

**FACT SHEET for the  
LAKE HOLCOMBE SANITARY DISTRICT**

<b>GENERAL INFORMATION</b>	
<b>Permit Number:</b> WI-0028339-10	<b>FID:</b> 609006750
<b>Permittee:</b> Lake Holcombe Sanitary District #1, PO Box 196, Holcombe, WI 54745	
<b>Discharge Location:</b> Lake Holcombe Sanitary District #1, 270 <sup>th</sup> Ave., Holcombe, WI 54745	
<b>Receiving Waters:</b> the surface waters of Lake Holcombe, an impoundment of the Chippewa River, located in the McCann Creek and Fisher River Watershed of the Lower Chippewa River Basin in Chippewa County	
<b>Annual Average Design Flow:</b> <u>0.07 MGD</u>	<b>Annual Average Flow (2013):</b> <u>0.03 MGD</u>
<b>Discharge Type:</b> Usually Seasonal (May-June and August-November), but at times discharge is throughout the year	

**FACILITY DESCRIPTION**

<b>Facility Description:</b> The Lake Holcombe Sanitary District (SD) #1 treats domestic wastewater from portions of the Town of Lake Holcombe. The annual average design flow of the treatment facility is 0.07 million gallons per day (MGD) and the annual average influent flow in 2013 was 0.03 MGD. The SD upgraded their treatment facility during the last permit (operational November 2010) to a 3-celled aerated lagoon system with seasonal UV disinfection. No significant effluent monitoring or limit changes are proposed for the upcoming permit term, although all influent & effluent sample points that were for the “old” treatment plant have been removed from the permit. Also, groundwater monitoring is also no longer required because the discharge for the recently upgraded plant is to surface water.
<b>Publishing Newspaper:</b> The Cornell and Lake Holcombe Courier, PO Box 546, Cornell, WI 54732-0546

**SUBSTANTIAL COMPLIANCE DETERMINATION - Overall**

	<b>Compliance</b>	<b>Comments</b>
<b>Discharge Limits</b>	Yes	
<b>Sampling/testing requirements</b>	Yes, conditionally	The SD is missing DMRs for the months of February through June, 2014 and the year 2013 CMAR. The past operator resigned and a new operator is in the process of submitting this data.
<b>Groundwater standards</b>	Yes	As of November, 2010 discharge is to surface water, and not ground water.
<b>Reporting requirements</b>	Yes	As per above, data missing but anticipated to be received.
<b>Compliance schedules</b>	Not Applicable	
<b>Other:</b>	None	
<b>Enforcement considerations</b>	Yes	Multiple enforcement letters (NOV, NON) have been issued during the last permit term for failure to submit data. These have been satisfied. The previous operator has recently resigned and a new operator is in charge. Data submission will be complete when DMRs for February through June 2014 and the year 2013 CMAR have been submitted.
<b>Operator at Proper Grade?</b>	Yes	Lisa Bushby (DNR) has reported that the new operator, Duane Schulze, has passed all required exams.
<b>In substantial compliance? Yes</b>		<b>Name:</b> Tom Ponty <b>Date:</b> 07/31/2014

## INFLUENT MONITORING

<b>Sample Number:</b> 702	<b>Sample Description:</b> Representative influent samples shall be collected at the headworks building prior to the first treatment pond.		
<b>PARAMETER</b>	<b>UNIT</b>	<b>SAMPLE FREQ.</b>	<b>SAMPLE TYPE</b>
<b>Flow Rate</b>	MGD	Continuous	
<b>BOD<sub>5</sub>, Total</b>	mg/L	2X Monthly	24 hr Fl Prop Comp
<b>Total Suspended Solids</b>	mg/L	2X Monthly	24 hr Fl Prop Comp
<b>Explanation of influent changes from previous permit:</b> None at this sample point 702, although influent sample point 701 has been removed from the permit because it was for the old” treatment facility.			

