

Chapter NR 347

SEDIMENT SAMPLING AND ANALYSIS, MONITORING PROTOCOL AND DISPOSAL CRITERIA FOR DREDGING PROJECTS

NR 347.01	Purpose and policy.
NR 347.02	Applicability.
NR 347.03	Definitions.
NR 347.04	Permits, approvals and reviews required.

NR 347.05	Preliminary application and analytical requirements.
NR 347.06	Sampling and analysis.
NR 347.07	Review procedures and review criteria.
NR 347.08	Monitoring, reporting and enforcement.

Note: Chapter NR 347 as it existed on February 28, 1989 was repealed and new chapter NR 347 was created effective March 1, 1989.

NR 347.01 Purpose and policy. c1d The purpose of this chapter is to protect the public rights and interest in the waters of the state by specifying definitions, sediment sampling and analysis requirements, disposal criteria and monitoring requirements for dredging projects regulated under one or more of the following statutes: s. 30.20, Stats., which requires a contract or permit for the removal of material from the beds of waterways; s. 281.41, Stats., which establishes a wastewater treatment facility plan approval program; ch. 289, Stats., which establishes the solid waste management program; ch. 291, Stats., which establishes the hazardous waste program; and ch. 283, Stats., which establishes the Wisconsin pollutant discharge elimination system cWPDESd program.

c2d It is department policy to encourage reuse of dredged material and to minimize environmental harm resulting from a dredging project.

History: Cr. Register, February, 1989, No. 398, eff. 3-1-89; corrections in c1d made under s. 13.93 c2md cbd 7., Stats., Register January 2002 No. 553.

NR 347.02 Applicability. The provisions of this chapter apply to the removal and disposal of material from the beds of waterways except where exempted by statute.

History: Cr. Register, February, 1989, No. 398, eff. 3-1-89.

NR 347.03 Definitions. c1d XAnalyteY means the chemical substance or physical property being tested for in a sample.

c2d XBathymetryY means the measurement of depth of water in lakes or rivers to determine lake or river bed topography.

c3d XBeach nourishment disposalY means the disposal of dredged material on the beaches or in the water landward from the ordinary high-water mark of Lakes Michigan and Superior for the purpose of adding, replenishing or preventing erosion of beach material.

c4d XBioassayY means a method for determining the acute or chronic toxicity of a material by studying its effects on test organisms under controlled conditions.

c5d XBulk sediment analysisY means a test to measure the total concentration of a specific constituent in a sample being analyzed.

c6d XCarriage waterY means the water portion of a slurry of water and dredged material.

c7d XCarriage water return flowY means the carriage water which is returned to a receiving water after separation of the dredged material from the carriage water in a disposal, rehandling or treatment facility.

c8d XConnecting waterwaysY means a portion of a navigable lake or stream which is directly joined to Lake Michigan or Lake Superior and which contains a navigation channel providing

access for commercial or recreational watercraft to Lake Michigan or Lake Superior.

c9d XContaminationY means a solid, liquid or gaseous material, microorganism, noise, heat, odor, or radiation, alone or in any combination, that may harm the quality of the environment in any way.

c10d XContractY means a binding written agreement between the department and a dredging applicant authorizing the removal of material from the bed of a natural navigable lake or outlying water.

c11d XDepartmentY means the department of natural resources

c12d XDisposal facilityY means a site or facility for the disposal of dredged material.

c13d XDredged materialY means any material removed from the bed of any waterway by dredging.

c14d XDredgingY means any part of the process of the removal of material from the beds of waterways; transport of the material to a disposal, rehandling or treatment facility; treatment of the material; discharge of carriage or interstitial water; and disposal of the material.

c15d XGrain size analysisY means a method to determine dredged material and disposal site sediment particle size distribution.

c16d XHazardous wasteY, as defined in s. 291.01 c7d, Stats., means any solid waste identified as a hazardous waste under ch. NR 661.

