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WPDES PERMIT

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
PERMIT TO DISCHARGE UNDER THE
WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM

MURPHY OIL USA SUPERIOR REFINERY

is permitted, under the authority of Chapter 283, Wisconsin Statutes, to discharge from a facility
located at
STINSON AVENUE, SUPERIOR, WISCONSIN
to

Newton Creek

in accordance with the effluent limitations, monitoring requirements and other conditions set
forth in this permit.

The permittee shall not discharge after the date of expiration. If the permittee wishes to continue to discharge after this expiration date an application shall be filed for reissuance of this permit, according to Chapter NR 200, Wis. Adm. Code, at least 180 days prior to the expiration date given below.

State of Wisconsin Department of Natural Resources
For the Secretary

By _____
Russell Rasmussen
Director, Bureau of Watershed Management

Date Permit Signed/Issued

PERMIT TERM: EFFECTIVE DATE – January 1, 2005

EXPIRATION DATE – December 31, 2009

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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(s).

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
001	Treated process wastewater (excluding all catalytic reformer regeneration wastewater), cooling tower and boiler blowdown, water softener wastewater and process area stormwater runoff sampled after the activated sludge wastewater treatment system (except that a permit compliance schedule requires moving the sampling station to after a constructed wetland receiving activated sludge treated wastewater if and when the wetland would be used after an initial evaluation period) prior to discharge to Newton Creek
002	Stormwater sampled after a retention pond
003	Stormwater sampled after a retention pond
004	Outfall 004 limits and requirements apply only to periodic direct discharge of treated (via oil water separator) hydrostatic test water to Newton Creek sampled prior to discharge

1.2 Monitoring Requirements and Effluent Limitations

The permittee shall comply with the following monitoring requirements and limitations.

1.2.1 Sampling Point (Outfall) 001 - PROCESS WW OUTFALL

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
WATER QUALITY BASED LIMITS					
Flow Rate		MGD	Daily	Continuous	
BOD ₅ , Total	Monthly Avg	15 mg/L	5/Week	24-Hr Comp	
BOD ₅ , Total	Daily Max	30 mg/L	5/Week	24-Hr Comp	
Suspended Solids, Total	Monthly Avg	20 mg/L	Daily	24-Hr Comp	
Suspended Solids, Total	Daily Max	30 mg/L	Daily	24-Hr Comp	
Nitrogen, Ammonia (NH ₃ -N) Total	Monthly Avg	5.6 mg/L	5/Week	24-Hr Comp	Applies May thru September
Nitrogen, Ammonia (NH ₃ -N) Total	Daily Max	9.0 mg/L	5/Week	24-Hr Comp	
pH (Continuous)		s.u.	Daily	Continuous	See "Continuous pH Monitoring" in 1.2.1.3 for pH limits and allowed excursions
Dissolved Oxygen	Daily Min	4.0 mg/L	Daily	Grab	
Phosphorus, Total	Rolling 12 Month Avg	1.0 mg/L	2/Week	24-Hr Comp	
Temperature		deg F	2/Week	Grab	