## EFFLUENT MONITORING AND LIMITATIONS for SURFACE WATER DISCHARGE

<b>Outfall Location:</b> Lake Holcombe, an impoundment of the Chippewa River. Outfall location is directly upstream of County Highway M, adjacent to the dam.			
<b>Outfall No:</b> 003	<b>Sample Description:</b> Representative effluent samples shall be collected after UV disinfection prior to discharge to Lake Holcombe.		
<b>PARAMETER</b>	<b>LIMITATION</b>	<b>SAMPLE FREQ</b>	<b>SAMPLE TYPE</b>
<b>BOD<sub>5</sub>, Total</b>	45 mg/L Weekly Ave, 30 mg/L Monthly Ave	2X/Week	24hr fl pr comp
<b>Total Suspended Solids</b>	45 mg/L Weekly Ave, 30 mg/L Monthly Ave	2X/Week	24hr fl pr comp
<b>pH, Field</b>	9.0 su Daily Max, 6.0 su Daily Min	Daily	Grab
<b>Fecal Coliform<sup>1</sup></b>	400#/100mL Geometric Mean	Weekly	Grab
<b>Nitrogen, Ammonia Total<sup>2</sup></b>	mg/L, Variable Daily Max limit	Weekly	24hr fl pr comp
<sup>1</sup> Monitoring and limitation effective May-September.			
<sup>2</sup> See the table below “ <b>VARIABLE DAILY MAXIMUM AMMONIA LIMITS</b> ” for more information.			
<b>Explanation of effluent changes from last permit:</b> This is a “new” outfall that regulates the discharge from the recently upgraded treatment facility. This outfall was in the current permit also. Outfall 001, which monitored effluent from the “old” treatment plant, has been removed from the permit. See the March 6, 2014 limits memo from Pat Oldenburg to Holly Heldstab entitled “Water Quality-Based Effluent Limitations for the Lake Holcombe Sanitary District #1 (WI-0028339)” for more information.			
<b>Ammonia monitoring or limits:</b> Variable daily max limits with weekly monitoring			
<b>Phosphorus monitoring or limits:</b> None. The calculated limitation is over 100 mg/L as a monthly average. There is no reasonable potential for this limitation to be exceeded, and the discharge has not exceeded the 60 lb/month threshold of s. NR 217.04, therefore no phosphorus limits or routine monitoring is required at this time.			
<b>Temperature:</b> Recent changes to chs. NR 102 and 106 include new temperature criteria and related procedures for calculating water quality based effluent limitations for temperature. The calculated limitation is 120° F, daily maximum. At temperatures above ~103° F, conventional biological treatment systems stop functioning properly and experience upsets. There is no indication that this has ever occurred at this treatment system. This information, coupled with the lack of industrial heat load, lead to the conclusion that there is no reasonable potential for the calculated limitation to be exceeded. Therefore, no limit or monitoring is required in the reissued permit.			

## VARIABLE DAILY MAXIMUM AMMONIA LIMITS

Effluent pH (s.u.)	NH <sub>3</sub> -N Limit (mg/L)	Effluent pH (s.u.)	NH <sub>3</sub> -N Limit (mg/L)
pH ≤ 7.5	No Limit	8.2 < pH ≤ 8.3	9.4
7.5 < pH ≤ 7.6	34*	8.3 < pH ≤ 8.4	7.8
7.6 < pH ≤ 7.7	29*	8.4 < pH ≤ 8.5	6.4
7.7 < pH ≤ 7.8	24*	8.5 < pH ≤ 8.6	5.3
7.8 < pH ≤ 7.9	20*	8.6 < pH ≤ 8.7	4.4
7.9 < pH ≤ 8.0	17	8.7 < pH ≤ 8.8	3.7
8.0 < pH ≤ 8.1	14	8.8 < pH ≤ 8.9	3.1
8.1 < pH ≤ 8.2	11	8.9 < pH ≤ 9.0	2.6

\* During the months of May through October if the pH is less than or equal to 7.9 there is no daily maximum limit for NH<sub>3</sub>-N. Limits shown in the table above with an asterisk\* apply from November through April only.

