UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 WYNKOOP STREET
DENVER, COLORADO 80202-1129

GENERAL PERMIT FOR FACILITIES/OPERATIONS THAT GENERATE, TREAT, AND/OR USE/DISPOSE OF SEWAGE SLUDGE BY MEANS OF LAND APPLICATION, LANDFILL, AND SURFACE DISPOSAL UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM IN

the State of North Dakota except for Indian country.

In compliance with the provisions of the Clean Water Act, as amended, (33 U.S.C. ' 1251 et seq; "the Act"), the persons covered under this general permit are authorized to use/dispose of sewage sludge by means of land application, landfill, and surface disposal, in accordance with specific limitations, monitoring requirements, management practices and other conditions set forth herein. Authorization for coverage under this permit is limited to those facilities and/or operations identified in the notice of intent or separate permit applications that have been accepted in place of a notice of intent.

This permit shall become effective

This permit and the authorization to use/dispose of sewage sludge shall expire at midnight, May 12, 2018.

Signed this 15th day of May, 2013

Original Signed by
Derrith Watchman-Moore

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Authorized Permitting Official

Derrith Watchman-Moore, Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

TABLE OF CONTENTS

Cover Sheet--Issuance and Expiration Dates

1. COVERAGE UNDER THIS PERMIT
   - 1.1. Introduction
   - 1.2. Permit Area
   - 1.3. Eligibility
   - 1.4. Limitations on Eligibility
   - 1.5. Obtaining Coverage Under This Permit

2. NOTICE OF INTENT REQUIREMENTS
   - 2.1. Deadlines for Applying for Permit Coverage
   - 2.2. Contents of Notice of Intent
   - 2.3. Where to Submit

3. SPECIFIC REQUIREMENTS FOR FACILITIES/OPERATIONS THAT ONLY GENERATE AND/OR PARTIALLY TREAT SEWAGE SLUDGE (Category 1)
   - 3.1. Applicability of This Part
   - 3.2. Specific Limitations and Self-Monitoring Requirements for Facilities/Operations That Only Generate and/or Partially Treat Sewage Sludge

4. SPECIFIC REQUIREMENTS FOR LAND APPLICATION OF SEWAGE SLUDGE (Subcategory 2.a.)
   - 4.1. Specific Limitations and Self-Monitoring Requirements for Land Application
   - 4.2. Management Practices for Application of Sewage Sludge to Land
   - 4.3. Special Conditions on Sewage Sludge Storage for Land Application
   - 4.4. Recordkeeping for Land Application

5. SPECIFIC REQUIREMENTS FOR LANDFILLING OF SEWAGE SLUDGE (Subcategory 2.b.)
   - 5.1. Specific Limitations and Self-Monitoring Requirements for Landfilling of Sewage Sludge
   - 5.2. Management Practices for Landfilling of Sewage Sludge
   - 5.3. Recordkeeping for Landfilling of Sewage Sludge

6. SPECIFIC REQUIREMENTS FOR SURFACE DISPOSAL OF SEWAGE SLUDGE (Subcategory 2.c.)
   - 6.1. Specific Limitations and Self-Monitoring Requirements for Surface Disposal
   - 6.2. Management Practices for Surface Disposal of Sewage Sludge
   - 6.3. Special Conditions for Surface Disposal
   - 6.4. Recordkeeping for Surface Disposal

7. SPECIFIC REQUIREMENTS FOR LIMITED LAND APPLICATION OF SEWAGE SLUDGE FROM WASTEWATER LAGOONS (Category 3)
   - 7.1. Specific Limitations and Self-Monitoring Requirements for Limited Land Application of Sewage Sludge from Wastewater Lagoons
   - 7.2. Management Practices for Limited Land Application
   - 7.3. Special Conditions on Sewage Sludge Storage for Limited Land Application
   - 7.4. Recordkeeping for Limited Land Application

8. MONITORING, RECORDING AND REPORTING REQUIREMENTS
   - 8.1. Representative Sampling
   - 8.2. Monitoring Procedures
   - 8.3. Penalties for Tampering
   - 8.4. Reporting of Monitoring Results and Other Information

TABLE OF CONTENTS (Continued)

8.5. Additional Monitoring by the Permittee
8.6. Twenty-Four Hour Notice of Noncompliance Reporting
8.7. Other Noncompliance Reporting
8.8. Inspection and Entry

9. COMPLIANCE RESPONSIBILITIES
9.1. Duty to Comply
9.2. Penalties for Violations of Permit Conditions
9.3. Need to Halt or Reduce Activity not a Defense
9.4. Duty to Mitigate
9.5. Proper Operation and Maintenance

10. GENERAL REQUIREMENTS
10.1. Planned Changes
10.2. Anticipated Noncompliance
10.3. Permit Actions
10.4. Duty to Reapply
10.5. Duty to Provide Information
10.6. Other Information
10.7. Signatory Requirements
10.8. Penalties for Falsification of Reports
10.9. Availability of Reports
10.10. Oil and Hazardous Substance Liability
10.11. Property Rights
10.12. Severability
10.13. Transfers
10.14. State Laws
10.15. Reopener Provision

11. DEFINITIONS

12. APPROVED METHODS FOR THE ANALYSIS OF SEWAGE SLUDGE (40 CFR Part 503)

13. ADDRESSES AND TELEPHONE NUMBERS OF ENVIRONMENTAL COORDINATORS FOR NORTH DAKOTA

1. COVERAGE UNDER THIS PERMIT

1.1. Introduction: This general permit is intended for the permitting of the generation, treatment, and/or the use/disposal of sewage sludge that occurs within the area covered by this permit. In most instances all three of these activities will be conducted by the treatment works that generated the sewage sludge. Only those sewage sludge related activities (i.e., generation, treatment, and use/disposal) that occur within the geographical area covered by this permit can be covered by this permit. If the generation, treatment, and/or use/disposal of the sewage sludge occurs in more than one permitting jurisdiction (e.g., in Indian country and outside Indian country), it most likely will be necessary to obtain permit coverage in each permitting jurisdiction.

Coverage under this permit will be limited to one of the following three categories:

Category 1. Facilities/operations that generate and/or partially treat sewage sludge, but do not use/dispose of sewage sludge. The sewage sludge **must** be sent to another Biosolids Permit holder for final treatment and/or use/disposal. This does not apply to wastewater lagoon systems unless the facility is notified to apply for coverage under this category. If a category 1 facility sends part or all of its sewage sludge to another entity for use/disposal and that other enetity does not have coverage under a Biosolids Permit for that use/disposal, then the Category 1 facility must obtain the applicable coverage under subcategories 2.a, 2.b, and/or 2.c for that use/disposal.

Category 2. Facilities/operations that use/dispose of sewage sludge and may also generate and/or treat sewage sludge. Facilities/operations that treat sewage sludge and have someone else use/dispose of the sewage sludge without further treatment (e.g., contractors land applying sewage sludge) are considered to be in this category. The applicant may apply for coverage under one or more of the following subcategories:

Subcategory 2.a. Facilities/operations that land apply sewage sludge and may also generate and/or treat sewage sludge.

Subcategory 2.b. Facilities/operations that landfill sewage sludge and may also generate and/or treat sewage sludge.

Subcategory 2.c. Facilities/operations that surface dispose of sewage sludge and may also generate and/or treat sewage sludge.

Category 3. Wastewater lagoon systems that need to land apply sewage sludge on an occasional, restricted basis. Under this category the land application of sewage sludge is limited to once every twenty (20) years per land application site and the application rate shall not exceed one dry metric ton per acre unless prior written approval is granted by the permit issuing authority. Sewage sludge may be removed from a wastewater lagoon system more frequently than once every 20 years, but it may be land applied to a specific land application site only once every 20 years under this category.

The permit issuing authority will have the final determination as to which category or subcategory(s) coverage under this permit will be granted.

The specific requirements for Category 1 are given in Part 3 of this permit. Category 2 facilities/operations have the options of using/disposing of sewage sludge by means of land application, landfill, and/or surface disposal. The incineration of sewage sludge is **not** authorized by this permit. The land application requirements, Subcategory 2.a., are given in Part 4, the landfill requirements (Subcategory 2.b., are given in Part 5, and the surface disposal requirements, Subcategory 2.c., are given

in Part 6. Facilities that use/dispose of sewage sludge by one or more of these three methods must obtain permit coverage under the appropriate subcategory(s) and must comply with the requirements of each part of the permit as applicable. Facilities/operations that need to dispose of sewage sludge at a landfill(s) on an emergency basis do not need to obtain coverage under subcategory 2.b. provide that the annual amount of sewage sludge disposed of at the landfills does not exceed the average amount of sludge that would be produced in 60 days. Sludge disposed of at the landfill(s) must meet the requirements of Part 5 of this permit. The names and locations of the landfills receiving the sewage sludge and the amounts of sewage sludge disposed at each landfill must be reported in the annual report. Category 3 is intended for wastewater lagoon systems that need to infrequently remove sewage sludge from the lagoon system and will land apply the sewage sludge. The specific requirements for Category 3 are given in Part 7 of this permit.

1.2. Permit Area: This general permit covers the State of North Dakota except for Indian country.

1.3. Eligibility: This permit provides coverage for the generation, treatment, and/or use/disposal of sewage sludge that occurs within the area covered by this permit. The use/disposal of the sewage sludge must be by means of land application, landfill, and/or surface disposal.

A person that has an EPA issued individual permit for sewage sludge generation, treatment, and/or use/disposal, other than an individual permit required under Part 1.6, may request that the individual permit be revoked and that the coverage be provided under this general permit.

1.4. Limitations on Eligibility:

1.4.1. Facilities that incinerate sewage sludge are not eligible for coverage under this permit. Those facilities/operations that incinerate sewage sludge must apply for an individual permit.

1.4.2. The generation, treatment and/or the use/disposal of sewage sludge that are likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species Act or its designated critical habitat are not eligible for coverage under this permit.

1.4.3. The generation, treatment and/or the use/disposal of sewage sludge with unconsidered adverse effects on properties listed or eligible for listing on the national Register of Historic Places under the National Historic Preservation Act are not eligible for coverage under this permit.

1.4.4. Sewage sludge generation, treatment, and/or use/disposal that occurs outside the area covered by this permit are not eligible for coverage under this permit. Those activities must be covered by an individual permit or a general permit that covers that area.

1.5. Obtaining Coverage Under This Permit

1.5.1. In order for a facility/operation that generates, treats, and/or uses/disposes of sewage sludge to be covered under this general permit, the generation, treatment, and/or use disposal of the sewage sludge must be eligible for coverage under this permit and one of the following must apply:

1.5.1.1. A complete Notice of Intent (NOI) must be submitted in accordance with the requirements of Part 2 and the facility/operation receives a written notice of coverage from the permit issuing authority; or

1.5.1.2. A complete application has been submitted for renewal of an individual permit issued by EPA for the generation, treatment, and/or use disposal of sewage sludge and the applicant receives written notification of coverage under the general permit from the permit issuing authority; or

1.5.1.3. A facility/operation was covered under the previous general permit and has submitted a timely request for renewal of coverage under the general permit; or

1.5.1.4. A facility/operation is notified by EPA that its sewage sludge generation, treatment, and/or use/disposal is covered by this general permit even if the facility/operation has not submitted a NOI to be covered by the general permit.

Coverage under this general permit begins upon receipt of the written notice of coverage from the permit issuing authority. Coverage for additional land application sites (not identified in the original NOI or submitted for review under the previous permit) begins 45 days after submittal of the required information unless the permittee is notified otherwise by the permit issuing authority.

The Director may deny coverage under this general permit and require submittal of an application for an individual NPDES permit based on a review of the NOI and/or other information.

1.6. Requiring An Individual Permit Or An Alternative General Permit.

1.6.1. The Director may require any person covered by this permit to apply for and/or obtain either an individual NPDES permit or an alternative NPDES general permit. Cases where an individual permit may be required include those listed at 40 CFR § 122.28(b)(3)(i). Any interested person may petition the Director to take action under this paragraph. Where the Director requires a person covered under this permit to apply for an individual NPDES permit, the Director shall notify the person in writing that a permit application is required. This notification shall include a brief statement of the reasons for this decision, an application form, a statement setting a deadline for the person to file the application, and a statement that on the effective date of issuance of the individual NPDES permit or the alternative general permit as it applies to the individual permittee, coverage under this general permit shall automatically terminate. Applications shall be submitted to the address given in Part 2.3 of this permit. The Director may grant additional time to submit the application upon request of the applicant. Failure to submit an application within the required time will be considered a violation of this permit.

1.6.2. Any permittee covered by this permit may request to be excluded from the coverage of this permit by applying for an individual permit. In such cases, the permittee shall submit an individual application in accordance with the requirements of 40 CFR § 122.21, with reasons supporting the request, to the Director at the address given in Part 2.3 of this permit. The request may be granted by issuance of any individual permit or an alternative general permit if the reasons cited by the permittee are adequate to support the request.

1.6.3. When an individual NPDES permit is issued to a person otherwise subject to this permit, or the person is authorized coverage under an alternative NPDES general permit, the applicability of this permit to the individual NPDES permittee is automatically terminated on the effective date of the individual permit or the date of authorization of coverage under the alternative general permit, whichever the case may be. When an individual NPDES permit is denied to an owner or operator otherwise subject to this permit, or the owner or operator is denied for coverage under an alternative NPDES general permit, the applicability of this permit to the individual NPDES permittee is automatically terminated on the date of such denial, unless otherwise specified by the Director.

2. NOTICE OF INTENT REQUIREMENTS

2.1. Deadlines for Applying for Permit Coverage

2.1.1. Facilities/operations that had coverage under the previous general permit and have submitted a timely request for coverage under this renewal permit will be notified that they are covered under this permit unless the permit issuing authority notifies them to submit a new NOI.

2.1.2. Facilities/operations that belong in either Category 1 or Category 2 as described in Part 1.1 and one of the following apply:

2.1.2.1. Do not have coverage under a current EPA issued permit;

2.1.2.2. Their coverage under an EPA issued individual permit for sewage sludge related activities will expire within 180 days after the effective date of this permit;

2.1.2.3. Have coverage under an EPA issued permit for sewage sludge related activities and that permit has expired, but has been administratively extended; or

2.1.2.4. Had coverage under the previous general permit, but did not submit a timely request for coverage under this renewal permit;

must submit a complete Notice of Intent (NOI) in accordance with the requirements of Part 2.2 **within ninety (90) days after the effective date of this permit or have already submitted a complete application for renewal of an individual permit issued by EPA for the generation, treatment, and/or use disposal of sewage sludge**. (This deadline does not apply to wastewater lagoon systems that are submitting a new NOI for coverage under the provisions of Category 3.)

2.1.3. Facilities/operations that belong in either Category 1 or Category 2 as described in Part 1.1 and have coverage under an EPA issued permit that will expire more than 180 days after the effective date of this permit must submit a complete NOI in accordance with the requirements of Part 2.2 **within ninety (90) days after the effective date of this permit or at least 180 days before the expiration date of their current permit, whichever occurs later**. If a facility/operation has already submitted a complete application for renewal of its individual permit, the Director may choose to accept that application in place on an NOI. (This deadline does not apply to wastewater lagoon systems that are applying for coverage under the provisions of Category 3.)

2.1.4. New facilities/operations that will belong in either Category 1 or Category 2 as described in Part 1.1 must submit an NOI in accordance with the provisions of Part 2.2 at least 90 days before the planned start of the generation, treatment and/or use/disposal of the sewage sludge. New facilities/operations that do not yet have the required sewage sludge monitoring data shall submit the required data separately within the time specified in Part 2.2.2 after the start of the use/disposal of the sewage sludge. New operations that use/dispose of sewage sludge, but do not treat it, are required to submit all of the required data with the NOI.

2.1.5. Facilities/operations that have coverage under this general permit and want to change coverage (e.g., from Category 1 to Category 2) or add additional coverage (e.g., have coverage for land application and want to add coverage for disposal by landfilling), must submit a complete NOI in accordance with the provisions of Part 2.2 at least 90 days before the planned start of the activity for which coverage is being requested.

2.1.6. Operators of wastewater lagoon systems that normally do not use/dispose of sewage sludge and want to land apply sewage sludge from the lagoon system under the provisions of Category 3 must submit a complete NOI in accordance with the requirements of Part 2.2 at least thirty (30) days prior to the planned start of the land application of the sewage sludge.

2.1.7. Operators of wastewater lagoon systems that normally do not use/dispose of sewage sludge and want to use/dispose of sewage sludge under the provisions of Category 2 must submit a complete NOI in accordance with the requirements of Part 2.2 at least ninety (90) days prior to the planned start of use/disposal of the sewage sludge.

2.1.8. Wastewater lagoon systems that do not routinely use/dispose of sewage sludge and have been notified that they need to apply for permit coverage under Category 1 or Category 2 must submit a complete NOI in accordance with the requirements of Part 2.2 within ninety (90) days after being notified.

2.2. Contents of Notice of Intent

NOTE: An electronic copy of Part 2.2, Contents of Notice of Intent, in rich text format (rtf), is available for downloading at the Region 8 web page at the following URL: http://www.epa.gov/region8/water/biosolids/documents.html . That document may be used to prepare the NOI in letter format or combination of letter format and/or electronic format for submittal.

NOTE: It is not necessary to submit an NOI if a current application for an individual NPDES permit for sewage sludge has been submitted to EPA Region 8 and the application is considered complete.

The information requested in the NOI may be submitted in one of the following two methods:

- Letter format, or;

- Combination of letter format and electronic format. The letter format portion of the submittal shall include the information required in Part 2.2.1, the required information that is not submitted in electronic format, a description of the electronic format used, a listing of the information included in electronic format, and the certification as given in Part 2.2.4. The information submitted in electronic format shall be in, a *Lotus 123* spreadsheet (version 9.8 or older), a *Microsoft Excel* spreadsheet (version Office 2007 or older), or a *Microsoft Access* database (version Office 2007 or older). The electronic files must be on either CD-ROMs or DVDs. The electronic files must be in the form that they can be opened by the aforementioned software programs and the data viewed and/or printed in those programs.

Applicants shall complete the appropriate parts of the NOI as specified below based on the category for which coverage is being requested:

Category	Parts of NOI to Complete
1	Parts 2.2.1 and 2.2.4.
2	Parts 2.2.1, 2.2.2, and 2.2.4.
3	Parts 2.2.1, 2.2.3, and 2.2.4.

NOTE: All applicants must complete Part 2.2.4 and include the certification statement in the signed document.

2.2.1. **Basic Information - All Applicants Complete**

2.2.1.1. Official or legal name of applicant.

2.2.1.2. Responsible Official
- Name
- Title
- Mailing Address
- Phone
- E-mail address

2.2.1.3. Contact Person
- Name

- Title
- Office Phone
- Cell Phone
- E-mail
- Fax

2.2.1.4. Facility/operation Physical Address
- Street
- City/State/Zip
- County
- Latitude and longitude of the facility

2.2.1.5. Facility/operation Mailing Address

2.2.1.6. Status of applicant as Federal, State, public, private, or other entity.

2.2.1.7. Indian Country
- Is the facility/operation located in Indian country?
- Are any of the sewage sludge use/disposal activities covered under this notice of intent located on Indian country? If yes, provide a description.

2.2.1.8. Specify the category or subcategories, as described in Part 1.1, for which coverage under this permit is requested. Coverage under more than one subcategory may be requested.

Category 1: Facilities/operations that generate and/or partially treat sewage sludge, but do not use/dispose of sewage sludge. The sewage sludge must be sent to another Biosolids Permit holder for final treatment and/or use/disposal. This does not apply to wastewater lagoon systems unless the facility is notified to apply for coverage under this category.

Category 2: Facilities/operations that use/dispose of sewage sludge and may also generate and/or treat sewage sludge. In addition, facilities/operations that treat sewage sludge and have someone else use/dispose of the sewage sludge without further treatment (e.g., contractors land applying sewage sludge) are considered to be in this category.
Subcategory 2.a - Land application of sewage sludge
Subcategory 2.b - Landfilling of sewage sludge
Subcategory 2.c - Surface disposal of sewage sludge

Category 3: Wastewater lagoon systems that need to land apply sewage sludge on an occasional, restricted basis.

Does the facility/operation presently have coverage under this general permit and application is being made for a change or addition in coverage under the general permit? If yes, provide a brief description in the change or addition in coverage that is being requested.

