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Form TCEQ-10056

TCEQ

**DOMESTIC
WASTEWATER PERMIT
APPLICATION:
SEWAGE SLUDGE
TECHNICAL REPORTS**

Instructions and Application for
Sludge Disposal Authorization in
the Domestic Wastewater Permit

Texas Commission on Environmental Quality

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Domestic Wastewater Permit Application: Completing the Sewage Sludge Technical Reports

Purpose

The purpose of this package is to provide detailed instructions and the application for completing the Sewage Sludge Technical Reports. The applicant may use these reports in conjunction with a domestic wastewater permit application to continue authorization or obtain new or amended authorization for certain sludge disposal options located adjacent to the wastewater treatment facility. The applicant needs to submit the appropriate sections of the Sewage Sludge Technical Reports along with the Administrative and Technical Reports of the Domestic Wastewater Permit Application.

For land application of sewage sludge for beneficial use at a site located adjacent to the wastewater treatment plant or at a different site, do not use these reports. Instead refer to the Domestic Wastewater Permit Application Instructions for details on which application to submit and who to contact for information.

Objectives

These instructions will answer the following questions

- Who must complete and submit the Sewage Sludge Technical Reports?
- When must the completed Sewage Sludge Technical Reports be submitted?
- How do I complete the Sewage Sludge Technical Reports?
- How do I obtain more information and assistance in completing the Sewage Sludge Technical Reports?

Who should submit the Sewage Sludge Technical Reports?

The Sewage Sludge Technical Reports should be submitted by owners of domestic wastewater treatment plants that are requesting authorization in an existing or proposed domestic wastewater permit for sewage sludge and/or septage disposal in a **surface disposal site** (sludge monofill) at a site located adjacent to the wastewater treatment facility, **sewage sludge composting**, or **sludge marketing and distribution**.

When are the Sewage Sludge Technical Reports submitted?

For renewals, new and amendment applications, the completed Sewage Sludge Technical Reports must be submitted with the completed Administrative and Technical Reports of the Domestic Wastewater Permit Application. The completed reports should be submitted at least 180 days before the date the proposed activity is to occur. For renewal applications, the completed application must be submitted at least 180 days before the expiration date of the current permit.

How do I complete the Sewage Sludge Technical Reports?

Submit the original Sewage Sludge Technical Reports and three copies when it is completed. The Sewage Sludge Technical Reports are designed so that only those sections that are relevant must be submitted depending on the type(s) of authorizations being sought by the applicant. Rarely will all sections of the Sewage Sludge Technical Reports be submitted. Administrative Report 1.0 and Technical Report 1.0 for Domestic Wastewater must be submitted along with the applicable sections of Sewage Sludge Technical Reports that are specific to the use or disposal authorization requested by the applicant. Administrative and Technical Reports 1.0 and 1.1, as well as the applicable Sewage Sludge Technical Reports must be submitted when requesting amended or new authorization for sewage sludge use or disposal in a wastewater permit. Do not submit the instructions; submit only the appropriate Sewage Sludge Technical Reports. Do not submit Sewage Sludge Technical Reports that are not applicable.

THE FORMS MAY NOT BE ALTERED IN ANY WAY; SEWAGE SLUDGE TECHNICAL REPORTS THAT ARE NOT IN THE SAME FORMAT AND PAGE NUMBERING SEQUENCE WILL NOT BE PROCESSED AND WILL BE RETURNED.

How do I obtain more information and assistance in completing the Sewage Sludge Technical Reports?

Contact the Municipal Permit Team at 512/239-4671 to discuss which reports are applicable for continued or new authorization for the various sludge disposal options. For sewage sludge disposal that is not located adjacent to the wastewater treatment plant, contact the Land Application Team at 512/239-4671.

Abbreviations and Acronyms

AMU	- Agricultural Management Unit	PSRP	- Process to Significantly Reduce Pathogens
CAFO	- Confined Animal Feeding Operation	QA/QC	- Quality Assurance/Quality Control
CASRN	- Chemical Abstract Service Registration Number	SAR	- Sodium Adsorption Ratio
CFR	- Code of Federal Regulations	SIC Code	- Standard Industrial Classification Code
CFU	- Colony Forming Units	SWDA	- Solid Waste Disposal Act
EPA	- United States Environmental Protection Agency	TAC	- Texas Administrative Code
MAL	- Minimum Analytical Level	TLAP	- Texas Land Application Permit
MPN	- Most Probable Number	TCEQ	- Texas Commission on Environmental Quality
mg/l	- Milligrams per Liter	TPDES Permit	- Texas Pollutant Discharge Elimination System Permit
ug/l	- Micrograms per Liter	USDA	- United States Department of Agriculture
NPDES	- National Pollutant Discharge Elimination System	USGS	- United States Geological Survey
PFRP	- Process to Further Reduce Pathogens		

Definitions

(30 TAC Chapter 312, Subchapter A contains definitions related to sewage sludge)

Active Sludge Unit - A sludge unit that has not closed and/or is still receiving sewage sludge.