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Chromium ⁺³	Weekly Avg	260 µg/L	Monthly	Calculated	See 1.2.1.7
Chromium ⁺³	Weekly Avg	0.98 lbs/day	Monthly	Calculated	See 1.2.1.7
Chromium ⁺⁶	Daily Max	32 µg/L	Monthly	Grab	
Chromium ⁺⁶	Daily Max	0.14 lbs/day	Monthly	Calculated	
Chromium ⁺⁶	Weekly Avg	11 µg/L	Monthly	Grab	
Chromium ⁺⁶	Weekly Avg	0.041 lbs/day	Monthly	Calculated	
Chloride	Weekly Avg	810 mg/L	2/Week	24-Hr Comp	
Mercury, Total Recoverable		ng/L	Monthly	Grab	See 1.2.1.1 for additional mercury requirements
Acute WET	Daily Max	1.0 TU _a	Quarterly	24-Hr Comp	See 1.2.1.4 for detailed WET requirements
Chronic WET		rTU _c	Quarterly	24-Hr Comp	See 1.2.1.4 for detailed WET requirements
CATEGORICAL LIMITS					See 1.2.1.5 for compliance determination requirements for Categorical Limits
Oil & Grease (Hexane)	Daily Max	167 lbs/day	Daily	Grab	
Oil & Grease (Hexane)	Monthly Avg	89 lbs/day	Daily	Calculated	
COD	Daily Max	4116 lbs/day	2/Week	24-Hr Comp	
COD	Monthly Avg	2136 lbs/day	2/Week	Calculated	
Sulfur, as Sulfide	Daily Max	3.62 lbs/day	2/Week	Grab	
Sulfur, as Sulfide	Monthly Avg	1.61 lbs/day	2/Week	Calculated	
Phenols, Total	Daily Max	4.85 lbs/day	2/Week	24-Hr Comp	
Phenols, Total	Monthly Avg	1.34 lbs/day	2/Week	24-Hr Comp	
Chromium ⁺⁶	Monthly Avg	0.13 lbs/day	Monthly	Calculated	See 1.2.1.6
Chromium, Total Recoverable	Daily Max	4.51 lbs/day	Monthly	24-Hr Comp	
Chromium, Total Recoverable	Monthly Avg	1.57 lbs/day	Monthly	Calculated	
ADDITIONAL EFFLUENT MONITORING					
Arsenic, Total Recoverable		µg/L	1/ 6 Months	24-Hr Comp	
Cadmium, Total Recoverable		µg/L	1/ 6 Months	24-Hr Comp	
Copper, Total Recoverable		µg/L	1/ 6 Months	24-Hr Comp	
Cyanide, Amenable		µg/L	1/ 6 Months	Grab	
Lead, Total Recoverable		µg/L	1/ 6 Months	24-Hr Comp	
Nickel, Total Recoverable		µg/L	1/ 6 Months	24-Hr Comp	

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Selenium, Total Recoverable		µg/L	Quarterly	24-Hr Comp	
Silver, Total Recoverable		µg/L	1/ 6 Months	24-Hr Comp	
Zinc, Total Recoverable		µg/L	1/ 6 Months	24-Hr Comp	
Hardness, Total as CaCO ₃		mg/L	1/ 6 Months	24-Hr Comp	
PAHs		µg/L	1/ 6 Months	24-Hr Comp	See 1.2.1.8 for PAH compounds
BHC alpha		µg/L	Once	24-Hr Comp	See 1.2.1.9 for detailed requirements
Chlordane		µg/L	Once	24-Hr Comp	See 1.2.1.9 for detailed requirements
4,4'-DDT		µg/L	Once	24-Hr Comp	See 1.2.1.9 for detailed requirements
4,4'-DDE		µg/L	Once	24-Hr Comp	See 1.2.1.9 for detailed requirements
Dieldrin		µg/L	Once	24-Hr Comp	See 1.2.1.9 for detailed requirements
Heptachlorepoxyde		µg/L	Once	24-Hr Comp	See 1.2.1.9 for detailed requirements
Hexachlorobenzene		µg/L	Once	24-Hr Comp	See 1.2.1.9 for detailed requirements
Octachlorostyrene		µg/L	Once	24-Hr Comp	See 1.2.1.9 for detailed requirements
PCB Total		µg/L	Once	24-Hr Comp	See 1.2.1.9 for detailed requirements
Dioxin, 2,3,7,8-TCDD		ng/L	Once	24-Hr Comp	See 1.2.1.9 for detailed requirements
Toxaphene		µg/L	Once	24-Hr Comp	See 1.2.1.9 for detailed requirements

1.2.1.1 Mercury Monitoring

The permittee shall collect and analyze all mercury samples according to the data quality requirements of ss. NR 106.145(9) and (10), Wisconsin Administrative Code. The permittee shall collect a mercury field blank for each mercury sampling event (day when samples for mercury are collected). The permittee shall report results to the Department on Discharge Monitoring Reports (DMRs) for effluent samples (DMR Outfall 001) and field blanks (DMR designated Sample Point 105). Results of any voluntary intake water monitoring for mercury determined to be appropriate by the permittee shall also be reported (using DMR Sample Point 701).

1.2.1.2 Reduced Mercury Monitoring

After generating at least 12 mercury results that meet the data quality requirements of ss. NR 106.145(9) and (10), Wis. Adm. Code, the permittee may apply for a permit modification to reduce the monthly monitoring frequency.

Under the authority of s. NR 106.145(3)(a)(6), Wis. Adm. Code, the Department may initiate the permit modification process to reduce the monitoring frequency from monthly to once every 3 months.