2.2.1.9. Is wastewater treatment done at this facility? If yes, provided the following information:
- Approximate population served.
- A brief description of the wastewater treatment process, including the number of treatment units (e.g., two primary clarifiers). A schematic of the treatment process shall be included as part of the description. If the facility is a wastewater lagoon system, give the number of cells and the area (in acres) of each cell.
- Average annual flow in million gallons per day (MGD).
- Does the facility have a pretreatment program?

2.2.1.10. Does this facility have an NPDES permit for the discharge of wastewater? If yes, give the NPDES permit number and permit expiration date.

2.2.1.11. Does this facility/operation currently have or has it previously had an NPDES permit that authorizes the use/disposal of sewage sludge? If yes, give the NPDES permit number and permit expiration date.

2.2.1.12. Does this facility/operation have authorization by the State for the use and/or disposal of sewage sludge? If yes, give the name of the State authorization document and the authorization number.

2.2.1.13. The amount of sewage sludge generated at the facility in dry metric tons per year (dmt/y). If a wastewater lagoon system, give an estimate of the amount of sewage sludge to be removed in dry metric tons (dmt).

2.2.1.14. Is any sewage sludge brought into the facility from other sources? If yes, list amount in dmt/y for each source and give the name and location of each source.

2.2.1.15. Is any sewage sludge sent to another facility for treatment prior to final use/disposal? If yes, list amount in dmt/y for each facility and give the name and location of each facility.

2.2.1.16. Applicants for coverage under Category 1, provide a summary of analytical monitoring data (i.e., sewage sludge quality, percent solids, etc.) on sewage sludge collected during the previous calendar year or the previous 12 months. Give the average and maximum values.

2.2.1.17. Provide a brief description of the sewage sludge treatment provided at the facility and give the number of treatment units involved (see Table NOI-1).

TABLE NOI-1
BIOSOLIDS TREATMENT PROVIDED (Number of Units)

THICKENING	CONDITIONING	OTHER
Gravity	Chemical Conditioning	Wastewater Lagoon
DAF		Mixing of Biosolids
Centrifuge	DEWATERING	Oxidation Ditch
	Vacuum Filter	
STABILIZATION	Pressure Filter	
Aerobic Digestion	Belt Filter	
Anaerobic Digestion	Drying Bed	
Heat Treatment	Drying Lagoon	
Wet Oxidation	Heat Drying	
Chemical (Lime) Stab.	Centrifuge	
Composting		
Biosolids Lagoons		

2.2.2. Additional Information for Applicants for Coverage Under Category 2

2.2.2.1. Provide a brief narrative description of the methods of final use/disposal of sewage sludge that is treated and/or received at the facility or operation. Also provide the information in the following table (TABLE NOI-2) for the previous calendar year or previous 12 months. Enter 0 or N/A where not applicable. For those facilities that will be starting use/disposal of sewage sludge, provide an estimate of the amount that will occur during the first year of use/disposal.

TABLE NOI-2
FINAL USE/DISPOSAL FOR PREVIOUS CALENDAR YEAR OR PREVIOUS 12 MONTHS

TOTAL ANNUAL PRODUCTION (Predigestion) in dmt	
TOTAL ANNUAL PRODUCTION (Postdigestion) in dmt	
LAND APPLICATION (Total): _____ dmt	
Bulk Sewage Biosolids (Total):_____dmt	Derived Material (Total): _____dmt(e.g. Compost)
Agricultural Land: _____dmt	Agricultural Land: _____dmt
Range Land: _____ dmt	Range Land: _____dmt
Forest: _____dmt	Forest: _____dmt
Public Contact Site: _____dmt	Public Contact Site: _____dmt
Reclamation: _____dmt	Reclamation: _____ dmt
Sold or Given Away: _____dmt	Sold or Given Away: _____dmt
Lawn or Garden: _____dmt	Lawn or Garden: _____dmt
SURFACE DISPOSAL (Total): _____dmt	
With liner and leachate collection system: _____dmt	
Without liner and leachate collection system: _____dmt	
LANDFILL (Total): _____dmt	
Landfill Disposal: _____dmt	Landfill Cover: _____dmt
Landfill Name: _____	
Does the landfill comply with 40 CFR Part 258 requirements? (Y/N)	
INCINERATION: _____dmt (If incinerate sewage sludge, must apply for an individual permit.)	
OTHER _____ _____dmt	
STORED: _____dmt	
LONG TERM TREATMENT: _____dmt	

2.2.2.2. Are contract appliers and/or haulers used to land apply sewage sludge and/or haul the sewage sludge to the use/disposal site(s)? If yes, provide the following information for each contract applier or hauler:

- ! Name of company, organization, or individual;
- ! Mailing address;
- ! Name and phone number of contact person; and
- ! Amount of Use: (Majority/Occasional)

2.2.2.3. Land Application of Sewage Sludge: If application is being made to land apply sewage sludge under Subcategory 2.a., provide the information specified below. The information is to be provided for each active land application site and for each site that is planned to be used during the first six (6) months of coverage under this permit. (For those sites where land application will begin more than six months after start of coverage under this permit, the permittee shall submit an addendum to its NOI with the information specified below at least 45 days before the planned start of land application at the site. Coverage for additional land application sites (not identified in the original NOI) begins 45 days after submittal of the required information unless the permittee is notified otherwise by the permit issuing authority.):

2.2.2.3.1. For each land application site supply the applicable information listed in Table NOI-3.

TABLE NOI-3
LAND APPLICATION SITE INFORMATION

Site Name	Site No.
State Authorization No.	State Site No.
Name of nearest stream and distance	
Owner	
Operator	
Applier	
Latitude	Longitude
Street address or other locational description, or	
Section _____; Township _____; Range _____	
Size (acres)	Size (hectares)
Crop(s)	

2.2.2.3.2. Metals, Total Solids, Nitrogen, and Phosphorus Data for Sewage Sludge: For sewage sludge that is land applied or will be land applied, provide the specified data for the pollutants and total solids listed in Table NOI-4. The data shall be based on a minimum of three sampling events that occurred at least one month apart and the data shall be no more than four and one-half years old. New facilities/operations see **Note** following Table NOI-5.

TABLE NOI-4
METALS, TOTAL SOLIDS, NITROGEN, & PHOSPHORUS DATA FOR SEWAGE SLUDGE THAT IS LAND APPLIED

Pollutants & Characteristics	Units	Average Concentration	Maximum Concentration	Number of Samples
Arsenic (As) a/	mg/Kg			
Cadmium (Cd) a/	mg/Kg			
Copper (Cu) a/	mg/Kg			
Lead (Pb) a/	mg/Kg			
Mercury (Hg) a/	mg/Kg			
Molybdenum (Mo) a/	mg/Kg			
Nickel (Ni) a/	mg/Kg			
Selenium (Se) a/	mg/Kg			
Zinc (Zn) a/	mg/Kg			
Total Solids	%			
Nitrite plus Nitrate (N)	%			
Total Kjeldahl Nitrogen (N)	%			
Ammonia (N)	%			
Total Phosphorus (P)	%			

a/ Report as mg per Kg of total solids (i.e., dry weight basis).

2.2.2.3.3. Describe briefly how the applicable vector attraction reduction requirements required under 40 CFR Part 503 for land application of sewage sludge will be met.

2.2.2.3.4. Describe briefly how the applicable pathogen requirements under 40 CFR Part 503 for land application of sewage sludge will be met.

In addition, provide a summary of data that will show that the sewage sludge that has been or will be land applied can comply with the applicable pathogen requirements in 40 CFR § 503.32. For Class A pathogen requirements the data shall include both monitoring data for the applicable pathogens and data from applicable process requirements. For Class B pathogen requirements the data may be either monitoring data for fecal coliforms and/or data for the applicable process requirements (e.g., time and temperature for sewage sludge digestion, etc.,). The data shall be based on a minimum of three sampling events that occurred at least one month apart and the data shall be no more than four and one-half years old. See Table NOI-5 for list of pollutants that may be applicable and the data to provide. New facilities/operations see **Note** following Table NOI-5.

TABLE NOI-5
PATHOGEN AND TOTAL SOLIDS DATA FOR SEWAGE SLUDGE THAT IS LAND APPLIED

Pollutants & Characteristics	Units	Average Concentration a/	Maximum Concentration	Number of Samples
Fecal Coliform	No./g b/			
Salmonella	No./4g b/			
Helminth OVA	No./g b/			
Enteric Virus	PFU/g b/			
Total Solids	%			

a/ Geometric mean shall be determined for fecal coliforms. Arithmetic mean shall be determined for the other pollutants and total solids.
b/ Results shall be reported on a dry weight basis.
c/ For Class B the applicant may enter N/A for items not measured.

Note: For Parts 2.2.2.3.2 and 2.2.2.3.4 above, new facilities/operations that do not yet have the required sewage sludge monitoring data shall submit the required data separately within six (6) months after the start of land application of sewage sludge. The data shall be based on a minimum of three (3) sampling events and the samples shall be collected in accordance with the requirements of Part 4.1.4. New operations that land apply sewage sludge, but do not treat it, are required to submit all of the required data with the NOI.

2.2.2.3.5. Provide the data on metals, total solids, nitrates, and phosphorus listed in Table NOI-6 for the soils at each land application site. The data shall be no more than four and one-half years old unless the permit issuing authority grants prior approval to use older data. Except as noted below, a minimum of six representative samples of one foot depth each for each 320 (or less) acre area are to be collected into one sample and analyzed. Guidance on collecting representative samples using a random sampling process may be found in the latest version of the EPA Region 8 Biosolids Management Handbook. In addition, the local office of the agricultural extension service, the State Land Grant University, etc., might have guidance on collecting representative samples. For those land application sites that have length to width ratios greater than 32:1 and are more than 4.0 miles long, the applicant shall submit a proposed sampling plan to the permit issuing authority for approval. Small-scale landscaping sites on the wastewater treatment plant grounds, and the sludge treatment facility grounds, if not collocated, that have a combined surface area of less than 5 acres and where less than 1 dry metric ton of sewage sludge has been or will be applied per acre per year, are exempt from these soil sampling requirements.

The analytical results for phosphorus and metals are to be reported as mg of pollutant per Kg of soil (dry weight basis). The total solids data are to be reported as percentage. The analytical results for nitrates are to be reported as mg of nitrate-nitrogen/Kg of soil (dry weight basis).

The deadlines for submitting these data are given below:

2.2.2.3.5.1. For new land application sites where the application of sewage sludge is planned to begin during the first six (6) months of coverage under this permit the data shall be submitted with the NOI;

2.2.2.3.5.2. For new land application sites where the application of sewage sludge is planned to begin more than six (6) months after the start of coverage under this permit the data shall be submitted at least 45 days before the start of land application; and

TABLE NOI-6
METALS, TOTAL SOLIDS, NITRATES, & PHOSPHORUS DATA REQUIRED FOR SOILS AT LAND APPLICATION SITE

Name of Land Application Site:				Site No.:
Pollutants & Characteristics	Units	Average Concentration	Maximum Concentration	Number of Samples
Arsenic (As) a/	mg/Kg			
Cadmium (Cd) a/	mg/Kg			
Copper (Cu) a/	mg/Kg			
Lead (Pb) a/	mg/Kg			
Mercury (Hg) a/	mg/Kg			
Molybdenum (Mo) a/	mg/Kg			
Nickel (Ni) a/	mg/Kg			
Selenium (Se) a/	mg/Kg			
Zinc (Zn) a/	mg/Kg			
Total Solids	%			
Nitrate (N)	mg/Kg			
pH	s.u.			
Available Phosphorus (P) a/, b/, c/	mg/Kg			

a/ Report as mg per Kg of total solids (i.e., dry weight basis).

b/ The sample shall be analyzed for available phosphorus. Depending on the pH of the soil sample, one of the following methods shall be used for the analysis of available phosphorus:

for soil pH greater than 6.5
sodium bicarbonate extraction (Olsen P), 1/ or
ammonium bicarbonate DTPA (AB-DPTA) extraction; 2/
for soil pH 6.5 or less
Bray and Kurtz P-1 extraction. 1/ or
Mehlich 3 1/

1/ *Methods of Phosphorus Analysis for Soils, Sediments, Residuals, and Waters*; Southern Cooperative Series Bulletin No. # 396, June 2000; Southern extension/Research activity - Information exchange Group (SERA-IEG); Gary M. Pierzynski, Editor; URL http://www.sera17.ext.vt.edu/SERA_17_ Publication.htm; ISBN: 1-58161-396-2

2/ Simultaneous Extraction of Macro, Micronutrients and trace Elements Using Ammonium Bicarbonate DPTA (AB-DPTA); *Laboratory Manual for SC-564, Soil and Plant Chemical Analysis,* Spring Semester 1998, Version 4, James R. Self, Juan B. Rodriguez, Soil, Water, and Plant Testing Laboratory, Department of Soil and Crop Sciences, Colorado State University

c/ The method used for analysis of available phosphorus shall be reported.

2.2.2.3.6. Ground Water Information For each new land application site provide the following information: (Note: For existing land application sites this information will have to be provided under the requirements of Part 4.2.2 of this permit):

2.2.2.3.6.1. Ground water classification: If the ground water underlying the land application site has been classified by the State, the classification shall be reported. If the ground water has not been classified, that shall be reported.

2.2.2.3.6.2. Annual high ground water level: Determine if the annual high ground water level at any point under the land application site is likely to be within five (5) feet of the ground surface. This determination may be made using available ground water data for nearby wells, the drilling of temporary observation wells at the site, and/or other methods as appropriate. The results of this determination and the method(s) used in the determination shall be reported.

2.2.2.3.6.3. Plan to Protect Ground Water Quality: If the determination required in Part 2.2.2.3.6.2 above shows that the annual high ground water level at any point under the land application site is likely to be within five (5) feet of the ground surface, submit a plan to for the application of sewage sludge to be conducted in a manner that will not contaminate the ground water or impair the use classification for that water has classified it underlying the site. The plan may consider such factors as reduced application rates in areas of possible high ground water levels, etc. The plan shall provide enough specifics so that the plan can be reviewed for adequacy.

2.2.2.4. Landfilling of Sewage Sludge: If application is being made to landfill sewage sludge under Subcategory 2.b., provide the following information:

2.2.2.4.1. The analytical results of all toxicity characteristic leaching procedure (TCLP) (i.e. SW 846 method 1311) tests that have been conducted within the past three years on sewage sludge that was landfilled.. If a TCLP test has not been conducted within the past three years, a sample shall be collected of sewage sludge that is going to be landfilled and a TCLP test shall be conducted on that sample and the results reported. New facilities/operations see **Note** following Part 2.2.2.4.2.

2.2.2.4.2. A summary of all paint filter tests and total solids analyses that have been conducted on sewage sludge that was landfilled during the past three years. If paint filter tests and/or total solids analyses have not been conducted during the past three years, a sample shall be collected of sewage sludge that is going to be landfilled and the appropriate paint filter test and/or total solids analysis conducted and the results reported. In addition, the results of any other tests required by the State and/or local agencies shall also be reported.

Note: For Parts 2.2.2.4.1 and 2.2.2.4.2 above, new facilities/operations that do not yet have the required sewage sludge monitoring data shall submit the required data separately within three (3) months after the start of landfilling of sewage sludge. For Part 2.2.2.4.1, a minimum of one sample is required and for Part 2.2.2.4.2, the data shall be based on a minimum of three samples. The samples shall be collected in accordance with the requirements of Part 5.1.2. New operations

that landfill sewage sludge, but do not treat it, are required to submit all of the required data with the NOI.

2.2.2.4.3. A brief description of the process that will be used to comply with the vector attraction reduction limitations in Part 5.1.1.2 of this permit.

2.2.2.4.4. The name and location of all landfills currently receiving sewage sludge from the applicant. (For those facilities that will be starting the disposal of sewage sludge by landfilling, provide information on the sites that are planned to be used during the first 12 months of disposal by landfilling.)

2.2.2.5. Surface Disposal of Sewage Sludge: If application is being made to dispose of sewage sludge by surface disposal under Subcategory 2.c., provide the information specified below. The information is to be provided for each active surface disposal site and for each surface disposal site that is planned to be used during the first twelve (12) months of coverage under this permit. (For those surface disposal sites where surface disposal will begin more than 12 months after start of coverage under this permit, the permittee shall submit an addendum to its NOI with the information specified below at least 90 days before the planned start of surface disposal at the site. **Surface disposal may not start until coverage is granted.**):

2.2.2.5.1. The name and location of each surface disposal site to be covered under this permit. Give the number of sewage sludge units (existing and planned) in each surface disposal site. Give the minimum distance (in meters) from the boundary of the sewage sludge unit to the property line of the surface disposal site.

2.2.2.5.2. Metals Data: For the sewage sludge that is surface disposed or will be surface disposed, provide the data for the pollutants listed in Table NOI-7. The data shall be based on a minimum of three sampling events that occurred at least one month apart and the data shall be no more than four and one-half years old. New facilities/operations see **Note** following Part 2.2.2.5.4.

TABLE NOI-7
METALS &TOTAL SOLIDS DATA FOR SURFACE DISPOSAL

Pollutants	Units	Average Concentration	Maximum Concentration	Number of Samples
Arsenic (As) a/	mg/Kg			
Chromium (Cr) a/	mg/Kg			
Nickel (Ni) a/	mg/Kg			
Total Solids	%			

a/ Report as mg per Kg of total solids (i.e., dry weight basis).

2.2.2.5.3. Describe briefly how the applicable vector attraction reduction requirements required under 40 CFR Part 503 for surface disposal of sewage sludge will be met

2.2.2.5.4. Describe briefly how the applicable pathogen requirements under 40 CFR Part 503 for surface disposal of sewage sludge will be met.

In addition, provide a summary of data that will show that the sewage sludge that has been or will be surface disposed can comply with the applicable pathogen requirements in 40 CFR Part 503. The data may be monitoring data for fecal coliforms, data for the applicable process requirements

(e.g., time and temperature for sludge digestion, etc.,) or a signed certified statement that the sewage sludge is covered with soil or other material in the sewage sludge unit at the end of each operating day. The data shall be based on a minimum of three sampling events that occurred at least one month apart and the data shall be no more than four and one-half years old. Fecal coliform data shall be expressed as number per gram of solids and the geometric mean, maximum concentration, and number of samples shall be reported. New facilities/operations see **Note** following Part 2.2.2.5.4.

Note: For Parts 2.2.2.5.2 and 2.2.2.5.4 above, new facilities/operations that do not yet have the required sewage sludge monitoring data shall submit the required data separately within six (6) months after the start of surface disposal of sewage sludge. The data shall be based on a minimum of three (3) sampling events and the samples shall be collected in accordance with the requirements of Part 6.1.4. New operations that surface dispose of sewage sludge, but do not treat it, are required to submit all of the required data with the NOI.

2.2.2.5.5. Provide a copy of the ground water monitoring plan for each surface disposal site and a summary of ground water monitoring data collected for each active surface disposal unit either during the previous 12 months or the previous calendar year.

2.2.2.5.6. Provide a summary of methane gas monitoring data, if collected, for each active surface disposal unit for either the previous 12 months or the previous calendar year.

2.2.3. Category 3: Additional Information for Applicants for Coverage Under Category 3

Wastewater lagoon systems wanting to land apply sewage sludge on a limited basis under the provisions for Category 3 shall provide the additional information as specified below. **Unless otherwise specified, all samples are to be collected no more than one (1) year prior to the submittal of the NOI.** The sewage sludge sampling requirements for wastewater lagoon systems with a design average flow of 1 million gallons per day (MGD) or less are somewhat different than the sampling requirements for larger wastewater lagoon systems. For those systems with a design average flow of 1 MGD or less, the specified number of discrete samples is the minimum number of samples that must be collected from the total of all lagoon cells and other sewage sludge bodies (see definition of Asewage sludge body@ in Part 11)) from which sewage sludge is to be land applied. An equal number of discrete samples shall be collected from each lagoon cell and other sewage sludge bodies from which sewage sludge is to be land applied. For wastewater lagoon systems with a design average flow greater than 1 MGD the specified number of discrete samples must be collected from each lagoon cell and other sewage sludge body from which sewage sludge will be land applied. Only those lagoon cells and other sewage sludge bodies from which sewage sludge is to be land applied need to be sampled.

