



# **Substantive Requirements of a**

## **WPDES PERMIT**

(WI-0062936-01-0)

### **For the Sheboygan River Superfund Site Discharge From Dredging Contaminated Sediment to the Sheboygan River**

March 30, 2006

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## 1 Surface Water Requirements

### 1.1 Sampling Point(s)

The discharge(s) shall be limited to the waste type(s) designated for the listed sampling point.

<b>Sampling Point Designation</b>	
<b>Sampling Point Number</b>	<b>Sampling Point Location, WasteType/Sample Contents and Treatment Description</b>
001	Treated wastewater resulting from dredging contaminated sediments from the Sheboygan River consisting of water draining from geotextile tubes containing sediment mixed with polymer, stormwater and any equipment decontamination water treated by sand filtration and activated carbon prior to discharge to the Sheboygan River.

### 1.2 Monitoring Requirements and Effluent Limitations

Monitoring requirements and limitations shall be complied with as follows.

#### 1.2.1 Sampling Point (Outfall) 001 - Treated WW from Sediment Dredging

<b>Monitoring Requirements and Effluent Limitations</b>					
<b>Parameter</b>	<b>Limit Type</b>	<b>Limit and Units</b>	<b>Sample Frequency</b>	<b>Sample Type</b>	<b>Notes</b>
Flow Rate		MGD	Daily	Continuous	
Suspended Solids, Total	Daily Max	10 mg/L	Daily	24 Hr Comp	
Suspended Solids, Total	Monthly Avg	5 mg/L	Daily	24 Hr Comp	
PCB Total	Daily Max	Nondetectable µg/L	Daily	24 Hr Comp	The limit for Total PCB is nondetectable using test method SW 846 8081 (expected detection levels of 0.2 to 0.5 µg/L)
Mercury, Total Recoverable			Weekly	Grab	See 1.2.2.2 for analytical and reporting requirements. See 1.2.2.3 below for mercury performance expectations.
BOD <sub>5</sub> , Total	Monthly Avg	See 1.2.2.1 below	Once per 2 weeks after the first month	24 Hr Comp	See 1.2.2.1 for more frequent monitoring during the first month and limits
pH Field		su	Monthly	Grab	
Acute WET		TU <sub>a</sub>	Annual	24 Hr Comp	An Acute WET Test shall be conducted within the first week after full scale discharge begins

## 1.2.2 Outfall 001 Additional Startup Monitoring

The following parameters shall be monitored once during the first week after initiating full scale discharge except as otherwise approved using 24 hour composite samples (except a grab sample is needed for Cr<sup>+6</sup>). Continued effluent monitoring shall be conducted every two weeks for parameters which have detectable results greater than one fifth of the lowest limit presented in the table below. Results of additional parameters tested separately or available from test methods used (metals (ICAP), PAHs and pesticide (scans)) shall also be reported.

Parameter	Limits Corresponding to Criteria : All Values in ug/l Unless Noted				
	ATC Daily Max	CTC Weekly Avg	WC Monthly Avg	HTC Monthly Avg	HCC Monthly Avg
Arsenic, Total Recoverable	680	486			50
Cadmium , Total Recoverable	76	12.2		160	
Chromium <sup>+6</sup>	32	35.07		2236	
Copper, Total Recoverable	89	100.8			
Manganese , Total Recoverable					
Chlordane					0.00192
Dieldrin	0.48	0.176		0.00271	4.31 x10 <sup>-5</sup>
Endrin	0.172	0.23			
Anthracene (Sec Value)	0.92	0.096		22,000	
Benzo(a)pyrene (Sec Value)	0.76	0.064		0.55 ng/l	
Fluoranthene (Sec Value)	15.8	7.35			
Phenanthrene (Sec Value)	76	6.71			
Fluorene (Sec Value)	116	10.2		1050	
Naphthalene (Sec Value)	688	61.1		6970	
Pyrene (Sec Value)	180	24.9		2010	
4,4'-DDT			5.8 x10 <sup>-5</sup>	1.41 x10 <sup>-2</sup>	1.04 x10 <sup>-3</sup>
4,4'-DDD			5.8 x10 <sup>-5</sup>		
4,4'-DDE			5.8 x10 <sup>-5</sup>		
Nitrogen, Ammonia (NH <sub>3</sub> -N) Total	11.2 mg/L for estimated effluent pH of 8.2 s.u. (varies with pH )				

### 1.2.2.1 BOD<sub>5</sub> Monitoring and Limits

Monitoring for BOD<sub>5</sub> shall be a minimum of 2 times per week for the first month after full scale discharge begins and every two weeks thereafter. Monthly average technology based limits for BOD<sub>5</sub> will be specified between 5 mg/L and 30 mg/L except as otherwise determined to be appropriate based on less restrictive water quality based limits within 1 month after full scale operation begins by notification from the Department based on performance of the treatment train.

