

**PUBLIC NOTICED HILLSBORO WWTF
FACT SHEET**

GENERAL INFORMATION	
Permit Number: WI-0020583-09	FID: 663007180
Permittee Name and Address (if different from discharge location): City of Hillsboro, PO Box 151, Hillsboro, WI 54634	
Discharge Location: Hillsboro Wastewater Treatment Facility, E Madison St., Hillsboro, WI 54634	
Receiving Waters: the West Branch of the Baraboo River in the Seymour Creek and Upper Baraboo River Watershed of the Lower Wisconsin River Basin in Vernon County	
Flows:	<u>0.185 MGD Annual Average Discharge Design</u> <u>0.122 MGD Actual Annual Average Discharge (2013)</u>
Stream Classification: Warmwater Sportfish Non-public Water Supply	Q_(7,10): 3.4 cfs
Discharge Type: Continuous	

FACILITY DESCRIPTION

Facility Description: The City of Hillsboro owns and operates an activated sludge type wastewater treatment facility which treats domestic wastewater from the City of Hillsboro and industrial wastewater from Whitehall Specialties (produces imitation cheese) and Riverview Dairy (produces butter). Both industrial contributors are required to meet pretreatment limits before discharging to the wastewater treatment facility. The wastewater facility consists of a raw sewage pumpstation, Huber fine screen, three aeration basins, a final clarifier, an aerobic digester, a flowmeter, chemical storage and handling equipment for phosphorus removal via alum, and aerated sludge storage tank. The facility has an annual average design flow of 0.185 MGD (million gallons per day). The actual annual average flow for the facility in 2013 was 0.122 MGD. Prior to discharge to the South Branch of the Baraboo River, effluent is disinfected via ultraviolet radiation prior to discharge. Sludge is land applied on Department approved sites by contracted haulers. Effluent monitoring changes since the last permit term include the addition of lower phosphorus limits and a compliance schedule to meet them.
Publishing Newspaper: Hillsboro Sentry-Enterprise, PO Box 469, Hillsboro, WI 54634-0469
Are there any general permits that should be rolled into this specific permit? No
Significant Industrial Loading? Whitehall Specialties, Riverview Dairy

SUBSTANTIAL COMPLIANCE DETERMINATION - OVERALL

	Compliance	Comments
Discharge Limits	Yes	
Sampling/testing requirements	Yes	
Groundwater standards	N/A	
Reporting requirements	Yes	
Compliance schedules	Yes	
Other:	None	
Enforcement considerations	No	
In substantial compliance? Yes	Name: Julia A. Stephenson	Date: 10/06/2014

SUBSTANTIAL COMPLIANCE DETERMINATION – LAND APP

	Compliance	Comments
Discharge Limits	Yes	
Sampling/testing requirements	Yes	
Groundwater standards	n/a	
Reporting requirements	Yes	
Compliance schedules	n/a	
Other:	n/a	
Enforcement considerations	None	
In substantial compliance? Yes	Name: L Hinke Date: October 7, 2014	

PERMIT MONITORING AND LIMITATIONS – INFLUENT

Sample Number: 701	Sample Location: Representative influent samples shall be collected as 24-flow proportional composites at the influent channel to the package treatment plant after screening.		
PARAMETER	UNIT	SAMPLE FREQ.	SAMPLE TYPE
BOD₅	mg/L	3/Week	24 hr Flow Prop Comp
Suspended Solids	mg/L	3/Week	24 hr Flow Prop Comp
Explanation of influent changes from previous permit: None			

PERMIT MONITORING AND LIMITATIONS – EFFLUENT

Outfall Location: SE bank of west branch Baraboo River, 475 ft NE of East Madison Street bridge			
Outfall No: 001	Sample Description: Representative effluent samples shall be collected as 24-hour flow proportional composites after the UV disinfection process.		
PARAMETER	LIMITATION	SAMPLE FREQ	SAMPLE TYPE
Flow	MGD	daily	continuous
BOD₅	45 mg/L Weekly Avg , 30 mg/L Monthly Avg (Nov-Apr) 25 mg/L Weekly Avg, 25 mg/L Monthly Avg (May-Oct)	3/Week	24 hr Fl Prop Comp
BOD₅	74 lbs/day Daily Max	3/Week	Calculated