2.2.3.1. Metals and Total Solids Data.

The sewage sludge is to be sampled for metals and total solids as listed in Table NOI-8. The number of samples to be analyzed for metals and total solids will depend on the design average flow of the wastewater lagoon system and the number of individual lagoon cells or other sewage sludge bodies to be sampled. The minimum number of discrete samples to be collected and the number of composite samples to be analyzed shall be based on the Table NOI-9. The discrete samples used to make up the composite samples are to be representative. Guidance on collecting representative samples using a random sampling process may be found in Section 2.4 of the 1999 version of the EPA Region 8 Biosolids Management Handbook. In addition, the local office of the agricultural extension service, the State Land Grant University, etc., might have guidance on collecting representative samples. Each composite sample shall be analyzed for the listed metals and for total solids. The analytical results for the metals analyses are to be reported on a dry weight basis. Approved methods for the analysis of biosolids (40 CFR Part 503) are given in

Part 12 of this permit. The average value of all of the samples, the maximum value of all of the samples, and the number of samples analyzed shall be reported.

TABLE NOI-8
METALS AND TOTAL SOLIDS MONITORING

Pollutants	Units	Average Concentration	Maximum Concentration	Number of Samples
Arsenic (As) a/	mg/Kg			
Cadmium (Cd) a/	mg/Kg			
Copper (Cu) a/	mg/Kg			
Lead (Pb) a/	mg/Kg			
Mercury (Hg) a/	mg/Kg			
Molybdenum (Mo) a/	mg/Kg			
Nickel (Ni) a/	mg/Kg			
Selenium (Se) a/	mg/Kg			
Zinc (Zn) a/	mg/Kg			
Total Solids	%			

a/ Report as mg per Kg of total solids (i.e., dry weight basis).

TABLE NOI-9
NUMBER OF SAMPLES FOR METALS AND TOTAL SOLIDS MONITORING

Design Average Flow, MGD	Minimum Number of Discrete Representative Samples to Be Collected	Number of Composite Samples for Each Lagoon Cell and Other Sewage Sludge Body
Flow $\leq$ 1	27 a/	a/
1 < Flow $\leq$ 10	42 b/	1 b/
Flow > 10	48 b/	1 b/

a/ An equal number of discrete sludge samples shall be collected from each lagoon cell and other sewage sludge body from which sewage sludge will be land applied. A minimum of 27 discrete samples shall be collected for the entire wastewater lagoon system. If necessary, the total number of discrete samples shall be increased so that an equal number of discrete samples are collected from each lagoon cell and other sewage sludge body from which sewage sludge is to be land applied (e.g., if 2 lagoon cells are to be sampled, 14 discrete samples shall be collected from each cell for a total of 28 discrete samples.) All of the discrete samples shall be composited by volume into one composite sample for analysis of parameters in TABLE NOI-8.

b/ The minimum number of discrete samples that shall be collected from each lagoon cell and other sewage sludge body from which sewage sludge will be land applied. For each lagoon cell or other sludge body all of the discrete samples shall be composited into one composite sample for analysis.

2.2.3.2. Fecal Coliform Data

Describe briefly how the applicable pathogen requirements in Part 7.1.2.1 will be met.

If the pathogen requirements will be met by meeting the numerical limitations on fecal coliforms, the sewage sludge is to be sampled and analyzed for fecal coliforms and total solids. The number of discrete samples to be analyzed for fecal coliforms and total solids will depend on the design average flow of the wastewater lagoon system and the number of individual lagoon cells and other sewage sludge bodies to be sampled. The minimum number of individual samples to be analyzed shall be as given in Table NOI-10. The individual samples are to be representative. Guidance on collecting representative samples using a random sampling process may be found in Section 2.4 of the 1999 version of the EPA Region 8 Biosolids Management Handbook. In addition, the local office of the agricultural extension service, the State Land Grant University, etc., might have guidance on collecting representative samples. The analytical results for each fecal coliform sample is to be expressed in terms of the most probable number (MPN) of fecal coliforms per gram of total solids (dry weight basis). The individual analytical results (fecal coliforms and total solids) for each sample shall be reported. In addition, the geometric mean of all of the fecal coliform analyses (for all samples) shall be calculated and that value shall be reported.

TABLE NOI-10
NUMBER OF SAMPLES FOR FECAL COLIFORMS AND TOTAL SOLIDS

Design Average Flow, MGD	Number of Discrete Representative Samples to Be Collected (N)
Flow $\leq$ 1	7 a/
1 > Flow	7 b/

a/ The minimum number of discrete samples to be collected from the wastewater lagoon system is 7. However, an equal number of discrete samples shall be collected from each lagoon cell and other sewage sludge body from which sewage sludge will be land applied. Therefore, if necessary, the total number of discrete samples shall be increased so that an equal number of discrete samples are collected from each lagoon cell and other sewage sludge body from which sewage sludge is to be land applied (e.g.., if 2 lagoon cells are to be sampled, 4 discrete samples are to be collected from each cell for a total of 8 discrete samples). Each discrete sample shall be analyzed separately for fecal coliforms and total solids.

b/ The minimum number of discrete samples to be collected from each lagoon cell and other sewage sludge body from which sewage sludge will be land applied is 7. Each discrete sample shall be analyzed separately for fecal coliforms and total solids.

2.2.3.3. Describe briefly how the site restriction requirements in Part 7.1.2.2 will be met.

2.2.3.4. Describe briefly how the vector attraction reduction requirements in Part 7.1.3 will be met.

2.2.3.5. Nitrogen, Phosphorus and Soils Data

If the applicant wants approval to land apply the sewage sludge at a rate greater than one (1) dry metric ton (dmt) per acre, the applicant must submit the following information:

2.2.3.5.1. The sewage sludge shall be sampled for the specified forms of nitrogen, total phosphorus, and total solids as listed in Table NOI-11. The number of samples to be analyzed will depend on the design average flow of the wastewater lagoon system and the number of individual lagoon

cells and other sewage sludge bodies to be sampled. The minimum number of discrete samples to be collected and the number of composite samples to be analyzed shall be based on Table NOI-9. The discrete samples used to make up the composite samples are to be representative. Guidance on collecting representative samples using a random sampling process may be found in Section 2.4 of the 1999 version of the EPA Region 8 Biosolids Management Handbook. In addition, the local office of the agricultural extension service, the State Land Grant University, etc., might have guidance on collecting representative samples. Each composite sample shall be analyzed for the pollutants listed in Table NOI-11. The analytical results for the nitrogen and phosphorus analyses are to be reported on a dry weight basis. Approved methods for the analysis of biosolids (40 CFR Part 503) are given in Part 12 of this permit. The average value of all of the samples, the maximum value of all of the samples, and the number of composite samples analyzed shall be reported.

TABLE NOI-11
NITROGEN, PHOSPHORUS, AND TOTAL SOLIDS MONITORING a/

Constituents	Units	Average Concentration	Maximum Concentration	Number of Samples
Ammonia (as N) b/	mg/Kg			
Total Kjeldahl Nitrogen (as N) b/	mg/Kg			
Nitrate plus Nitrite (as N) b/	mg/Kg			
Total Phosphorus (as P) b/	mg/Kg			
Total Solids	%			

a/ Sewage sludge data required if permittee wants approval to land apply the sewage sludge at a rate greater than one (1) dry metric ton per acre.

b/ Report as mg per Kg of total solids (i.e., dry weight basis).

2.2.3.5.2. The soils at the site(s) where the sewage sludge is to be land applied shall be analyzed for nitrate-nitrogen, available phosphorus, total solids, and pH. The data shall be no more than four and one-half years old unless the permit issuing authority grants prior approval to use older data. A minimum of six samples of one foot depth each for each 320 (or less) acre area are to be collected into one sample and analyzed. Sampling point locations for new data are to be representative. Guidance on collecting representative samples using a random sampling process may be found in Section 2.4 of the 1999 version of the EPA Region 8 Biosolids Management Handbook. In addition, the local office of the agricultural extension service, the State Land Grant University, etc., might have guidance on collecting representative samples. Depending on the pH of the soil sample, one of the following methods shall be used for the analysis of available phosphorus:

for soil pH greater than 6.5
sodium bicarbonate extraction (Olsen P), 1/ or
ammonium bicarbonate DTPA (AB-DPTA) extraction; 2/
for soil pH 6.5 or less
Bray and Kurtz P-1 extraction, 1/ or
Mehlich 3. 1/

1/ *Methods of Phosphorus Analysis for Soils, Sediments, Residuals, and Waters*; Southern Cooperative Series Bulletin No. # 396, June 2000; Southern

extension/Research activity - Information exchange Group (SERA-IEG); Gary M. Pierzynski, Editor; URL http://www.sera17.ext.vt.edu/SERA_17_Publications.htm; ISBN: 1-58161-396-2

2/ Simultaneous Extraction of Macro, Micronutrients and trace Elements Using Ammonium Bicarbonate DPTA (AB-DPTA); *Laboratory Manual for SC-564, Soil and Plant Chemical Analysis,* Spring Semester 1998, Version 4, James R. Self, Juan B. Rodriguez, Soil, Water, and Plant Testing Laboratory, Department of Soil and Crop Sciences, Colorado State University

The method of analysis for available phosphorus shall be reported. The analytical results for phosphorus are to be reported as mg of phosphorus per Kg of soil (dry weight basis). The total solids data are to be reported as percentage. The analytical results for nitrates are to be reported as mg of nitrate-nitrogen/Kg of soil (dry weight basis).

2.2.3.6. Provide maps showing the specific location(s) and acreage to be utilized for land application. Provide the section, township, and range for each site.

2.2.3.7. What type of cover vegetation or crop will be grown on the application site(s).

2.2.3.8. Provide information on the volume of sewage sludge to be land applied, the application rate, and the application methods and equipment to be used to insure uniform and timely incorporation.

2.2.4. Certification Statement and Who Signs - **All Applicants Complete**

The Notice of Intent must be submitted by the organization or entity that has the legal responsibility for the generation, treatment, and/or use disposal of sewage sludge that will be covered under this permit, it shall be signed in accordance with the requirements of Part 10.7, and **the person signing the Notice of Intent shall make the following certification**:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Upon review of the NOI, the Director may request additional information. **Coverage under this permit does not begin until the operator receives written authorization from the Director.**

2.3. Where to Submit

The completed NOI must be submitted to the following address by means of U.S. Postal Service, a commercial delivery service or hand delivered. **The NOI may not be submitted via email.**:

WASTEWATER UNIT (8P-W-WW)
BIOSOLIDS PROGRAM - NOI
U.S. EPA, REGION 8
1595 WYNKOOP STREET
DENVER, CO 80202-1129

A copy of the completed NOI should be submitted to the State at the following address:

Environmental Health Section
Division of Water Quality
ND Dept. of Health
918 E Divide Ave
P.O. Box 5520
Bismarck, ND 58501-1947

3. SPECIFIC REQUIREMENTS FOR FACILITIES/OPERATIONS THAT ONLY GENERATE AND/OR PARTIALLY TREAT SEWAGE SLUDGE (Category 1)

3.1. Applicability of This Part

These requirements apply to those facilities where one or more of the following occurs with part or all of the sewage sludge at the facility:

3.1.1. Facilities that generate sewage sludge and provide no or partial treatment of the sewage sludge (e.g., concentrating) beyond the treatment that occurs during the treatment of the wastewater. The sewage sludge must be sent to another facility(s)/operations(s) that has authorization under a Biosolids Permit for the treatment necessary to meet applicable use/disposal requirements;

3.1.2. Facilities that generate sewage sludge and provide partial treatment of the sewage sludge, but the level of treatment is not adequate to meet the applicable requirements for use/disposal. The sewage sludge must be sent to another facility(s)/operation(s) that has authorization under a Biosolids Permit for the treatment necessary to meet applicable use/disposal requirements;

3.1.3. Facilities that receive sewage sludge from other facilities (but do not generate any sewage sludge) and provide partial treatment of the sewage sludge, but the level of treatment is not adequate to meet the applicable requirements for use/disposal. The sewage sludge must be sent to another facility(s)/op[eration(s) that has authorization under a Biosolids Permit for the treatment necessary to meet applicable use/disposal requirements; and/or

3.1.4. Facilities that generate some sewage sludge, receive sewage sludge from other facilities, and provide partial treatment of the sewage sludge, but the level of treatment is not adequate to meet the applicable requirements for use/disposal. The sewage sludge is sent to another facility(s)/operation(s) that has authorization under a Biosolids Permit for the treatment necessary to meet applicable use/disposal requirements.

NOTE: If *this facility* sends part or all of its sewage sludge to another entity for use/disposal and that other enetity does not have coverage under a Biosolids Permit for that use/disposal, then *this facility* must obtain the applicable coverage under subcategories 2.a, 2.b, and/or 2.c for that use/disposal.

3.2. Self-Monitoring and Reporting Requirements for Facilities/Operations That Only Generate and/or Partially Treat Sewage Sludge

The permittee shall annually report the following information to EPA in accordance with the requirements of Part 8.4 (Reporting of Monitoring Results):

3.2.1. Name of facility;

3.2.2. Permit number;
3.2.3. Contact person for this facility:
3.2.3.1 Name;
3.2.3.2. Title;
3.2.3.3. Phone number;
3.2.4. The total amount of sewage sludge, in dry metric tons, that is generated by this facility during the reporting year;
3.2.5. Sewage sludge received from other facilities during the reporting year:
3.2.5.1. Total amount of sewage sludge received (dry metric tons)
3.2.5.2. For each facility sending sewage sludge to this facility:
- ! Name of facility;
- ! Location of that facility;
- ! Amount of sewage sludge, in dry metric tons, received from the facility;

3.2.6. Sewage sludge sent to other facilities/operations:
3.2.6.1. Total amount of sewage sludge, in dry metric tons, sent to other facilities,
3.2.6.2. For each facility receiving sewage sludge from this facility:
- ! Name of facility/operation;
- ! Location of facility/operation;
- ! Amount of sewage sludge, in dry metric tons, sent to that facility/operation;

3.2.7. The amount of sewage sludge, in dry metric tons, placed in storage during the reporting year.
3.2.8. A brief narrative description of the treatment provided to sewage sludge. Name each treatment process and give a brief summary of operating conditions (e.g., anaerobic digestion, 20 days at 25^0 C) and pollutant concentrations.

See Part 8.4 for report format requirements.

3.3. Retention of Records for Facilities/Operations That Only Generate and/or Partially Treat Sewage Sludge

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit and the data to prepare those reports, and records of all data used to complete the application for this permit, for a period of **at least five years** from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

4. SPECIFIC REQUIREMENTS FOR LAND APPLICATION OF SEWAGE SLUDGE (Subcategory 2.a)

4.1. Specific Limitations and Self-Monitoring Requirements for Land Application

All sewage sludge generated and/or treated by this facility/operation to be used for land application shall meet the requirements of Parts 4.1.1, 4.1.2 and 4.1.3 listed below. These limits are effective immediately.

4.1.1. Chemical Pollutant Limitations for Land Application (See Part 4.1.1.5 for Tables 1, 2, and 3)

4.1.1.1. If the sewage sludge is to be land applied to agricultural land, forest land, a public contact site or a reclamation site it must meet at all times:

- ! The maximum pollutant concentrations listed in Table 1 and the cumulative pollutant loading rates in Table 2; or

! The maximum pollutant concentrations in Table 1 and the monthly average pollutant concentrations in Table 3.

If the sewage sludge does not meet these requirements it cannot be land applied.

NOTE: If sewage sludge that exceeds Table 3 values, for any parameter, is land applied to a site, that site thereafter is subject to the cumulative pollutant loading rates in Table 2. **Records for those sites are to be retained in perpetuity.**

4.1.1.2. If the sewage sludge is to be sold or given away in a bag or other container for application to the land for other than lawn or home garden use it shall meet the maximum pollutant concentrations in Table 1 and the monthly average pollutant concentrations in Table 3.

If the sewage sludge does not meet these requirements it cannot be sold or given away for land application.

4.1.1.3. If the sewage sludge is to be applied to a lawn or home garden it shall meet the maximum pollutant concentrations in Table 1 and the monthly average pollutant concentrations in Table 3.

If the sewage sludge does not meet these requirements it cannot be sold or given away for application to a lawn or home garden.

4.1.1.4. The permittee must provide written notification to the EPA and the State of North Dakota within 90 days of the date of coverage under this permit of the location of any present land application site where sewage sludge that contained any pollutant in excess of the concentration limitations in Table 3 has been applied. This same notification must be given for new sites as soon as practicable, but no later than 30 days after learning that the concentration of any pollutant in sewage sludge has exceeded the concentration limitations in Table 3.

4.1.1.5. Tables 1, 2, and 3 of Chemical Pollutant Limitations

Pollutant	Table 1 Daily Maximum mg/Kg a/b/c/d/	Table 2 Cumulative Pollutant Loading Rate Kg/Ha a/	Table 3 Monthly Average Concentration mg/Kg a/c/e/
Total Arsenic	75	41	41
Total Cadmium	85	39	39
Total Copper	4300	1500	1500
Total Lead	840	300	300
Total Mercury	57	17	17
Total Molybdenum	75	N/A	N/A
Total Nickel	420	420	420
Total Selenium	100	100	100

Total Zinc	7500	2800	2800

a/ See Part 11 for definition of terms.

b/ The limitations represent maximum allowable levels of pollutants in any sewage sludge intended for land application.

c/ The concentration is mg pollutant per Kg of total solids (dry-weight basis).

d/ Any violation of these limitations shall be reported in accordance with the requirements of Part 8.6.2 of this permit.

e/ These limitations represent the maximum allowable levels of pollutants based on an average of all samples taken during a 30-day period.

4.1.2. Pathogen Requirements

If the sewage sludge is to be land applied to agricultural land, forest land, a public contact site or a reclamation site it shall be either Class A or Class B (including the site restrictions) as described below. If the sewage sludge does not meet Class A or Class B it cannot be land applied.

If the sewage sludge is to be sold or given away in a bag or other container for application to land or for use on a lawn or home garden it shall be Class A as described below. **If the sewage sludge does not meet Class A, it cannot be sold or given away in a bag or other container for application to land or for use on a lawn or home garden.**

4.1.2.1. Class A Pathogen Requirements

In order for a sewage sludge to be classified Class A with respect to pathogens, the requirements in either 40 CFR § 503. 32(a)(3), 32(a)(4), 32(a)(5), 32(a)(6), 32(a)(7), or 32(a)(8) shall be met. The two methods most commonly used in Region 8 for meeting the Class A pathogen requirements are given in Table 4.1.2.1. If the permittee intends to use another method for meeting the class A pathogen requirements, the EPA and the State must be informed at least 30 days prior to its use. This change may be made without additional public notice.

The Class A pathogen requirements must be met in the same treatment process as the vector attraction reduction requirements in Part 4.1.3 are met or in a treatment process prior to meeting the vector attraction reduction requirements in Part 4.1.3. This requirement does not apply when the vector attraction reduction requirements are met by using Part 4.1.3.6, Part 4.1.3.7, or Part 4.1.3.8.

TABLE 4.1.2.1: THE TWO METHODS MOST COMMONLY USED IN REGION 8 FOR MEETING CLASS A PATHOGEN REQUIREMENTS

Fecal Coliform and *Salmonella* Limits		Process Requirements (One of the following):
Fecal Coliforms shall be < 1000 MPN/gram of total solids a/b/c/ OR *Salmonella* shall be	AND	1. Composting using either the within-vessel or static aerated pile composting method, the temperature of the sewage sludge is maintained at 55° C or higher for three days. 2. Composting using the windrow method, the temperature of the sewage sludge is maintained at 55° C or higher for 15 days or longer, with a minimum of 5 turnings of the pile during those 15 days.

< 3 MPN/4 grams of total solids a/b/c/		

a/ Based on a minimum of seven (7) samples of sewage sludge collected over a two week period (or as approved by the permitting authority in your sampling and analysis plan, if you were required to have one (See Part 4.1.4)). (i.e., If quarterly sampling is required, a minimum of seven samples is required each quarterly event.) Samples to be analyzed for fecal coliforms and/or *Salmonella* shall be discrete, individual samples, with no compositing of samples. Samples are to be collected 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 40 CFR § 503.10 (b), (c), (e), or (f).

b/ Any violation of these limitations shall be reported in accordance with the requirements of Part 8.6.2 of this permit.

c/ The values of fecal coliforms and *Salmonella* are to be based on the MPN procedures of analyses. **The membrane filter (MF) procedures of analyses are not acceptable.**

4.1.2.1.1. Special conditions for facilities/operations that use Alternative 3 (40CFR503.32(a)(5)) for meeting Class A pathogen requirements. In addition to meeting the conditions specified below, the requirements of (40CFR503.32(a)(5)) must also be met.

