

Permit Guidance  <b>11</b>  <b>Final</b>	<b>National Pollutant Discharge Elimination System (NPDES); Monitoring and Reporting for Sewage Sludge and Biosolids</b>	
	Statutory references: ORC 6111.01, 6111.03, 6111.04 Rule references: OAC 3745-33, 3745-40	Ohio EPA, Division of Surface Water Revision 0, April 15, 2005 Revision 1, August 31, 2007 Revision 2, May 13, 2010 Revision 3, October 31, 2011
This internal guidance does not affect requirements found in referenced rule or statute.		

**Purpose**

To provide guidance for drafting the sewage sludge and biosolids parts of a new NPDES permit or when renewing an existing NPDES permit.

**Background**

Ohio NPDES permits have included 40 C.F.R. 503 compliant monitoring stations since 1993. Ohio adopted laws and rules for sewage sludge management in 2000 and 2002 respectively. Sewage sludge management was delegated to Ohio EPA as part of the NPDES permit program in 2005. Revised sewage sludge and biosolids rules became effective July 1, 2011. The information in this guidance document is consistent with ORC Chapter 6111. and OAC Chapter 3745-40.

**Procedure**

Station tables, and the accompanying footnotes, outline the monitoring frequency requirements for the treatment, storage, transfer, or disposal of sewage sludge or biosolids and the beneficial use of biosolids by publicly owned treatment works and semi-public treatment works. Monitoring frequency requirements for sewage sludge/biosolids stations are based on the average dry weight of sewage sludge or biosolids disposed or biosolids beneficially used during the three most recent calendar years for which records are available. Discharge Monitoring Report (DMR) codes in **bold face** type are parameters that are required of any Permittee with such a sewage sludge/biosolids station. Other parameters may be included on a case-by-case basis (i.e. Dioxin). On a case-by-case basis, monitoring may be necessary for parameters not listed in this guidance. In cases where additional monitoring is necessary, or when the proposed monitoring requirements are different from those of this guidance, the permit writer should document reasons for the changes. NPDES permit Part II and Part III guidance for sewage sludge is also provided in this document. Facsimile NPDES Part 1 stations are included as an appendix.

Industrial NPDES Permittees may operate a domestic sewage package plant that is separate from the process wastewater collection and treatment system. If a permit writer is aware of such a situation, the industrial permit should have, at a minimum, a 586 station and/or a 588 station for the final disposal of sewage sludge or biosolids removed from such treatment works.

**Cross Reference**

Permit Guidance 1 - National Pollutant Discharge Elimination System; Monitoring Frequency Requirements for Sanitary Discharges.

**For More Information, Contact:**

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**Station 581 - Monitoring requirements for beneficial use of Class B biosolids**

Parameter	Units (A)	MOR Code	Sewage sludge weight (U. S. dry tons per calendar year)			
			≥16,500	≥1,650 but <16,500	≥320 but <1,650	<320
<b>Weight (B)</b>	<b>US</b>	<b>70316</b>	<b>1/Month T</b>	<b>1/2 Months T</b>	<b>1/Qtr T</b>	<b>1/Year T</b>
<b>Fee weight (C)</b>	<b>US</b>	<b>51129</b>	<b>1/Month T</b>	<b>1/2 Months T</b>	<b>1/Qtr T</b>	<b>1/Year T</b>
<b>Metals (D)</b>	<b>mg/kg</b>	<b>varies</b>	<b>1/Month C</b>	<b>1/2 Months C</b>	<b>1/Qtr C</b>	<b>1/Year C</b>
<b>Ammonia N</b>	<b>mg/kg</b>	<b>00611</b>	<b>1/Month C</b>	<b>1/2 Months C</b>	<b>1/Qtr C</b>	<b>1/Year C</b>
<b>Kjeldahl N</b>	<b>mg/kg</b>	<b>00627</b>	<b>1/Month C</b>	<b>1/2 Months C</b>	<b>1/Qtr C</b>	<b>1/Year C</b>
<b>Phosphorus</b>	<b>mg/kg</b>	<b>00668</b>	<b>1/Month C</b>	<b>1/2 Months C</b>	<b>1/Qtr C</b>	<b>1/Year C</b>
<b>Potassium</b>	<b>mg/kg</b>	<b>00938</b>	<b>1/Month C</b>	<b>1/2 Months C</b>	<b>1/Qtr C</b>	<b>1/Year C</b>
NO2/NO3 N (E)	mg/kg	00633	1/Month C	1/2 Months C	1/Qtr C	1/Year C
Fecal coliform (F)	MPN/g	31641	1/Month MG	1/2 Months MG	1/Qtr MG	1/Year MG
Fecal coliform (F)	CFU/g	51131	1/Month MG	1/2 Months MG	1/Qtr MG	1/Year MG

Station 581 applies to the beneficial use (formerly land application) of Class B biosolids. Parameters in **bold** are required to be monitored by all Permittees with a 581 station. Monitoring of other parameters, whether listed above or not, is at the discretion of the Director and depends in part on the treatment choices made by the Permittee. For example, if the Permittee utilizes Class B pathogen reduction alternative 1 then one of the two fecal coliform monitoring options must be selected. The CFU/g option is recommended as this is the method that most permittees utilize.

Station 582 is reserved.

Station 583 is reserved.