Total Suspended Solids	45 mg/L Weekly Avg , 30 mg/L Monthly Avg (Nov-Apr) 25 mg/L Weekly Avg, 25 mg/L Monthly Avg (May-Oct)	3/Week	24 hr Fl Prop Comp
pH	9.0 su Daily Max, 6.0 su Daily Min	Daily	Grab
Phosphorus Interim limit throughout permit term Final limits next permit term	1.0 mg/L Monthly Ave 0.075 mg/L, 0.12 lbs/day 6-month ave 0.225 mg/L monthly ave,	Weekly	24 hr Fl Prop Comp
Ammonia June-Sept Oct-May	3.1 mg/L monthly avg , 6.5 mg/L weekly avg 5.3 mg/L monthly avg , 11 mg/L weekly avg	Weekly	24 hr Fl Prop Comp
Dissolved Oxygen May-Oct	7.0 mg/L Daily Min	Daily	Grab
Fecal Coliform May-Sept	400#/100mL Geometric Mean	Weekly	Grab
Acute WET July-Sept 15 Oct-Dec 17	TU _a	2X/Term	24 hr Fl Prop Comp
Explanation of effluent changes from last permit: Effluent monitoring changes since the last permit term include new phosphorus limits. In addition to the weekly average limits, monthly average limits for BOD and TSS for May – October are included in the reissued permit for purposes of implementing the provisions of s. NR 110.05. See the WQBEL memo dated Sept 23, 2014 for the City of Hillsboro from Pat Oldenburg for more information.			
Ammonia monitoring or limits: Seasonal limits as noted in table above.			

Phosphorus monitoring or limits: This permit contains a compliance schedule to meet the water quality-based effluent limit (WQBEL) for phosphorus in accordance with s. NR 217.17, Wis. Adm. Code. As such an interim limitation of 1.0 mg/L monthly average is required.

The proposed final 6 month average concentration limits for phosphorus of 0.075 mg/L and 0.12 lbs/day represents a very challenging level for wastewater facilities to meet with current technology and operation. The facility is an activated sludge type facility. Even with treatment optimization, facilities with plant processes similar to this facility are insufficient to meet either the proposed monthly limits. Therefore, the Department believes that a compliance schedule is necessary to comply with the proposed limitations. It is also probable that, in order to consistently comply with the 0.075 mg/L and 0.12 lbs/day 6-monthly average limits, the facility will need to evaluate and implement any number of the following approaches:

- Plant optimization;
- Phosphorus source reduction;
- Additional treatment processes, or replacement or retrofitting of the current phosphorus removal process;
- Potential for adaptive management and/or pollutant trading with upstream contributors, and implementation of such trades.

The Department believes that the compliance schedule suggested in the draft permit provides the appropriate length of time for the permittee to evaluate these options, implement the chosen option and meet the final phosphorus limits (WQBELs). See compliance schedule section and limit memo for more information.

Temperature: There is no reasonable potential for the calculated limits to be exceeded and neither a temperature limit nor monitoring is included in the reissued permit.

BIOMONITORING REQUIREMENTS

Is biomonitoring required at this outfall? Yes. Two acute tests are required during the permit term. See WET Checklist in SWAMP and the WQBEL memo dated Sept 23, 2014 for the City of Hillsboro from Pat Oldenburg for more information.	IWC= N/A	Primary Control Water Location: West Branch of the Baraboo River
Q_s:Q_e: 4.0:1	Discussion of existing biomonitoring data: All previous Acute and Chronic WET tests were passed.	
If the stream class at the discharge point is other than Full Fish and Aquatic Life (FFAL), how far down stream is the next Fish and Aquatic Life stream? Stream is FFAL		