Facilities/operations that use Alternative 3 (40CFR503.32(a)(5)) for meeting the Class A pathogen requirements, shall provide a detailed sampling plan and quality assurance project plan(QAPP) that will show that the sewage sludge that has been or will be land applied can comply with the applicable pathogen requirements in 40 CFR § 503.32. That sampling plan and QAPP shall meet the requirements set forth in "EPA requirements for Quality Assurance Project Plans" (QA/R-5) available at http://www.epa.gov/region08/biosolids.

Facilities/operations that use Alternative 3 shall use only EPA methods 1680 or 1681 for fecal coliform and 1682 for *Salmonella*; and the methods listed in Table 12, APPROVED METHODS FOR THE ANALYSIS OF SEWAGE SLUDGE, for Helminth Ova and enteric virus.

4.1.2.1.2. Special conditions for facilities/operations that use Alternative 4 (40CFR503.32(a)(6)) for meeting Class A pathogen requirements. In addition to meeting the conditions specified below, the requirements of (40CFR503.32(a)(6)) must also be met.

Facilities/operations that use alternative 4 (40CFR503.32(a)(6)) for meeting the Class A pathogen requirements, shall provide a detailed sampling plan and quality assurance project plan(QAPP) that will show that the sewage sludge that has been or will be land applied can comply with the applicable pathogen requirements in 40 CFR § 503.32. That sampling plan and QAPP shall meet the requirements set forth in "EPA requirements for Quality Assurance Project Plans" (QA/R-5) available at http://www.epa.gov/region08/biosolids.

Facilities/operations that use alternative 4 shall use only EPA methods 1680 or 1681 for fecal coliform and 1682 for *Salmonella*; and the methods listed in Table 12, APPROVED METHODS FOR THE ANALYSIS OF SEWAGE SLUDGE, for Helminth Ova and enteric virus.

4.1.2.2. Class B Pathogen Requirements

In order for a sewage sludge to be classified Class B with respect to pathogens, the requirements in either 40 CFR § 503 Sec 32(b)(2), 32(b)(3), or 32(b)(4) shall be met. The methods most

commonly used in Region 8 for meeting the Class B pathogen requirements are given in Table 4.1.2.2. If the permittee intends to use another method for meeting the class B pathogen requirements, the EPA and the State must be informed at least 30 days prior to its use. This change may be made without additional public notice.

The site restrictions in Part 4.1.2.3 must be met when sewage sludge that meets Class B pathogen requirements is applied to the land.

TABLE 4.1.2.2: THE METHODS MOST COMMONLY USED IN REGION 8 FOR MEETING CLASS B PATHOGEN REQUIREMENTS

Fecal Coliform Limit		Process Requirements (One of the following):
Fecal Coliforms shall be < 2,000,000 MPN/gram of total solids a/ d/	OR	1. Anaerobically digested between these mean cell residence times and temperatures specified: 15 days at 35-55° C and 60 days at 20° C. b/ 2. Aerobically digested for 40 days at 20° C to 60 days at 15° C. c/ 3. Composting using the within-vessel, static pile or windrow methods, the temperature is maintained at 40° C or higher for 5 days. During those 5 days the temperature in the pile exceeds 55° C for 4 hours. 4. Sewage sludge is dried on beds at a depth of no more than 9 inches for a minimum of 3 months. During 2 of those 3 months the average daily temperature is above 0° C.

a/ Based on a geometric mean of a minimum of seven (7) samples of sewage sludge collected over a two week period (or as approved by the permitting authority in your sampling and analysis plan, if you were required to have one (See Part 4.1.4)). (i.e., If quarterly sampling is required, a minimum of seven samples is required each quarterly event.) Samples to be analyzed for fecal coliforms shall be discrete, individual samples, with no compositing of samples.

b/ For minimum digestion temperatures between 35° C and 20° C, determine the minimum mean cell residence time using the following equation: $\theta = -3T + 120$, where θ is the required minimum mean cell residence time in days ($15 \leq \theta \leq 60$) and T is the minimum temperature (°C) during anaerobic digestion time. For temperatures greater than 35° C, use θ equal to 15 days. The actual mean cell residence time during anaerobic digestion shall be calculated using the appropriate method described in *Environmental Regulations and Technology, Control of Pathogens and Vector Attraction in Sewage Sludge (Including Domestic Septage) Under 40 CFR Part 503*, EPA Publication EPA/625/R-92/013, Revised October 2003 or latest revision thereof. If annual monitoring, sampling is to be performed during the most restrictive time of the year (this is usually during the winter).

c/ For minimum digestion temperatures between 20° C and 15° C, determine the minimum mean cell residence time using the following equation: $\theta = -4T + 120$, where θ is the required minimum mean cell residence time in days ($40 \leq \theta \leq 60$) and T is the minimum temperature (°C) during aerobic digestion time. For temperatures greater than 20° C, use θ equal to 40 days. The actual mean cell residence time during aerobic digestion shall be calculated using the appropriate method described in *Environmental Regulations and Technology, Control of Pathogens and Vector Attraction in Sewage Sludge (Including Domestic Septage) Under 40 CFR Part 503*, EPA Publication EPA/625/R-92/013, Revised October 2003 or latest revision thereof.

d/ The values of fecal coliforms and *Salmonella* are to be based on the MPN procedures of analyses. **The membrane filter (MF) procedures of analyses are not acceptable.**

4.1.2.3. Site Restrictions

If the sewage sludge is **Class B** with respect to pathogens, the permittee shall comply with all of the site restrictions listed below:

4.1.2.3.1. 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.

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

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

4.1.2.3.4. Other food crops and feed crops shall not be harvested from the land for 30 days after application.

4.1.2.3.5. Animals shall not be allowed to graze on the land for 30 days after application.

4.1.2.3.6. Turf grown on land where sewage sludge is applied shall not be harvested for one year after application if the harvested turf is placed on either land with a high potential for public exposure or a lawn.

4.1.2.3.7. Public access to land with a high potential for public exposure shall be restricted for one year after application.

4.1.2.3.8. Public access to land with a low potential for public exposure shall be restricted for 30 days after application.

4.1.3. Vector Attraction Reduction Limitations for Land Application

If the sewage sludge is to be land applied to agricultural land, forest land, a public contact site or a reclamation site it shall meet one of the alternatives listed below.

If the sewage sludge is to be sold or given away in a bag or other container for application to land or for use on a lawn or home garden it shall meet one of the first five (5) alternatives listed below. a/

4.1.3.1. The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38 percent prior to land application.

4.1.3.2. If an anaerobically digested sewage sludge cannot meet the 38 percent volatile solids reduction requirement, a portion of the previously digested sewage sludge shall be digested anaerobically in the laboratory in a bench-scale unit for an additional 40 days at 30° C or higher. At the end of the 40 days, the volatile solids content shall have been reduced by no more than 17 additional percent.

4.1.3.3. If an aerobically digested sewage sludge cannot meet the 38 percent volatile solids reduction requirement, a portion of the previously digested sewage sludge (with a percent solids content of 2 percent or less) shall be digested aerobically in the laboratory in a bench-scale unit for an additional 30 days at a temperature between 20 and 22° C. At the end of the 30 days, the volatile solids content shall have been reduced by no more than 15 additional percent.

4.1.3.4. The specific oxygen uptake rate (SOUR) for the sewage sludge treated in an aerobic process shall be equal to or less than 1.5 mg of oxygen/hour/gram of total solids at a temperature of 20° C.

4.1.3.5. The sewage sludge shall be treated in an aerobic process for 14 days or longer with a temperature remaining above 40° C. The average temperature shall be greater than 45° C.

4.1.3.6. The pH of the sewage sludge shall be raised to a minimum of 12 by alkali addition, but without the addition of more alkali, the pH shall remain at 12 or above for 2 hours and remain at a minimum of 11.5 for an additional 22 hours.

4.1.3.7. The sewage sludge shall be injected below the surface of the land and no significant amount of sewage sludge shall be present on the land surface within one hour after the sewage sludge is injected. If the sewage sludge meets the Class A pathogen requirements (Part 4.1.2.1), the sewage sludge shall be injected below the land surface within 8 hours after the sewage sludge is discharged from the pathogen reduction process.

4.1.3.8. Sewage sludge applied to the land surface shall be incorporated into the soil within 6 hours after application to the land. Sewage sludge that is incorporated into the soil and meets the Class A pathogen requirements (Part 4.1.2.1) shall be applied to or placed on the land within 8 hours after being discharged from the pathogen treatment process.

a/ There are additional pathogen reduction and vector attraction reduction alternatives available in 40 CFR § 503.32 and 40 CFR § 503.33. If the permittee intends to use one of these alternatives the EPA and the State of North Dakota must be informed at least 30 days prior to its use. This change may be made without additional public notice.

4.1.4. Self-Monitoring Requirements for Land Application

At a minimum, upon the date of coverage under this permit, the permittee shall monitor sewage sludge related activities as specified below. The monitoring results shall be reported in accordance to the requirements of Part 8.4 of this permit. See Part 8.4 for report format requirements. Samples or measurements shall be representative of the quantity and quality of the sewage sludge.

If this facility/operation collects samples from sewage sludge bodies (e.g., long-term treatment piles, compost piles, drying beds, storage piles, lagoon cells, etc.) a sampling and analysis plan is to be prepared and submitted to the EPA and the State of North Dakota within 90 days of the date of coverage under this permit. (If the permittee already has a sampling and analysis plan, that plan may be updated and submitted. The permittee shall continue to implement the existing plan until the updated plan is implemented.) **NOTE: Either a new plan or an updated plan must be submitted.** If, when coverage under this permit was approved the permittee was not sampling in this manner but a change in process necessitates this form of sampling, then the plan must be submitted 30 days before the change occurs. This plan is to detail how representative samples are to be obtained. Guidance on collecting representative samples using a random sampling process may be found in Section 2.4 of the 1999 version of the EPA Region 8 Biosolids Management Handbook. In addition, the local office of the agricultural extension service, the State Land Grant University, etc., might have guidance on collecting representative samples. The number of samples collected will be at least as many as those that would be collected annually as required from the amount of sewage sludge land applied (see Part 4.1.4.5).

4.1.4.1. The sewage sludge shall be monitored for the chemical pollutants listed in Part 4.1.1.5. See Part 4.1.4.5 below for the minimum frequency of monitoring. The concentrations shall be reported as mg/Kg (dry weight basis) and the average and maximum concentrations shall be reported.

If the concentrations of any pollutant in sewage sludge that is land applied exceeds the limitations in Table 3 (Monthly average limitation) in Part 4.1.1.5, the limitations in Table 2 must be used thereafter for each site where that sewage sludge was land applied. The permittee shall determine cumulative pollutant loadings **for all of the pollutants** listed in Part 4.1.1.5 for each land application site where that sewage sludge was land applied. This must be done for each succeeding application of sewage sludge to that site even if the concentrations of pollutants meet the limitations in Table 3.

4.1.4.2. Provide a brief description of the method used during the reporting year to meet the applicable pathogen requirements given in Part 4.1.2. For Class B pathogen requirements met by fecal coliform densities and for Class A pathogen requirements, the permittee shall monitor the sewage sludge for the applicable pathogens. The results shall be reported in the units used in the limitations (e.g., fecal coliform, MPN/gram of total solids). For Class A pathogen requirements the samples shall be collected at approximately the time of use/disposal of the sewage sludge. In addition, for Class A pathogen requirements, the permittee shall monitor the appropriate process parameters. If the long-term treatment option (see Section 2.7.7 of the 1999 version of the EPA Region 8 Biosolids Management Handbook for Requirements for The Long-Term Treatment PFRP Equivalency Option (a.k.a. the ATwo Summer Method@) is used for meeting Class A pathogen requirements, the permittee must monitor for helminth ova once for each batch. At each turning of the pile, the permittee shall monitor for volatile solids, total solids and temperature. The permittee is not required to monitor for enteric viruses if all other conditions listed for long-term treatment are followed. If the Class B pathogen requirements in Part 4.1.2.2 are met by complying with one of process requirements, the permittee shall monitor the appropriate process parameters. See Part 4.1.4.5 below for the minimum frequency of monitoring. For each sampling event for fecal coliform and/or *Salmonella*, a minimum of seven discrete samples shall be collected and analyzed separately. This applies to the fecal coliform and/or *Salmonella* sampling for meeting the Class A pathogen requirements and for meeting the Class B pathogen requirements. If the samples are not collected from sewage sludge bodies (e.g., long-term treatment piles, compost piles, drying beds, storage piles, lagoon cells, etc.), the samples shall be collected on separate days within a two week period. If the samples are collected from sewage sludge bodies, a minimum of seven samples shall be collected from each sludge body for each sampling event.

It should be noted that for the analyses of fecal coliforms and *Salmonella*, the MPN procedures of analyses are to be used and that the membrane filter (MF) procedures of analyses are not acceptable.

4.1.4.3. Provide a brief description of the method used to meet the applicable vector attraction reduction requirements given in Part 4.1.3. If the vector attraction reduction requirements are met by a treatment process, the permittee shall monitor the appropriate process parameters in the treatment of the sewage sludge. If the facility/operation produces sewage sludge that meets Class A pathogen requirements, the determination of meeting the vector attraction reduction requirements shall include the final sewage sludge treatment process involved. See Part 4.1.4.5 below for the minimum frequency of monitoring.

4.1.4.4. Provide the average and maximum concentrations of ammonia (as N), total Kjeldahl nitrogen (TKN), organic nitrogen, nitrates (as N), total phosphorus (as P), and total solids (percent solids) of the sewage sludge that was land applied during the reporting year. The nitrogen parameters and the phosphorus shall be reported as percent (%) of total solids (dry weight basis). See Part 4.1.4.5 below for the minimum frequency of monitoring.

4.1.4.5. **Minimum monitoring frequency for metals, pathogen requirements, and vector attraction reduction requirements**: The minimum frequency of monitoring for the sewage sludge that is land applied shall be based on the table below.

FREQUENCY OF MONITORING - LAND APPLICATION

Amount of sewage sludge a/ (dry metric tons per 365 day period)	Frequency
0 < Amount < 290.	Once per year.
290 ≤ Amount < 1,500.	Once per quarter (four times per year).
1,500 ≤ Amount < 15,000.	Once per 60 days (six times per year).
Amount ≥ 15,000.	Once per month (12 times per year).

a/ Either the amount of bulk sewage sludge applied to the land or the amount of sewage sludge received by a person who prepares sewage sludge that is sold or given away in a bag or other container for application to the land (dry weight basis).

4.1.4.6. Soil monitoring for nitrate-nitrogen is required for all land application sites where sewage sludge has been land applied during the life of this permit except when prior written approval is granted by the permit issuing authority (does not apply to sewage sludge that is sold or given away in bags or other containers). A minimum of six representative samples for each 320 (or less) acre area are to be collected. Guidance on collecting representative samples using a random sampling process may be found in Section 2.4 of the 1999 version of the EPA Region 8 Biosolids Management Handbook. In addition, the local office of the agricultural extension service, the State Land Grant University, etc., might have guidance on collecting representative samples. Use the following table to determine if the samples may be collected at one foot depth or if deep soil sampling is required.

Number of sewage sludge applications during previous 5 years b/	Mean Annual Precipitation Based on USDA/NRCS a/	
	Less than 18 in/yr	Equal to or more than 18 in/yr
One application during previous 5 years. No irrigation	No deep soil monitoring required	No deep soil monitoring required
Two or more applications during previous 5 years. No irrigation	No deep soil monitoring required	Deep soil monitoring required
One application during previous 5 years on land that is irrigated.	No deep soil monitoring required	No deep soil monitoring required
Two or more applications during previous 5 years on land that is irrigated.	Deep soil monitoring required	Deep soil monitoring required

a/ Based on the U.S. Department of Agriculture, Natural Resources Conservation Service=s AMean Annual Precipitation Maps@ (1961-1990) available online at http://www.ncgc.nrcs.usda.gov/products/datasets/climate/data/precipitation-state/index.html or a pdf file at http://www.epa.gov/region08/biosolids.

b/ Each application of sewage sludge at or less than calculated agronomic rate.

If deep soil sampling is not required, six representative samples of one foot depth each for each 320 (or less) acres are to be collected, composited into one sample for each 320 acres, and that sample analyzed. If deep soil monitoring is required, the samples are to be collected at one-foot increments down to either 5 feet or to the confining layer, whichever is shallower. Each one foot

increment is to be composited with the other nitrate samples from that depth in that 320 acres and one analysis for nitrate is to be done for each increment. The analytical results are to be reported as mg of nitrate-nitrogen/Kg of soil (dry weight basis).

The minimum frequency of monitoring is at least once during the life of this permit unless prior written approval is granted by the permit issuing authority. If soil sampling is done during the life of this permit to determine the agronomic rates for sewage sludge application, that data may be used to meet these requirements provided that the depth requirements indicated by the above table are met (i.e., deep soil sampling is done when required). If one foot samples were collected to determine the agronomic rate and the above table shows that deep soil monitoring is required, then additional monitoring is required using deep soil monitoring. Small-scale landscaping sites on the wastewater treatment plant grounds, and the sludge treatment facility grounds, if not collocated, that have a combined surface area of less than 5 acres and where less than 1 dry metric ton of sewage sludge has been applied per acre per year, are exempt from these soil sampling requirements.

4.1.4.7. Soil monitoring for available phosphorus (reported as P) and pH is required for all land application sites where sewage sludge has been land applied during the life of this permit except when prior written approval is granted by the permit issuing authority (does not apply to sewage sludge that is sold or given away). A minimum of six representative samples of one foot depth each are to be collected for each 320 acre area and composited into one sample. Guidance on collecting representative samples using a random sampling process may be found in Section 2.4 of the 1999 version of the EPA Region 8 Biosolids Management Handbook. In addition, the local office of the agricultural extension service, the State Land Grant University, etc., might have guidance on collecting representative samples. Depending on the pH of the soil sample, one of the following methods shall be used for the analysis of available phosphorus:

for soil pH greater than 6.5
sodium bicarbonate extraction (Olsen P), 1/ or
ammonium bicarbonate DTPA (AB-DPTA) extraction; 2/
for soil pH 6.5 or less
Bray and Kurtz P-1 extraction. 1/ or
Mehlich 3 1/

1/ *Methods of Phosphorus Analysis for Soils, Sediments, Residuals, and Waters*; Southern Cooperative Series Bulletin No. # 396, June 2000; Southern extension/Research activity - Information exchange Group (SERA-IEG); Gary M. Pierzynski, Editor; URL http://www.sera17.ext.vt.edu/SERA_17_Publications.htm; ISBN: 1-58161-396-2

2/ Simultaneous Extraction of Macro, Micronutrients and trace Elements Using Ammonium Bicarbonate DPTA (AB-DPTA); *Laboratory Manual for SC-564, Soil and Plant Chemical Analysis,* Spring Semester 1998, Version 4, James R. Self, Juan B. Rodriguez, Soil, Water, and Plant Testing Laboratory, Department of Soil and Crop Sciences, Colorado State University

The method of analysis for available phosphorus shall be reported. The analytical results for available phosphorus are to be reported as mg of phosphorus/Kg of soil (dry weight basis).

The minimum frequency of monitoring is at least once during the life of this permit unless prior written approval is granted by the permit issuing authority. If soil sampling is done during the life of this permit to determine the agronomic rates for sewage sludge application, that data may be used to meet these requirements. Small-scale landscaping sites on the wastewater treatment plant grounds, and the sludge treatment facility grounds, if not collocated, that have a combined surface area of less than 5 acres where less than 1 dry

metric ton of sewage sludge has been applied per acre per year, are exempt from these soil sampling requirements.

