAL QUALITY
Part IX. Water Quality Regulations

Chapter 23. The Louisiana Pollution Discharge Elimination System (LPDES) Program

Subchapter X. Standards For The Use Or Disposal Of Sewage Sludge

§3101. General Provisions

A. Purpose and applicability.

1. *Purpose*

a. This subchapter establishes standards, which consist of general and other requirements, pollutant limits, general and other management practices, and operational standards, for the final use or disposal of sewage sludge generated during the treatment of domestic sewage in a treatment works. Standards are included in this subchapter for sewage sludge applied to the land, placed on a surface disposal site, or fired in a sewage sludge incinerator. Also included in this subchapter are pathogen and alternative vector attraction reduction requirements for sewage sludge applied to the land or placed on a surface disposal site.

b. In addition, the standards in this subchapter include the frequency of monitoring and recordkeeping requirements when sewage sludge is applied to the land, placed on a surface disposal site, or fired in a sewage sludge incinerator. Also included in this subchapter are reporting requirements for the person who prepares sewage sludge or a material derived from sewage sludge which is applied to the land or placed on a surface disposal site, the person who applies domestic septage, sewage sludge or a material derived from sewage sludge to the land or place domestic septage, sewage sludge or a material derived from sewage sludge on a surface disposal site, the owner/operator of a surface disposal site, the person who prepares the sewage sludge which is fired in a sewage sludge incinerator, and the owner/operator of a sewage sludge incinerator.

2. *Applicability*.

a. This subchapter applies to any person who prepares sewage sludge or a material derived from sewage sludge, applies domestic septage, sewage sludge or a material derived from sewage sludge to the land or place domestic septage, sewage sludge or a material derived from sewage sludge on a surface disposal site, the owner/operator of a surface disposal site, and the owner/operator of a sewage sludge incinerator.

b. This subchapter applies to sewage sludge applied to the land, placed on a surface disposal site, or fired in a sewage sludge incinerator.

c. This subchapter applies to the exit gas from a sewage sludge incinerator stack.

d. This subchapter applies to land where sewage sludge is applied, to a surface disposal site, and to a sewage sludge incinerator.

B. Compliance period.

1. Compliance with the standards in this subchapter shall be achieved as expeditiously as practicable, but in no case later than February 19, 1994. When compliance with the standards requires construction of new pollution control facilities, compliance with the standards shall be achieved as expeditiously as practicable, but in no case later than February 19, 1995.

2. The requirements for frequency of monitoring, recordkeeping, and reporting in this subchapter for total hydrocarbons in the exit gas from a a sewage sludge incinerator are effective February 19, 1994 or, if compliance with the operational standard for total hydrocarbons in this subchapter requires the construction of new pollution control facilities, February 19, 1995.

3. All other requirements for frequency of monitoring, recordkeeping, and reporting in this subchapter are effective on July 20, 1993.

4. Unless otherwise specified in LAC 33:IX.3109, compliance with the requirements in LAC 33:IX.3109 of this Subchapter that were revised on **[insert the effective date of this final rule]** shall be achieved as expeditiously as practicable, but in no case later than **[insert the date 12 months from the effective date of this final rule]**. When new pollution control facilities must be constructed to comply with the revised requirements in LAC 33:IX.3109, compliance with the revised requirements shall be achieved as expeditiously as practicable but no later than **[insert the date that is 24 months from the effective date of this rule]**.

C. Sewage sludge Disposed in a Municipal Solid Waste Landfill:

1. Sewage sludge shall only be disposed at a municipal solid waste landfill which has an approved permit issued under LAC 33:VII or subtitle C of the Solid Waste Disposal Act.

2. The person who prepares the sewage sludge shall provide the necessary information to the owner/operator of the landfill where the sewage sludge is to be disposed to assure that the landfill will be in compliance with its permit requirements.

3. The person who prepares the sewage sludge shall provide proof to the state administrative authority that the sewage sludge is being disposed at an approved landfill by furnishing the name, address, and permit number of the landfill to the state administrative authority.

D. Additional or more stringent requirements.

On a case-by-case basis, the permitting authority may impose requirements for the use or disposal of sewage sludge in addition to or more stringent than the requirements in this subchapter when necessary to protect public health and the environment from any adverse effect of a pollutant in the sewage sludge.

E. Exclusions.

1. *Treatment processes*. This subchapter does not establish requirements for processes used to treat domestic sewage or for processes used to treat sewage sludge prior to final use or disposal, except as provided in LAC 33:IX.3107.C and LAC 33:IX.3107.D.

2. *Selection of a use or disposal practice*. This subchapter does not require the selection of a sewage sludge use or disposal practice. The determination of the manner in which sewage sludge is used or disposed is a local determination.

3. *Co-firing of sewage sludge*. This subchapter does not establish requirements for sewage sludge co-fired in an incinerator with other wastes or for the incinerator in which sewage sludge and other wastes are co-fired. Other wastes do not include auxiliary fuel, as defined in LAC 33:IX.3109.B, fired in a sewage sludge incinerator.

4. *Sludge generated at an industrial facility*. This subchapter does not establish requirements for the use or disposal of sewage sludge generated at an industrial facility during the treatment of industrial wastewater, including sewage sludge generated during the treatment of industrial wastewater combined with domestic sewage.

5. *Hazardous sewage sludge*.

a. This subchapter does not establish requirements for the use or disposal of sewage sludge determined to be hazardous in accordance with 40 CFR part 261 and LAC 33:V.

b. This subchapter does not establish requirements for sewage sludge which has been blended, composted, or mixed with characteristics hazardous waste whose codes are those other than D001, D002, or D003. Sewage sludge mixed with any other characteristics hazardous waste codes are regulated under LAC 33:V.

6. *Sewage sludge with high PCB concentration*. This subchapter does not establish requirements for the use or disposal of sewage sludge with a concentration of polychlorinated biphenyls (PCBs) equal to or greater than 50 milligrams per kilogram of total solids (dry weight basis).

7. *Incinerator ash*. This subchapter does not establish requirements for the use or disposal of ash generated during the firing of sewage sludge in a sewage sludge incinerator.

8. *Grit and screenings*. This subchapter does not establish requirements for the use or disposal of grit (e.g., sand, gravel, cinders, or other materials with a high specific gravity) or screenings (e.g., relatively large materials such as rags) generated during preliminary treatment of domestic sewage in a treatment works.

9. *Drinking water treatment sludge*. This subchapter does not establish requirements for the use or disposal of sludge generated during the treatment of either surface water or ground water used for drinking water.

10. *Commercial and industrial septage*. This subchapter does not establish requirements for the use or disposal of commercial septage, industrial septage, a mixture of domestic septage and commercial septage, or a

mixture of domestic septage and industrial septage.

11. *Commercial sewage sludge blenders, composters, mixers, and processors.* This subchapter does not establish requirements for the siting of facilities used for the commercial blending, composting, mixing, and processing of sewage sludge which are required to obtain a permit under LAC 33:VII.

12. *Transporters and Haulers of sewage sludge or domestic septage.* This subchapter does not establish requirements for the transporting and hauling of sewage sludge or domestic septage.

F. Permit and Permitting Requirements.

1. No person shall prepare sewage sludge, or own or operate a sewage sludge surface disposal site or a sewage sludge incinerator, or apply sewage sludge, a material derived from sewage sludge or domestic septage to the land or on a surface disposal site without first obtaining a permit which authorizes such use in accordance with the applicable requirements of this subchapter and other applicable requirements in LAC 33:IX.Chapter 23.

2. a. The person who applies sewage sludge or a material derived from sewage sludge to the land is exempt from the requirement of obtaining a permit if the person applies sewage sludge or a material derived from sewage sludge which is issued an Exceptional Quality Certification under LAC 33:IX.3103.J of this subchapter and that person provides proof to the state administrative authority that the sewage sludge or a material derived from sewage sludge has an Exceptional Quality Certification.

b. The state administrative authority may exempt any other person who applies sewage sludge or a material derived from sewage sludge to the land from the requirement of obtaining a permit, on a case-by-case basis, after determining that the public health and the environment will not be adversely affected by the application of sewage sludge to the land.

3. Permits issued in accordance with the applicable requirements of this subchapter and other applicable requirements in LAC 33:IX.Chapter 23 to the owner/operator of a sewage sludge incinerator and for the sewage sludge fired in a sewage sludge incinerator shall satisfy the permitting requirement at R.S. 30.2055 (permit for the discharge of air contaminants). However, the permit shall contain adequate provisions to satisfy the applicable requirements in LAC 33:III and the requirements in subpart O of 40 CFR Part 60 which are not addressed in LAC 33:IX.3109 of this subchapter.

4. All treatment works treating domestic sewage, as defined in LAC 33:IX.3101.H, who generate sewage sludge shall keep a record of the annual production of sewage sludge (i.e. dry ton or dry metric tons) and of the sewage sludge management practice used and shall submit the information to the state administrative authority on February 19 of each year.

G. Sampling and analysis.

1. *Sampling*. Representative samples of sewage sludge that is applied to the land, placed on a surface disposal site, or fired in a sewage sludge incinerator shall be collected and analyzed.

2. *Methods*. The materials listed below are incorporated by reference in this subchapter. These incorporations by reference were approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. The materials are incorporated as they exist on the date of approval, and notice of any change in these materials will be published in the Federal Register. They are available for inspection at the Office of the Federal Register, 7th Floor, suite 700, 800 North Capitol Street, NW., Washington, DC, and at the Office of Water Docket, room L-102, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC. Copies may be obtained from the standard producer or publisher listed in the regulation. Methods in the materials listed below shall be used to analyze samples of sewage sludge.

a. *Enteric viruses*. ASTM Designation: D 4994-89, ``Standard Practice for Recovery of Viruses From Wastewater Sludges'', 1992 Annual Book of ASTM Standards: Section 11--Water and Environmental Technology, ASTM, 1916 Race Street, Philadelphia, PA 19103-1187.

b. *Fecal coliform.* Part 9221 E. or Part 9222 D., ``Standard Methods for the Examination of Water and Wastewater'', 18th Edition, 1992, American Public Health Association, 1015 15th Street, NW., Washington, DC 20005.

c. *Helminth ova.* Yanko, W.A., ``Occurrence of Pathogens in Distribution and Marketing Municipal Sludges'', EPA 600/1-87-014, 1987. National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161 (PB 88-154273/AS).

d. *Inorganic pollutants.* ``Test Methods for Evaluating Solid Waste, Physical/Chemical Methods'', EPA Publication SW-846, Second Edition (1982) with Updates I (April 1984) and II (April 1985) and Third Edition (November 1986) with Revision I (December 1987). Second Edition and Updates I and II are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161 (PB-87-120-291). Third Edition and Revision I are available from Superintendent of Documents, Government Printing Office, 941 North Capitol Street, NE., Washington, DC 20002 (Document Number 955-001-00000-1).

e. *Salmonella sp. bacteria.* Part 9260 D., ``Standard Methods for the Examination of Water and Wastewater'', 18th Edition, 1992, American Public Health Association, 1015 15th Street, NW., Washington, DC 20005; or Kenner, B.A. and H.P. Clark, ``Detection and enumeration of *Salmonella* and *Pseudomonas aeruginosa*'', Journal of the Water Pollution Control Federation, Vol. 46, no. 9, September 1974, pp. 2163-2171. Water Environment Federation, 601 Wythe Street, Alexandria, Virginia 22314.

f. *Specific oxygen uptake rate.* Part 2710 B., ``Standard Methods for the Examination of Water and Wastewater'', 18th Edition, 1992, American Public Health Association, 1015 15th
Street, NW., Washington, DC 20005.

g. *Total, fixed, and volatile solids.* Part 2540 G., ``Standard Methods for the Examination of Water and Wastewater'', 18th Edition, 1992, American Public Health Association, 1015 15th Street, NW., Washington, DC 20005.

H. General definitions. In addition to the terms defined at LAC 33:IX.2313 and LAC 33:IX.2403, the following definitions shall apply to this Subchapter:

Apply sewage sludge or sewage sludge applied to the land-means land application of sewage sludge.

Base flood-is a flood that has a one percent chance of occurring in any given year (i.e., a flood with a magnitude equaled once in 100 years).

Beneficial use-is using sewage sludge or a material derived from sewage sludge through *land application* for the purpose of soil conditioning, or crop or vegetative fertilization in a manner which does not pose adverse effects upon human health and the environment or cause any deterioration of land surfaces, soils, surface waters, or groundwater.

Cover crop-is a small grain crop, such as oats, wheat, or barley, not grown for harvest.

Domestic septage-is either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic sewage. Domestic septage does not include liquid or solid material removed from a septic tank, cesspool, or similar treatment works that receives either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant.

Domestic sewage-is waste and wastewater from humans or household operations that is discharged to or otherwise enters a treatment works.

Dry weight basis—means calculated on the basis of having been dried at 105 degrees Celsius until reaching a constant mass (i.e., essentially 100 percent solids content).

Exceptional Quality—is sewage sludge or a material derived from sewage sludge which meets the ceiling concentrations in Table 1 of §3103.D, the pollutant concentrations in Table 3 of §3103.D, the Class A pathogen requirements in LAC 33:IX.3107.C.1, one of the vector attraction reduction requirements in LAC 33:IX.3107.D.2.a through 2.h, and the concentration of PCB’s of less than 10 mg/kg (dry weight).

Feed crops—are crops produced primarily for consumption by animals.

Fiber crops—are crops such as flax and cotton.

Food crops—are crops consumed by humans. These include, but are not limited to, fruits, vegetables, and tobacco.

Ground water—is water below the land surface in the saturated zone.

Industrial wastewater—is wastewater generated in a commercial or industrial process.

Land application—is the spraying or spreading onto the land surface, the injection below the land surface, or the incorporation into the soil of sewage

sludge or a material derived from sewage sludge.