DISINFECTION

Is disinfection required for this discharge? Yes	
Frequency: Seasonally, May-Sept	Type of disinfection: Ultraviolet Radiation
Discussion: None	

SLUDGE REQUIREMENTS

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

Outfall No: 002	Sample Description: Representative liquid sludge composite samples shall be collected annually from the aerated sludge storage tank and analyzed for Lists 1, 2, 3 & 4 and once in 2016 for PCBs.
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Sludge # (3 digits)	Sludge Class (A or B)	Liquid or Cake	Pathogen Reduction Method	Vector Attraction Reduction Method	Reuse Option
002	B	Liquid	Fecal Coliform	Incorporation	Land Application
Sludge Management Adequate? Yes					
Sludge Storage Required? Adequate storage provided with 250,000 gallons capacity (for minimum 180 days)					
Radium Requirements: Is radium-226 present in the water supply at a level > than 2 pCi/L? No					
Is a priority pollutant scan required? No					
Quantity of sludge used/disposed of annually: 180,000 gallons					

COMPLIANCE SCHEDULES

Water Quality Based Effluent Limits (WQBELs) for Total Phosphorus

The permittee shall comply with the WQBELs for Phosphorus as specified. No later than 30 days following each compliance date, the permittee shall notify the Department in writing of its compliance or noncompliance. If a submittal is required, a timely submittal fulfills the notification requirement.

Required Action	Due Date
<p>Operational Evaluation Report: The permittee shall prepare and submit to the Department for approval an operational evaluation report. The report shall include an evaluation of collected effluent data, possible source reduction measures, operational improvements or other minor facility modifications that will optimize reductions in phosphorus discharges from the treatment plant during the period prior to complying with final phosphorus WQBELs and, where possible, enable compliance with final phosphorus WQBELs by 01/01/2018. The report shall provide a plan and schedule for implementation of the measures, improvements, and modifications as soon as possible, but not later than 01/01/2018 and state whether the measures, improvements, and modifications will enable compliance with final phosphorus WQBELs. Regardless of whether they are expected to result in compliance, the permittee shall implement the measures, improvements, and modifications in accordance with the plan and schedule specified in the operational evaluation report.</p> <p>If the operational evaluation report concludes that the facility can achieve final phosphorus WQBELs using the existing treatment system with only source reduction measures, operational improvements, and minor facility modifications, the permittee shall comply with the final phosphorus WQBEL by 01/01/2018 and is not required to comply with the milestones identified below for years 3 through 9 of this compliance schedule ('Preliminary Compliance Alternatives Plan', 'Final Compliance Alternatives Plan', 'Final Plans and Specifications', 'Treatment Plant Upgrade to Meet WQBELs', 'Complete Construction', 'Achieve Compliance').</p> <p>STUDY OF FEASIBLE ALTERNATIVES - If the Operational Evaluation Report concludes that the permittee cannot achieve final phosphorus WQBELs with source reduction measures, operational improvements and other minor facility modifications, the permittee shall initiate a study of feasible alternatives for meeting final phosphorus WQBELs and comply with the remaining required actions of this schedule of compliance. If the Department disagrees with the conclusion of the report, and determines that the permittee can achieve final phosphorus WQBELs using the existing treatment system with only source reduction measures, operational improvements, and minor facility modifications, the Department may reopen and modify the permit to include an implementation schedule for achieving the final phosphorus WQBELs sooner than 01/01/2024.</p>	01/01/2016
<p>Compliance Alternatives, Source Reduction, Improvements and Modifications Status: The permittee shall submit a 'Compliance Alternatives, Source Reduction, Operational Improvements and</p>	01/01/2017