### 1.2.2.2 Reporting of Influent Monitoring

Results of influent monitoring to the treatment train for TSS, PCBs and mercury completed in accordance with the workplan for the project (reference Sheboygan Upper River Phase II remedial action work plan) and any other influent monitoring conducted shall be reported.

### 1.2.2.3 Mercury Monitoring

- All mercury samples shall be collected and analyzed according to the data quality requirements of ss. NR 106.145(9) and (10), Wisconsin Administrative Code. The limit of quantitation (LOQ) used for the effluent and field blank shall be less than 1.3 ng/L, unless the samples are quantified at levels above 1.3 ng/L. At least one mercury field blank shall be collected for each set of mercury samples (a set of samples may include combinations of intake, influent, effluent or other samples all collected on the same day). Results of samples and field blanks shall be reported to the Department on Discharge Monitoring Reports.
- Mercury analytical results shall be determined with an expedited lab turnaround of 5 working days, unless otherwise approved.

### 1.2.2.4 Mercury Performance Expectations

Performance expectations for effluent quality from the wastewater treatment train include mercury results between non detectable at levels of 0.2 to 0.5 ng/L (reference performance expectations set for the current Fox River Sediment Cleanup Projects) up to a monthly average of mercury results of 1.3 ng/L.

- If the mercury performance expectations above are consistently achieved using valid data for the first 4 weeks of effluent monitoring for full scale operations, the mercury monitoring frequency may be reduced from weekly to every 2 weeks.
- If the mercury performance expectations above are not consistently being achieved, a report evaluating mercury data compared to the performance expectations above shall be submitted after 6 weeks of effluent monitoring for full scale operations are available, unless otherwise agreed by the Department in consultation with US EPA. The report should include a summary of any actions that may have been taken to date to improve operation and maintenance of the treatment train and an evaluation of alternatives to meet performance expectations as additional improvements in operation and maintenance of the treatment train or dredging operations or addition of cost effective treatment technology. The report may also request a reduction in the frequency of mercury monitoring if appropriate by submitting a rationale and justification including considerations related to mercury data close to the performance expectations; evaluation of effluent variability; evaluation of any data not meeting qa/qc requirements; and evaluation of other appropriate factors (such as influent mercury levels, mercury removals in the treatment train, etc.).

### 1.2.2.5 Whole Effluent Toxicity (WET) Testing

**Primary Control Water:** Sheboygan River

**Dilution series:** At least five effluent concentrations and dual controls must be included in each test.

- **Acute:** 100, 50, 25, 12.5, 6.25% and any additional selected.

**WET Testing Frequency:** Tests are required during the following quarters.

- **Acute:** Within the first week after full scale discharge begins

**Reporting:** Test results shall be reported on the Discharge Monitoring Report form, and the "Whole Effluent Toxicity Test Report Form" (Section 6, "*State of Wisconsin Aquatic Life Toxicity Testing Methods Manual, 2<sup>nd</sup> Edition*"), shall also be completed for each test. The original, complete, signed version of the Whole Effluent Toxicity Test Report Form shall be sent to the Biomonitoring Coordinator, Bureau of Watershed Management, 101 S. Webster St., P.O. Box 7921, Madison, WI 53707-7921, within 45 days of test completion. The original Discharge Monitoring Report (DMR) form and one copy shall be sent to the contact and location provided on the DMR by the required deadline.

**Determination of Positive Results:** An acute toxicity test shall be considered positive if the Toxic Unit - Acute ( $TU_a$ ) is greater than 1.0 for either species. The  $TU_a$  shall be calculated as follows: If  $LC_{50} \geq 100$ , then  $TU_a = 1.0$ . If  $LC_{50}$  is  $< 100$ , then  $TU_a = 100 \div LC_{50}$ .