Aerobic Digestion - The biochemical decomposition of organic matter in sewage sludge into carbon dioxide, water and other by-products by microorganisms in the presence of free oxygen.

Agricultural Management Unit - A portion of the land application area contained within an identifiable boundary, such as a river, fence, or road, or where the area has a known crop or land use history.

Agronomic Rate - The whole sludge application rate (dry weight basis) designed: (A) to provide the amount of nitrogen needed by the crop or vegetation grown on the land; and (B) to minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the groundwater.

Beneficial Use - Placement of sewage sludge onto land in a manner which complies with the requirements of 30 TAC 312 Subchapter B, and does not exceed the agronomic need or rate for a cover crop or any metal or toxic constituent limitations which the cover crop may have. Placement of sewage sludge on the land at a rate below the optimal agronomic rate will be considered a beneficial use.

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

Class A Sewage Sludge - Sewage sludge meeting one of the pathogen reduction requirements on 30 TAC Section 312.82(a).

Class B Sewage Sludge - Sewage sludge meeting one of the pathogen reduction requirements on 30 TAC Section 312.82(b).

Domestic Septage - 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.

Domestic Sewage - Waste and wastewater from humans or household operations that is discharged to a wastewater collection system or otherwise enters a treatment works.

Dry Weight Basis - Calculated on the basis of having been dried at 105 degrees Celsius until reaching a constant mass (i.e., essentially 100% solids content).

Facility - Includes all contiguous land, structures, other appurtenances, and improvements on the land used for the surface disposal, land application for beneficial use, or incineration of sewage sludge.

Ground Water - Water below the land surface in the saturated zone.

Industrial Wastewater - Wastewater generated in a commercial or industrial process.

Land Application - The spraying or spreading of sewage sludge or septage onto the land surface; the injection of sewage sludge or septage below the land surface; or the incorporation of sewage sludge or septage into the soil so that the sewage sludge or septage can either condition the soil or fertilize vegetation grown in the soil.

Monofill - A landfill or trench in which sewage sludge and/or septage is the only type of solid waste placed.

Off-site - Property which cannot be characterized as "on-site".

On-site - The same or contiguous property owned, controlled or supervised by the same person. If the property is divided by public or private right-of-way, the access shall be by crossing the right-of-way or the right-of-way shall be under the control of the person.

Pathogenic Organisms - Disease-causing organisms which include, but are not limited to, certain bacteria, protozoa, viruses, and viable *helminth ova*.

Person - An individual, association, partnership, corporation, municipality, state or federal agency, or an agent or employee thereof.

Place Sewage Sludge or Sewage Sludge Placed - Disposal of sewage sludge on a surface disposal site.

Process or Processing - These terms shall have the same meaning as "treat" or "treatment".

Sewage Sludge - Solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in treatment works. Sewage sludge includes, but is not limited to, domestic septage, scum, or solids removed in primary, secondary, or advanced wastewater treatment processes, and material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sludge incinerator or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works.

Sludge Unit - Land on which only sewage sludge is placed for disposal. A sludge unit shall be used for sewage sludge. This does not include land on which sewage sludge is either stored or treated.

Sludge Unit Boundary - The outermost perimeter of a surface disposal site.

Transporter - Any person who collects, conveys, or transports sewage sludge, water treatment plant sludge, grit trap waste, grease trap waste, chemical toilet waste and/or septage by roadway, ship, rail, or other means.

Treat or Treatment of Sewage Sludge - The preparation of sewage sludge for final use of disposal. This includes, but is not limited to thickening, stabilization, and dewatering of sewage sludge. This does not include storage of sewage sludge.

Vector Attraction - The characteristic of sewage sludge that attracts rodents, flies, mosquitos, or other organisms capable of transporting infectious agents.

Water Treatment Sludge - Sludge generated during the treatment of either surface water or ground water for potable use, which is not an industrial solid waste as defined in 30 TAC Section 335.1.

SEWAGE SLUDGE TECHNICAL REPORT 1.0 - GENERAL INFORMATION

1. Treatment Process Information

a. Indicate by a check mark that each of the requested items has been provided. If an item is not applicable, please mark the space N/A and provide a discussion of why the item is not applicable.