<p>Minor Facility Modification' status report to the Department. The report shall provide an update on the permittee's: (1) progress implementing source reduction measures, operational improvements, and minor facility modifications to optimize reductions in phosphorus discharges and, to the extent that such measures, improvements, and modifications will not enable compliance with the WQBELs, (2) status evaluating feasible alternatives for meeting phosphorus WQBELs.</p>	
<p>Preliminary Compliance Alternatives Plan: The permittee shall submit a preliminary compliance alternatives plan to the Department.</p> <p>If the plan concludes upgrading of the permittee's wastewater treatment facility is necessary to achieve final phosphorus WQBELs, the submittal shall include a preliminary engineering design report.</p> <p>If the plan concludes Adaptive Management will be used, the submittal shall include a completed Watershed Adaptive Management Request Form 3200-139 without the Adaptive Management Plan.</p> <p>If water quality trading will be undertaken, the plan must state that trading will be pursued.</p>	01/01/2018
<p>Final Compliance Alternatives Plan: The permittee shall submit a final compliance alternatives plan to the Department.</p> <p>If the plan concludes upgrading of the permittee's wastewater treatment is necessary to meet final phosphorus WQBELs, the submittal shall include a final engineering design report addressing the treatment plant upgrades, and a facility plan if required pursuant to ch. NR 110, Wis. Adm. Code.</p> <p>If the plan concludes Adaptive Management will be implemented, the submittal shall include a completed Watershed Adaptive Management Request Form 3200-139 and an engineering report addressing any treatment system upgrades necessary to meet interim limits pursuant to s. NR 217.18, Wis. Adm. Code.</p> <p>If the plan concludes water quality trading will be used, the submittal shall identify potential trading partners.</p> <p>Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.</p>	01/01/2019
<p>Progress Report on Plans & Specifications: Submit progress report regarding the progress of preparing final plans and specifications. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.</p>	01/01/2020
<p>Final Plans and Specifications: Unless the permit has been modified, revoked and reissued, or reissued to include Adaptive Management or Water Quality Trading measures or to include a revised schedule based on factors in s. NR 217.17, Wis. Adm. Code, the permittee shall submit final construction plans to the Department for approval pursuant to s. 281.41, Stats., specifying treatment plant upgrades that must be constructed to achieve compliance with final phosphorus WQBELs, and a schedule for completing construction of the upgrades by the complete construction date specified below. (Note: Permit modification, revocation and reissuance, and reissuance are subject to s. 283.53(2), Stats.)</p> <p>Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.</p>	01/01/2021
<p>Treatment Plant Upgrade to Meet WQBELs: The permittee shall initiate construction of the upgrades. The permittee shall obtain approval of the final construction plans and schedule from the Department pursuant to s. 281.41. Stats. Upon approval of the final construction plans and schedule by the Department pursuant to s. 281.41, Stats., the permittee shall construct the treatment plant upgrades in accordance with the approved plans and specifications. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.</p>	04/01/2021

Construction Upgrade Progress Report #1: The permittee shall submit a progress report on construction upgrades. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	04/01/2022
Construction Upgrade Progress Report #2: The permittee shall submit a progress report on construction upgrades. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	04/01/2023
Complete Construction: The permittee shall complete construction of wastewater treatment system upgrades. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	12/01/2023
Achieve Compliance: The permittee shall achieve compliance with final phosphorus WQBELs. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	01/01/2024

OTHER COMMENTS

None

Proposed expiration date: December 31, 2019

Prepared by: Angie Parkhurst

Date: October 6, 2014

CORRESPONDENCE / MEMORANDUM

State of Wisconsin

DATE: September 23, 2014

TO: Angela Parkhurst - WCR

FROM: Pat Oldenburg - WCR

SUBJECT: Water Quality-Based Effluent Limitations for the City of Hillsboro (WI-0020583)

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 City of Hillsboro's discharge to the West Branch of the Baraboo River. The discharge is located in the Seymour Creek and Upper Baraboo River Watershed of the Lower Wisconsin River Basin in Vernon County.

