CITY OF WATERTOWN WWTP

Water Quality Trading Plan for Total Phosphorus

THE CITY OF WATERTOWN

Applied Technologies
Engineers - Architects

June 2022
PN6449

WATER QUALITY TRADING PLAN FOR TOTAL PHOSPHORUS

CITY OF WATERTOWN WWTP

JUNE 2022

Prepared by:

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PN6449

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EXECUTIVE SUMMARY

The City of Watertown (City) owns and operates a wastewater treatment plant (WWTP) with phosphorus limits. These phosphorus limits are based on the Rock River Total Maximum Daily Load (TMDL) allocations, which resulted in more restrictive limits than in previous permits. The City submitted a Final Compliance Alternatives Plan (CAP) to the Wisconsin Department of Natural Resources (WDNR) in September 2018. The Final CAP documented the City's continued efforts to reduce phosphorus loadings in its effluent, evaluated compliance alternatives, and identified the actions that will be implemented to meet the TMDL phosphorus limits.

Water Quality Trading was selected as one alternative to comply with the new TMDL limits. This WQT plan (Plan) details the methods the City will use to secure at least the required 66 lbs/year in annual nonpoint source credits.

The City will implement a combination of best management practices (BMPs), including wetland restoration and perennial vegetation, on fields it owns to generate nonpoint source credits. SnapPlus modeling was used to estimate that the BMPs will result in approximately 102 lbs/year in reduced phosphorus loadings to the watershed. After applying the trade ratio of 1.2:1, this results in approximately 85 lbs/year in credits that the City can apply throughout the year to demonstrate compliance.

A Water Quality Trade agreement between the City and the WDNR is proposed in this Plan, and the City is applying to register this nonpoint-to-point trade. The City plans to contract with a third-party to implement the wetland restoration and perennial vegetation BMPs. The City plans to maintain these BMPs through at least Fall 2028, with an intention to maintain these BMPs, generate WQT credits, and apply these credits towards permit compliance for as long as possible thereafter.

SECTION 1
INTRODUCTION

The City of Watertown (City) owns and operates a wastewater treatment plant (WWTP) with phosphorus limits. These phosphorus limits are based on the Rock River Total Maximum Daily Load (TMDL) allocations, which resulted in more restrictive limits than in previous permits. The City submitted a Final Compliance Alternatives Plan (CAP) to the Wisconsin Department of Natural Resources (WDNR) in September 2018. The Final CAP documented the City's continued efforts to reduce phosphorus loadings in its effluent, evaluated compliance alternatives, and identified the actions that will be implemented to meet the TMDL phosphorus limits.

Operational improvements and minor facility modifications alone would not enable the City to meet the new effluent phosphorus limits. Based on the Final CAP, it was recommended that the City achieve compliance using a combination of alternatives, including chemical phosphorus removal-and Water Quality Trading (WQT).

Consequently, the WDNR requires a WQT plan (Plan) to detail the methods the City will use to comply with its phosphorus discharge limits. As presented in Table 1-1, a total of 66 lbs/year in annual nonpoint source credits were estimated to be required for compliance.

The City owns several fields adjacent to the WWTP site, including BE06 and BE08 west of the railroad. The City will implement a combination of best management practices (BMPs), including wetland restoration and perennial vegetation, to generate nonpoint source credits on an annual basis. SnapPlus modeling was used to estimate the number of credits generated. These annual credits can then be applied as needed throughout the year to demonstrate compliance.

Table 1-1 Estimated Annual Phosphorus Credits Required				
Month	**Total Phosphorus Effluent Limit (lbs/day)**	**Average Flow[1] (mgd)**	**Estimated Effluent T-P Loading[2] (lbs/day)**	**Required Offset[2] (lbs/year)**
January	13.7	3.21	10.7	-
February	19.5	3.23	10.8	-
March	18.4	4.41	14.7	-
April	18.3	4.00	13.3	-
May	16.5	4.12	13.8	-
June	17.6	3.42	11.4	-
July	17.7	3.25	10.8	-
August	16.2	4.01	13.4	-
September	14.8	4.31	14.4	-
October	12.3	4.32	14.4	66.1
November	12.3	3.60	12.0	-
December	11.9	3.18	10.6	-
Total	-	-	-	66

1. Based on August 2018 – July 2021 flow data.
2. Based on an average day effluent phosphorus concentration of 0.4 mg/l.

SECTION 2
PROJECT BACKGROUND

2.0 PROJECT INFORMATION

2.1 Facility and Field Locations

The City of Watertown owns and operates a 5.2 mgd wastewater treatment plant (WWTP) located at 800 Hoffman Rd, Watertown, WI, 53094, as shown in Appendix C. The WWTP discharges to Rock River (Middle Rock River Watershed, UR01 – Upper Rock River Basin) in Jefferson County. The facility's outfall is regulated by the Wisconsin Department of Natural Resources' (WDNR) Wisconsin Permit Discharge Elimination System (WPDES) Permit No. WI-0028541-09-0. In Phase 1, the City will generate credits on two fields, as shown in Appendix B: BE06 and BE08 which are located across the railroad to the west of the WWTP.

2.2 Existing Land Use

BE06 and BE08 are currently used to grow corn and soybeans on 20.5 and 40.8 acres, respectively. These fields have been farmed in a corn/soy rotation since at least 2014, according to the SnapPlus database. See Appendix D for records back to 2017, and Appendix E (WQ1: P Trade Report) for records back to 2016. The City also owns adjacent fields, including BE21, BE14, and BE07. No additional acreage will be farmed as a result of this trade, and that pollutant loading from other City-owned fields will not increase as a result of this trade.

Table 2-1
Existing Land Use, Phase 1

Field	Acres	Existing Land Use
BE06	20.5	Corn and Soybeans
BE08	40.8	Corn and Soybeans
Total	61.3	-

2.3 Soil Sampling

The Snap Plus modeling was completed using agronomist records from the Snap Plus database for each farm. Soil sampling reports can be found in Appendix E. The Planner has certified the following with the 590 Checklist, which accompanies the Nutrient Management Plan:

1. The plan includes the following nutrient application requirements to protect surface and groundwater:
    a. Field nutrient levels were determined from soil samples analyzed by a DATCP certified laboratory.
    b. For fields or pastures with mechanical nutrient applications, field nutrient levels were determined from soil samples collected within the last 4 years according to 590 Standard (590) and UWEX Pub. A2809, Nutrient Application Guidelines for Field, Vegetable, and Fruit Crops in Wisconsin (A2809) typically collecting 1 sample per 5 acres of 10 cores.

Furthermore, the 590 Standard specifies the following about soil sampling:

1. Soils shall be tested a minimum of once every four years by a DATCP-certified laboratory for pH, phosphorus (P), potassium (K), and organic matter. A laboratory list is provided in Part VI of the Technical Note WI-1. Soil sampling shall be consistent with UWEX Pub. A2809, "Nutrient application guidelines for field, vegetable, and fruit crops in Wisconsin," or A2100, "Sampling Soils for Testing." For perennial fruit crops, use of soil test recommendations from UWEX Pub. A2809 is only required as the basis for fertilizer applications prior to establishment of new plantings.

2.4 Trade Ratio

A trade ratio is utilized to determine the number of credits received from the water quality trading. The following values were assumed to calculate the City's trade ratio:

Delivery: 0. The WWTP and the credit generating acreage are both located in the same hydraulic unit code (HUC) 12 area.

Downstream: 0. The point of standards application for the Watertown WWTP is the bottom of the reach that generated the credit user's wasteload allocation. The lower boundary of Reach 29 is located downstream of both the WWTP and the credit generator, as shown in Appendix C.

Equivalency: 0. Equivalency is not required for phosphorus trading.

Uncertainty: 1. The management practices under consideration are wetland restoration and perennial vegetation.

The calculated trade ratio is 1:1; however, a minimum trade ratio of 1.2:1 is required for non-point sources to point sources.

2.5 SnapPlus Modeling

SnapPlus modelling was conducted to determine the phosphorus losses from two scenarios: the baseline, without any new BMP, and the proposed, including the proposed BMPs. Table 2-1 compares the modelling results of the two scenarios. Additional details are in Appendix E.

Table 2-2
Estimated Annual Phosphorus Reductions, Phase 1

Scenario	Field	Acres	Phosphorus Losses (PTP) lbs P / year							TP Reductions (lbs P/year)
			2022	2023	2024	2025	2026	2027	Avg.	
Baseline: Corn/Soybeans	BE06	20.5	130	47	73	43	72	42	68	0
	BE08	40.8	148	120	77	122	150	199	123	0
	Total	61.3	278	167	150	165	222	161	**191**	**0**
Proposed: Wetland Restoration & Perennial Vegetation, Corn/Soybeans in part of BE08	BE06 – Perennial Veg.	12.7	11	7	5	4	4	4	6	58
	BE06 - Wetland Rest.	7.8	6	4	3	3	2	2	3	
	BE08 – Perennial Veg.	15.8	5	3	2	2	2	2	3	44
	BE08 – Corn/Soy	25.0	92	74	49	76	93	74	76	
	Total	61.3	114	88	59	85	101	82	**88**	**102**

2.6 Credit Generation

Based on the results presented in Tables 2-1 and 2-2, portions of field BE06 will be restored into wetlands. The remainder of field BE06 will be converted into perennial vegetation, along with approximately 15.8 acres of BE08. Implementing these BMPs will prevent approximately 102 pounds of total phosphorus from entering the watershed each year as compared to the baseline condition.

Fields BE06 and BE08 are within Reach 29 of the Rock River TMDL, as shown in Appendix C. According to Appendix H of the Rock River TMDL, non-point sources contributing to Reach 29 are required to reduce TP loads by 36% from the baseline. The assumed baseline loading for agricultural fields is equivalent to a Phosphorus Index (PI) of 6 lbs P/acre-year. Given the required reduction of 36%, the credit threshold for these fields is 3.84 lbs P/acre-year.

In both the baseline and proposed conditions, all of the fields had rotational average Phosphorus Index (PI) values below 3.84 lbs P/acre-year. These rotational average PI values ranged from a maximum of 3.31 lbs P/acre-year (Baseline BE06) to a minimum of 0.17 lbs P/acre-year (Proposed BE08 – Perennial Vegetation). Therefore, all credits generated will be long-term credits.

Table 2-3 presents the total number of credits generated by each field, after applying the trade ratio of 1.2:1. Consequently, the City will be able to apply 85 lbs/year in phosphorus credits to its permit to demonstrate compliance, which is almost 30% more than the anticipated requirement of 66 lbs/year. As nonpoint-to-point source WQT credits, the City will be able to apply the credits to any month within the year, although they will not rollover to subsequent years.

Table 2-3
Estimated Annual Phosphorus Credits Available, Phase 1

Field	Acres	TP Reductions (lbs P/year)	TP Credits (lbs P/year)
BE06	20.5	58	48
BE08	40.8	44	37
Total	61.3	**102**	**85**

SECTION 3
MANAGEMENT PRACTICE

3.0 MANAGEMENT PRACTICE BACKGROUND INFORMATION

3.1 Management Practice Description & Plan

The City plans to contract with a third-party to implement the wetland restoration and perennial vegetation BMPs. The City plans to maintain these BMPs through at least Fall 2028, with an intention to maintain these BMPs, generate WQT credits, and apply these credits towards permit compliance for as long as possible thereafter.

Establishment procedures for wetland restoration and perennial vegetation are included in Appendix F. Field Inspection and Operations and Maintenance Plans for the upkeep of restored wetlands and perennial vegetation are also included in Appendix F, based on guidancefrom the Natural Resources Conservation Service (NRCS), an agency of the United States Department of Agriculture (USDA).

All planting practices, tracking procedures, inspection requirements, and operation and maintenance of the planting practice will be completed in accordance with standards provided by the USDA.

SECTION 4
TIMELINE

4.0 SCHEDULE FOR INSTALLATION OF PRACTICE

4.1 Timeline for Actions

Table 4-1
Timeline for Actions

Date	Action
August 2022	Complete Construction – Wetland
August 2022	Complete Construction – Grassland Perennial Vegetation
September 2022	Post-Construction Inspection
January 2023	Credits become available

SECTION 5
INSPECTIONS AND REPORTING

5.0 METHODS FOR INSPECTION, REPORTING, AND OPERATIONS AND MAINTENANCE

5.1 Inspections, Certification, and Reporting

Wetland restoration requires that the City of Watertown or the City's agent inspect the restored fields generating the phosphorus reduction credits to confirm the management practice is in acceptable conditions as required below:

- Inspections shall take after significant storm event and at least annually to identify repair and maintenance needs.
- The downstream toe of the embankment shall be inspected annually to ensure that no wet areas or seeps are present.
- Fields shall be inspected at least once a month for burrowing animals.

The City or the City's agent shall certify that the management practices installed are operated and maintained in a manner consistent with that specified in this WQT Plan or provide a statement noting noncompliance. A certification of compliance may be made by including the following statement as a comment on the monthly discharge monitoring report (DMR):

"I certify that to the best of my knowledge the management practice identified in the approved WQT plan as the source of phosphorus reduction credits is installed, established and properly maintained."

Photos taken during inspection can be used to verify compliance or noncompliance annual reports. Usage and reporting of phosphorus credits will be submitted on the DMRs.

5.2 Notification of Problems with Management Practice

Fields will be inspected one month after installation to verify compliance with relevant NRCS standards. After that, the fields will be inspected per the Operation and Maintenance Plan.

The WDNR will be provided written notification if the City becomes aware that phosphorus reduction credits used or intended for use by the City are not being implemented or generated as set forth in this WQT Plan. The City shall work to rectify such problems in accordance with the Operation and Maintenance Plan and the Water Quality Trading Agreement.

The WDNR has consistently provided assurance that if a permittee followed their WQT Plan but did not generate the estimated credits, then the WDNR would not issue a Notice of Violation (NOV), but would require the permittee to update their Plan to secure additional reductions. As part of this Plan, the City and the WDNR shall commit to the following contingency procedure in case insufficient credits would be generated:

- The City shall notify the WDNR within 7 days of becoming aware of an anticipated change in credits forecast by the Water Quality Trading Plan.
- If this notification would occur between January 1 and June 30 (e.g., 2023), then the City would commit to securing sufficient credits to be generated by the start of the following calendar year (e.g., 2024).
- If this notification would occur between July 1 and September 30 (e.g., 2023), then the City would *attempt* to secure sufficient credits to be generated by the start of the following calendar year (e.g., 2024). The City would *not* commit to securing sufficient credits to be generated by the start of the following calendar year (e.g., 2024).
- If this notification would occur between October 1 and December 31 (e.g., 2023), then the City would not be able to secure sufficient credits prior to the following calendar year (e.g., 2024), but would instead commit to secure enough credits within the following calendar year (e.g., 2024) to be applied more than a year later (e.g., 2025). If the City concludes at any time between July 1 and December 31 that it will *not be able* to secure sufficient credits prior to the start of the following calendar year (e.g., 2024), then the City would commit to provide a brief written summary to the WDNR prior to the year's end (e.g., December 31, 2023) of the City's unsuccessful efforts to secure sufficient credits.
- Consequently, the WDNR has indicated that it will follow a stepped enforcement process to resolve any potential issues, and will consider all pertinent information when determining which regulatory mechanism will be required. Although the WDNR reserves the right to issue a notice of violation (NOV) or notice of noncompliance (NON), the City does not expect that the WDNR would issue a NOVnor a NON to the City regarding phosphorus compliance as long as:
    - The City does not exceed its proposed annual average effluent plant effluent target (0.4 mg/L TP)

- The City executes agreements to fund best management practices (BMPs) that will secure credits totaling 66 lb/year, and
- The City follows the contingency procedure above if insufficient credits will be generated.

5.3 Annual Water Quality Trading Report

The City shall report to WDNR, by January 31 of each year, the following:

- The number of phosphorus reduction credits (lbs/month) used each month of the previous year to demonstrate compliance;
- Photographs from inspections, if available, of the management practice that generated the phosphorus reduction credits used during the previous years; and
- Identification of noncompliance or failure to implement any terms or conditions WPDES permit WI-0028541-09-0 with respect to WQT that have not been reported in discharge monitoring reports.

5.4 WDNR Right to Inspect the Fields

The WDNR has the right to inspect the permanent management practice at any time upon given reasonable notice to the WWTP to ensure the management practice is in compliance with NRCS Technical Standards 327 and 657 and the terms of this plan.

SECTION 6
WATER QUALITY TRADING CHECKLIST

6.0 WATER QUALITY TRADING CHECKLIST

The Water Quality Trading Checklist (Form 3400-208) can be found in Appendix G.

6.1 Water Quality Trading Management Practice Registration

Registration Form 3400-207 for Water Quality Trading Management Practice Registration can be found in Appendix G.

6.2 Water Quality Trade Agreement

The City will generate the nonpoint source credits without the need for a trading partner. Therefore, the trade agreement will be made between the City and WDNR. The trade agreement is required to be in place prior to using trading to demonstrate compliance with the new phosphorus limits. A draft agreement is included in Appendix G, and a final agreement will be executed prior to approval of the Plan.

SECTION 7
WATER QUALITY TRADING PLAN CERTIFICATION

7.0 WATER QUALITY TRADING PLAN CERTIFICATION

The undersigned hereby certified that this WQT Plan is, to the best of their knowledge, accurate and correct.

Submitted for Approval by: _____ (signed)

Peter Hartz _____ (printed)
Authorized Permit Representative

APPENDIX

APPENDIX A:
NOTICE OF INTENT
(FORM 3400-206)

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison WI 53707-7921
dnr.wi.gov

Notice of Intent to Conduct Water Quality Trading

Form 3400-206 (1/14)

Notice: Pursuant to s. 283.84, Wis. Stats., and ch. NR 217 Wis. Adm. Code, this form must be completed by any WPDES permittee that is using water quality trading as a method of complying with a permit limitation. Failure to complete this form would not result in penalties. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

Applicant Information

Permittee Name	Permit Number	Facility Site Number
City of Watertown Wastewater Utility	WI- 0028541-08-0	

Facility Address	City	State	ZIP Code
800 Hoffmann Drive	Watertown	WI	53094

Project Contact Name (if applicable)	Address	City	State	ZIP Code
Peter Hartz	800 Hoffmann Drive / PO Box 447	Watertown	WI	53094

Project Name
City of Watertown Wastewater Treatment Facility WQBELs for Total Phosphorus

Receiving Water Name	Parameter(s) being traded	HUC 12(s)
Rock River	Total Phosphorus	070900010608

Is the permittee in a point or nonpoint source dominated watershed? (See PRESTO results - http://dnr.wi.gov/topic/surfacewater/presto.html)
- ○ Point source dominated
- ◉ Nonpoint source dominated

Credit Generator Information

Credit generator type (select all that apply):
- ☐ Permitted Discharge (non-MS4/CAFO)
- ☐ Permitted MS4
- ☐ Permitted CAFO
- ☐ Urban nonpoint source discharge
- ☒ Agricultural nonpoint source discharge
- ☐ Other - Specify: _____

Are any of the credit generators in a different HUC 12 than the applicant?
- ○ Yes; HUC 12: _____
- ◉ No
- ○ Unsure

Are any of the credit generators downstream of the applicant?
- ◉ Yes
- ○ No
- ○ Unsure

Will a broker/exchange be used to facilitate trade?
- ○ Yes; Name: _____
- ◉ No
- ○ Unsure

Point to Point Trades (Traditional Municipal / Industrial Discharge, MS4, CAFO)

Discharge Type	Permit Number	Name	Contact Address	Is the point source credit generator currently in compliance with their permit requirements?
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure

Point to Nonpoint Trades (Non-permitted Agricultural, Non-Permitted Urban, etc.)

List the practices that will be used to generate credits:

Replacement of agricultural land use with wetland restoration and re-establishment of perennial vegetation or other natural restorative practices as approved by Jefferson County Land and Water Department or the City of Watertown.

Method for quantifying credits generated:

- ☐ Monitoring
- ☒ Modeling, Names: Snap Plus
- ☐ Other: _____

Projected date credits will be available: 01/01/2023

The preparer certifies all of the following:

- I am familiar with the specifications submitted for this application, and I believe all applicable items in this checklist have been addressed.
- I have completed this document to the best of my knowledge and have not excluded pertinent information.

Signature of Preparer	Date Signed
[signature]	September 22, 2021

Authorized Representative Signature

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative	Date Signed
[signature]	September 22, 2021

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison WI 53707-7921
dnr.wi.gov

Notice of Intent to Conduct Water Quality Trading

Form 3400-206 (1/14)

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Applicant Information

Permittee Name	Permit Number	Facility Site Number
City of Watertown	WI- 0028541-08-0	

Facility Address	City	State	ZIP Code
800 Hoffman Drive	Watertown	WI	53094

Project Contact Name (if applicable)	Address	City	State	ZIP Code
Kevin Freber	800 Hoffman Drive	Watertown	WI	53094

Project Name
City of Watertown Wastewater Treatment Plant WQBELs for Total Phosphorus

Receiving Water Name	Parameter(s) being traded	HUC 12(s)
Rock River	Total Phosphorus	070900010608

Is the permittee in a point or nonpoint source dominated watershed? (See PRESTO results - http://dnr.wi.gov/topic/surfacewater/presto.html)
- ○ Point source dominated
- ◉ Nonpoint source dominated

Credit Generator Information

Credit generator type (select all that apply):
- ☐ Permitted Discharge (non-MS4/CAFO)
- ☐ Permitted MS4
- ☐ Permitted CAFO
- ☐ Urban nonpoint source discharge
- ☒ Agricultural nonpoint source discharge
- ☐ Other - Specify:

Are any of the credit generators in a different HUC 12 than the applicant?
- ○ Yes; HUC 12:
- ◉ No
- ○ Unsure

Are any of the credit generators downstream of the applicant?
- ◉ Yes
- ○ No
- ○ Unsure

Will a broker/exchange be used to facilitate trade?
- ○ Yes; Name:
- ◉ No
- ○ Unsure

Point to Point Trades (Traditional Municipal / Industrial Discharge, MS4, CAFO)

Discharge Type	Permit Number	Name	Contact Address	Is the point source credit generator currently in compliance with their permit requirements?
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure
○ Traditional ○ MS4 ○ CAFO				○ Yes ○ No ○ Unsure

Point to Nonpoint Trades (Non-permitted Agricultural, Non-Permitted Urban, etc.)

List the practices that will be used to generate credits:

Replacement of agriculture with perennial vegetation.

Method for quantifying credits generated:
- ☐ Monitoring
- ☒ Modeling, Names: Snap Plus
- ☐ Other:

Projected date credits will be available: 09/30/2018

The preparer certifies all of the following:

- I am familiar with the specifications submitted for this application, and I believe all applicable items in this checklist have been addressed.
- I have completed this document to the best of my knowledge and have not excluded pertinent information.

Signature of Preparer	Date Signed
	19 October 2017

Authorized Representative Signature

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

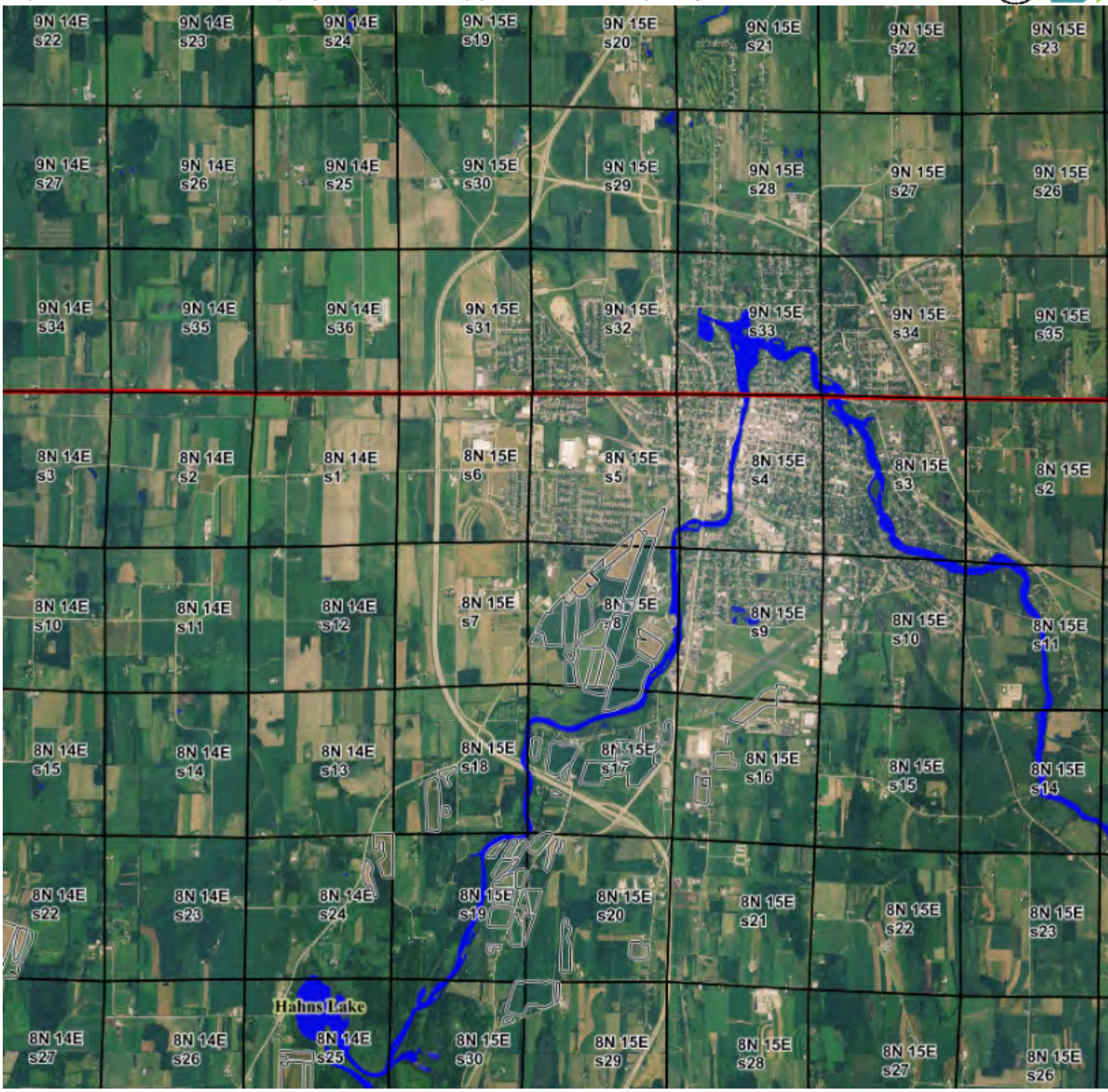
Signature of Authorized Representative	Date Signed
	10-23-2017

APPENDIX B:
CREDIT GENERATOR MAPS


BE19
BE05
BE15B
8N 15E
s8
Perennial
Vegetation:
Phase 1
BE06
BE15
City of
Watertown
WWTP
BE14
BE06
Phase 1
Wetland
Restoration
BE21
BE13
Perennial Vegetation:
Phase 1 BE08
BE08
Split still in Ag
BE12
BE07
BE09

Watertown

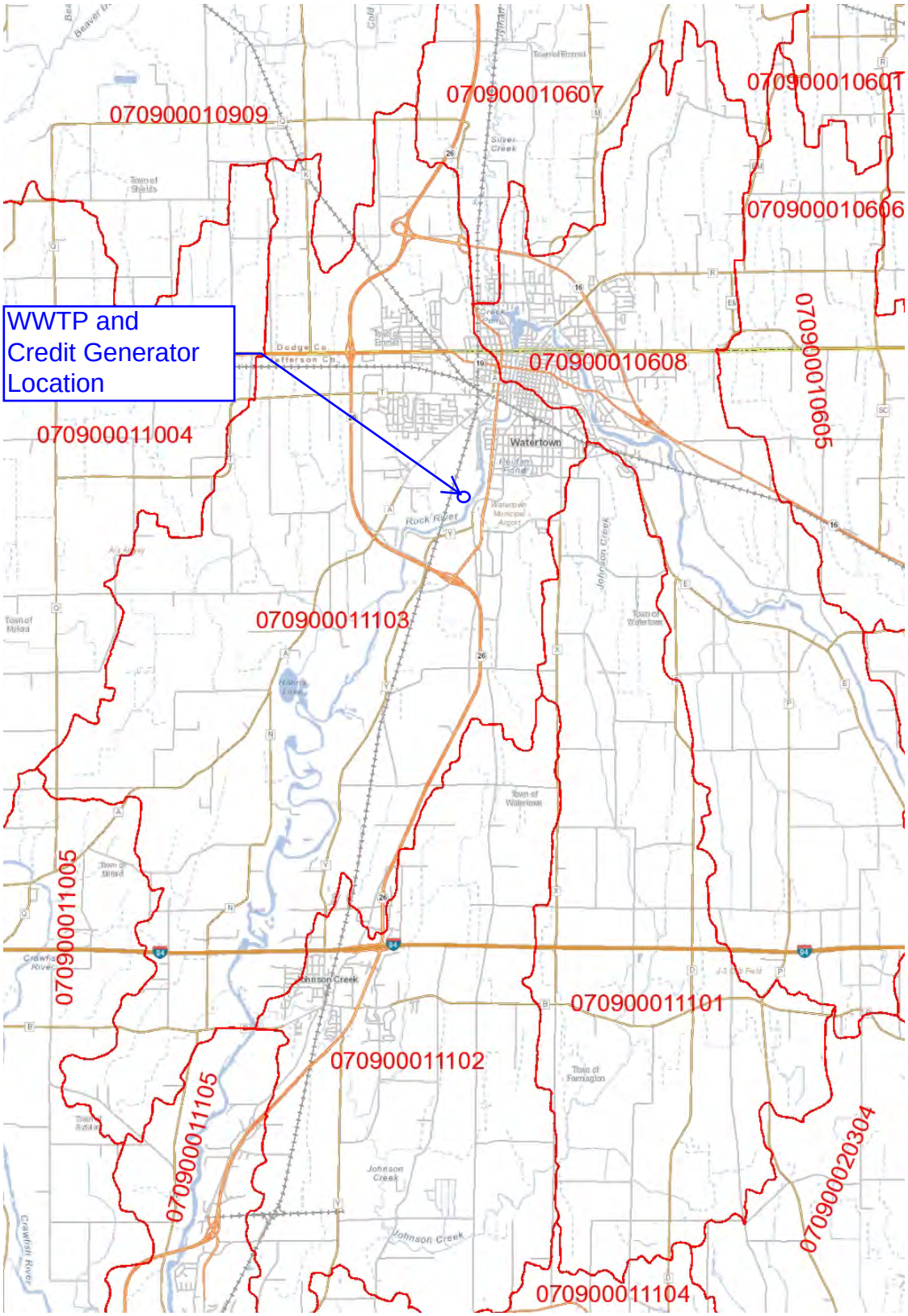
Map Generated on:7/30/2018 SnapMap Version: 17 , Crop year: 2018, Township Range Section:9N 15E s31