## DISINFECTION

<b>Is disinfection required for this discharge?</b> Yes	
<b>Frequency:</b> Seasonally, May-Sept	<b>Type of disinfection:</b> Ultraviolet (UV) Light
<b>Discussion:</b> None	

## LAGOON SLUDGE REQUIREMENTS

All sludge management requirements were determined ch. NR 204, Wis. Adm. Code

<b>Outfall No:</b> 004	<b>For Lagoon Systems: Will sludge be removed from the ponds in this permit term?</b> No, therefore, in 2015 representative composite sludge samples shall be collected from cell #1 and monitored for List 1 and PCBs.
<b>Explanation of effluent changes from last permit:</b> Landspreading Outfall 002 from the "old" treatment has been removed because the treatment facility was upgraded during the last permit term.	

## COMPLIANCE SCHEDULES

N/A
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## SPECIAL REPORTING REQUIREMENTS

N/A
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## OTHER COMMENTS

None
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**Proposed effective date:** October 1, 2014

**Proposed expiration date:** September 30, 2019

**Prepared by:** Holly Heldstab

**Date:** August 20, 2014

**CORRESPONDENCE / MEMORANDUM**

**State of Wisconsin**

DATE: March 6, 2014

TO: Holly Heldstab - WCR

FROM: Pat Oldenburg - WCR

SUBJECT: Water Quality-Based Effluent Limitations for the Lake Holcombe Sanitary District #1 (WI-0028339)

This is in response to your request for an evaluation of water quality-based effluent limitations using chs. NR 102, 105, 106, and 217 of the Wisconsin Administrative Code (where applicable), for the Lake Holcombe Sanitary District #1's discharge to the Chippewa River. The discharge is located in the McCann Creek and Fisher River Watershed of the Lower Chippewa River Basin in Chippewa County.

Based on our review, the following recommendations are made on a chemical-specific basis:

Parameter	Limit Type	Limit and Units	Notes
BOD <sub>5</sub> , Total	Monthly Avg	30 mg/L	1
BOD <sub>5</sub> , Total	Weekly Avg	45 mg/L	1
Suspended Solids, Total	Monthly Avg	30 mg/L	1
Suspended Solids, Total	Weekly Avg	45 mg/L	1
pH Field	Daily Max	9.0 su	1
pH Field	Daily Min	6.0 su	1
Nitrogen, Ammonia (NH <sub>3</sub> -N) Total	Daily Max - Variable	mg/L	1,2
Fecal Coliform	Geometric Mean	400 #/100 ml	1,3

- Continued from current permit.
- Daily maximum ammonia limits

Effluent pH (s.u.)	NH <sub>3</sub> -N Limit (mg/L)	Effluent pH (s.u.)	NH <sub>3</sub> -N Limit (mg/L)
pH ≤ 7.5	No Limit	8.2 < pH ≤ 8.3	9.4
7.5 < pH ≤ 7.6	34*	8.3 < pH ≤ 8.4	7.8
7.6 < pH ≤ 7.7	29*	8.4 < pH ≤ 8.5	6.4
7.7 < pH ≤ 7.8	24*	8.5 < pH ≤ 8.6	5.3
7.8 < pH ≤ 7.9	20*	8.6 < pH ≤ 8.7	4.4
7.9 < pH ≤ 8.0	17	8.7 < pH ≤ 8.8	3.7
8.0 < pH ≤ 8.1	14	8.8 < pH ≤ 8.9	3.1
8.1 < pH ≤ 8.2	11	8.9 < pH ≤ 9.0	2.6

\* During the months of May through October if the pH is less than or equal to 7.9 there is no daily maximum limit for NH<sub>3</sub>-N. Limits shown in the table above with an asterisk "\*" would only apply from November through April.

- Monitoring and limit apply May - September annually.