1.2.1.3 Continuous pH Monitoring

Whenever continuous pH monitoring is specified, the permittee shall maintain the pH of this wastewater within the range of 6.0 to 9.0 s.u. except, pursuant to ss. NR 205.06 and NR 102.05(3)(h), Wis. Adm. Code, excursions from the limits are permitted subject to the following conditions.

The total time during which the pH values are outside the required range shall not exceed 446 minutes in any calendar month.

No individual excursion from the range shall exceed 60 minutes.

No individual excursions shall be outside the range of 4.0 to 11.0 s.u., inclusive.

On a daily basis, the permittee is required to report the total time the pH limits are exceeded and the number of times any individual excursion exceeds 60 minutes in duration or is outside the range of 4.0 to 11.0 s.u., inclusive.

1.2.1.4 Whole Effluent Toxicity (WET) Testing

Primary Control Water: Lake Superior water outside Lake Superior Bay or reconstituted laboratory water

Instream Waste Concentration: 22%

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

- **Acute:** Quarterly through out permit term.
- **Chronic:** Quarterly through out permit term.

Chronic Dilution Series: 88, 44, 22, 11, 5.5 % (and any additional dilutions selected by the permittee)

Reporting: The permittee shall report test results on the Discharge Monitoring Report form and shall also complete the "Whole Effluent Toxicity Test Report Form" (as required by the "*State of Wisconsin Aquatic Life Toxicity Testing Methods Manual*" - see 1.2.1.4 below for edition number), for each test. A copy of the Whole Effluent Toxicity Test Report Form shall be sent to the Biomonitoring Coordinator, WT/2, Bureau of Watershed Management, 101 S. Webster St., P.O. Box 7921, Madison, WI 53707-7921, within 45 days of test completion.

Test Acceptability Requirements: Acute and chronic tests shall be conducted according to the requirements found in the "State of Wisconsin Aquatic Life Toxicity Testing Methods Manual", as required in s. NR 219.04 (Table A) (see 1.2.1.4.1 below for edition number). Additional test acceptability requirements, as described in the "Data Validation Criteria Checklist" approved by the Department on July 28, 2004, are also required to be met in order for chronic tests to be acceptable. Chronic tests which the permittee feels are inconclusive or unacceptable must be reported to the Department, along with a detailed explanation as to why the permittee feels that results are questionable. Inconclusive and unacceptable tests will need to be repeated, as described in the "Data Validation Criteria Checklist".

Determination of Positive Results: An acute toxicity test shall be considered positive if the Toxic Unit – Acute (TU_a) is >1.0 for either species. The TU_a shall be calculated as follows: $TU_a = 100/LC_{50}$. An $LC_{50} \geq 100$ equals a TU_a of 1.0. A chronic toxicity test shall be considered positive if the Relative Toxic Unit - Chronic (rTU_c) is >1.0 for either species. The rTU_c shall be calculated as follows: $rTU_c = IWC/IC_{25}$. An $IC_{25} \geq IWC$ equals an rTU_c of 1.0.

Additional Testing Requirements: Within 90 days of an acute or chronic test which showed positive results, the permittee shall submit the results of at least 2 retests for the parameter (i.e., acute or chronic) which prompted the retest to the Biomonitoring Coordinator on "Whole Effluent Toxicity Test Report Forms". The retests shall be completed in accordance with the same requirements specified for the original test (see the Standard Requirements section herein).

1.2.1.4.1 WET Test Methods Manual Edition

At time of permit reissuance, Edition 1 of the Manual remains in effect. Murphy shall follow Edition 1, in conjunction with the approved Data Validation Criteria Checklist described in paragraph 1.2.1.4 above. DNR is in the process of updating state administrative rules to incorporate by reference the Second Edition of the manual; if those rule changes become effective during the term of this permit, Murphy shall follow Edition 2 after the effective date of any rule changes, along with the Data Validation Criteria Checklist.