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**Additional Testing Requirements:** Within 90 days of a test which showed positive results, the results of at least 2 retests shall be submitted to the Biomonitoring Coordinator on "Whole Effluent Toxicity Test Report Forms". The retests shall be completed using the same species and test methods specified for the original test (see the Standard Requirements section herein).

## 2 Standard Requirements

**NR 205, Wisconsin Administrative Code (Conditions for Industrial Dischargers):** The conditions in ss. NR 205.07(1) and NR 205.07(3), Wis. Adm. Code, are included by reference in this substantive requirements of a permit. The responsible party shall comply with all of these requirements. Some of these requirements are outlined in the Standard Requirements section of this substantive requirements of a permit document. Requirements not specifically outlined in the Standard Requirement section of this substantive requirements of a permit document can be found in ss. NR 205.07(1) and NR 205.07(3).

### 2.1 Reporting and Monitoring Requirements

#### 2.1.1 Monitoring Results

Monitoring results obtained during the previous month shall be summarized and reported on a Department Wastewater Discharge Monitoring Report Form. This report form is to be returned to the Department no later than the date indicated on the form. The original and one copy of the Wastewater Discharge Monitoring Report Form shall be submitted to your DNR regional office. A copy of the Wastewater Discharge Monitoring Report Form shall be retained by the responsible party.

If the responsible party monitors any pollutant more frequently than required by this substantive requirements of a permit document, the results of such monitoring shall be included on the Wastewater Discharge Monitoring Report Form.

The responsible party shall comply with all limits for each parameter regardless of monitoring frequency. For example, monthly, weekly, and/or daily limits shall be met even with monthly monitoring. The responsible party may monitor more frequently than required for any parameter.

Monitoring reports shall be signed by a principal executive officer, a ranking elected official, or other duly authorized representative.

#### 2.1.2 Sampling and Testing Procedures

Sampling and laboratory testing procedures shall be performed in accordance with Chapters NR 218 and NR 219, Wis. Adm. Code and shall be performed by a laboratory certified or registered in accordance with the requirements of ch. NR 149, Wis. Adm. Code. Groundwater sample collection and analysis shall be performed in accordance with ch. NR 140, Wis. Adm. Code. The analytical methodologies used shall enable the laboratory to quantitate all substances for which monitoring is required at levels below the effluent limitation. If the required level cannot be met by any of the methods available in NR 219, Wis. Adm. Code, then the method with the lowest limit of detection shall be selected. Additional test procedures may be specified in this substantive requirements of a permit document.

#### 2.1.3 Recording of Results

The responsible party shall maintain records which provide the following information for each effluent measurement or sample taken:

- the date, exact place, method and time of sampling or measurements;
- the individual who performed the sampling or measurements;
- the date the analysis was performed;
- the individual who performed the analysis;
- the analytical techniques or methods used; and
- the results of the analysis.

#### 2.1.4 Reporting of Monitoring Results

The responsible party shall use the following conventions when reporting effluent monitoring results:

- Pollutant concentrations less than the limit of detection shall be reported as < (less than) the value of the limit of detection. For example, if a substance is not detected at a detection limit of 0.1 mg/L, report the pollutant concentration as < 0.1 mg/L.
- Pollutant concentrations equal to or greater than the limit of detection, but less than the limit of quantitation, shall be reported and the limit of quantitation shall be specified.
- For the purposes of reporting a calculated result, average or a mass discharge value, the responsible party may substitute a 0 (zero) for any pollutant concentration that is less than the limit of detection. However, if the effluent limitation is less than the limit of detection, the department may substitute a value other than zero for results less than the limit of detection, after considering the number of monitoring results that are greater than the limit of detection and if warranted when applying appropriate statistical techniques.

### **2.1.5 Records Retention**

The responsible party 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 the substantive requirements of a permit document, and records of all data used to complete the application for the substantive requirements of a permit document for a period of at least 3 years from the date of the sample, measurement, report or application, except for sludge management forms and records, which shall be kept for a period of at least 5 years.