4.1.4.8. Sample collection, preservation and analysis shall be performed in a manner consistent with the requirements of 40 CFR Part 503 and/or other criteria specified in this permit. The analyses for metals in sewage sludge samples and soil samples are to be done using appropriate methods from those listed in Part 12 of this permit. The digestion of those samples are to be done in accordance with the requirements of footnote b/ of Part 12. For the digestion procedure, an amount of sewage sludge equivalent to one gram dry weight shall be used. Monitoring for soil nitrate is to be performed using the methods in *Methods of Soil Analysis, Part 3. Chemical Methods*. Sparks, D.L., Ed., American Society of Agronomy and Soil Science Society of America, Madison, WI, 1996. The analysis for available phosphorus in soils shall be performed using one of the applicable methods listed in Part 4.1.4.7 above.

4.1.4.9. Material derived from a sewage sludge that meets the chemical limitations in Table 3 (Part 4.1.1.5), the Class A pathogen requirements in Part 4.1.2, and one of the first six (6) vector attraction reduction requirements in Part 4.1.3 is not required to be monitored unless otherwise required by the permitting authority. **The sewage sludge itself is required to be monitored as stated above.** The permitting authority may request additional monitoring for material derived from sewage sludge if the data shows a potential for concern.

4.1.4.10. After two years of monitoring at the frequency specified (may include monitoring done prior to coverage under this permit), the permittee may request that the permitting authority reduce the sampling frequency for the chemical pollutants listed in Part 4.1.1.5. The frequency cannot be reduced to less than once per year for land applied sewage sludge for any parameter. The frequency also cannot be reduced for any of the pathogen or vector attraction reduction requirements listed in this permit.

4.1.4.11. The permittee shall do the necessary monitoring and/or data collection to provide the following information for each reporting year:

4.1.4.11.1. The total amount of sewage sludge, in dry metric tons, that is generated by this facility during the reporting year;

4.1.4.11.2. Sewage sludge received from other facilities during the reporting year:
4.1.4.11.2.1. Total amount of sewage sludge received (dry metric tons)
4.1.4.11.2.2. For each facility sending sewage sludge to this facility:
4.1.4.11.2.2.1. Name of facility;
4.1.4.11.2.2.2. Location of that facility;
4.1.4.11.2.2.3. Amount of sewage sludge, in dry metric tons, received from the facility;

4.1.4.11.3. Sewage sludge sent to other facilities/operations:
4.1.4.11.3.1. Total amount of sewage sludge, in dry metric tons, sent to other facilities,
4.1.4.11.3.2 For each facility receiving sewage sludge from this facility:
4.1.4.11.3.2.1. Name of facility/operation;
4.1.4.11.3.2.2. Location of facility/operation;
4.1.4.11.3.2.3. Amount of sewage sludge, in dry metric tons, sent to that facility/operation;

4.1.4.11.4. The amount of sewage sludge, in dry metric tons, placed in storage during the reporting year.

4.1.4.11.5. The amount of sewage sludge land applied during the reporting year.

4.2. Management Practices for Application of Sewage Sludge to Land

If the sewage sludge or material derived from sewage sludge meets the metals limits in Table 3 (Part 4.1.1), the Class A pathogen requirements in Part 4.1.2 and one of the first six (6) vector attraction reduction alternatives in Part 4.1.3, the following management practices are not required unless notified in writing by the permitting authority.

The permittee shall operate and maintain the land application site operations in accordance with the following requirements:

4.2.1. The permittee shall provide to the EPA and the State of North Dakota within 90 days of the date of coverage under this permit a current (updated) land application plan. At a minimum, the plan is to include the components listed in section 2.5 of the 1999 or latest version of the Region 8 Biosolids Management Handbook. The permittee shall update the land application plan as appropriate and shall follow the latest version of the plan. Copies of any updates to the land application plan shall be submitted to the permit issuing authority along with the annual report required in Part 8.4.

4.2.2. Application of sewage sludge shall be conducted in a manner that will not contaminate the ground water or impair the use classification for that water (if the State has classified it) underlying the sites. For each land application site that was not considered a Anew site@ at the time of the submittal of the NOI, or subsequent revisions thereof, the permittee shall submit the following information to the permit issuing authority **if it has not been submitted previously**. **The information shall be submitted within one year of the date of coverage under this permit.**

4.2.2.1. Ground water classification: If the ground water underlying the land application site has been classified by the State, the classification shall be reported. If the ground water has not been classified, that shall be reported.

4.2.2.2. Annual high ground water level: Determine if the annual high ground water level at any point under the land application site is likely to be within five (5) feet of the ground surface. This determination may be made using available ground water data for nearby wells, the drilling of temporary observation wells at the site, and/or other methods as appropriate. The results of this determination and the method(s) used in the determination shall be reported.

4.2.2.3. Plan to Protect Ground Water Quality: If the determination required in Part 4.2.2.2 above shows that the annual high ground water level at any point under the land application site is likely to be within five (5) feet of the ground surface, submit a plan for the application of sewage sludge to be conducted in a manner that will not contaminate the ground water or impair the use classification for that water (if the State has classified it) underlying the site. The plan may consider such factors as reduced application rates in areas of possible high ground water levels, etc. The plan shall provide enough specifics so that the plan can be reviewed for adequacy.

4.2.3. Application of sewage sludge shall be conducted in a manner that will not cause a violation of any receiving water quality standard from discharges of surface runoff from the land application sites. Sewage sludge shall not be applied to land 10 meters or less from waters of the United States (as defined in 40 CFR § 122.2).

4.2.4. Application of sewage sludge shall be conducted in a manner that does not exceed the agronomic rate for available nitrogen of the crops grown on the site unless prior written approval is given by the permit issuing authority. At a minimum, the permittee is required to follow the methods for calculating agronomic rate outlined in the 1999 version of the Region 8 Biosolids Management Handbook (other methods may be approved by the permitting authority). The facility/operation shall provide written notification to the applier of the sewage sludge of the concentration of total nitrogen (as N on a dry weight basis) in the sewage sludge.

4.2.5. Application of sewage sludge to frozen, ice-covered, or snow covered sites where the slope of the site exceeds six percent is prohibited.

4.2.6. No person shall apply sewage sludge for beneficial use to frozen, ice-covered, or snow-covered land where the slope of such land is greater than three percent and is less than or equal to six percent unless one of the following requirements is met:

4.2.6.1. there is 80 percent vegetative ground cover; or,

4.2.6.2. approval from the permitting authority has been obtained based upon a plan demonstrating adequate runoff containment measures.

4.2.7. Sewage sludge shall not be applied to sites where the available phosphorous content of the soil, as indicated by the specified analytical methods, exceeds the following:

4.2.7.1. for soil pH greater than 6.5

4.2.7.1.1. for sodium bicarbonate extraction (Olsen P) 1/, 80 ppm; or

4.2.7.1.2. for ammonium bicarbonate DTPA (AB-DPTA) extraction 2/, 40 ppm;

4.2.7.2. for soil pH 6.5 or less

4.2.7.2.1. for Bray and Kurtz P-1 extraction 1/, 120 ppm;

4.2.7.2.2. for Mehlich 3 extraction 1/, 200 ppm.

1/ *Methods of Phosphorus Analysis for Soils, Sediments, Residuals, and Waters*; Southern Cooperative Series Bulletin No. # 396, June 2000; Southern extension/Research activity - Information exchange Group (SERA-IEG); Gary M. Pierzynski, Editor; URL http://www.sera17.ext.vt.edu/SERA_17_Publications.htm; ISBN: 1-58161-396-2

2/ Simultaneous Extraction of Macro, Micronutrients and trace Elements Using Ammonium Bicarbonate DPTA (AB-DPTA); *Laboratory Manual for SC-564, Soil and Plant Chemical Analysis,* Spring Semester 1998, Version 4, James R. Self, Juan B. Rodriguez, Soil, Water, and Plant Testing Laboratory, Department of Soil and Crop Sciences, Colorado State University

The permittee may request these limits be modified if different limits would be justified based on local conditions (e.g., phosphorus index, see definitions). The limits are required to be developed in cooperation with the local agricultural extension office, USDA/NRCS office, or local university. The permittee may request and EPA may approve the use of the phosphorus index or other site specific limits as a replacement for the limits in the permit.

4.2.8. Sewage sludge shall not be applied to any site area with standing surface water. If the annual high groundwater level is known or suspected to be within five feet of the surface, additional deep soil monitoring for nitrate-nitrogen as described in Part 4.1.4.6 is to be performed. At a minimum, this additional monitoring will involve a collection of more samples in the affected area and possibly more frequent sampling. The exact number of samples to be collected will be outlined in a deep soil monitoring plan to be submitted to the EPA and the State of North Dakota within 90 days of the date of coverage under this permit. The plan is subject to approval by the permitting authority.

4.2.9. If the planned crop is not grown or there is significant crop failure (e.g., significant hail damage) in the next available growing season after the application of sewage sludge, the annual report shall include the following information for that site:

4.2.9.1. Crop grown;
4.2.9.2. Nitrogen requirements for crop grown;
4.2.9.3. Amount of nitrogen applied in sewage sludge; and
4.2.9.4. Results of agronomic rate calculations based on crop actually grown.

Deep soil monitoring for nitrates may be required under the discretion of the permit issuing authority.

4.2.10. The sewage sludge or the application of the sewage sludge shall not cause or contribute to the harm of a threatened or endangered species or result in the destruction or adverse modification of critical habitat of a threatened or endangered species after application.

4.2.11. When weather and or soil conditions prevent adherence to the sewage sludge application procedure, sewage sludge shall not be applied on the site.

4.2.12. For sewage sludge that is sold or given away, either a label shall be affixed to the bag or other container or an information sheet shall be provided to the person who receives the sewage sludge. The label or information sheet shall contain:

4.2.12.1. The name and address of the person who prepared the sewage sludge for sale or give away for application to the land.

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

4.2.13. Sewage sludge subject to the cumulative pollutant loading rates in Table 2 (Part 4.1.1.5) shall not be applied to agricultural land, forest, a public contact site, or a reclamation site if any of the cumulative pollutant loading rates in Table 2 have been reached.

4.2.14. If the treatment plant applies the sewage sludge, it shall provide the owner or lease holder of the land on which the sewage sludge is applied notice and necessary information to comply with the requirements in this permit.

4.2.15. Before sewage sludge subject to the cumulative pollutant loading rates in Table 2 (Part 4.1.1.5) is applied to the land, the following conditions must be met:

4.2.15.1. The person who proposes to apply the sewage sludge shall contact the permitting authority to determine whether sewage sludge subject to the cumulative pollutant loading rates in Table 2 has been applied to the site since July 19, 1993.

4.2.15.2. If sewage sludge subject to the cumulative loading limits in Table 2 (Part 4.1.1.5) has not been applied since July 19, 1993, the cumulative amount for each pollutant listed in Table 2 may be applied to the site in accordance with Table 2 (Part 4.1.1.5).

4.2.15.3. If sewage sludge subject to the cumulative loading limits in Table 2 (Part 4.1.1.5) has been applied since July 19, 1993, and the cumulative amount of each pollutant applied to the site in the 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 Table 2.

4.2.15.4. If sewage sludge subject to the cumulative loading limits in Table 2 has been applied since July 19, 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 (i.e., no additional sludge may be applied to that site).

4.2.16. For sewage sludge or material derived from sewage sludge that is stored in piles for thirty (30) days or longer, measures shall be taken to ensure that erosion (whether by wind or water) does not occur. In addition, best management practices should also be used for piles used for sewage sludge treatment. If a treatment pile is considered to have caused a problem, best management practices could be added as a requirement in the next permit renewal.

4.2.17. The permittee shall inspect the application of the sewage sludge to active sites to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sewage sludge to the environment or a threat to human health. The permittee must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment. The permittee shall keep an inspection log or summary including at least the date and time of inspection, the printed name and the handwritten signature of the inspector, a notation of observations made and the date and nature of any repairs or corrective action.

4.2.18. The permittee shall notify the permitting authority of changes in land application locations (i.e. either by written notice or e-mail)

4.3. Special Conditions on Sewage Sludge Storage for Land Application

Permanent storage of sewage sludge is prohibited. Sewage sludge shall not be temporarily stored for more than two years unless written permission is given by the permitting authority. Storage of sewage sludge for more than two years will be allowed only if it is determined that significant treatment is occurring.

4.4. Recordkeeping for Land Application

4.4.1. If the permittee **prepared material derived from sewage sludge** that meets the limits in Table 3 (Part 4.1.1), the Class A pathogen requirements in Part 4.1.2.1, and one of the first six (6) vector attraction reduction alternatives in Part 4.1.3, the permittee is not required to keep records on that material unless otherwise required by the permitting authority. If so notified by the permitting authority the permittee may be required to add additional recordkeeping if information provided indicates that this is necessary to protect public health and the environment. However, it is necessary to keep records on the sewage sludge.

4.4.2. For each land application site where sewage sludge is land applied during the reporting year, the following information shall be recorded:

4.4.2.1. Site Name
4.4.2.2. Site Owner
4.4.2.3. Site Operator
4.4.2.4. Applier
4.4.2.5. Latitude and Longitude of Site
4.4.2.6. Street address, other locational description, or Section, Township, and Range
4.4.2.7. Size (hectares)
4.4.2.8. Crop
4.4.2.9. Application Rate (metric tons/hectare)
4.4.2.10. Cumulate pollutant loading rate (Kg/Ha), if applicable. The cumulate pollutant loading rate must be determined each time sewage sludge is applied to a site that has received any sewage sludge since July 20, 1993, where the concentration of any pollutant exceeded the limitations in Table 3

in Part 4.1.1. The cumulative pollutant loading rate must be determined for each pollutant listed in Table 3.

4.4.2.11. The following certification statement, if applicable, that has been signed in accordance with the requirements of Part 10.7:

AI certify, under penalty of law, that the information that will be used to determine compliance with the cumulative pollutant loading requirements of Part 4.1.1.1.1 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 the possibility of fine and imprisonment.@

The permittee is required to keep the above information indefinitely for each site subject to the cumulative pollutant loading rate of Table 2. For the other sites the information shall be retained for five years.

4.4.3. The permittee is required to keep the following information for at least 5 years:

4.4.3.1. Concentration of each pollutant in Table 3 (Part 4.1.1.5).

4.4.3.2. A description of how the pathogen requirements in Part 4.1.2 were met and the results of any monitoring.

4.4.3.3. A description of how the vector attraction reduction requirements in Part 4.1.3 were met and the results of any monitoring.

4.4.3.4. A description of how the management practices in Part 4.2 were met (if necessary) and the results of any monitoring.

4.4.3.5. A description of how the site restrictions in Part 4.1.2.3 were met (if necessary).

4.4.3.6. The results of any other monitoring required under Part 4.1.4, Self-Monitoring Requirements for Land Application.

4.4.3.7. The following certification statement that has been signed in accordance with the requirements of Part 10.7:

AI certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements in Part 4.1.2, one of the vector attraction reduction alternatives in Part 4.1.3, the management practices in Part 4.2 (if necessary) and the site restrictions in Part 4.1.2.3 (if necessary) 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.@

4.4.4. Records of monitoring information shall include:

4.4.4.1. The date, exact place, and time of sampling or measurements;
4.4.4.2. The initials or name(s) of the individual(s) who performed the sampling or measurements;

4.4.4.3. The date(s) analyses were performed;

4.4.4.4. The time(s) analyses were initiated;

4.4.4.5. The initials or name(s) of individual(s) who performed the analyses;
4.4.4.6. References and written procedures, when available, for the analytical techniques or methods used; and,

4.4.4.7. The results of such analyses, including the bench sheets, instrument readouts, computer disks or .tapes, etc., used to determine these results.

4.4.5. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit and records of all data used to complete the application for this permit for at least five years.

5. SPECIFIC REQUIREMENTS FOR LANDFILLING OF SEWAGE SLUDGE (Subcategory 2.b.)

5.1. Specific Limitations and Self-Monitoring Requirements for Landfilling of Sewage Sludge

5.1.1. The disposal of sewage sludge by landfilling shall be done only at municipal solid waste landfill (MSWLF) units, as defined by 40 CFR § 258.2, that are in compliance with the requirements of 40 CFR Part 258. The sewage sludge shall be in compliance with 40 CFR Part 258 and shall meet the following requirements:

5.1.1.1. Hazardous Wastes Characteristics and Moisture Content

5.1.1.1.1. The sewage sludge shall not exhibit the characteristics of a hazardous waste as defined in 40 CFR Part 261, Subpart C.

5.1.1.1.2. The sewage sludge shall not contain any free water as determined by the Paint Filter Test.

5.1.1.2. Vector Attraction Reduction Limitations

Sewage sludge to be landfilled shall meet one of the alternatives listed below. There are additional vector attraction reduction alternatives available in 40 CFR § 503.33. If the permittee intends to use one of these alternatives the EPA must be informed at least 30 days prior to its use.

5.1.1.2.1. The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38 percent prior to landfilling.

5.1.1.2.2. If an anaerobically digested sewage sludge cannot meet the 38 percent volatile solids reduction requirement, a portion of the previously digested sewage sludge shall be digested anaerobically in the laboratory in a bench-scale unit for an additional 40 days at 30° C or higher. At the end of the 40 days, the volatile solids content shall have been reduced by no more than 17 additional percent.

5.1.1.2.3. If an aerobically digested sewage sludge cannot meet the 38 percent volatile solids reduction requirement, a portion of the previously digested sewage sludge (with a percent solids content of 2 percent or less) shall be digested aerobically in the laboratory in a bench-scale unit for an additional 30 days at a temperature between 20 and 22° C. At the end of the 30 days, the volatile solids content shall have been reduced by no more than 15 additional percent.

5.1.1.2.4. The specific oxygen uptake rate (SOUR) for the sewage sludge treated in an aerobic process shall be equal to or less than 1.5 mg of oxygen/hour/gram of total solids at a temperature of 20° C.

5.1.1.2.5. The sewage sludge shall be treated in an aerobic process for 14 days or longer with a temperature remaining above 40° C. The average temperature shall be greater than 45° C.

5.1.1.2.6. The pH of the sewage sludge shall be raised to a minimum of 12 by alkali addition, but without the addition of more alkali, the pH shall remain at 12 or above for 2 hours and remain at a minimum of 11.5 for an additional 22 hours.

5.1.1.2.7. Sewage sludge applied to the land surface shall be incorporated into the soil within 6 hours after application to the land. Sewage sludge that is incorporated into the soil and meets the Class A pathogen requirements (40 CFR § 503.32(a)) shall be applied to or placed on the land within 8 hours after being discharged from the pathogen treatment process.

5.1.1.2.8. Sewage sludge placed in a landfill shall be covered with soil or other material at the end of each operating day.

Note: For purposes of this permit the use of sewage sludge for daily cover at the landfill is consider to be disposal by means of landfilling and subject to the requirements of Part 5. In order for sewage sludge to be used as daily cover the sewage sludge must meet the vector attraction reduction requirements that are achieved by means of treatment. If that requirement is not met, the sewage sludge cannot be used as daily cover and must be covered daily by soil or other material as specified in part 5.1.1.2.8 of the permit. If the permittee suspects that the daily cover requirements of 40 CFR § 258.21 are not being met at the landfill and the sewage sludge being taken to the landfill does not meet one of the vector attraction reduction requirements of Part 5.1.1.2 through treatment, then the permittee is obligated to immediately stop taking the sewage sludge to that landfill until the problem is corrected.

If sewage sludge is to be used in the final cover of the landfill, it must meet the applicable chemical pollutant limitations for land application, pathogen requirements and applicable site restrictions, and the applicable vector attraction reduction limitations given in Parts 4.1.1, 4.1.2, 4.1.3 and 4.1.4 of this permit. **In addition, the permittee must have coverage under Part 4 of this permit for use of the sewage sludge in this manner**.

5.1.2. Self-Monitoring Requirements for Landfill Disposal of Sewage Sludge (See Part 8.4 for report format requirements.)

5.1.2.1. The permittee shall report to the EPA the annual amount (dmt) and percent solids of sewage sludge transferred to each landfill and the name and location of the landfill.

5.1.2.2. At a minimum, upon the date of coverage under this permit, the sewage sludge shall be monitored for percent total solids, free moisture content using the paint filter test, and the applicable vector attraction reduction requirements. If the vector attraction reduction requirements are met by a treatment process, the permittee shall monitor the appropriate process parameters in the treatment of the sewage sludge. Compliance with the requirement that the sewage sludge have no free moisture shall be determined with the paint filter test. Samples or measurements shall be representative of the nature of the sewage sludge.