Provide all of the information listed in the bullets below regarding the sludge treatment units and sludge processing conducted at the facility. This information will be used to evaluate all aspects of the sludge operation to ensure they are adequate for the sludge use or disposal being requested. Information specific to each method of disposal/use (i.e., beneficial land application, composting, monofill) is addressed in the separate Technical Reports.

- Description of the type of sludge processing (e.g., aerobic digestion, heat drying, and lime stabilization). Provide a detailed description of processes and treatment units utilized to meet pathogen and vector reduction requirements as needed for the sludge use or disposal. Include any admixtures and blending agents.
- Process flow diagram of the entire wastewater treatment process. Include all components of the treatment system and flow streams through the process, storage, and removal from the treatment plant site. Provide more detailed flow stream information regarding the sludge treatment units. The flow streams must indicate the quantity of sludge on a wet weight, dry weight, and volumetric basis through each sludge process unit.
- Design calculations for the specified treatment process. Provide the dimensions of the treatment units (Length x Width x Height, capacity in gallons and/or cubic feet). Include design calculations for the specified treatment process (temperature ranges, residence time, chemical additions, dewatering capability, etc). Provide information within the design calculations that discuss design features (alarms, standby and duplicate units, holding tanks) and functional arrangements (flexibility of piping, valves, backup generator) within the sludge process units that will prevent the partial treatment of sewage sludge or the overflow of wastewater (e.g., supernate) due to: 1) power failure; 2) equipment malfunction; 3) plant maintenance; or 4) other circumstances.
- Description of storage method. Include the method to control surface water runoff and runoff, collection of leachate, and/or process wastewater generated from the facility, and any bulk material storage areas. For uncovered bulk material storage or processed material, provide design calculations for protecting the areas from the 25-year, 24-hour rainfall event. Include sources of information and assumptions.
- Method to control ground water contamination.
- An odor, dust, and bioaerosol management plan that outlines how the production and migration of each of these emissions will be monitored and minimized, including design and operational practices. The buffer zone requirements for treatment units are found in 30 TAC Section 312.13(e) and are applicable for all wastewater treatment plant units.
- Description of the ultimate use for the finished product. The description of the proposed use or disposal and method of disposal of any product that cannot be used in the expected manner due to poor quality or change in market conditions.

b. Answer the question yes or no whether the treatment units are above the 100-year frequency flood plain. TCEQ design criteria require that all treatment units be protected from inundation from a 100-year frequency flood. If any units are not located above the 100-year frequency flood, provide a separate site map that shows the location of the treatment units within the 100-year frequency flood plain and the detailed description of the type and size of protective measures.

c. Answer the question yes or no whether the processing facility or the disposal sites are located on Indian Land?

2. Source material information

The information requested in this section is self-explanatory. If more than one source of sludge is utilized/processed at the treatment facility, provide separate reports for each source of the sludge which includes all the requested information in this item. Sources for domestic septage must also be listed, if applicable.

3. Pathogen reduction alternatives

Please indicate by a check mark which pathogen reduction alternative(s) will be used prior to use or disposal of the sewage sludge/septage. If multiple treatment facilities are involved, please indicate which alternative is applicable for each sludge source facility. The alternatives are found in 30 TAC Section 312.82. For each type of sewage sludge use or disposal, please review 30 TAC Chapter 312 for the pathogen reduction alternatives requirements.

All sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site shall be treated by one of the following methods to ensure that the sludge meets either the Class A or Class B pathogen requirements. Vector attraction reduction alternative must also be met as discussed in Item 6.

For sewage sludge to be classified as Class A with respect to pathogens, the requirements of one of the six alternatives must be met prior to or at the same time as the vector attraction reduction requirements AND either the density of fecal coliform in the sewage sludge shall be less than 1,000 Most Probable Number (MPN) per gram total solids (dry weight basis) or the density of *Salmonella sp.* Bacteria in the sewage sludge shall be less than three MPN per four grams of total solids (dry weight basis). This must be done by the time the sewage sludge is used or disposed of, prepared for sale, or given away in a bag or other container, or at the time the sewage sludge or material derived from the sewage sludge is prepared to meet the requirements for bulk sewage sludge, the general requirements for bulk derived materials, bagged sludge, or bagged derived materials as specified in 30 TAC Sections 312.41(b), (c), (e), or (f).