- Waterbodies
- Counties
- Township/Range
- Areas contributing runoff to direct conduits to groundwater
- Grassed waterway
- Non-eroding channel
- Ephemeral erosion channel
- Ditch
- Gully
- Headland stacks
- Fields

APPENDIX C:
WWTP LOCATION

Surface Water Data Viewer Map



Legend

- 12-digit HUCs (Subwatersheds)
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads
- Tribal Lands
- Rivers and Streams
- Intermittent Streams
- Lakes and Open water

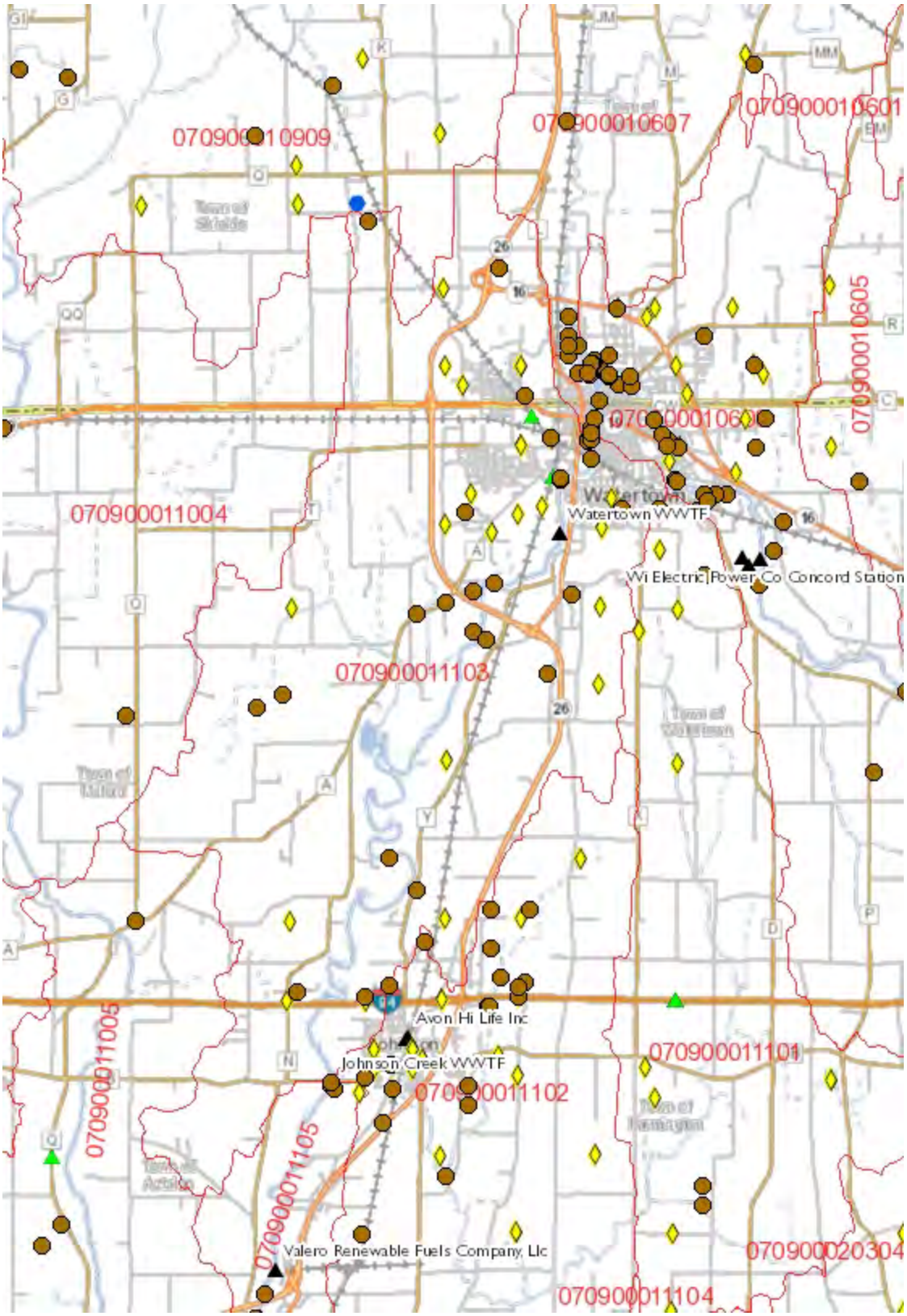
4.0 0 2.00 4.0 Miles

1: 126,720

NAD_1983_HARN_Wisconsin_TM

Notes

Surface Water Data Viewer Map



Legend

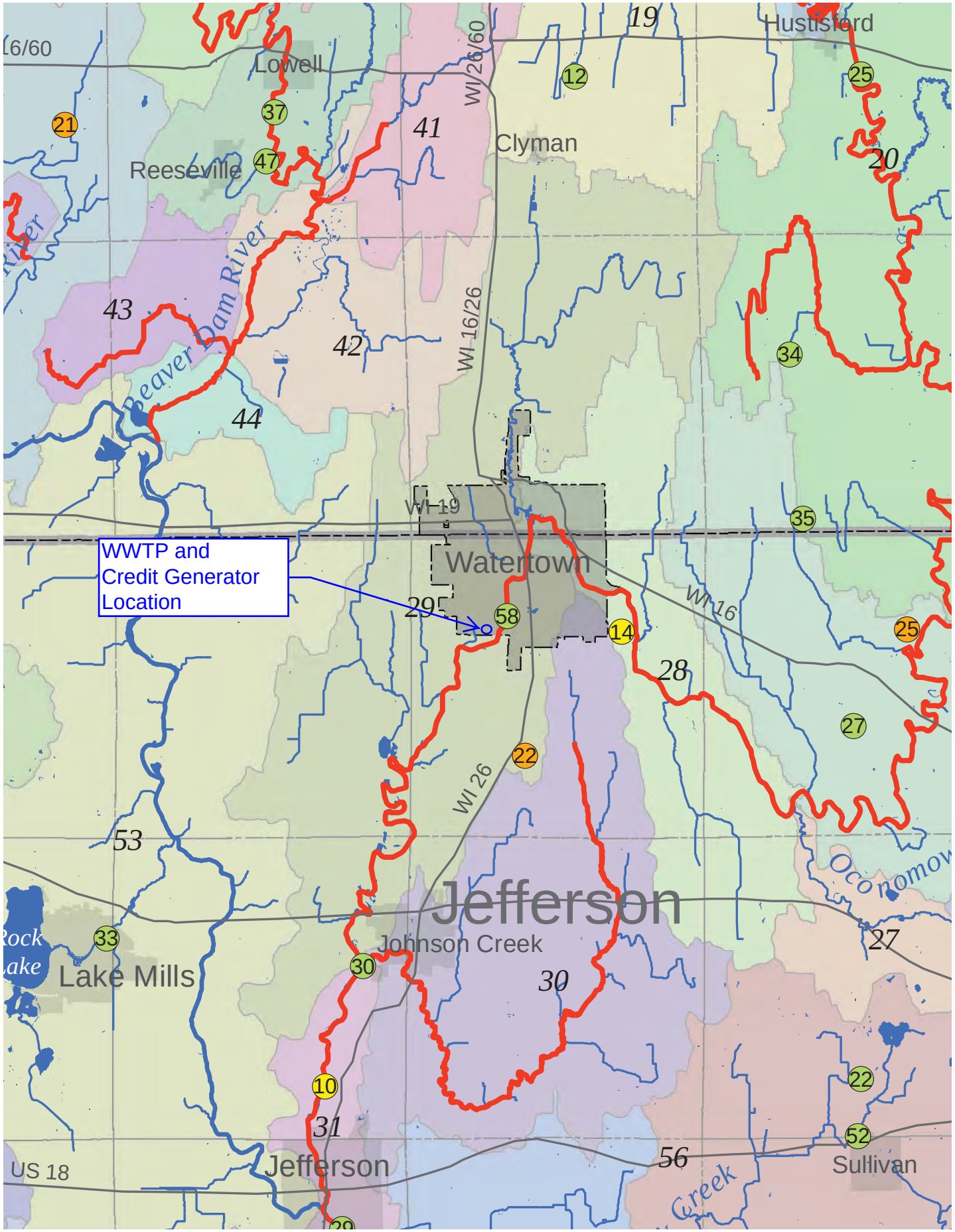
- Waterway and Wetland Alterations
- Informal Actions
- Exemption Determinations
- Ordinary High Water Mark Determinations
- Navigability Determinations
  - Yes
  - Yes with Agricultural Exemption
  - No
- Surface Water Outfalls
- 12-digit HUCs (Subwatersheds)
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads
- Tribal Lands
- Rivers and Streams
- Intermittent Streams
- Lakes and Open water

4.0 0 2.00 4.0 Miles

1: 126,720

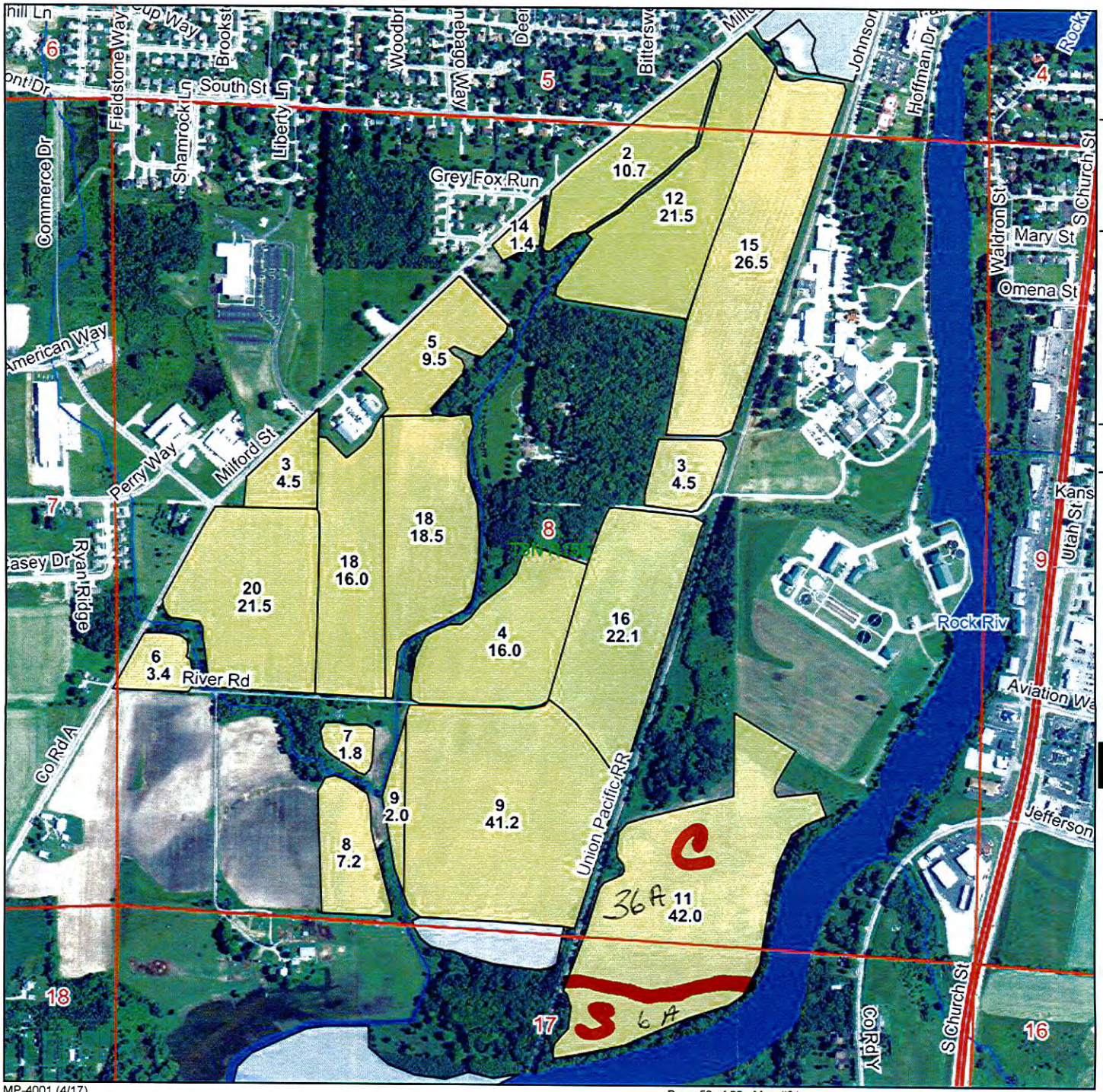
NAD_1983_HARN_Wisconsin_TM

Notes



Reach 29 Map
City of Watertown, WI

APPENDIX D: EXISTING LAND USE INFORMATION



RCIS

Acreage Reporting Form

Dettmann Dairy Farms OP LLC

Crop Year: 2017

HOME PETIG GAULK MAR STRAUSS HOWARDS BETH

KELLIM PPR/LOEB/MCDN/KRPI/LB DETTMERS/ATZALAN ALBERS CHSB LOEB/YENSER DETTMERS

JEFFERSON, WI
T8N R15E section 8

8 T8N R15E

WI-951-686864

[redacted]

Remarks:

APPENDIX E:
SNAPPLUS MODELING DATA

NM1: Narrative and Crops Report

Starting Year	**2021**
Reported For	**Watertown WWTP**
Printed	**2021-04-29**
Plan Completion/Update Date:	**2021-03-02**
SnapPlus Version 20.3 built on 2021-02-18	
C:\Users\joes\Documents\WWWTP WTQ\Watertown WW Project.snapDb	

Prepared for:
Watertown WWTP
attn:City of Watertown

Farm has 6 fields totalling 107 cropped acres.
Farm Narrative: None

Annual Farm Notes:

No Annual Farm Notes

Spreader Calibration Methods: Custom applications, Amount applied / Acres

Narrative and Crops:

Field Name	Field Acres	2021	2022	2023	2024	2025	2026	2027
BE06	20.5	Soybeans 15-20 inch row Spring Cultivation 56-65 bu/acre	Corn grain Spring Cultivation 191-210 bu/acre	Corn grain Fall Chisel, no disk 191-210 bu/acre	Corn grain Fall Chisel, no disk 191-210 bu/acre	Corn grain Fall Chisel, no disk 191-210 bu/acre	Corn grain Fall Chisel, no disk 191-210 bu/acre	Corn grain Fall Chisel, no disk 191-210 bu/acre
BE08	40.8	Soybeans 15-20 inch row Spring Cultivation 56-65 bu/acre	Corn grain Spring Cultivation 231-250 bu/acre	Soybeans 15-20 inch row Spring Cultivation 56-65 bu/acre	Corn grain Fall Chisel, no disk 211-230 bu/acre	Soybeans 15-20 inch row Spring Cultivation 56-65 bu/acre	Corn grain Spring Cultivation 231-250 bu/acre	Soybeans 15-20 inch row Spring Cultivation 56-65 bu/acre
BE08 Split still in Ag	25	Soybeans 15-20 inch row Spring Cultivation 56-65 bu/acre	Corn grain Spring Cultivation 231-250 bu/acre	Soybeans 15-20 inch row Spring Cultivation 56-65 bu/acre	Corn grain Fall Chisel, no disk 211-230 bu/acre	Soybeans 15-20 inch row Spring Cultivation 56-65 bu/acre	Corn grain Spring Cultivation 231-250 bu/acre	Soybeans 15-20 inch row Spring Cultivation 56-65 bu/acre

Field Name	Field Acres	2021	2022	2023	2024	2025	2026	2027
Phase 1 BE06 Prairie	12.7	Soybeans 15-20 inch row Spring Cultivation 56-65 bu/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre
Phase 1 BE06 Wetland	7.8	Soybeans 15-20 inch row Spring Cultivation 56-65 bu/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre
Phase 1 BE08 Prairie	15.8	Soybeans 15-20 inch row Spring Cultivation 56-65 bu/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre

Summary by Crop:

NOTE: Yields calculated using the midpoint of the SnapPlus yield goal range for each crop.

Crops Grouped By Category		2021	2022	2023	2024	2025	2026	2027
Corn grain	Acres bu		86 17,243	21 4,211	86 17,243	21 4,211	86 17,243	21 4,211
Soybeans 15-20 inch row	Acres bu	123 7,442		66 3,993		66 3,993		66 3,993
Grasslands, permanent, not harvested	Acres none		36 0	36 0	36 0	36 0	36 0	36 0

WQ1: P Trade Report

Reported For	Watertown WWTP
Printed	2021-04-30
Plan Completion/Update Date	2021-03-02
SnapPlus Version 20.3 built on 2021-02-18	
C:\Users\joes\Documents\WWWTP WTQ\Watertown WW Project.snapDb	

Prepared for:
Watertown WWTP
attn:City of Watertown

The P Trade Report estimates the annual pounds of phosphorus (P) in surface runoff from cropland entering surface waters. These P loss calculations are based on a field's soil test P concentration, crops, tillage, nutrient management practices and estimates of average runoff and sheet and rill erosion for the predominant soil type. Losses from concentrated flow channel or gully erosion with a field are not included in these calculations. Field runoff losses are calculated for each year as **PTP** (lb P/field/yr). Fields are only included if there are at least 2 years of crops before the selected start year. Before using this report as part of a Water Quality Trade activity, phosphorus losses (PTP) must be converted into 'P credits' according to DNR guidance.

For more information go to **http://dnr.wi.gov/** and type keyword: **Water Quality Trading**

Questions? Please contact DNRphosphorus@wisconsin.gov

This report was developed for Wisconsin DNR Water Quality Trading and Adaptive Management purposes and cannot be used to demonstrate compliance with NR 151 or NRCS 590 NM plan requirements.

P Trade Report				PTP											PTP
Field Name	Soil Series	Soil Symbol	Acres	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
BE06	MATHERTON	MmA	21	40	48	34	44	89	57	130	47	73	43	72	42
BE08	SISSON	SoB	41	116	85	173	35	69	118	148	120	77	122	150	119
BE08 Split still in Ag	SISSON	SoB	25	23	34	19	17	38	73	92	74	49	76	93	74
Phase 1 BE06 Prairie	MATHERTON	MmA	13	24	30	21	27	55	31	11	7	5	4	4	4
Phase 1 BE06 Wetland	MATHERTON	MmA	8	15	18	13	17	34	22	6	4	3	3	2	2
Phase 1 BE08 Prairie	SISSON	SoB	16	45	33	67	13	27	16	5	3	2	2	2	2
Total			123	262	248	326	154	312	317	393	254	210	250	324	244

FM6: Soil Test Report

Reported For	Watertown WWTP
Printed	2021-04-29
Plan Completion/Update Date	2021-03-02
SnapPlus Version 20.3 built on 2021-02-18	
C:\Users\joes\Documents\WWWTP WTQ\Watertown WW Project.snapDb	

Prepared for:
Watertown WWTP
attn:City of Watertown

			Predominant					Samples				in ppm			
Field Name	Subfarm	Acres	Soil Map Symbol	Soil Name	Soil Test Date	Soil Test Lab	Lab Number	Rec. #	Actual #	pH	OM%	P	K	S	CEC
BE06	Bethesda	20.5	MmA	MATHERTON	2018-12-27	AgSource	726047	**3**	**4**	7.4	9.4	46	179	0	20
BE06	Bethesda	20.5	MmA	MATHERTON	2015-04-27	AgSource	758631	**3**	**4**	7.5	15.0	46	248	0	24
BE06	Bethesda	20.5	MmA	MATHERTON	2010-10-26	AgSource	710772	**3**	**4**	6.8	24.1	32	134	0	35
BE06	Bethesda	20.5	MmA	MATHERTON	2007-04-25	Agsource		**3**	**4**	7.5	10.8	15	105	0	0
BE08	Bethesda	40.8	SoB	SISSON	2018-12-27	AgSource	726048	**8**	**9**	7.5	3.4	25	77	0	12
BE08	Bethesda	40.8	SoB	SISSON	2015-04-27	AgSource	758631	**8**	**9**	7.7	3.9	41	86	0	16
BE08	Bethesda	40.8	SoB	SISSON	2010-10-07	AgSource	709533	**8**	**8**	7.7	3.2	25	67	0	16
BE08	Bethesda	40.8	SoB	SISSON	2007-04-25	Agsource		**8**	**1**	6.3	1.7	25	66	0	0
BE08	Bethesda	40.8	SoB	SISSON	2006-10-05	Agsource		**8**	**5**	7.7	4.8	14	53	0	0
BE08 Split still in Ag	Bethesda	25	SoB	SISSON	2018-12-27	AgSource	726048	**5**	**9**	7.5	3.4	25	77	0	12
BE08 Split still in Ag	Bethesda	25	SoB	SISSON	2015-04-27	AgSource	758631	**5**	**9**	7.7	3.9	41	86	0	16
BE08 Split still in Ag	Bethesda	25	SoB	SISSON	2010-10-07	AgSource	709533	**5**	**8**	7.7	3.2	25	67	0	16
BE08 Split still in Ag	Bethesda	25	SoB	SISSON	2007-04-25	Agsource		**5**	**1**	6.3	1.7	25	66	0	0
BE08 Split still in Ag	Bethesda	25	SoB	SISSON	2006-10-05	Agsource		**5**	**5**	7.7	4.8	14	53	0	0
Phase 1 BE06 Prairie	Bethesda	12.7	MmA	MATHERTON	2018-12-27	AgSource	726047	**3**	**4**	7.4	9.4	46	179	0	20

			Predominant					Samples				in ppm			
Field Name	Subfarm	Acres	Soil Map Symbol	Soil Name	Soil Test Date	Soil Test Lab	Lab Number	Rec. #	Actual #	pH	OM%	P	K	S	CEC
Phase 1 BE06 Prairie	Bethesda	12.7	MmA	MATHERTON	2015-04-27	AgSource	758631	**3**	**4**	7.5	15.0	46	248	0	24
Phase 1 BE06 Prairie	Bethesda	12.7	MmA	MATHERTON	2010-10-26	AgSource	710772	**3**	**4**	6.8	24.1	32	134	0	35
Phase 1 BE06 Prairie	Bethesda	12.7	MmA	MATHERTON	2007-04-25	Agsource		**3**	**4**	7.5	10.8	15	105	0	0
Phase 1 BE06 Wetland	Bethesda	7.8	MmA	MATHERTON	2018-12-27	AgSource	726047	**2**	**4**	7.4	9.4	46	179	0	20
Phase 1 BE06 Wetland	Bethesda	7.8	MmA	MATHERTON	2015-04-27	AgSource	758631	**2**	**4**	7.5	15.0	46	248	0	24
Phase 1 BE06 Wetland	Bethesda	7.8	MmA	MATHERTON	2010-10-26	AgSource	710772	**2**	**4**	6.8	24.1	32	134	0	35
Phase 1 BE06 Wetland	Bethesda	7.8	MmA	MATHERTON	2007-04-25	Agsource		**2**	**4**	7.5	10.8	15	105	0	0
Phase 1 BE08 Prairie	Bethesda	15.8	SoB	SISSON	2018-12-27	AgSource	726048	**3**	**9**	7.5	3.4	25	77	0	12
Phase 1 BE08 Prairie	Bethesda	15.8	SoB	SISSON	2015-04-27	AgSource	758631	**3**	**9**	7.7	3.9	41	86	0	16
Phase 1 BE08 Prairie	Bethesda	15.8	SoB	SISSON	2010-10-07	AgSource	709533	**3**	**8**	7.7	3.2	25	67	0	16
Phase 1 BE08 Prairie	Bethesda	15.8	SoB	SISSON	2007-04-25	Agsource		**3**	**1**	6.3	1.7	25	66	0	0
Phase 1 BE08 Prairie	Bethesda	15.8	SoB	SISSON	2006-10-05	Agsource		**3**	**5**	7.7	4.8	14	53	0	0

Crop Year Soil Test Needed

Field Name	Soil Test Date	2018	2019	2020	2021	2022	2023	2024
BE06	2018-12-27						X	
BE08	2018-12-27						X	
BE08 Split still in Ag	2018-12-27						X	
Phase 1 BE06 Prairie	2018-12-27						X	
Phase 1 BE06 Wetland	2018-12-27						X	
Phase 1 BE08 Prairie	2018-12-27						X	

APPENDIX F:
BEST MANAGEMENT PRACTICE INFORMATION

NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

CONSERVATION COVER

(Ac.)

CODE 327

DEFINITION

Establishing and maintaining permanent vegetative cover

PURPOSE

This practice is applied to support one or more of the following purposes:

- Reduce sheet, rill, and wind erosion and sedimentation.
- Reduce ground and surface water quality degradation by nutrients and surface water quality degradation by sediment.
- Reduce emissions of particulate matter (PM), PM precursors, and greenhouse gases.)
- Enhance wildlife, pollinator and beneficial organism habitat.
- Improve soil health.

CONDITION WHERE PRACTICE APPLIES

This practice applies on all lands needing permanent herbaceous vegetative cover. This practice does not apply to plantings for forage production or to critical area plantings. This practice can be applied on a portion of the field.

CRITERA

General Criteria Applicable to All Purposes

Select species that are adapted to the soil, ecological sites, and climatic conditions that are suitable for the planned purpose and site conditions. Periodic removal of some products such as high value trees, medicinal herbs, nuts, and fruits is permitted provided the conservation purpose is not compromised by the loss of vegetation or harvesting disturbance.

Inoculate legumes at planting time.

Choose seeding rates and planting methods that will be adequate to accomplish the planned purpose.

Planting dates, planting methods and care in handling and planting of the seed or planting stock shall ensure that planted materials have an acceptable rate of survival.

Prepare the site by establishing a consistent seeding depth. Eliminate weeds that would impede the establishment and growth of selected species.

Base the timing and equipment selection on the site and soil conditions.

Apply nutrients as needed to ensure crop establishment and planned growth.

Additional Criteria to Reduce Sheet, Rill, and Wind Erosion and Sedimentation

Determine and maintain the amount of plant biomass and cover needed to reduce wind and water erosion to the planned soil loss objective by using the current approved wind and/or water erosion prediction technology.

Additional Criteria to Reduce Emissions of Particulate Matter (PM), PM Precursors, and greenhouse gases

In perennial crop systems such as orchards, vineyards, berries and nursery stock, establish vegetation to provide full ground coverage in the alleyway during mowing and harvest operations to minimize generation of particulate matter.

Additional Criteria to Enhance Wildlife, Pollinator and Beneficial Organism Habitat

Plant a diverse mixture grasses and forbs

species to promote bio-diversity and meet the needs of the targeted species using approved habitat appraisal guides, evaluation tools, and appraisal worksheets for the respective state.

Locate habitat plantings to reduce pesticide exposures that could harm wildlife, pollinators, and other beneficial organisms.

Additional Criteria to Improve Soil Health

To maintain or improve soil organic matter, select plants that will produce high volumes of organic material. The amount of biomass needed will be determined using the current soil conditioning index procedure.

CONSIDERATIONS

This practice may be used to promote the conservation of wildlife species in general, including threatened and endangered species.

Certified seed and planting stock that is adapted to the site should be used when it is available.

Mowing may be needed during the establishment period to reduce competition from weeds.

On sites where annual grasses are an expected weed problem it may be necessary to postpone nitrogen fertilizer application until the planted species are well established.

Where applicable this practice may be used to conserve and stabilize archeological and historic sites.

Consider rotating management and maintenance activities (e.g. mow only one-fourth or one-third of the area each year) throughout the managed area to maximize spatial and temporal diversity.

Where wildlife management is an objective, the food and cover value of the planting can be enhanced by using a habitat evaluation procedure to aid in selecting plant species and by providing or managing for other habitat requirements necessary to achieve the objective. Encouraging plant species diversity and establishing plantings that result in multiple structural levels of vegetation within the conservation cover will maximize wildlife use.

Where pollinator and wildlife habitat are primary purposes consider less dense seeding rates as long as soil loss is within tolerable soil loss limits.

To provide habitat for natural enemies of crop pests, select a mix of plant species that provide year round habitat and food (accessible pollen or nectar) for the desired beneficial species. Consider habitat requirements of predatory and parasitic insects, spiders, insectivorous birds and bats, raptors, and terrestrial rodent predators. Consult Land Grant University Integrated Pest Management recommendations for beneficial habitat plantings to manage the target pest species.

Use a diverse mix of cover plant species that come into bloom at different times and provide a sequence of bloom throughout the year (e.g., plant at least three flowering species from each of the three bloom periods (spring, summer, and fall).

Where practical, use native species that are appropriate for the identified resource concern and management objective. Consider trying to re-establish the native plant community for the site.