Recent changes to chs. NR 102 and 217 include new phosphorus criteria and related procedures for calculating water quality based effluent limitations for phosphorus. These rule changes became effective on December 1<sup>st</sup>, 2010. There are recent phosphorus data from the Chippewa

River which can be used to calculate an upstream concentration:

SWIMS ID	093051
Station Name	Chippewa River at NSP Holcombe Dam Tailrace
Sample Count	8
First Sample	05/4/2000
Last Sample	06/06/2001
Mean	0.048
Median	0.045
NR 217 Median	0.049

For discharges of phosphorus to flowing streams and rivers, water quality based effluent limitations are calculated using the same conservation of mass equation used in ch. NR 106:

$$\text{Limitation} = [(WQC) (Q_s + (1-f)Q_e) - (Q_s - fQ_e) (C_s)] / Q_e$$

Where:

- Limitation = Water quality based effluent limitation (mg/L),
- WQC = Water quality criterion concentration (0.100 mg/L),
- Q<sub>s</sub> = Receiving water flow (400 cfs; minimum FERC required flow from the Cornell Hydro Project)
- Q<sub>e</sub> = Effluent flow (0.07 MGD or 0.11 cfs)
- f = Fraction of the effluent flow that is withdrawn from the receiving water (0), and
- C<sub>s</sub> = Upstream concentration (0.049 mg/L)

The calculated limitation is over 100 mg/L as a monthly average. There is no reasonable potential for this limitation to be exceeded, and the discharge has not exceeded the 60 lb/month threshold of s. NR 217.04, therefore no phosphorus limits or routine monitoring is warranted at this time.

Recent changes to chs. NR 102 and 106 include new temperature criteria and related procedures for calculating water quality based effluent limitations for temperature. The calculated limitation is 120° F, daily maximum. At temperatures above ~103° F, conventional biological treatment systems stop functioning properly and experience upsets. There is no indication that this has ever occurred at this treatment system. This information, coupled with the lack of industrial heat load, lead to the conclusion that there is no reasonable potential for the calculated limitation to be exceeded. No limit or monitoring is recommended to be included in the reissued permit.

Based on the guidance provided in Chapter 11 the July 1, 2008 *Whole Effluent Toxicity Program Guidance Document - Revision #8* no Whole Effluent Toxicity (WET) testing is recommended due to the large amount of dilution available and the chemical specific results.

If there are any questions or comments, please contact Pat Oldenburg at (715) 831-3262 or via e-mail at [Patrick.Oldenburg@wisconsin.gov](mailto:Patrick.Oldenburg@wisconsin.gov).

e-cc: Tom Ponty - Eau Claire  
Mark Hazuga - Eau Claire  
Diane Figiel – WT/3  
Amanda Minks – WT/3

**Effluent limit calculations for:** Lake Holcombe Sanitary District #1  
 WPDES Permit #: 0028339  
 Permit Drafter: Holly Heldstab  
 Basin Engineer: Tom Ponty - Eau Claire  
 WQ Reviewer: Mark Hazuga - Eau Claire

**Receiving Water Information:**  
 Receiving Water: Chippewa River  
 Watershed: McCann Creek and Fisher River Watershed  
 Basin: Lower Chippewa River Basin  
 County: Chippewa  
 Classification: Warm Water Sport Fish Community, Non-public Water Supply

				Estimated	Basin
				Harmonic	Area
Flows	7Q10	7Q2	90Q10	Mean	(mi <sup>2</sup> )
	400	400	400	400	

Flows based on minimum FERC flows at the Cornell Dam

% Used For Mixing = 25  
 Hardness = 46.4 PPM

Background Metals Data Source: Chippewa River at Winter

Substance	Result
Cadmium	0.011
Chromium	0.500
Copper	0.753
Lead	0.392
Mercury	
Zinc	1.200

Effluent Information: Daily Average Flow

Outfall Number	f	(mgd)	(cfs)
003	0	0.07	0.11
<b>Σ</b>	<b>0</b>	<b>0.07</b>	<b>0.11</b>

Effluent Hardness = 122 PPM  
 Effluent Dilution due to ZID = NA  
 7Q10:Qe = 3693.1 :1