Station 584 - Monitoring requirements for beneficial use of exceptional quality biosolids

Parameter	Units (A)	MOR Code	Sewage sludge weight (U. S. dry tons per calendar year) (B)			
			≥16,500	≥1,650 but <16,500	≥320 but <1,650	<320
<b>Weight (B)</b>	<b>US tons</b>	<b>70316</b>	<b>1/Month T</b>	<b>1/2 Months T</b>	<b>1/Qtr T</b>	<b>1/Year T</b>
<b>Fee weight (C)</b>	<b>US tons</b>	<b>51129</b>	<b>1/Month T</b>	<b>1/2 Months T</b>	<b>1/Qtr T</b>	<b>1/Year T</b>
<b>Metals (D)</b>	<b>mg/kg</b>	<b>varies</b>	<b>1/Month C</b>	<b>1/2 Months C</b>	<b>1/Qtr C</b>	<b>1/Year C</b>
<b>Ammonia N</b>	<b>mg/kg</b>	<b>00611</b>	<b>1/Month C</b>	<b>1/2 Months C</b>	<b>1/Qtr C</b>	<b>1/Year C</b>
<b>Kjeldahl N</b>	<b>mg/kg</b>	<b>00627</b>	<b>1/Month C</b>	<b>1/2 Months C</b>	<b>1/Qtr C</b>	<b>1/Year C</b>
<b>Phosphorus</b>	<b>mg/kg</b>	<b>00668</b>	<b>1/Month C</b>	<b>1/2 Months C</b>	<b>1/Qtr C</b>	<b>1/Year C</b>
<b>Potassium</b>	<b>mg/kg</b>	<b>00938</b>	<b>1/Month C</b>	<b>1/2 Months C</b>	<b>1/Qtr C</b>	<b>1/Year C</b>
NO <sub>2</sub> /NO <sub>3</sub> N (E)	mg/kg	00633	1/Month C	<b>1/2 Months C</b>	1/Qtr C	1/Year C
Fecal coliform (G)	MPN/g	31641	1/Month MG	1/2 Months MG	1/Qtr MG	1/Year MG
Salmonella sp. (G)	MPN/4g	71202	1/Month MG	1/2 Months MG	1/Qtr MG	1/Year MG

Station 584 applies to beneficial use (formerly land application/distribution) of exceptional quality biosolids (the definition of “exceptional quality biosolids” is found in OAC Chapter 3745-40-01.JJ). Parameters in **bold** are required to be monitored by all Permittees with a 584 station. Monitoring of other parameters, whether listed above or not, is at the discretion of the Director. All Permittees must choose to monitor either Fecal coliform or Salmonella sp. to demonstrate pathogen reduction. The permit writer must determine which option the Permittee wishes to utilize and insert the choice in the 584 table.

It is a requirement that all Permittees that generate exceptional quality biosolids also have a 581 station, for Class B biosolids, for situations when the biosolids may not meet “exceptional quality” requirements but still may be beneficially used as Class B biosolids.

Station 585 - Monitoring requirements for incineration of sewage sludge or biosolids

Parameter	Units (A)	MOR Code	Sewage sludge weight (U. S. dry tons per calendar year) (B)			
			≥16,500	≥1,650 but <16,500	≥320 but <1,650	<320
<b>Fee weight (C)</b>	<b>US tons</b>	<b>51129</b>	<b>1/Month T</b>	<b>1/2 Months T</b>	<b>1/Qtr T</b>	<b>1/Year T</b>
<b>Metals (H)</b>	<b>mg/kg</b>	<b>varies</b>	<b>1/Month C</b>	<b>1/2 Months C</b>	<b>1/Qtr C</b>	<b>1/Year C</b>

Station 585 applies to incineration of sewage sludge or biosolids. Parameters in **bold** are required to be monitored by all Permittees with a 585 station. Monitoring of other parameters would be included at the discretion of the Director.

Station 586 - Monitoring requirements for disposal of sewage sludge or biosolids in a landfill

Parameter	Units (A)	MOR Code	Sewage sludge weight (U. S. dry tons per calendar year) (B)
			Any amount
<b>Fee weight (C)</b>	<b>US tons</b>	<b>51129</b>	<b>1/Year T</b>

Station 586 applies to sewage sludge or biosolids disposed in a landfill. Parameters in **bold** are required to be monitored by all Permittees with a 586 station. Monitoring of other parameters, whether listed above or not, are included at the discretion of the Director.

Station 587 is reserved.

Station 588 - Monitoring requirements for transfer of sewage sludge or biosolids to another NPDES Permittee

Parameter	Units (A)	MOR Code	Sewage sludge weight (U. S. dry tons per calendar year) (B)
			Any amount
Weight (B)	US tons	70316	1/Year T
Volume (I)	Gals	80991	1/Year T

Station 588 applies to sewage sludge transferred to another NPDES Permittee. Since OAC Chapter 3745-40 requires any person who treats, stores, transfers, or disposes of sewage sludge or biosolids and beneficially uses biosolids to have an NPDES permit for the activity, sewage sludge or biosolids may only be transferred to an NPDES Permittee whose permit allows for the treatment, storage, transfer, or disposal of sewage sludge or biosolids and the beneficial use of biosolids. The annual total of sewage sludge or biosolids transferred may be reported in dry tons, or gallons, at the discretion of the permit writer (gallons is often preferred especially for small treatment works that hire a waste hauler to remove relatively small volumes of sewage sludge or biosolids).

Station 589 is reserved. **Note to permit writers: Station 589 was formerly utilized to report biosolids transferred to PPG Lime Lakes for use in the reclamation project. Since PPG Lime Lakes has been issued a sludge management plan, all Permittees that utilize PPG Lime Lakes will report the amount of biosolids transferred via Station 588.**

**Footnotes**

C = composite, T = total, MG = multiple grab

- (A) All units are dry weight basis (except Volume in gallons).
- (B) Weight means the weight of sewage sludge, in dry U.S. tons, including admixtures such as liming material or bulking agents. Sewage sludge monitoring frequency is based on the annual sewage sludge weight, in dry US tons, for the most recent calendar year per rule 3745-40-06 of the Ohio Administrative Code [Note: both Weight and Fee weight must be included as parameters for land application-sewage sludge stations. Ohio EPA must track Fee weight as per the ORC and Weight for numerous reasons including Clean Water Act regulations (503)].