The minimum frequency of monitoring for these pollutants in sewage sludge that is landfilled shall be based on the table below. If this facility/operation collects samples from sewage sludge bodies (e.g., long-term treatment piles, compost piles, drying beds, storage piles, lagoon cells, etc.) a sampling and analysis plan is to be prepared and submitted to the EPA and the State of North Dakota within 90 days of the date of coverage under this permit. (If the permittee already

has a sampling and analysis plan, that plan may be updated and submitted. The permittee shall continue to implement the existing plan until the updated plan is implemented.) If, when coverage under this permit was approved the permittee was not sampling in this manner but a change in process necessitates this form of sampling, then the plan must be submitted 30 days before the change occurs. This plan is to detail how representative samples are to be obtained. Guidance on collecting representative samples using a random sampling process may be found in Section 2.4 of the 1999 version of the EPA Region 8 Biosolids Management Handbook. In addition, the local office of the agricultural extension service, the State Land Grant University, etc., might have guidance on collecting representative samples. The number of samples collected will be at least as many as those that would be collected annually as required from the amount of sewage sludge landfilled

FREQUENCY OF MONITORING - LANDFILLING

Amount of sewage sludge a/ (dry metric tons per 365 day period)	Frequency
0 < Amount < 290.	Once per year.
290 ≤ Amount < 1,500.	Once per quarter (four times per year).
1,500 ≤ Amount < 15,000.	Once per 60 days (six times per year).
Amount ≥ 15,000.	Once per month (12 times per year).

a/ The amount of bulk sewage sludge landfilled.

5.1.2.3. At least once during the life of this permit unless additional testing is requested by the operator of the landfill or the permit issuing authority, the sewage sludge shall be tested using the toxicity characteristic leaching procedure (TCLP) for metals. Samples or measurements shall be representative of the nature of the sewage sludge. In the annual report the permittee shall report the analytical results of any monitoring of sewage sludge for TCLP for organics conducted for any other program (e.g., pretreatment program) and/or state or local agency.

5.1.2.4. The permittee shall do the necessary monitoring and/or data collection to provide the following information for each reporting year:

5.1.2.4.1. The total amount of sewage sludge, in dry metric tons, that is generated by this facility during the reporting year;

5.1.2.4.2. Sewage sludge received from other facilities during the reporting year:
5.1.2.4.2.1. Total amount of sewage sludge received (dry metric tons)
5.1.2.4.2.2. For each facility sending sewage sludge to this facility:
5.1.2.4.2.2.1. Name of facility;
5.1.2.4.2.2.2. Location of that facility;
5.1.2.4.2.2.3. Amount of sewage sludge, in dry metric tons, received from the facility;

5.1.2.4.3. Sewage sludge sent to other facilities/operations:
5.1.2.4.3.1. Total amount of sewage sludge, in dry metric tons, sent to other facilities,
5.1.2.4.3.2. For each facility receiving sewage sludge from this facility:
5.1.2.4.3.2.1. Name of facility/operation;
5.1.2.4.3.2.2. Location of facility/operation;
5.1.2.4.3.2.3. Amount of sewage sludge, in dry metric tons, sent to that facility/operation;

5.1.2.4.4. The amount of sewage sludge, in dry metric tons, placed in storage during the reporting year.

5.1.2.4.5. The amount of sewage sludge landfilled during the reporting year.

5.1.2.5. Sample collection and preservation shall be performed in a manner consistent with the requirements of 40 CFR Part 503, 40 CFR Part 261 and/or other criteria specified in this permit.

5.2. Recordkeeping for Landfilling of Sewage Sludge

5.2.1. The permittee is required to keep the following information for at least 5 years:

5.2.1.1. Results of the paint filter tests, percent solids tests, and toxicity characteristic leaching procedure tests (Part 5.1.2).

5.2.1.2. A description of how the vector attraction reduction requirements in Part 5.1.1.2 were met and the results of any monitoring.

5.2.1.3. The results of monitoring and data collection to determine the amounts of sewage sludge generated by the facility, received from other facilities, sent to other facilities/operations, and placed in storage during the reporting year.

5.2.1.4. The annual amount (dmt) and percent solids of sewage sludge transferred to each landfill and the name and location of the landfill.

5.2.1.5. Documentation that the landfill(s) receiving the sewage sludge was in compliance with the requirements of 40 CFR Part 258 during the past year. A written statement from the appropriate regulatory authority that the landfill was in compliance with 40 CFR Part 258 during the past year is adequate documentation.

5.2.1.6. The following certification statement that has been signed in accordance with the requirements of Part 10.7:

> I certify, under penalty of law, that the information that will be used to determine compliance with the moisture content requirements of Part 5.1.1.1.2, one of the vector attraction reduction alternatives in 5.1.1.2, and the requirement of Part 5.1 that the sewage sludge shall be disposed of only at landfills that are in compliance with the requirements of 40 CFR Part 258 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.

5.2.2. Records of monitoring information shall include:

5.2.2.1. The date, exact place, and time of sampling or measurements;

5.2.2.2. The initials or name(s) of the individual(s) who performed the sampling or measurements;

5.2.2.3. The date(s) analyses were performed;

5.2.2.4. The time(s) analyses were initiated;

5.2.2.5. The initials or name(s) of individual(s) who performed the analyses;

5.2.2.6. References and written procedures, when available, for the analytical techniques or methods used; and,

5.2.2.7. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results.

5.2.3. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit and records of all data used to complete the application for this permit for at least 5 years

6. SPECIFIC REQUIREMENTS FOR SURFACE DISPOSAL OF SEWAGE SLUDGE (Subcategory 2.c.)

6.1. Specific Limitations and Self-Monitoring Requirements for Surface Disposal

All sewage sludge generated by this facility to be used for surface disposal shall meet the requirements of Parts 6.1.1, 6.1.2, and 6.1.3 listed below. These limits are effective immediately.

6.1.1. Chemical Pollutant Limitations for Surface Disposal

6.1.1.1. Where distance from unit boundary to property line is 150 meters or greater, sewage sludge to be placed in the active sewage sludge unit shall meet the limitations below. If the sewage sludge does not meet these requirements it cannot be surfaced disposed.

Pollutant	Daily Maximum (mg/Kg) a/b/c/
Total Arsenic	73
Total Chromium	600
Total Nickel	420

6.1.1.2. Where distance from unit boundary to property line is less than 150 meters, sewage sludge to be placed in the active sewage sludge unit shall meet the limitations below, based on the distance from the unit boundary to the property line. If the sewage sludge does not meet these requirements it cannot be surfaced disposed.

Distance from Unit Boundary to Property Line (meters)	Pollutant Concentration a/b/c/d/		
	Arsenic mg/Kg	Chromium mg/Kg	Nickel mg/Kg
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

a/ See Part 11 for definition of terms.
b/ The limitations represent maximum allowable levels of pollutants in any sewage sludge intended for surface disposal.

c/ Dry-weight Basis.
d/ Any violation of these limitations shall be reported in accordance with the requirements of Part 8.6.2 of this permit.

6.1.2. Pathogen Requirements

Sewage sludge to be placed in an active sewage sludge unit shall be at least Class B as described below unless the sewage sludge is covered with soil or other material at the end of each operating day (Part 6.1.3.9). If the sewage sludge does not meet at least Class B or it is not covered at the end of each operating day, it cannot be surface disposed.

CLASS B PATHOGEN REQUIREMENTS

Fecal Coliform Limit		Process Requirements (One of the following): a/
Fecal Coliforms shall be < 2,000,000 MPN/gram of total solids b/	OR	1. Anaerobically digested between these mean cell residence times and temperatures specified: 15 days at 35-55° C and 60 days at 20° C. c/ 2. Aerobically digested for 40 days at 20° C to 60 days at 15° C. d/ 3. Composting using the within-vessel, static pile or windrow methods, the temperature is maintained at 40° C or higher for 5 days. During those 5 days the temperature in the pile exceeds 55° C for 4 hours. 4. Sewage sludge is dried on beds at a depth of no more than 9 inches for a minimum of 3 months. During 2 of those 3 months the average daily temperature is above 0° C.

a/ There are additional pathogen reduction alternatives available in 40 CFR § 503.32. If the permittee intends to use one of these alternatives, the EPA and the State of North Dakota must be informed at least 30 days prior to its use. This change may be made without additional public notice.

b/ Based on a geometric mean of a minimum of seven (7) samples of sewage sludge collected over a two week period (or as approved by the permitting authority in your sampling and analysis plan, if you were required to have one (See Part 6.1.4.4)). (i.e., If quarterly sampling is required, a minimum of seven samples is required each quarterly event.) Samples to be analyzed for fecal coliforms shall be discrete, individual samples, with no compositing of samples. The values of fecal coliforms are to be based on the MPN procedures of analyses. The membrane filter (MF) procedures of analyses are not acceptable.

c/ For minimum digestion temperatures between 35° C and 20° C, determine the minimum mean cell residence time using the following equation: $\theta = -3T + 120$, where θ is the required minimum mean cell residence time in days ($15 \leq \theta \leq 60$) and T is the minimum temperature (° C) during anaerobic digestion time. For temperatures greater than 35° C, use θ equal to 15 days. The actual mean cell residence time during anaerobic digestion shall be calculated using the appropriate method described in *Environmental Regulations and Technology, Control of Pathogens and Vector Attraction in Sewage Sludge (Including Domestic Septage) Under 40 CFR Part 503*, EPA Publication EPA/625/R-92/013, Revised October 1999 or latest revision thereof. If annual monitoring, sampling is to be performed during the most restrictive time of the year (this is usually during the winter).

d/ For minimum digestion temperatures between 20° C and 15° C, determine the minimum mean cell residence time using the following equation: $\theta = -4T + 120$, where θ is the required minimum mean cell residence time in days ($40 \leq \theta \leq 60$) and T is the minimum temperature (° C) during aerobic digestion time. For temperatures greater than 20° C, use θ equal to 40 days. The actual mean cell residence time during aerobic digestion shall be calculated using the appropriate method described in *Environmental Regulations*

and Technology, Control of Pathogens and Vector Attraction in Sewage Sludge (Including Domestic Septage) Under 40 CFR Part 503, EPA Publication EPA/625/R-92/013, Revised October 1999 or latest revision thereof.

6.1.3. Vector Attraction Reduction Limitations for Surface Disposal a/

Sewage sludge to be placed in an active sewage sludge unit shall meet one of the alternatives listed below.

6.1.3.1. The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38 percent prior to surface disposal.

6.1.3.2. If an anaerobically digested sewage sludge cannot meet the 38 percent volatile solids reduction requirement, a portion of the previously digested sewage sludge shall be digested anaerobically in the laboratory in a bench-scale unit for an additional 40 days at 30° C or higher. At the end of the 40 days, the volatile solids content shall have been reduced by no more than 17 additional percent.

6.1.3.3. If an aerobically digested sewage sludge cannot meet the 38 percent volatile solids reduction requirement, a portion of the previously digested sewage sludge (with a percent solids content of 2 percent or less) shall be digested aerobically in the laboratory in a bench-scale unit for an additional 30 days at a temperature between 20 and 22° C. At the end of the 30 days, the volatile solids content should have been reduced by no more than 15 additional percent.

6.1.3.4. The specific oxygen uptake rate (SOUR) for the sewage sludge treated in an aerobic process shall be equal to or less than 1.5 mg of oxygen/hour/gram of total solids at a temperature of 20° C.

6.1.3.5. The sewage sludge shall be treated in an aerobic process for 14 days or longer with a temperature remaining above 40° C. The average temperature shall be greater than 45° C

6.1.3.6. The pH of the sewage sludge shall be raised to a minimum of 12 by alkali addition, but without the addition of more alkali, the pH shall remain at 12 or above for 2 hours and remain at a minimum of 11.5 for an additional 22 hours.

6.1.3.7. The sewage sludge shall be injected below the surface of the land and no significant amount of sewage sludge shall be present on the land surface within one hour after the sewage sludge is injected. If the sewage sludge meets the Class A pathogen requirements (40 CFR § 503.32(a)), the sewage sludge shall be injected below the land surface within 8 hours after the sewage sludge is discharged from the pathogen reduction process.

6.1.3.8. Sewage sludge placed in a surface disposal site shall be incorporated into the soil within 6 hours after surface disposal. Sewage sludge that is incorporated into the soil and meets the Class A pathogen requirements (40 CFR § 503.32(a)) shall be applied to or placed on the land within 8 hours after being discharged from the pathogen treatment process.

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

a/ There are additional pathogen reduction and vector attraction reduction alternatives available in 40 CFR § 503.32 and 40 CFR § 503.33. If the permittee intends to use one of these alternatives the EPA and the State of North Dakota must be informed at least 30 days prior to its use. This change may be made without additional public notice.

6.1.4. Self-Monitoring Requirements for Surface Disposal

At a minimum, upon the date of coverage under this permit, the permittee shall monitor sewage sludge related activities as specified below. The monitoring results shall be reported in accordance to the requirements of Part 8.4 of this permit. See Part 8.4 for report format requirements.

6.1.4.1. The sewage sludge shall be monitored for the chemical pollutants listed in Part 6.1.1. See Part 6.1.4.5 below for the minimum frequency of monitoring. The concentrations shall be reported as mg/Kg (dry weight basis) and the average and maximum concentrations shall be reported.

6.1.4.2. Provide a brief description of the method used during the reporting year to meet the pathogen requirements given in Part 6.1.2. If the pathogen requirements are met by fecal coliform densities, the permittee shall monitor the sewage sludge for the fecal coliforms. The results shall be reported in the units used in the limitations (i.e., fecal coliform, MPN/gram of total solids). If the pathogen requirements are met by complying with one of process requirements, the permittee shall monitor the appropriate process parameters. See Part 6.1.4.4 below for the minimum frequency of monitoring. For each sampling event for fecal coliform, a minimum of seven samples shall be collected. If the samples are not collected from sewage sludge bodies (e.g., long-term treatment piles, compost piles, drying beds, storage piles, lagoon cells, etc.), the samples shall be collected on separate days within a two week period.

6.1.4.3. Provide a brief description of the method used to meet the applicable vector attraction reduction requirements given in Part 6.1.3. If the vector attraction reduction requirements are met by a treatment process, the permittee shall monitor the appropriate process parameters in the treatment of the sewage sludge. See Part 6.1.4.4 below for the minimum frequency of monitoring.

6.1.4.4. **Minimum monitoring frequency for metals, pathogen requirements, and vector attraction reduction requirements**: The minimum frequency of monitoring for the sewage sludge that is surface disposed shall be based on the table below. If this facility/operation collects samples from sewage sludge bodies (e.g., long-term treatment piles, compost piles, drying beds, storage piles, lagoon cells, etc.) a sampling and analysis plan is to be prepared and submitted to the EPA and the State of North Dakota within 90 days of the date of coverage under this permit. (If the permittee already has a sampling and analysis plan, that plan may be updated and submitted. The permittee shall continue to implement the existing plan until the updated plan is implemented.) If, when coverage under this permit was approved the permittee was not sampling in this manner but a change in process necessitates this form of sampling, then the plan must be submitted 30 days before the change occurs. This plan is to detail how representative samples are to be obtained. Guidance on collecting representative samples using a random sampling process may be found in Section 2.4 of the 1999 version of the EPA Region 8 Biosolids Management Handbook. In addition, the local office of the agricultural extension service, the State Land Grant University, etc., might have guidance on collecting representative samples. The number of samples collected will be at least as many as those that would be collected annually as required from the amount of sewage sludge surface disposed.

FREQUENCY OF MONITORING - SURFACE DISPOSAL

Amount of sewage sludge a/ (dry metric tons per 365 day period)	Frequency
0 < Amount < 290.	Once per year.
290 ≤ Amount < 1,500.	Once per quarter (four times per year).
1,500 ≤ Amount < 15,000.	Once per 60 days (six times per year).
Amount ≥ 15,000.	Once per month (12 times per year).

a/ Amount of sewage sludge placed on an active sewage unit (dry weight basis)

6.1.4.5. The permittee shall do the necessary monitoring and/or data collection to provide the following information for each reporting year:

6.1.4.5.1. The total amount of sewage sludge, in dry metric tons, that is generated by this facility during the reporting year;

6.1.4.5.2. Sewage sludge received from other facilities during the reporting year:
6.1.4.5.2.1. Total amount of sewage sludge received (dry metric tons)
6.1.4.5.2.2. For each facility sending sewage sludge to this facility:
6.1.4.5.2.2.1. Name of facility;
6.1.4.5.2.2.2. Location of that facility;
6.1.4.5.2.2.3. Amount of sewage sludge, in dry metric tons, received from the facility;

6.1.4.5.3. Sewage sludge sent to other facilities/operations:
6.1.4.5.3.1. Total amount of sewage sludge, in dry metric tons, sent to other facilities,
6.1.4.5.3.2. For each facility receiving sewage sludge from this facility:
6.1.4.5.3.2.1. Name of facility/operation;
6.1.4.5.3.2.2. Location of facility/operation;
6.1.4.5.3.2.3. Amount of sewage sludge, in dry metric tons, sent to that facility/operation;

6.1.4.5.4. The amount of sewage sludge, in dry metric tons, placed in storage during the reporting year.

6.1.4.5.5. The amount of sewage sludge surface disposed during the reporting year.

6.1.4.6. If a cover is placed on an active sewage sludge unit, the permittee shall continuously monitor for methane gas in all structures located within the surface disposal site and submit for approval a plan for (1) continuously monitoring for methane gas in the air at the property line of the surface disposal unit and (2) for monitoring for methane gas in the soil at the property line of the surface disposal site. The primary objective of the plan shall be to ensure that the requirements of Part 6.2.11 are met and that methane gas is not migrating off the site via the air or the soil in concentrations greater than the lower explosive limit for methane gas. The plan should include, at a minimum, the location of all monitoring sites, a description of how the monitoring will be done, a schedule for sampling and a discussion of the basis for the plan. (If the permittee already has a methane gas monitoring plan, that plan may be updated and submitted. The permittee shall continue to implement the existing plan until the updated plan is implemented.) The plan is to be submitted to the EPA and the State of North Dakota within 180 days of the date of coverage under this permit. The plan is to be fully implemented within 90 days after submittal of the plan unless otherwise directed by the permit issuing authority.

6.1.4.7. The permittee is required to submit for approval and fully implement a ground water monitoring plan for each surface disposal site. The objective of the plan shall be to determine if material leached from the sewage sludge unit is increasing the concentration of nitrates in the ground water and to provide a method of determining if the placement of sewage sludge in the sewage sludge unit should be terminated. The plan should include, at a minimum, the location of all monitoring wells and a schedule for sampling and analysis for nitrate. (If the permittee already has a ground water monitoring plan, that plan may be updated and submitted. The permittee shall continue to implement the existing plan until the updated plan is implemented.) The plan is to be submitted to the EPA and the State of North Dakota within 180 days of the date of coverage under this permit. The facility is also to include a copy of any ground water permits issued by the State of North Dakota. The plan is to be fully implemented within 90 days after submittal of the plan unless otherwise directed by the permit issuing authority.

6.1.4.8. Sample collection, preservation and analysis shall be performed in a manner consistent with the requirements of 40 CFR Part 503 and/or other criteria specified in this permit. Metals analysis is to be performed using method SW 846 with method SW-3050B used for digestion. (See footnote b/ of Part 12, Approved Methods for the Analysis of Sewage Sludge (40 CFR Part 503), for optional methods.) For the digestion procedure, an amount of sewage sludge equivalent to one gram dry weight shall be used. The methods are also described in the 1999 version of the Region 8 Biosolids Management Handbook.

6.1.4.9. After two years of monitoring at the frequency specified (may include monitoring done prior to coverage under this permit), the permittee may request that the permitting authority reduce the sampling frequency for the chemical pollutants in Part 6.1.1. The frequency cannot be reduced to less than once per year for land applied sewage sludge for any parameter. The frequency also cannot be reduced for any of the pathogen or vector attraction reduction requirements listed in this permit.

6.2. Management Practices for Surface Disposal of Sewage Sludge

The permittee shall operate and maintain the surface disposal site operations in accordance with the following requirements:

6.2.1. An active sewage sludge unit shall be located in accordance with the requirements in either a State Wellhead Protection Program or a Comprehensive State Ground Water Protection Program.

6.2.2. The sewage sludge shall not cause or contribute to the harm of a threatened or endangered species or result in the destruction or adverse modification of critical habitat of a threatened or endangered species after surface disposal.