If a native cover (other than what was planted) establishes, and this cover meets the intended purpose and the landowner's objectives, the cover should be considered adequate.

During vegetation establishment, natural mulches, such as wood products or hay, can be used to conserve soil moisture, support beneficial soil life, and suppress competing vegetation.

PLANS AND SPECIFICATIONS

Prepare plans and specifications for the site to include, but are not limited to:

- recommended species,
- seeding rates and dates,
- establishment procedures,
- management actions needed to insure and adequate stand

Specifications and operation and maintenance shall be recorded using approved Implementation Requirement document.

OPERATION AND MAINTENANCE

Mowing and harvest operations in a perennial crop system such as orchards, vineyards, berries, and nursery stock shall be done in a manner which minimizes the generation of particulate matter.

If wildlife habitat enhancement is a purpose, maintenance practices and activities shall not disturb cover during the reproductive period for the desired species. Exceptions should be considered for periodic burning or mowing when necessary to maintain the health of the plant community.

Control noxious weeds and other invasive species.

Mowing may be needed during the establishment period to reduce competition from weeds.

To benefit insect food sources for grassland nesting birds, spraying or other control of noxious weeds shall be done on a “spot” basis to protect forbs and legumes that benefit native pollinators and other wildlife.

Re-vegetate bare spots.

REFERENCES

Renard, K.G., G.R. Foster, G.A. Weesies, D.K. McCool and D.C. Yoder. 1997. Predicting Soil Erosion by Water: A Guide to Conservation Planning with the Revised Universal Soil Loss Equation (RUSLE), Agricultural Handbook Number 703.

Revised Universal Soil Loss Equation Version 2 (RUSLE2) website: http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/

Wind Erosion Prediction System (WEPS) website: http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/technical/

Preventing or mitigating potential negative impacts of pesticides on pollinators using IPM and other conservation practices. Nat. Agron. Tech Note 9. Washington, DC. http://directives.sc.egov.usda.gov/

NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

WETLAND RESTORATION

(Ac.)

CODE 657

DEFINITION

The return of a wetland and its functions to a close approximation of its original condition as it existed prior to disturbance on a former or degraded wetland site.

PURPOSE

To restore wetland function, value, habitat, diversity, and capacity to a close approximation of the pre-disturbance conditions by restoring:

- Conditions conducive to hydric soil maintenance.
- Wetland hydrology (dominant water source, hydroperiod, and hydrodynamics).
- Native hydrophytic vegetation (including the removal of undesired species, and/or seeding or planting of desired species).
- Original fish and wildlife habitats.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies only to natural wetland sites with hydric soils which have been subject to the degradation of hydrology, vegetation, or soils.

This practice is applicable only where the natural hydrologic conditions can be approximated by actions such as modifying drainage, restoring stream/floodplain connectivity, removing diversions, dikes, and levees, and/or by using a natural or artificial water source to provide conditions similar to the original, natural conditions.

This practice does not apply to:

- The treatment of point and non-point sources of water pollution (Constructed Wetland - 656);
- The rehabilitation of a degraded wetland, the reestablishment of a former wetland, or the modification of an existing wetland, where specific wetland functions are augmented beyond the original natural conditions; possibly at the expense of other functions.(Wetland Enhancement - 659);
- The creation of a wetland on a site location which was historically non-wetland (Wetland Creation - 658).
- The management of fish and wildlife habitat on wetlands restored under this standard.

CRITERIA

General Criteria Applicable to All Purposes

The purpose, goals, and objectives of the restoration shall be clearly defined in the restoration plan, including soils, hydrology, vegetation, and fish and wildlife habitat criteria that are to be met and are appropriate for the site and the project objectives.

These planning steps shall be done with the use of a functional assessment-type procedure, or a state approved equivalent. The objectives will be determined by an analysis of current and historic site functions. They will be based on those functions which can reasonably be supported by current site constraints. Data from historic and recent aerial photography and/or other remotely sensed data, soil maps, topographic maps, stream gage data, intact reference wetlands, and historical records shall be gathered.

The soils, hydrology and vegetative conditions existing on the site, the adjacent landscape, and the contributing watershed shall be documented in the planning process.

The nutrient and pesticide tolerance of the

plant and animal species likely to occur shall be evaluated where known nutrient and pesticide contamination exists. Sites suspected of containing hazardous material shall be tested to identify appropriate remedial measures. If remedial measures are not possible or practicable, the practice shall not be planned.

The availability of sufficient water rights should be reviewed prior to restoration.

Upon completion, the site shall meet soil, hydrology, vegetation and habitat conditions of the wetland that previously existed on the site to the extent practicable.

Where offsite hydrologic alterations or the presence of invasive species impact the site, the design shall compensate for these impacts to the extent practicable.

Invasive species, federal/state listed noxious plant species, and nuisance species (e.g., those whose presence or overpopulation jeopardize the practice) shall be controlled on the site as necessary to restore wetland functions. The establishment and/or use of non-native plant species shall be discouraged.

Criteria for Hydric Soil Restoration

Restoration sites will be located on soils that are hydric.

If the hydric soil is covered by fill, sediment, spoil, or other depositional material, the material covering the hydric soil shall be removed to the extent needed to restore the original soil functions.

Soil hydrodynamic and bio-geochemical properties such as permeability, porosity, pH, or soil organic carbon levels shall be restored to the extent needed to restore hydric soil functions.

Criteria for Hydrology Restoration

The hydroperiod, hydrodynamics, and dominant water source of the restored site shall approximate the conditions that existed before alteration. The restoration plan shall document the adequacy of available water sources based on groundwater investigation, stream gage data, water budgeting, or other appropriate means.

The work associated with the wetland shall not adversely affect adjacent properties or other water users unless agreed to by signed written letter, easement or permit.

Timing and level setting of water control structures, if needed, will be based on the actions needed to maintain a close approximation of the original, natural hydrologic conditions.

The original natural water supply should be used to reestablish the site's hydrology to approximate the hydrologic conditions of the wetland type. If this is not possible, an alternate natural or artificial water supply can be used; however, these sources shall not be diverted from other wetland resources. If the alternate water source requires energy inputs, these shall be estimated and documented in the restoration plan.

To the extent technically feasible reestablish macrotopography and/or microtopography. Use reference sites within the local area to determine desired topographic relief. The location, size, and geometry of earthen structures, if needed, shall match that of the original macrotopographic features to the extent practicable.

Macrotopographic features, including ditch plugs installed in lieu of re-filling surface drainage ditches, shall meet the requirements of other practice standards to which they may apply due to purpose, size, water storage capacity, hazard class, or other parameters. If no other practice standard applies, they shall meet the requirements for Dike – 356 unless there is no potential for damage to the feature or other areas on or off site due to erosion, breaching, or overtopping.

Excavations from within the wetland shall remove sediment to approximate the original topography or establish a water level that will compensate for the sediment that remains.

Water control structures that may impede the movement of target aquatic species or species of concern shall meet the criteria in Fish Passage, Code 396.

Wetland restoration sites that exhibit soil oxidation and/or subsidence, resulting in a lower surface elevation compared to pre-disturbance, shall take into account the appropriate hydrologic regime needed to support the original wetland functions.

Criteria for Vegetative Restoration

Hydrophytic vegetation restoration shall be of species typical for the wetland type(s) being established and the varying hydrologic regimes and soil types within the wetland. Preference shall be given to native wetland plants with localized genetic material.

Where natural colonization of acceptable species can realistically be expected to occur within 5 years, sites may be left to revegetate naturally. If not, the appropriate species will be established by seeding or planting.

Adequate substrate material and site preparation necessary for proper establishment of the selected plant species shall be included in the plan.

Where planting and/or seeding is necessary, the minimum number of native species to be established shall be based on a reference wetland with the type of vegetative communities and species planned on the restoration site:

- Where the dominant vegetation will be herbaceous community types, a subset of the original vegetative community shall be established within 5 years, or a suitable precursor to the original community will be established within 5 years that creates conditions suitable for the establishment of the native community. Species richness shall be addressed in the planning of herbaceous communities. Seeding rates shall be based upon the percentage of pure live seed and labeled with a current seed tag from a registered seed laboratory identifying the germination rate, purity analysis, and other seed statistics.
- Where the dominant vegetation will be forest or woodland community types, vegetation establishment will include a mix of woody species (trees and/or shrubs) adequate to establish the reference wetland community.

CONSIDERATIONS

Soil Considerations

Consider making changes to physical soil properties, including:

- Increasing or decreasing saturated hydraulic conductivity by mechanical compaction or tillage, as appropriate.
- Incorporating soil amendments.
- The effect of construction equipment on soil density, infiltration, and structure.

Consider changes in soil bio-geochemical properties, including:

- Increasing soil organic carbon by incorporating compost.

Increasing or decreasing soil pH with lime, gypsum, or other compounds

Hydrology Considerations

Consider the general hydrologic effects of the restoration, including:

- Impacts on downstream stream hydrographs, volumes of surface runoff, and groundwater resources due to changes of water use and movement created by the restoration.

Consider the impacts of water level management, including:

- Increased predation due to concentrating aquatic organisms, including herptivores, in small pool areas during draw downs
- Increased predation of amphibians due to high water levels that can sustain predators.
- Decreased ability of aquatic organisms to move within the wetland and from the wetland area to adjacent habitats, including fish and amphibians as water levels are decreased.
- Increases in water temperature on-site, and in off-site receiving waters.
- Changes in the quantity and direction of movement of subsurface flows due to increases or decreases in water depth.
- The effect changes in hydrologic regime have on soil bio-geochemical properties, including: oxidation/reduction; maintenance of organic soils; and salinity

increase or decrease on site and on adjacent areas.

Vegetation Considerations

Consider:

- The relative effects of planting density on fish and wildlife habitat versus production rates in woody plantings.
- The potential for vegetative buffers to increase function by trapping sediment, cycling nutrients, and removing pesticides.
- The selection of vegetation for the protection of structural measures that is appropriate for wetland function.
- The potential for invasive or noxious plant species to establish on bare soils after construction and before the planned plant community is established.
- The use of prescribed burning to restore wetland and adjacent upland plant communities.

Fish and Wildlife Habitat Considerations

Consider:

- The addition of coarse woody debris on sites to be restored to woody plant communities for an initial carbon source and fish and wildlife cover.
- The potential to restore habitat capable of supporting fish and wildlife with the ability to control disease vectors such as mosquitoes.
- The potential to establish fish and wildlife corridors to link the site to adjacent landscapes, streams, and water bodies and to increase the sites colonization by native flora.
- The need to provide barriers to passage for unwanted or predatory species.

PLANS AND SPECIFICATIONS

Plans and specifications for this practice shall be prepared for each site. Plans and specifications shall be recorded using approved specifications sheets, job sheets, or other documentation. The plans and specifications for structural features will include, at a minimum, a plan view, quantities, and sufficient profiles and cross-sections to define the location, line, and grade for stakeout and checkout. Plans and specifications shall be reviewed and approved by staff with appropriate job approval authority.

OPERATION AND MAINTENANCE

A separate Operation and Maintenance Plan will be prepared for sites that have structural features. The plan will include specific actions for the normal and repetitive operation of installed structural items, especially water control structures, if included in the project. The plan will also include the maintenance actions necessary to assure that constructed items are maintained for the life of the project. It will include the inspection schedule, a list of items to inspect, a checklist of potential damages to look for, recommended repairs, and procedures for documentation.

Management and monitoring activities needed to ensure the continued success of the wetland functions may be included in the above plan, or in a separate Management and Monitoring Plan. In addition to the monitoring schedule, this plan may include the following:

- The timing and methods for the use of fertilizers, pesticides, prescribed burning, or mechanical treatments.
- Circumstances when the use of biological control of undesirable plant species and pests (e.g. using predator or parasitic species) is appropriate, and the approved methods.
- Actions which specifically address any expected problems from invasive or noxious species.
- The circumstances which require the removal of accumulated sediment.
- Conditions which indicate the need to use haying or grazing as a management tool, including timing and methods.

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CITY OF WATERTOWN

Field Inspection and Operation & Maintenance Plan - Perennial Vegetation

Vegetation should be established and maintained in accordance with NRCS Technical Standard 327. In addition, field inspections should document and report any large areas of sheet, rill, or gully erosion. Field inspections should be conducted after significant storm events and at least annually to identify repair and maintenance needs.

Per NRCS WI Agronomy Technical Note 5 Establishing and Maintaining Native Grasses, Forbs, and Legumes:

DETERMINING SUCCESS OF THE PLANTING

In determining stand adequacy, there are two major considerations: 1) adequate protection of the soil resource, and 2) adequate stand for the planned purpose. It may be difficult to determine if the prairie restoration is successful, particularly during the seeding year. Most native species are long-lived, but develop slowly. It may take two to five years for a stand to be fully successful. For native plantings determined to be questionable or inadequate, a final evaluation deciding whether to reseed should not be done until after the third growing season. It is often said prairie sleeps the first year (sets root structure), creeps the second year (starts to spread slowly) and leaps in the third year (distinct and prominent). Patience is a virtue.

POST-PLANTING WEED CONTROL

Planting Year Post Emergence Weed Control Mowing – New Seedings

Mesic and wet sites in particular are prone to weed competition. Currently, there are limited herbicides available to control weeds in a prairie restoration planting without potentially impacting native legumes and most forbs. To combat this problem, repeated mowing is essential throughout the establishment period. The first year following seeding, mow growing plants to a height of 7 inches whenever the canopy reaches a height of 12 inches. Depending on rainfall and growing conditions, three mowings may be required. In a normal growing season, mowing should occur around the middle of June, early to mid July as well as the first part of August. It may be necessary to remove the clippings to avoid smothering the seedlings. Utilize a rotary mower or flail chopper to uniformly distribute mowed material over the field surface. It is essential to monitor the canopy height to avoid the accumulation of excess clipped material over top of seedlings and to ensure sunlight reaches the soil surface for the new seeding. Use of this mowing strategy will stress the weeds and will not harm the prairie plants in this first year.

Second Year Weed Control
Routinely evaluate the stand in the second year to determine if mowing for weed control is necessary. When necessary to control weed canopy, mow the planting to a height of 7 inches as

often as required. The strategy in year two will mirror year one maintenance activities. Establishment of your native planting will have precedent over nesting season concerns. Once the prairie is established, wildlife habitat concerns should be mitigated with seasonal or spot treatment activities that will minimally impact wildlife.

POST ESTABLISHMENT MANAGEMENT

Any planned maintenance (except for noxious weed control) after the establishment period, should be done before May 15 or after August 1 to protect nesting cover and reduce disruption of nesting activities.

Spot Treatment By Clipping

Spot clipping can be used to control annual weeds and to suppress other weeds. Spot clipping must be done before the target plant forms viable seed and must continue throughout the growing season. Spot clipping is not an effective control for biennial and perennial weeds but can be used to contain these plants until other control treatments can be implemented.

Spot Treatment With Herbicide

It is often necessary to spot treat invasive plants in a prairie. Introduced grasses and legumes and other aggressive weeds can severely impact a prairie when these undesirable plants are not controlled. The timing of herbicide product application is an important factor to protect prairie plants. Improper herbicide selection or application timing can severely damage a prairie planting. Early spring spot treatment with herbicides is often highly effective in addressing aggressive weeds while native plants are dormant. Spot treatment should be timed to treat weeds during active growth periods. Effective herbicide spot treatment can prevent the target plants from setting seed and spreading in the prairie.

Spot Treatment By Hand Pulling/Digging

Hand pulling or digging can be an effective control if the entire root is removed from the soil. Hand pulling/digging is most effective in the spring when the soil is moist and loose from the Winter freeze/thaw cycles.

Prescribed Burning – Established Cover

Burning is a good tool for long-term stand management of native vegetation. Burning may be used to manage weeds once the prairie has been established if there is enough material to carry a fire. Time of burning and frequency will impact the species that are present on the site. Fall burns and to a lesser extent early spring burns, will tend to promote forbs. Late spring burns tend to stimulate the growth of warm season grasses and suppress cool season plants. Burn when the cool season plants are growing and the warm season plants are dormant or starting to grow to control cool season species. Do not conduct sequential prescribed burns on a given site at the same time of year. This tends to reduce stand diversity and can create a negative impact on desirable prairie plants. For longevity and plant diversity, burning should be conducted periodically, every other year to every fifth year.

CITY OF WATERTOWN

Field Inspection and Operation & Maintenance Plan - Wetland Restoration

The purpose of this practice is to return a wetland and its functions to a close approximation of its original condition as it existed prior to disturbance on a former or degraded wetland site. See attached construction plan for practice location. Necessary operation and maintenance items include:

1. Inspect after significant storm events and at least annually to identify repair and maintenance needs.

2. Inspect the downstream toe of the embankment annually. If there are wet areas or seeps present, it could be a serious problem. Ask for assistance from a qualified professional to evaluate the seepage.

3. Clear accumulated trash away from water control structures, pipe inlets or outlets, rock riprap, and trash racks. Boards in Water Control Structures should be removed periodically to flush debris that could accumulate in pipe. Flow a maximum of 5 minutes and then put boards back.

4. Repair erosion at pipe outlets.

5. Fill rills and gullies that occur on the embankments. Seed the filled areas.

6. Check frequently for burrowing animals. When found, remove the burrowing animals, replace embankment materials, and seed repaired areas.

7. Maintain a vigorous sod by regular mowing. Time the first mowing after nesting birds have hatched about August 1. Remove excess top grass. Operate mowing and other equipment on slopes in accordance with the machinery operation manual.

8. Prevent woody vegetation from growing in or around the embankment and in upland plantings. Control tree and bush growth by hand cutting, mowing, or chemicals. Avoid damaging grass with herbicide sprays.

9. Maintain a riparian filter around the perimeter of the wetland to trap sediment.

10. Maintain a diverse stand of aquatic vegetation by manipulating water levels

11. Adjust flashboards in water control structures to maintain water levels for wildlife management.

12. Monitor and control invasive species. Mow or burn as needed to control invasive species.

GRAPHIC SCALE

500 0 250 500 1000 2000

1 inch = 500 feet

N

620789.51
872670.08

620739.49
873303.58

33.94 AC
TOTAL

619543.08
872275.00

619520.10
871317.11

619486.20
872175.05

619169.08
871286.10

618962.82
872716.40

Revision	Sheet	Revisions	Date	By

SITE BOUNDARY POINTS
WATERTOWN WQT
JEFFERSON COUNTY
WISCONSIN

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Watertown
DESIGNED BY: MJS
DRAWN BY: MJS
SURVEYED BY: MJS
BIOLOGIST: BG
DATE: 11/1/2021
PROJECT NUMBER: US-WI-453-1

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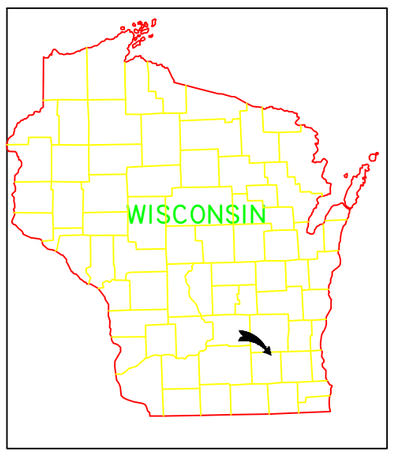
JEFFERSON COUNTY, WI

WATERTOWN TOWNSHIP
T8N, R15E, S8



N

PROJECT LOCATION

SHEET INDEX

1. COVER SHEET & PROJECT LOCATION MAP
2. ESTIMATED QUANTITIES, SPECIFICATIONS & NOTES
3. OVERALL SITE PLAN
4. SCRAPE PONDS/TILE REMOVAL
5. AGRIDRAIN & EMBANKMENT DETAILS
6. AGRIDRAIN DETAILS
6A. TRASH RACK
7. WATER CONTROL STRUCTURE PROFILES
8. SEEDING

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By	Date	Revisions	Sheet	Revision

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DATE: 11/1/2021
PROJECT NUMBER: US-WI-453-1
SHEET 1 OF 8

811 Know what's **below.** **Call** before you dig.

ESTIMATED QUANTITIES

NOTES	SPEC. #	ITEM	UNIT	QUANTITY
11	201	MOBILIZATION	LS	1
14	202	SITE PREPARATION	LS	1
12	203	EXCAVATION	CY - P	225
16	204	EMBANKMENT CONSTRUCTION	CY-P	125
18	301	INLINE WCS	EACH	2
18	303	12" DUAL WALL HDPE PIPE	LIN FT	1225
17	305	RIP RAP WITH GEOTEXTILE	TN	12
12	203	TILE BREAK	LIN FT	1655
13	402	SEEDING AND MULCHING	AC	0.2

SPECIFICATIONS

101 GENERAL CONDITIONS
102 SUPPLEMENTAL CONDITIONS
201 MOBILIZATION
202 SITE PREPARATION
203 EXCAVATION
204 EMBANKMENT CONSTRUCTION
301 WATER CONTROL STRUCTURES
303 CULVERT AND PIPE INSTALLATION
305 RIPRAP
402 SEEDING AND MULCHING

CONSTRUCTION NOTES:

1. ALL UNDERGROUND HAZARDS AND UTILITIES MUST BE INVESTIGATED PRIOR TO CONSTRUCTION. NOTIFICATION OF EFFECTED UTILITY COMPANIES IS THE RESPONSIBILITY OF THE CONTRACTOR. CONTACT DIGGERS HOTLINE AT LEAST THREE DAYS PRIOR TO START OF CONSTRUCTION.
2. A PRE-CONSTRUCTION MEETING SHALL BE SCHEDULED WITH DU PERSONNEL, THE CONTRACTOR, AND THE LANDOWNER PRIOR TO CONSTRUCTION START-UP.
3. THE CONTRACTOR AND/OR LANDOWNER SHALL NOTIFY DU AT LEAST 3 DAYS PRIOR TO START-UP OF CONSTRUCTION.
4. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH CONSTRUCTION SPECIFICATIONS.
5. ALL LOCAL STATE AND FEDERAL PERMITS WILL BE OBTAINED PRIOR TO CONSTRUCTION.
6. ALL EXCAVATED FILL WILL BE USED IN CONSTRUCTION OF PLANNED DITCH FILLS AND EMBANKMENT. ANY REMAINING SPOILS CAN BE PLACED IN DESIGNATED SPOILS AREAS LISTED ON PLAN VIEW.
7. ALL DISTURBED AREAS WILL BE SEEDED UPON COMPLETION OF CONSTRUCTION.
8. THE CONTRACTOR IS RESPONSIBLE FOR RESTORING ALL ACCESS ROADS AND STAGING AREAS TO PRE-CONSTRUCTION CONDITIONS AFTER CONSTRUCTION IS COMPLETED.
9. DU TECHNICIAN WILL STAKE ALL CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION.
10. ALL TRAFFIC LEAVING THE SITE SHALL BE FREE OF ANY LOOSE MUD AND/OR DEBRIS. ANY MUD DEPOSITED ON ROAD WILL BE REMOVED AND DEPOSITED BACK ON SITE IMMEDIATELY.
11. BID ITEM FOR MOBILIZATION SHALL INCLUDE THE SUPPLY OF ALL LABOR, MATERIAL AND EQUIPMENT TO TRANSPORT ALL NEEDED LABOR, MATERIAL AND EQUIPMENT, TO AND FROM A PROJECT SITE, TO SUCCESSFULLY COMPLETE THAT PROJECT AS SHOWN ON THE PLANS.
12. BID ITEM FOR EXCAVATION IS FOR CUTTING OUT OR EXCAVATING ALL SCRAPE PONDS AND TILE BREAK. SITE PREPARATION FOR PONDS IS INCIDENTAL.
13. THE BID ITEM FOR SOIL EROSION AND POLLUTION CONTROL SHALL INCLUDE THE SUPPLY, INSTALLATION, AND MAINTENANCE OF ALL MATERIALS, IN COMPLIANCE WITH WISCONSIN REGULATIONS. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF WORK, AND WILL BE MAINTAINED UNTIL FINAL STABILIZATION OF THE SITE. CONTRACTOR SHALL MAINTAIN, INSPECT, AND PROVIDE ALL PROPER RECORDING AND REPORTING ACCORDING TO THE PERMIT REGULATIONS. INCLUDES SEEDING, AND MULCHING.
14. THE BID ITEM FOR SITE PREPARATION SHALL INCLUDE STRIPPING FOR EMBANKMENT, STOCKPILING TOPSOIL FOR REPLACEMENT, PLACING TOPSOIL OVER ALL DISTURBED AREAS, REMOVING AND DISPOSING OF PUMP AND PIPING AND LEVELED SUITABLE ENOUGH FOR SEEDING. GRUBBING OF BRUSH AND TREES FOR EARTHWORK PREPARATION IS ALSO INCLUDED.
15. DEWATERING AND WATER MAINTENANCE IS THE CONTRACTOR'S RESPONSIBILITY, AND IS CONSIDERED INCIDENTAL TO THE PROJECT.
16. BID ITEM FOR EMBANKMENT SHALL INCLUDE ALL WORK REQUIRED TO HAUL, PLACE, AND COMPACT FILL MATERIAL TO CONSTRUCT EARTHWORK, AS STAKED IN THE FIELD. ANY MATERIAL EITHER NEEDED OR REMAINING FROM THIS OPERATION SHALL BE UTILIZED FROM THE DISPOSAL AREA.
17. BID ITEM FOR RIP-RAP CLASS I IS FOR THE ROCK PLACED DOWNSTREAM OF THE WATER CONTROL STRUCTURE. NON-WOVEN FILTER FABRIC IS REQUIRED BENEATH ALL ROCK/RIP-RAP AND SHALL BE SECURED TO SLOPES AND BOTTOM, USING PINS AS NOTED SPECIFICATION 305. QUANTITY IS BASED ON TONS. CONTRACTOR SHALL PROVIDE SCALE TICKETS WITH WEIGHTS INCLUDING TARE WEIGHTS, GROSS WEIGHTS, AND NET WEIGHTS OF MATERIAL DELIVERED.
18. BID ITEM FOR WATER CONTROL STRUCTURE IS FOR STRUCTURE AND ALL COMPONENTS. THE BID ITEM FOR PIPE INSTALLATION IS FOR LINEAL FEET OF INLET AND OUTLET PIPES FOR WATER CONTROL STRUCTURES.

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QUANTITIES, NOTES, SPECIFICATIONS
WATERTOWN WQT
JEFFERSON COUNTY
WISCONSIN

Revision	Sheet	Revisions	Date	By

CAD FILE: Watertown
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SURVEYED BY: MJS
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GRAPHIC SCALE

250 0 125 250 500 1000

1 inch = 250 feet

N

EXISTING GROUND CONTOURS

33 ACRE SITE BOUNDARY

815

810

805

800

795

WEST INLINE WCS
375' OF 12" DUAL WALL PIPE
INLET INV. 796.0
OUTLET INV. 791.0
INSTALL TRASH RACK ON INLET
SEE SHEET 5,6,7,8

WEST EMBANKMENT
TOP ELEV. 800.50
133' LONG
~125 CU YD
SEE SHEETS 5,6,7

TILE REMOVAL
~1655'
SEE SHEET 4

EAST SCRAPE
0.1 AC
~120 CU YD
SEE SHEET 4

SPOIL PLACEMENT
AREA FOR EAST
SCRAPE POND EXCAV.

WEST SCRAPE
0.1 AC
~105 CU YD
SEE SHEET 4

EAST INLINE WCS
850' OF 12" DUAL WALL PIPE
INLET INV. 799.0
OUTLET INV. 796.0
INSTALL TRASH RACK ON INLET
SEE SHEET 5,6,7,8

Revision	Sheet	Revisions	Date	By

SITE PLAN
WATERTOWN WQT
JEFFERSON COUNTY
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SHEET 3 OF 8

PROJECT NUMBER: US-WI-453-1

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DRAWN BY:

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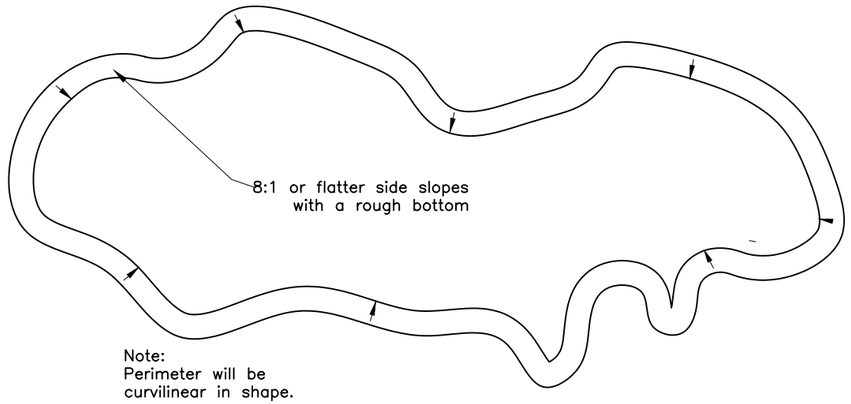
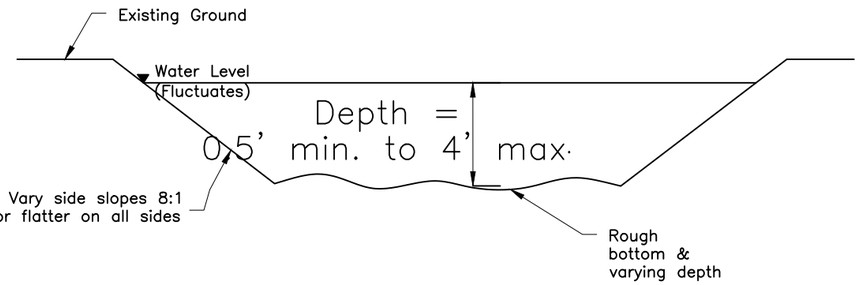


WETLAND SCRAPE PLAN VIEW

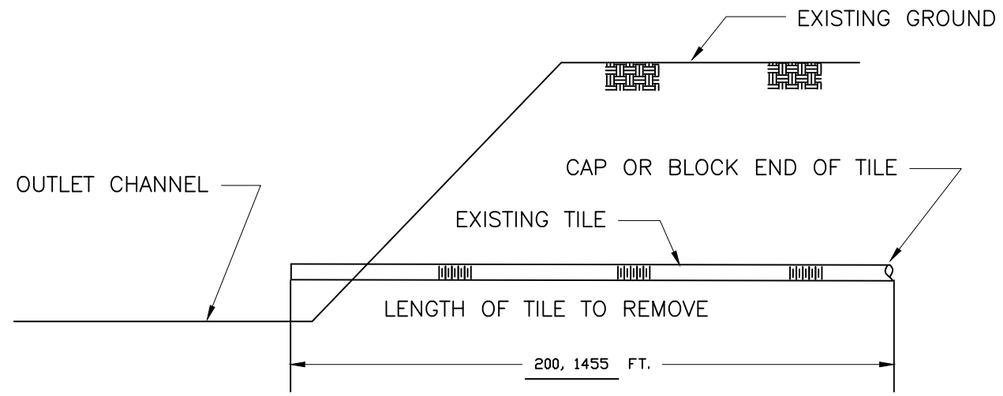


TYPICAL WETLAND SCRAPE CROSS SECTION

Notes:

1. Scrapes/borrow areas will be constructed at locations and as flagged by the technician.
2. Scrapes are to be irregular in shape when completed. Wheel ruts are allowed and desired.
3. Strip minimum 6" of topsoil and stockpile it for spreading, if needed, after the excavation is completed.
4. Spoil shall be spread in designated location as shown on plan map, sheet 3.