- Alternative 1 - The temperature of the sewage sludge that is used or disposed must be maintained at or above a specific value for a period of time. See 30 TAC Section 312.82(a)(2)(A) for specific information.
- Alternative 2 - The pH of the sewage sludge that is used or disposed shall be raised to above 12 standard units and shall remain above 12 std. units for 72 hours; **AND** the temperature of the sewage sludge must be held above 52 degrees Celsius for 12 hours or longer during the period that the pH of the sewage sludge is above 12 std. units; **AND** at the end of the 72-hour period during which the pH of the sewage sludge is above 12 std. units, the sewage sludge must be air dried to achieve a percent solids in the sewage sludge greater than 50 percent.
- Alternative 3 - The sewage sludge must be analyzed for enteric viruses and *helminth ova* prior to and after pathogen treatment. The limit for enteric viruses is less than one Plaque-Forming Unit per four grams of total solids (dry weight basis). See 30 TAC Section 312.82(a)(2)(C)(i-iii) for specific information. The limit for viable *helminth ova* is less than one per four grams of total solids (dry weight basis). See 30 TAC Section 312.82(a)(2)(C)(iv-vi) for specific information.
- Alternative 4 - The density of enteric viruses in the sewage sludge must be less than one Plaque-Forming Unit per four grams of total solids (dry weight basis) at the time the sewage sludge is used, disposed of or prepared for Marketing and Distribution. The density of viable *helminth ova* in the sewage sludge must be less than one per four grams of total solids (dry weight basis) at the time the sewage sludge is used, disposed of, or prepared for Marketing and Distribution.
- Alternative 5 (PFRP) - Sewage sludge that is used or disposed of must be treated in one of the Processes to Further Reduce Pathogens (PFRP) described in 40 CFR Part 503, Appendix B. PFRP include composting, heat drying, heat treatment, irradiation, and thermophilic aerobic digestion.
- Alternative 6 (PFRP Equivalent) - Sewage sludge that is used or disposed of must be treated in a process that has been approved by the U. S. Environmental Protection Agency as being equivalent to those in Alternative 5.

Three alternatives are available to demonstrate compliance with Class B criteria for sewage sludge.

- Alternative 1 - A minimum of seven random samples of the sewage sludge must be collected within 48 hours of the time the sewage sludge is used or disposed of during each monitoring episode for the sewage sludge. The geometric mean of the density of fecal coliform in the samples collected must be less than either 2,000,000 MPN per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis).
- Alternative 2 - Sewage sludge that is used or disposed of must be treated in one of the Processes to Significantly Reduce Pathogens (PSRP) described in 40 CFR Part 503, Appendix B, so long as all of the following requirements are met by the generator of the sewage sludge:

Prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in paragraph (*) below; **AND** an independent Texas Licensed Professional Engineer must make a certification to the generator of a sewage sludge that the wastewater treatment facility generating the sewage sludge is designed to achieve one of the PSRP at the permitted design loading of the facility. The certification need only be repeated if the design loading of the facility is increased. The

certification must include a statement indicating the design meets all the applicable standards specified in Appendix B of 40 CFR Part 503; **AND**

prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, must certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements must be in accordance with established U. S. Environmental Protection Agency final guidance; **AND**

all certification records and operational records describing how the requirements of this paragraph were met shall be kept by the generator for a minimum of three years and be available for inspection by commission staff for review; **AND**

(*) If the sewage sludge is generated from a mixture of sources, resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product must meet one of the PSRP, and must meet the certification, operation, and record keeping requirements.

- Alternative 3 - Sewage sludge shall be treated in an equivalent process that has been approved by the U. S. Environmental Protection Agency, so long as all of the following requirements are met by the generator of the sewage sludge:
prior to use or disposal, all the sewage sludge must have been generated from a single location, except as provided in paragraph (*) below; **AND**
prior to any off-site transportation or on-site use or disposal of any sewage sludge generated at a wastewater treatment facility, the chief certified operator of the wastewater treatment facility or other responsible official who manages the processes to significantly reduce pathogens at the wastewater treatment facility for the permittee, must certify that the sewage sludge underwent at least the minimum operational requirements necessary in order to meet one of the PSRP. The acceptable processes and the minimum operational and record keeping requirements must be in accordance with established U. S. Environmental Protection Agency final guidance; **AND**
all certification records and operational records describing how the requirements of this paragraph were met must be kept by the generator for a minimum of three years and be available for inspection by commission staff for review; **AND**
the executive director accepts from the EPA a finding of equivalency to the defined PSRP; **AND**
(*) If the sewage sludge is generated from a mixture of sources resulting from a person who prepares sewage sludge from more than one wastewater treatment facility, the resulting derived product shall meet one of the Processes to Significantly Reduce Pathogens, and shall meet the certification, operation, and record keeping requirements.