- (C) Fee weight means the weight of sewage sludge, in dry U.S. tons, excluding any admixtures such as liming material or bulking agents. Annual sewage sludge fees are based on the most recent calendar year generation of sewage sludge per Section 3745.11(Y) of the Ohio Revised Code [Note: both Weight and Fee weight must be included as parameters for land application sewage sludge stations. Ohio EPA must track Fee weight as per the ORC and Weight for numerous reasons including Clean Water Act regulations (503)].
- (D) The following metals shall be monitored when biosolids are beneficially used:  
 Arsenic, Total In Sludge - MOR code 01003  
 Cadmium, Total In Sludge - MOR code 01028  
 Copper, Total In Sludge - MOR code 01043  
 Lead, Total In sludge - MOR code 01052  
 Mercury, Total In Sludge - MOR code 71921  
 Molybdenum, Total In Sludge - MOR code 78465  
 Nickel, Total In Sludge - MOR code 01068  
 Selenium, Total In Sludge - MOR code 01148  
 Zinc, Total In Sludge - MOR code 01093
- (E) Monitoring for nitrite/nitrate nitrogen is recommended for composted sewage sludge, aerobically digested sewage sludge, and air dried sewage sludge. These aerobic processes promote the nitrification of ammonia. Other sewage sludge treatment processes do not promote the nitrification of significant ammonia and monitoring for nitrite/nitrate nitrogen is not required.
- (F) Monitoring for fecal coliform is required for class B pathogen reduction alternative 1. Seven separate grab samples of the sewage sludge shall be submitted for analysis. The grab samples must be representative of the Permittee's treatment process.
- (G) Monitoring for fecal coliform (or Salmonella sp. bacteria, see below) is required for all exceptional quality pathogen reduction alternatives. For fecal coliform the most probable number (MPN/g, MOR code 31641) is the required monitoring methodology.
- Salmonella sp. monitoring (MPN/4g, MOR code 71202) may be substituted for the fecal coliform monitoring for exceptional quality pathogen reduction alternatives. This is not recommended. Fecal coliform (MPN/g, MOR code 31641) is the recommended pathogen reduction monitoring organism.
- (H) The following metals shall be monitored when sewage sludge or biosolids are fired in an incinerator:  
 Arsenic, Total In Sludge - MOR code 01003  
 Beryllium, Total In Sludge - MOR code 01013  
 Cadmium, Total In Sludge - MOR code 01028  
 Chromium, Total In Sludge - MOR code 01029  
 Lead, Total In sludge - MOR code 01052  
 Mercury, Total In Sludge - MOR code 71921  
 Nickel, Total In Sludge - MOR code 01068
- (I) At the discretion of the permit writer, Permittees may report sewage sludge or biosolids gallons transferred to another NPDES Permittee rather than sewage sludge or biosolids dry tons transferred to another NPDES Permittee. Total cumulative gallons transferred shall be tracked and reported annually.

## Guidance for Part II, Other Parameters

The following paragraphs shall be included in Part II for all POTWs that generate sewage sludge:

“All treatment, storage, transfer, or disposal of sewage sludge or biosolids or beneficial use of biosolids by the Permittee shall comply with Chapter 6111. of the Ohio Revised Code, Chapter 3745-40 of the Ohio Administrative Code and any future revisions thereof, any further requirements specified in this NPDES permit, and any other actions of the Director that pertain to the treatment, storage, transfer, or disposal of sewage sludge or biosolids or beneficial use of biosolids by the Permittee.”

“Sewage sludge composite samples shall consist of a minimum of six grab samples collected at such times and locations, and in such fashion, as to be representative of the facility’s sewage sludge.”

“No later than January 31 of each calendar year, the Permittee shall submit two (2) copies of a report summarizing the treatment, storage, transfer, or disposal of sewage sludge or biosolids or the beneficial use of biosolids activities of the Permittee during the previous calendar year. One copy of the report shall be sent to the Ohio EPA, Division of Surface Water, P.O. Box 1049, Columbus, Ohio 43216-1049, and one copy of the report shall be sent to the \_\_\_\_\_ Ohio EPA District Office. The report shall be submitted on Ohio EPA Form 4229.”

“Each day when sewage sludge or biosolids is removed from the treatment works for treatment, storage, transfer, or disposal of sewage sludge or biosolids or the beneficial use of biosolids, a representative sample of sewage sludge or biosolids shall be collected and analyzed for percent total solids. This value of percent total solids shall be used to calculate the total Sewage Sludge Weight (Discharge Monitoring Report code 70316) and/or total Sewage Sludge Fee Weight (Discharge Monitoring Report code 51129) removed from the treatment plant on that day. The results of the daily monitoring, and the weight calculations, shall be maintained on site for a minimum of five years. The test methodology used shall be from the latest edition, Part 2540 G of Standard Methods for the Examination of Water and Wastewater—American Public Health Association, American Water Works Association, and Water Environment Federation. To convert from gallons of liquid sewage sludge to dry tons of sewage sludge:  $\text{dry tons} = \text{gallons} \times 8.34 \text{ (lbs/gallon)} \times 0.0005 \text{ (tons/lb)} \times \text{decimal fraction total solids}$ .”