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

6.2.4. If a surface disposal site is located in a seismic impact zone, active sewage sludge units shall be designed to withstand the maximum recorded horizontal ground level acceleration.

6.2.5. An active sewage sludge unit shall be located 60 meters or more from a fault that has displacement in Holocene time.

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

6.2.7. An active sewage sludge unit shall not be located in an area with standing water or where the annual high groundwater level is less than five feet. This applies to areas where the sewage sludge is actually applied, not to buffer zones.

6.2.8. Run-off from an active sewage sludge unit shall be collected and shall be disposed in accordance with NPDES permit requirements and any other applicable requirements. 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.

6.2.9. The leachate collection system for an active sewage sludge unit that has a liner and a leachate collection system shall be operated and maintained during the period the sewage sludge unit is active and for three years after the sewage sludge unit closes.

6.2.10. Leachate from an active sewage sludge unit that has a liner and a leachate collection system shall be collected and shall be disposed in accordance with the applicable requirements during period the sewage sludge unit is active and for three years after the sewage sludge unit closes.

6.2.11. If a cover is placed on an active sewage sludge unit, 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 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.

6.2.12. If a final cover is place 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 three 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.

6.2.13. A food crop, a feed crop or a fiber crop shall not be grown on an active sewage sludge unit without the written permission of the permitting authority.

6.2.14. Animals shall not be grazed on an active sewage sludge unit without the written permission of the permitting authority.

6.2.15. 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 three years after the last active sewage sludge unit closes.

6.2.16. After placement on an active sewage sludge unit, sewage sludge shall not cause the concentration of nitrate (as N) in ground water to exceed 10 mg/L or cause the existing concentration in ground water to increase when the existing concentration of nitrate (as N) exceeds 10 mg/L.

6.2.17. Either the 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 the sewage sludge will not contaminate an aquifer.

6.2.18. For sewage sludge or material derived from sewage sludge that is stored in piles for thirty (30) days or longer, measures shall be taken to ensure that erosion (whether by wind or water) does not occur. In addition, best management practices should also be used for piles used for sewage sludge treatment. If a treatment pile is considered to have caused a problem, best management practices could be added as a requirement in the next permit renewal.

6.2.19. The permittee shall inspect the disposal of the sewage sludge to active sites to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sewage sludge to the environment, a threat to human health, or a nuisance. The permittee must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment. The permittee shall keep an inspection log or summary including at least the date and time of inspection, the printed name and the handwritten signature of the inspector, a notation of observations made and the date and nature of any repairs or corrective action.

6.3. Special Conditions for Surface Disposal

6.3.1. Additional sewage sludge shall not be placed on an active sewage sludge unit if sewage sludge placed previously on the sewage sludge unit contaminated an aquifer.

6.3.2. Before an active sewage sludge unit is closed, a written closure and post closure plan that describes how the sewage sludge unit will be closed and discusses the measures taken to protect public health and the environment when the sewage sludge unit closes shall be submitted to the permitting authority for approval at least 180 days prior to the date that the closure is planned to start. Closure of the sewage sludge unit shall not start until the closure plan is approved by the permit issuing

authority and closure shall be done in accordance with the conditions of the plan unless otherwise approved by the permit issuing authority. At a minimum, the plan shall include:

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

6.3.2.2. If the sewage sludge unit will have a final cover, a plan for monitoring for methane gas at the following points (1) continuously in structures within the surface disposal site, continuously in the air at the property line of the surface disposal site, and (3) in the soils at the property line of the surface disposal site. The primary objective of the plan shall be to ensure that the requirements of Part 6.2.11 are met and that methane gas is not migrating off the site via the air or the soil in concentrations greater than the lower explosive limit for methane gas. The plan should include, at a minimum, the location of all monitoring sites, a description of how the monitoring will be done, a schedule for sampling and a discussion of the basis for the plan. If the permittee already has a methane gas monitoring plan, that plan may be updated and submitted. The monitoring is to be conducted for three years after the sewage sludge unit is closed.

6.3.2.3. A discussion of how public access to the surface disposal site will be restricted for three years after the last sewage sludge unit in the surface disposal site closes.

6.3.3. Written notification shall be provided by the owner of a surface disposal site to the subsequent owner of the surface disposal site that sewage sludge was placed on the land.

6.3.4. Permanent storage of sewage sludge is prohibited. Sewage sludge shall not be temporarily stored for more than two years unless written permission is given by the permitting authority. Storage of sewage sludge for more than two years will be allowed only if it is determined that significant treatment is occurring.

6.4. Recordkeeping for Surface Disposal

6.4.1. The permittee is required to keep the following information for at least 5 years:

6.4.1.1. The results of monitoring for any pollutant listed in Part 6.1.1.

6.4.1.2. A description of how the pathogen requirements in Part 6.1.2 were met and the results of any monitoring.

6.4.1.3. A description of how the vector attraction reduction requirements in Part 6.1.3 were met and the results of any monitoring.

6.4.1.4. A description of how the management practices in Part 6.2 were met.

6.4.1.5. The results of monitoring and data collection to determine the amounts of sewage sludge generated by the facility, received from other facilities, sent to other facilities/operations, and placed in storage during the reporting year.

6.4.1.6. The annual amount (dmt) and percent solids of sewage sludge transferred to each sewage sludge unit of each surface disposal site and the name and location of the surface disposal site.

6.4.1.7. The results of monitoring under the ground water monitoring plan required in Part 6.1.4.7.

6.4.1.8. The results of the monitoring for methane gas as required in Part 6.1.4.6.

6.4.1.9. The following certification statement that has been signed in accordance with the requirements of Part 10.7:

> I certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements in Part 6.1.2, one of the vector attraction reduction alternatives in Part 6.1.3, and the management practices in Part 6.2 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.

6.4.2. Records of monitoring information shall include:

6.4.2.1. The date, exact place, and time of sampling or measurements;

6.4.2.2. The initials or name(s) of the individual(s) who performed the sampling or measurements;

6.4.2.3. The date(s) analyses were performed;

6.4.2.4. The time(s) analyses were initiated;

6.4.2.5. The initials or name(s) of individual(s) who performed the analyses;

6.4.2.6. References and written procedures, when available, for the analytical techniques or methods used; and,

6.4.2.7. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results.

6.4.3. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit and records of all data used to complete the application for at least five (5) years

7. SPECIFIC REQUIREMENTS FOR LIMITED LAND APPLICATION OF SEWAGE SLUDGE FROM WASTEWATER LAGOONS (Category 3)

7.1. Specific Limitations and Self-Monitoring Requirements for Limited Land Application of Sewage Sludge from Wastewater Lagoons

Coverage under this Part of the permit is limited to those applicants that submitted a notice of intent for coverage under Category 3 of this permit.

All sewage sludge generated by this facility to be used for limited land application under this Part shall meet the requirements of Parts 7.1.1, 7.1.2 and 7.1.3. listed below. **These limits are effective immediately.**

The sewage sludge is not to be sold or given away in a bag or other container for application to land or for use on a lawn or home garden.

7.1.1. Chemical Pollutant Limitations for Limited Land Application

The sewage sludge to be land applied must meet the following chemical limitations at all times. If the sewage sludge does not meet these requirements, it cannot be land applied.

Pollutant	Maximum of Any Sample mg/Kg a/b/c/
Total Arsenic	41
Total Cadmium	39
Total Copper	1500
Total Lead	300
Total Mercury	17
Total Molybdenum	75
Total Nickel	420
Total Selenium	100
Total Zinc	2800

a/ See Part 11 for definition of terms.
b/ The limitations represent maximum allowable levels of pollutants in any sewage sludge intended for land application under Category 3.
c/ Dry-weight Basis.

7.1.2. Pathogen Requirements and Site Restrictions

The sewage sludge to be land applied under this Part must meet the pathogen requirements and the site restrictions as described. If the sewage sludge does not meet pathogen requirements, it cannot be land applied.

7.1.2.1. Pathogen Requirements for Limited Land Application
The pathogen requirements can be met by one of the following:

7.1.2.1.1. The geometric mean of the density of fecal coliforms in a minimum of seven (7) samples of the sewage sludge shall be less than 2,000,000 Most Probable Number (MPN) per gram of total solids (dry weight basis). (Note: Samples to be analyzed for fecal coliforms shall be discrete, individual samples, with no compositing of samples. The values of fecal coliforms are to be based on the MPN procedures of analyses. The membrane filter (MF) procedures of analyses are not acceptable.); or

7.1.2.1.2. The sewage sludge has been treated in one of the Processes to Significantly Reduce Pathogens described in Appendix B of 40 CFR Part 503; or

7.1.2.1.3. The sewage sludge has been treated in a process that is equivalent to a Process to Significantly Reduce Pathogens, as determined by the permit issuing authority.

7.1.2.2. Site Restrictions

The permittee shall comply with all of the site restrictions listed below:

7.1.2.2.1. 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.

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

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

7.1.2.2.4. Other food crops and feed crops shall not be harvested from the land for 30 days after application.

7.1.2.2.5. Animals shall not be allowed to graze on the land for 30 days after application.

7.1.2.2.6. Turf grown on land where sewage sludge is applied shall not be harvested for one year after application if the harvested turf is placed on either land with a high potential for public exposure or a lawn.

7.1.2.2.7. Public access to land with a high potential for public exposure shall be restricted for one year after application.

7.1.2.2.8. Public access to land with a low potential for public exposure shall be restricted for 30 days after application.

7.1.3. Vector Attraction Reduction Requirements for Limited Land Application

The sewage sludge to be land applied shall meet one of the alternatives listed below.

7.1.3.1. The sewage sludge shall be injected below the surface of the land and no significant amount of sewage sludge shall be present on the land surface within one hour after the sewage sludge is injected.;

7.1.3.2. Sewage sludge applied to the land surface shall be incorporated into the soil within 6 hours after application to the land; or

7.1.3.3. The pH of the 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.

7.1.4. Self-Monitoring Requirements for Limited Land Application

At a minimum, upon the date of coverage under this permit, the permittee shall monitor sewage sludge related activities as specified below. The monitoring shall be conducted at least yearly intervals until land application has been completed. If more frequent monitoring is appropriate for a specific sewage sludge related activity, e.g., monitoring of a treatment process, the monitoring shall be conducted more frequently for that activity. During the first year of the actual application of sewage sludge to the land, the permittee may use data submitted with the NOI, as appropriate. However, if the land application has not been completed within one year after the start of the land application of the sewage sludge, new data must be collected. The monitoring results shall be reported in accordance to the requirements of Part 8.4 of this permit. See Part 8.4 for report format requirements. Samples or measurements shall be representative of the quantity and quality of the sewage sludge.

7.1.4.1. The sewage sludge shall be monitored for the metals and total solids listed in Table NOI-8, Part 2.2.3.1. The sampling requirements shall be as specified in that part.

7.1.4.2. Provide a brief description of the method used during the reporting year to meet the applicable pathogen requirements given in Part 7.1.2.1. If the pathogen requirements are met by the fecal densities given in Part 7.1.2.1.1, the sewage sludge shall be monitored for fecal coliforms as specified in Part 2.2.3.2. The sampling requirements shall be as specified in that part. If the pathogen requirements are met by one of the processes to significantly reduce pathogens (40 CFR Part 503, Appendix B), the permittee shall monitor the appropriate process parameters.

7.1.4.3. Provide a brief description of the method used to meet the applicable vector attraction reduction requirements in Part 7.1.3. If the vector attraction reduction requirements are met by means of pH adjustment, Part 7.1.3.3, the permittee shall monitor the appropriate process parameters in the treatment of the sewage sludge.

7.1.4.4. If the permittee has approval to land apply sewage sludge at a rate greater than one (1) dry metric ton (dmt) per acre, the permittee shall monitor the sewage sludge for the specified forms of nitrogen, total phosphorus, and total solids as listed in Table NOI-11, Part 2.2.3.5.1. The sampling requirements shall be as specified in that part.

7.1.4.5. Provide a brief summary of the status of land application at the end of the reporting year. The summary shall include the approximate percentage of the sewage sludge that has been land applied and the estimated date for completion of the land application. **If the land application has been completed, the date of completion shall be provided.**

7.2. Management Practices for Limited Land Application

The permittee shall operate and maintain the land application site operations in accordance with the following requirements:

7.2.1. Application of sewage sludge shall be conducted in a manner that will not cause a violation of any receiving water quality standard from discharges of surface runoff from the land application sites. Sewage sludge shall not be applied to land 10 meters or less from waters of the United States (as defined in 40 CFR § 122.2).

7.2.2. Application of sewage sludge shall not exceed one (1.0) dry metric ton per acre unless otherwise approved in writing by the permit issuing authority.

7.2.3. **Application of sewage sludge to a given site under the provisions of this part is limited to one application of sewage sludge to that site during a twenty (20) year period.** More frequent application of sewage sludge to that site must be done in accordance with the requirements of Part 4 of this permit and would require a different notice of intent as specified in Part 2.2 of this permit.

7.2.4. Application of sewage sludge to frozen, ice-covered, or snow covered sites where the slope of the site exceeds six percent is prohibited.

7.2.5. No person shall apply sewage sludge for beneficial use to frozen, ice-covered, or snow-covered land where the slope of such land is greater than three percent and is less than or equal to six percent unless one of the following requirements is met:

7.2.5.1. there is 80 percent vegetative ground cover; or,

7.2.5.2. approval has been obtained based upon a plan demonstrating adequate runoff containment measures.

7.2.6. Sewage sludge shall not be applied to any site area with standing surface water nor to sites where the average seasonal high water table is less than five (5) feet below the ground surface.

7.2.7. The specified cover crop shall be planted during the next available planting season. If this does not occur, the permittee shall notify the Director. Deep soil monitoring for nitrates may be required under the discretion of the permitting authority.

7.2.8. The sludge or the application of the sewage sludge shall not cause or contribute to the harm of a threatened or endangered species or result in the destruction or adverse modification of critical habitat of a threatened or endangered species after application.

7.2.9. When weather and or soil conditions prevent adherence to the sewage sludge application procedure, sewage sludge shall not be applied on the site.

7.2.10. The permittee shall provide the owner or lease holder of the land on which the sewage sludge is applied notice and necessary information to comply with the requirements in this permit.

7.2.11. The permittee shall inspect the application of the sewage sludge to active sites to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of sewage sludge to the environment or a threat to human health. The permittee must conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment. The permittee shall keep an inspection log or summary including at least the date and time of inspection, the printed name and the handwritten signature of the inspector, a notation of observations made, and the date and nature of any repairs or corrective action.

7.3. Special Conditions on Sewage Sludge Storage for Limited Land Application

Permanent storage of sewage sludge is prohibited. Sewage sludge shall not be temporarily stored for more than two years unless written permission is given by the permitting authority. Storage of sewage sludge for more than two years will be allowed only if it is determined that significant treatment is occurring.

7.4. Recordkeeping for Limited Land Application

7.4.1. The permittee is required to keep the following information for at least 5 years:

7.4.1.1. A description of how the pathogen requirements in Part 7.1.2.2 were met and the results of any monitoring.

7.4.1.2. A description of how the vector attraction reduction requirements in Part 7.1.3 were met and the results of any monitoring.

7.4.1.3. A description of how the management practices in Part 7.2 were met.

7.4.1.4. A description of how the site restrictions in Part 7.1.2.2 were met.

7.4.1.5. For each land application site where sewage sludge is land applied during the reporting year, the following information shall be recorded:

7.4.1.5.1. Site Name
7.4.1.5.2. Site Owner
7.4.1.5.3. Site Operator

7.4.1.5.4. Applier
7.4.1.5.5. Latitude and Longitude of Site
7.4.1.5.6. Street address, other locational description, or Section, Township, and Range
7.4.1.5.7. Size (hectares)
7.4.1.5.8. Crop
7.4.1.5.9. Application Rate (metric tons/hectare)

7.4.1.6. The following certification statement that has been signed in accordance with the requirements of Part 10.7:

> AI certify, under penalty of law, that the information that will be used to determine compliance with the pathogen requirements in Part 7.1.2.1, the site restrictions in Part 7.1.2.2, one of the vector attraction reduction alternatives in Part 7.1.3, and the management practices in Part 7.2 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.@

7.4.2. Records of monitoring information shall include:

7.4.2.1. The date, exact place, and time of sampling or measurements;

7.4.2.2. The initials or name(s) of the individual(s) who performed the sampling or measurements;

7.4.2.3. The date(s) analyses were performed;

7.4.2.4. The time(s) analyses were initiated;
7.4.2.5. The initials or name(s) of individual(s) who performed the analyses;

7.4.2.6. References and written procedures, when available, for the analytical techniques or methods used; and,

7.4.2.7. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results.

7.4.3. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit and records of all data used to complete the application for this permit for at least five years.

8. MONITORING, RECORDING AND REPORTING REQUIREMENTS

8.1. Representative Sampling. Sewage sludge samples used to measure compliance with Parts 3, 4, 5, 6, and 7 of this Permit shall be collected at locations representative of the quality of sewage sludge generated and/or treated at the operation covered by this permit.

8.2. Monitoring Procedures. Monitoring must be conducted according to test procedures approved under 40 CFR Part 503, unless other test procedures have been specified in this permit. See Parts 4.1, 5.1, and 6.1 for any applicable sewage sludge monitoring procedures.

8.3. Penalties for Tampering. The Act provides that any person who knowingly falsifies, tampers with, or renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than

two years, or by both. Second conviction is punishable by a fine of not more than $20,000 per day of violation, or by imprisonment of not more than four years, or both.

8.4. Reporting of Monitoring Results and Other Information. **By no later than February 19 of each year**, the permittee shall submit a report including all information that the permit requires be recorded during the previous calendar year. **(This includes items listed under Recordkeeping requirements for the permittees use/disposal practices, e.g., Part 4.4 for land application.)** The report shall include the results of all monitoring performed in accordance with Parts 3.2, 4.1, 5.1, 6.1, and 7.1 and the required information on pathogen requirements, vector attraction reduction requirements, management practices, land application sites, site restrictions, and the required signed certification statements. If no sewage sludge was generated, treated, and/or used/disposed of during the reporting period, "no sewage sludge was generated, treated, and/or used/disposed" shall be reported.

The EPA presently does not have a standard form for reporting sewage sludge monitoring results or other information required by the permit to be reported. Unless otherwise approved by the permit issuing authority, the permittee shall submit the report on letter size (8.5" x 11") paper. Monitoring results may be reported in the testing laboratory=s normal format, and may be photocopies of the laboratory reports.

Legible copies of these, and all other reports required herein, shall be signed and certified in accordance with the Signatory Requirements (see Part 10.7), and submitted to the Region 8 Biosolids Program and the _____ State of North Dakota _____ at the following addresses:

original to: REGIONAL BIOSOLIDS PROGRAM
WASTEWATER UNIT (8P-W-WW)
U.S. EPA, REGION 8
1595 WYNKOOP STREET
DENVER, CO 80202-1129

copy to: Environmental Health Section
Division of Water Quality
ND Dept. of Health
918 E Divide Ave
P.O. Box 5520
Bismarck, ND 58501-1947

8.5. Additional Monitoring by the Permittee. If the permittee monitors any pollutant more frequently than required by this permit, using test procedures approved under 40 CFR Part 503 or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the annual report required in Part 8.4 above. Such increased frequency shall also be indicated.

8.6. Twenty-four Hour Notice of Noncompliance Reporting

8.6.1. The permittee shall report any noncompliance, including transportation accidents, spills, and uncontrolled runoff from sewage sludge transfer sites, storage sites, or land application sites, etc., which may seriously endanger health or the environment, as soon as possible, but no later than 24 hours from the time the permittee first became aware of the circumstances. The report shall be made to the EPA, Region 8, Preparedness, Assessment and Emergency Response Program at (303) 293-1788 and the State of North Dakota at (701) 328-8100.

8.6.2. The following occurrences of noncompliance shall be reported by telephone to the EPA, Region 8, NPDES Enforcement Unit at (800) 227-8917 (8:00 a.m. - 4:30 p.m. Mountain Time) (8:00 a.m. - 4:30 p.m. local time) by the first workday following the day the permittee became aware of the circumstances:

8.6.2.1. Any violation of a maximum pollutant limitation for any of the chemicals listed in Table 1 of Part 4.1.1.5 for sewage sludge that has been distributed or land applied;

8.6.2.2. Any violation of the Class A pathogen requirements in Part 4.1.2.1 for sewage sludge that has been distributed or land applied such that there is a reasonable risk of public exposure to the sewage sludge;

8.6.2.3. Any violation of the limitations on arsenic, chromium, and nickel in Part 6.1.1.2 for sewage sludge that has been disposed of in a surface disposal site.