### **2.1.6 Other Information**

Where the responsible party becomes aware that it failed to submit any relevant facts in a substantive requirements of a permit application or submitted incorrect information in a substantive requirements of a permit application or in any report to the Department, it shall promptly submit such facts or correct information to the Department.

## **2.2 System Operating Requirements**

### **2.2.1 Noncompliance Notification**

- The responsible party shall report the following types of noncompliance by a telephone call to the Department's regional office within 24 hours after becoming aware of the noncompliance;
  - any noncompliance which may endanger health or the environment;
  - any violation of an effluent limitation resulting from an unanticipated bypass;
  - any violation of an effluent limitation resulting from an upset; and
  - any violation of a maximum discharge limitation for any of the pollutants listed by the Department in the substantive requirements of a permit document.
- A written report describing the noncompliance shall also be submitted to the Department's regional office within 5 days after the responsible party becomes aware of the noncompliance. On a case-by-case basis, the Department may waive the requirement for submittal of a written report within 5 days and instruct the responsible party to submit the written report with the next regularly scheduled monitoring report. In either case, the written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; the steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance; and if the noncompliance has not been corrected, the length of time it is expected to continue.

- The responsible party shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with substantive permit requirements.

NOTE: Section 292.11(2)(a), Wisconsin Statutes, requires any person who possesses or controls a hazardous substance or who causes the discharge of a hazardous substance to notify the Department of Natural Resources **immediately** of any discharge not authorized by the substantive requirements of a permit document. The discharge of a hazardous substance that is not authorized by this substantive requirements of a permit document or that violates this substantive requirements of a permit document may be a hazardous substance spill. To report a hazardous substance spill, call DNR's 24-hour HOTLINE at **1-800-943-0003**.

### 2.2.2 Unscheduled Bypassing

Any unscheduled bypass or overflow of wastewater at the treatment works or from the collection system is prohibited, and the Department may take enforcement action against a responsible party for such occurrences under s. 283.89, Wis. Stats., unless:

- The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
- The responsible party notified the Department as required in this Section.

Whenever there is an unscheduled bypass or overflow occurrence at the treatment works or from the collection system, the responsible party shall notify the Department within 24 hours of initiation of the bypass or overflow occurrence by telephoning the wastewater staff in the regional office as soon as reasonably possible (FAX, email or voice mail, if staff are unavailable).

In addition, the responsible party shall within 5 days of conclusion of the bypass or overflow occurrence report the following information to the Department in writing:

- Reason the bypass or overflow occurred, or explanation of other contributing circumstances that resulted in the overflow event. If the overflow or bypass is associated with wet weather, provide data on the amount and duration of the rainfall or snow melt for each separate event.
- Date the bypass or overflow occurred.
- Location where the bypass or overflow occurred.
- Duration of the bypass or overflow and estimated wastewater volume discharged.
- Steps taken or the proposed corrective action planned to prevent similar future occurrences.
- Any other information the responsible party believes is relevant.

### 2.2.3 Scheduled Bypassing

Any construction or normal maintenance which results in a bypass of wastewater from a treatment system is prohibited unless authorized by the Department in writing. If the Department determines that there is significant public interest in the proposed action, the Department may schedule a public hearing or notice a proposal to approve the bypass. Each request shall specify the following minimum information:

- proposed date of bypass;
- estimated duration of the bypass;
- estimated volume of the bypass;
- alternatives to bypassing; and

- measures to mitigate environmental harm caused by the bypass.

#### **2.2.4 Proper Operation and Maintenance**

The responsible party shall at all times properly operate and maintain all facilities and systems of treatment and control which are installed or used by the responsible party to achieve compliance with the conditions of this substantive requirements of a permit document. The wastewater treatment facility shall be under the direct supervision of a state certified operator as required in s. NR 108.06(2), Wis. Adm. Code. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training as required in ch. NR 114, Wis. Adm. Code, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the substantive requirements of a permit document.

#### **2.2.5 Spill Reporting**

The responsible party shall notify the Department in accordance with ch. NR 706 (formerly NR 158), Wis. Adm. Code, in the event that a spill or accidental release of any material or substance results in the discharge of pollutants to the waters of the state at a rate or concentration greater than the effluent limitations established in this substantive requirements of a permit document, or the spill or accidental release of the material is unregulated in this substantive requirements of a permit document, unless the spill or release of pollutants has been reported to the Department in accordance with s. NR 205.07 (1)(s), Wis. Adm. Code.