The following paragraph shall be included in each NPDES permit that includes Station 586 and/or 588 as a backup disposal option (only listed in Part II of the permit; no station in Part 1B):

“The Permittee is authorized to dispose of sewage sludge or biosolids in a landfill or to transfer the sewage sludge or biosolids to another NPDES Permittee in emergency situations only. These stations are included in the authorized list of stations in Part II of this permit, however, there are not tables included in Part 1.B for these stations. If these stations must be used in an emergency situation, the Permittee must report the total amount of sewage sludge or biosolids disposed at a landfill or transferred to another NPDES Permittee on the Permittee’s Annual Sludge Report. The Permittee does not need to report sewage sludge or biosolids disposed at a landfill or transferred to another NPDES Permittee in an emergency situation on their DMR.”

**Note to permit writers: If 586 and 588 are primary disposal options; delete this paragraph from Part II. If one or the other is used as a primary disposal station and the other is a backup, rewrite this paragraph in Part II to only include the backup station.**

### **Guidance for Part III, General Conditions**

**The following definitions appear in Part III of NPDES permits.**

1. "Sewage sludge" means a solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works as defined in section 6111.01 of the Revised Code. "Sewage sludge" includes, but is not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment processes. "Sewage sludge" does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator, grit and screenings generated during preliminary treatment of domestic sewage in a treatment works, animal manure, residue generated during treatment of animal manure, or domestic septage. means sewage sludge, as defined in division (Y) of section 3745.11 of the Revised Code. At the time of the development of this guidance document, section 3745.11 of the Revised Code defined sewage sludge as follows: "sewage sludge" means a solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works as defined in section 6111.01 of the Revised Code. "Sewage sludge" includes, but is not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment processes. "Sewage sludge" does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator, grit and screenings generated during preliminary treatment of domestic sewage in a treatment works, animal manure, residue generated during treatment of animal manure, or domestic septage.
2. "Biosolids" means sewage sludge or mixtures containing sewage sludge that have been treated for beneficial use.
3. "Sewage sludge weight" means the weight of sewage sludge, in dry U.S. tons, including admixtures such as liming materials or bulking agents. Monitoring frequencies for sewage sludge parameters are based on the reported sludge weight generated in a calendar year (use the most recent calendar year data when the NPDES permit is up for renewal).
4. "Sewage sludge fee weight" means the weight of sewage sludge, in dry U.S. tons, excluding admixtures such as liming materials or bulking agents. Annual sewage sludge fees, as per section 3745.11(Y) of the Ohio Revised Code, are based on the reported sludge fee weight for the most recent calendar year.

### **RECORDS RETENTION**

The Permittee shall retain all of the following records for the treatment works for a minimum of three years except those records that pertain to the treatment, storage, transfer, or disposal of sewage sludge or biosolids and the beneficial use of biosolids, which shall be kept for a minimum of five years, which include:

1. All sampling and analytical records (including internal sampling data not reported);
2. All original recordings for any continuous monitoring instrumentation;
3. All instrumentation, calibration and maintenance records;
4. All treatment works operation and maintenance records;

5. All reports required by this permit; and
6. Records of all data used to complete the application for this permit for a period of at least three years, or five years for sewage sludge or biosolids, from the date of the sample, measurement, report, or application.

#### SOLIDS DISPOSAL

Collected grit and screenings, and other solids other than sewage sludge or biosolids, shall be disposed of in such a manner as to prevent entry of those wastes into “waters of the State,” and in accordance with all applicable laws and rules.

**Appendix: The following tables are facsimiles of the default stations that will be available in SWIMS. Parameters may need to be added on a case-by-case basis. Also added are examples of other tables that may be used when appropriate.**

**ALL NOTES ARE NOW GOING TO BE LOCATED ON THE DSW INTRANET SITE, UNDER THE NPDES PERMIT PROGRAM LINK, PERMIT LANGUAGE. YOU CAN CUT AND PASTE FROM THIS SITE INTO SWIMS. THIS WAY YOU CAN SELECT THE PROPER NOTES FOR EACH STATION.**

**Example sewage sludge stations for < 320 dry tons sewage sludge per calendar year**

Table - Sewage Sludge Monitoring - 581 - Class B Biosolids Land Application - Final

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>	<u>Monitoring Requirements</u>		
		Measuring Frequency	Sampling Type	Monitoring Months
Parameter	Daily Maximum			
00611 - Nitrogen Ammonia, Total In Sludge - mg/kg		1/Year	Composite	December
00627 - Nitrogen Kjeldahl, Total In Sludge - mg/kg		1/Year	Composite	December
00668 - Phosphorus, Total in Sludge - mg/kg		1/Year	Composite	December
00938 - Potassium in Sludge - mg/kg		1/Year	Composite	December
01003 - Arsenic, Total In Sludge - mg/kg	75	1/Year	Composite	December
01028 - Cadmium, Total In Sludge - mg/kg	85	1/Year	Composite	December
01043 - Copper, Total In Sludge - mg/kg	4,300	1/Year	Composite	December
01052 - Lead, Total In Sludge - mg/kg	840	1/Year	Composite	December
01068 - Nickel, Total In Sludge - mg/kg	420	1/Year	Composite	December
01093 - Zinc, Total In Sludge - mg/kg	7,500	1/Year	Composite	December
01148 - Selenium, Total In Sludge - mg/kg	100	1/Year	Composite	December
51129 - Sludge Fee Weight - Dry Tons		1/Year	Total	December
70316 - Sludge Weight - Dry Tons		1/Year	Total	December
71921 - Mercury, Total In Sludge - mg/kg	57	1/Year	Composite	December
78465 - Molybdenum, Total In Sludge - mg/kg	75	1/Year	Composite	December

NOTES for Station Number 581:  
See Intranet page

Table - Sewage Sludge Monitoring - 581 - Class B Biosolids Land Application – **If Fecal Coliform monitoring required**