SCRAPE NUMBER	ACRES	CY
EAST	0.1	120
WEST	0.1	105



TILE OUTLET REMOVAL

NUMBER OF LINES TO REMOVE 2
(SEE PAGE 3 FOR LOCATION)

TOTAL LENGTH OF TILE TO REMOVE 1655 FT.

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SCRAPES
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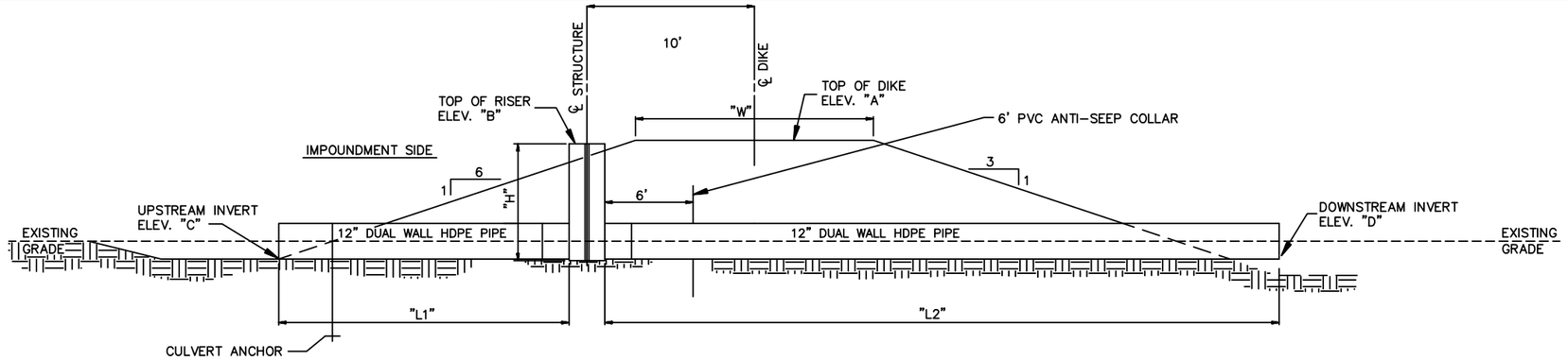


PROFILE OF AGRI-DRAIN® WATER CONTROL STRUCTURE

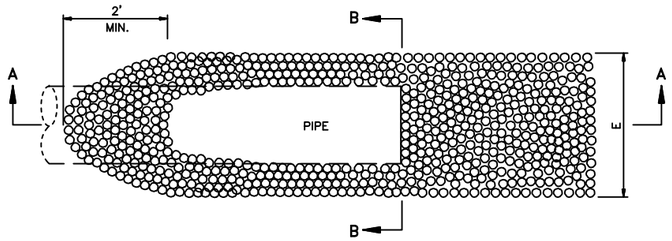
NOT TO SCALE

STRUCTURE	PIPE SIZE	RISER SIZE	TOP OF DIKE EL. "A"	TOP OF RISER EL. "B"	FULL SERVICE LEVEL	INLET I.E. EL. "C"	OUTLET I.E. EL. "D"	TOP WIDTH "W"	INLET LENGTH "LI"	OUTLET LENGTH "L2"	℄ – ℄ OFFSET	RISER HEIGHT "H"
EAST	12	16	804.6	806.0	803.0	799.0	796.0	30	300	550	10	8
WEST	12	16	800.5	802.0	798.0	796.0	791.0	20	100	275	10	7

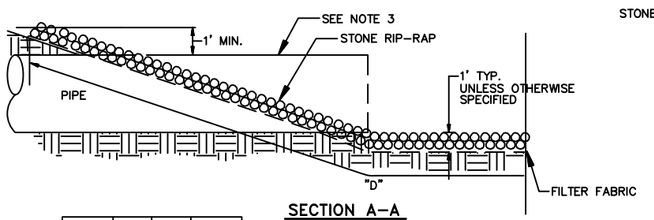
NOTES:
1. EAST WATER CONTROL STRUCTURE USES EXISTING GROUND, WHICH MEETS REQUIRED EMBANKMENT ELEVATION.

GRADATION OF ROCK

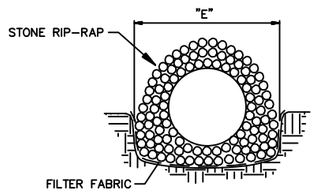
PERCENT PASSING BY WEIGHT	SIZE (INCHES)
100	14"
60–85	11"
25–50	7"
5–20	4"
0–5	2"



PLAN VIEW



SECTION A–A



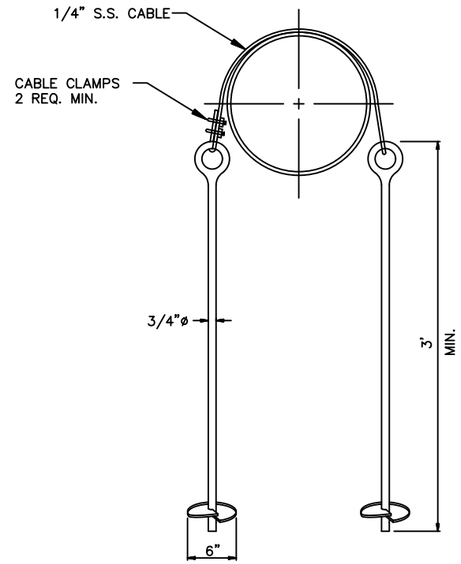
SECTION B–B

PIPE DIA.	D	E	Sq.Yds.
12"	17'	3'	5.5
15"	18'	3.75'	7.2
18"	19'	4.5'	8.3
21"	20'	5.25'	11.0
24"	21'	6'	13.2
27"	22'	6.75'	15.4
30"	27'	10'	28.7
36"	29'	10'	30.3
42"	31'	10'	31.8
48"	33'	10'	33.2
54"	35'	10'	34.5
60"	37'	10'	35.7

NOTES:
1. IF THE RIPRAP CLASS DESIGNATION IS NOT SPECIFIED ON THE CONSTRUCTION PLANS, D50 7" ROCK RIPRAP SHALL BE UTILIZED. THE ROCK SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
2. UNLESS OTHERWISE SPECIFIED, CLASS I GEOTEXTILE BE UTILIZED IN THE INSTALLATION OF RIP RAP.
3. DOWNSTREAM PIPE OUTLET SHALL CONFORM TO SLOPE FOR PIPE DIAMETERS 30" AND LARGER

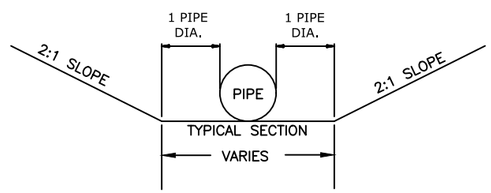
OUTLET AND STONE RIP–RAP DETAIL

NOT TO SCALE



CULVERT ANCHOR

NO SCALE



PIPE INSTALLATION & REMOVAL DETAIL

NOT TO SCALE

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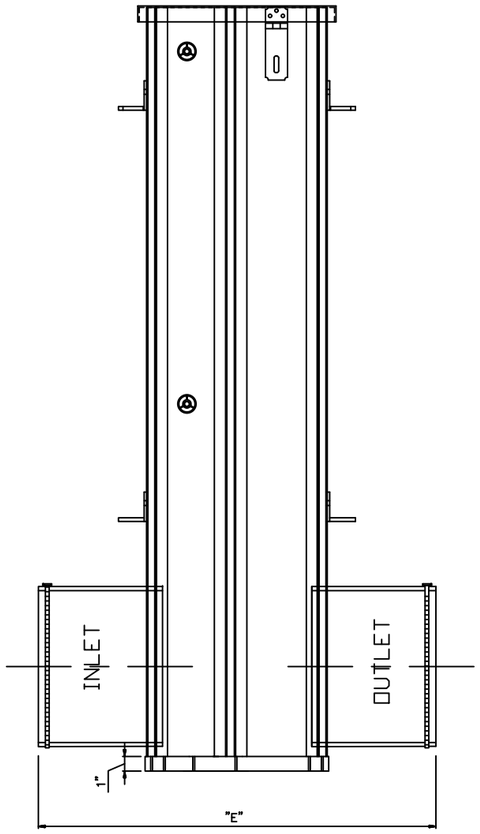
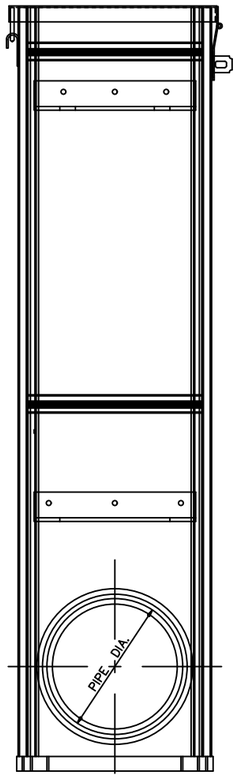
AGRI DRAIN WATER CONTROL STRUCTURE
WATERTOWN WQT
JEFFERSON COUNTY
WISCONSIN

By	Date	Revisions	Sheet	Revision

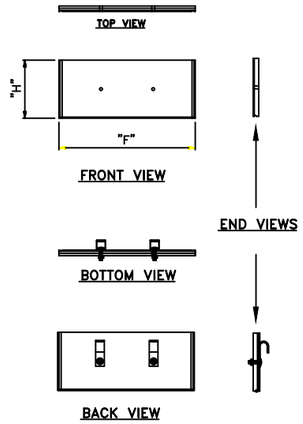
CAD FILE: Watertown
DESIGNED BY: MJS
DRAWN BY:
SURVEYED BY: MJS
BIOLOGIST: BG
DATE: 11/1/2021
PROJECT NUMBER: US-WI-453-1



SECTION "A"–"A"



SECTION "B"–"B"



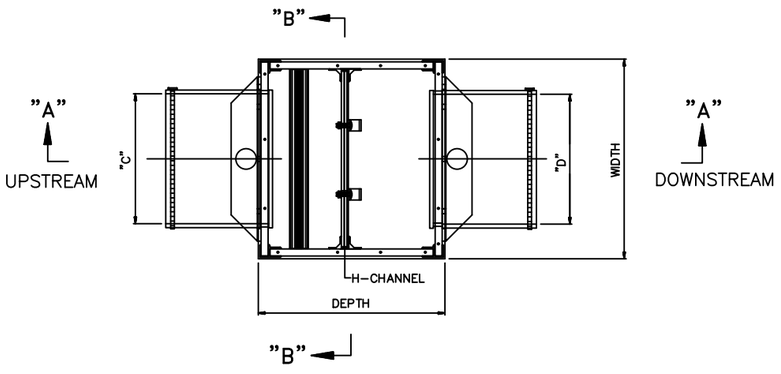
STOPLOG DETAIL
NOT TO SCALE

STRUCTURE SIZING CHART									
PIPE* DIA.	INSIDE DIM.		COUPLING DIM.		COUPLING LENGTH	STOPLOG DIM.			
	WIDTH	DEPTH	"C" (I.D.)	"D" (I.D.)		WIDTH		HEIGHT	
					"E"	"F"	"G"	"H"	"I"
4"	8"	10"	4.42"	4.42"	17.5"	7.75"	7.75"	5"	7"
6"	8"	10"	6.38"	6.38"	17.5"	7.75"	7.75"	5"	7"
8"	12"	12"	8.50"	8.50"	23.5"	11.75"	11.75"	5"	7"
10"	14"	16"	10.60"	10.60"	27.5"	13.75"	13.75"	5"	7"
12"	16"	20"	12.83"	12.83"	31.5"	15.75"	15.75"	5"	7"
15"	20"	24"	17.85"	17.85"	43.5"	19.75"	19.75"	5"	7"
18"	24"	28"	21.70"	21.70"	47.5"	23.75"	23.75"	5"	7"
24"	31"	39"	29.00"	29.00"	58.5"	30.75"	30.75"	5"	7"

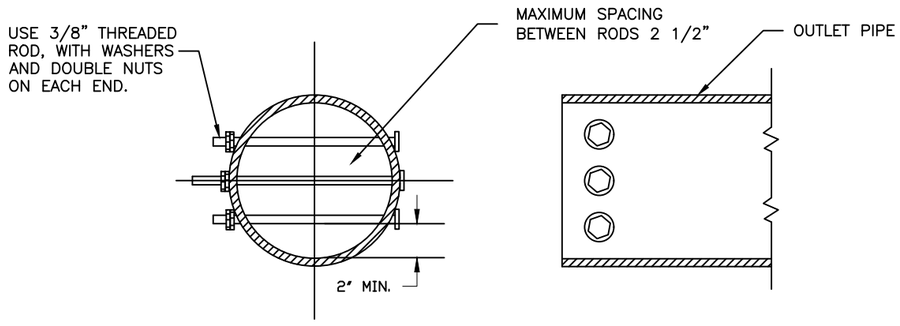
* ALL APPLICATIONS WILL UTILIZE SCHEDULE 40 PVC PIPE

AGRI–DRAIN® (OR EQUIVALENT) INLINE WATER LEVEL CONTROL STRUCTURE DETAIL

NOT TO SCALE



PLAN VIEW
(DRAWN WITH FERNCO 1056 COUPLER)



END ELEVATION

SIDE ELEVATION
Not to Scale

NOTE: OTHER OPTIONS FOR SECURING THE RODS IN PLACE INCLUDE COTTER PINS, OR SIMPLY BENDING THE RODS AT RIGHT ANGLE TO THE PIPE. SMOOTH ROD WOULD BE ACCEPTABLE IF THESE METHODS ARE USED.

ANIMAL GAURD
NOT TO SCALE

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AGRI DRAIN WATER CONTROL STRUCTURE
WATERTOWN WQT
JEFFERSON COUNTY
WISCONSIN

By	Date	Revisions	Sheet	Revision

CAD FILE: Watertown
DESIGNED BY: MJS
DRAWN BY:
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BIOLOGIST: BG
DATE: 11/1/2021
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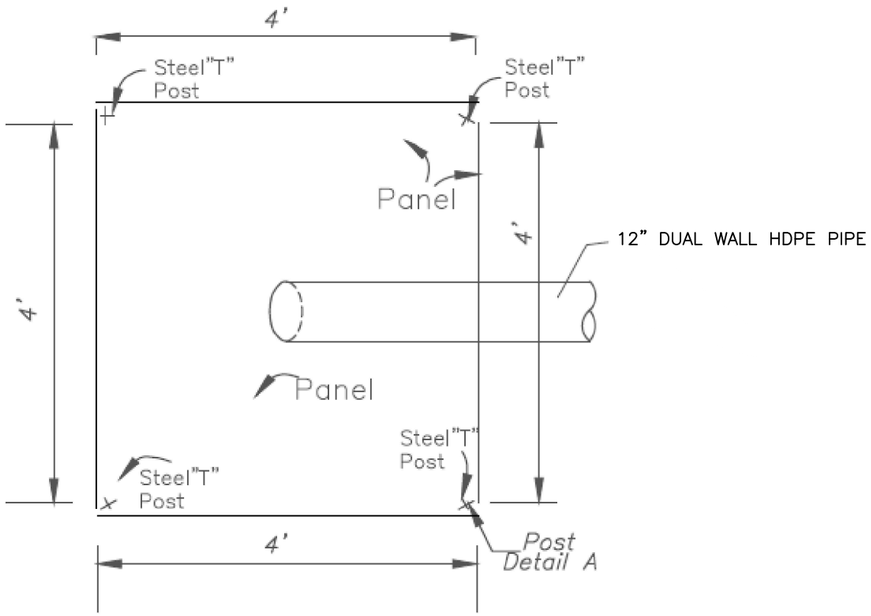
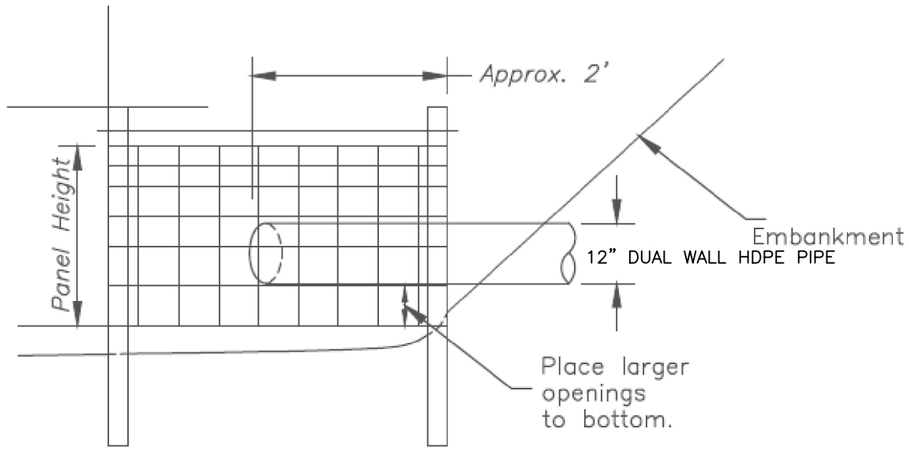
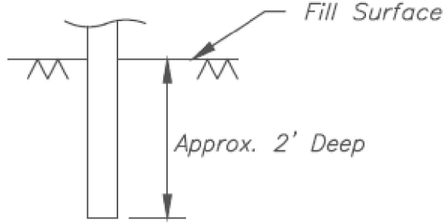
DETAILS OF TRASH RACK INLET SIDE OF WATER CONTROL STRUCTURE



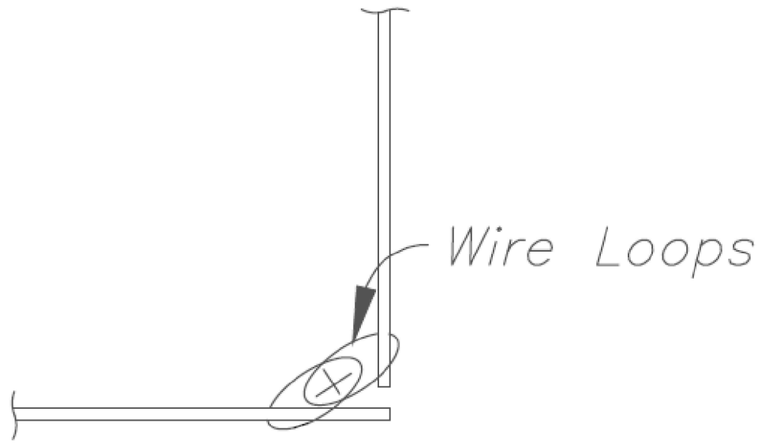
PLANVIEW



SIDE ELEVATION



POST ANCHORAGE



STANDARD DETAIL A

NOTES:

1. Minimum height of panel to be 3 feet. The minimum length of steel posts shall be 5 feet.
2. The panels shall be fastened to each post with a minimum of 2 strands per loop of 10 gage insulated copper wire securely twisted. Spacing of wire loops shall not exceed 2 feet with minimum 2 loops per post.
3. Panels (sold as Hog or Cattle Panels) shall be ¼" galvanized steel rods welded together to form a panel. Maximum spacing of rods shall be 6 inches vertical and 8 inches horizontal.

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TRASH RACK
WATERTOWN WQT
JEFFERSON COUNTY
WISCONSIN

Revision	Sheet	Revisions	Date	By

CAD FILE: Watertown
DESIGNED BY: MJS
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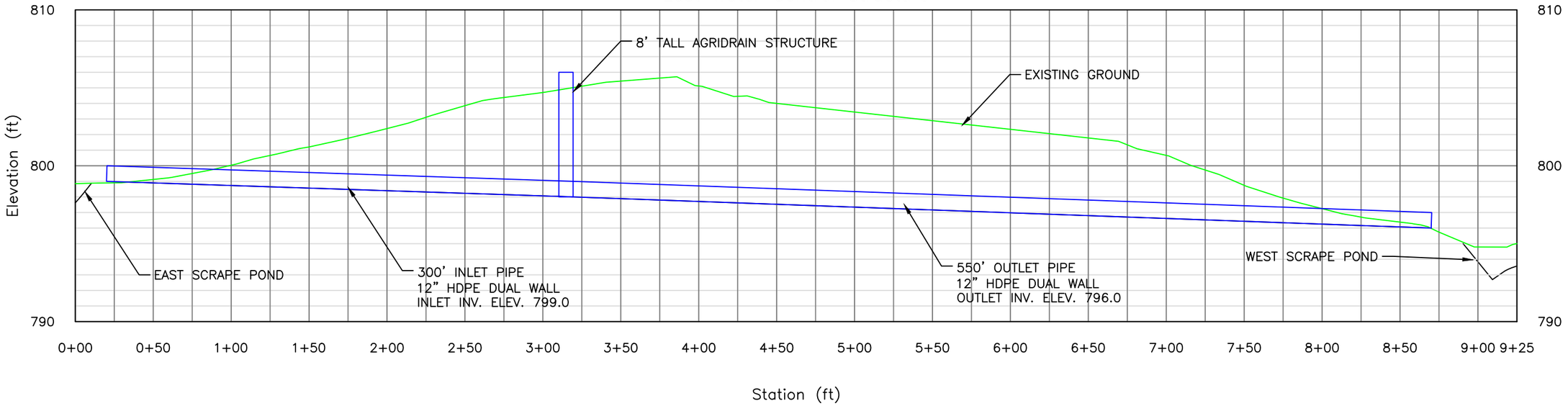
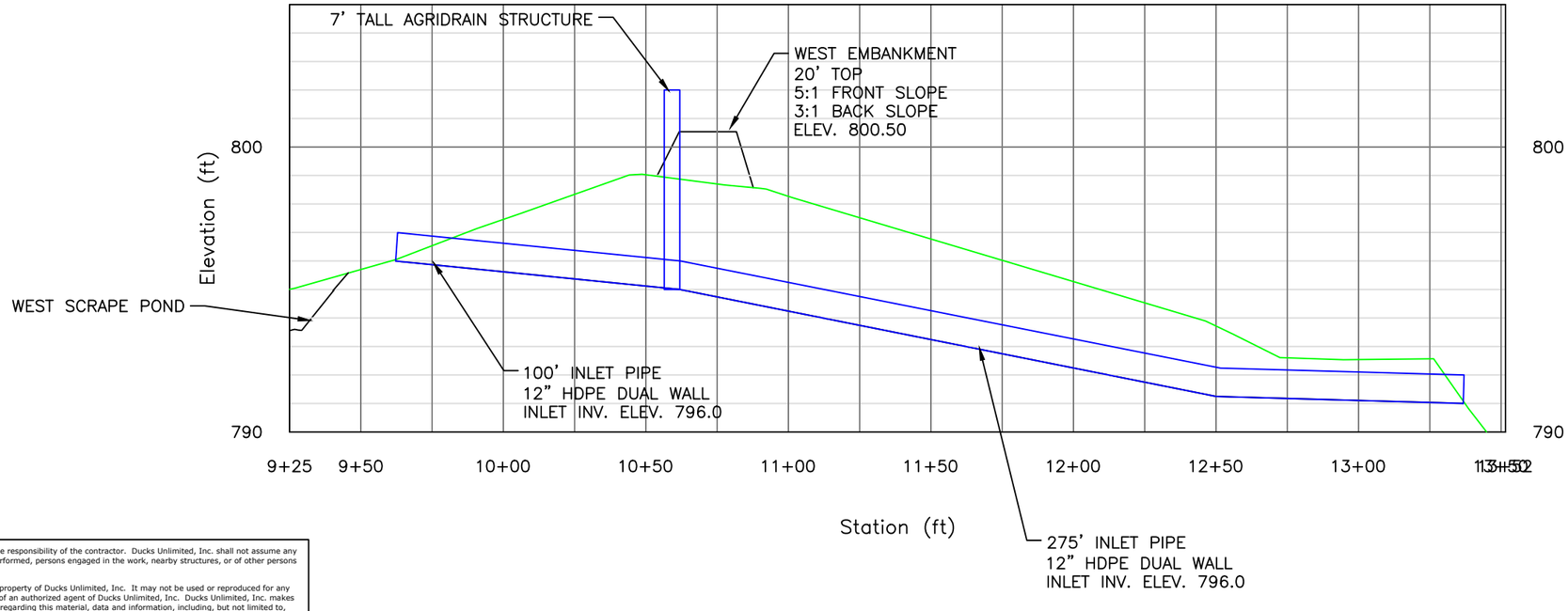
East Water Control Structure



West Water Control Structure



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WATER CONTROL STRUCTURES
WATERTOWN WQT
JEFFERSON COUNTY
WISCONSIN

Revision	Sheet	Revisions	Date	By

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SEEDING DATES — CENTRAL

TIME PERIOD	DATES			TYPE OF SEEDING
Spring	April 15	through	June 1	Permanent
Summer	June 2	through	see WI-710ss pg 2	Temporary *
Late Summer	August 1	through	August 21	Permanent
Fall	August 22	through	see WI-710ss pg 2	Temporary *
Late Fall	November 1	through	Snow Cover	Dormant
Winter	Snow Cover	through	April 14	Not Allowed

MATERIALS

If no soil test is available, apply a minimum of 150 pounds of 20-10-10 fertilizer per acre. This is equivalent to 30 pounds nitrogen (N), 15 pounds phosphate (P205), and 15 pounds potash (K2O) per acre. Apply two tons / acre of 80-89 lime or equivalent. (See page 2 for equivalent)

* Seed a temporary cover crop of Annual Ryegrass at 20 # /ac (0.8 bu/ac)
A permanent seeding shall be completed during the next acceptable time period following a temporary seeding.

MINIMUM PURE LIVE SEED (PLS) [1] RATE PER ACRE AND TOTAL POUNDS OF SEED NEEDED

SEEDING MIX 17 (DESIGN)	LOCATION: DIST ACRES: 0.20	
SPECIES	RATE	POUNDS
Redtop	1.3	0.3
Timothy	3.8	0.8
Red Clover	6.3	1.3
** Annual Ryegrass	6.0	1.2

[PLS lbs./ac] = [total % Germination / 100 * % Purity / 100] * Net Weight [lbs.]

SEEDING MIX (AS-BUILT)	LOCATION ACRES	
SPECIES	RATE	POUNDS

ADDITIONAL SEED PERCENT: 25 %
Mulching Require Yes

** Companion Crop

Total % Germination may also be termed *Total %* Viable Seed on a tag. If a tag only shows % Germination, the user must *include percentage of the seed that germinated during the lab test* (% Germination) **plus** the *percentage of hard and/or dormant seed.* Hard seed and dormant seed are seeds that are still capable of germinating and producing a plant but did not germinate under the conditions of the test in the lab.

Additional native seeds may be required by permitting agencies. These addition are allowed.

Seed mixture shall meet all requirements of the WI weed laws.

Species identified as restricted or prohibited by law shall not be planted.

Certified seed shall be used, and the seeding rates will be based on pure live seed.

For dormant seedings, increase the seeds per square foot by 15%.

SEEDBED PREPARATION

Seedbed preparation shall immediately follow construction activities.

Prepare a fine, firm seedbed to a minimum depth of three inches. A seedbed is considered firm when a footprint penetrates less than 1/4 inch deep.

SEEDING

Inoculate legumes with the specific inoculum for the species in accordance with the manufacturer's recommendations. When using a hydroseeder, five times the recommended rate of inoculant shall be added to the hydroseeder. Inoculant shall not be mixed with liquid fertilizer.

Seed may be broadcast or drilled as appropriate to the site.
Seed, fertilize, and lime as soon as possible after construction.
Seeding perpendicular to direction of flow is required to limit erosion.

Seed grasses and legumes no more than 1/4 inch deep.

Consider seeding at a lower rate and making 2 passes to ensure more uniform distribution.