1.2.1.5 Categorical Effluent Limit Mass Allowances For Contaminated Stormwater Runoff

The categorical effluent limit daily mass allowances listed below shall be given for the volume of process area runoff water treated in the main refinery process wastewater treatment facility and discharged through Outfall 001. The calculated stormwater runoff mass allowances (reported on DMR designated Sample Point 103 for the Daily Allowance and Sample Point 104 for the Monthly Allowance) shall be subtracted from the total effluent mass discharge prior to comparing the effluent mass to the categorical based effluent limitations listed in Table 1.2.1 above. Both the actual total effluent mass discharge and mass discharge adjusted for stormwater runoff allowance (on DMR designated Outfall 011 for Daily Max. and Outfall 021 for Monthly Avg.) shall be reported.

<u>Effluent Characteristic</u>	<u>Additional Allowances For Runoff</u>	
	<u>Daily Maximum</u> (lbs/1000 gal)	<u>Monthly Average</u> (lbs/1000 gal)
COD	3.0	1.5
Oil & Grease	0.13	0.067
Phenolic Compounds (4AAP)	0.0029	0.0014
Chromium, Total	0.0060	0.0035
Chromium, Hexavalent	0.00052	0.00023
pH	within the range of 6.0 to 9.0 s.u.	

The volume of process area runoff water treated in the main refinery process wastewater treatment facility and discharged on any day shall be computed as follows:

$$PARO = (RF + SM)(PA)(CF) \text{ where:}$$

- PARO = daily volume of process area runoff in gallons per day (gpd)
- RF + SM = daily amount of rainfall and/or snow melt in inches per day (in/d)
- PA = refinery process area of 4.9 acres or such other area (not to exceed 6.0 acres) as may be subsequently approved in writing by the Department
- CF = conversion factor of 27,152 gallons per acre-inch

The permittee shall report the following parameters on a total runoff event when the runoff allowance is claimed (on DMR designated Sample Point 102):

<u>Parameter</u>	<u>Units</u>
Total Daily amount of rainfall and/or snow melt	inches of water per day
Daily volume of process area runoff	MGD

1.2.1.6 Categorical Limit for Hexavalent Chromium

The categorical daily maximum limit for hexavalent chromium (0.29 lbs/day) is not included since it is less restrictive than the water quality based daily maximum limit of 32 µg/L and 0.14 lbs/day in Table 1.2.1 above.

1.2.1.7 Trivalent Chromium Determination

For purposes of compliance with this permit, the trivalent chromium concentration shall be determined from the difference of the total chromium and hexavalent chromium analysis.

1.2.1.8 PAHs, Total Compounds

The effluent concentration of PAHs, total compounds, shall be calculated as the sum of the individual effluent concentrations of chrysene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)pyrene, dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, phenanthrene and pyrene. Analysis shall be performed using EPA test method - SW-846 8310 (HPLC) or other approved test method with similar detection limits (as EPA Method 8270 GC/MS).

1.2.1.9 Bioaccumulating Substances

Monitoring for bioaccumulating substances referenced by this footnote in Table 1.2.1 above shall be monitored once during the fourth year of the permit and results included with the next permit reissuance application.

Notification shall be provided in accordance with Standard Requirements condition for Planned Changes, if the permittee becomes aware of discharge of any of the substances listed in Table 1.2.1 above as persistent bioaccumulating substances identified by this footnote, either through effluent monitoring or other determinations regarding production processes which generate this wastewater. The notification shall include the concentration of the substance and the probable cause of its presence. Within twelve months of becoming aware of a discharge of any of the substances, the permittee shall conduct a study on the sources of the persistent bioaccumulating toxic substances referenced to this footnote and report to the Department those activities which the permittee could conduct to reduce to the maximum extent practicable the discharge of these substances.

1.2.1.10 Quality Assurance/Quality Control Procedures

In performing any analysis required under this permit, the permittee may, at its option, utilize the following quality assurance/quality control procedures to verify analytical results and assist in the evaluation of false positives, whether due to laboratory analytical error or cross contamination of samples. If an analytical result is initially reported by the laboratory as equal to or greater than the limit of detection, the result may be deemed to be a "no-detect" if:

- reanalysis of two aliquots of the original sample extract or analysis of two aliquots of archived replicate samples, all of which comply with the allowable holding times and other quality assurance/quality control requirements, do not confirm the original results; or
- analysis of field, laboratory or trip blanks demonstrate potential contamination of the sample.

The results may be reported on the discharge monitoring report forms (DMR) as either the original result or as a "no-detect"; in either case, it shall be designated with an *. All data and quality assurance/quality control information, including the original result, if not listed on the DMR, shall be reported as a separate attachment to the DMR.