<u>Effluent Characteristic</u> Parameter	<u>Discharge Limitations</u> Maximum	<u>Monitoring Requirements</u>		
		Measuring Frequency	Sampling Type	Monitoring Months
00611 - Nitrogen Ammonia, Total In Sludge - mg/kg		1/Year	Composite	December
00627 - Nitrogen Kjeldahl, Total In Sludge - mg/kg		1/Year	Composite	December
00668 - Phosphorus, Total in Sludge - mg/kg		1/Year	Composite	December
00938 - Potassium in Sludge - mg/kg		1/Year	Composite	December
01003 - Arsenic, Total In Sludge - mg/kg	75	1/Year	Composite	December
01028 - Cadmium, Total In Sludge - mg/kg	85	1/Year	Composite	December
01043 - Copper, Total In Sludge - mg/kg	4,300	1/Year	Composite	December
01052 - Lead, Total In Sludge - mg/kg	840	1/Year	Composite	December
01068 - Nickel, Total In Sludge - mg/kg	420	1/Year	Composite	December
01093 - Zinc, Total In Sludge - mg/kg	7,500	1/Year	Composite	December
01148 - Selenium, Total In Sludge - mg/kg	100	1/Year	Composite	December
51129 - Sludge Fee Weight - Dry Tons		1/Year	Total	December
70316 - Sludge Weight - Dry Tons		1/Year	Total	December
51131 - Fecal Coliform - CFU/g	2,000,000	1/Year	Multiple Grab	December
71921 - Mercury, Total In Sludge - mg/kg	57	1/Year	Composite	December
78465 - Molybdenum, Total In Sludge - mg/kg	75	1/Year	Composite	December

NOTES for Station Number 581:  
See Intranet page

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**Example sewage sludge stations for < 320 dry tons sewage sludge per calendar year**

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Table - Sewage Sludge Monitoring - 584 -Exceptional Quality Biosolids Land Application/Distribution

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>		<u>Monitoring Requirements</u>		
	Maximum	Monthly Average	Measuring Frequency	Sampling Type	Monitoring Months
00611 - Nitrogen Ammonia, Total In Sludge - mg/kg			1/Year	Composite	December
00627 - Nitrogen Kjeldahl, Total In Sludge - mg/kg			1/Year	Composite	December
00668 - Phosphorus, Total in Sludge - mg/kg			1/Year	Composite	December
00938 - Potassium in Sludge - mg/kg			1/Year	Composite	December
01003 - Arsenic, Total In Sludge - mg/kg	75	41	1/Year	Composite	December
01028 - Cadmium, Total In Sludge - mg/kg	85	39	1/Year	Composite	December
01043 - Copper, Total In Sludge - mg/kg	4,300	1,500	1/Year	Composite	December
01052 - Lead, Total In Sludge - mg/kg	840	300	1/Year	Composite	December
01068 - Nickel, Total In Sludge - mg/kg	420	420	1/Year	Composite	December
01093 - Zinc, Total In Sludge - mg/kg	7,500	2,800	1/Year	Composite	December
01148 - Selenium, Total In Sludge - mg/kg	100	100	1/Year	Composite	December
31641 - Fecal Coliform in Sludge - MPN/g	1,000		1/Year	Multiple Grab	December
51129 - Sludge Fee Weight - Dry Tons			1/Year	Total	December
70316 - Sludge Weight - Dry Tons			1/Year	Total	December
71921 - Mercury, Total In Sludge - mg/kg	57	17	1/Year	Composite	December
78465 - Molybdenum, Total In Sludge - mg/kg	75	75	1/Year	Composite	December

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NOTES for Station Number 581:

See Intranet page

**Example sewage sludge stations for < 320 dry tons sewage sludge per calendar year**

Table - Sewage Sludge Monitoring - 585 - Sewage Sludge Incineration - Final

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>	<u>Monitoring Requirements</u>		
		Measuring Frequency	Sampling Type	Monitoring Months
Parameter	Maximum			
01003 - Arsenic, Total In Sludge - mg/kg		1/Year	Composite	December
01013 - Beryllium, Total In Sludge - mg/kg		1/Year	Composite	December
01028 - Cadmium, Total In Sludge - mg/kg		1/Year	Composite	December
01029 - Chromium, Total In Sludge - mg/kg		1/Year	Composite	December
01052 - Lead, Total In Sludge - mg/kg		1/Year	Composite	December
01068 - Nickel, Total In Sludge - mg/kg		1/Year	Composite	December
51129 - Sludge Fee Weight - Dry Tons		1/Year	Composite	December
71921 - Mercury, Total In Sludge - mg/kg		1/Year	Composite	December

**Example sewage sludge stations for < 320 dry tons sewage sludge per calendar year**

Table - Sewage Sludge Monitoring - 586 - Sewage Sludge Disposal in a Mixed Solid Waste Landfill - Final

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>	<u>Monitoring Requirements</u>		
		Measuring Frequency	Sampling Type	Monitoring Months
Parameter	Maximum			
51129 - Sludge Fee Weight - Dry Tons		1/Year	Total	December

**[NOTE: It is intended this station would be an annual reporting requirement regardless of the volume of dry tons of sewage sludge generated]**

**Example sewage sludge stations for < 320 dry tons sewage sludge per calendar year**

Table - Sewage Sludge Monitoring - 588 - Sewage Sludge Transferred to Another NPDES Permittee - Final

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>	<u>Monitoring Requirements</u>		
		Measuring Frequency	Sampling Type	Monitoring Months
Parameter	Maximum			
70316 - Sludge Weight - Dry Tons or 80991 - Sludge Volume - Gallons		1/Year	Total	December
		1/Year	Total	December