TEMPORARY SEEDING OPTIONS

Select one of the following species for temporary cover if:

1) The required seeds or plant stock are not available or the normal permanent seeding period for the species has passed
   - Forage Sorghum - 1/2 bushel per acre (May 15-July 15)
   - Sorghum - Sudangrass Hybrid - 1 bushel per acre (May 15-July 15)
   - Sudangrass - 1 bushel per acre (May 15-July 15)
   - Winter Wheat - 2 bushels per acre (Aug 1-Oct 1)
   - Winter Cereal Rye - 2 bushels per acre (Aug 1-Oct 15)
   - Oats - 2 bushels per acre (Apr 1-Sept 1)
   - Annual Ryegrass - 20 Pounds per acre (Apr 1-Sept 1)

2) Triazine herbicide carryover will not allow establishment of permanent cover immediately.
   - Forage Sorghum - 1/2 Bushel per acre (May 15-July 15)
   - Sorghum - Sudangrass Hybrid - 1 Bushel per acre (May 15-July 15)
   - Sudangrass - 1 Bushel per acre (May 15-July 15)

DORMANT SEEDING

Seed is broadcast and incorporated, no-tilled, or drilled into the seedbed .
Seedbed preparations and conditions are similar to conventional seeding.

MULCHING WILL BE COMPLETED ON EMBANKMENT

Mulching shall be done immediately after seedbed preparation and seeding.
Mulch shall be applied immediately after final grading for areas seeded at a later date.
Mulch material shall be relatively free of disease, pesticides, chemicals, noxious weed seeds, and other pests and pathogens.

Spread straw and hay mulch uniformly and at the rate of 1.5-2.0 tons per acre (60-70 bales). This application results in a layer of 6 to 7 stems, 1 to 2 inches thick, and provides a minimum 70% ground cover. Some soil surface can be seen after the application. Crimping (disking), wood cellulose fiber, tackifiers, netting, pinning, or other acceptable methods of anchoring will be used if needed to hold the mulch in place.

If other mulch materials are used, the rate of application shall meet the manufacturer's recommendations.
Two (2) tons/ac of 80-89 lime or equivalent from UW-EXT A3671

Lime Quality	Tons / AC.	Lime Quality	Tons / AC.
40-49	3.9	70-79	2.3
50-59	3.2	90-99	1.9
60-69	2.7	100+	1.6

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SEEDING
WDNR - REIGER II
JEFFERSON COUNTY
WISCONSIN

By | Date | Revisions | Sheet | Revision

CAD FILE: Watertown
DESIGNED BY: MJS
DRAWN BY:
SURVEYED BY: MJS
BIOLOGIST: BG
DATE: 11/1/2021
PROJECT NUMBER: US-WI-453-1

APPENDIX G: WATER QUALITY TRADING CHECKLIST

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison WI 53707-7921
dnr.wi.gov

Water Quality Trading Checklist

Notice: Pursuant to s. 283.84, Wis. Stats., this form must be completed by any WPDES permittee that intends to pursue pollutant trading as a method of complying with a permit limitation. Failure to complete this form would not result in penalties. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

Applicant Information

Permittee Name	Permit Number	Facility Site Number
City of Watertown	WI- 0028541-09-0	

Facility Address	City	State	ZIP Code
800 Hoffman Drive	Watertown	WI	53094

Project Contact Name (if applicable)	Address	City	State	ZIP Code
Peter Hartz	800 Hoffman Drive	Watertown	WI	53094

Project Name
City of Watertown Wastewater Treatment Plant WQBELs for Total Phosphorus

Receiving Water Name	Parameter(s) being traded	HUC 12(s)
Rock River	Phosphorus	070900011103

Credit Generator Information

Credit generator type (select all that apply):
- ☐ Permitted Discharge (non-MS4CAFO)
- ☐ Permitted MS4
- ☐ Permitted CAFO
- ☐ Urban nonpoint source discharge
- ☒ Agricultural nonpoint source discharge
- ☐ Other - Specify: _____

Are any of the credit generators in a different HUC 12 than the applicant?
- ○ Yes; HUC 12: _____
- ◉ No

Are any of the credit generators downstream of the applicant?
- ◉ Yes
- ○ No

Will a broker/exchange be used to facilitate trade?
- ○ Yes *(include description and contact information in WQT plan)*
- ◉ No

Point to Point Trades (Traditional Municipal / Industrial, MS4, CAFO)

Are each of the point source credit generators identified in this section in compliance with their WDPES permit requirements?
- ○ Yes
- ○ No

Discharge Type	Permit Number	Name	Contact Information	Trade Agreement Number
○ Traditional ○ MS4 ○ CAFO				
○ Traditional ○ MS4 ○ CAFO				
○ Traditional ○ MS4 ○ CAFO				
○ Traditional ○ MS4 ○ CAFO				
○ Traditional ○ MS4 ○ CAFO				

Point to Point Trades (Traditional Municipal / Industrial, MS4, CAFO) *cont.*

Does plan have a narrative that describes:			Plan Section
a. Summary of discharge and existing treatment including optimization	◯ Yes	◯ No	
b. Amount of credit being generated	◯ Yes	◯ No	
c. Timeline for credits and agreements	◯ Yes	◯ No	
d. Method for quantifying credits	◯ Yes	◯ No	
e. Tracking and verification procedures	◯ Yes	◯ No	
f. Location of credit generator in proximity to receiving water and credit user	◯ Yes	◯ No	
g. Other: ____________________	◯ Yes	◯ No	

Point to Nonpoint Trades (Non-Permitted Urban, Agricultural, Other)

Discharge Type	Practices Used to Generate Credits	Method of Quantification	Trade Agreement Number	Have the practice(s) been formally registered?
◯ Urban NPS ◉ Agricultural NPS ◯ Other	Wetland Restoration, Perennial Vegetation	SnapPlus	WQT-2021-	◉ Yes ◯ No ◯ Only in part
◯ Urban NPS ◯ Agricultural NPS ◯ Other				◯ Yes ◯ No ◯ Only in part
◯ Urban NPS ◯ Agricultural NPS ◯ Other				◯ Yes ◯ No ◯ Only in part
◯ Urban NPS ◯ Agricultural NPS ◯ Other				◯ Yes ◯ No ◯ Only in part
◯ Urban NPS ◯ Agricultural NPS ◯ Other				◯ Yes ◯ No ◯ Only in part
◯ Urban NPS ◯ Agricultural NPS ◯ Other				◯ Yes ◯ No ◯ Only in part
◯ Urban NPS ◯ Agricultural NPS ◯ Other				◯ Yes ◯ No ◯ Only in part
◯ Urban NPS ◯ Agricultural NPS ◯ Other				◯ Yes ◯ No ◯ Only in part

Does plan have a narrative that describes:			Plan Section
a. Description of existing land uses	◉ Yes	◯ No	2.2
b. Management practices used to generate credits	◉ Yes	◯ No	3.1
c. Amount of credit being generated	◉ Yes	◯ No	2.6
d. Description of applicable trade ratio per agreement/management practice	◉ Yes	◯ No	2.4
e. Location where credits will be generated	◉ Yes	◯ No	2.1
f. Timeline for credits and agreements	◉ Yes	◯ No	3.1, 4.1
g. Method for quantifying credits	◉ Yes	◯ No	2.5

Does plan have a narrative that describes:			Plan Section
h. Tracking procedures	◉ Yes	○ No	5.1
i. Conditions under which the management practices may be inspected	◉ Yes	○ No	5.4
j. Reporting requirements should the management practice fail	◉ Yes	○ No	5.2
k. Operation and maintenance plan for each management practice	◉ Yes	○ No	3.1
l. Location of credit generator in proximity to receiving water and credit user	◉ Yes	○ No	2.1
m. Practice registration documents, if available	◉ Yes	○ No	6.1
n. History of project site(s)	◉ Yes	○ No	2.2
o. Other: _____	○ Yes	○ No	

The preparer certifies all of the following:

- I am familiar with the specifications submitted for this application, and I believe all applicable items in this checklist have been addressed.
- I have completed this document to the best of my knowledge and have not excluded pertinent information.
- I certify that the information in this document is true to the best of my knowledge.

Signature of Preparer	Date Signed
Leo A. Rucek	October 13, 2021

Authorized Representative Signature

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative	Date Signed
Peter Wentz	September 21, 2021

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison WI 53707-7921
dnr.wi.gov

Water Quality Trading Management Practice Registration

Form 3400-207 (R 1/14)

Notice: Pursuant to s. 283.84, Wis. Stats., this form must be completed by any WPDES permittee that is using water quality trading as a method of complying with a permit limitation. Failure to complete this form would not result in penalties. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

Applicant Information

Permittee Name	Permit Number	Facility Site Number
City of Watertown	WI- 0028541-09-0	

Facility Address	City	State	ZIP Code
800 Hoffman Drive	Watertown	WI	53094

Project Contact Name (if applicable)	Address	City	State	ZIP Code
Peter Hartz	800 Hoffman Drive	Watertown	WI	53094

Project Name
City of Watertown Wastewater Treatment Plant WQBELs for Total Phosphorus

Broker/Exchange Information (if applicable)

Was a broker/exchange be used to facilitate trade? ○ Yes ◉ No

Broker/Exchange Organization Name	Contact Name

Address	Phone Number	Email

Trade Registration Information (Use a separate form for each trade agreement)

Type	Trade Agreement Number	Practices Used to Generate Credits	Anticipated Load Reduction	Trade Ratio	Method of Quantification
○ Urban NPS ◉ Agricultural NPS ○ Other	NA	Wetland Restoration, Perennial Vegetation	102	1.2	SnapPlus

County	Closest Receiving Water Name	Land Parcel ID(s)	Parameter(s) being traded
Jefferson	Rock River	See WQT Plan	Phosphorus

The preparer certifies all of the following:

- I have completed this document to the best of my knowledge and have not excluded pertinent information.
- I certify that the information in this document is true to the best of my knowledge.

Signature of Preparer	Date Signed
Leo A. Rucek	October 13, 2021

Authorized Representative Signature

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative	Date Signed
Peter Hartz	September 22, 2021

Leave Blank – For Department Use Only

Date Received		Trade Docket Number
Entered in Tracking System ☐ Yes	Date Entered	Name of Department Reviewer

Water Quality Trade Agreement

Permittee Information

Credit User Name (Permittee)	Permit Number
City of Watertown	WI-0028541-09-0

Credit User Address
800 Hoffman Drive, Watertown, WI 53094

Permittee/Broker/Exchange Name (if applicable)	Trade Agreement Number
N/A	WQT-2021-

Permittee/Broker/Exchange Address (if applicable)

Street Address	City	State	ZIP Code
N/A			

Project Name
BE06 and BE08 – Wetland Restoration, Perennial Vegetation

Name of Credit Generator (Landowner/Operator) (Last, First, M.I.)
City of Watertown

Street Address	City	State	ZIP Code
800 Hoffman Drive	Watertown	WI	53094

Property Information

Name of Landowner(s) (if not Operator) (Last, First, M.I.)
City of Watertown

Street Address	City	State	ZIP Code
800 Hoffman Drive	Watertown	WI	53094

Legal Description of Property - Contiguous sites under the same ownership: (add additional sheets if necessary)
See attached.

Parcel ID(s):
291-0815-0831-000

Site Locator for Construction Projects

County	Township	Range E / W	Section	Quarter/Quarter (e.g., NW ¼ of the NE ¼)
Jefferson	T8 N	R15E	8	NE1/4 of SW1/4
	N			
	N			
	N			

Agreement

The property described above is enrolled in a Water Quality Trade Agreement. Funds are provided to the landowner/ operator in return for the installation, operation and maintenance of best management practices (BMPs) designed to enhance water quality. This agreement commits the landowner/operator, their heirs, successors and assigns to fulfill the trade agreement until a satisfaction or release is filed by the grantee.

Addenda which describe the BMPs, costs, installation schedule, and conditions are hereby incorporated into this agreement and are on file with the grantee and may be given to Wisconsin DNR upon request by the Department.

Landowner/Operator

Signed this 7 day of April, 20 22.

Peter Hartz DNR # 32167
Signature of Landowner/Operator

Signature of Landowner/Operator

City of Watertown
Typed Name of Landowner/Operator

Typed Name of Landowner/Operator

STATE OF WISCONSIN)
)
_____ County) ss.
)
)

Personally came before me this _____ day of _____, 20 _____.

The above named _____ to me known to be the person(s) who executed the foregoing instrument and acknowledge the same.

Signature of Notary Public

Typed Name of Notary Public

Notary Public _____ County, Wisconsin

My commission (is permanent) (expires _____).

Landowners (if not operator)

If the landowner section is not completed, check (X) one or both of the following that apply

☒ Landowner is also operator

☐ Trade agreement contains only high residue management, nutrient management, pesticide management, cropland protection cover (green manure)

Signed this _____ day of _____, 20 _____.

Signature of Landowner (if not operator)

Signature of Landowner (if not operator)

Typed Name of Landowner (if not operator)

Typed Name of Landowner (if not operator)

STATE OF WISCONSIN)
)
_____ County) ss.
)
)

Personally came before me this _____ day of _____, 20 _____.

The above named _____ to me known to be the person(s) who executed the foregoing instrument and acknowledge the same.

Signature of Notary Public

Typed Name of Notary Public

Notary Public _____ County, Wisconsin

My commission (is permanent) (expires _____).

Credit user/broker/exchange

Signed this 7 day of April, 20 22.

Peter Hartz DNR # 32167
Signature of credit user/broker/exchange

City of Watertown
Typed Name of credit user/broker/exchange

STATE OF WISCONSIN)
)
_____ County) ss.
)
)

Personally came before me this _____ day of _____, 20 _____.

The above named _____ to me known to be the person(s) who executed the foregoing instrument and acknowledge the same.

Signature of Notary Public

Notary Public _____ County, Wisconsin

My commission (is permanent) (expires _____).

Department of Natural Resources

Other Signer- Specify title or relationship: Department of Natural Resources

Signed this _____ day of _____, 20 _____.

_____ Signature

_____ Typed Name

_____ Signature

_____ Typed Name

STATE OF WISCONSIN)
)
_____ County) ss.
)
)

Personally came before me this _____ day of _____, 20 _____.

The above named _____ to me known to be the person(s) who executed the foregoing instrument and acknowledge the same.

_____ Signature of Notary Public

_____ Typed Name of Notary Public

Notary Public _____ County, Wisconsin

My commission (is permanent) (expires _____).

Other Signer- Specify title or relationship: _____

Signed this _____ day of _____, 20 _____.

_____ Signature

_____ Typed Name

_____ Signature

_____ Typed Name

STATE OF WISCONSIN)
)
_____ County) ss.
)
)

Personally came before me this _____ day of _____, 20 _____.

The above named _____ to me known to be the person(s) who executed the foregoing instrument and acknowledge the same.

_____ Signature of Notary Public

_____ Typed Name of Notary Public

Notary Public _____ County, Wisconsin

My commission (is permanent) (expires _____).

Other Signer- Specify title or relationship: _____

Signed this _____ day of _____, 20 _____.

_____ Signature

_____ Typed Name

_____ Signature

_____ Typed Name

STATE OF WISCONSIN)
)
_____ County) ss.
)
)

Personally came before me this _____ day of _____, 20 _____.

The above named _____ to me known to be the person(s) who executed the foregoing instrument and acknowledge the same.

_____ Signature of Notary Public

_____ Typed Name of Notary Public

Notary Public _____ County, Wisconsin

My commission (is permanent) (expires _____).

☐ Check this box if this page is purposely left blank.

Section A – General Requirements

A 1. This agreement may be amended by mutual agreement of either party, so long as the agreement has not yet expired.
A 2. If a significant archeological or historical site is found, construction is to cease immediately and the BMP will be relocated, redesigned, or deleted to prevent damage to the archeological or historical site. The BMP may be deleted only if approved in writing by the Department of Natural Resources.

Section B – Landowner/Operator Shall:

B 1. Design, install, operate and maintain BMPs listed in Addendum 2 of this agreement.
B 2. Allow access to the installed BMP by the grantee, or an authorized representative of the grantee for site inspection of the BMP for installation, operation and maintenance, following written or verbal authorization from landowner.

TA Number	Typed Name of Landowner/Operator	Initials of Landowner/Operator	Date
	City of Watertown	PAH	4-7-2022

The cost-share recipient shall implement and maintain all best management practices listed in this Addendum, unless otherwise amended in accordance with this agreement.

							Installation Period			
							From (MM/YY) 08/22		To (MM/YY) 12/28	
Field #	DNR BMP Code	Practice Name	Quantity	Unit	Unit Cost	Estimated Total Cost	Reimburs-ement Rate (%)	Estimated Cost-Share Amt.	Cost-Share Amt. From Other Programs*	Estimated Year to be Installed
BE06	NRCS 327	Perennial Vegetation	12.7	Acres	-	-	-	-	-	2022
BE06	NRCS 657	Wetland Restoration	7.8	Acres	-	-	-	-	-	2022
BE08	NRCS 327	Perennial Vegetation	15.8	Acres	-	-	-	-	-	2022
* Identify Program Names: _____					**TOTALS**					

CSA Number	Typed Name of Landowner/Operator	Initials of Landowner/Operator	Date
	City of Watertown	PAH	1-7-2022

CITY OF WATERTOWN WWTP

Water Quality Trading Plan for Total Suspended Solids

THE CITY OF WATERTOWN

Applied Technologies
Engineers - Architects

December 2022
PN6449

WATER QUALITY TRADING PLAN FOR TOTAL SUSPENDED SOLIDS

CITY OF WATERTOWN WWTP

DECEMBER 2022

Prepared by:

Applied Technologies, Inc.
13400 Bishop's Lane, Suite 270
Brookfield, WI 53005
(262) 784-7690

PN6449

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EXECUTIVE SUMMARY

The City of Watertown (City) owns and operates a wastewater treatment plant (WWTP) with phosphorus and total suspended solids (TSS) limits. These phosphorus and TSS limits are based primarily on the Rock River Total Maximum Daily Load (TMDL) allocations, which resulted in more restrictive limits than in previous permits. The City submitted a Final Compliance Alternatives Plan (CAP) to the Wisconsin Department of Natural Resources (WDNR) in September 2018. The Final CAP documented the City's continued efforts to reduce phosphorus loadings in its effluent, evaluated compliance alternatives, and identified the actions to be implemented to meet the TMDL phosphorus limits.

Water Quality Trading (WQT) was selected as one alternative to comply with the new TMDL phosphorus limits. A phosphorus WQT plan was developed previously to detail the methods the City will use to secure annual nonpoint source phosphorus credits. The City is implementing a combination of best management practices (BMPs), including wetland restoration and perennial vegetation, on fields it owns to generate nonpoint source credits.

This TSS WQT plan (Plan) describes how the City will generate nonpoint source TSS credits from the same practice, which was installed in 2022. SnapPlus modeling was used to estimate that the BMPs will result in approximately 4,400 lbs/year in reduced TSS loadings to the watershed. After applying the trade ratio of 1.2:1, this results in approximately 3,700 lbs/year in TSS WQT credits that the City can apply throughout the year to demonstrate compliance.

A Water Quality Trade agreement between the City and the WDNR is proposed in this Plan, and the City is applying to register this nonpoint-to-point trade. The City contracted with a third-party to implement the wetland restoration and perennial vegetation BMPs. The City plans to maintain these BMPs through at least Fall 2028, with an intention to maintain these BMPs, generate WQT credits, and apply these credits towards permit compliance for as long as possible thereafter.

SECTION 1
INTRODUCTION

The City of Watertown (City) owns and operates a wastewater treatment plant (WWTP) with phosphorus and total suspended solids (TSS) limits. These limits are based primarily on the Rock River Total Maximum Daily Load (TMDL) allocations, which resulted in more restrictive limits than in previous permits. The City submitted a Final Compliance Alternatives Plan (CAP) to the Wisconsin Department of Natural Resources (WDNR) in September 2018. The Final CAP documented the City's efforts to reduce effluent phosphorus loadings, evaluated compliance alternatives, and identified actions to meet the TMDL phosphorus limits.

Operational improvements and minor facility modifications alone would not enable the City to meet the new effluent phosphorus limits. Based on the Final CAP, it was recommended that the City achieve compliance using a combination of alternatives, including chemical phosphorus removal and Water Quality Trading (WQT).

Consequently, the City submitted a phosphorus WQT plan detailing the methods for generating WQT credits and how it would use these phosphorus WQT credits comply with its phosphorus discharge limits. The City received WDNR approval for its phosphorus WQT plan in June 2022, which went into effect starting on October 1, 2022.

Per discussions with WDNR staff in October 2022, the City seeks to generate TSS WQT credits from the same best management practices (BMPs) that were approved to generate phosphorus WQT credits. Specifically, the City owns several fields adjacent to the WWTP site, including BE06 and BE08 west of the railroad. Starting in 2022, the City is implementing a combination of best management practices (BMPs), including wetland restoration and perennial vegetation, to generate nonpoint source credits on an annual basis. SnapPlus modeling was used to estimate the number of credits generated. These annual credits can then be applied as needed throughout the year to demonstrate compliance.

The target number of TSS WQT credits that the City could potentially use was estimated. Sustained high flows from August to October 2018 presented the worst-case conditions in the past decade, as shown in Figure 1-1. These high flows led to one monthly exceedance (September 2018) and four weekly exceedances of the TSS loading limits, as identified in Figure 1-2. Only three other weekly TSS exceedances occurred in the past decade, with two in July 2017 and one in June 2022.

FIGURE NO. 1-1
Plant Flow, 2013-2022

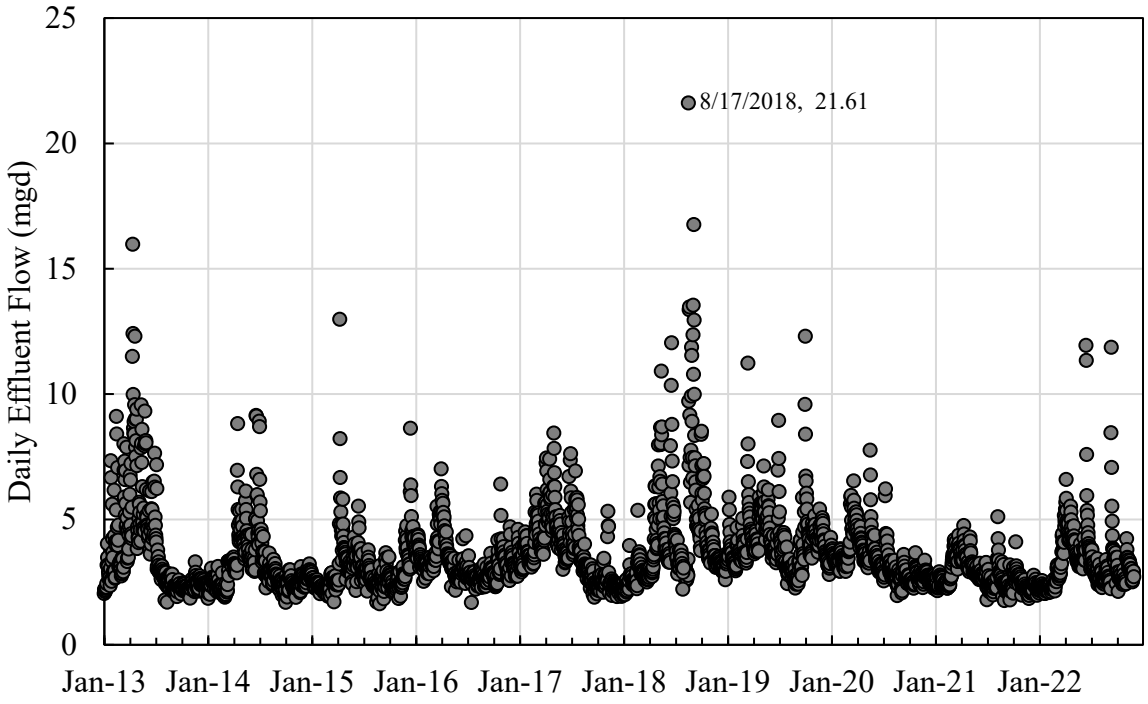
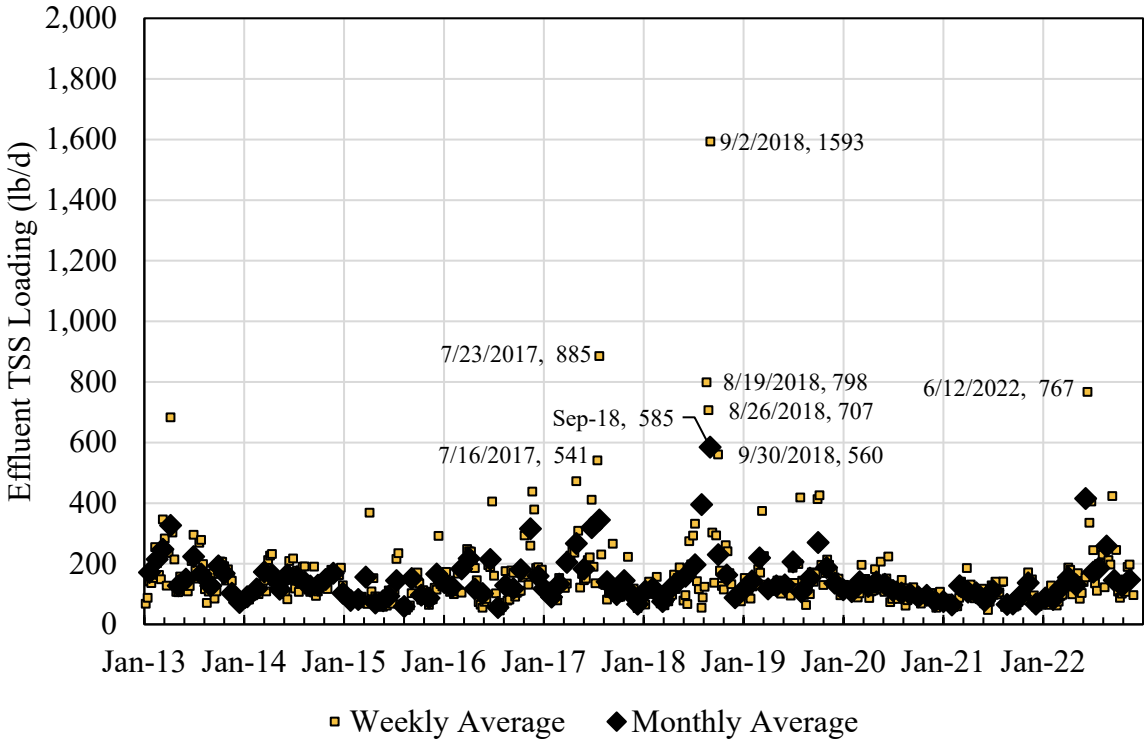


FIGURE NO. 1-2
Monthly and Weekly Average Effluent TSS Loadings, 2013-2022



As presented in Table 1-1, a total of approximately 4,340 lbs/year in nonpoint source TSS WQT credits would have been required to maintain compliance with the monthly TSS loading limits during 2018.

Table 1-1
Estimated TSS Credits Required: Monthly Loading Limits

Month	Monthly Average Effluent TSS Limit (lbs/d)	Average Monthly Effluent TSS (lbs/d)	Average Required TSS Offset (lbs/d)	Maximum Month Effluent TSS (lbs/d)	Maximum Month Required TSS Offset (lbs/d)	Duration (d/month)	Estimated Maximum Required TSS Offset (lbs/month)
January	1,270	100	-	114	-	31	-
February	1,410	100	-	143	-	28	-
March	1,270	160	-	219	-	31	-
April	1,310	120	-	127	-	30	-
May	1,270	120	-	140	-	31	-
June	700	130	-	132	-	30	-
July	510	140	-	206	-	31	-
August	430	200	-	395	-	31	-
September	440	280	-	585	145	30	4,340
October	510	200	-	270	-	31	-
November	1,100	150	-	188	-	30	-
December	1,230	100	-	136	-	31	-
Total							**4,340**

Notes:
1. Based on August 2018 – July 2021 flow data.
2. Maximum month effluent TSS loading occurred in September 2018, which corresponded with the highest effluent flows and TSS loading within the past decade.

As shown in Table 1-2, without sufficient TSS WQT credits, the peak flow events from August to October 2018 resulted in four exceedances of the weekly TSS loading limits (weeks of August 19, August 26, September 2, and the first week of October 2018). To meet the monthly *and* weekly TSS loading limits in 2018, a total of 12,520 lbs/year of nonpoint source TSS WQT credits would have been required.

Table 1-2 Estimated TSS Credits Required: Weekly Loading Limits							
Month	**Weekly Average Effluent TSS Limit (lbs/day)**	**Average Week Effluent TSS (lbs/d)**	**Average Required TSS Offset (lbs/d)**	**Peak Week Effluent TSS (lbs/d)**	**Maximum Required TSS Offset (lbs/d)**	**Duration (d/month)**	**Estimated Maximum Required TSS Offset (lbs/month)**
January	1,400	100	-	152	-	7	-
February	1,500	100	-	181	-	7	-
March	2,270	160	-	374	-	7	-
April	2,340	120	-	182	-	7	-
May	2,270	120	-	207	-	7	-
June	690	130	-	223	-	7	-
July	530	140	-	418	-	7	-
August	450	200	-	798	348	7	2,440
				707	257	7	1,800
September	440	280	-	1,593	1153	7	8,070
October	530	200	-	560	30	7	210
November	1,100	150	-	241	-	7	-
December	1,300	100	-	154	-	7	-
Total	**-**	**-**	**-**	**-**	**-**	**-**	**12,520**

Notes:

1. Based on August 2018 – July 2021 flow data.
2. Peak week effluent TSS loading occurred week of September 2, 2018, which corresponded with the highest effluent flows and TSS loadings within the past decade. From August 2018-July 2021, there were four weekly TSS loading limit exceedances, including the weeks of: August 19, August 26, September 2, and September 30.
3. Per the WPDES permit, weekly loading limits from the TMDL were superseded by more stringent water quality based effluent limits for all months except March, April, and May. See the WPDES permit in Appendix H for details.