For domestic septage, Alternative 1 and the site restrictions described below for food crops, grazing, turf, and public access must be met if domestic septage is applied to agricultural land, forest, or a reclamation site. 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 a period of 30 minutes.

In addition, the following site restrictions must be met if Class B sludge or domestic septage is land applied at a permitted site.

- Food crops with harvested parts totally above the land surface in areas where sludge has been applied must not be harvested from the land for at least 14 months after the last application of sludge if any of the harvested parts contact the sludge or soil (**e.g., strawberries, squash, pecans picked up from the ground**).
- Food crops with harvested parts below the surface of the land must not be harvested from the land for at least 20 months after application of sludge when the sludge remains on the land surface for 4 months or longer prior to incorporation into the soil (**e.g., onions, potatoes**).
- Food crops with harvested parts below the surface of the land must not be harvested for at least 38 months after application of sludge when the sludge remains on the land surface for less than four months prior to the incorporation into the soil (**e.g., onions, potatoes**).
- Food crops (when grown and harvested in a manner that prevents any part of the crop from contacting the soil or sludge such as **hand-picked oranges and apples**), feed crops (**e.g., hay**), and fiber crops (**e.g., cotton**) must not be harvested for at least 30 days after application of sludge.
- Animals must not be allowed to graze on the land for at least 30 days after application of sludge.
- Public access to land with a high potential for public exposure, such as a soccer field, must be restricted for at least one year after application of sludge.
- Public access to land with a low potential for public exposure, such as must be restricted for at least 30 days after application of the sludge.

4. Vector attraction reduction alternatives

Please indicate the vector attraction reduction option(s) that will be implemented prior to or after use or disposal of the sewage sludge/septage. If multiple treatment facilities are involved, please indicate which alternative is applicable for each source facility. The following options are found in 30 TAC Section 312.83. For each type of use or disposal, please review 30 TAC Chapter 312 for vector attraction reduction requirements.

All bulk sewage sludge that is applied to agricultural land, forest, a public contact site, or a reclamation site shall be treated by one of the following alternatives 1 through 10 for Vector Attraction Reduction.

- Alternative 1 -The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38 percent.
- Alternative 2 -If Alternative 1 cannot be met for anaerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 degrees Celsius. Volatile solids must be reduced by less than 17 percent to demonstrate compliance.
- Alternative 3 -If Alternative 1 cannot be met for aerobically digested sludge, demonstration can be made by digesting a portion of the previously digested sludge with 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. Volatile solids must be reduced by less than 15 percent to demonstrate compliance.
- Alternative 4 -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.
- Alternative 5 -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.
- Alternative 6 -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 remain at a pH of 11.5 or higher for an additional 22 hours at the time the sewage sludge is prepared for sale or given away in a bag or other container.
- Alternative 7 -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. Unstabilized solids are defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.
- Alternative 8 -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 at the time the sludge is used. Unstabilized solids are defined as organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.
- Alternative 9 -Sewage sludge shall be injected below the surface of the land. No significant amount of the sewage sludge shall be present on the land surface within one hour after the sewage sludge is injected. When 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.
- Alternative 10 - Sewage sludge applied to the land surface or placed on a surface disposal site shall be incorporated into the soil within six hours after application to or placement on the land. 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.
- Alternative 11 - Sewage sludge placed on an active sewage sludge unit shall be covered with soil or other material at the end of the each operating day.

For domestic septage, one of the following vector attraction reduction alternatives must be met if domestic septage is applied to agricultural land, forest, or a reclamation site.

- Alternative 1 - Sewage sludge shall be injected below the surface of the land. No significant amount of the sewage sludge shall be present on the land surface within one hour after the sewage sludge is injected. If the sewage sludge that is injected below the surface of the land is Class A with respect to pathogens, as described in §312.82 (relating to Pathogen Reduction), the sewage sludge shall be injected below the land surface within eight hours after the sewage sludge is discharged from the pathogen treatment process.
- Alternative 2 - Sewage sludge applied to the land surface or placed on a surface disposal site shall be incorporated into the soil within six hours after application or placement on the land. If the sewage sludge that is incorporated into the soil is Class A with respect to pathogens, as described in §312.82 of this title (relating to Pathogen Reduction), the sewage sludge shall be applied to or placed on the land within eight hours after the sewage sludge is discharged from the pathogen treatment process.
- Alternative 3 - 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.