**[NOTE: It is intended this station would be an annual reporting requirement regardless of the volume of dry tons of sewage sludge generated]**

**Example sewage sludge stations for  $\geq 320$  but  $< 1,650$  dry tons sewage sludge per calendar year**

**[NOTE: See examples for  $< 320$  dry tons for tables 586 and 588]**

Table - Sewage Sludge Monitoring - 581 - Class B Biosolids Land Application - Final

<u>Effluent Characteristic</u> Parameter	<u>Discharge Limitations</u> Maximum	<u>Monitoring Requirements</u>		
		Measuring Frequency	Sampling Type	Monitoring Months
00611 - Nitrogen Ammonia, Total In Sludge - mg/kg		1/Quarter	Composite	Quarterly-Alt.
00627 - Nitrogen Kjeldahl, Total In Sludge - mg/kg		1/Quarter	Composite	Quarterly-Alt.
00668 - Phosphorus, Total in Sludge - mg/kg		1/Quarter	Composite	Quarterly-Alt.
00938 - Potassium in Sludge - mg/kg		1/Quarter	Composite	Quarterly-Alt.
01003 - Arsenic, Total In Sludge - mg/kg	75	1/Quarter	Composite	Quarterly-Alt.
01028 - Cadmium, Total In Sludge - mg/kg	85	1/Quarter	Composite	Quarterly-Alt.
01043 - Copper, Total In Sludge - mg/kg	4,300	1/Quarter	Composite	Quarterly-Alt.
01052 - Lead, Total In Sludge - mg/kg	840	1/Quarter	Composite	Quarterly-Alt.
01068 - Nickel, Total In Sludge - mg/kg	420	1/Quarter	Composite	Quarterly-Alt.
01093 - Zinc, Total In Sludge - mg/kg	7,500	1/Quarter	Composite	Quarterly-Alt.
01148 - Selenium, Total In Sludge - mg/kg	100	1/Quarter	Composite	Quarterly-Alt.
51129 - Sludge Fee Weight - Dry Tons		1/Quarter	Total	Quarterly-Alt.
70316 - Sludge Weight - Dry Tons		1/Quarter	Total	Quarterly-Alt.
71921 - Mercury, Total In Sludge - mg/kg	57	1/Quarter	Composite	Quarterly-Alt.
78465 - Molybdenum, Total In Sludge - mg/kg	75	1/Quarter	Composite	Quarterly-Alt.

-See example for stations less than 320 dry tons per year for other notes.

**Example sewage sludge stations for  $\geq 320$  but  $< 1,650$  dry tons sewage sludge per calendar year**

Table - Sewage Sludge Monitoring - 584 – Exceptional Quality Biosolids Land Application/Distribution - Final

<u>Effluent Characteristic</u> Parameter	<u>Discharge Limitations</u>		<u>Monitoring Requirements</u>		
	Maximum	Monthly Average	Measuring Frequency	Sampling Type	Monitoring Months
00611 - Nitrogen Ammonia, Total In Sludge - mg/kg			1/Quarter	Composite	Quarterly-Alt.
00627 - Nitrogen Kjeldahl, Total In Sludge - mg/kg			1/Quarter	Composite	Quarterly-Alt.
00668 - Phosphorus, Total in Sludge - mg/kg			1/Quarter	Composite	Quarterly-Alt.
00938 - Potassium in Sludge - mg/kg			1/Quarter	Composite	Quarterly-Alt.
01003 - Arsenic, Total In Sludge - mg/kg	75	41	1/Quarter	Composite	Quarterly-Alt.
01028 - Cadmium, Total In Sludge - mg/kg	85	39	1/Quarter	Composite	Quarterly-Alt.
01043 - Copper, Total In Sludge - mg/kg	4,300	1,500	1/Quarter	Composite	Quarterly-Alt.
01052 - Lead, Total In Sludge - mg/kg	840	300	1/Quarter	Composite	Quarterly-Alt.
01068 - Nickel, Total In Sludge - mg/kg	420	420	1/Quarter	Composite	Quarterly-Alt.
01093 - Zinc, Total In Sludge - mg/kg	7,500	2,800	1/Quarter	Composite	Quarterly-Alt.
01148 - Selenium, Total In Sludge - mg/kg	100	100	1/Quarter	Composite	Quarterly-Alt.
31641 - Fecal Coliform in Sludge - MPN/g	1,000		1/Quarter	Multiple Grab	Quarterly-Alt.
51129 - Sludge Fee Weight - Dry Tons			1/Quarter	Total	Quarterly-Alt.
70316 - Sludge Weight - Dry Tons			1/Quarter	Total	Quarterly-Alt.
71921 - Mercury, Total In Sludge - mg/kg	57	17	1/Quarter	Composite	Quarterly-Alt.
78465 - Molybdenum, Total In Sludge - mg/kg	75	75	1/Quarter	Composite	Quarterly-Alt.

-See example for stations less than 320 dry tons per year for other notes.

**Example sewage sludge stations for  $\geq 320$  but  $< 1,650$  dry tons sewage sludge per calendar year**

Table - Sewage Sludge Monitoring - 585 - Sewage Sludge Incineration - Final

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>	<u>Monitoring Requirements</u>		
		Measuring Frequency	Sampling Type	Monitoring Months
Parameter	Maximum			
01003 - Arsenic, Total In Sludge - mg/kg		1/Quarter	Composite	Quarterly-Alt.
01013 - Beryllium, Total In Sludge - mg/kg		1/Quarter	Composite	Quarterly-Alt.
01028 - Cadmium, Total In Sludge - mg/kg		1/Quarter	Composite	Quarterly-Alt.
01029 - Chromium, Total In Sludge - mg/kg		1/Quarter	Composite	Quarterly-Alt.
01052 - Lead, Total In Sludge - mg/kg		1/Quarter	Composite	Quarterly-Alt.
01068 - Nickel, Total In Sludge - mg/kg		1/Quarter	Composite	Quarterly-Alt.
51129 - Sludge Fee Weight - Dry Tons		1/Quarter	Composite	Quarterly-Alt.
71921 - Mercury, Total In Sludge - mg/kg		1/Quarter	Composite	Quarterly-Alt.