In future years, a target of 12,520 lbs/year in TSS WQT credits would be especially conservative. The worst-case effluent TSS loading conditions from August to October 2018 appear to be outliers, as shown in Figure 1-2. In total, with one monthly exceedance and seven weekly exceedances in the past decade, the City achieved compliance with the TSS loading limits for 99% of the averaging periods. In 2017 and 2022, compliance would have been achieved with 2,840 and 2,290 lbs/year in TSS WQT credits, respectively. Therefore, even gaining several thousand annual TSS WQT credits would be very precautious and should be sufficient for almost all anticipated conditions.

SECTION 2
PROJECT BACKGROUND

2.0 PROJECT INFORMATION

2.1 Facility and Field Locations

The City of Watertown owns and operates a 5.2 mgd wastewater treatment plant (WWTP) located at 800 Hoffman Rd, Watertown, WI, 53094, as shown in Appendix C. The WWTP discharges to the Rock River (Middle Rock River Watershed, UR01 – Upper Rock River Basin) in Jefferson County. The facility's outfall is regulated by the Wisconsin Department of Natural Resources' (WDNR) Wisconsin Permit Discharge Elimination System (WPDES) Permit No. WI-0028541-09-2. In Phase 1, the City will generate credits on two fields, as shown in Appendix B: BE06 and BE08 which are located across the railroad to the west of the WWTP. The City anticipates that it may generate additional credits on additional fields in a future phase of BMP implementation.

2.2 Existing Land Use

Prior to BMP implementation in recent months, BE06 and BE08 were used to grow corn and soybeans on 20.5 and 40.8 acres, respectively. These fields were farmed in a corn/soy rotation since at least 2014, according to the SnapPlus database. See Appendix D for records back to 2017, and Appendix E (WQ1: P Trade Report) for records back to 2016. The City also owns adjacent fields, including BE21, BE14, and BE07. No additional acreage will be farmed as a result of this trade, and pollutant loading from other City-owned fields will not increase as a result of this trade.

Table 2-1
Existing Land Use, Phase 1

Field	Acres	Existing Land Use
BE06	20.5	Corn and Soybeans
BE08	40.8	Corn and Soybeans
Total	61.3	-

2.3 Soil Sampling

The SnapPlus modeling was completed using agronomist records from the SnapPlus database for each farm. Soil sampling reports can be found in Appendix E. The Planner has certified the following with the 590 Checklist, which accompanies the Nutrient Management Plan:

1. The plan includes the following nutrient application requirements to protect surface and groundwater:
    a. Field nutrient levels were determined from soil samples analyzed by a DATCP certified laboratory.
    b. For fields or pastures with mechanical nutrient applications, field nutrient levels were determined from soil samples collected within the last 4 years according to 590 Standard (590) and UWEX Pub. A2809, Nutrient Application Guidelines for Field, Vegetable, and Fruit Crops in Wisconsin (A2809) typically collecting 1 sample per 5 acres of 10 cores.

Furthermore, the 590 Standard specifies the following about soil sampling:

1. Soils shall be tested a minimum of once every four years by a DATCP-certified laboratory for pH, phosphorus (P), potassium (K), and organic matter. A laboratory list is provided in Part VI of the Technical Note WI-1. Soil sampling shall be consistent with UWEX Pub. A2809, "Nutrient application guidelines for field, vegetable, and fruit crops in Wisconsin," or A2100, "Sampling Soils for Testing." For perennial fruit crops, use of soil test recommendations from UWEX Pub. A2809 is only required as the basis for fertilizer applications prior to establishment of new plantings.

2.4 Trade Ratio

A trade ratio is utilized to determine the number of credits received from the water quality trading. The following values were assumed to calculate the City's trade ratio:

Delivery: 0. The WWTP and the credit generating acreage are both located in the same twelve-digit hydraulic unit code (HUC-12) area.

Downstream: 0. The point of standards application for the Watertown WWTP is the bottom of the reach that generated the credit user's wasteload allocation. The lower boundary of Reach 29 is located downstream of both the WWTP and the credit generator, as shown in Appendix C.

Equivalency: 0. Equivalency is not required for TSS water quality trading.

Uncertainty: 1. The management practices under consideration are wetland restoration and perennial vegetation.

The calculated trade ratio is 1:1; however, a minimum trade ratio of 1.2:1 is required for non-point sources to point sources.

2.5 SnapPlus Modeling

SnapPlus modelling was conducted to determine the TSS losses from two scenarios:

1. The baseline scenario, without any perennial vegetation or wetland restoration BMPs, and
2. The proposed scenario, including implementation of the BMPs.

Table 2-1 compares the modelling results of these scenarios. Additional details are in Appendix E.

Table 2-2
Estimated Annual TSS Reductions, Phase 1

Scenario	Field	Acres	TSS Losses tons/year							TSS Reductions (tons/year)
			2022	2023	2024	2025	2026	2027	Avg.	
Baseline: Corn/Soybeans	BE06	20.5	2.7	1.8	1.6	1.7	1.6	1.7	1.9	0
	BE08	40.8	1.0	0.6	2.0	0.7	1.1	0.6	1.0	0
	Total	61.3	3.7	2.4	3.6	2.4	2.7	2.3	**2.9**	**0**
Proposed: Wetland Restoration & Perennial Vegetation, Corn/Soybeans in part of BE08	BE06 – Perennial Veg.	12.7	0.2	0.1	0.0	0.0	0.0	0.0	0.1	1.8
	BE06 - Wetland Rest.	7.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	
	BE08 – Perennial Veg.	15.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4
	BE08 – Corn/Soy	25.0	0.6	0.4	1.2	0.4	0.7	0.4	0.6	
	Total	61.3	1.0	0.5	1.2	0.4	0.7	0.4	**0.7**	**2.2**

2.6 Credit Generation

Based on the results presented in Tables 2-1 and 2-2, portions of field BE06 were recently restored into wetlands. The remainder of field BE06 was recently converted into perennial vegetation, along with approximately 15.8 acres of BE08. Implementing these BMPs will prevent approximately 2.2 tons (4,400 pounds) of TSS from entering the watershed each year as compared to the baseline condition.

Fields BE06 and BE08 are within Reach 29 of the Rock River TMDL, as shown in Appendix C. According to Appendix I of the Rock River TMDL, non-point sources contributing to Reach 29 are required to reduce TP loads by 24% from the baseline. The assumed baseline loading for agricultural fields is equivalent to a value of 0.1 tons of TSS/acre-year (200 lbs/acre-year), per

Figure 18 of the Rock River TMDL. Given the required reduction of 24%, the credit threshold for these fields is 152 lbs TSS/acre-year.

Most of the fields had rotational average sediment loss values below 152 lbs TSS/acre-year. In the baseline condition, field BE06 had a sediment loss value of approximately 180 lbs TSS/acre-year. Therefore, approximately 16% of the credits generated by field BE06 will be interim TSS WQT credits, with the remaining credits being long-term TSS WQT credits.

Table 2-3 presents the total number of credits generated by each field, after applying the trade ratio of 1.2:1. Consequently, the City seeks the option to apply 3,700 lbs/year in TSS WQT credits to its permit to demonstrate compliance. As nonpoint-to-point source WQT credits, the City will be able to apply the credits to any month within the year, although they will not rollover to subsequent years. The long-term credits will be available to the City as long as the BMP is maintained. The duration of interim credits is expected to be 10 years from the date of practice establishment (Fall 2022), which means that the City would be able to apply these interim credits toward achieving permit compliance through calendar year 2032.

Table 2-3
Estimated Annual TSS WQT Credits Available, Phase 1

Field	Acres	TSS Reductions (lbs/year)	TSS Interim Credits (lbs/year)	TSS Long-Term Credits (lbs/year)
BE06	20.5	3,600	500	2,500
BE08	40.8	800	0	700
Total	61.3	**4,400**	**500**	**3,200**

SECTION 3
MANAGEMENT PRACTICE

3.0 MANAGEMENT PRACTICE BACKGROUND INFORMATION

3.1 Management Practice Description & Plan

In recent months, the City contracted with a third-party to implement the wetland restoration and perennial vegetation BMPs. The City plans to maintain these BMPs through at least Fall 2028, with an intention to maintain these BMPs, generate WQT credits, and apply these credits towards permit compliance for as long as possible thereafter.

Establishment procedures for wetland restoration and perennial vegetation are included in Appendix F. Field Inspection and Operations and Maintenance Plans for the upkeep of restored wetlands and perennial vegetation are also included in Appendix F, based on guidance from the Natural Resources Conservation Service (NRCS), an agency of the United States Department of Agriculture (USDA).

All planting practices, tracking procedures, inspection requirements, and operation and maintenance of the planting practice have and will continue to adhere to standards provided by the USDA.

SECTION 4
TIMELINE

4.0 SCHEDULE FOR INSTALLATION OF PRACTICE

4.1 Timeline for Actions

As summarized in Table 4-1, the establishment of wetland and grassland perennial vegetation was completed in recent months as part of the Phosphorus WQT Plan. TSS credits from the implementation of these BMPs will become available in 2023 after the WDNR completes the WPDES permit modification. Based on Figure 1-2 and Tables 1-1 and 1-2, the most likely time for TSS exceedances has been from June through October. Therefore, the City seeks to complete the permit modification and gain the TSS WQT credits as soon as practicable. If the City gains credits by April 1, 2023, it is likely that these credits may be applied to the electronic discharge monitoring report (eDMR) as soon as June 2023.

Table 4-1
Timeline for Actions, Phase 1

Date	Action
August 2022	Completed Wetland Construction
August 2022	Completed Grassland Perennial Vegetation Restoration
September 2022	Completed Post-Construction Inspection
2023	Credits Available Following Permit Modification and Re-Issuance

SECTION 5
INSPECTIONS AND REPORTING

5.0 METHODS FOR INSPECTION, REPORTING, AND OPERATIONS AND MAINTENANCE

5.1 Inspections, Certification, and Reporting

Wetland restoration requires that the City of Watertown or the City's agent inspect the restored fields generating the TSS reduction credits to confirm the management practice is in acceptable conditions as required below:

- Inspections shall take after significant storm event and at least annually to identify repair and maintenance needs.
- The downstream toe of the embankment shall be inspected annually to ensure that no wet areas or seeps are present.
- Fields shall be inspected at least once a month for burrowing animals.

The City or the City's agent shall certify that the management practices installed are operated and maintained in a manner consistent with that specified in this WQT Plan or provide a statement noting noncompliance. A certification of compliance may be made by including the following statement as a comment on the monthly discharge monitoring report (DMR):

"I certify that to the best of my knowledge the management practice identified in the approved WQT plan as the source of TSS reduction credits is installed, established and properly maintained."

If available, photos taken during inspection can be used to verify compliance or noncompliance annual reports. Usage and reporting of TSS credits will be submitted on the DMRs.

5.2 Notification of Problems with Management Practice

Fields were inspected one month after installation to verify compliance with relevant NRCS standards. Fields will continue to be inspected per the Operation and Maintenance Plan.

The WDNR will be provided written notification if the City becomes aware that TSS reduction credits used or intended for use by the City are not being implemented or generated as set forth in this WQT Plan. The City shall work to rectify such problems in accordance with the Operation and Maintenance Plan and the Water Quality Trading Agreement.

The WDNR has consistently provided assurance that if a permittee followed their WQT Plan but did not generate the estimated credits, then the WDNR would not issue a Notice of Violation (NOV), but would require the permittee to update their Plan to secure additional reductions. As part of this Plan, the City and the WDNR shall commit to the following contingency procedure in case insufficient credits would be generated:

- The City shall notify the WDNR within 7 days of becoming aware of an anticipated change in credits forecast by the Water Quality Trading Plan.
- If this notification would occur between January 1 and June 30 (e.g., 2023), then the City would commit to securing sufficient credits to be generated by the start of the following calendar year (e.g., 2024).
- If this notification would occur between July 1 and September 30 (e.g., 2023), then the City would *attempt* to secure sufficient credits to be generated by the start of the following calendar year (e.g., 2024). The City would *not* commit to securing sufficient credits to be generated by the start of the following calendar year (e.g., 2024).
- If this notification would occur between October 1 and December 31 (e.g., 2023), then the City would not be able to secure sufficient credits prior to the following calendar year (e.g., 2024), but would instead commit to secure enough credits within the following calendar year (e.g., 2024) to be applied more than a year later (e.g., 2025). If the City concludes at any time between July 1 and December 31 that it will *not be able* to secure sufficient credits prior to the start of the following calendar year (e.g., 2024), then the City would commit to provide a brief written summary to the WDNR prior to the year's end (e.g., December 31, 2023) of the City's unsuccessful efforts to secure sufficient credits.
- Consequently, the WDNR has indicated that it will follow a stepped enforcement process to resolve any potential issues, and will consider all pertinent information when determining which regulatory mechanism will be required. Although the WDNR reserves the right to issue a notice of violation (NOV) or notice of noncompliance (NON), the City does not expect that the WDNR would issue a NOV nor a NON to the City regarding TSS compliance as long as 1) the City executes agreements to fund best management practices (BMPs) that will secure credits totaling 3,700 lb/year and 2) the City follows the contingency procedure above if insufficient credits will be generated.

5.3 Annual Water Quality Trading Report

The City shall report to WDNR, by January 31 of each year, the following:

- The number of TSS reduction credits (lbs/month) used each month of the previous year to demonstrate compliance;
- Results from an annual inspection of the management practice that generated the TSS reduction credits used during the previous years; and
- Identification of noncompliance or failure to implement any terms or conditions WPDES permit WI-0028541-09-2 with respect to WQT that have not been reported in discharge monitoring reports.

5.4 WDNR Right to Inspect the Fields

The WDNR has the right to inspect the permanent management practice at any time upon given reasonable notice to the WWTP to ensure the management practice is in compliance with NRCS Technical Standards 327 and 657 and the terms of this plan.

SECTION 6
WATER QUALITY TRADING CHECKLIST

6.0 WATER QUALITY TRADING CHECKLIST

The Water Quality Trading Checklist (Form 3400-208) can be found in Appendix G.

6.1 Water Quality Trading Management Practice Registration

Registration Form 3400-207 for Water Quality Trading Management Practice Registration can be found in Appendix G.

6.2 Water Quality Trade Agreement

The City will generate the nonpoint source TSS WQT credits without the need for a trading partner. Therefore, the TSS water quality trade agreement will be made between the City and WDNR. The trade agreement is required to be in place prior to using trading to demonstrate compliance with the new TSS limits. A draft agreement is included in Appendix G, and a final agreement will be executed prior to approval of the Plan.

SECTION 7
WATER QUALITY TRADING PLAN CERTIFICATION

7.0 WATER QUALITY TRADING PLAN CERTIFICATION

The undersigned hereby certified that this WQT Plan is, to the best of their knowledge, accurate and correct.

Submitted for Approval by: Peter Hartz (signed) Water Systems Manager City of Watertown

Peter A. Hartz (printed)
Authorized Permit Representative

APPENDIX

APPENDIX A:
NOTICE OF INTENT
(FORM 3400-206)

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison WI 53707-7921
dnr.wi.gov

Notice of Intent to Conduct Water Quality Trading

Form 3400-206 (1/14)

Notice: Pursuant to s. 283.84, Wis. Stats., and ch. NR 217 Wis. Adm. Code, this form must be completed by any WPDES permittee that is using water quality trading as a method of complying with a permit limitation. Failure to complete this form would not result in penalties. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

Applicant Information

Permittee Name	Permit Number	Facility Site Number
City of Watertown	WI- 0028541-09-2	

Facility Address	City	State	ZIP Code
800 Hoffman Drive	Watertown	WI	53094

Project Contact Name (if applicable)	Address	City	State	ZIP Code
Peter Hartz	800 Hoffman Drive	Watertown	WI	53094

Project Name: City of Watertown Wastewater Treatment Plant WQT Plan for TSS

Receiving Water Name	Parameter(s) being traded	HUC 12(s)
Rock River	TSS	070900011103

Is the permittee in a point or nonpoint source dominated watershed? (See PRESTO results - http://dnr.wi.gov/topic/surfacewater/presto.html)

- ◯ Point source dominated
- ◉ Nonpoint source dominated

Credit Generator Information

Credit generator type (select all that apply):

- ☐ Permitted Discharge (non-MS4/CAFO)
- ☐ Permitted MS4
- ☐ Permitted CAFO
- ☐ Urban nonpoint source discharge
- ☒ Agricultural nonpoint source discharge
- ☐ Other - Specify: _____

Are any of the credit generators in a different HUC 12 than the applicant?

- ◯ Yes; HUC 12: _____
- ◉ No
- ◯ Unsure

Are any of the credit generators downstream of the applicant?

- ◉ Yes
- ◯ No
- ◯ Unsure

Will a broker/exchange be used to facilitate trade?

- ◯ Yes; Name: _____
- ◉ No
- ◯ Unsure

Point to Point Trades (Traditional Municipal / Industrial Discharge, MS4, CAFO)

Discharge Type	Permit Number	Name	Contact Address	Is the point source credit generator currently in compliance with their permit requirements?
◯ Traditional ◯ MS4 ◯ CAFO				◯ Yes ◯ No ◯ Unsure
◯ Traditional ◯ MS4 ◯ CAFO				◯ Yes ◯ No ◯ Unsure
◯ Traditional ◯ MS4 ◯ CAFO				◯ Yes ◯ No ◯ Unsure
◯ Traditional ◯ MS4 ◯ CAFO				◯ Yes ◯ No ◯ Unsure
◯ Traditional ◯ MS4 ◯ CAFO				◯ Yes ◯ No ◯ Unsure

Point to Nonpoint Trades (Non-permitted Agricultural, Non-Permitted Urban, etc.)

List the practices that will be used to generate credits:

Replacement of agricultural land use with wetland restoration and re-establishment of perennial vegetation or other natural restorative practices as approved by Jefferson County Land and Water Department or the City of Watertown.

Method for quantifying credits generated:
- ☐ Monitoring
- ☒ Modeling, Names: SnapPlus
- ☐ Other: _____

Projected date credits will be available: 01/01/2023

The preparer certifies all of the following:

- I am familiar with the specifications submitted for this application, and I believe all applicable items in this checklist have been addressed.
- I have completed this document to the best of my knowledge and have not excluded pertinent information.

Signature of Preparer	Date Signed

Authorized Representative Signature

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

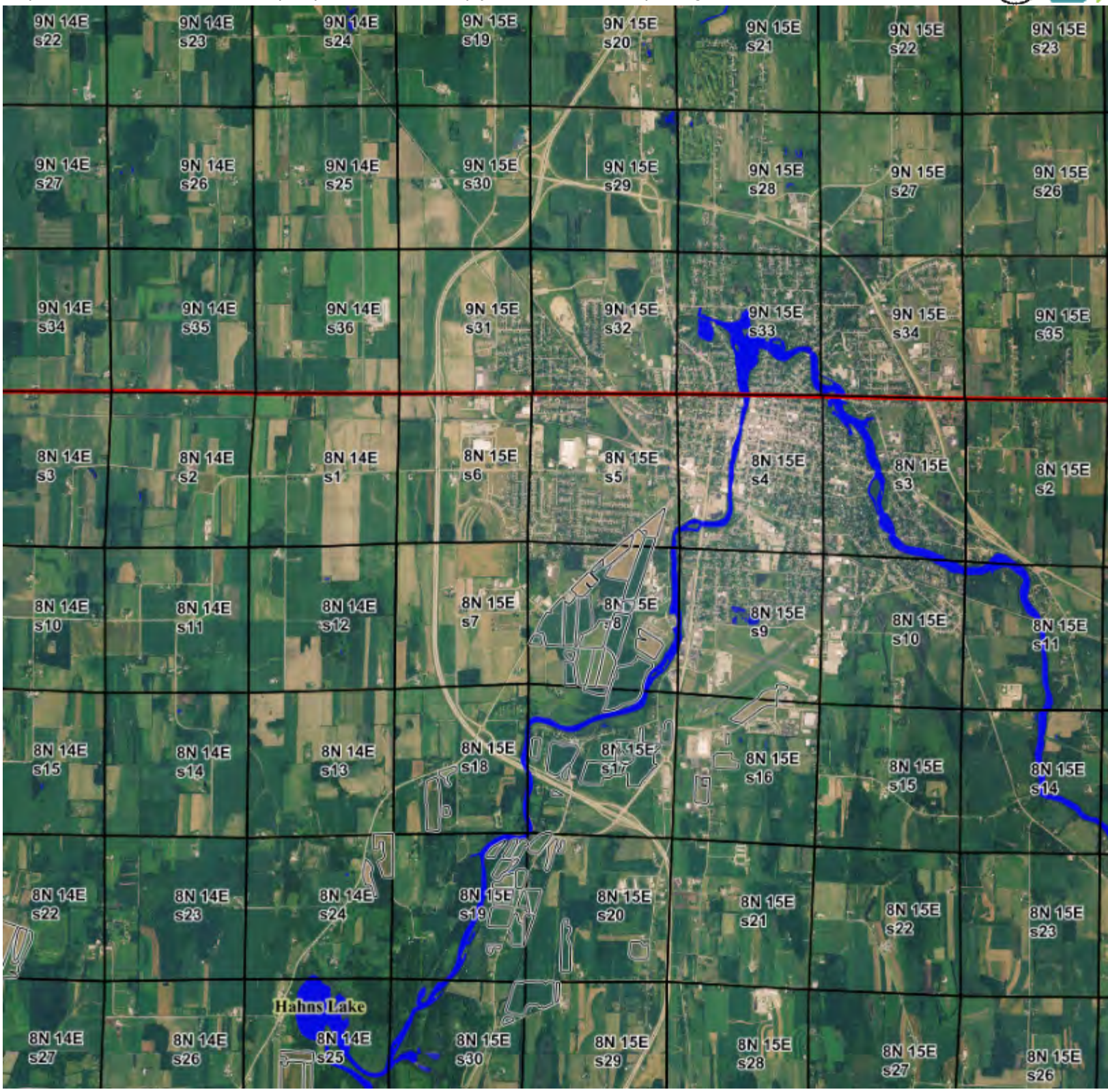
Signature of Authorized Representative	Date Signed
[signature]	12-21-2022

APPENDIX B:
CREDIT GENERATOR MAPS


BE19
BE05
BE15B
8N 15E
s8
Perennial
Vegetation:
Phase 1
BE06
BE15
City of
Watertown
WWTP
BE14
BE06
Phase 1
Wetland
Restoration
BE21
BE13
Perennial Vegetation:
Phase 1 BE08
BE08
Split still in Ag
BE12
BE07
BE09

Watertown

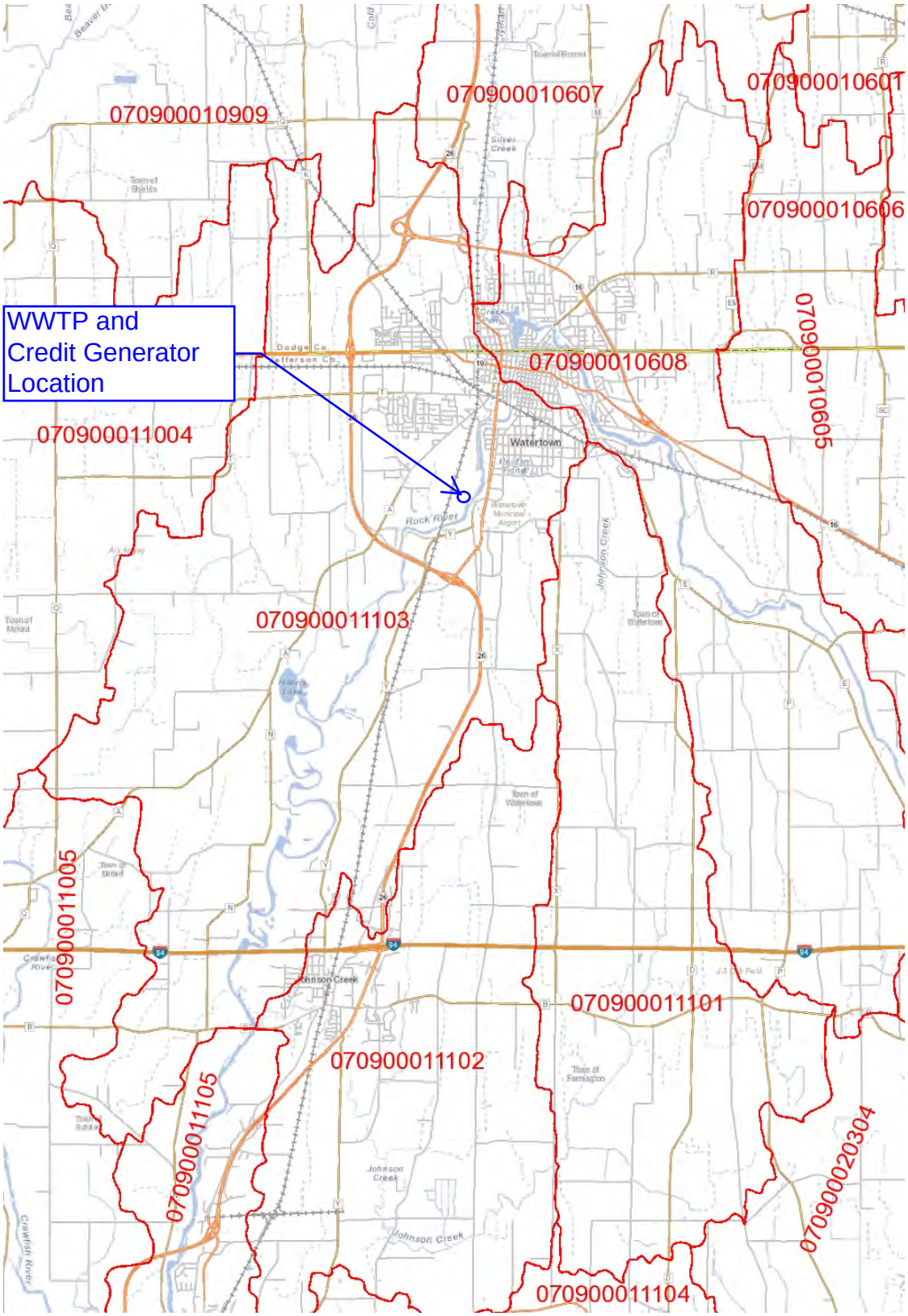
Map Generated on:7/30/2018 SnapMap Version: 17 , Crop year: 2018, Township Range Section:9N 15E s31



- Waterbodies
- Counties
- Township/Range
- Areas contributing runoff to direct conduits to groundwater
- Grassed waterway
- Non-eroding channel
- Ephemeral erosion channel
- Ditch
- Gully
- Headland stacks
- Fields

APPENDIX C:
WWTP LOCATION

Surface Water Data Viewer Map



Legend

- 12-digit HUCs (Subwatersheds)
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads
- Tribal Lands
- Rivers and Streams
- Intermittent Streams
- Lakes and Open water