#### **2.2.6 Planned Changes**

In accordance with ss. 283.31(4)(b) and 283.59, Stats., the responsible party shall report to the Department any facility expansion, production increase or process modifications which will result in new, different or increased discharges of pollutants. The report shall either be a new application, or if the new discharge will not violate the effluent limitations of this substantive requirements of a permit document, a written notice of the new, different or increased discharge. The notice shall contain a description of the new activities, an estimate of the new, different or increased discharge of pollutants and a description of the effect of the new or increased discharge on existing waste treatment facilities. Following receipt of this report, the Department may modify this substantive requirements of a permit document to specify and limit any pollutants not previously regulated.

#### **2.2.7 Duty to Halt or Reduce Activity**

Upon failure or impairment of treatment facility operation, the responsible party shall, to the extent necessary to maintain compliance with its substantive requirements of a permit document, curtail production or wastewater discharges or both until the treatment facility operations are restored or an alternative method of treatment is provided.

### **2.3 Surface Water Requirements**

#### **2.3.1 Responsible party-Determined Limit of Quantitation Incorporated into this Substantive requirements of a permit document**

For pollutants with water quality-based effluent limits below the Limit of Quantification (LOQ) in this substantive requirements of a permit document, the LOQ calculated by the responsible party and reported on the Discharge Monitoring Reports (DMRs) is incorporated by reference into this substantive requirements of a permit document. The LOQ shall be reported on the DMRs, shall be the lowest quantifiable level practicable, and shall be no greater than the minimum level (ML) specified in or approved under 40 CFR Part 136 for the pollutant at the time this substantive requirements of a permit document was issued, unless this document specifies a higher LOQ.

### 2.3.2 Appropriate Formulas for Effluent Calculations

The responsible party shall use the following formulas for calculating effluent results to determine compliance with average limits and mass limits:

**Weekly/Monthly average concentration** = the sum of all daily results for that week/month, divided by the number of results during that time period.

**Weekly Average Mass Discharge (lbs/day):** Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the week.

**Monthly Average Mass Discharge (lbs/day):** Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the month.

### 2.3.3 Visible Foam or Floating Solids

There shall be no discharge of floating solids or visible foam in other than trace amounts.

### 2.3.4 Whole Effluent Toxicity (WET) Monitoring Requirements

In order to determine the potential impact of the discharge on aquatic organisms, static-renewal toxicity tests shall be performed on the effluent in accordance with the procedures specified in the "*State of Wisconsin Aquatic Life Toxicity Testing Methods Manual, 2<sup>nd</sup> Edition*" (PUB-WT-797, November 2004) as required by NR 219.04, Table A, Wis. Adm. Code). All of the WET tests required in this substantive requirements of a permit document, including any required retests, shall be conducted on the *Ceriodaphnia dubia* and fathead minnow species. Receiving water samples shall not be collected from any point in contact with the responsible party's mixing zone and every attempt shall be made to avoid contact with any other discharge's mixing zone.

### 2.3.5 Whole Effluent Toxicity (WET) Identification

In the event of serious or repeated toxicity, the responsible party may obtain approval from the Department to postpone retests in order to investigate the source(s) of toxicity. In order to postpone these tests, the responsible party must provide the following information to the Department in writing, within 30 days of the end of the test which showed a positive result:

- a description of the investigation to be used to identify potential sources of toxicity. Treatment efficiency, housekeeping practices, and chemicals used in operation of the facility should be included in the investigation.
- who will conduct a toxicity identification evaluation (TIE), if required.

Once the above investigation has been completed, the responsible party must conduct the postponed test(s) to demonstrate that toxicity has been reduced/eliminated.

### 3 Summary of Reports Due

FOR INFORMATIONAL PURPOSES ONLY

Description	Date	Page
Wastewater Discharge Monitoring Report Form	no later than the date indicated on the form	5

All submittals required by this permit shall be submitted to the Southeast Region - Plymouth, W5750 Woodchuck Lane, P.O. Box 408, Plymouth, WI 53073, and US EPA Region 5, project manager except as follows. Report forms shall be submitted to the address printed on the report form.