c17d XInterstitial waterY means water contained in the interstices or voids of soil or rock in the dredged material.

c18d XLimit of detectionY means the lowest concentration level that can be determined to be statistically different from a blank sample for that analytical test method and sample matrix.

c19d XLimit of quantitationY cLOQd means the concentration of an analyte at which one can state with a stated degree of confidence for that analytical test method and sample matrix that an analyte is present at a specific concentration in the sample tested.

c20d XParent materialY means the native unconsolidated material which overlies the bedrock.

c21d XPCBsY means those materials defined in s. 299.45 c1d cad, Stats.

c22d XParticle size distributionY means a cumulative frequency distribution or frequency distribution of percentages of particles of specified diameters in a sample.

c23d XRehandling facilityY means a temporary storage site or facility used during the transportation of dredged material to a treatment or disposal facility.

c24d XTreatment facilityY in this chapter means a natural or

artificial confinement facility used for the separation of dredged material solids from the interstitial or carriage water.

c25d XUpland disposalY means the disposal of dredged materials landward from the ordinary high-water mark of a waterway or waterbody.

History: Cr. Register, February, 1989, No. 398, eff. 3-1-89; correction in c16d made under s. 13.93 c2md cbd 7., Stats., Register, October, 1995, No. 478; correction in c16d made under s. 13.93 c2md cbd 7., Stats., Register May 2013 No. 689.

NR 347.04 Permits, approvals and reviews required. c1d The following are the permit, approval and review requirements for dredging projects:

cad Except where otherwise provided by law, all private and municipal dredging projects require a permit or contract under s. 30.20, Stats., and ch. NR 346. Dredging in portions of the Mississippi, St. Croix and Black rivers by the U.S. army corps of engineers is governed by s. 30.202, Stats.

cbd All dredging projects require review under ch. 289, Stats., and chs. NR 500 to 520 for disposal of dredged material under the solid waste management program.

ccd All dredging projects shall be reviewed under ss. 1.11 and 23.11 c5d, Stats., and ch. NR 150 for compliance with the Wisconsin environmental policy act.

cdd All federally funded, permitted or sponsored dredging projects require water quality certification under ss. 281.11 to 281.36 c12d and 283.001, Stats., and ch. NR 299.

ced A Wisconsin pollutant discharge elimination system cW-PDESd permit under ch. 283, Stats., is required for dredging projects with carriage water return flows to surface water or groundwater.

cf Plan approval under s. 281.41, Stats., is required for dredging projects which include a dredged material treatment facility.

cg Sites and facilities for the disposal of hazardous waste and PCBs require review under subch. IV of ch. 291, Stats., and s. 299.45, Stats., and chs. NR 500 to 520 and 660 to 670.

c2d The project application process shall be coordinated by the department. Except as otherwise provided by law, decisions on all applicable department approvals, permits, contracts and licenses relating to a dredging project shall be made concurrently and with the decision on:

cad Water quality certification under ch. NR 299 for all federally funded, permitted or sponsored projects, or

cbd Permit or contract under s. 30.20, Stats., and ch. NR 346 for all other projects.

History: Cr. Register, February, 1989, No. 398, eff. 3-1-89; corrections in c1d made under s. 13.93 c2md cbd 7., Stats., Register, October, 1995, No. 478; corrections in c1d cbd, cdd, ced, cf, and cg made under s. 13.93 c2md cbd 7., Stats., Register January 2002 No. 553; corrections in c1d cdd, cg made under s. 13.93 c2md cbd 7., Stats., Register May 2013 No. 689.