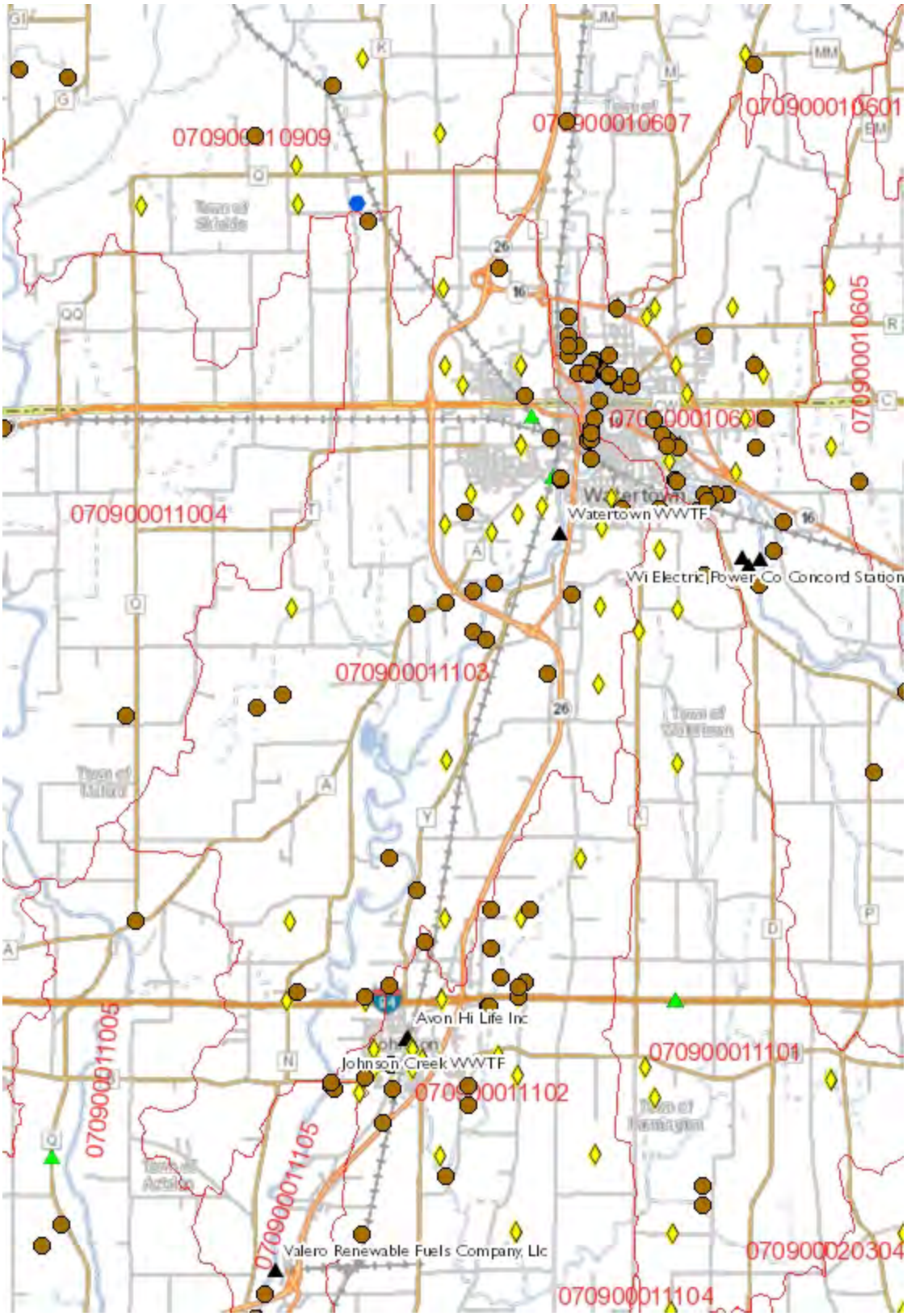
4.0 0 2.00 4.0 Miles

1: 126,720

NAD_1983_HARN_Wisconsin_TM

Notes

Surface Water Data Viewer Map



Legend

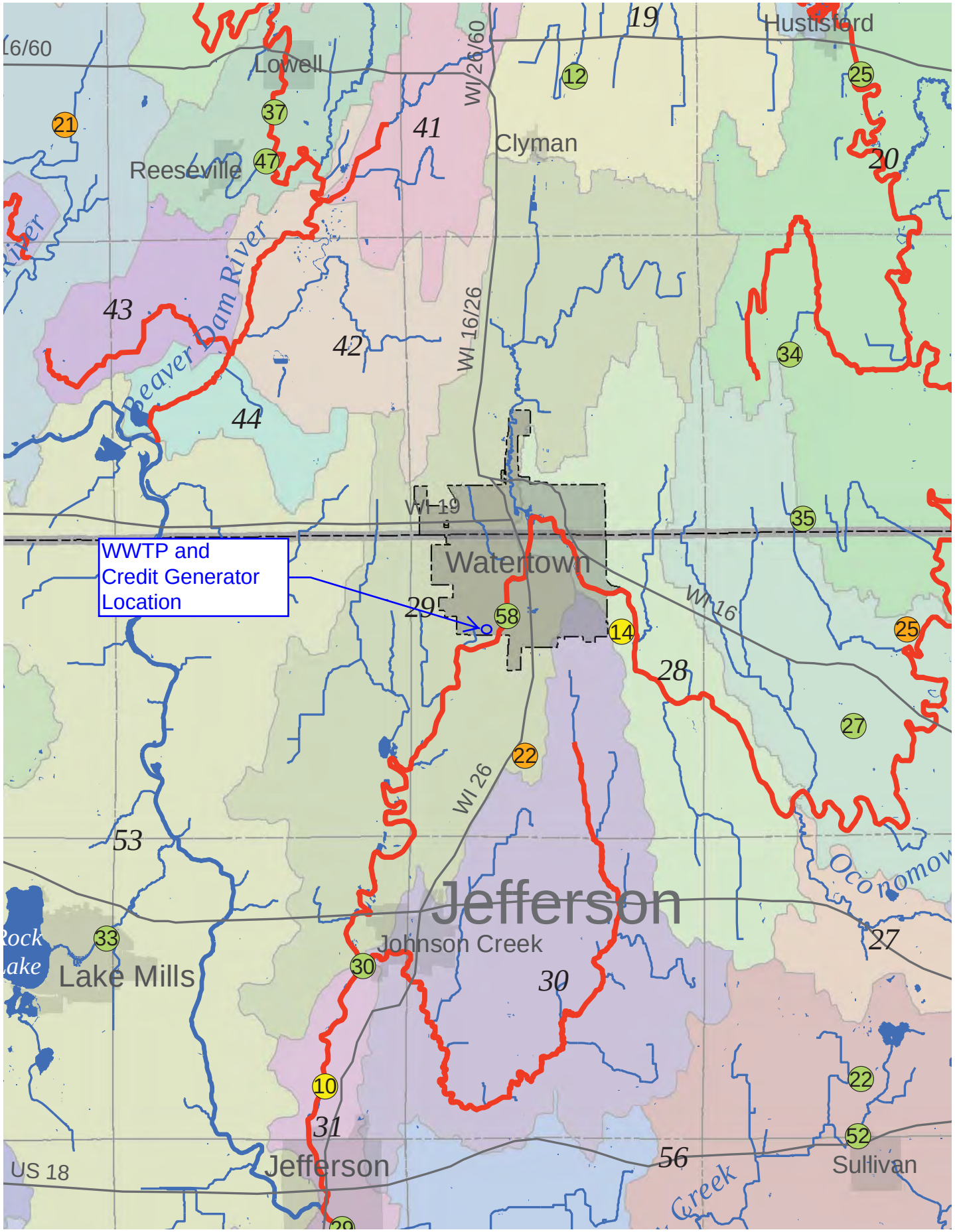
- Waterway and Wetland Alterations
- Informal Actions
- Exemption Determinations
- Ordinary High Water Mark Determinations
- Navigability Determinations
  - Yes
  - Yes with Agricultural Exemption
  - No
- Surface Water Outfalls
- 12-digit HUCs (Subwatersheds)
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads
- Tribal Lands
- Rivers and Streams
- Intermittent Streams
- Lakes and Open water

4.0 0 2.00 4.0 Miles

1: 126,720

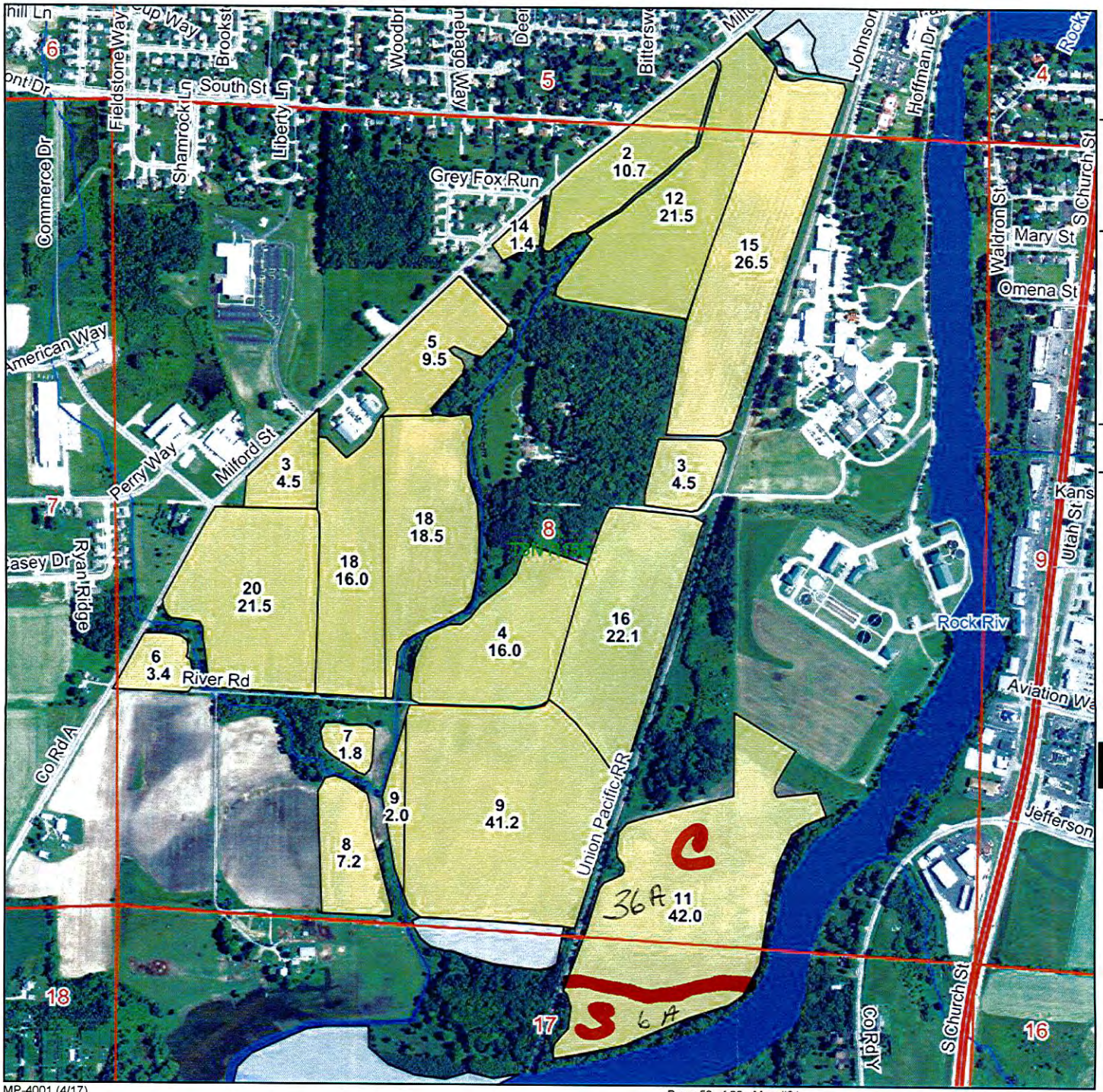
NAD_1983_HARN_Wisconsin_TM

Notes



Reach 29 Map
City of Watertown, WI

APPENDIX D: EXISTING LAND USE INFORMATION



RCIS

Acreage Reporting Form

Dettmann Dairy Farms OP LLC

Crop Year: 2017

HOME PETIG GAULK MAR STRAUSS HOWARDS BETH

KELLIM PPR/LOEB/MCDN/KRPI/LB DETTMERS/ATZALAN ALBERS CHSB LOEB/YENSER DETTMERS

JEFFERSON, WI
T8N R15E section 8

8 T8N R15E

WI-951-686864

[redacted]

Remarks:

APPENDIX E:
SNAPPLUS MODELING DATA

NM1: Narrative and Crops Report

Starting Year	**2021**
Reported For	**Watertown WWTP**
Printed	**2021-04-29**
Plan Completion/Update Date:	**2021-03-02**
SnapPlus Version 20.3 built on 2021-02-18	
C:\Users\joes\Documents\WWWTP WTQ\Watertown WW Project.snapDb	

Prepared for:
Watertown WWTP
attn:City of Watertown

Farm has 6 fields totalling 107 cropped acres.
Farm Narrative: None

Annual Farm Notes:

No Annual Farm Notes

Spreader Calibration Methods: Custom applications, Amount applied / Acres

Narrative and Crops:

Field Name	Field Acres	2021	2022	2023	2024	2025	2026	2027
BE06	20.5	Soybeans 15-20 inch row Spring Cultivation 56-65 bu/acre	Corn grain Spring Cultivation 191-210 bu/acre	Corn grain Fall Chisel, no disk 191-210 bu/acre	Corn grain Fall Chisel, no disk 191-210 bu/acre	Corn grain Fall Chisel, no disk 191-210 bu/acre	Corn grain Fall Chisel, no disk 191-210 bu/acre	Corn grain Fall Chisel, no disk 191-210 bu/acre
BE08	40.8	Soybeans 15-20 inch row Spring Cultivation 56-65 bu/acre	Corn grain Spring Cultivation 231-250 bu/acre	Soybeans 15-20 inch row Spring Cultivation 56-65 bu/acre	Corn grain Fall Chisel, no disk 211-230 bu/acre	Soybeans 15-20 inch row Spring Cultivation 56-65 bu/acre	Corn grain Spring Cultivation 231-250 bu/acre	Soybeans 15-20 inch row Spring Cultivation 56-65 bu/acre
BE08 Split still in Ag	25	Soybeans 15-20 inch row Spring Cultivation 56-65 bu/acre	Corn grain Spring Cultivation 231-250 bu/acre	Soybeans 15-20 inch row Spring Cultivation 56-65 bu/acre	Corn grain Fall Chisel, no disk 211-230 bu/acre	Soybeans 15-20 inch row Spring Cultivation 56-65 bu/acre	Corn grain Spring Cultivation 231-250 bu/acre	Soybeans 15-20 inch row Spring Cultivation 56-65 bu/acre

Field Name	Field Acres	2021	2022	2023	2024	2025	2026	2027
Phase 1 BE06 Prairie	12.7	Soybeans 15-20 inch row Spring Cultivation 56-65 bu/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre
Phase 1 BE06 Wetland	7.8	Soybeans 15-20 inch row Spring Cultivation 56-65 bu/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre
Phase 1 BE08 Prairie	15.8	Soybeans 15-20 inch row Spring Cultivation 56-65 bu/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre	Grasslands, permanent, not harvested None 0-0 none/acre

Summary by Crop:

NOTE: Yields calculated using the midpoint of the SnapPlus yield goal range for each crop.

Crops Grouped By Category		2021	2022	2023	2024	2025	2026	2027
Corn grain	Acres bu		86 17,243	21 4,211	86 17,243	21 4,211	86 17,243	21 4,211
Soybeans 15-20 inch row	Acres bu	123 7,442		66 3,993		66 3,993		66 3,993
Grasslands, permanent, not harvested	Acres none		36 0	36 0	36 0	36 0	36 0	36 0

WQ2: Sediment Trade Report

Reported For	Watertown WWTP
Printed	2022-09-06
Plan Completion/Update Date	2021-03-02
SnapPlus Version 20.4 built on 2021-06-03	
C:\Users\joes\Documents\WWWTP WTQ\Watertown WW Project.snapDb	

Prepared for:
Watertown WWTP
attn:City of Watertown

The Sediment Trade Report estimates the annual tons of sediment in surface runoff from cropland entering surface waters. These sediment delivery calculations are based on RUSLE2 estimates of sheet and rill erosion for the predominant soil. Sediment losses from concentrated flow channel or gully erosion within a field are not included in these calculations. Field sediment yields are calculated for each year as US tons/field/year. Fields are only included if there at least 2 years of crops before the selected start year. Before using this report as part of a Water Quality Trade activity, sediment losses must be converted into 'credits' according to DNR guidance.

For more information go to **http://dnr.wi.gov** and type keyword: **Water Quality Trading**

Questions? Please contact DNRphosphorus@wisconsin.gov

This report was developed for Wisconsin DNR Water Quality Trading and Adaptive Management purposes and cannot be used to demonstrate compliance with NR 151 or NRCS 590 NM plan requirements.

Sediment Trading

Field Name	Soil Series	Soil Symbol	Acres	Sediment (US Tons)						
				2016	2017	2018	2019	2020	2021	2022
BE06	MATHERTON	MmA	20.5	1.9	1.8	1.7	1.5	3.6	1.5	2.7
BE08	SISSON	SoB	40.8	1.4	0.8	1.3	0.6	1.7	0.6	1.0
BE08 Split still in Ag	SISSON	SoB	25	0.5	0.5	0.4	0.3	1.0	0.4	0.6
Phase 1 BE06 Prairie	MATHERTON	MmA	12.7	1.2	1.1	1.0	0.9	2.2	1.0	0.2

Sediment (US Tons)				
2023	2024	2025	2026	2027
1.8	1.6	1.7	1.6	1.7
0.6	2.0	0.7	1.1	0.6
0.4	1.2	0.4	0.7	0.4
0.1	0.0	0.0	0.0	0.0

Phase 1 BE06 Wetland	MATHERTON	MmA	7.8	0.7	0.7	0.6	0.6	1.4	0.6	0.1
Phase 1 BE08 Prairie	SISSON	SoB	15.8	0.6	0.3	0.5	0.2	0.7	0.2	0.1
Total				6.3	5.2	5.5	4.3	10.7	4.3	4.8

0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0
2.9	4.8	2.8	3.4	2.7

FM6: Soil Test Report

Reported For	Watertown WWTP
Printed	2021-04-29
Plan Completion/Update Date	2021-03-02
SnapPlus Version 20.3 built on 2021-02-18	
C:\Users\joes\Documents\WWWTP WTQ\Watertown WW Project.snapDb	

Prepared for:
Watertown WWTP
attn:City of Watertown

			Predominant					Samples				in ppm			
Field Name	Subfarm	Acres	Soil Map Symbol	Soil Name	Soil Test Date	Soil Test Lab	Lab Number	Rec. #	Actual #	pH	OM%	P	K	S	CEC
BE06	Bethesda	20.5	MmA	MATHERTON	2018-12-27	AgSource	726047	**3**	**4**	7.4	9.4	46	179	0	20
BE06	Bethesda	20.5	MmA	MATHERTON	2015-04-27	AgSource	758631	**3**	**4**	7.5	15.0	46	248	0	24
BE06	Bethesda	20.5	MmA	MATHERTON	2010-10-26	AgSource	710772	**3**	**4**	6.8	24.1	32	134	0	35
BE06	Bethesda	20.5	MmA	MATHERTON	2007-04-25	Agsource		**3**	**4**	7.5	10.8	15	105	0	0
BE08	Bethesda	40.8	SoB	SISSON	2018-12-27	AgSource	726048	**8**	**9**	7.5	3.4	25	77	0	12
BE08	Bethesda	40.8	SoB	SISSON	2015-04-27	AgSource	758631	**8**	**9**	7.7	3.9	41	86	0	16
BE08	Bethesda	40.8	SoB	SISSON	2010-10-07	AgSource	709533	**8**	**8**	7.7	3.2	25	67	0	16
BE08	Bethesda	40.8	SoB	SISSON	2007-04-25	Agsource		**8**	**1**	6.3	1.7	25	66	0	0
BE08	Bethesda	40.8	SoB	SISSON	2006-10-05	Agsource		**8**	**5**	7.7	4.8	14	53	0	0
BE08 Split still in Ag	Bethesda	25	SoB	SISSON	2018-12-27	AgSource	726048	**5**	**9**	7.5	3.4	25	77	0	12
BE08 Split still in Ag	Bethesda	25	SoB	SISSON	2015-04-27	AgSource	758631	**5**	**9**	7.7	3.9	41	86	0	16
BE08 Split still in Ag	Bethesda	25	SoB	SISSON	2010-10-07	AgSource	709533	**5**	**8**	7.7	3.2	25	67	0	16
BE08 Split still in Ag	Bethesda	25	SoB	SISSON	2007-04-25	Agsource		**5**	**1**	6.3	1.7	25	66	0	0
BE08 Split still in Ag	Bethesda	25	SoB	SISSON	2006-10-05	Agsource		**5**	**5**	7.7	4.8	14	53	0	0
Phase 1 BE06 Prairie	Bethesda	12.7	MmA	MATHERTON	2018-12-27	AgSource	726047	**3**	**4**	7.4	9.4	46	179	0	20

			Predominant					Samples				in ppm			
Field Name	Subfarm	Acres	Soil Map Symbol	Soil Name	Soil Test Date	Soil Test Lab	Lab Number	Rec. #	Actual #	pH	OM%	P	K	S	CEC
Phase 1 BE06 Prairie	Bethesda	12.7	MmA	MATHERTON	2015-04-27	AgSource	758631	**3**	**4**	7.5	15.0	46	248	0	24
Phase 1 BE06 Prairie	Bethesda	12.7	MmA	MATHERTON	2010-10-26	AgSource	710772	**3**	**4**	6.8	24.1	32	134	0	35
Phase 1 BE06 Prairie	Bethesda	12.7	MmA	MATHERTON	2007-04-25	Agsource		**3**	**4**	7.5	10.8	15	105	0	0
Phase 1 BE06 Wetland	Bethesda	7.8	MmA	MATHERTON	2018-12-27	AgSource	726047	**2**	**4**	7.4	9.4	46	179	0	20
Phase 1 BE06 Wetland	Bethesda	7.8	MmA	MATHERTON	2015-04-27	AgSource	758631	**2**	**4**	7.5	15.0	46	248	0	24
Phase 1 BE06 Wetland	Bethesda	7.8	MmA	MATHERTON	2010-10-26	AgSource	710772	**2**	**4**	6.8	24.1	32	134	0	35
Phase 1 BE06 Wetland	Bethesda	7.8	MmA	MATHERTON	2007-04-25	Agsource		**2**	**4**	7.5	10.8	15	105	0	0
Phase 1 BE08 Prairie	Bethesda	15.8	SoB	SISSON	2018-12-27	AgSource	726048	**3**	**9**	7.5	3.4	25	77	0	12
Phase 1 BE08 Prairie	Bethesda	15.8	SoB	SISSON	2015-04-27	AgSource	758631	**3**	**9**	7.7	3.9	41	86	0	16
Phase 1 BE08 Prairie	Bethesda	15.8	SoB	SISSON	2010-10-07	AgSource	709533	**3**	**8**	7.7	3.2	25	67	0	16
Phase 1 BE08 Prairie	Bethesda	15.8	SoB	SISSON	2007-04-25	Agsource		**3**	**1**	6.3	1.7	25	66	0	0
Phase 1 BE08 Prairie	Bethesda	15.8	SoB	SISSON	2006-10-05	Agsource		**3**	**5**	7.7	4.8	14	53	0	0

Crop Year Soil Test Needed

Field Name	Soil Test Date	2018	2019	2020	2021	2022	2023	2024
BE06	2018-12-27						X	
BE08	2018-12-27						X	
BE08 Split still in Ag	2018-12-27						X	
Phase 1 BE06 Prairie	2018-12-27						X	
Phase 1 BE06 Wetland	2018-12-27						X	
Phase 1 BE08 Prairie	2018-12-27						X	

APPENDIX F:
BEST MANAGEMENT PRACTICE INFORMATION

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison WI 53707-7921
dnr.wi.gov

Water Quality Trading Management Practice Registration

Form 3400-207 (R 1/14)

Notice: Pursuant to s. 283.84, Wis. Stats., this form must be completed by any WPDES permittee that is using water quality trading as a method of complying with a permit limitation. Failure to complete this form would not result in penalties. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

Applicant Information

Permittee Name	Permit Number	Facility Site Number
City of Watertown	WI- 0028541-09-2	

Facility Address	City	State	ZIP Code
800 Hoffman Drive	Watertown	WI	53094

Project Contact Name (if applicable)	Address	City	State	ZIP Code
Peter Hartz	800 Hoffman Drive	Watertown	WI	53094

Project Name
City of Watertown Wastewater Treatment Plant WQT Plan for TSS

Broker/Exchange Information (if applicable)

Was a broker/exchange be used to facilitate trade? ○ Yes ◉ No

Broker/Exchange Organization Name	Contact Name	
Address	Phone Number	Email

Trade Registration Information (Use a separate form for each trade agreement)

Type	Trade Agreement Number	Practices Used to Generate Credits	Anticipated Load Reduction	Trade Ratio	Method of Quantification
○ Urban NPS ◉ Agricultural NPS ○ Other	WQT-2022-	Wetland Restoration, Perennial Vegetation	4,400	1.2	SnapPlus

County	Closest Receiving Water Name	Land Parcel ID(s)	Parameter(s) being traded
Jefferson	Rock River	See WQT Plan	TSS

The preparer certifies all of the following:

- I have completed this document to the best of my knowledge and have not excluded pertinent information.
- I certify that the information in this document is true to the best of my knowledge.

Signature of Preparer	Date Signed

Authorized Representative Signature

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative	Date Signed
Peter Hartz	12-21-2022

Leave Blank – For Department Use Only

Date Received		Trade Docket Number
Entered in Tracking System ☐ Yes	Date Entered	Name of Department Reviewer

NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

CONSERVATION COVER

(Ac.)

CODE 327

DEFINITION

Establishing and maintaining permanent vegetative cover

PURPOSE

This practice is applied to support one or more of the following purposes:

- Reduce sheet, rill, and wind erosion and sedimentation.
- Reduce ground and surface water quality degradation by nutrients and surface water quality degradation by sediment.
- Reduce emissions of particulate matter (PM), PM precursors, and greenhouse gases.)
- Enhance wildlife, pollinator and beneficial organism habitat.
- Improve soil health.

CONDITION WHERE PRACTICE APPLIES

This practice applies on all lands needing permanent herbaceous vegetative cover. This practice does not apply to plantings for forage production or to critical area plantings. This practice can be applied on a portion of the field.

CRITERA

General Criteria Applicable to All Purposes

Select species that are adapted to the soil, ecological sites, and climatic conditions that are suitable for the planned purpose and site conditions. Periodic removal of some products such as high value trees, medicinal herbs, nuts, and fruits is permitted provided the conservation purpose is not compromised by the loss of vegetation or harvesting disturbance.

Inoculate legumes at planting time.

Choose seeding rates and planting methods that will be adequate to accomplish the planned purpose.

Planting dates, planting methods and care in handling and planting of the seed or planting stock shall ensure that planted materials have an acceptable rate of survival.

Prepare the site by establishing a consistent seeding depth. Eliminate weeds that would impede the establishment and growth of selected species.

Base the timing and equipment selection on the site and soil conditions.

Apply nutrients as needed to ensure crop establishment and planned growth.

Additional Criteria to Reduce Sheet, Rill, and Wind Erosion and Sedimentation

Determine and maintain the amount of plant biomass and cover needed to reduce wind and water erosion to the planned soil loss objective by using the current approved wind and/or water erosion prediction technology.

Additional Criteria to Reduce Emissions of Particulate Matter (PM), PM Precursors, and greenhouse gases

In perennial crop systems such as orchards, vineyards, berries and nursery stock, establish vegetation to provide full ground coverage in the alleyway during mowing and harvest operations to minimize generation of particulate matter.

Additional Criteria to Enhance Wildlife, Pollinator and Beneficial Organism Habitat

Plant a diverse mixture grasses and forbs

species to promote bio-diversity and meet the needs of the targeted species using approved habitat appraisal guides, evaluation tools, and appraisal worksheets for the respective state.

Locate habitat plantings to reduce pesticide exposures that could harm wildlife, pollinators, and other beneficial organisms.

Additional Criteria to Improve Soil Health

To maintain or improve soil organic matter, select plants that will produce high volumes of organic material. The amount of biomass needed will be determined using the current soil conditioning index procedure.

CONSIDERATIONS

This practice may be used to promote the conservation of wildlife species in general, including threatened and endangered species.

Certified seed and planting stock that is adapted to the site should be used when it is available.

Mowing may be needed during the establishment period to reduce competition from weeds.

On sites where annual grasses are an expected weed problem it may be necessary to postpone nitrogen fertilizer application until the planted species are well established.

Where applicable this practice may be used to conserve and stabilize archeological and historic sites.

Consider rotating management and maintenance activities (e.g. mow only one-fourth or one-third of the area each year) throughout the managed area to maximize spatial and temporal diversity.

Where wildlife management is an objective, the food and cover value of the planting can be enhanced by using a habitat evaluation procedure to aid in selecting plant species and by providing or managing for other habitat requirements necessary to achieve the objective. Encouraging plant species diversity and establishing plantings that result in multiple structural levels of vegetation within the conservation cover will maximize wildlife use.

Where pollinator and wildlife habitat are primary purposes consider less dense seeding rates as long as soil loss is within tolerable soil loss limits.

To provide habitat for natural enemies of crop pests, select a mix of plant species that provide year round habitat and food (accessible pollen or nectar) for the desired beneficial species. Consider habitat requirements of predatory and parasitic insects, spiders, insectivorous birds and bats, raptors, and terrestrial rodent predators. Consult Land Grant University Integrated Pest Management recommendations for beneficial habitat plantings to manage the target pest species.

Use a diverse mix of cover plant species that come into bloom at different times and provide a sequence of bloom throughout the year (e.g., plant at least three flowering species from each of the three bloom periods (spring, summer, and fall).

Where practical, use native species that are appropriate for the identified resource concern and management objective. Consider trying to re-establish the native plant community for the site.

If a native cover (other than what was planted) establishes, and this cover meets the intended purpose and the landowner's objectives, the cover should be considered adequate.

During vegetation establishment, natural mulches, such as wood products or hay, can be used to conserve soil moisture, support beneficial soil life, and suppress competing vegetation.

PLANS AND SPECIFICATIONS

Prepare plans and specifications for the site to include, but are not limited to:

- recommended species,
- seeding rates and dates,
- establishment procedures,
- management actions needed to insure and adequate stand

Specifications and operation and maintenance shall be recorded using approved Implementation Requirement document.

OPERATION AND MAINTENANCE

Mowing and harvest operations in a perennial crop system such as orchards, vineyards, berries, and nursery stock shall be done in a manner which minimizes the generation of particulate matter.

If wildlife habitat enhancement is a purpose, maintenance practices and activities shall not disturb cover during the reproductive period for the desired species. Exceptions should be considered for periodic burning or mowing when necessary to maintain the health of the plant community.

Control noxious weeds and other invasive species.

Mowing may be needed during the establishment period to reduce competition from weeds.

To benefit insect food sources for grassland nesting birds, spraying or other control of noxious weeds shall be done on a “spot” basis to protect forbs and legumes that benefit native pollinators and other wildlife.

Re-vegetate bare spots.

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NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

WETLAND RESTORATION

(Ac.)

CODE 657

DEFINITION

The return of a wetland and its functions to a close approximation of its original condition as it existed prior to disturbance on a former or degraded wetland site.

PURPOSE

To restore wetland function, value, habitat, diversity, and capacity to a close approximation of the pre-disturbance conditions by restoring:

- Conditions conducive to hydric soil maintenance.
- Wetland hydrology (dominant water source, hydroperiod, and hydrodynamics).
- Native hydrophytic vegetation (including the removal of undesired species, and/or seeding or planting of desired species).
- Original fish and wildlife habitats.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies only to natural wetland sites with hydric soils which have been subject to the degradation of hydrology, vegetation, or soils.

This practice is applicable only where the natural hydrologic conditions can be approximated by actions such as modifying drainage, restoring stream/floodplain connectivity, removing diversions, dikes, and levees, and/or by using a natural or artificial water source to provide conditions similar to the original, natural conditions.