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

Parameter	Limit Type	Limit and Units	Notes
Flow Rate		MGD	1
BOD ₅ , Total	Weekly Avg	25 mg/L	1,2
BOD ₅ , Total	Monthly Avg	30 mg/L	1,3
BOD ₅ , Total	Weekly Avg	45 mg/L	1,3
BOD ₅ , Total	Daily Max	74 lbs/day	1
Suspended Solids, Total	Weekly Avg	25 mg/L	1,2
Suspended Solids, Total	Monthly Avg	30 mg/L	1,3
Suspended Solids, Total	Weekly Avg	45 mg/L	1,3
pH Field	Daily Min	6.0 su	1
pH Field	Daily Max	9.0 su	1
Phosphorus, Total	Monthly Avg	0.225 mg/L	
Phosphorus, Total	6 Month Avg	0.075 mg/L; 0.12 lbs/day	
Nitrogen, Ammonia (NH ₃ -N) Total	Weekly Avg	6.5 mg/L	1,4
Nitrogen, Ammonia (NH ₃ -N) Total	Monthly Avg	5.3 mg/L	1,5
Nitrogen, Ammonia (NH ₃ -N) Total	Monthly Avg	3.1 mg/L	1,4
Nitrogen, Ammonia (NH ₃ -N) Total	Weekly Avg	11 mg/L	1,5
Fecal Coliform	Geometric Mean	400 #/100 ml	1,6
Acute WET		TU _a	1,7
Dissolved Oxygen	Daily Min	7.0 mg/L	1,2

- Continued from current permit.
- Limit effective May-Oct annually.
- Limit effective Nov-Apr annually.
- Limit effective June-Sept annually.
- Limit effective Oct-May annually.
- Limit effective May-Sept annually.
- Two tests in permit term.

Changes to chs. NR 102 and 106 include new temperature criteria and related procedures for calculating water quality based effluent limitations for temperature. Based on data from other municipal facilities, no limits or routine monitoring is recommended.

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 1st, 2010.

Data from West Branch of the Baraboo River upstream from the discharge indicate that the receiving water is above the 0.075 mg/L water quality criterion:

SWIMS ID	10017367
Station Name	West Branch Baraboo River At E. Madison. St. Bridge
Sample Count	24-Oct-13
First Sample	09-Jun-11
Last Sample	24-Oct-13
Mean	128
Median	117
NR 217 Median	124

Because the data indicates that the receiving stream is exceeding the criterion, the calculated water-quality based effluent limit would be equal to criterion (s. NR 217.13(7)). For the reasons explained in the April 30, 2012 paper *Justification for Use of Monthly, Growing Season and Annual Average Periods for Expression of WPDES Permit Limits for Phosphorus Discharges in Wisconsin*, WDNR has determined that it is impracticable to express the phosphorus WQBEL for the permittee as maximum daily, weekly, or monthly values. The final effluent limit for phosphorus is expressed as a six-month average (0.075 mg/L). It is also expressed as a monthly average equal to three times the derived WQBEL (0.225 mg/L). This final effluent limit was derived from and complies with the applicable water quality criterion. As the receiving water is on Wisconsin's 303(d) list for phosphorus impairments, a mass limit is required per s. NR 217.14. The recommended mass limit is 0.12 lbs/day 6 month average and is based on the corresponding concentration limit and the design flow of 0.185 MGD.

The current permit contains a phosphorus limit of 1.0 mg/L monthly average; therefore a limit is warranted per s. NR 217.15(1). The calculated water-quality based limitation is stringent enough that a compliance schedule is appropriate. It should also be noted that the department is actively engaged in developing a Total Maximum Daily Load (TMDL) for the Wisconsin River basin upstream of Lake Wisconsin. This TMDL may result in phosphorus limitations different than those calculated above.

Based on the guidance provided in Chapter 1.3 of the July 1, 2008 *Whole Effluent Toxicity Program Guidance Document - Revision #8* two acute whole effluent toxicity (WET) tests are recommended, primarily due to the presence of industrial contributions. No chronic WET tests are recommended at this time due to the amount of dilution and chronic WET test history.