NR 347.05 Preliminary application and analytical requirements. c1d Prior to submission of a formal application, anyone seeking to remove material from the beds of waterways shall provide the department with preliminary information including:

cad Name of waterbody and location of project;

cbd Volume of material to be dredged;

ccd Brief description of dredging method and equipment;

cdd Brief description of proposed disposal method and location and, if a disposal facility is to be used, size of the disposal facility;

ced Any previous sediment sampling including field observations and analysis data from the area to be dredged or from the proposed disposal site;

cf Copy of a map showing the area to be dredged, the depth of cut, the specific location of the proposed sediment sampling sites and the bathymetry of the area to be dredged; and

cg Anticipated starting and completion dates of the proposed project.

c2d An initial evaluation shall be conducted by the department within 30 business days after receipt of the information under sub. c1d to determine if there is reason to believe that the material proposed to be dredged is contaminated. This initial evaluation shall be used by the department in specifying sediment sampling and analysis requirements to the applicant under s. NR 347.06 and shall be accomplished with existing data. Factors which shall be considered by the department in its evaluation of the dredging site and, if appropriate the disposal site, include, but are not limited to, the following:

cad Potential that contaminants may be present. Potential routes that may have introduced contaminants into the dredging site shall be identified by examining appropriate maps, aerial photographs, or other graphic materials that show surface watercourses and groundwater flow patterns, surface relief, proximity to surface and groundwater movement, private and public roads, location of buildings, agricultural land, municipal and industrial sewage and stormwater outfalls, etc., or by making supplemental field inspections.

cbd Previous tests of the material at the dredging site or from other projects in the vicinity when there are similar sources and types of contaminants, water circulation and stratification, accumulation of sediments, general sediment characteristics, and potential for impact on the aquatic environment, as long as nothing is known to have occurred which would render the comparisons inappropriate.

ccd The probability of past introduction of contaminants from land runoff.

cdd Spills of toxic or hazardous substances.

ced Introduction of contaminants from point sources.

cf Source and previous use of materials used or proposed to be used as fill.

cg Natural deposits of minerals and other natural substances.

ch Any other relevant information available to the department.

History: Cr. Register, February, 1989, No. 398, eff. 3-1-89.

NR 347.06 Sampling and analysis. Upon completion of the initial evaluation, the department shall establish sampling and analysis requirements.

c1d EXCEPTION. Except as provided in subs. c3d cad and c6d, the applicant shall collect and analyze data on sediments to be dredged in the manner outlined in this section.

c2d CORRECT METHODS. Unless otherwise specified, sampling, sample handling and sample analysis to demonstrate compliance with this section shall be in accordance with methods from applicable sources enumerated in ch. NR 149.

c3d NUMBER OF SAMPLES. cad Sediment sampling may be waived by the department if it determines from its review of available information under s. NR 347.05 c2d that sediment contamination is unlikely.

cbd If available information is either insufficient to determine the possibility for sediment contamination, or shows a possibility for sediment contamination, the department shall require the applicant to collect sufficient samples to describe the chemical, physical and biological properties of the sediment. The exact number and location of sediment samples required and analyses to be conducted shall be specified by the department, in consulta-

tion with the applicant, based on the initial evaluation and on other factors including, but not limited to, the potential for possibility of contamination, volume and aerial extent of material to be dredged, depth of cut and proposed method of disposal.

ccd For a project involving the disposal of dredged material at an upland disposal site, the department may require samples to be taken from the proposed disposal site and analyzed for parameters found to be elevated in the dredged material sediment samples. The number and location of disposal site samples required shall be specified by the department based on the size and other characteristics of the site.

cdd For a project to be conducted in the Great Lakes with beach nourishment disposal, at least one sample every 250 linear feet of beach with a minimum of 2 samples shall be taken from the proposed beach nourishment disposal site and analyzed for particle size and color. Core or grab samplers may be used.

c4d METHOD OF TAKING SAMPLES. cad All samples shall be taken with a core sampler except as provided in sub. [c3d cdd](#). The department may approve other sampling methods if it finds them to be appropriate.

cbd All sampling equipment shall be properly cleaned prior to and following each sample collection.

ccd Samples collected for PCB, pesticide and other organic analyses shall be collected and processed using metallic stainless steel preferred liners, tubs, spoons and spatulas. Samples collected for other chemical analysis, including heavy metals, shall be collected and processed using non-metallic liners, tubs, spoons and spatulas.