-See example for stations less than 320 dry tons per year for other notes.

**Example sewage sludge stations for  $\geq 1,650$  but  $< 1,6500$  dry tons sewage sludge per calendar year**

**[NOTE: See examples for  $< 320$  dry tons for tables 586 and 588]**

Table - Sewage Sludge Monitoring - 581 - Class B Biosolids Land Application - Final

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>	<u>Monitoring Requirements</u>		
		Measuring Frequency	Sampling Type	Monitoring Months
Parameter	Maximum			
00611 - Nitrogen Ammonia, Total In Sludge - mg/kg		1/2 Months	Composite	Bimonthly-Even
00627 - Nitrogen Kjeldahl, Total In Sludge - mg/kg		1/2 Months	Composite	Bimonthly-Even
00668 - Phosphorus, Total in Sludge - mg/kg		1/2 Months	Composite	Bimonthly-Even
00938 - Potassium in Sludge - mg/kg		1/2 Months	Composite	Bimonthly-Even
01003 - Arsenic, Total In Sludge - mg/kg	75	1/2 Months	Composite	Bimonthly-Even
01028 - Cadmium, Total In Sludge - mg/kg	85	1/2 Months	Composite	Bimonthly-Even
01043 - Copper, Total In Sludge - mg/kg	4,300	1/2 Months	Composite	Bimonthly-Even
01052 - Lead, Total In Sludge - mg/kg	840	1/2 Months	Composite	Bimonthly-Even
01068 - Nickel, Total In Sludge - mg/kg	420	1/2 Months	Composite	Bimonthly-Even
01093 - Zinc, Total In Sludge - mg/kg	7,500	1/2 Months	Composite	Bimonthly-Even
01148 - Selenium, Total In Sludge - mg/kg	100	1/2 Months	Composite	Bimonthly-Even
51129 - Sludge Fee Weight - Dry Tons		1/2 Months	Total	Bimonthly-Even
70316 - Sludge Weight - Dry Tons		1/2 Months	Total	Bimonthly-Even
71921 - Mercury, Total In Sludge - mg/kg	57	1/2 Months	Composite	Bimonthly-Even
78465 - Molybdenum, Total In Sludge - mg/kg	75	1/2 Months	Composite	Bimonthly-Even

-See example for stations less than 320 dry tons per year for other notes.

**Example sewage sludge stations for  $\geq 1,650$  but  $< 16,500$  dry tons sewage sludge per calendar year**

Table - Sewage Sludge Monitoring - 584 - EQ Biosolids Land Application/Distribution - Final

<u>Effluent Characteristic</u> Parameter	<u>Discharge Limitations</u>		<u>Monitoring Requirements</u>		
	Maximum	Monthly Average	Measuring Frequency	Sampling Type	Monitoring Months
00611 - Nitrogen Ammonia, Total In Sludge - mg/kg			1/2 Months	Composite	Bimonthly-Even
00627 - Nitrogen Kjeldahl, Total In Sludge - mg/kg			1/2 Months	Composite	Bimonthly-Even
00668 - Phosphorus, Total in Sludge - mg/kg			1/2 Months	Composite	Bimonthly-Even
00938 - Potassium in Sludge - mg/kg			1/2 Months	Composite	Bimonthly-Even
01003 - Arsenic, Total In Sludge - mg/kg	75	41	1/2 Months	Composite	Bimonthly-Even
01028 - Cadmium, Total In Sludge - mg/kg	85	39	1/2 Months	Composite	Bimonthly-Even
01043 - Copper, Total In Sludge - mg/kg	4,300	1,500	1/2 Months	Composite	Bimonthly-Even
01052 - Lead, Total In Sludge - mg/kg	840	300	1/2 Months	Composite	Bimonthly-Even
01068 - Nickel, Total In Sludge - mg/kg	420	420	1/2 Months	Composite	Bimonthly-Even
01093 - Zinc, Total In Sludge - mg/kg	7,500	2,800	1/2 Months	Composite	Bimonthly-Even
01148 - Selenium, Total In Sludge - mg/kg	100	100	1/2 Months	Composite	Bimonthly-Even
31641 - Fecal Coliform in Sludge - MPN/g	1,000		1/2 Months	Multiple Grab	Bimonthly-Even
51129 - Sludge Fee Weight - Dry Tons			1/2 Months	Total	Bimonthly-Even
70316 - Sludge Weight - Dry Tons			1/2 Months	Total	Bimonthly-Even
71921 - Mercury, Total In Sludge - mg/kg	57	17	1/2 Months	Composite	Bimonthly-Even
78465 - Molybdenum, Total In Sludge - mg/kg	75	75	1/2 Months	Composite	Bimonthly-Even

-See example for stations less than 320 dry tons per year for other notes.