Permitting authority—is either EPA or a State with an EPA-approved sludge management program.

Person who prepares sewage sludge—is either the person who generates sewage sludge during the treatment of domestic sewage in a treatment works or the person who derives a material from sewage sludge.

Place sewage sludge or sewage sludge placed—means disposal of sewage sludge on a surface disposal site.

Pollutant—is an organic substance, an inorganic substance, a combination of organic and inorganic substances, or a pathogenic organism that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food chain, could, on the basis of information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction), or physical deformations in either organisms or offspring of the organisms.

Pollutant limit—is a numerical value that describes the amount of a pollutant allowed per unit amount of sewage sludge (e.g., milligrams per kilogram of total solids); the amount of a pollutant that can be applied to a unit area of land (e.g., kilograms per hectare); or the volume of a material that can be applied to a unit area of land (e.g., gallons per acre).

Runoff—is rainwater, leachate, or other liquid that drains overland on any part of a land surface and runs off of the land surface.

Store or storage of sewage sludge—is the placement of sewage sludge on land on which the sewage sludge remains for two years or less. This does not include the placement of sewage sludge on land for treatment.

Treat or treatment of sewage sludge—is the preparation of sewage sludge for final use or disposal. This includes, but is not limited to, thickening, stabilization, and dewatering of sewage sludge. This does not include storage of sewage sludge.

Treatment works—is either a federally owned, publicly owned, or privately owned device or system used to treat (including recycle and reclaim) either domestic sewage or a combination of domestic sewage and industrial waste of a liquid nature.

Treatment works treating domestic sewage—shall be the following for the purpose of this subsection: 1. a publicly owned treatment works or privately owned wastewater treatment device or system regardless of ownership, used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage; 2. The preparer of sewage sludge, the owner/operator of a surface disposal site, the owner/operator of a sewage sludge incinerator, and 3. The person who applies sewage sludge or domestic septage to the land or places sewage sludge or domestic septage on a surface disposal site.

I. Additional Application Requirements. In addition to the application

requirements in Subchapter B, the person who applies domestic septage or the person who has not received an exemption in LAC 33:IX.3101.F.2.a or 2.b and applies sewage sludge or a material derived from sewage sludge to the land shall provide the information in LAC 33:IX.3101.I.1 through I.18 and the owner/operator of a surface disposal site shall provide the information in LAC 33:IX.3101.I.1 through I.15 to the state administrative authority at the time of permit application, unless the state administrative authority determines that such information is not required for the applicant's activity or facility:

1. Name, address, and telephone number of the land owner and lessee (if any).

2. Identification of the proposed individual site and name designation by which it is to be know.

3. Documentation of the applicant's right to use the site, including time restrictions, if any.

4. Land use description of general area within one (1) mile of the proposed site's boundaries.

5. Land use descriptions of the site and adjacent property, including present zoning classifications and current and anticipated uses.

6. The addresses (if any), legal descriptions, and latitude and longitude of each site.

7. Distance to nearest established school, institution, business, or occupied residence.

8. A map showing the location of access roads to site and in route bridges.

9. A USGS map showing the topography of the site.

10. Description of soil types, soil permeability, infiltration, and drainage patterns (Use of the USDA Natural Resource Conservation Service Soil Survey information is acceptable.)

11. Depth to groundwater (including highest seasonal ground water level) for each USDA Natural Resource Conservation Service soil symbol for the site.

12. Identification of streams and bodies of water, including all ponds, drainage ditches and wetlands, on or within one (1) mile of the site.

13. Potable water (public and private) surface water or ground water source, treatment, and distribution facilities on or within two (2) miles of the site.

14. Narrative description of methods to be used to control surface drainage, storm water runoff, and erosion at each site and other management practices which will be used on the site.

15. Narrative information on the location and size of the buffer zones, if applicable.

16. Analytical results showing the concentration of metals regulated by this subchapter, taken from the uppermost horizon of soil to be affected by the application of sewage sludge, from each USDA Natural Resource Conservation Service soil symbol for the site; with a composite of one sample per every 80 acres of each soil symbol.

17. The methods of soil tillage, cropping utilization, expected yield, and final use of crop.

18. Irrigation practices, if any.

§3103. Land Application

A. Applicability.

1. This part applies to any person who prepares sewage sludge that is applied to the land, to any person who applies sewage sludge to the land, to sewage sludge applied to the land, and to the land on which sewage sludge is applied.

2. a. i. The general requirements in LAC 33:IX.3103.C.1, the other requirements in LAC 33:IX.3103.E.1, the general management practices in LAC 33:IX.3103.C.2.b through 2.d, and the other management practices in LAC 33:IX.3103.E.2 do not apply when bulk sewage sludge is applied to the land if the bulk sewage sludge is Exceptional Quality as defined in LAC 33:IX.3101.H and the preparer has been issued and maintains an Exceptional Quality Certification under the requirements in LAC 33:IX.3103.J.

ii. The general requirements in LAC 33:IX.3103.C.1, the other requirements in LAC 33:IX.3103.E.1, the general management practices in LAC 33:IX.3103.C.2.b through 2.d, and the other management practices in LAC 33:IX.3103.E.2 do not apply when a bulk material derived from sewage sludge is applied to the land if the derived bulk material is *Exceptional Quality* as defined in LAC 33:IX.3101.H and the preparer has been issued and maintains an Exceptional Quality Certification under the requirements in LAC 33:IX.3103.J.

b. The state administrative authority may apply any or all of the general requirements in LAC 33:IX.3103.C.1, the other requirements in LAC 33:IX.3103.E.1, the general management practices in LAC 33:IX.3103.E.2 to the bulk sewage sludge in LAC 33:IX.3103.A.2.a.i and the bulk material in LAC 33:IX.3103.A.2.a.ii on a case-by-case basis after determining that any or all of the requirements or management practices are needed to protect public health and the environment from any reasonably anticipated adverse effect that may occur from the application of the bulk sewage sludge or bulk material to the land.

3. a. i. The general requirements in LAC 33:IX.3103.C.1 and the general management practices in LAC 33:IX.3103.C.2 do not apply if sewage sludge sold or given away in a bag or other container is *Exceptional Quality* as defined in LAC 33:IX.3101.H and the preparer has been issued and maintains an Exceptional Quality Certification under the requirements in LAC 33:IX.3103.J.

ii. The general requirements in LAC 33:IX.3103.C.1 and the general management practices in LAC 33:IX.3103.C.2 do not apply if a material, derived from sewage sludge, which is sold or given away in a bag or other container is *Exceptional Quality* as defined in LAC 33:IX.3101.H and the preparer has been

issued and maintains an Exceptional Quality Certification under the requirements in LAC 33:IX.3103.J.

b. The state administrative authority may apply any or all of the general requirements in LAC 33:IX.3103.C.1 and the general management practices in LAC 33:IX.3103.C.2 to the sewage sludge in LAC 33:IX.3103.A.3.a.i or the derived material in LAC 33:IX.3103.A.3.a.ii on a case-by-case basis after determining that the general requirements or general management practices are needed to protect public health and the environment from any reasonably anticipated adverse effect that may occur from the application of the sewage sludge or derived material to the land.

4.a. The requirements in LAC 33:IX.3103.C through 3103.I of this part do not apply when a bulk material or a material sold or given away in a bag or other container derived from sewage sludge is applied to the land if the sewage sludge from which the material is derived is *Exceptional Quality* as defined in LAC 33:IX.3101.H and the preparer has been issued an Exceptional Quality Certification under the requirements in LAC 33:IX.3103.J.

b. The state administrative authority may apply any or all of the requirements in this part to the bulk material or the material sold or given away in a bag or other container in LAC 33:IX.3103.A.4.a on a case-by-case basis after determining that the requirements are needed to protect public health and the environment from any reasonably anticipated adverse effect that may occur from the application of this material to the land.

B. Special definitions. In addition to the terms referenced and defined at LAC 33:IX.3101.H, the following definitions apply to this part:

Agricultural land—is land on which a food crop, a feed crop, or a fiber crop is grown. This includes range land and land used as pasture.

Agronomic rate—is the whole sludge application rate (dry weight basis) designed: (a). To provide the amount of nitrogen, phosphorus, and potassium needed by the food crop, feed crop, fiber crop, cover crop, or vegetation grown on the land; and(b). To minimize the amount of nitrogen, phosphorus, or potassium in the sewage sludge that is not utilized by the crop or vegetation grown on the land and either passes below the root zone to the ground water or gets into surface waters during storm events.

Annual pollutant loading rate—is the maximum amount of a pollutant that can be applied to a unit area of land during a 365 day period.

Annual whole sludge application rate—is the maximum amount of sewage sludge (dry weight basis) that can be applied to a unit area of land during a 365 day period.

Bulk sewage sludge—is sewage sludge that is not sold or given away in a bag or other container for application to the land.

Cumulative pollutant loading rate—is the maximum amount of an inorganic pollutant that can be applied to an area of land.

Forest—is a tract of land thick with trees and underbrush.

Monthly average—is the arithmetic mean of all measurements taken during the month.

Other container—is either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of one metric ton or less.

Pasture—is land on which animals feed directly on feed crops such as legumes, grasses, grain stubble, or stover.

Public contact site—is land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.

Range land—is open land with indigenous vegetation.

Reclamation site—is drastically disturbed land that is reclaimed using sewage sludge. This includes, but is not limited to, strip mines and construction sites.

C. General requirements and general management practices.

1. General requirements:

a. No person shall apply sewage sludge to the land except in accordance with the requirements in this part.

b. The person who applies sewage sludge to the land shall obtain information needed to comply with the requirements in this part.

c. The person who applies bulk sewage sludge to the land shall provide the owner or lease holder of the land on which the bulk sewage sludge is applied notice and necessary information to comply with the requirements in this part.

d. The person who prepares bulk sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site shall provide the person who applies the bulk sewage sludge written notification of the concentration, on a dry weight basis, of nitrogen, ammonia, nitrates, potassium, and phosphorus in the bulk sewage sludge.

e. When a person who prepares bulk sewage sludge provides the bulk sewage sludge to a person who applies the bulk sewage sludge to the land, the person who prepares the bulk sewage sludge shall provide the person who applies the sewage sludge notice and necessary information to comply with the requirements in this part.

f. When a person who prepares sewage sludge provides the sewage sludge to another person who prepares the sewage sludge, the person who provides the sewage sludge shall provide the person who receives the sewage sludge notice and necessary information to comply with the requirements in this part.

g. When sewage sludge not meeting *Exceptional Quality* as defined in LAC 33:IX.3101.H is applied to agricultural land, forest, or a reclamation site, the following buffer zones shall be established for each application area, unless otherwise specified by the state administrative authority:

i. private potable water supply well - 100 feet.

ii. public potable water supply well, surface water intake, treatment plant, or public potable water supply elevated or ground storage tank - 100 feet.

iii. established school, institution, business, or occupied residential structure - 200 feet; unless special permission is granted by a qualified representative of the established school, institution, business, or occupied residential structure.

iv. property boundary - 50 feet; unless special permission is granted by the property owner(s).

2. General management practices.

a. All bulk sewage sludge shall be applied to agricultural land, forest, a public contact site, or a reclamation site at a whole sludge application rate that is equal to or less than the agronomic rate for the bulk sewage sludge, unless, in the case of a reclamation site, otherwise specified by the permitting authority.

b. i. Sewage sludge or domestic septage shall be applied to the land only in accordance with the requirements pertaining to slope in Table 1 of §3103.C.

ii. In addition to the restrictions addressed in LAC 33:IX.3103.C.2.b.i, all sewage sludge or domestic septage having a concentration of PCB’s equal to or greater than 10 mg/kg (dry wt.) must be incorporated into the soil regardless of slope.

c. Sewage sludge sold or given away in a bag or other container shall not be applied to the land at a rate which would cause any of the annual pollutant loading rates in Table 4 of §3103.D to be exceeded.

d. Either a label shall be affixed to the bag or other container in which sewage sludge that is sold or given away for application to the land, or an information sheet shall be provided to the person who receives sewage sludge sold or given away in a bag or other container for application to the land. The label or information sheet shall contain the following information:

i. The name and address of the person who prepared the sewage sludge that is sold or given away in a bag or other container for application to the land.

ii. A statement that application of the sewage sludge to the land is prohibited except in accordance with the instructions on the label or information sheet.

iii. The annual whole sludge application rate for the sewage sludge that does not cause any of the annual pollutant loading rates in Table 4 of §3103.D to be exceeded.

iv. Concentration of PCB’s in mg/kg (dry wt.)

Table 1 of §3103.C - SLOPE LIMITATIONS FOR LAND APPLICATION OF SEWAGE SLUDGE OR DOMESTIC SEPTAGE

Slope Percent	Application Restriction
0-3	None, except drainage to prevent standing water shall be provided.
3-6	A 100 foot vegetated runoff area should be provided at the down slope end of the application area if a liquid is applied. Measures should be taken to prevent erosion.
6-12	Liquid material must be injected into the soil. Solid material must be incorporated into the soil if the site is not covered with vegetation. A 100 foot vegetated runoff area is required at the down slope end of the application area for all applications. Measures must be taken to prevent erosion.
>12	Unsuitable for application unless a 200 foot vegetated buffer area with a slope of less than 3% is provided at the down slope edge of the application area and the material is incorporated (solid material) and injected (liquid material) into the soil. Measures must be taken to prevent erosion.