8.6.3. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:

8.6.3.1. A description of the noncompliance and its cause;

8.6.3.2. The period of noncompliance, including exact dates and times;

8.6.3.3. The estimated time noncompliance is expected to continue if it has not been corrected; and,

8.6.3.4. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The written submission shall be submitted to the following addresses:

Original to: NPDES ENFORCEMENT UNIT (8ENF-W-NP)
U.S. EPA, REGION 8
1595 WYNKOOP STREET
DENVER, CO 80202-1129

Copy to:
Environmental Health Section
Division of Water Quality
ND Dept. of Health
918 E Divide Ave
P.O. Box 5520
Bismarck, ND 58501-1947

8.7. Other Noncompliance Reporting. Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for Part 8.4 are submitted. The reports shall contain the information listed in Part 8.6.3.

8.8. Inspection and Entry. The permittee shall allow the Director, the State of North Dakota or authorized representative thereof, upon the presentation of credentials and other documents as may be required by law, to:

8.8.1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

8.8.2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

8.8.3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit, including, but not limited to, sewage sludge treatment, collection, storage facilities or area, transport vehicles and containers, and land application sites; and,

8.8.4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the Act, any substances or parameters at any location, including, but not limited to, digested sewage sludge before dewatering, dewatered sewage sludge, sewage sludge transfer or staging areas, any ground or surface waters at the landfill, surface disposal, and land application sites, or sewage sludges, soils, or vegetation at the landfill, surface disposal, and land application sites.

8.8.5. The permittee shall make the necessary arrangements with the use/disposal site landowner or leaseholder to obtain permission or clearance, so that the Director, the State of North Dakota or authorized representative thereof, upon the presentation of credentials and other documents as may be required by law, will be permitted to enter without delay for the purposes of performing their responsibilities.

9. COMPLIANCE RESPONSIBILITIES

9.1. Duty to Comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification, or denial of a permit renewal application.

9.2. Penalties for Violations of Permit Conditions. The Clean Water Act provides for specified civil and criminal penalties for violations of its provisions. However, the Federal Civil Penalties Inflation Adjustment Act of 1990, as amended by the Debt Collection Improvement Act of 1996, requires EPA to adjust the civil monetary penalties for inflation on a periodic basis. EPA adjusted its civil monetary penalties on December 31, 1996 (61 Fed. Reg. 69359-69365), with technical corrections and additions published on March 20, 1997 (62 Fed. Reg. 13514-13517) and June 27, 1997 (62 Fed. Reg. 35037-35041). The resulting civil and criminal penalties, as of July 28, 1997, for violations of the Act (including permit conditions) are given below:

9.2.1. Any person who violates section 301, 302, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under sections 402(a)(3) or 402(b)(8) of the Act, is subject to a civil penalty not to exceed $27,500 per day for each violation.

9.2.2. Any person who ***negligently*** violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than 2 years, or both.

9.2.3. Any person who ***knowingly*** violates sections 301, 302, 306, 307, 308, 318, or 405 of the Act, or any condition or limitation implementing any of such sections in a permit issued under section 402 of the

Act, or any requirement imposed in a pretreatment program approved under section 402(a)(3) or 402(b)(8) of the Act, is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both.

9.2.4. Any person who ***knowingly*** violates section 301, 302, 303, 306, 307, 308, 318 or 405 of the Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of the Act, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

9.2.5. Any person may be assessed an administrative penalty by the Administrator for violating section 301, 302, 306, 307, 308, 318 or 405 of this Act, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed $11,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $27,500. Penalties for Class II violations are not to exceed $11,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $137,500.

9.3. Need to Halt or Reduce Activity not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

9.4. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

9.5. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances), including but not limited to, all treatment, transportation, and application equipment which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit. However, the permittee shall operate, as a minimum, one complete set of each main line unit treatment process whether or not this process is needed to achieve permit effluent compliance.

10. GENERAL REQUIREMENTS

10.1. Planned Changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

10.1.1. The alteration or addition could significantly change the nature or increase the quantity of pollutant land applied. This notification applies to pollutants which are not subject to limitations in the permit; or,

10.1.2. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source.

10.1.3. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;

10.2. Anticipated Noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

10.3. Permit Actions. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

10.4. Continuation of the Expired General Permit. This permit expires approximately five years after the effective date. However, an expired general permit may be administratively continued in force and effect until a new permit can be issued. If a permittee wants to retain coverage under the continued permit until a new general permit is issued, the permittee must submit a letter to EPA containing the following:

10.4.1. Official or legal name of the facility/operation;

10.4.2. The existing permit number for the facility/operation;

10.4.3. Name, mailing address, and telephone number of the contact person for the facility/operation; and,

10.4.4. A request that coverage under the continued permit be retained until a new general permit is issued and there has been reasonable time to submit a notice of intent for coverage under the new general permit.

The letter must be signed in accordance with Part 10.7, Signatory Requirements, and mailed to the address given in Part 2.3 no later than 180 days before the expiration date of the permit.

10.5. Duty to Provide Information. The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

10.6. Other Information. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Director, it shall promptly submit such facts or information.

10.7. Signatory Requirements. All applications, reports or information submitted to the Director shall be signed and certified.

10.7.1. All permit applications shall be signed by either a principal executive officer or ranking elected .official.

10.7.2. All reports required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

10.7.2.1. The authorization is made in writing by a person described above and submitted to the Director; and,

10.7.2.2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)

10.7.3. Changes to authorization. If an authorization under Part 10.7.2 is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Part 10.7.2 must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.

10.7.4. Certification. Any person signing a document under this section shall make the following certification:

> "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

10.8. Penalties for Falsification of Reports. The Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six months per violation, or by both.

10.9. Availability of Reports. Except for data determined to be confidential under 40 CFR Part 2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Director. As required by the Act, permit applications, permits and all data necessary to determine compliance with the permit conditions or applicable Federal sewage sludge regulations shall not be considered confidential.

10.10. Oil and Hazardous Substance Liability. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Act.

10.11. Property Rights. The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state (or Tribal) or local laws or regulations.

10.12. Severability. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

10.13. Transfers. This permit may be automatically transferred to a new permittee if:

10.13.1. The current permittee notifies the Director at least 30 days in advance of the proposed transfer date;

10.13.2. The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,

10.13.3. The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 2. above.

10.14. State Laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Act.

10.15. Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate sewage sludge limitations (and compliance schedule, if necessary), or other appropriate requirements if any applicable standards for sewage sludge use or disposal have been promulgated under section 405(d) of the CWA which are more stringent than the requirements in this permit or not covered by this permit.

11. DEFINITIONS.

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

Agronomic rate is the whole sewage sludge application rate (dry-weight basis) designed to: (1) provide the amount of nitrogen needed by the crop or vegetation grown on the land; and (2) 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 ground water.

Animals for the purposes of this permit means domestic livestock.

Annual pollutant loading rate is the maximum amount of a pollutant (dry-weight basis) that can be applied to a unit area of land during a 365-day period.

Annual whole sewage sludge application rate is the amount of sewage sludge (dry-weight basis) that can be applied to a unit area of land during a cropping cycle.

Application site or land application site means all contiguous areas of a users' property intended for sewage sludge application.

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

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

Batch is when a pile of sewage sludge is created, allowed to treat for a specific period of time and then removed from the site. A batch of sewage sludge could be compost piles or long-term treatment piles.

Biosolids means any sewage sludge or material derived from sewage sludge that can be beneficially used. Beneficial use includes, but is not limited to, land application to agricultural land, forest land, a reclamation site or sale or give away to the public for home lawn and garden use.

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

Comprehensive state ground water protection program (CSGWPP) is a group of strategic activities endorsed by EPA that establish a common ground water protection goal across programs; establish

priorities based on resource characterization and identification of ground water contamination sources; define roles and responsibilities; implement efforts to accomplish the State's ground water protection goal and priorities; coordinate information collection and management; and provide for public education and participation. A CSGWPP includes, among other things, a system for determining different uses of ground water including use as an underground source of drinking water or use supporting an aquatic ecosystem.

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

Composite sewage sludge sample is a sample taken either in a wastewater treatment process, dewatering facility, or application device consisting of a series of individual grab samples. For liquid sewage sludges, a minimum of three grab samples of 500 milliliters taken during the first one-third, second one-third and final one-third of a pumping cycle and combined in equal volumetric amounts. For semi-dewatered, dewatered or dried sewage sludge, a composite sample consisting of a minimum of three grab samples of 0.5 pounds taken over a period of 24 hours not less than two hours apart or another representative sample as defined or approved by the permitting authority.

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

Cumulative pollutant loading rate is the maximum amount of an inorganic pollutant (dry-weight basis) that can be applied to a unit area of land.

CWA means the Clean Water Act (formerly referred to as either the Federal Water Pollution Act or the Federal Water Pollution Control Act Amendments of 1972), Pub. L. 92-500, as amended by Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, Pub. L. 97-117, and Pub. L. 100-4.

Daily Maximum (*Daily Max.*) is the maximum measured value for a pollutant discharged during a calendar day or any 24-hour period that reasonably represents a calendar day for purposes of sampling. For pollutants with daily maximum limitations expressed in units of mass (e.g., kilograms, pounds), the daily maximum is calculated as the total mass of pollutant discharged over the calendar day or representative 24-hour period. For pollutants with limitations expressed in other units of measurement (e.g., milligrams/liter, parts per billion), the daily maximum is calculated as the average of all measurements of the pollutant over the calendar day or representative 24-hour period. If only one measurement or sample is taken during a calendar day or representative 24-hour period, the single measured value for a pollutant will be considered the daily maximum measurement for that calendar day or representative 24-hour period.

Director means the Regional Administrator of the United States Environmental Protection Agency, Region 8.

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

Dry weight-basis means 100 percent solids (i.e., zero percent moisture).

EPA means the United States Environmental Protection Agency.

Facility for the purpose of this permit generally means where sewage sludge is generated and/or treated for use/disposal. If the sewage sludge is generated at one site and treated at another site, the sewage sludge is transported to the treatment site via a pipeline or sewer, and both sites are operated by the same operator, then the two sites are considered to be the same facility for purposes of this permit.

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.

Grab sample, for monitoring requirements, is defined as a single "dip and take" sample collected at a representative point anywhere in wastewater treatment or sewage sludge use/disposal processes.

Grit and screenings are sand, gravel, cinders, other materials with a high specific gravity and relatively large materials such as rags generated during preliminary treatment of domestic sewage at a treatment works. (Note: The disposal of grit and screenings are not regulated under this permit. They should be disposed of in accordance with applicable State (or Tribal, if applicable) and local regulations.)

Ha means hectares. One hectare equals 2.47 acres.

High potential for 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.

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

Instantaneous measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.

Land application is the spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the land so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil. Land application includes distribution and marketing (i.e. the selling or giving away of the sewage sludge).

Landfilling of sewage sludge for the purpose of this permit is the disposal of sewage sludge in a municipal solid waste landfill unit as defined at 40 CFR § 258.2.

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 x 10-7 centimeters per second or less.

Liquid Sewage Sludge means a sewage sludge having a dry weight solids content less than or equal to 8% of the total weight of the sewage sludge.

Long-term treatment is the process where Class B sewage sludge is treated in batch piles over a minimum of two summers in order to achieve a Class A sewage sludge with respect to pathogens.

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.

Low potential for public contact site is land with a low potential for contact by the public. This includes, but is not limited to, farms, ranches, reclamation areas, and other lands which are private lands, restricted public lands, or lands which are not generally accessible to or used by the public.

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

Municipal solid waste landfill unit (MSWLF unit) means a discrete area of land or an excavation that receives household waste, and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined under 40 CFR § 257.2. A MSWLF unit also may receive other types

of RCRA subtitle D wastes, such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste and industrial solid waste. such a landfill may be publicly or privately owned. A MSWLF unit may be a new MSWLF unit, and existing MSWLF unit or a lateral expansion.

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.

Paint filter test is a test (SW 9095) where a predetermined amount of sewage sludge is placed in a paint filter. If any portion of the material passes through the filter in a five minute test period, the material is deemed to contain free liquids.

Pathogen means an organism that is capable of producing an infection or disease in a susceptible host.

Person is an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

PFRP means *Processes to Further Reduce Pathogens*, as described in detail in Appendix B (Part B.) of 40 CFR Part 503 using composting, heat drying, heat treatment, thermophilic aerobic digestion, irradiation or pasteurization as specified in that part.

Phosphorus index is an integrated approach, developed by USDA/Natural Resources Conservation Service (NRCS), to estimate the risk of phosphorus being delivered to surface water from agricultural fields. These characteristics include site specific factors such as soil test phosphorus (i.e., available phosphorus), total soil phosphorus, the rate, method, and timing of phosphorus application (fertilizer, manure, and other organic sources), and erosion. The phosphorus index provides a relative rating as to the risk of phosphorus moving from individual fields.

Pollutant for the purposes of this permit is an organic substance, an inorganic substance, a combination of organic and inorganic substances, or pathogenic organisms that, after discharge and upon exposure, ingestions, 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).

PSRP means *Processes to Significantly Reduce Pathogens*, as described in detail in Appendix B (Part A.) of 40 CFR Part 503 and consists of aerobic digestion, air drying, anaerobic digestion, composting, or lime stabilization as specified in that part.

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 judgements regarding ground water monitoring, pollutant fate and transport and corrective action.

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

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

Sewage sludge means solid, semi-solid, or liquid residue generated during the treatment of domestic sewage and/or a combination of domestic sewage and industrial waste of a liquid nature in a 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 a material derived from sewage sludge. Sewage sludge does not include ash generated during the incineration of sewage sludge or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works. (Note: The disposal of grit and screenings are not regulated under this permit. They should be disposed of in accordance with applicable State (or Tribal, if applicable) and local regulations.)

Sewage sludge body for the purpose of this permit is an individual or discrete lagoon cell, sewage sludge cell, pile of sewage sludge, long-term treatment pile, compost pile, drying bed, storage pile, etc., that contains sewage sludge and/or material derived from sewage sludge.

Sewage sludge unit is an area of land on which only sewage sludge is placed for final disposal. This does not include land on which sewage sludge is placed for either storage or treatment. Land does not include waters of the United States as defined in 40 CFR § 122.2.

Sewage sludge unit boundary is the outermost perimeter of a sewage sludge unit.

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.

Surface disposal of sewage sludge for the purpose of this permit is the placement of sewage sludge in a sewage sludge unit for the purpose of final disposal.

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

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

Toxicity characteristic leaching procedure is the test method (Method 1311 (1992 or latest version) of Test Methods for Evaluating Solid Wastes (EPA Publication SW-846), Volume 1C: Laboratory Manual, Physical/Chemical Methods) used to determine the mobility of both organic and inorganic pollutants present in liquid, solid and multiphasic wastes.

Treatment works are either Federally owned, publicly owned, or privately owned devices or systems used to treat (including recycle and reclamation) either domestic sewage or a combination of domestic sewage and industrial waste of a liquid nature.

Unstable area is an area of 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.

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

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the

permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

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 for 15-20 minutes in the presence of excess air.

12 APPROVED METHODS FOR THE ANALYSIS OF SEWAGE SLUDGE (40 CFR Part 503)

Parameter	Analysis Method a/
Arsenic	SW-846 Method 6010B b/ SW-846 Method 6020 b/ EPA Method 200.7 EPA Method 200.9
Cadmium	SW-846 Method 6010B b/ SW-846 Method 6020 b/ EPA Method 200.7 EPA Method 200.9
Copper	SW-846 Method 6010B b/ SW-846 Method 6020 b/ EPA Method 200.7 EPA Method 200.9
Lead	SW-846 Method 6010B b/ SW-846 Method 6020 b/ EPA Method 200.7 EPA Method 200.9 /
Mercury	EPA Method 200.7
Molybdenum	SW-846 Method 6010B b/ SW-846 Method 6020 b/ EPA Method 200.7
Nickel	SW-846 Method 6010B b/ SW-846 Method 6020 b/ EPA Method 200.7 EPA Method 200.9
Selenium	SW-846 Method 6010B b/ SW-846 Method 6020 b/ EPA Method 200.7 EPA Method 200.9
Zinc	SW-846 Method 6010B b/ SW-846 Method 6020 b/ EPA Method 200.7
Fecal Coliform (MPN only; MF not allowed under this permit)	SM-18th Method 9221 E (MPN) Appendix F, EPA/625/R-92/013 EPA Method 1680 EPA Method 1681
Salmonella bacteria	EPA Method 1682
Helminth Ova	Appendix I, EPA/625/R-92/013
Enteric Viruses	Appendix H, EPA/625/R-92/013
Nitrate (as N)	SM-18th Method 4500-NO_3^- SW-846 Method 9056 SW-846 Method 9210

Nitrite (as N)	SM-18th Method 4500-NO_2
Nitrate/Nitrite	EPA Method 1685 EPA Method 1686
Ammonia (as N)	SM-18th Method 4500-NH_3 EPA Method 1689 EPA Method 1690
Organic Nitrogen	Value calculated TKN minus NH3-N
Total Kjeldahl Nitrogen (TKN)	SM-18th Method 4500-N_{org} EPA Method 1687 EPA Method 1688
Total Solids	SM-18th Method 2540 G EPA Method 1684
Total Volatile Solids	SM-18th Method 2540 G
Total Phosphorus	SM-18th Method 4500-P
pH	SW-846 Method 9040C SW-846 Method 9045D
TCLP	SW-846 Method 1311
Paint Filter Test	SW-846 Method 9095B
Specific Oxygen Uptake Rate in Biosolids	EPA Method 1683

a/ The references for the specified analytical methods are listed below:

EPA/626/R-92/013 means *Environmental Regulations and Technology, Control of Pathogens and Vector Attraction in Sewage Sludge (Including Domestic Septage) Under 40 CFR Part 503*, EPA Publication EPA/625/R-92/013, Revised October 1999. Use the indicated appendix. A copy of the document can be downloaded in PDF format from the Region 8 Biosolids Web page at http://www.epa.gov/region08/biosolids Click on "Biosolids Documents", "New Documents", then "625r92013.pdf".

SM-18th means *Standard Methods for the Examination of Water and Wastewater*, 18th Edition, 1992, American Public Health Association, 1015 15th Street, NW., Washington, DC 20005.

SW-846 means *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, EPA publication SW-846 Third Edition (September 1986), Update I (July 1992), Update II (September 1994), Update IIA (August 1993), Update IIB (January 1995), and Update III (December 1996). Available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161.
All methods except those in *Standard Methods for the Examination of Water and Wastewater* can be found at http://www.epa.gov/region08/biosolids under the biosolids menu.

Older Methods (i.e AA Furnace methods may also be utilized with permission of the permitting authority.

b/ All samples must be digested using SW-846 Method 3050B, 3051A or 3052 or equivlent (using equivalent to 1 gram dry weight) prior to analysis by any of the procedures indicated. The AA direct Aspiration analyses are applicable at moderate concentration levels in clean complex matrix systems. AA Furnace methods can increase sensitivity if matrix effects are not severe. Inductively Coupled Plasma (ICP) methods are applicable over a broad linear range and are especially sensitive for refractory elements. ~~Detection limits for AA Furnace methods are generally lower than for ICP methods.~~

Other Analytical Methods

Methods of Phosphorus Analysis for Soils, Sediments, Residuals, and Waters; Southern Cooperative Series Bulletin No. # 396, June 2000; Southern extension/Research activity - Information exchange Group (SERA-IEG); Gary M. Pierzynski, Editor; URL http://www.sera17.ext.vt.edu/SERA_17_ Publication.htm; ISBN: 1-58161-396-2

Simultaneous Extraction of Macro, Micronutrients and trace Elements Using Ammonium Bicarbonate DPTA (AB-DPTA); *Laboratory Manual for SC-564, Soil and Plant Chemical Analysis,* Spring Semester 1998, Version 4, James R. Self, Juan B. Rodriguez, Soil, Water, and Plant Testing Laboratory, Department of Soil and Crop Sciences, Colorado State University.