cdd Core samples from the dredging site shall be taken to the proposed dredging depth plus 2 feet.

ced Core samples shall be visually inspected for the existence of strata formation, and a written description including position, length, odor, texture and color of the strata shall be provided to the department.

c5d SAMPLE HANDLING AFTER COLLECTION AND PRIOR TO ANALYSIS. Sample handling and storage prior to analysis shall be in accordance with the maximum holding times and container types given in table F of ch. [NR 219](#). Samples shall be preserved at the time of collection by cooling to 4vC.

c6d ANALYSES TO BE PERFORMED ON SEDIMENT SAMPLES. Analyses shall be done in accordance with methods from applicable sources enumerated in ch. [NR 149](#). Analyses submitted to the department under this chapter shall be done by a laboratory certified or registered under ch. [NR 149](#).

cad Samples shall be analyzed from each distinct layer observed in the material to be dredged. If no strata formation exists, core samples shall be divided into 2-foot segments, and each segment shall be analyzed for the required chemicals and characteristics. For cores extending into parent material, analysis of only the top 2-foot segment of parent material is required. The department may approve other subsampling methods if it finds them to be appropriate.

cbd All samples shall be analyzed for those parameters listed in table 1 unless waived by the department as provided in par. [cdd](#). Elutriate testing may be required for all chemicals listed in Table 1 unless waived by the department as provided in par. [cdd](#).

ccd If previous sampling data or other adequate available information indicates the possibility of contamination by chemicals not listed in table 1, the department may require analysis for those chemicals.

cdd If previous sampling data or other adequate available information demonstrates that the possibility of contamination is negligible, analysis for any chemical may be waived, in writing, by the department.

ced The department may require additional samples and analyses as specified by law or for other appropriate reasons.

TABLE 1
ANALYSES TO BE PERFORMED ON SEDIMENT SAMPLES

	GREAT LAKES	INLAND WATERS
PCB cTotald	X	X
Total 2,3,7,8 TCDD	X	X
Total 2,3,7,8 TCDF	X	X
	GREAT LAKES	INLAND WATERS
Aldrin	X	X
Dieldrin	X	X
Chlordane	X	X
Endrin	X	X
Heptachlor	X	X
Lindane	X	X
Toxaphene	X	X
DDT	X	X
DDE	X	X
Arsenic	X	X
Barium	X	X
Cadmium	X	X
Chromium	X	
Copper	X	X
Cyanide	X	
Iron	X	
Lead	X	X

Manganese	X	
Mercury	X	X
Nickel	X	X
Selenium	X	X
Zinc	X	X
Oil and Grease	X	X
NO ² , NO ³ , NH ³ -N, TKN	X	X
Total P	X	X
Grain-size	X	X
Percent Solids	X	X
Total Organic Carbon	X	X
Moisture Content	X	X
Settleability	X	X
cif return water		

History: Cr. Register, February, 1989, No. 398, eff. 3-1-89; am. c5d and c6d cintro.d, Register, November, 1992, No. 443, eff. 12-1-92.

NR 347.07 Review procedures and review criteria.

c1d When sediment sampling and analyses have been completed, the applicant shall submit a copy of the testing report to the department. This report shall include raw data for all analyses, a map of the project area showing the specific locations of sediment sampling sites and the name and address of the laboratory which performed the tests. All testing and quality control procedures shall be described and analytical methods, detection limits and quantification limits shall be identified.

c2d The department shall review the information submitted under sub. **c1d** within 30 business days after receipt and determine the applicable statutory and administrative rule provisions and any additional information required from the applicant under this section.

c3d Based on the submitted testing report the department may after consultation with the applicant require additional sediment sampling and analyses when there is evidence of contamination.

c4d For projects in the Great Lakes involving beach nourishment disposal, grain-size analysis results of the proposed dredged material and the beach shall be compared by the department.

cad The department may allow beach nourishment disposal if:

1. The average percentage of silt plus clay (material passing a y200 sieve or less than .074 mm dia.d in the dredged material does not exceed the average percentage of silt plus clay in the existing beach by more than 15% and the color of the dredged material does not differ significantly from the color of the beach material.