D. Pollutant limits.

1. Sewage sludge.

a. Bulk sewage sludge or sewage sludge sold or given away in a bag or other container shall not be applied to the land if the concentration of any pollutant in the sewage sludge exceeds the ceiling concentration for the pollutant in Table 1 of §3103.D.

b. If bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site, either:

i. The cumulative loading rate for each pollutant shall not exceed the cumulative pollutant loading rate for the pollutant in Table 2 of §3103.D; or

ii. The concentration of each pollutant in the sewage sludge shall not exceed the concentration for the pollutant in Table 3 of §3103.D.

c. If bulk sewage sludge is applied to a lawn or a home garden, the

concentration of each pollutant in the sewage sludge shall not exceed the concentration for the pollutant in Table 3 of §3103.D.

d. If sewage sludge is sold or given away in a bag or other container for application to the land, either:

i. The concentration of each pollutant in the sewage sludge shall not exceed the concentration for the pollutant in Table 3 of §3103.D;or
ii.Theproduct of the concentration of each pollutant in the sewage sludge and the annual whole sludge application rate for the sewage sludge shall not cause the annual pollutant loading rate for the pollutant in Table 4 of §3103.D to be exceeded. The procedure used to determine the annual whole sludge application rate is presented in Appendix O of this chapter.

2. Pollutant concentrations and loading rates--sewage sludge.

a. Ceiling concentrations.

Table 1 of §**3103.D** - Ceiling Concentrations

Pollutant	Ceiling Concentration (milligrams per kilogram)[1]
Arsenic	75
Cadmium	85
Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7500

[1]Dry weight basis.

b. Cumulative pollutant loading rates.

Table 2 of §**3103.D** - Cumulative Pollutant Loading Rates

Pollutant	Cumulative Pollutant Loading Rate (kilograms per hectare)
Arsenic	41
Cadmium	39
Copper	1500
Lead	300
Mercury	17
Nickel	420
Selenium	100
Zinc	2800

c. Pollutant concentrations.

Table 3 of §**3103.D** - Pollutant Concentrations

Pollutant	Monthly Average Concentrations (milligrams per kilogram)[1]
Arsenic	41
Cadmium	39
Copper	1500
Lead	300
Mercury	17
Nickel	420
Selenium	100
Zinc	2800

[1]Dry weight basis.

d. Annual pollutant loading rates.

Table 4 of §**3103.D** - Annual Pollutant Loading Rates

Pollutant	Annual Pollutant Loading Rate (kilograms per hectare per 365 day period)
Arsenic	2.00
Cadmium	1.90
Copper	75.00
Lead	15.00
Mercury	0.85
Nickel	21.00
Selenium	5.00
Zinc	140.00

3. Domestic septage. The annual application rate for domestic septage applied to agricultural land, forest, or a reclamation site shall not exceed the annual application rate calculated using equation (1).

$$AAR = \frac{N}{0.0026} \qquad \text{Eq. (1)}$$

Where:

AAR = Annual application rate in gallons per acre per 365 day period.
N = Amount of nitrogen in pounds per acre per 365 day period needed by the crop or vegetation grown on the land.

E. Other requirements and other management practices.

1. Other requirements:

a. *Bulk Sewage sludge*:

i. No person shall apply bulk sewage sludge subject to the cumulative pollutant loading rates in Table 2 of §3103.D to the land without first contacting the state administrative authority to determine if bulk sewage sludge subject to the cumulative pollutant loading rate in Table 2 of §3103.D has been applied to the land since July 20, 1993.

ii. No person shall apply bulk sewage sludge subject to the cumulative pollutant loading rates in Table 2 of §3103.D to agricultural land, forest, a public contact site, or a reclamation site if any of the cumulative pollutant loading rates in Table 2 of §3103.D has been reached.

iii. If bulk sewage sludge has not been applied to a site since July 20, 1993, the cumulative amount for each pollutant listed in Table 2 of §3103.D may be applied to the site in accordance with LAC 33:IX.3103.D.1.b.i.

iv. If bulk sewage sludge has been applied to the site since July 20, 1993, and the cumulative amount of each pollutant applied to the site in the bulk sewage sludge since that date is known, the cumulative amount of each pollutant applied to the site shall be used to determine the additional amount of each pollutant that can be applied to the site in accordance with LAC 33:IX.3103.D.1.b.i.

v. If bulk sewage sludge has been applied to the site since July 20, 1993, and the cumulative amount of each pollutant applied to the site in the bulk sewage sludge since that date is not known, an additional amount of each pollutant shall not be applied to the site in accordance with LAC 33:IX.3103.D.1.b.i.

b. *Domestic Septage*: No person shall apply domestic septage to agricultural land, forest, or a reclamation site during a 365 day period if the annual application rate in LAC 33:IX.3103.D.3 has been reached during that period.

2. Other management practices:

a. Bulk sewage sludge shall not be applied to the land if it is likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species Act or its designated critical habitat.

b. Bulk sewage sludge shall not be applied to agricultural land, forest, a public contact site, or a reclamation site that is flooded, frozen, or snow-covered so that the bulk sewage sludge enters a wetland or other waters of the United States, as defined in LAC 33:IX.2312, except as provided in a permit issued pursuant to Section 402 or 404 of the CWA.

c. i. Bulk sewage sludge shall not be applied to agricultural land, forest, or a reclamation site that is 10 meters or less from waters of the United States, as defined in LAC 33:IX.2312, unless otherwise specified by the permitting authority,

ii. Bulk sewage sludge shall not be applied to agricultural land, forest, or a reclamation site if the ground water is less than three (3) feet from the surface at the time of application.

F. Operational standards--pathogens and vector attraction reduction.

1. *Pathogens--sewage sludge*. a. The Class A pathogen requirements in 3107.C.1 or the Class B pathogen requirements and site restrictions in 3107.C.2 shall be met when bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site.

b. The Class A pathogen requirements in 3107.C.1 shall be met when bulk sewage sludge is applied to a lawn or a home garden.

c. The Class A pathogen requirements in 3107.C.1 shall be met when sewage sludge is sold or given away in a bag or other container for application to the land.

2. *Pathogens--domestic septage*. The requirements in either 3107.C.3.a or 3107.C.3.b shall be met when domestic septage is applied to agricultural land, forest, or a reclamation site.

3. *Vector attraction reduction--sewage sludge*. a. One of the vector attraction reduction requirements in 3107.D.2.a through 3107.D.2.j shall be met when bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site.

b. One of the vector attraction reduction requirements in 3701.D.2.a through 3701.D.2.h shall be met when bulk sewage sludge is applied to a lawn or a home garden.

c. One of the vector attraction reduction requirements in 3107.D.2.a through 3107.D.2.h shall be met when sewage sludge is sold or given away in a bag or other container for application to the land.

4. *Vector attraction reduction--domestic septage*. The vector attraction reduction requirements in 3107.D.2.i, 3107.D.2.j, or 3107.D.2.l shall be met when domestic septage is applied to agricultural land, forest, or a reclamation site.

G. Frequency of monitoring.

1. *Sewage sludge*.

a. The frequency of monitoring for the pollutants listed in Table 1, Table 2, Table 3 and Table 4 of §3103.D; the pathogen density requirements in LAC 33:IX.3107.C.1 and in LAC 33:IX.3107.C.2.b; and the vector attraction reduction requirements in LAC 33:IX.3107.D.2.a through 3107.D.2.d, and LAC 33:IX.3107.D.2.g through 3107.D.2.h shall be the frequency in Table 1 of §3103.G.

Table. 1 of §3103.G - Frequency of Monitoring - Land Application

Amount of sewage sludge[1] (metric tons per 365 day period)	Frequency
Greater than zero but less than 290	Once per year.
Equal to or greater than 290 but less than 1,500	Once per quarter (four times per year)
Equal to or greater than 1,500 but less than 15,000	Once per 60 days (six times per year)
Equal to or greater than 15,000	Once per month (12 times per year)

[1]Either the amount of bulk sewage sludge applied to the land or the amount of sewage sludge prepared for sale or to be given away in a bag or other container for application to the land (dry weight basis).

b. After the sewage sludge has been monitored for two years at the frequency in Table 1 of §3103.G, the permitting authority may reduce the frequency of monitoring for pollutant concentrations and for the pathogen density requirements in LAC 33:IX.3107.C.1.e.ii and 3107.C.1.e.iii.

2. *Domestic septage*. If either the pathogen requirements in LAC 33:IX.3107.C.3.b or the vector attraction reduction requirements in LAC 33:IX.3107.D.2.l are met when domestic septage is applied to agricultural land, forest, or a reclamation site, each container of domestic septage applied to the land shall be monitored for compliance with those requirements.

H. Recordkeeping.

1. *Sewage sludge*.

a. For land applied sewage sludge which meets the criteria in LAC 33:IX.3103.A.2.a or 3103.A.3.a:

i. the person who prepares the sewage sludge shall develop the following information and shall retain the information for five years:

(a). the concentration of each pollutant listed in Table 3 of §3103.D in the bulk sewage sludge or the sewage sludge given away or sold in a bag or other container,

(b). a description of how the Class A pathogen requirements in LAC 33:IX.3107.C.1 are met,

(c). a description of how one of the vector attraction reduction requirements in LAC 33:IX.3107.D.2.a through h is met, and

(d). the following certification statement:
``I certify, under penalty of law, that the information that will be used to determine compliance with the Class A pathogen requirements in LAC 33:IX.3107.C.1 and the vector attraction reduction requirement in [insert one of the vector attraction reduction requirements in LAC 33:IX.3107.D.2.a through 2.h] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.''

ii. the person who applies the bulk sewage sludge which meets the criteria in LAC 33:IX.3103.A.2.a shall develop the following information and shall retain the information for five years:

(a) a description of how the general management practices in LAC 33:IX.3103.C.2.a was met.

(b) the following certification statement:
“I certify, under penalty of law, that the information that will be used to determine compliance with the general management practices in LAC 33:IX.3101.C.2.a was prepared under my direction and supervision in accordance with the system designed to insure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalities for false certification including the possibility of fine and imprisonment.”

b. For bulk sewage sludge which is applied to agricultural land, forest, a public contact site, or a reclamation site and which meets the pollutant concentrations in Table 3 of §3103.D, the Class A pathogen requirements in LAC 33:IX.3107.C.1, and the vector attraction reduction requirements in either LAC 33:IX.3107.D.2.i or 2.j are met:

i. The person who prepares the bulk sewage sludge shall develop the following information and shall retain the information for five years:

(a). the concentration of each pollutant in Table 3 of §3103.D.

(b). a description of how the Class A pathogen requirements in LAC 33:IX.3107.C.1 are met, and

(c). the following certification statement:
``I certify, under penalty of law, that the information that will be used to determine compliance with the Class A pathogen requirements in LAC 33:IX.3107.C.1 was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including fine and imprisonment.''

ii. The person who applies the bulk sewage to the land shall develop the following information and shall retain the information for

five years:

(a). a description of how the general management practices LAC 33:IX.3103.C.2.a and 2.b are met for each site on which the bulk sewage sludge is applied,

(b). a description of how the vector attraction reduction requirements in either LAC 33:IX.3107.D.2.i or 2.j are met for each site for which bulk sewage sludge is applied and,

(c). the following certification statement: ``I certify, under penalty of law, that the information that will be used to determine compliance with the general management practices in LAC 33:IX.3103.C.2.a through 2.b and the vector attraction reduction requirement in [insert either LAC 33:IX.3107.D.2.i or 2.j] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including fine and imprisonment.''

c. For bulk sewage sludge which is applied to agricultural land, forest, a public contact site, or a reclamation site and which meets the pollutant concentrations in Table 3 of §3103.D, the Class B pathogen requirements in LAC 33:IX.3107.C.2, and the vector attraction reduction requirements in LAC 33:IX.3107.D.2.a through 2.h for the person who prepares the bulk sewage sludge and the vector attraction reduction requirements in LAC 33:IX.3107.D.2.i or 2.j for the person who applies the bulk sewage sludge to the land:

i. The person who prepares the bulk sewage sludge shall develop the following information and shall retain the information for five years:

(a). The concentration of each pollutant listed in Table 3 of §3103.D in the bulk sewage sludge,

(b). a description of how the Class B pathogen requirements in 3107.C.2 are met,

(c). when one of the vector attraction reduction requirements in LAC 33:IX.3107.D.2.a through 2.h is met, a description of how the vector attraction reduction requirement is met, and

(d). the following certification statement: ``I certify under, penalty of law, that the information that will be used to determine compliance with the Class B pathogen requirements in LAC 33:IX.3107.C.2 and the vector attraction reduction requirement in [insert one of the vector attraction reduction requirements in LAC 33:IX.3107.D.2.a through 2.h if one of those requirements is met] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.''

ii. The person who applies the bulk sewage sludge to the land shall develop the following information and shall retain the information

for five years:

(a). A description of how the general management practices in LAC 33:IX.3103.C.2.a through 2.b and the other management practices in LAC 33:IX.3103.E.2 are met for each land site on which the bulk sewage sludge is applied,

(b). a description of how the site restrictions in LAC 33:IX.3107.C.2.e are met for each land site on which the bulk sewage sludge is applied,

(c). when the vector attraction reduction requirement in either LAC 33:IX.3107.D.2.i or 2.j is met, a description of how the vector attraction reduction requirement is met,

(d). the date bulk sewage sludge is applied to each site, and

(e). the following certification statement: ``I certify, under penalty of law, that the information that will be used to determine compliance with the general management practices in LAC 33:IX.3103.C.2.a through 2.b, the other management practices in LAC 33:IX.3103.E.2, the site restrictions in LAC 33:IX.3107.C.2.e, and the vector attraction reduction requirements in [insert either LAC 33:IX.3107.D.2.i or 2.j, if one of those requirements is met] was prepared for each site on which bulk sewage sludge is applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.''

d. For bulk sewage sludge which is applied to the land which is agricultural land, forest, a public contact site, or a reclamation site whose cumulative loading rate for each pollutant does not exceed the cumulative pollutant loading rate for each pollutant in Table 2 of §3103.D and which meets the Class A or Class B pathogen requirements in LAC 33:IX.3107.C, and the vector attraction reduction requirements in LAC 33:IX.3107.D.2.a through 2.h for the person who prepares the bulk sewage sludge and the vector attraction reduction requirements in LAC 33:IX.3107.D.2.i or 2.j for the person who applies the bulk sewage sludge to the land:

i. The person who prepares the bulk sewage sludge shall develop the following information and shall retain the information for five years:

(a). The concentration of each pollutant listed in Table 1 of §3103.D in the bulk sewage sludge,

(b). a description of how the Class A or Class B pathogen requirements in 3107.C are met,

(c). when one of the vector attraction requirements in LAC 33:IX.3107.D.2.a through 2.h is met, a description of how the vector attraction requirement is met, and

(d). the following certification statement: ``I certify, under penalty of law, that the information that will be used to

determine compliance with the pathogen requirements in [insert either LAC 33:IX.3107.C.1 or 3107.C.2] and the vector attraction reduction requirement in [insert one of the vector attraction reduction requirements in LAC 33:IX.3107.D.2.a through 2.h if one of those requirements is met] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.''

ii. The person who applies the bulk sewage sludge to the land shall develop the following information, retain the information in LAC 33:IX.3103.H.1.d.ii.(a) through 3103.H.1.d.ii.(g) indefinitely, and retain the information in LAC 33:IX.3103.H.1.d.ii.(h) through 3103.H.1.d.ii.(m) for five years:

(a). The location, by either street address or latitude and longitude, of each land site on which bulk sewage sludge is applied,

(b). the number of hectares or acres in each land site on which the bulk sewage sludge is applied,

(c). the date the bulk sewage sludge is applied to each land site,

(d). The cumulative amount of each pollutant (i.e., kilograms) listed in Table 2 of §3103.D in the bulk sewage sludge applied to each land site, including the amount in LAC 33:IX.3103.C.5.b.iii,

(e). the amount of bulk sewage sludge (i.e., tons or metric tons) applied to each land site,

(f). a description of how information was obtained in order to comply with LAC 33:IX.3103.E.1.a, and

(g). the following certification statement:

``I certify, under penalty of law, that the information that will be used to determine compliance with the requirement to obtain information in LAC 33:IX.3103.E.1.a was prepared for each site which bulk sewage sludge was applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including fine and imprisonment.'',

(h). a description of how the general management practices in LAC 33:IX.3103.C.2.a through 2.b and the other management practices in LAC 33:IX.3103.E.2 are met for each site on which bulk sewage sludge is applied,

(i). the following certification statement:

``I certify, under penalty of law, that the information that will be used to determine compliance with the general management practices in LAC 33:IX.3103.C.2.a through 2.b and the other management practices in LAC 33:IX.3103.E.2 was prepared for each site on which bulk sewage sludge was applied under my direction and supervision in accordance with the system

designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including fine and imprisonment.'',

(j). a description of how the site restrictions in LAC 33:IX.3107.C.2.e are met for each site on which Class B bulk sewage sludge is applied,

(k). the following certification statement when the bulk sewage sludge meets the Class B pathogen requirements in LAC 33:IX.3107.C.2:

``I certify, under penalty of law, that the information that will be used to determine compliance with the site restrictions in LAC 33:IX.3107.C.2.e for each site on which Class B sewage sludge was applied was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including fine and imprisonment.'',

(l). if the vector attraction reduction requirements in either LAC 33:IX.3107.D.2.i or 2.j are met, a description of how the requirements are met, and

(m) the following certification statement when the vector attraction reduction requirement in either LAC 33:IX.3107.D.2.i or 2.j is met:

``I certify, under penalty of law, that the information that will be used to determine compliance with the vector attraction reduction requirement in [insert either LAC 33:IX.3107.D.2.i or 2.j] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.''

e. For sewage sludge sold or given away in a bag or other container for application to the land meeting the requirement at LAC 33:IX.3103.D.1.d.ii, the Class A pathogen requirements at LAC 33:IX.3107.C., and the vector attraction reduction requirements in LAC 33:IX.3107.D.2.a through 2.h:

i. The person who prepares sewage sludge which is given away or sold in a bag or other container shall develop the following information and shall retain the information for five years:

(a) The annual whole sludge application rate for the sewage sludge that does not cause the annual pollutant loading rates in Table 4 of §3103.D to be exceeded,

(b) the concentration of each pollutant listed in Table 4 of §3103.D in the sewage sludge,

(c) a description of how the Class A pathogen requirements in LAC 33:IX.3107.C.1 are met,

(d) a description of how one of the vector attraction requirements in LAC 33:IX.3107.D.2.a through 2.h is met,

(e) a description of how the general management practice in LAC 33:IX.3103.C.2.d was met,

(f) the following certification statement:

``I certify, under penalty of law, that the information that will be used to determine compliance with the general management practice in LAC 33:IX.3103.C.2.d, the Class A pathogen requirement in LAC 33:IX.3107.C.1, and the vector attraction reduction requirement in [insert one of the vector attraction reduction requirements in LAC 33:IX.3107.D.2.a through 2.h] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.''

ii. The person who applies the sewage sludge given away or sold in a bag or other container to the land which is agricultural land, forest, a public contact site, or a reclamation area shall develop the following information and shall retain the information for five years:

(a) A description of how the general management practices LAC 33:IX.3103.C.2.b and 2.c are met for each site on which the sewage sludge given away or sold in a bag or other container is applied, and

(b) The following certification statement:

``I certify, under penalty of law, that the information that will be used to determine compliance with the general management practices LAC 33:IX.3103.C.2.b through 2.c was prepared for each site which sewage sludge given away or sold in a bag or other container is applied under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including fine and imprisonment.''

2. *Domestic septage*. The person who applies domestic septage to agricultural land, forest, or a reclamation site shall develop the following information and shall retain the information for five years:

a. The location, by either street address or latitude and longitude, of each site on which domestic septage is applied,

b. the number of acres in each site on which domestic septage is applied,

c. the date domestic septage is applied to each site,

d. the nitrogen requirement for the crop or vegetation grown on each site during a 365 day period,

e. the rate, in gallons per acre per 365 day period, at which domestic septage is applied to each site,

f. a description of how the pathogen requirements in either LAC 33:IX.3107.C.3.a or 3107.C.3.b are met,

g. a description of how the vector attraction reduction

requirements in LAC 33:IX.3107.D.2.i, 3107.D.2.j, or 3107.D.2.l are met,

h. a description of how the general management practices at LAC 33:IX.3103.C.2.b are meet,

i. a description of how the other requirement at LAC 33:IX.3103.E.1.b is met, and

j. The following certification statement:

``I certify, under penalty of law, that the information that will be used to determine compliance with the general management practices at LAC 33:IX.3103.C.2.b, the other requirement at LAC 33:IX.3103.E.1.c, the pathogen requirements in [insert either LAC 33:IX.3107.C.3.a or 3107.C.3.b] and the vector attraction reduction requirements in [insert LAC 33:IX.3107.D.2.i, 3107.D.2.j, or 3107.D.2.l] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.''

I. Reporting.

1. Persons who prepare sewage sludge or a material derived from sewage sludge or who applies sewage sludge or a material derived from sewage sludge to the land which are required to obtain a permit under LAC 33:IX.3101.F of this Subchapter shall submit the applicable information in LAC 33:IX.3103.H.1, except the information in LAC 33:IX.3103.H.1.d.ii, to the state administrative authority on February 19 of each year.

2. The person in LAC 33:IX.3103.H.1.d.ii who applies bulk sewage sludge to the land and is required to obtain a permit under LAC 33:IX.3101.F of this Subchapter shall submit the information in LAC 33:IX.3103.H.1.d.ii to the state administrative authority on February 19 of each year when 90 percent or more of any of the cumulative pollutant loading rates in Table 2 of §3103.D is reached at a land application site.

3. The person who applies domestic septage to the land shall submit the information in LAC 33:IX.3103.H.2 for the appropriate requirements to the state administrative authority on February 19 of each year.

4. The state administrative authority may require any other treatment works treating domestic sewage to report any or all of the information required in LAC 33:IX.3103.I if deemed necessary for the protection of human health or the environment.

J. Exceptional Quality Certification.

1. a. The preparer of sewage sludge or a material derived from sewage sludge who desires to be issued an Exceptional Quality Certification must prepare sewage sludge which is *Exceptional Quality* as defined in LAC 33:IX.3101.H and shall forward to the state administrative authority an Exceptional Quality Certification Request Form having the following information:

i. The laboratory results of the metals in Table 3 of §3103.D.

ii. The laboratory results for pH, percent dry solids, percent ammonia nitrogen, percent nitrate-nitrite, Percent total Kjeldahl Nitrogen, percent organic nitrogen, percent phosphorus, percent potassium, and percent organic matter.

iii. The laboratory results for Polychlorinated Biphenyls (PCB's).

iv. The Class A pathogen requirement in LAC 33:IX.3107.C.1 used and the results obtained.

v. The vector attraction reduction requirement in LAC 33:IX.3107.D.2.a through 2.h used and the results obtained.

vi. For sewage sludge or a material derived from sewage sludge which is sold or given away either in bulk or in a bag, an example of the label which will accompany the sewage sludge or material derived from sewage sludge. The label shall contain the following information:

(a). Name & address of the preparer

(b). Concentration (by volume) of each metal in Table 3 of §3103.D

(c). Percent Ammonia Nitrogen

(d). Percent Nitrate-Nitrite

(e). Percent Phosphorus

(f). Percent Potassium

(g). pH

(h). Percent Dry Solid

(i). Concentration of PCB's in mg/kg (dry wt.)

b. Samples required to be collected in accordance with LAC 33:IX.3103.J.1.a.i through 3103.J.1.a.v above shall be from at least four (4) representative sampling of the sewage sludge or the material derived from sewage sludge taken at least sixty (60) days apart within the twelve (12) months prior to the date of the application.

2. The state administrative authority shall make a determination whether the sewage sludge or the material derived from sewage sludge meets *Exceptional Quality* as defined in LAC 33:IX.3101.H and to issue an Exceptional Quality Certification within thirty (30) days of having received a complete form having all of the information requested in LAC 33:IX.3103.J.1.a above.

3. Exceptional Quality Certifications shall be issued for a period not to exceed five (5) years.

4. After the issuance of an Exceptional Quality Certification, the preparer of the sewage sludge or a material derived from sewage sludge shall conduct continued sampling required in LAC 33:IX.3103.J.1.a.i through a.v

above at the frequency of monitoring in LAC 33:IX.3103.G.1 for the term of the Exceptional Quality Certification period.

5. The preparer of the sewage sludge or a material derived from sewage sludge shall forward the results of the sampling required in LAC 33:IX.3103.J.4 to the state administrative authority on February 19 of each year.

6. a. If results of the sampling indicates that the sewage sludge or the material derived from sewage sludge no longer meets the requirement of *Exceptional Quality* as defined in LAC 33:IX.3101.H, then the preparer must cease any land application of the sewage sludge as an *Exceptional Quality* sewage sludge.

b. If the sewage sludge which is no longer of *Exceptional Quality* is used or disposed, the exemptions for *Exceptional Quality* sewage sludge no longer applies and the sewage sludge must now meet all the requirements and restrictions of this part which applies to a sewage sludge which is not *Exceptional Quality*.

c. i. Sampling for the requirements in LAC 33:IX.3103.J.1.a.i through a.v which have caused the sewage sludge or the material derived from sewage sludge to not meet the *Exceptional Quality* designation shall be increased to a frequency which is double that of the frequencies required in LAC 33:IX.3103.J.4.

ii. The increased sampling shall continue until the results indicate that the sewage sludge or the material derived from sewage sludge meets the criteria for *Exceptional Quality* as defined in LAC 33:IX.3101.H.

7. The sewage sludge or material derived from sewage sludge shall not be applied to the land as an *Exceptional Quality* sewage sludge until the sampling has shown that the sewage sludge or material derived from sewage sludge meets the criteria for *Exceptional Quality* as defined in LAC 33:IX.3101.H for a period of two consecutive months.

§3105. Surface Disposal

A. Applicability.

1. This part applies to any person who prepares sewage sludge that is placed on a surface disposal site, to the owner/operator of a surface disposal site, to sewage sludge placed on a surface disposal site, and to a surface disposal site.

2. a. This part applies to sewage sludge stored on the land except, for a period not to exceed two years, when necessary for a treatment works treating domestic sewage upgrade, repair, or maintenance or for agricultural storage purposes when the sewage sludge is to be used for *beneficial use* as defined in LAC 33:IX.3101.H.

b. i. The state administrative authority may exempt sewage sludge stored on the land for purposes other than those which are exempted in LAC 33:IX.3105.A.2.a, for a period not to exceed two years, if the person who prepares the sewage sludge demonstrates that the land on which the sewage

sludge is stored is not an active sewage sludge unit and that human health and the environment will not be affected.

ii. The demonstration shall be in the form of an official request to the state administrative authority and shall include, but is not limited to:

(a) The name and address of the person who prepared the sewage sludge.

(b) The name and address of the person who either owns the land or leases the land, if different from the person who prepared the sewage sludge.

(c) The location, by either street address or latitude and longitude, of the land.

(d) An explanation why the sewage sludge needs to remain on the land.

(e) An explanation as to why the land on which the sewage sludge is stored is not an active sewage sludge unit.

(f) An explanation of how human health and the environment will not be affected.

(g) The approximate time period when the sewage sludge will be used or disposed.

iii. The state administrative authority shall make a determination as to whether an exemption is warrented and shall issue such exemption within thirty (30) days of having received a complete official request containing all the information in LAC 33:IX.3105.A.2.B.ii.(a) through (g).

B. Special definitions. In addition to the terms defined at LAC 33:IX.33:IX.2313 and LAC 33:IX.3101.H, the following definitions apply to this part:

Active sewage sludge unit—is a sewage sludge unit that has not closed.

Aquifer—is a geologic formation, group of geologic formations, or a portion of a geologic formation capable of yielding ground water to wells or springs.