1.2.2 Sampling Point (Outfall) 002 - STORMWATER RUNOFF

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Monthly	Estimated	
Oil & Grease (Hexane)	Daily Max	30 mg/L	Weekly	Grab	
Oil & Grease (Hexane)	Monthly Avg	15 mg/L	Weekly	Grab	

1.2.3 Sampling Point (Outfall) 003 - STORMWATER RUNOFF

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Monthly	Estimated	
Oil & Grease (Hexane)	Daily Max	30 mg/L	Weekly	Grab	
Oil & Grease (Hexane)	Monthly Avg	15 mg/L	Weekly	Grab	

1.2.4 Sampling Point (Outfall) 004 - HYDROSTATIC TEST WATER

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Estimated	
Oil & Grease (Hexane)	Daily Max	15 mg/L	Daily	Grab	
Suspended Solids, Total	Daily Max	30 mg/L	Daily	Grab	
Suspended Solids, Total	Monthly Avg	20 mg/L	Daily	Grab	
Dissolved Oxygen	Daily Min	4.0 mg/L	Daily	Grab	
pH Field	Daily Max	9.0 su	Daily	Grab	
pH Field	Daily Min	6.0 su	Daily	Grab	

1.2.4.1 Hydrostatic Test Water

Outfall 004 requirements and limits apply only during periodic direct discharge of treated (via oil water separator) hydrostatic test water to Newton Creek excluding when hydrotest water is drained back to the ponds used to store water for firefighting. Discharge rates and locations shall be controlled to prevent erosion and the addition of sediment or turbidity to the receiving water. The discharge shall be observed and controlled by an onsite inspector to assure compliance with this requirement.

2 Schedules of Compliance

2.1 Chloride Target Value

Required Action	Date Due
Annual Chloride Progress Report: Submit an annual progress report that shall indicate which chloride source reduction measures have been implemented. Chloride reduction measures to be evaluated and reported on include but are not limited to: updates on chloride content in sources of crude oil; continued optimization of water softeners and evaluation of any cost effective advances in softening technology; updates on evaluation of reduction measures for existing and any new process sources; and evaluation of any effective flow equalization opportunities for chloride sources including during periods of high chloride content in crude oil. The report shall also include a calculated annual mass discharge of chloride based on monthly chloride sampling and flow data. Note that the interim limitation(s) of 810 mg/L as a Weekly Average remain enforceable until new enforceable limits are established in the next permit issuance. The first annual chloride progress report is to be submitted by the Date Due.	12/31/2005
Annual Chloride Progress Report #2: Submit an annual chloride progress report.	12/31/2006
Annual Chloride Progress Report #3: Submit an annual chloride progress report.	12/31/2007
Annual Chloride Progress Report #4: Submit an annual chloride progress report.	12/31/2008
Final Chloride Report: Submit a final report documenting the success in meeting the chloride target value, as well as the anticipated future reduction in chloride sources and chloride effluent concentrations. Note that the target value of 700 mg/L as a Weekly Average is the benchmark for evaluating the effectiveness of the chloride source reduction measures, but is not an enforceable limitation under the terms of this permit.	06/30/2009

2.2 Mercury Pollutant Minimization Program

The permittee shall implement a pollutant minimization program whenever, after the first 24 months of mercury monitoring, a mercury effluent limitation is necessary under the procedure in s. NR 106.145(2), Wis. Adm. Code.

Required Action	Date Due
Submit a Mercury Pollutant Minimization Program: The permittee shall develop and submit to the Department a plan for a cost-effective pollutant minimization program (PMP) that has as its goal the reduction of mercury for the purpose of maintaining the effluent at or below the water quality based effluent limitation or potential limitation. The PMP shall meet the requirements of s. NR 106.145(7), Wis. Adm. Code. Note: The Department will notify the permittee of acceptance of or comments on the proposed PMP. The permittee and the Department will then agree on what changes, if any will be made to the PMP. If the Department has not notified the permittee within 90 days of the Department's receipt of the PMP, the permittee may assume that the PMP has been accepted.	06/30/2007
Implement the Mercury Pollutant Minimization Program: The permittee shall implement the PMP as submitted or as amended by agreement of the permittee and the Department.	06/30/2008
Submit Annual Status Reports: The permittee shall submit to the Department an annual status report on the progress of the PMP as required by s. NR 106.145(7), Wis. Adm. Code. Submittal of	06/30/2009