5. Well information

Complete the table by providing the requested information for each well located on and within 500 feet of the application area, including off-site wells. By definition, a well is any artificial excavation constructed for the purpose of exploring, monitoring or producing substances, elements, chemicals or fluids beneath the surface of the ground.

1. Provide the number of the well cross referenced to the required map(s) showing the well(s) location.
2. Provide the type of well. Examples of well types include; potable water wells, irrigation wells, gas wells, oil wells, and monitoring wells.
3. Indicate yes or no whether the well is producing. If yes, what is the well producing?
4. Indicate yes or no whether the well is cased. A cased well is a well in which a watertight pipe is installed in an excavated or drilled hole, temporarily or permanently, to maintain the hole sidewalls against caving, advance the borehole, and in conjunction with cementing and/or bentonite grouting, to confine the ground waters to their respective zones of origin, and to prevent surface contaminant infiltration.
 - (A) Plastic casing - National Sanitation Foundation (NSF-WC) or American Society of Testing Material (ASTM) F-480 minimum SDR 26 approved water well casing.
 - (B) Steel Casing - ASTM A-53 Grade B or better and have a minimum weight and thickness of American National Standards Institute (ANSI) Schedule 10.
 - (C) fluoropolymer (Teflon), glass-fiber-reinforced epoxy, or various stainless steel alloys or other materials may be used for monitoring wells
5. Plugged - An absolute sealing of the well bore.
6. Capped well - A well that is closed or capped with a covering capable of preventing surface pollutants from entering the well and sustaining weight of at least 400 pounds and constructed in such a way that the covering cannot be easily removed by hand.
7. Actions - The following are actions that should be taken depending on the condition of the well and the use or disposal option requested.
 - a. Producing and cased - No action necessary
 - b. Producing and not cased - Case the well or describe other means of protection
 - c. Nonproducing and cased - Plug the well or cap before sludge/septage application begins
 - d. Nonproducing and not cased - Plug the well before sludge/septage application begins

6. Submitted technical reports

Please check which of the Sludge Technical Report(s) has been submitted. At a minimum, one other report must accompany Sewage Sludge Technical Report 1.0

7. Sworn affidavit of owner and applicant

All applications must be signed and dated by an authorized person, and the signature **MUST** be notarized. The following information is applicable to the top portion of the sworn affidavit page.

An application submitted by a CORPORATION must be signed by a principal executive officer of at least the level of vice president or higher or by their duly authorized representative, if such representative is responsible for the overall activity. An application signed by a person other than a principal executive officer must include a letter of authorization, signed by a principal executive officer that gives the authorized representative the authority to sign on their behalf.

In the case of a PARTNERSHIP or SOLE PROPRIETORSHIP, the application must be signed by a general partner or the proprietor, respectively.

In the case of a MUNICIPAL, STATE, FEDERAL OR OTHER PUBLIC FACILITY, the application must be signed by a principal executive officer or ranking elected official. An application signed by a person other than a principal executive officer or ranking elected official must include a letter of authorization, signed by a principal executive officer or ranking elected official that gives the authority to sign on their behalf.

An application submitted by an INDIVIDUAL, must be signed by the individual himself/herself. A person signing an application on behalf of the applicant must provide a letter of authorization signed by the applicant.

In all cases, the person signing the form must be authorized to do so by the applicant.

If the landowner is not the same as the site operator, the bottom half of the Sworn Affidavit **MUST** be completed. The owner of the land is the entity that must sign and date this portion. The signature **MUST** be notarized.

The notary date must be the same as the signature date. If the dates are not the same, a new signature page will need to be provided.

SEWAGE SLUDGE TECHNICAL REPORT 2.0 - SEWAGE SLUDGE COMPOSTING

1. Renewal of existing authorization in a wastewater permit

This section of the application form must be completed if the applicant is seeking to continue composting of sewage sludge through authorization in their municipal wastewater permit. This does not include facilities that obtained composting authorization through a Municipal Solid Waste Permit. This section is only applicable if composting is authorized in the existing permit. The information requested is self-explanatory.