Contaminate an aquifer—means to introduce a substance that causes the maximum contaminant level for nitrate in 40 CFR 141.62(b) to be exceeded in ground water or that causes the existing concentration of nitrate in ground water to increase when the existing concentration of nitrate in the ground water exceeds the maximum contaminant level for nitrate in 40 CFR 141.62(b).

Cover—is soil or other material used to cover sewage sludge placed on an active sewage sludge unit.

Displacement—is the relative movement of any two sides of a fault measured in any direction.

Fault—is a fracture or zone of fractures in any materials along which strata on one side are displaced with respect to strata on the other side.

Final cover—is the last layer of soil or other material placed on a sewage sludge unit at closure.

Holocene time—is the most recent epoch of the Quaternary period, extending from the end of the Pleistocene epoch to the present.

Leachate collection system—is a system or device installed immediately above a liner that is designed, constructed, maintained, and operated to collect and remove leachate from a sewage sludge unit.

Liner—is soil or synthetic material that has a hydraulic conductivity of 1×10^{-7} centimeters per second or less.

Lower explosive limit for methane gas—is the lowest percentage of methane gas in air, by volume, that propagates a flame at 25 degrees Celsius and atmospheric pressure.

Qualified ground-water scientist—is an individual with a baccalaureate or post-graduate degree in the natural sciences or engineering who has sufficient training and experience in ground-water hydrology and related fields, as may be demonstrated by State registration, professional certification, or completion of accredited university programs, to make sound professional judgments regarding ground-water monitoring, pollutant fate and transport, and corrective action.

Seismic impact zone—is an area that has a 10 percent or greater probability that the horizontal ground level acceleration of the rock in the area exceeds 0.10 gravity once in 250 years.

Sewage sludge unit—is land on which only sewage sludge is placed for final disposal. This does not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in LAC 33:IX.2313.

Sewage sludge unit boundary—is the outermost perimeter of an active sewage sludge unit.

Surface disposal site—is an area of land that contains one or more active sewage sludge units.

Unstable area—is land subject to natural or human-induced forces that may damage the structural components of an active sewage sludge unit. This includes, but is not limited to, land on which the soils are subject to mass movement.

C. General requirements.

1. No person shall place sewage sludge on an active sewage sludge unit unless the requirements in this part are met.

2. a. An active sewage sludge unit located in an unstable area or

located in a wetland, except as provided in a permit issued pursuant to Section 402 or 404 of the CWA, shall have closed on or before March 22, 1994.

b. Unless otherwise specified by the state administrative authority, an active sewage sludge unit located within 60 meters of a fault that has displacement in Holocene time shall have closed on or before March 22, 1994.

3. The owner/operator of an active sewage sludge unit shall submit a written closure and post closure plan to the permitting authority 180 days prior to the date that the active sewage sludge unit closes. The plan shall describe how the sewage sludge unit will be closed and, at a minimum, shall include:

a. A discussion of how the leachate collection system will be operated and maintained for thirty (30) years after the sewage sludge unit closes if the sewage sludge unit has a liner and leachate collection system.

b. A description of the system used to monitor for methane gas in the air in any structures within the surface disposal site and in the air at the property line of the surface disposal site, as required in LAC 33:IX.3105.E.10.b.

c. A discussion of how public access to the surface disposal site will be restricted for thirty (30) years after the last sewage sludge unit in the surface disposal site closes.

4. The owner of a surface disposal site shall provide written notification to the subsequent owner of the site that sewage sludge was placed on the land.

5. a. The owner/operator of a sewage sludge unit shall provide adequate documentation, by a qualified ground water scientist, to the state administrative authority to provide proof that the sewage sludge unit does not require a liner.

b. The owner/operator of a sewage sludge unit shall provide adequate documentation, by a qualified ground water scientist, to the state administrative authority to provide proof that the sewage sludge unit does not require a leachate collection unit.

6. For active sewage sludge units the following buffer zones (in feet) shall be established unless otherwise specified by the state administrative authority; however, in no case, shall the distance be less than the distance required for the pollutant concentrations listed in Table 2 of §3105.D for active sewage sludge units without liners and leachate collection systems:

a. Surface Water - 50

b. Potable water supply wells (private and public) - 400

c. Public potable water supply surface water intake - 500

d. Public potable water supply treatment plants or elevated or ground water storage tank - 400

e. Public Roads other than Federal Interstate Highways - 25

f. Federal Interstate Highways - 50

g. On-site Occupied Dwelling - 200

h. Established school, institution, business, or off-site occupied dwelling - 500; unless special permission is granted by an authorized representative of the established school, institution, business, or off-site occupied dwelling.

i. Public-use runway end used by turbojet aircraft - 10,000

j. Public-use runway end used by only piston-type aircraft - 5,000

D. Pollutant limits (other than domestic septage).

1. Active sewage sludge unit without a liner and leachate collection system.

a. Except as provided in LAC 33:IX.3105.D.1.b and 3105.D.2, the concentration of each pollutant listed in Table 1 of §3105.D in sewage sludge placed on an active sewage sludge unit shall not exceed the concentration for the pollutant in Table 1 of §3105.D.

Table 1 of §3105.D - Pollutant Concentrations--Active Sewage sludge Unit Without a Liner and Leachate Collection

Pollutant	Concentration (milligrams per kilograms[1])
Arsenic	73
Chromium	600
Nickel	420

[1]Dry weight basis.

b. Except as provided in LAC 33:IX.3105.D.2, the concentration of each pollutant listed in Table 1 of §3105.D in sewage sludge placed on an active sewage sludge unit whose boundary is less than 150 meters from the property line of the surface disposal site shall not exceed the concentration determined using the following procedure.

i. The actual distance from the active sewage sludge unit boundary to the property line of the surface disposal site shall be determined.

ii. The concentration of each pollutant listed in Table 2 of §3105.D in the sewage sludge shall not exceed the concentration in Table 2 of §3105.D that corresponds to the actual distance in LAC 33:IX.3105.D.1.b.i.

Table 2 of §**3105.D** - Pollutant Concentrations--Active Sewage sludge Unit Without a Liner and Leachate Collection System That Has a Unit Boundary to Property Line Distance Less Than 150 Meters

Unit boundary to property line	Pollutant concentration (mg/kg)[1]		
Distance (meters)	Arsenic	Chromium	Nickel
0 to less than 25	30	200	210
25 to less than 50	34	220	240
50 to less than 75	39	260	270
75 to less than 100	46	300	320
100 to less than 125	53	360	390
125 to less than 150	62	450	420

[1]Dry weight basis.

2. Active sewage sludge unit without a liner and leachate collection system ---- site-specific limits.

a. At the time of permit application, the owner/operator of a surface disposal site may request site-specific pollutant limits in accordance with LAC 33:IX.3105.D.2.b for an active sewage sludge unit without a liner and leachate collection system when the existing values for site parameters specified by the permitting authority are different from the values for those parameters used to develop the pollutant limits in Table 1 of §3105.D and when the permitting authority determines that site-specific pollutant limits are appropriate for the active sewage sludge unit.

b. The concentration of each pollutant listed in Table 1 of §3105.D in sewage sludge placed on an active sewage sludge unit without a liner and leachate collection system shall not exceed either the concentration for the pollutant determined during a site-specific assessment, as specified by the permitting authority, or the existing concentration of the pollutant in the sewage sludge, whichever is lower.

E. Management practices.

1. Sewage sludge shall not be placed on an active sewage sludge unit if it is likely to adversely affect a threatened or endangered species listed under Section 4 of the Endangered Species Act or its designated critical habitat.

2. An active sewage sludge unit shall not restrict the flow of a base flood.

3. When a surface disposal site is located in a seismic impact zone, an active sewage sludge unit shall be designed to withstand the maximum recorded horizontal ground level acceleration.

4. An active sewage sludge unit shall be located 60 meters or more from a fault that has displacement in Holocene time, unless otherwise specified by the permitting authority.

5. An active sewage sludge unit shall not be located in an unstable

area.

6. An active sewage sludge unit shall not be located in a wetland, except as provided in a permit issued pursuant to Section 402 or 404 of the CWA.

7. a. Run-off from an active sewage sludge unit shall be collected and shall either be disposed offsite at an appropriate permitted facility or handled on-site and discharged in accordance with the requirements of a Louisiana Pollutant Discharge Elimination System permit during the period the sewage sludge unit is active and for thirty (30) years after the sewage sludge unit closes.

b. The run-off collection system for an active sewage sludge unit shall have the capacity to handle run-off from a 24-hour, 25-year storm event.

8. The leachate collection system for an active sewage sludge unit that has a liner and leachate collection system shall be operated and maintained during the period the sewage sludge unit is active and for thirty (30) years after the sewage sludge unit closes.

9. Leachate from an active sewage sludge unit that has a liner and leachate collection system shall be collected and shall be either disposed off-site at an appropriate permitted facility or handled on-site and discharged in accordance with the requirements of a Louisiana Pollutant Discharge Elimination System permit during the period the sewage sludge unit is active and for thirty (30) years after the sewage sludge unit closes.

10. a. When a cover is placed on an active sewage sludge unit, the concentration of methane gas in the air in any structure within the surface disposal site shall not exceed 25 percent of the lower explosive limit for methane gas during the period that the sewage sludge unit is active and the concentration of methane gas in air at the property line of the surface disposal site shall not exceed the lower explosive limit for methane gas during the period that the sewage sludge unit is active.

b. When a final cover is placed on a sewage sludge unit at closure, the concentration of methane gas in air in any structure within the surface disposal site shall not exceed 25 percent of the lower explosive limit for methane gas for thirty (30) years after the sewage sludge unit closes and the concentration of methane gas in air at the property line of the surface disposal site shall not exceed the lower explosive limit for methane gas for three years after the sewage sludge unit closes, unless otherwise specified by the permitting authority.

11. A food crop, a feed crop, or a fiber crop shall not be grown on an active sewage sludge unit.

12. Animals shall not be grazed on an active sewage sludge unit.

13. Public access to a surface disposal site shall be restricted for the period that the surface disposal site contains an active sewage sludge unit and for thirty (30) years after the last active sewage sludge unit in the surface disposal site closes.

14. a. Sewage sludge placed on an active sewage sludge unit shall not contaminate an aquifer.

b. Results of a ground-water monitoring program developed by a qualified ground-water scientist or a certification by a qualified ground-water scientist shall be used to demonstrate that sewage sludge placed on an active sewage sludge unit does not contaminate an aquifer.

15. a. Sewage sludge or a material derived from sewage sludge which is used as intermediate daily cover for an active sewage sludge unit shall meet the *Exceptional Quality* criteria as defined in LAC 33:IX.3101.H of this Subchapter.

b. Sewage sludge or a material derived from sewage sludge which is used as final cover for a surface disposal site shall be used in accordance with the requirements in LAC 33:IX.3103 of this Subchapter.

F. Operational standards--pathogens and vector attraction reduction.

1. *Pathogens--sewage sludge (other than domestic septage)*. The Class A pathogens requirements in LAC 33:IX.3107.C.1 or one of the Class B pathogen requirements in LAC 33:IX.3107.C.2.b through 3107.C.2.d shall be met when sewage sludge is placed on an active sewage sludge unit, unless the vector attraction reduction requirement in LAC 33:IX.3107.D.2.k is met.

2. *Vector attraction reduction--sewage sludge (other than domestic septage)*. One of the vector attraction reduction requirements in LAC 33:IX.3107.D.2.a through 3107.D.2.k shall be met when sewage sludge is placed on an active sewage sludge unit.

3. *Vector attraction reduction--domestic septage*. One of the vector attraction reduction requirement in LAC 33:IX.3107.D.2.i through 3107.D.2.l shall be met when domestic septage is placed on an active sewage sludge unit.

G. Frequency of monitoring.

1. *Sewage sludge (other than domestic septage)*. The frequency of monitoring for the pollutants in Tables 1 and 2 of §3105.D; the pathogen density requirements in LAC 33:IX.3107.C.1 and in LAC 33:IX.3107.C.2.b through 2.d; and the vector attraction reduction requirements in LAC 33:IX.3107.D.2.a through 2.d and LAC 33:IX.3107.D.2.g through 2.h for sewage sludge placed on an active sewage sludge unit shall be the frequency in Table 1 of §3105.G.

Table 1 of §3105.G - Frequency of Monitoring--Surface Disposal

Amount of sewage sludge[1] (metric tons per 365 day period)	Frequency
Greater than zero but less than 290	Once per year.
Equal to or greater than 290 but less than 1,500	Once per quarter (four times per year)
Equal to or greater than 1,500 but less than 15,000	Once per 60 days (six times per year)
Equal to or greater than 15,000	Once per month (12 times per year)

[1]Amount of sewage sludge placed on an active sewage sludge unit (dry weight basis)

b. After the sewage sludge has been monitored for two years at the frequency in Table 1 of §3105.G, the permitting authority may reduce the frequency of monitoring for pollutant concentrations and for the pathogen density requirements in LAC 33:IX.3107.C.1.e.ii and 3107.C.1.e.iii.

2. *Domestic septage*. If the vector attraction reduction requirements in LAC 33:IX.3107.D.2.l are met when domestic septage is placed on an active sewage sludge unit, each container of domestic septage shall be monitored for compliance with those requirements.

3. *Air*. Air in structures within a surface disposal site and at the property line of the surface disposal site shall be monitored continuously for methane gas during the period that the surface disposal site contains an active sewage sludge unit on which the sewage sludge is covered and for thirty (30) years after a sewage sludge unit closes when a final cover is placed on the sewage sludge.