<p>the first annual status report is required by the Date Due.</p> <p>Note: If the permittee wishes to apply for an alternative mercury effluent limitation, that application is due with the application for permit reissuance by 6 months prior to permit expiration. The permittee should submit or reference the PMP plan as updated by the Annual Status Report or more recent developments as part of that application.</p>	
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2.3 Constructed Wetland Evaluation

Reports shall be submitted on use of the constructed wetland built in 11/04 next to the existing treatment system to document wetland efficiency and operations and to present updated conclusions on benefits of continued use and appropriate actions for moving the monitoring station for Outfall 001.

Required Action	Date Due
<p>Initial Progress Report : An initial progress report evaluating the constructed wetland shall be submitted including a summary and evaluation of the influent and discharge data, operations and maintenance actions including routing activated sludge treated wastewater around the wetland and preliminary conclusions on benefits of continued use. The progress report may reference any quarterly submittals of data under separate cover letter as required by the plan approval for the constructed wetland. The initial progress report shall be submitted by 12/31/2005 unless the wetland is not used or if it is decided to submit a final report below on or before 12/31/2005.</p>	12/31/2005
<p>Report with Final Conclusions on Continued use of Constructed Wetland: A report with conclusions on continued use of the constructed wetland shall be submitted no later than January 1, 2007. The report shall include but not be limited to: a summary of all wetland monitoring results; a comparison of wetland monitoring results to the current treatment system effluent monitoring results and WPDES limits; a discussion of any observed seasonal variation in performance; any operational problems encountered and maintenance activities performed; actions to route activated sludge treated wastewater around the wetland and conclusions on the effectiveness of the constructed wetland in removing contaminants and whether to continue operation of the wetland.</p>	
<p>Effluent Monitoring Station for Outfall 001: Within 9 months of concluding that the constructed wetland will continue to be used in the final report above (due no later than January 1, 2007), the permanent effluent monitoring station for Outfall 001 shall be moved to monitor final effluent from the constructed wetland. Appropriate plans and specifications must be submitted in accordance with s. 281.41 Wis. Statutes at least 90 days before construction activities begin.</p>	

3 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 permit. The permittee shall comply with all of these requirements. Some of these requirements are outlined in the Standard Requirements section of this permit. Requirements not specifically outlined in the Standard Requirement section of this permit can be found in ss. NR 205.07(1) and NR 205.07(3).

3.1 Reporting and Monitoring Requirements

3.1.1 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 permittee.

If the permittee monitors any pollutant more frequently than required by this permit, the results of such monitoring shall be included on the Wastewater Discharge Monitoring Report Form.

The permittee 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 permittee 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.

3.1.2 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. 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 permit.

3.1.3 Recording of Results

The permittee 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.

3.1.4 Reporting of Monitoring Results

The permittee 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 calculating an average or a mass discharge value, the permittee may substitute a 0 (zero) for any pollutant concentration that is less than the limit of detection.

3.1.5 Records Retention

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 the permit, and records of all data used to complete the application for the permit 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.

3.1.6 Other Information

Where 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 in any report to the Department, it shall promptly submit such facts or correct information to the Department.

3.2 System Operating Requirements

3.2.1 Noncompliance Notification

- The permittee 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 permit.
- A written report describing the noncompliance shall also be submitted to the Department's regional office within 5 days after the permittee 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 permittee 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 permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

3.2.2 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 permittee 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 permittee 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 permittee 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 permittee 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 permittee believes is relevant.

3.2.3 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.

3.2.4 Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control which are installed or used by the permittee to achieve compliance with the conditions of this permit. 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 permit.

3.2.5 Spill Reporting

The permittee 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 permit, or the spill or accidental release of the material is unregulated in this permit, 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.

3.2.6 Planned Changes

In accordance with ss. 283.31(4)(b) and 283.59, Stats., the permittee 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 permit application, or if the new discharge will not violate the effluent limitations of this permit, 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 permit to specify and limit any pollutants not previously regulated in the permit.