2. New and amended authorization for compost sewage sludge

All of the following information must be completed for all applicants requesting new and amended authorization for sewage sludge composting.

a. The original General Highway (County) Map may be obtained from the Texas Department of Transportation Map Sales in Austin by phoning (512) 465-7397. All of the following required information must be shown on the map: location of composting facility; sludge composting area within facility boundaries; the applicant's property boundaries marked in RED ink.

b. Answer the question yes or no whether composting has previously been conducted at this site. If yes, the following information must be provided when discussing the use history of the composting operations:

- the type of wastes composted
- tons of waste composted so far
- quality of the final product with respect to 30 TAC Section 332.72
- how the final product was marketed and distributed
- compliance history (e.g., enforcement, upsets)
- copy of any closure plan developed for this facility including anticipated closure date

c. The information required for the detailed description of the sewage sludge composting site must be submitted in a separate report. Indicate by check marks that all the requested information has been included in the report. The following is a summary of the information requested:

- Amount of sludge originating off-site which is to be composted
- Total amount of sewage sludge to be composted and total amount of feedstocks identified in 30 TAC Section 332.3(b)
- The Fecal Coliform or Salmonella sp. bacteria analysis of the sludge in MPN or CFU
- The type, origin and the amount of bulking material to be used
- Set back distance from the facility boundary to the areas for receiving, processing, or storing feedstocks or final product
- A plan view of the site showing all the equipment, storage facilities, and sludge management facilities
- Types of composting proposed (e.g., Windrow process, Aerated pile process, etc.)
- Description how the facility shall be constructed, maintained, and operated to manage run-on and run-off during a 25-year, 24-hour rainfall event and include calculations and provide source of all assumptions used
- Description the leachate collection system and the method used for leachate processing and disposal in accordance with applicable requirements and provide the TCEQ permit(s) numbers for leachate treatment and disposal
- Description of how the facility will be constructed, maintained, and operated to protect groundwater
- Description of a design plan to line all the surfaces used for sewage sludge delivery, mixing, composting, curing, screening and storing to control seepage
- Design of facility to minimize windblown material, odor and vector control

d. Answer yes or no whether the end product meets the requirements set forth in 30 TAC Section 332.72(d)(2)(A)(D).

e. Submit a site operating plan. This document is to provide guidance from the design engineer to site management and operating personnel in sufficient detail to enable them to conduct day to day operations in a manner consistent with the engineer's design. At a minimum, the site operating plan shall include specific guidance or instructions on all of the following:

Process description. The process description must be composed of a descriptive narrative along with a process diagram. The process description shall include:

- Feedstock identification. The applicant must prepare a list of the materials intended for processing along with the anticipated volume to be processed. This section must also contain an estimate of the daily quantity of material to be processed at the facility along with a description of the proposed process of screening for unauthorized and prohibited materials;
- Tipping process. Indicate what happens to the feedstock material from the point it enters the gate. Indicate how the material is handled in the tipping area, how long it remains in the tipping area, what equipment is used, how the material is evacuated from the tipping area, at what interval the tipping area is cleaned, the process used to clean the tipping area;
- Process. Indicate what happens to the material as it leaves the tipping area. Indicate how the material is incorporated into the process and what process or processes are used until it goes to the post-processing area. The narrative shall include: water addition; processing rates; equipment; energy and mass balance calculations; process monitoring method; testing and monitoring methods and frequency.
- Post-processing. Provide a complete narrative on the post-processing process to include: post-processing times; identification and segregation of product; storage of product; quality assurance and quality control; testing methods and frequency.
- Product distribution. Provide a complete narrative on product distribution to include but not limited to: end-product quantities; anticipated final grades; packaging; labeling; loading; tracking bulk material; anticipated end use; method of distribution or use.
- Process diagram. Present a process diagram that displays graphically, the narrative generated in response to clauses (1)-(5) of this paragraph.
- Minimum number of personnel and their functions to be provided by the site operator in order to have adequate capability to conduct the operation in conformance with the design and operational standards;
- Minimum number and operational capacity of each type of equipment to be provided by the site operator in order to have adequate capability to conduct the operation in conformance with the design and operational standards;
- Security, site access control, traffic control and safety;
- Control of dumping within designated areas
- Mechanical and process screening for unprocessable, prohibited, and unauthorized material;
- A fire prevention and suppression plan that complies with provisions of the local fire code, which must also be sent to the local fire protection entity responsible for responding to a fire at the facility;
- Control of windblown material;
- Equipment failures including alternative plans in the event of an equipment failure; and
- A description of the anticipated final grade of the materials.
- Submit a description of the method(s) by which materials that do not meet the end product requirements of 30 TAC Chapters 312 and 332 will be handled and/or disposed.