H. Recordkeeping.

1. When sewage sludge (other than domestic septage) is placed on an active sewage sludge unit:

a. The owner/operator of the surface disposal site or the person who prepares the sewage sludge, if different from the owner/operator of the surface disposal site, shall develop the following information and shall retain the information for five years.

i. The concentration of each pollutant listed in Table 1 of §3105.D in the sewage sludge when the pollutant concentrations in Table 1 of §3105.D are met.

ii. A description of how the pathogen requirements in LAC 33:IX.3107.C.1, 3107.C.2.b, 3107.C.2.c, or 3107.C.2.d are met when one of those requirements is met.

iii. A description of how one of the vector attraction reduction requirements in LAC 33:IX.3107.D.2.a through 2.h is met when one of those requirements is met.

iv. The following certification statement:

``I certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements in [insert LAC 33:IX.3107.C.1, 3107.C.2.b, 3107.C.2.c, or 3107.C.2.d when one of those requirements is met] and the vector attraction reduction requirement in [insert one of the vector attraction reduction requirements in LAC 33:IX.3107.D.2.a through 2.h if one of those requirements is met] was made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.''

b. The owner/operator of the surface disposal site, shall develop the following information and shall retain that information for five

years.

i. The concentration of each pollutant listed in Table 2 of §3105.D in the sewage sludge when the pollutant concentrations in Table 2 of §3105.D are met or when site-specific pollutant limits in LAC 33:IX.3105.D.2 are met.

ii. A description of how the management practices in LAC 33:IX.3105.E are met.

iii. A description of how the vector attraction reduction requirements in LAC 33:IX.3107.D.2.i through 3107.D.2.k are met if one of those requirements is met.

iv. The following certification statement:

``I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in LAC 33:IX.3105.E and the vector attraction reduction requirement in [insert one of the requirements in LAC 33:IX.3107.D.2.i through 3107.D.2.k if one of those requirements is met] was made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.''

2. When domestic septage is placed on a surface disposal site:

a. If the vector attraction reduction requirements in §3107.D.2.l are met, the owner/operator of the surface disposal site or the person who places the domestic septage on the surface disposal site, if different from the owner/operator of the surface disposal site, shall develop the following information and shall retain the information for five years:

i. A description of how the vector attraction reduction requirements in LAC 33:IX.3107.D.2.l are met.

ii. The following certification statement:

``I certify, under penalty of law, that the information that will be used to determine compliance with the vector attraction reduction requirements in LAC 33:IX.3107.D.2.l was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.''

b. The owner/operator of the surface disposal site shall develop the following information and shall retain that information for five years:

i. A description of how the management practices in LAC 33:IX.3105.E are met.

ii. A description how the vector attraction reduction requirements in LAC 33:IX.3107.D.2.i through 3107.D.2.k are met if one of those requirements is met.

iii. The following certification statement:

``I certify, under penalty of law, that the information that will be used to determine compliance with the management practices in LAC 33:IX.3105.E and the vector attraction reduction requirements in [insert LAC 33:IX.3107.D.2.i through 2.k if one of those requirements is met] was prepared under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine or imprisonment.''

I. Reporting.

1. The owner/operator of a surface disposal site, or the person who prepares the sewage sludge which is placed on a surface disposal site, if different from the owner/operator of a surface disposal site, shall provide the information in LAC 33:IX.3105.H.1.a to the state administrative authority on February 19 of each year.

2. The owner/operator of the surface disposal site or the person who places domestic septage on a surface disposal site, if different from the owner/operator of the surface disposal site, shall provide the information in LAC 33:IX.3105.H.2.a to the state administrative authority on February 19 of each year.

3. The owner/operator of a surface disposal site shall provide the information in LAC 33:IX.3105.G.3, 3105.H.1.b, and 3105.H.2.b to the state administrative authority on February 19 of each year.

4. The state administrative authority may require any other treatment works treating domestic sewage to report any or all of the information required in LAC 33:IX.3105.I if deemed necessary for the protection of human health or the environment.

§3107. Pathogens and Vector Attraction Reduction

A. Scope.

1. This part contains the requirements for a sewage sludge to be classified either Class A or Class B with respect to pathogens.

2. This part contains the site restrictions for land on which a Class B sewage sludge is applied.

3. This part contains the pathogen requirements for domestic septage applied to agricultural land, forest, or a reclamation site.

4. This part contains alternative vector attraction reduction requirements for sewage sludge that is applied to the land or placed on a surface disposal site.

B. Special definitions. In addition to the terms referenced and defined at LAC 33:IX.3101.H, the following definitions apply to this part:

Aerobic digestion—is the biochemical decomposition of organic matter in sewage sludge into carbon dioxide and water by microorganisms in the presence of air.

Anaerobic digestion—is the biochemical decomposition of organic matter in sewage sludge into methane gas and carbon dioxide by microorganisms in the absence of air.

Density of microorganisms—is the number of microorganisms per unit mass of total solids (dry weight) in the sewage sludge.

Land with a high potential for public exposure—is land that the public uses frequently. This includes, but is not limited to, a public contact site and a reclamation site located in a populated area (e.g, a construction site located in a city).

Land with a low potential for public exposure—is land that the public uses infrequently. This includes, but is not limited to, agricultural land, forest, and a reclamation site located in an unpopulated area (e.g., a strip mine located in a rural area).

Pathogenic organisms—are disease-causing organisms. These include, but are not limited to, certain bacteria, protozoa, viruses, and viable helminth ova.

pH—is the logarithm of the reciprocal of the hydrogen ion concentration measured at 25° Centigrade or measured at another temperature and then converted to an equivalent value at 25° Centigrade.

Specific oxygen uptake rate (SOUR)—is the mass of oxygen consumed per unit time per unit mass of total solids (dry weight basis) in the sewage sludge.

Total solids—are the materials in sewage sludge that remain as residue when the sewage sludge is dried at 103 to 105 degrees Celsius.

Unstabilized solids—are organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Vector attraction—is the characteristic of sewage sludge that attracts rodents, flies, mosquitos, or other organisms capable of transporting infectious agents.

Volatile solids—is the amount of the total solids in sewage sludge lost when the sewage sludge is combusted at 550 degrees Celsius in the presence of excess air.

C. Pathogens.

1. *Sewage sludge--Class A*.

a. The requirement in LAC 33:IX.3107.C.1.b and the requirements in either LAC 33:IX.3107.C.1.c, 3107.C.1.d, 3107.C.1.e, 3107.C.1.f, 3107.C.1.g, or 3107.C.1.h shall be met for a sewage sludge to be classified Class A with respect to pathogens.

b. The Class A pathogen requirements in LAC 33:IX.3107.C.1.c through 3107.C.1.h shall be met either prior to meeting or at the same time

the vector attraction reduction requirements in LAC 33:IX.3107.D, except the vector attraction reduction requirements in LAC 33:IX.3107.D.2.f through 3107.D.2.h, are met.

c. *Class A--Alternative 1*.

i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of *Salmonella sp*. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements of *Exceptional Quality* as defined in LAC 33:IX.3101.H.

ii. The temperature of the sewage sludge that is used or disposed shall be maintained at a specific value for a period of time.

(a). When the percent solids of the sewage sludge is seven percent or higher, the temperature of the sewage sludge shall be 50 degrees Celsius or higher; the time period shall be 20 minutes or longer; and the temperature and time period shall be determined using equation (2), except when small particles of sewage sludge are heated by either warmed gases or an immiscible liquid.

$$D = \frac{131{,}700{,}000}{10^{0.1400t}} \qquad \text{Eq. (2)}$$

Where,

D = time in days.
t = temperature in degrees Celsius.

(b). When the percent solids of the sewage sludge is seven percent or higher and small particles of sewage sludge are heated by either warmed gases or an immiscible liquid, the temperature of the sewage sludge shall be 50 degrees Celsius or higher; the time period shall be 15 seconds or longer; and the temperature and time period shall be determined using equation (2).

(c). When the percent solids of the sewage sludge is less than seven percent and the time period is at least 15 seconds, but less than 30 minutes, the temperature and time period shall be determined using equation (2).

(d). When the percent solids of the sewage sludge is less than seven percent; the temperature of the sewage sludge is 50 degrees Celsius or higher; and the time period is 30 minutes or longer, the temperature and time period shall be determined using equation (3).

$$D = \frac{50{,}070{,}000}{\quad} \qquad \text{Eq. (3)}$$

$$10^{0.1400t}$$

Where,

D = time in days.
t = temperature in degrees Celsius.

d. *Class A--Alternative 2*.

i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of *Salmonella sp*. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements of *Exceptional Quality* as defined in LAC 33:IX.3101.H.

ii. (a). The pH of the sewage sludge that is used or disposed shall be raised to above 12 and shall remain above 12 for 72 hours.

(b). The temperature of the sewage sludge shall be above 52 degrees Celsius for 12 hours or longer during the period that the pH of the sewage sludge is above 12.

(c). At the end of the 72 hour period during which the pH of the sewage sludge is above 12, the sewage sludge shall be air dried to achieve a percent solids in the sewage sludge greater than 50 percent.

e. *Class A--Alternative 3*.

i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of *Salmonella sp*. bacteria in sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements of *Exceptional Quality* as defined in LAC 33:IX.3101.H.

ii. (a). The sewage sludge shall be analyzed prior to pathogen treatment to determine whether the sewage sludge contains enteric viruses.

(b). When the density of enteric viruses in the sewage sludge prior to pathogen treatment is less than one Plaque-forming Unit per four grams of total solids (dry weight basis), the sewage sludge is Class A with respect to enteric viruses until the next monitoring episode for the sewage sludge.

(c). When the density of enteric viruses in the sewage sludge prior to pathogen treatment is equal to or greater than one Plaque-forming Unit per four grams of total solids (dry weight basis), the sewage sludge is Class A with respect to enteric viruses when the density of

enteric viruses in the sewage sludge after pathogen treatment is less than one Plaque-forming Unit per four grams of total solids (dry weight basis) and when the values or ranges of values for the operating parameters for the pathogen treatment process that produces the sewage sludge that meets the enteric virus density requirement are documented.

(d). After the enteric virus reduction in LAC 33:IX.3107.C.1.e.ii.(c) is demonstrated for the pathogen treatment process, the sewage sludge continues to be Class A with respect to enteric viruses when the values for the pathogen treatment process operating parameters are consistent with the values or ranges of values documented in LAC 33:IX.3107.C.1.e.ii.(c).

iii. (a). The sewage sludge shall be analyzed prior to pathogen treatment to determine whether the sewage sludge contains viable helminth ova.

(b). When the density of viable helminth ova in the sewage sludge prior to pathogen treatment is less than one per four grams of total solids (dry weight basis), the sewage sludge is Class A with respect to viable helminth ova until the next monitoring episode for the sewage sludge.

(c). When the density of viable helminth ova in the sewage sludge prior to pathogen treatment is equal to or greater than one per four grams of total solids (dry weight basis), the sewage sludge is Class A with respect to viable helminth ova when the density of viable helminth ova in the sewage sludge after pathogen treatment is less than one per four grams of total solids (dry weight basis) and when the values or ranges of values for the operating parameters for the pathogen treatment process that produces the sewage sludge that meets the viable helminth ova density requirement are documented.

(d). After the viable helminth ova reduction in LAC 33:IX.3107.C.1.e.iii.(c) is demonstrated for the pathogen treatment process, the sewage sludge continues to be Class A with respect to viable helminth ova when the values for the pathogen treatment process operating parameters are consistent with the values or ranges of values documented in LAC 33:IX.3107.C.1.e.iii.(c).

f. *Class A--Alternative 4.*

i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of *Salmonella sp*. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements of *Exceptional Quality* as defined in LAC 33:IX.3101.H.

ii. The density of enteric viruses in the sewage sludge shall be less than one Plaque-forming Unit per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other

container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements in LAC 33:IX.3103.A.2, 3103.A.3, 3103.A.5, or 3103.A.6, unless otherwise specified by the permitting authority.

iii. The density of viable helminth ova in the sewage sludge shall be less than one per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or give away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements of *Exceptional Quality* as defined in LAC 33:IX.3101.H.

g. *Class A--Alternative 5*.

i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of *Salmonella sp*. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or given away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements of *Exceptional Quality* as defined in LAC 33:IX.3101.H.

ii. Sewage sludge that is used or disposed shall be treated in one of the Processes to Further Reduce Pathogens described in appendix P of this Chapter.

h. *Class A--Alternative 6*.

i. Either the density of fecal coliform in the sewage sludge shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of *Salmonella sp*. bacteria in the sewage sludge shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the sewage sludge is used or disposed; at the time the sewage sludge is prepared for sale or given away in a bag or other container for application to the land; or at the time the sewage sludge or material derived from sewage sludge is prepared to meet the requirements of *Exceptional Quality* as defined in LAC 33:IX.3101.H.

ii. Sewage sludge that is used or disposed shall be treated in a process that is equivalent to a Process to Further Reduce Pathogens, as determined by the permitting authority.