**Example sewage sludge stations for  $\geq 320$  but  $< 1,650$  dry tons sewage sludge per calendar year**

Table - Sewage Sludge Monitoring - 585 - Sewage Sludge Incineration - Final

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>	<u>Monitoring Requirements</u>		
		Measuring Frequency	Sampling Type	Monitoring Months
Parameter	Maximum			
01003 - Arsenic, Total In Sludge - mg/kg		1/2 Months	Composite	Bimonthly-Even
01013 - Beryllium, Total In Sludge - mg/kg		1/2 Months	Composite	Bimonthly-Even
01028 - Cadmium, Total In Sludge - mg/kg		1/2 Months	Composite	Bimonthly-Even
01029 - Chromium, Total In Sludge - mg/kg		1/2 Months	Composite	Bimonthly-Even
01052 - Lead, Total In Sludge - mg/kg		1/2 Months	Composite	Bimonthly-Even
01068 - Nickel, Total In Sludge - mg/kg		1/2 Months	Composite	Bimonthly-Even
51129 - Sludge Fee Weight - Dry Tons		1/2 Months	Composite	Bimonthly-Even
71921 - Mercury, Total In Sludge - mg/kg		1/2 Months	Composite	Bimonthly-Even

**Example sewage sludge stations for  $\geq 16,500$  dry tons sewage sludge per calendar year**

**[NOTE: See examples for  $< 320$  dry tons for tables 586 and 588]**

Table - Sewage Sludge Monitoring - 581 - Class B Biosolids Land Application - Final

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>	<u>Monitoring Requirements</u>		
		Measuring Frequency	Sampling Type	Monitoring Months
Parameter	Maximum			
00611 - Nitrogen Ammonia, Total In Sludge - mg/kg		1/Month	Composite	All
00627 - Nitrogen Kjeldahl, Total In Sludge - mg/kg		1/Month	Composite	All
00668 - Phosphorus, Total in Sludge - mg/kg		1/Month	Composite	All
00938 - Potassium in Sludge - mg/kg		1/Month	Composite	All
01003 - Arsenic, Total In Sludge - mg/kg	75	1/Month	Composite	All
01028 - Cadmium, Total In Sludge - mg/kg	85	1/Month	Composite	All
01043 - Copper, Total In Sludge - mg/kg	4,300	1/Month	Composite	All
01052 - Lead, Total In Sludge - mg/kg	840	1/Month	Composite	All
01068 - Nickel, Total In Sludge - mg/kg	420	1/Month	Composite	All
01093 - Zinc, Total In Sludge - mg/kg	7,500	1/Month	Composite	All
01148 - Selenium, Total In Sludge - mg/kg	100	1/Month	Composite	All
51129 - Sludge Fee Weight - Dry Tons		1/Month	Total	All
70316 - Sludge Weight - Dry Tons		1/Month	Total	All
71921 - Mercury, Total In Sludge - mg/kg	57	1/Month	Composite	All
78465 - Molybdenum, Total In Sludge - mg/kg	75	1/Month	Composite	All

-See example for stations less than 320 dry tons per year for other notes.

**Example sewage sludge stations for  $\geq$  16,500 dry tons sewage sludge per calendar year**

Table - Sewage Sludge Monitoring - 584 - EQ Biosolids Land Application/Distribution - Final

<u>Effluent Characteristic</u> Parameter	<u>Discharge Limitations</u>		<u>Monitoring Requirements</u>		
	Maximum	Monthly Average	Measuring Frequency	Sampling Type	Monitoring Months
00611 - Nitrogen Ammonia, Total In Sludge - mg/kg			1/Month	Composite	All
00627 - Nitrogen Kjeldahl, Total In Sludge - mg/kg			1/Month	Composite	All
00668 - Phosphorus, Total in Sludge - mg/kg			1/Month	Composite	All
00938 - Potassium in Sludge - mg/kg			1/Month	Composite	All
01003 - Arsenic, Total In Sludge - mg/kg	75	41	1/Month	Composite	All
01028 - Cadmium, Total In Sludge - mg/kg	85	39	1/Month	Composite	All
01043 - Copper, Total In Sludge - mg/kg	4,300	1,500	1/Month	Composite	All
01052 - Lead, Total In Sludge - mg/kg	840	300	1/Month	Composite	All
01068 - Nickel, Total In Sludge - mg/kg	420	420	1/Month	Composite	All
01093 - Zinc, Total In Sludge - mg/kg	7,500	2,800	1/Month	Composite	All
01148 - Selenium, Total In Sludge - mg/kg	100	100	1/Month	Composite	All
31641 - Fecal Coliform in Sludge - MPN/g	1,000		1/Month	Multiple Grab	All
51129 - Sludge Fee Weight - Dry Tons			1/Month	Total	All
70316 - Sludge Weight - Dry Tons			1/Month	Total	All
71921 - Mercury, Total In Sludge - mg/kg	57	17	1/Month	Composite	All
78465 - Molybdenum, Total In Sludge - mg/kg	75	75	1/Month	Composite	All

-See example for stations less than 320 dry tons per year for other notes.

**Example sewage sludge stations for  $\geq$  16,500 dry tons sewage sludge per calendar year**

Table - Sewage Sludge Monitoring - 585 - Sewage Sludge Incineration - Final

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>	<u>Monitoring Requirements</u>		
		Measuring Frequency	Sampling Type	Monitoring Months
Parameter	Maximum			
01003 - Arsenic, Total In Sludge - mg/kg		1/Month	Composite	All
01013 - Beryllium, Total In Sludge - mg/kg		1/Month	Composite	All
01028 - Cadmium, Total In Sludge - mg/kg		1/Month	Composite	All
01029 - Chromium, Total In Sludge - mg/kg		1/Month	Composite	All
01052 - Lead, Total In Sludge - mg/kg		1/Month	Composite	All
01068 - Nickel, Total In Sludge - mg/kg		1/Month	Composite	All
51129 - Sludge Fee Weight - Dry Tons		1/Month	Composite	All
71921 - Mercury, Total In Sludge - mg/kg		1/Month	Composite	All

-See example for stations less than 320 dry tons per year for other notes.