**CALCULATION OF EFFLUENT LIMITATIONS BASED ON ATC (ug/L)**

SUBSTANCE	Ref. Hard. or pH	ATC	Daily Effl. Limit	1/5 of Effl. Limit	Mean Effl. Conc.	1- day P99	1-day Max. Conc.
Chlorine		19.03	38.06	7.61			
Arsenic		339.80	679.60	135.92	1.6		
Cadmium	122	12.95	25.90	5.18	<3		
Chromium (+3)	122	2121.96	4243.92	848.78	<6		
Copper	122	18.72	37.44		8.1	10.8	10
Lead	122	129.57	259.14	51.83	<1		
Nickel	122	538.99	1077.98	215.60	<8		
Zinc	122	143.24	286.48	57.30	<8		
Chloride (mg/L)		757	1514.00		221.3		230

**CALCULATION OF EFFLUENT LIMITATIONS BASED ON CTC (ug/L)**

Receiving Water Flow = 100 cfs

SUBSTANCE	Ref. Hard. or pH	CTC	Mean Back- ground	Weekly Effl. Limit	1/5 of Effl. Limit	Mean Effl. Conc.	4- day P99	4-day Max. Conc.
Chlorine		7.28		6728.80	1345.76			
Arsenic		152.20		140676.29	28135.26	1.60		
Cadmium	46.4	1.35	0.011	1237.63	247.53	<3		
Chromium (+3)	46.4	70.44	0.500	64645.04	12929.01	<6		
Copper	46.4	5.37	0.753	4268.18		8.1	9.4	
Lead	46.4	13.34	0.392	11968.04	2393.61	<1		
Nickel	46.4	27.26		25196.03	5039.21	<8		
Zinc	46.4	61.50	1.200	55735.63	11147.13	<8		
Chloride (mg/L)		395		365092.86		221.3		

**CALCULATION OF EFFLUENT LIMITATIONS BASED ON HTC (ug/L)**

Receiving Water Flow = 100.00 cfs

SUBSTANCE	Ref. Hard. or pH	HTC	Mean Back- ground	Monthly Effl. Limit	1/5 of Effl. Limit	Mean Effl. Conc.	30- day P99	30- day Max. Conc.
Cadmium		370	0.011	341976	68395	<3		
Chromium (+3)		3.82E+06	0.5	3.53E+09	7.06E+08	<6		
Lead		140	0.392	129038	25808	<1		
Nickel		4.30E+04		3.97E+07	7.95E+06	<8		

**CALCULATION OF EFFLUENT LIMITATIONS BASED ON HCC (ug/L)**

Receiving Water Flow = 100.00 cfs

SUBSTANCE	Ref. Hard. or pH	HCC	Mean Back- ground	Monthly Effl. Limit	1/5 of Effl. Limit	Mean Effl. Conc.	30- day P99	30- day Max. Conc.
Arsenic		13.3		12293	2459	1.60		

Date	Effluent Total Phosphorous (mg/L)	Monthly Average Effluent Flow Rate (MGD)	Phosphorous Discharged (lb./month)
18-Sep-13	4.65		
24-Sep-13	4.75	0.015	18
01-Oct-13	3.41		
08-Oct-13	3.74		
15-Oct-13	3.71		
22-Oct-13	4.34		
29-Oct-13	4.66	0.023	22
05-Nov-13	5.07		
12-Nov-13	5.73		
19-Nov-13	5.39		
26-Nov-13	5.84	0.018	24
03-Dec-13	5.77	0.021	30

Date	Cu ( $\mu\text{g/L}$ )	Cl- (mg/L)	Hardness (mg/L as $\text{CaCO}_3$ )
18-Sep-13	10	228	119
24-Sep-13	10	213	120
01-Oct-13	8	230	124
08-Oct-13	8	214	124
15-Oct-13	8		
22-Oct-13	7		
29-Oct-13	7		
05-Nov-13	7		
12-Nov-13	8		
19-Nov-13	8		
26-Nov-13	8		