3.2.7 Duty to Halt or Reduce Activity

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

3.3 Surface Water Requirements

3.3.1 Permittee-Determined Limit of Quantitation Incorporated into this Permit

For pollutants with water quality-based effluent limits below the Limit of Quantification (LOQ) in this permit, the LOQ calculated by the permittee and reported on the Discharge Monitoring Reports (DMRs) is incorporated by reference into this permit. 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 permit was issued, unless this permit specifies a higher LOQ.

3.3.2 Appropriate Formulas for Effluent Calculations

The permittee 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.

3.3.3 Visible Foam or Floating Solids

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

3.3.4 Compliance with Phosphorus Limitation

Compliance with the concentration limitation for phosphorus shall be determined as a rolling twelve-month average and shall be calculated as follows:

First, determine the pounds of phosphorus for an individual month by multiplying the average of all the concentration values for phosphorus (in mg/L) for that month by the total flow for the month in Million Gallons times the conversion factor of 8.34.

Then, the monthly pounds of phosphorus determined in this manner shall be summed for the most recent 12 months and inserted into the numerator of the following equation.

$$\text{Average concentration of P in mg/L} = \frac{\text{Total lbs of P discharged (most recent 12 months)}}{\text{Total flow in MG (most recent 12 months)} \times 8.34}$$

The compliance calculation shall be performed each month with a reported discharge volume after substituting data from the most recent month(s) for the oldest month(s). A calculated value in excess of the concentration limitation will be considered equivalent to a violation of a monthly average.

3.3.5 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, Edition 1"* (PUBL-WW-033-096, as required by NR 219.04, Table A, parameters 9 & 10, footnote 8, Wis. Adm. Code). (Note: Permit section 1.2.1.4.1 specifies that Edition 2 must be used after it is promulgated.) Receiving water samples shall not be collected from any point in contact with the permittee's mixing zone and every attempt shall be made to avoid contact with any other discharge's mixing zone.

3.3.6 Whole Effluent Toxicity (WET) Identification

In the event of serious or repeated toxicity, the permittee 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 permittee 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 permittee must conduct the postponed test(s) to demonstrate that toxicity has been reduced/eliminated.

3.3.7 Exceedance of a Whole Effluent Toxicity (WET) Limit

In the event of a WET limit exceedance, the permittee shall submit the following (within 30 days of test end):

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- the findings of a toxicity reduction evaluation (TRE) or other investigation to identify the cause(s) of the toxicity;
- actions the permittee has taken or will take to mitigate the impact of the discharge, to correct the noncompliance, and to prevent the recurrence of toxicity;
- where corrective actions including a TRE have not been completed, an expeditious schedule under which corrective actions will be implemented; and
- if no actions have been taken, the reason for not taking action.

4 Summary of Reports Due

FOR INFORMATIONAL PURPOSES ONLY

Description	Date	Page
Chloride Target Value -Annual Chloride Progress Report	December 31, 2005	8
Chloride Target Value -Annual Chloride Progress Report #2	December 31, 2006	8
Chloride Target Value -Annual Chloride Progress Report #3	December 31, 2007	8
Chloride Target Value -Annual Chloride Progress Report #4	December 31, 2008	8
Chloride Target Value -Final Chloride Report	June 30, 2009	8
Mercury Pollutant Minimization Program -Submit a Mercury Pollutant Minimization Program	June 30, 2007	8
Mercury Pollutant Minimization Program -Implement the Mercury Pollutant Minimization Program	June 30, 2008	8
Mercury Pollutant Minimization Program -Submit Annual Status Reports	June 30, 2009	9
Constructed Wetland Evaluation -Initial Progress Report	December 31, 2005	9
Constructed Wetland Evaluation -Report with Final Conclusions on Continued use of Constructed Wetland	See Permit	9
Constructed Wetland Evaluation -Effluent Monitoring Station for Outfall 001	See Permit	9
Wastewater Discharge Monitoring Report Form	no later than the date indicated on the form	10

All submittals required by this permit shall be submitted to the Northern Region - Ashland, 2501 Golf Course Road, Ashland, WI 54806-0015, except as follows. Report forms shall be submitted to the address printed on the report form. Any facility plans or plans and specifications for municipal, industrial pretreatment and non industrial wastewater systems shall be submitted to the Regional Plan Reviewer (as designated at www.dnr.state.wi.us/org/water/wm/consultant.htm). Any construction plans and specifications for industrial wastewater systems shall be submitted to the Bureau of Watershed Management, P.O. Box 7921, Madison, WI 53707-7921.