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

e-cc: Julia Stephenson - La Crosse
Kurt Rasmussen - La Crosse
Diane Figiel – WT/3
Amanda Minks – WT/3

Effluent limit calculations for: City of Hillsboro
 WPDES Permit #: 0020583
 Permit Drafter: Angela Parkhurst
 Basin Engineer: Julia Stephenson - La Crosse
 WQ Reviewer: Kurt Rasmussen - La Crosse

Receiving Water Information:
 Receiving Water: West Branch of the Baraboo River
 Watershed: Seymour Creek and Upper Baraboo River Watershed
 Basin: Lower Wisconsin River Basin
 County: Vernon
 Classification: Warm Water Sport Fish Community, Non-public Water Supply

Flows	7Q10	7Q2	90Q10	Estimated Harmonic Mean	Basin Area (mi ²)
	3.4	5.4		12	

% Used For Mixing	=	25	
Hardness	=	243	PPM

Background Metals Data Source:	Kickapoo River at Oil City	
	<u>Substance</u>	<u>Result</u>
	Cadmium	0.025
	Chromium	0.836
	Copper	1.093
	Lead	0.950
	Mercury	
	Zinc	2.935

Effluent Information:	Daily Average Flow		
Outfall Number	f	(mgd)	(cfs)
001	0	0.185	0.29
<hr/>			
	Σ	0	0.185 0.29

Effluent Hardness	=	292	PPM
Effluent Dilution due to ZID	=		NA
<hr/>			
7Q10:Qe	=	11.9	: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	<4		
Cadmium	292	35.23	70.46	14.09	<0.3		
Chromium (+3)	292	4336.67	8673.34	1734.67	0.76		
Copper	292	42.65	85.30		14.3	64.1	40.6
Lead	292	301.11	602.22	120.44	4.8		
Mercury		0.83	1.66	0.33			
Nickel	268	1048.88	2097.76	419.55	5.7		
Zinc	292	307.27	614.54	122.91	50.9		
Chloride (mg/L)		757	1514.00		207.5		230

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

Receiving Water Flow = 0.85 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		28.90	5.78			
Arsenic		152.20		604.16	120.83	<4		
Cadmium	175	3.82	0.025	15.09	3.02	<0.3		
Chromium (+3)	243	273.37	0.836	1082.66	216.53	0.76		
Copper	243	22.13	1.093	84.60		14.30	35.5	
Lead	243	66.04	0.950	259.32	51.86	4.80		
Nickel	243	110.62		439.10	87.82	5.70		
Mercury		0.44	0.000	1.75	0.35			
Zinc	243	261.67	2.935	1029.98	206.00	50.9		
Chloride (mg/L)		395		1567.95		207.5		

CALCULATION OF EFFLUENT LIMITATIONS BASED ON WC (ug/L)

Receiving Water Flow = 1.15 cfs

SUBSTANCE	WC	Mean Back- ground	Monthly Effl. Limit	1/5 of Effl. Limit	Mean Effl. Conc.	30- day P99	30- day Max. Conc.
Mercury	1.30E-03	0.00E+00	6.51E-03	1.30E-03			

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

Receiving Water Flow = 2.89 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	0.0253	4111	822	<0.3		
Chromium (+3)		3.82E+06	0.836	4.24E+07	8.48E+06	0.76		
Lead		140	0.9501	1546	309	4.80		
Mercury		1.50E-03	0.00E+00	1.67E-02	3.33E-03			
Nickel		4.30E+04		4.78E+05	9.55E+04	5.70		

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

Receiving Water Flow = 2.89 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		148	30	<4		

Date	Cu (µg/L)	Date	Cl- (mg/L)	Date	Hardness (mg/L as CaCO ₃)
20-Jan-14	6.9	20-Jan-14	230	20-Jan-14	313
23-Jan-14	5	23-Jan-14	220	23-Jan-14	280
26-Jan-14	3.2	26-Jan-14	200	26-Jan-14	296
29-Jan-14	6.3	29-Jan-14	180	29-Jan-14	280
01-Feb-14	6.8				
04-Feb-14	10.1				
07-Feb-14	8				
10-Feb-14	10				
13-Feb-14	27.7				
16-Feb-14	32.7				
19-Feb-14	40.6				