SEWAGE SLUDGE TECHNICAL REPORT 3.0 - SEWAGE SLUDGE MARKETING AND DISTRIBUTION

1. Activity information

- a.** Provide the TCEQ Permit Number of the facility generating the Class A sewage sludge and the name and location of the sites used for the storage and distribution of the Class A sewage sludge.
- b.** Provide a description of the marketing and distribution plan. The plan must include, but is not limited to, the following activities:
- If the sewage sludge will be sold or given away directly to the public, include a general description of the types of end uses proposed by persons who will be receiving the sewage sludge
 - The methods of distribution, marketing, handling, and transportation of the sewage sludge
 - A reasonable estimate of the expected quantity of sewage sludge to be generated or handled by the person making the notification
 - Any proposed storage and the methods which will be employed to prevent surface water runoff of the sewage sludge or contamination of ground water.
- c.** Provide the information requested for all entities that receive Class A sewage sludge directly from the permittee. The information includes name, company name, telephone and fax numbers, and street address. If more than two entities receive Class A sewage sludge directly, provide a separate attachment that includes the requested information for all entities. Provide all federal, state, and local permits that the receiving facility has obtained.
- d.** Provide a copy of the label or information sheet provided to all entities that receive the sewage sludge.
- e.** Indicate by a check mark that the Class A sewage sludge being sold, given away in bulk, bag, or container for land application meets the following:
- Metal concentrations in 30 TAC Section 312.82(a)
 - Vector attraction reduction requirements
 - Class A pathogen requirements

SEWAGE SLUDGE TECHNICAL REPORT 4.0 - SEWAGE SLUDGE SURFACE DISPOSAL

1. Location information

a. The following are descriptions of the maps required and the information that must be shown on the maps. Indicate with check marks on the application form that the maps and associated information have been provided.

Submit one **ORIGINAL General Highway (County) Map** showing the location of the disposal site with a scale sufficient to show the distance of the disposal area from the property line in accordance with 30 TAC Section 312.63 and all areas within 1000 feet of the site. Mark in red ink the applicant's property boundaries and the sludge disposal site. (Copies may be submitted on 8.5 x 11-inch sheets). For County Highway Maps, you may call the Texas Department of Transportation Map Sales in Austin.

Submit a legible copy of a **USDA Natural Resources Conservation Service (NRCS) Soil Map** with soil legend and necessary interpretative information. Contact the nearest NRCS office for map information. If the county is not mapped, have a soil scientist identify the soils.

Submit a copy of the **Federal Emergency Management Agency (FEMA) Map** showing the 100-year flood plain. Several options are available. These maps can be obtained by requesting a Flood Insurance Study (no charge) from the FEMA Flood Map Distribution Center at (800) 358-9616. The flood insurance study will contain a booklet and the FEMA maps.

b. Indicate with check marks if the sludge disposal unit contains certain features as listed in the application. Also, provide a discussion of the protective measures to protect the disposal site. Include the type and size of the structures.

2. Disposal information

Sewage sludge that has failed a TCLP test cannot be disposed of within a sewage sludge surface disposal site.

3. Facility information

Please note that depending on the responses, additional descriptive information may be required.

4. Site development plan

a. Describe the methods used to deposit sludge in the active sludge unit. This description should include site layout plan, site entrance roads from public access roads, rate of sludge deposition, average lift size, maximum lift, average trench or cell size, maximum cell or trench size, active sludge unit cover, seismic impact design, protection from floods, and other information necessary to depict how the surface disposal unit will be developed. Also, provide the following:

b. Indicate by a check mark that the following information has been submitted.

- A detailed plan view and cross-section of the surface disposal unit.
- The source and physical properties of the soil, daily cover, and other media for sludge bulking if applicable.
- Locations of stockpiles of media and the area for sludge unloading and mixing within the plant site.
- Operational procedures detailing the following: how the sludge is to be mixed; the ratio of the media/sludge mixture; the handling and placement of the mixture in the sludge unit; the method of spreading the daily cover; the depth of the daily cover.
- A copy of any closure plan that has been developed for this active sewage sludge unit in accordance with 30 TAC Section 312.62 (c). The plan should also describe how the permittee will comply with post-closure maintenance requirements for the final cover as discussed in 30 TAC Section 312.62(d).
- A copy of deed recordation for the site.
- Size of the sludge disposal site in acres. Locate sludge disposal site on a site map.
- Description of the method of controlling infiltration of ground and surface water from entering site.
- Provide financial assurance to properly operate this surface disposal unit and to provide final closure of this surface disposal unit and storage (if applicable) (30 TAC Section 312.62(g)).
- Provide a brief description of how methane gas is monitored, if cover is placed on unit and how public access to the site is restricted.

5. Groundwater monitoring

Please note that depending on the response, additional descriptive information may be required. Information on groundwater protection and soil types is also requested.