2. *Sewage sludge--Class B*.

a. i. The requirements in either LAC 33:IX.3107.C.2.b, 3107.C.2.c, or 3107.C.2.d shall be met for a sewage sludge to be classified Class B with respect to pathogens.

ii. The site restrictions in LAC 33:IX.3107.C.2.e shall be met when sewage sludge that meets the Class B pathogen requirements in LAC 33:IX.3107.C.2.b, 3107.C.2.c, or 3107.C.2.d is applied to the land.

b. *Class B--Alternative 1*.

i. Seven representative samples of the sewage sludge that is used or disposed shall be collected.

ii. The geometric mean of the density of fecal coliform in the samples collected in LAC 33:IX.3107.C.2.b.i shall be less than either 2,000,000 Most Probable Number per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis).

c. *Class B--Alternative 2*. Sewage sludge that is used or disposed shall be treated in one of the Processes to Significantly Reduce Pathogens described in Appendix P of this Chapter.

d. *Class B--Alternative 3*. Sewage sludge that is used or disposed shall be treated in a process that is equivalent to a Process to Significantly Reduce Pathogens, as determined by the permitting authority.

e. *Site restrictions*.

i. Food crops with harvested parts that touch the sewage sludge/soil mixture and are totally above the land surface shall not be harvested for 14 months after application of sewage sludge.

ii. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after application of sewage sludge when the sewage sludge remains on the land surface for four months or longer prior to incorporation into the soil.

iii. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months after application of sewage sludge when the sewage sludge remains on the land surface for less than four months prior to incorporation into the soil.

iv. Food crops, feed crops, and fiber crops shall not be harvested for 30 days after application of sewage sludge.

v. Animals shall not be grazed on the land for 30 days after application of sewage sludge.

vi. Turf grown on land where sewage sludge is applied shall not be harvested for one year after application of the sewage sludge when the harvested turf is placed on either land with a high potential for public exposure or a lawn, unless otherwise specified by the permitting authority.

vii. Public access to land with a high potential for public exposure shall be restricted for one year after application of sewage sludge.

viii. Public access to land with a low potential for public exposure shall be restricted for 30 days after application of sewage sludge.

3. *Domestic septage*.

a. The site restrictions in LAC 33:IX.3107.C.2.e shall be met when domestic septage is applied to agricultural land, forest, or a

reclamation site; or

b. The pH of domestic septage applied to agricultural land, forest, or a reclamation site shall be raised to 12 or higher by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for 30 minutes and the site restrictions in LAC 33:IX.3107.C.2.e.i through 3107.C.2.e.iv shall be met.

D. Vector attraction reduction.

1. a. One of the vector attraction reduction requirements in LAC 33:IX.3107.D.2.a through 3107.D.2.j shall be met when bulk sewage sludge is applied to agricultural land, forest, a public contact site, or a reclamation site.

b. One of the vector attraction reduction requirements in LAC 33:IX.3107.D.2.a through 3107.D.2.h shall be met when bulk sewage sludge is applied to a lawn or a home garden.

c. One of the vector attraction reduction requirements in LAC 33:IX.3107.D.2.a through 3107.D.2.h shall be met when sewage sludge is sold or given away in a bag or other container for application to the land.

d. One of the vector attraction reduction requirements in LAC 33:IX.3107.D.2.a through 3107.D.2.k shall be met when sewage sludge (other than domestic septage) is placed on an active sewage sludge unit. One of the vector attraction reduction requirements in LAC 33:IX.3107.D.2.i, 3107.D.2.j, or 3107.D.2.l shall be met when domestic septage is applied to agricultural land, forest, or a reclamation site and one of the vector attraction reduction requirements in LAC 33:IX.3107.D.2.i, 3107.D.2.j, or 3107.D.2.l shall be met when domestic septage is placed on an active sewage sludge unit.

2. a. The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38 percent (see calculation procedures in ``Environmental Regulations and Technology--Control of Pathogens and Vector Attraction in Sewage sludge'', EPA-625/R-92/013, 1992, U.S. Environmental Protection Agency, Cincinnati, Ohio 45268).

b. When the 38 percent volatile solids reduction requirement in LAC 33:IX.3107.D.2.a cannot be met for an anaerobically digested sewage sludge, vector attraction reduction can be demonstrated by digesting a portion of the previously digested sewage sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 degrees Celsius. When at the end of the 40 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 17 percent, vector attraction reduction is achieved.

c. When the 38 percent volatile solids reduction requirement in LAC 33:IX.3107.D.2.a cannot be met for an aerobically digested sewage sludge, vector attraction reduction can be demonstrated by digesting a portion of the previously digested sewage sludge that has a percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20 degrees Celsius. When at the end of the 30 days, the volatile solids in the sewage sludge at the beginning of that period is reduced by less than 15 percent, vector attraction reduction is achieved.

d. The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20 degrees Celsius.

e. Sewage sludge shall be treated in an aerobic process for 14 days or longer. During that time, the temperature of the sewage sludge shall be higher than 40 degrees Celsius and the average temperature of the sewage sludge shall be higher than 45 degrees Celsius.

f. The pH of sewage sludge shall be raised to 12 or higher by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for two hours and then at 11.5 or higher for an additional 22 hours.

g. The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials.

h. The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials.

i. i. Sewage sludge shall be injected below the surface of the land.

ii. No significant amount of the sewage sludge shall be present on the land surface within one hour after the sewage sludge is injected.

iii. When the sewage sludge that is injected below the surface of the land is Class A with respect to pathogens, the sewage sludge shall be injected below the land surface within eight hours after being discharged from the pathogen treatment process.

j. i. Sewage sludge applied to the land surface or placed on an active sewage sludge unit shall be incorporated into the soil within six hours after application to or placement on the land, unless otherwise specified by the permitting authority.

ii. When sewage sludge that is incorporated into the soil is Class A with respect to pathogens, the sewage sludge shall be applied to or placed on the land within eight hours after being discharged from the pathogen treatment process.

k. Sewage sludge placed on an active sewage sludge unit shall be covered with soil or other material at the end of each operating day.

l. The pH of domestic septage shall be raised to 12 or higher by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for 30 minutes.

§3109. Incineration

A. Applicability.

1. This part applies to the owner/operator of a sewage sludge incinerator, to a sewage sludge incinerator, and to sewage sludge fired in a sewage sludge incinerator.

2. This part applies to the exit gas from a sewage sludge incinerator stack.

3. The management practice in LAC 33:IX.3109.F.1, the frequency of monitoring requirement for total hydrocarbon concentration in LAC 33:IX.3109.G.2 and the recordkeeping requirements for total hydrocarbon concentration in LAC 33:IX.3109.H.3 and 3109.H.14 do not apply if the following conditions are met:

a. The exit gas from a sewage sludge incinerator stack is monitored continuously for carbon monoxide.

b. The monthly average concentration of carbon monoxide in the exit gas from a sewage sludge incinerator stack, corrected for zero percent moisture and to seven percent oxygen, does not exceed 100 parts per million on a volumetric basis.

c. The owner/operator of a sewage sludge incinerator retains the following information for five years:

i. The carbon monoxide concentrations in the exit gas; and

ii. A calibration and maintenance log for the instrument used to measure the carbon monoxide concentration.

d. The owner/operator of a sewage sludge incinerator submits the monthly average carbon monoxide concentration in the exit gas to the state administrative authority on February 19 of each year.

B. Special definitions. In addition to the terms referenced and defined at LAC 33:IX.3101.H, the following definitions apply to this part:

Air pollution control device—is one or more processes used to treat the exit gas from a sewage sludge incinerator stack.

Auxiliary fuel—is fuel used to augment the fuel value of sewage sludge. This includes, but is not limited to, natural gas, fuel oil, coal, gas generated during anaerobic digestion of sewage sludge, and municipal solid waste (not to exceed 30 percent of the dry weight of sewage sludge and auxiliary fuel together). Hazardous wastes are not auxiliary fuel.

Average daily concentration—is the arithmetic mean of the concentration of a pollutant in milligrams per kilogram of sewage sludge (dry weight basis) in the samples collected and analyzed in a month.

Control efficiency—is the mass of a pollutant in the sewage sludge fed to an incinerator minus the mass of that pollutant in the exit gas from the incinerator stack divided by the mass of the pollutant in the sewage sludge fed to the incinerator.

Dispersion factor—is the ratio of the increase in the ground level

ambient air concentration for a pollutant at or beyond the property line of the site where the sewage sludge incinerator is located to the mass emission rate for the pollutant from the incinerator stack.

Fluidized bed incinerator—is an enclosed device in which organic matter and inorganic matter in sewage sludge are combusted in a bed of particles suspended in the combustion chamber gas.

Hourly average—is the arithmetic mean of all measurements, taken during an hour. At least two measurements must be taken during the hour.

Incineration—is the combustion of organic matter and inorganic matter in sewage sludge by high temperatures in an enclosed device.

Incinerator operating combustion temperature—is the arithmetic mean of the temperature readings in the hottest zone of the furnace recorded in a day (24 hours) when the temperature is averaged and recorded at least hourly during the hours the incinerator operates in a day.

Monthly average—is the arithmetic mean of the hourly averages for the hours a sewage sludge incinerator operates during the month.

Performance test combustion temperature—is the arithmetic mean of the average combustion temperature in the hottest zone of the furnace for each of the runs in a performance test.

Risk specific concentration—is the allowable increase in the average daily ground level ambient air concentration for a pollutant from the incineration of sewage sludge at or beyond the property line of the site where the sewage sludge incinerator is located.

Sewage sludge feed rate—is either the average daily amount of sewage sludge fired in all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located for the number of days in a 365 day period that each sewage sludge incinerator operates, or the average daily design capacity for all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located.

Sewage sludge incinerator—is an enclosed device in which only sewage sludge and auxiliary fuel are fired.

Stack height—is the difference between the elevation of the top of a sewage sludge incinerator stack and the elevation of the ground at the base of the stack when the difference is equal to or less than 65 meters. When the difference is greater than 65 meters, stack height is the creditable stack height determined in accordance with LAC 33:III.921.

Total hydrocarbons—means the organic compounds in the exit gas from a sewage sludge incinerator stack measured using a flame ionization detection instrument referenced to propane.

Wet electrostatic precipitator—is an air pollution control device that uses both electrical forces and water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

Wet scrubber—is an air pollution control device that uses water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

C. General requirements.

No person shall fire sewage sludge in a sewage sludge incinerator except in compliance with the requirements in this part.

D. Pollutant limits.

1. Firing of sewage sludge in a sewage sludge incinerator shall not violate the requirements in the National Emission Standard for Beryllium in LAC 33:III.5116.

2. Firing of sewage sludge in a sewage sludge incinerator shall not violate the requirements in the National Emission Standard for Mercury in LAC 33:III.5116.

3. *Pollutant limit-lead*.

a. The average daily concentration for lead in sewage sludge fed to a sewage sludge incinerator shall not exceed the concentration calculated using Equation (4).

$$C = \frac{0.1 \times NAAQS \times 86{,}400}{DF \times (1\text{-}CE) \times SF} \quad \text{Eq. (4)}$$

Where:
C = Average daily concentration of lead in sewage sludge.
NAAQS = National Ambient Air Quality Standard for lead in micrograms per cubic meter.
DF = Dispersion factor in micrograms per cubic meter per gram per second.
CE = Sewage sludge incinerator control efficiency for lead in hundredths.
SF = Sewage sludge feed rate in metric tons per day (dry weight basis).

b. The dispersion factor (DF) in equation (4) shall be determined from an air dispersion model in accordance with LAC 33:IX.3109.D.5.

i. When the sewage sludge stack height is 65 meters or less, the actual sewage sludge incinerator stack height shall be used in an air dispersion model to determine the dispersion factor (DF) in equation (4).

ii. When the sewage sludge incinerator stack height exceeds 65 meters, the creditable stack height shall be determined in accordance with LAC 33:III.921 and the creditable stack height shall be used in an air dispersion model to determine the dispersion factor (DF) in equation (4).

c. The control efficiency (CE) for equation (4) shall be determined from a performance test of the sewage sludge incinerator in accordance with LAC 33:IX.3109.D.5.

4. *Pollutant limit--arsenic, cadmium, chromium, and nickel*.

a. The average daily concentration for arsenic, cadmium,

chromium, and nickel in sewage sludge fed to a sewage sludge incinerator each shall not exceed the concentration calculated using equation (5).

$$C = \frac{RSC \times 86{,}400}{DF \times (1\text{-}CE) \times SF} \quad \text{Eq. (5)}$$

Where:

C = Average daily concentration of arsenic, cadmium, chromium, or nickel in sewage sludge.

CE = Sewage sludge incinerator control efficiency for arsenic, cadmium, chromium, or nickel in hundredths.

DF = Dispersion factor in micrograms per cubic meter per gram per second.

RSC = Risk specific concentration for arsenic, cadmium, chromium, or nickel in micrograms per cubic meter.

SF = Sewage sludge feed rate in metric tons per day (dry weight basis).

b. The risk specific concentrations for arsenic, cadmium, and nickel used in equation (5) shall be obtained from Table 1 of §3109.D.

Table 1 of §3109.D - Risk Specific Concentration Arsenic, Cadmium, and Nickel

Pollutant	Risk specific concentration (micrograms per cubic meter)
Arsenic	0.023
Cadmium	0.057
Nickel	2.000

c. The risk specific concentration for chromium used in equation (5) shall be obtained from Table 2 of §3109.D or shall be calculated using equation (6).

Table 2 of §3109.D - Risk Specific Concentration--Chromium

Type of Incinerator	Risk specific concentration (micrograms per cubic meter)
Fluidized bed with wet scrubber	0.65
Fluidized bed with wet scrubber and wet electrostatic precipitator	0.23
Other types with wet scrubber	0.064
Other types with wet scrubber and wet electrostatic precipitator	0.016

$$RSC = \frac{0.0085}{r} \quad \text{Eq. (6)}$$

Where:

RSC = risk specific concentration for chromium in micrograms per cubic meter used in equation (5).

r = decimal fraction of the hexavalent chromium concentration in the total chromium concentration measured in the exit gas from the sewage sludge incinerator stack in hundredths.

d. The dispersion factor (DF) in equation (5) shall be determined from an air dispersion model in accordance with LAC 33:IX.3109.D.5.

i. When the sewage sludge incinerator stack height is equal to or less than 65 meters, the actual sewage sludge incinerator stack height shall be used in an air dispersion model to determine the dispersion factor (DF) for equation (5).

ii. When the sewage sludge incinerator stack height is greater than 65 meters, the creditable stack height shall be determined in accordance with LAC 33:III.921 and the creditable stack height shall be used in an air dispersion model to determine the dispersion factor (DF) for equation (5).

e. The control efficiency (CE) in equation (5) shall be determined from a performance test of the sewage sludge incinerator in accordance with LAC 33:IX.3109.D.5.