WHOLE EFFLUENT TOXICITY (WET) TESTING CHECKLIST SUMMARY

	Acute	Chronic
IWC	Not Applicable for Acute	Instream Waste Concentration : 25 (< 35% = 0 pts; 36 - 65% = 1- pts; >65% = 15 pts) Total Points: 0
Historical Data	Acute RPF : 0 a limit is required if >= 0.3 Total Points: 0	Chronic RPF : 0 a limit is required if >= 0.3 Total Points: 0
Effluent Variability	Points assessed for effluent variability, permit violations and WWTP operations Total Points: 0	Same as Acute Total Points: 0
Stream Classification	Points assessed due to receiving water classification 5	Same as Acute Total Points: 5
Chemical Specific Data	Acute WQBEL required: 0 Substances detected without WQBEL: 7 Additional compounds of concern: 0 Total Points: 3	Chronic WQBEL required: 0 Substances detected without WQBEL: 7 Additional compounds of concern: 0 Total Points: 3
Additives	# Biocide(s): 0 # Water Quality Conditioners: 1 Total Points: 1	Same as Acute Total Points: 1
Discharge Category	# of industrial contributor(s): 2 Total Points: 6	Same as Acute Total Points: 6
Wastewater Treatment	Points assessed for effluent variability, permit violations and WWTP operations Total Points: 0	Same as Acute Total Points: 0
Downstream Impacts	Points assessed due to ecological impacts solely or partially due to the discharge Total Points: 0	Same as Acute Total Points: 0
TOTAL POINTS	Acute : 15	Chronic : 15

Facility Type:	Municipal
Secondary values considered and no WET data?	N
Is this facility classified as either a Major Municipal or Primarily Industrial Facility?	N
Effluent limits based on a dissolved water quality criterion?	N
Acute Frequency:	2 tests in permit term
Chronic Frequency:	No WET tests needed
Recommended Chronic Dilution Series:	100% 30% 10% 3% 1%
NEW IWC:	25

Temperature limits for receiving waters with unidirectional flow

(calculation using default ambient temperature data)

Facility:	Hillsboro	Data Range	7Q10 or 4Q3: 3.4 cfs
Outfall(s):	001	Start:	06/01/11
Date Prepared:	3-Sep-14	End:	07/31/14
Design Flow (Qe):	0.185 mgd	Dilution:	100%
		f:	0
		Stream type:	Small warm water sport or forage fish community ▼
		Qs:Qe ratio:	11.9 :1
		Calculation Needed?	YES

Month	Water Quality Criteria			Receiving Water Flow Rate (Qs) (cfs)	Representative Highest Effluent Flow Rate (Qe)		Representative Highest Monthly Effluent Temperature		99th Percentile of Representative Data		Calculated Effluent Limits	
	Ta (default) (°F)	Sub-Lethal WQC (°F)	Acute WQC (°F)		7-day Rolling Ave (Qesl) (mgd)	Daily Max Flow Rate (Qea) (mgd)	Weekly Ave (°F)	Daily Max (°F)	Weekly Ave (°F)	Daily Max* (°F)	Weekly Ave Limit (°F)	Daily Max Limit (°F)
JAN	33	49	76	3.40	0.134	0.165					-	120
FEB	34	50	76	3.40	0.244	0.298					-	120
MAR	38	52	77	3.40	0.259	0.392					-	120
APR	48	55	79	3.40	0.558	1.097					83	120
MAY	58	65	82	3.40	0.312	0.509					114	120
JUN	66	76	84	3.40	0.393	0.705					-	120
JUL	69	81	85	3.40	0.142	0.291					-	120
AUG	67	81	84	3.40	0.108	0.148					-	120
SEP	60	73	82	3.40	0.105	0.177					-	120
OCT	50	61	80	3.40	0.122	0.209					-	120
NOV	40	49	77	3.40	0.137	0.221					-	120
DEC	35	49	76	3.40	0.107	0.146					-	120

*NA - Indicates that there are greater than 100 daily maximum values, therefore 99th percentile would be a value less than the recorded daily maximum.