Note: For example, if the silt plus clay content of the existing beach is 10%, suitable dredged material must have a silt plus clay content of less than 25%.

2. The criteria of any general permit regulating wastewater discharges under the Wisconsin pollutant discharge elimination system is not exceeded.

c5d For all projects where upland disposal is required or planned, the results of sediment sampling and analysis shall be compared by the department to the solid waste disposal standards and criteria specified in chs. NR 500 to 520.

c6d If the bulk sediment analysis criteria in sub. **c4d** is exceeded, the applicant shall have the option of demonstrating to the department through use of bioassay, or other methods approved by the department, that the dredging and sediment disposal operations will have minimum effects on the environment.

History: Cr. Register, February, 1989, No. 398, eff. 3-1-89; correction in c5d made under s. 13.93 c2md cbd 7., Stats., Register, October, 1995, No. 478.

NR 347.08 Monitoring, reporting and enforcement.

c1d SURVEILLANCE. **cad** The permittee shall contact the department 5 business days prior to the commencement of dredging to provide an opportunity for the department to review all required environmental safeguards to ensure they are in place and operable.

cbd The department may inspect the dredging project at any time during operation to determine whether requirements of permits and approvals are being met or to conduct effluent sampling.

c2d MONITORING. **cad** For those projects authorized in part by a WPDES permit, monitoring, analyses and reporting shall be performed as specified in the WPDES permit.

cbd For all other projects, monitoring, analyses and reporting shall be performed as specified in ss. NR 347.06 c2d and 347.07 c1d.

ccd Project characteristics to be monitored may include, but are not limited to, carriage water return flow, total suspended solids, dissolved oxygen concentrations, effluent and receiving water temperatures, receiving stream flow rates, effluent ammonia-nitrogen concentrations, and pH.

c3d SUSPENSION OF WORK. If the department determines that project performance is not in compliance with permit or contract conditions, the permittee shall suspend work upon written notification from the department. This shall be a condition of any permit or contract issued by the department. The permittee shall be accorded an opportunity for hearing in accordance with s. 227.51 c3d, Stats. The issuance of a suspension order under this subsection shall not limit other enforcement actions or penalties. The department and permittee shall analyze operational deficiencies and the department shall prescribe changes necessary to bring project operation into conformance with permit or contract conditions.

c4d PENALTIES. **cad** Each violation of the conditions of a permit or contract issued under s. 30.20, Stats., or this chapter, may result in a forfeiture of not less than \$100 nor more than \$10,000 for the first offense and shall forfeit not less than \$500 nor more than \$10,000 upon conviction of the same offense a second or subsequent time. The permit or contract may be rescinded and appropriate restoration orders may be issued as authorized by ss. 23.79, 30.03, 30.12, 30.15, 30.20, 30.292, 30.294 and 30.298, Stats.

cbd The enforcement provisions of s. 283.91, Stats., shall apply to any violations of WPDES permits associated with dredging projects.

ccd The enforcement provisions of ss. 289.97 and 299.97,

Stats., and chs. [NR 500](#) to [520](#) shall apply to violations of solid waste management approvals for this chapter.

cdd The enforcement provisions of ss. [291.95](#) and [291.97](#), Stats., shall apply to violations of any hazardous waste approvals

for disposal activities associated with dredging projects authorized by this chapter.

History: Cr. [Register, February, 1989, No. 398](#), eff. 3-1-89; corrections in c4d made under s. 13.93 c2md cbd 7., Stats., [Register, October, 1995, No. 478](#); corrections in c4d cbd to cdd made under s. 13.93 c2md cbd 7., Stats., [Register January 2002 No. 553](#).