5. Air Dispersion Modeling and Performance Testing

a. The air dispersion model used to determine the dispersion factor in LAC 33:IX.3109.D.3.b and 3109.D.4.d shall be appropriate for the geographical, physical, and population characteristics at the sewage sludge incinerator site. The performance test used to determine the control efficiencies in LAC 33:IX.3109.D.3.c and 3109.D.4.e shall be appropriate for the type of sewage sludge incinerator.

b. For air dispersion modeling initiated after (**insert the effective date for this final rule**), the modeling results shall be submitted to the permitting authority 30 days after completion of the modeling. In addition to the modeling results, the submission shall include a description of the air dispersion model and the values used for the model parameters.

c. The following procedures, at a minimum, shall apply in conducting performance tests to determine the control efficiencies in LAC 33:IX.3109.D.3.c and 3109.D.4.e after (**insert the effective date for this final rule**):

i. The performance test shall be conducted under representative sewage sludge incinerator conditions at the highest expected sewage sludge feed rate within the design capacity of the sewage sludge incinerator.

ii. The permitting authority shall be notified at least 30 days prior to any performance test so the permitting authority may have the opportunity to observe the test. The notice shall include a test protocol with incinerator operating conditions and a list of test methods to be used.

iii. Each performance test shall consist of three separate runs using the applicable test method. The control efficiency for a pollutant shall be the arithmetic mean of the control efficiencies for the pollutant from the three runs.

d. The pollutant limits in LAC 33:IX.3109.D.3 and 3109.D.4 of this section shall be submitted to the permitting authority no later than 30 days after completion of the air dispersion modeling and performance test.

e. Significant changes in geographic or physical characteristics at the incinerator site or in incinerator operating conditions require new air dispersion modeling or performance testing to determine a new dispersion factor or a new control efficiency that will be used to calculate revised pollutant limits.

E. Operational standard--total hydrocarbons.

1. The total hydrocarbons concentration in the exit gas from a sewage sludge incinerator shall be corrected for zero percent moisture by multiplying the measured total hydrocarbons concentration by the correction factor calculated using equation (7).

$$\text{Correction factor (percent moisture)} = \frac{1}{(1 - X)} \quad \text{Eq. (7)}$$

Where:
X = decimal fraction of the percent moisture in the sewage sludge incinerator exit gas in hundredths.

2. The total hydrocarbons concentration in the exit gas from a sewage sludge incinerator shall be corrected to seven percent oxygen by multiplying the measured total hydrocarbons concentration by the correction factor calculated using equation (8).

$$\text{Correction factor (oxygen)} = \frac{14}{(21 - Y)} \quad \text{Eq. (8)}$$

Where:
Y = Percent oxygen concentration in the sewage sludge incinerator stack exit gas (dry volume/dry volume).

3. The monthly average concentration for total hydrocarbons in the exit gas from a sewage sludge incinerator stack, corrected for zero percent moisture using the correction factor from equation (7) and to seven percent oxygen using the correction factor from equation (8), shall not exceed 100 parts per million on a volumetric basis when measured using the instrument required by LAC 33:IX.3109.F.1.

F. Management practices.

1. a. An instrument that continuously measures and records the total hydrocarbons concentration in the sewage sludge incinerator stack exit gas shall be installed, calibrated, operated, and maintained for each sewage sludge incinerator.

b. The total hydrocarbons instrument shall employ a flame ionization detector; shall have a heated sampling line maintained at a temperature of 150 degrees Celsius or higher at all times; and shall be calibrated at least once every 24-hour operating period using propane.

2. An instrument that continuously measures and records the oxygen concentration in the sewage sludge incinerator stack exit gas shall be installed, calibrated, operated, and maintained for each sewage sludge incinerator.

3. An instrument that continuously measures and records information used to determine the moisture content in the sewage sludge incinerator stack exit gas shall be installed, calibrated, operated, and maintained for each sewage sludge incinerator.

4. An instrument that continuously measures and records combustion temperatures shall be installed, calibrated, operated, and maintained for each sewage sludge incinerator.

5. Operation of a sewage sludge incinerator shall not cause the operating combustion temperature for the sewage sludge incinerator to exceed the performance test combustion temperature by more than 20 percent.

6. An air pollution control device shall be appropriate for the type of sewage sludge incinerator and the operating parameters for the air pollution control device shall be adequate to indicate proper performance of the air pollution control device. For sewage sludge incinerators subject to the requirements in Subpart O of 40 CFR part 60, operation of the air pollution control device shall not violate the requirements for the air pollution control device in Subpart O of 40 CFR 60. For all other sewage sludge incinerators, operation of the air pollution control device shall not cause a significant exceedance of the average value for the air pollution control device operating parameters from the performance test required by LAC 33:IX.3109.D.3.c and 3109.D.4.e.

7. Sewage sludge shall not be fired in a sewage sludge incinerator if it is likely to adversely affect a threatened or endangered species listed under Section 4 of the Endangered Species Act or its designated critical habitat.

8. The instruments required in LAC 33:IX.3109.F.1 through 3109.F.4 shall be appropriate for the type of sewage sludge incinerator.

G. Frequency of monitoring.

1. *Sewage sludge*.

a. The frequency of monitoring for beryllium shall be as required in Subpart C of 40 CFR Part 61, and for mercury as required in Subpart E of 40 CFR Part 61.

b. The frequency of monitoring for arsenic, cadmium, chromium, lead, and nickel in sewage sludge fed to a sewage sludge incinerator shall be the frequency in Table 1 of §3109.G.

c. i. The frequency of monitoring for all other sampling required by the applicable regulations in LAC 33:III and Subpart O of 40 CFR Part 60 shall be as specified in LAC 33:III and Subpart O of 40 CFR Part 60.

ii. If the frequency of monitoring is not specified, then the frequency of monitoring shall be as specified by the state administrative authority.

Table 1 of §3109.G - Frequency of Monitoring--Incineration

Amount of sewage sludge[1] (metric tons per 365 day period)	Frequency

Greater than zero but less than 290.....	Once per year
Equal to or greater than 290 but less than 1,500.....	Once per quarter (four times per year).
Equal to or greater than 1,500 but less than 15,000.....	Once per 60 days (six times per year).
Equal to or greater than 15,000.....	Once per month (12 times per year).

[1]Amount of sewage sludge fired in a sewage sludge incinerator (dry weight basis).

d. After the sewage sludge has been monitored for two years at the frequency in Table 1 of §3109.G, the permitting authority may reduce the frequency of monitoring for arsenic, cadmium, chromium, lead, and nickel.

2. *Total hydrocarbons, oxygen concentration, information to determine moisture content, and combustion temperatures*. The total hydrocarbons concentration and oxygen concentration in the exit gas from a sewage sludge incinerator stack, the information used to measure moisture content in the exit gas, and the combustion temperatures for the sewage sludge incinerator shall be monitored continuously.

3. *Air pollution control device operating parameters*. For sewage sludge incinerators subject to the requirements in Subpart O of 40 CFR Part 60, the frequency of monitoring for the appropriate air pollution control device operating parameters shall be the frequency of monitoring in Subpart O of 40 CFR Part 60. For all other sewage sludge incinerators, the appropriate air pollution control device operating parameters shall be at least daily.

H. Recordkeeping.

1. The owner/operator of a sewage sludge incinerator shall develop the information in LAC 33:IX.3109.H.2 through 3109.H.15 and shall retain that information for five years.

2. The concentration of lead, arsenic, cadmium, chromium, and nickel in the sewage sludge fed to the sewage sludge incinerator.

3. The total hydrocarbons concentrations in the exit gas from the sewage sludge incinerator stack.

4. Information that indicates the requirements in the National Emission Standard for beryllium in LAC 33:III.5116 are met.

5. Information that indicates the requirements in the National Emission Standard for mercury in LAC 33:III.5116 are met.

6. The operating combustion temperatures for the sewage sludge incinerator.

7. Values for the air pollution control device operating parameters.

8. The oxygen concentration and information used to measure moisture content in the exit gas from the sewage sludge incinerator stack.

9. The sewage sludge feed rate.

10. The stack height for the sewage sludge incinerator.

11. The dispersion factor for the site where the sewage sludge incinerator is located.

12. The control efficiency for lead, arsenic, cadmium, chromium, and nickel for each sewage sludge incinerator.

13. The risk specific concentration for chromium calculated using equation (6), if applicable.

14. A calibration and maintenance log for the instruments used to measure the total hydrocarbons concentration and oxygen concentration in the exit gas from the sewage sludge incinerator stack, the information needed to determine moisture content in the exit gas, and the combustion temperatures.

15. Results of all the sampling required by the applicable regulations in LAC 33:III and Subpart O of 40 CFR Part 60.

I. Reporting.

1. The owner/operator of a sewage sludge incinerator shall submit the information in LAC 33:IX.3109.H.2 through 3109.H.8 and 3109.H.15 to the state administrative authority on February 19 of each year.

2. The state administrative authority may require any other treatment works treating domestic sewage to report any or all of the information required in LAC 33:IX.3109.I if deemed necessary for the protection of human health or the environment.

APPENDIX O -- PROCEDURE TO DETERMINE THE ANNUAL WHOLE SLUDGE APPLICATION RATE FOR A SEWAGE SLUDGE

LAC 33:IX.3103.D.1.d.ii requires that the product of the concentration for each pollutant listed in Table 4 of §3103.D in sewage sludge sold or given away in a bag or other container for application to the land and the annual whole sludge application rate (AWSAR) for the sewage sludge not cause the annual pollutant loading rate for the pollutant in Table 4 of §3103.D to be exceeded. This appendix contains the procedure used to determine the AWSAR for a sewage sludge that does not cause the annual pollutant loading rates in Table 4 of §3103.D to be exceeded.

The relationship between the annual pollutant loading rate (APLR) for a pollutant and the annual whole sludge application rate (AWSAR) for sewage sludge is shown in equation (1).

$$APLR = C \times ABAR \times 0.001 \quad \text{Equation (1)}$$

Where:
APLR = Annual pollutant loading rate in kilograms per hectare per 365 day period.
C = Pollutant concentration in milligrams, per kilogram of total solids (dry weight basis).
AWSAR = Annual whole sludge application rate in metric tons per hectare per 365 day period (dry weight basis).
0.001 = A conversion factor.

To determine the AWSAR, equation (1) is rearranged into equation (2):

$$AWSAR = \frac{APLR}{C \times 0.001} \quad \text{Equation (2)}$$

The procedure used to determine the AWSAR for a sewage sludge is presented below.

Procedure:

1. Analyze a sample of the sewage sludge to determine the concentration for each of the pollutants listed in Table 4 of §3103.D in the sewage sludge.

2. Using the pollutant concentrations from Step 1 and the APLRs from Table 4 of §3103.D, calculate an AWSAR for each pollutant using equation (2) above.

3. The AWSAR for the sewage sludge is the lowest AWSAR calculated in Step 2.

APPENDIX P -- PATHOGEN TREATMENT PROCESSES

A. Processes to Significantly Reduce Pathogens (PSRP)

1. Aerobic digestion--Sewage sludge is agitated with air or oxygen to maintain aerobic conditions for a specific mean cell residence time at a specific temperature. Values for the mean cell residence time and temperature shall be between 40 days at 20 degrees Celsius and 60 days at 15 degrees Celsius.

2. Air drying--Sewage sludge is dried on sand beds or on paved or unpaved basins. The sewage sludge dries for a minimum of three months. During two of the three months, the ambient average daily temperature is above zero degrees Celsius.

3. Anaerobic digestion--Sewage sludge is treated in the absence of air for a specific mean cell residence time at a specific temperature. Values for the mean cell residence time and temperature shall be between 15 days at 35 to 55 degrees Celsius and 60 days at 20 degrees Celsius.

4. Composting--Using either the within-vessel, static aerated pile, or windrow composting methods, the temperature of the sewage sludge is raised to 40 degrees Celsius or higher and remains at 40 degrees Celsius or higher for five days. For four hours during the five days, the temperature in the compost pile exceeds 55 degrees Celsius.

5. Lime stabilization--Sufficient lime is added to the sewage sludge to raise the pH of the sewage sludge to 12 after two hours of contact.

B. Processes to Further Reduce Pathogens (PFRP)

1. Composting--Using either the within-vessel composting method or the static aerated pile composting method, the temperature of the sewage sludge is maintained at 55 degrees Celsius or higher for three days. Using the windrow composting method, the temperature of the sewage sludge is maintained at 55 degrees or higher for 15 days or longer. During the period when the compost is maintained at 55 degrees or higher, there shall be a minimum of five turnings of the windrow.

2. Heat drying--Sewage sludge is dried by direct or indirect contact with hot gases to reduce the moisture content of the sewage sludge to 10 percent or lower. Either the temperature of the sewage sludge particles exceeds 80 degrees Celsius or the wet bulb temperature of the gas in contact with the sewage sludge as the sewage sludge leaves the dryer exceeds 80 degrees Celsius.

3. Heat treatment--Liquid sewage sludge is heated to a temperature of 180 degrees Celsius or higher for 30 minutes.

4. Thermophilic aerobic digestion--Liquid sewage sludge is agitated with air or oxygen to maintain aerobic conditions and the mean cell residence time of the sewage sludge is 10 days at 55 to 60 degrees Celsius.

5. Beta ray irradiation--Sewage sludge is irradiated with beta rays from an accelerator at dosages of at least 1.0 megarad at room temperature (ca. 20 degrees Celsius).

6. Gamma ray irradiation--Sewage sludge is irradiated with gamma rays from certain isotopes, such as ^{60}Cobalt and ^{137}Cesium, at dosages of at least 1.0 megarad at room temperature (ca. 20° Celsius).

7. Pasteurization--The temperature of the sewage sludge is maintained at 70 degrees Celsius or higher for 30 minutes or longer.