This practice does not apply to:

- The treatment of point and non-point sources of water pollution (Constructed Wetland - 656);
- The rehabilitation of a degraded wetland, the reestablishment of a former wetland, or the modification of an existing wetland, where specific wetland functions are augmented beyond the original natural conditions; possibly at the expense of other functions.(Wetland Enhancement - 659);
- The creation of a wetland on a site location which was historically non-wetland (Wetland Creation - 658).
- The management of fish and wildlife habitat on wetlands restored under this standard.

CRITERIA

General Criteria Applicable to All Purposes

The purpose, goals, and objectives of the restoration shall be clearly defined in the restoration plan, including soils, hydrology, vegetation, and fish and wildlife habitat criteria that are to be met and are appropriate for the site and the project objectives.

These planning steps shall be done with the use of a functional assessment-type procedure, or a state approved equivalent. The objectives will be determined by an analysis of current and historic site functions. They will be based on those functions which can reasonably be supported by current site constraints. Data from historic and recent aerial photography and/or other remotely sensed data, soil maps, topographic maps, stream gage data, intact reference wetlands, and historical records shall be gathered.

The soils, hydrology and vegetative conditions existing on the site, the adjacent landscape, and the contributing watershed shall be documented in the planning process.

The nutrient and pesticide tolerance of the

plant and animal species likely to occur shall be evaluated where known nutrient and pesticide contamination exists. Sites suspected of containing hazardous material shall be tested to identify appropriate remedial measures. If remedial measures are not possible or practicable, the practice shall not be planned.

The availability of sufficient water rights should be reviewed prior to restoration.

Upon completion, the site shall meet soil, hydrology, vegetation and habitat conditions of the wetland that previously existed on the site to the extent practicable.

Where offsite hydrologic alterations or the presence of invasive species impact the site, the design shall compensate for these impacts to the extent practicable.

Invasive species, federal/state listed noxious plant species, and nuisance species (e.g., those whose presence or overpopulation jeopardize the practice) shall be controlled on the site as necessary to restore wetland functions. The establishment and/or use of non-native plant species shall be discouraged.

Criteria for Hydric Soil Restoration

Restoration sites will be located on soils that are hydric.

If the hydric soil is covered by fill, sediment, spoil, or other depositional material, the material covering the hydric soil shall be removed to the extent needed to restore the original soil functions.

Soil hydrodynamic and bio-geochemical properties such as permeability, porosity, pH, or soil organic carbon levels shall be restored to the extent needed to restore hydric soil functions.

Criteria for Hydrology Restoration

The hydroperiod, hydrodynamics, and dominant water source of the restored site shall approximate the conditions that existed before alteration. The restoration plan shall document the adequacy of available water sources based on groundwater investigation, stream gage data, water budgeting, or other appropriate means.

The work associated with the wetland shall not adversely affect adjacent properties or other water users unless agreed to by signed written letter, easement or permit.

Timing and level setting of water control structures, if needed, will be based on the actions needed to maintain a close approximation of the original, natural hydrologic conditions.

The original natural water supply should be used to reestablish the site's hydrology to approximate the hydrologic conditions of the wetland type. If this is not possible, an alternate natural or artificial water supply can be used; however, these sources shall not be diverted from other wetland resources. If the alternate water source requires energy inputs, these shall be estimated and documented in the restoration plan.

To the extent technically feasible reestablish macrotopography and/or microtopography. Use reference sites within the local area to determine desired topographic relief. The location, size, and geometry of earthen structures, if needed, shall match that of the original macrotopographic features to the extent practicable.

Macrotopographic features, including ditch plugs installed in lieu of re-filling surface drainage ditches, shall meet the requirements of other practice standards to which they may apply due to purpose, size, water storage capacity, hazard class, or other parameters. If no other practice standard applies, they shall meet the requirements for Dike – 356 unless there is no potential for damage to the feature or other areas on or off site due to erosion, breaching, or overtopping.

Excavations from within the wetland shall remove sediment to approximate the original topography or establish a water level that will compensate for the sediment that remains.

Water control structures that may impede the movement of target aquatic species or species of concern shall meet the criteria in Fish Passage, Code 396.

Wetland restoration sites that exhibit soil oxidation and/or subsidence, resulting in a lower surface elevation compared to pre-disturbance, shall take into account the appropriate hydrologic regime needed to support the original wetland functions.

Criteria for Vegetative Restoration

Hydrophytic vegetation restoration shall be of species typical for the wetland type(s) being established and the varying hydrologic regimes and soil types within the wetland. Preference shall be given to native wetland plants with localized genetic material.

Where natural colonization of acceptable species can realistically be expected to occur within 5 years, sites may be left to revegetate naturally. If not, the appropriate species will be established by seeding or planting.

Adequate substrate material and site preparation necessary for proper establishment of the selected plant species shall be included in the plan.

Where planting and/or seeding is necessary, the minimum number of native species to be established shall be based on a reference wetland with the type of vegetative communities and species planned on the restoration site:

- Where the dominant vegetation will be herbaceous community types, a subset of the original vegetative community shall be established within 5 years, or a suitable precursor to the original community will be established within 5 years that creates conditions suitable for the establishment of the native community. Species richness shall be addressed in the planning of herbaceous communities. Seeding rates shall be based upon the percentage of pure live seed and labeled with a current seed tag from a registered seed laboratory identifying the germination rate, purity analysis, and other seed statistics.
- Where the dominant vegetation will be forest or woodland community types, vegetation establishment will include a mix of woody species (trees and/or shrubs) adequate to establish the reference wetland community.

CONSIDERATIONS

Soil Considerations

Consider making changes to physical soil properties, including:

- Increasing or decreasing saturated hydraulic conductivity by mechanical compaction or tillage, as appropriate.
- Incorporating soil amendments.
- The effect of construction equipment on soil density, infiltration, and structure.

Consider changes in soil bio-geochemical properties, including:

- Increasing soil organic carbon by incorporating compost.

Increasing or decreasing soil pH with lime, gypsum, or other compounds

Hydrology Considerations

Consider the general hydrologic effects of the restoration, including:

- Impacts on downstream stream hydrographs, volumes of surface runoff, and groundwater resources due to changes of water use and movement created by the restoration.

Consider the impacts of water level management, including:

- Increased predation due to concentrating aquatic organisms, including herptivores, in small pool areas during draw downs
- Increased predation of amphibians due to high water levels that can sustain predators.
- Decreased ability of aquatic organisms to move within the wetland and from the wetland area to adjacent habitats, including fish and amphibians as water levels are decreased.
- Increases in water temperature on-site, and in off-site receiving waters.
- Changes in the quantity and direction of movement of subsurface flows due to increases or decreases in water depth.
- The effect changes in hydrologic regime have on soil bio-geochemical properties, including: oxidation/reduction; maintenance of organic soils; and salinity

increase or decrease on site and on adjacent areas.

Vegetation Considerations

Consider:

- The relative effects of planting density on fish and wildlife habitat versus production rates in woody plantings.
- The potential for vegetative buffers to increase function by trapping sediment, cycling nutrients, and removing pesticides.
- The selection of vegetation for the protection of structural measures that is appropriate for wetland function.
- The potential for invasive or noxious plant species to establish on bare soils after construction and before the planned plant community is established.
- The use of prescribed burning to restore wetland and adjacent upland plant communities.

Fish and Wildlife Habitat Considerations

Consider:

- The addition of coarse woody debris on sites to be restored to woody plant communities for an initial carbon source and fish and wildlife cover.
- The potential to restore habitat capable of supporting fish and wildlife with the ability to control disease vectors such as mosquitoes.
- The potential to establish fish and wildlife corridors to link the site to adjacent landscapes, streams, and water bodies and to increase the sites colonization by native flora.
- The need to provide barriers to passage for unwanted or predatory species.

PLANS AND SPECIFICATIONS

Plans and specifications for this practice shall be prepared for each site. Plans and specifications shall be recorded using approved specifications sheets, job sheets, or other documentation. The plans and specifications for structural features will include, at a minimum, a plan view, quantities, and sufficient profiles and cross-sections to define the location, line, and grade for stakeout and checkout. Plans and specifications shall be reviewed and approved by staff with appropriate job approval authority.

OPERATION AND MAINTENANCE

A separate Operation and Maintenance Plan will be prepared for sites that have structural features. The plan will include specific actions for the normal and repetitive operation of installed structural items, especially water control structures, if included in the project. The plan will also include the maintenance actions necessary to assure that constructed items are maintained for the life of the project. It will include the inspection schedule, a list of items to inspect, a checklist of potential damages to look for, recommended repairs, and procedures for documentation.

Management and monitoring activities needed to ensure the continued success of the wetland functions may be included in the above plan, or in a separate Management and Monitoring Plan. In addition to the monitoring schedule, this plan may include the following:

- The timing and methods for the use of fertilizers, pesticides, prescribed burning, or mechanical treatments.
- Circumstances when the use of biological control of undesirable plant species and pests (e.g. using predator or parasitic species) is appropriate, and the approved methods.
- Actions which specifically address any expected problems from invasive or noxious species.
- The circumstances which require the removal of accumulated sediment.
- Conditions which indicate the need to use haying or grazing as a management tool, including timing and methods.

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CITY OF WATERTOWN

Field Inspection and Operation & Maintenance Plan - Perennial Vegetation

Vegetation should be established and maintained in accordance with NRCS Technical Standard 327. In addition, field inspections should document and report any large areas of sheet, rill, or gully erosion. Field inspections should be conducted after significant storm events and at least annually to identify repair and maintenance needs.

Per NRCS WI Agronomy Technical Note 5 Establishing and Maintaining Native Grasses, Forbs, and Legumes:

DETERMINING SUCCESS OF THE PLANTING

In determining stand adequacy, there are two major considerations: 1) adequate protection of the soil resource, and 2) adequate stand for the planned purpose. It may be difficult to determine if the prairie restoration is successful, particularly during the seeding year. Most native species are long-lived, but develop slowly. It may take two to five years for a stand to be fully successful. For native plantings determined to be questionable or inadequate, a final evaluation deciding whether to reseed should not be done until after the third growing season. It is often said prairie sleeps the first year (sets root structure), creeps the second year (starts to spread slowly) and leaps in the third year (distinct and prominent). Patience is a virtue.

POST-PLANTING WEED CONTROL

Planting Year Post Emergence Weed Control Mowing – New Seedings

Mesic and wet sites in particular are prone to weed competition. Currently, there are limited herbicides available to control weeds in a prairie restoration planting without potentially impacting native legumes and most forbs. To combat this problem, repeated mowing is essential throughout the establishment period. The first year following seeding, mow growing plants to a height of 7 inches whenever the canopy reaches a height of 12 inches. Depending on rainfall and growing conditions, three mowings may be required. In a normal growing season, mowing should occur around the middle of June, early to mid July as well as the first part of August. It may be necessary to remove the clippings to avoid smothering the seedlings. Utilize a rotary mower or flail chopper to uniformly distribute mowed material over the field surface. It is essential to monitor the canopy height to avoid the accumulation of excess clipped material over top of seedlings and to ensure sunlight reaches the soil surface for the new seeding. Use of this mowing strategy will stress the weeds and will not harm the prairie plants in this first year.

Second Year Weed Control
Routinely evaluate the stand in the second year to determine if mowing for weed control is necessary. When necessary to control weed canopy, mow the planting to a height of 7 inches as

often as required. The strategy in year two will mirror year one maintenance activities. Establishment of your native planting will have precedent over nesting season concerns. Once the prairie is established, wildlife habitat concerns should be mitigated with seasonal or spot treatment activities that will minimally impact wildlife.

POST ESTABLISHMENT MANAGEMENT

Any planned maintenance (except for noxious weed control) after the establishment period, should be done before May 15 or after August 1 to protect nesting cover and reduce disruption of nesting activities.

Spot Treatment By Clipping

Spot clipping can be used to control annual weeds and to suppress other weeds. Spot clipping must be done before the target plant forms viable seed and must continue throughout the growing season. Spot clipping is not an effective control for biennial and perennial weeds but can be used to contain these plants until other control treatments can be implemented.

Spot Treatment With Herbicide

It is often necessary to spot treat invasive plants in a prairie. Introduced grasses and legumes and other aggressive weeds can severely impact a prairie when these undesirable plants are not controlled. The timing of herbicide product application is an important factor to protect prairie plants. Improper herbicide selection or application timing can severely damage a prairie planting. Early spring spot treatment with herbicides is often highly effective in addressing aggressive weeds while native plants are dormant. Spot treatment should be timed to treat weeds during active growth periods. Effective herbicide spot treatment can prevent the target plants from setting seed and spreading in the prairie.

Spot Treatment By Hand Pulling/Digging

Hand pulling or digging can be an effective control if the entire root is removed from the soil. Hand pulling/digging is most effective in the spring when the soil is moist and loose from the Winter freeze/thaw cycles.

Prescribed Burning – Established Cover

Burning is a good tool for long-term stand management of native vegetation. Burning may be used to manage weeds once the prairie has been established if there is enough material to carry a fire. Time of burning and frequency will impact the species that are present on the site. Fall burns and to a lesser extent early spring burns, will tend to promote forbs. Late spring burns tend to stimulate the growth of warm season grasses and suppress cool season plants. Burn when the cool season plants are growing and the warm season plants are dormant or starting to grow to control cool season species. Do not conduct sequential prescribed burns on a given site at the same time of year. This tends to reduce stand diversity and can create a negative impact on desirable prairie plants. For longevity and plant diversity, burning should be conducted periodically, every other year to every fifth year.

CITY OF WATERTOWN

Field Inspection and Operation & Maintenance Plan - Wetland Restoration

The purpose of this practice is to return a wetland and its functions to a close approximation of its original condition as it existed prior to disturbance on a former or degraded wetland site. See attached construction plan for practice location. Necessary operation and maintenance items include:

1. Inspect after significant storm events and at least annually to identify repair and maintenance needs.

2. Inspect the downstream toe of the embankment annually. If there are wet areas or seeps present, it could be a serious problem. Ask for assistance from a qualified professional to evaluate the seepage.

3. Clear accumulated trash away from water control structures, pipe inlets or outlets, rock riprap, and trash racks. Boards in Water Control Structures should be removed periodically to flush debris that could accumulate in pipe. Flow a maximum of 5 minutes and then put boards back.

4. Repair erosion at pipe outlets.

5. Fill rills and gullies that occur on the embankments. Seed the filled areas.

6. Check frequently for burrowing animals. When found, remove the burrowing animals, replace embankment materials, and seed repaired areas.

7. Maintain a vigorous sod by regular mowing. Time the first mowing after nesting birds have hatched about August 1. Remove excess top grass. Operate mowing and other equipment on slopes in accordance with the machinery operation manual.

8. Prevent woody vegetation from growing in or around the embankment and in upland plantings. Control tree and bush growth by hand cutting, mowing, or chemicals. Avoid damaging grass with herbicide sprays.

9. Maintain a riparian filter around the perimeter of the wetland to trap sediment.

10. Maintain a diverse stand of aquatic vegetation by manipulating water levels

11. Adjust flashboards in water control structures to maintain water levels for wildlife management.

12. Monitor and control invasive species. Mow or burn as needed to control invasive species.

GRAPHIC SCALE

500 0 250 500 1000 2000

1 inch = 500 feet

N

620789.51
872670.08

620739.49
873303.58

33.94 AC
TOTAL

619543.08
872275.00

619520.10
871317.11

619486.20
872175.05

619169.08
871286.10

618962.82
872716.40

Revision	Sheet	Revisions	Date	By

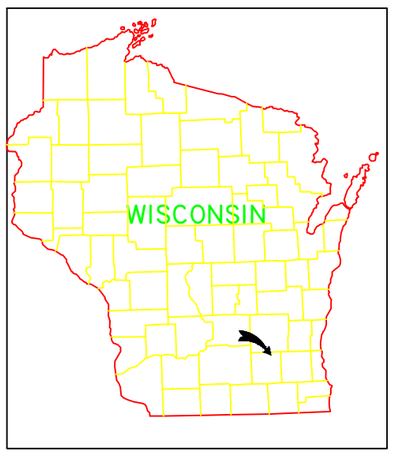
SITE BOUNDARY POINTS
WATERTOWN WQT
JEFFERSON COUNTY
WISCONSIN

GREAT LAKES/ATLANTIC REGIONAL OFFICE
7322 NEWMAN BOULEVARD, BUILDING 1
DEXTER, MICHIGAN 48130
(734) 623-2000 www.ducks.org
DUCKS UNLIMITED

Watertown
DESIGNED BY: MJS
DRAWN BY: MJS
SURVEYED BY: MJS
BIOLOGIST: BG
DATE: 11/1/2021
PROJECT NUMBER: US-WI-453-1

DUCKS UNLIMITED
WATERTOWN WQT
CITY OF WATERTOWN
JEFFERSON COUNTY, WI

WATERTOWN TOWNSHIP
T8N, R15E, S8



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PROJECT LOCATION

SHEET INDEX

1. COVER SHEET & PROJECT LOCATION MAP
2. ESTIMATED QUANTITIES, SPECIFICATIONS & NOTES
3. OVERALL SITE PLAN
4. SCRAPE PONDS/TILE REMOVAL
5. AGRIDRAIN & EMBANKMENT DETAILS
6. AGRIDRAIN DETAILS
6A. TRASH RACK
7. WATER CONTROL STRUCTURE PROFILES
8. SEEDING

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WATERTOWN WQT
JEFFERSON COUNTY
WISCONSIN

By	Date	Revisions	Sheet	Revision

CAD FILE: Watertown
DESIGNED BY: MJS
DRAWN BY:
SURVEYED BY: MJS
BIOLOGIST: BG
DATE: 11/1/2021
PROJECT NUMBER: US-WI-453-1
SHEET 1 OF 8

811 Know what's **below.** **Call** before you dig.

ESTIMATED QUANTITIES

NOTES	SPEC. #	ITEM	UNIT	QUANTITY
11	201	MOBILIZATION	LS	1
14	202	SITE PREPARATION	LS	1
12	203	EXCAVATION	CY - P	225
16	204	EMBANKMENT CONSTRUCTION	CY-P	125
18	301	INLINE WCS	EACH	2
18	303	12" DUAL WALL HDPE PIPE	LIN FT	1225
17	305	RIP RAP WITH GEOTEXTILE	TN	12
12	203	TILE BREAK	LIN FT	1655
13	402	SEEDING AND MULCHING	AC	0.2

SPECIFICATIONS

101 GENERAL CONDITIONS
102 SUPPLEMENTAL CONDITIONS
201 MOBILIZATION
202 SITE PREPARATION
203 EXCAVATION
204 EMBANKMENT CONSTRUCTION
301 WATER CONTROL STRUCTURES
303 CULVERT AND PIPE INSTALLATION
305 RIPRAP
402 SEEDING AND MULCHING

CONSTRUCTION NOTES:

1. ALL UNDERGROUND HAZARDS AND UTILITIES MUST BE INVESTIGATED PRIOR TO CONSTRUCTION. NOTIFICATION OF EFFECTED UTILITY COMPANIES IS THE RESPONSIBILITY OF THE CONTRACTOR. CONTACT DIGGERS HOTLINE AT LEAST THREE DAYS PRIOR TO START OF CONSTRUCTION.
2. A PRE-CONSTRUCTION MEETING SHALL BE SCHEDULED WITH DU PERSONNEL, THE CONTRACTOR, AND THE LANDOWNER PRIOR TO CONSTRUCTION START-UP.
3. THE CONTRACTOR AND/OR LANDOWNER SHALL NOTIFY DU AT LEAST 3 DAYS PRIOR TO START-UP OF CONSTRUCTION.
4. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH CONSTRUCTION SPECIFICATIONS.
5. ALL LOCAL STATE AND FEDERAL PERMITS WILL BE OBTAINED PRIOR TO CONSTRUCTION.
6. ALL EXCAVATED FILL WILL BE USED IN CONSTRUCTION OF PLANNED DITCH FILLS AND EMBANKMENT. ANY REMAINING SPOILS CAN BE PLACED IN DESIGNATED SPOILS AREAS LISTED ON PLAN VIEW.
7. ALL DISTURBED AREAS WILL BE SEEDED UPON COMPLETION OF CONSTRUCTION.
8. THE CONTRACTOR IS RESPONSIBLE FOR RESTORING ALL ACCESS ROADS AND STAGING AREAS TO PRE-CONSTRUCTION CONDITIONS AFTER CONSTRUCTION IS COMPLETED.
9. DU TECHNICIAN WILL STAKE ALL CONSTRUCTION ACTIVITIES PRIOR TO CONSTRUCTION.
10. ALL TRAFFIC LEAVING THE SITE SHALL BE FREE OF ANY LOOSE MUD AND/OR DEBRIS. ANY MUD DEPOSITED ON ROAD WILL BE REMOVED AND DEPOSITED BACK ON SITE IMMEDIATELY.
11. BID ITEM FOR MOBILIZATION SHALL INCLUDE THE SUPPLY OF ALL LABOR, MATERIAL AND EQUIPMENT TO TRANSPORT ALL NEEDED LABOR, MATERIAL AND EQUIPMENT, TO AND FROM A PROJECT SITE, TO SUCCESSFULLY COMPLETE THAT PROJECT AS SHOWN ON THE PLANS.
12. BID ITEM FOR EXCAVATION IS FOR CUTTING OUT OR EXCAVATING ALL SCRAPE PONDS AND TILE BREAK. SITE PREPARATION FOR PONDS IS INCIDENTAL.
13. THE BID ITEM FOR SOIL EROSION AND POLLUTION CONTROL SHALL INCLUDE THE SUPPLY, INSTALLATION, AND MAINTENANCE OF ALL MATERIALS, IN COMPLIANCE WITH WISCONSIN REGULATIONS. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF WORK, AND WILL BE MAINTAINED UNTIL FINAL STABILIZATION OF THE SITE. CONTRACTOR SHALL MAINTAIN, INSPECT, AND PROVIDE ALL PROPER RECORDING AND REPORTING ACCORDING TO THE PERMIT REGULATIONS. INCLUDES SEEDING, AND MULCHING.
14. THE BID ITEM FOR SITE PREPARATION SHALL INCLUDE STRIPPING FOR EMBANKMENT, STOCKPILING TOPSOIL FOR REPLACEMENT, PLACING TOPSOIL OVER ALL DISTURBED AREAS, REMOVING AND DISPOSING OF PUMP AND PIPING AND LEVELED SUITABLE ENOUGH FOR SEEDING. GRUBBING OF BRUSH AND TREES FOR EARTHWORK PREPARATION IS ALSO INCLUDED.
15. DEWATERING AND WATER MAINTENANCE IS THE CONTRACTOR'S RESPONSIBILITY, AND IS CONSIDERED INCIDENTAL TO THE PROJECT.
16. BID ITEM FOR EMBANKMENT SHALL INCLUDE ALL WORK REQUIRED TO HAUL, PLACE, AND COMPACT FILL MATERIAL TO CONSTRUCT EARTHWORK, AS STAKED IN THE FIELD. ANY MATERIAL EITHER NEEDED OR REMAINING FROM THIS OPERATION SHALL BE UTILIZED FROM THE DISPOSAL AREA.
17. BID ITEM FOR RIP-RAP CLASS I IS FOR THE ROCK PLACED DOWNSTREAM OF THE WATER CONTROL STRUCTURE. NON-WOVEN FILTER FABRIC IS REQUIRED BENEATH ALL ROCK/RIP-RAP AND SHALL BE SECURED TO SLOPES AND BOTTOM, USING PINS AS NOTED SPECIFICATION 305. QUANTITY IS BASED ON TONS. CONTRACTOR SHALL PROVIDE SCALE TICKETS WITH WEIGHTS INCLUDING TARE WEIGHTS, GROSS WEIGHTS, AND NET WEIGHTS OF MATERIAL DELIVERED.
18. BID ITEM FOR WATER CONTROL STRUCTURE IS FOR STRUCTURE AND ALL COMPONENTS. THE BID ITEM FOR PIPE INSTALLATION IS FOR LINEAL FEET OF INLET AND OUTLET PIPES FOR WATER CONTROL STRUCTURES.

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QUANTITIES, NOTES, SPECIFICATIONS
WATERTOWN WQT
JEFFERSON COUNTY
WISCONSIN

Revision	Sheet	Revisions	Date	By

CAD FILE: Watertown
DESIGNED BY: MJS
DRAWN BY:
SURVEYED BY: MJS
BIOLOGIST: BG
DATE: 11/1/2021
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GRAPHIC SCALE

250 0 125 250 500 1000

1 inch = 250 feet

N

EXISTING GROUND CONTOURS

33 ACRE SITE BOUNDARY

815

810

805

800

795

WEST INLINE WCS
375' OF 12" DUAL WALL PIPE
INLET INV. 796.0
OUTLET INV. 791.0
INSTALL TRASH RACK ON INLET
SEE SHEET 5,6,7,8

WEST EMBANKMENT
TOP ELEV. 800.50
133' LONG
~125 CU YD
SEE SHEETS 5,6,7

TILE REMOVAL
~1655'
SEE SHEET 4

EAST SCRAPE
0.1 AC
~120 CU YD
SEE SHEET 4

SPOIL PLACEMENT
AREA FOR EAST
SCRAPE POND EXCAV.

WEST SCRAPE
0.1 AC
~105 CU YD
SEE SHEET 4

EAST INLINE WCS
850' OF 12" DUAL WALL PIPE
INLET INV. 799.0
OUTLET INV. 796.0
INSTALL TRASH RACK ON INLET
SEE SHEET 5,6,7,8

Revision	Sheet	Revisions	Date	By

SITE PLAN
WATERTOWN WQT
JEFFERSON COUNTY
WISCONSIN

SHEET 3 OF 8

PROJECT NUMBER: US-WI-453-1

DATE: 11/1/2021

BIOLOGIST: BG

SURVEYED BY: MJS

DRAWN BY:

DESIGNED BY: MJS

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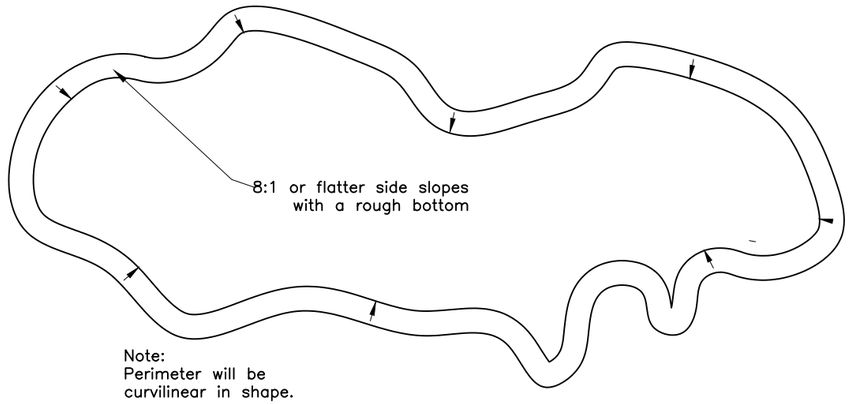
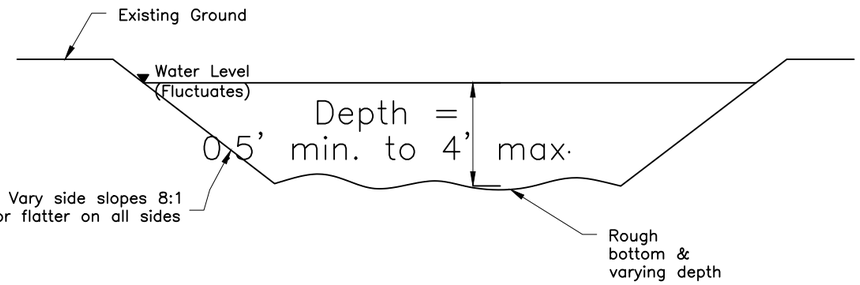


WETLAND SCRAPE PLAN VIEW

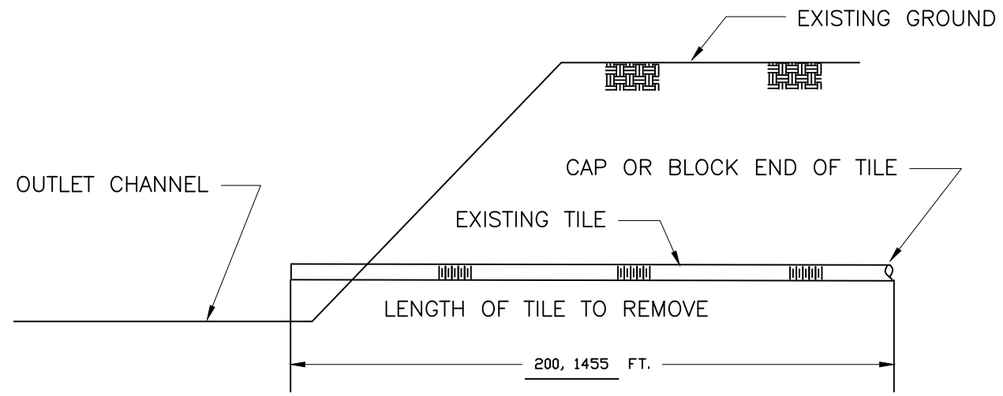


TYPICAL WETLAND SCRAPE CROSS SECTION

Notes:

1. Scrapes/borrow areas will be constructed at locations and as flagged by the technician.
2. Scrapes are to be irregular in shape when completed. Wheel ruts are allowed and desired.
3. Strip minimum 6" of topsoil and stockpile it for spreading, if needed, after the excavation is completed.
4. Spoil shall be spread in designated location as shown on plan map, sheet 3.

SCRAPE NUMBER	ACRES	CY
EAST	0.1	120
WEST	0.1	105



TILE OUTLET REMOVAL

NUMBER OF LINES TO REMOVE 2
(SEE PAGE 3 FOR LOCATION)

TOTAL LENGTH OF TILE TO REMOVE 1655 FT.

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SCRAPES
WATERTOWN WQT
JEFFERSON COUNTY
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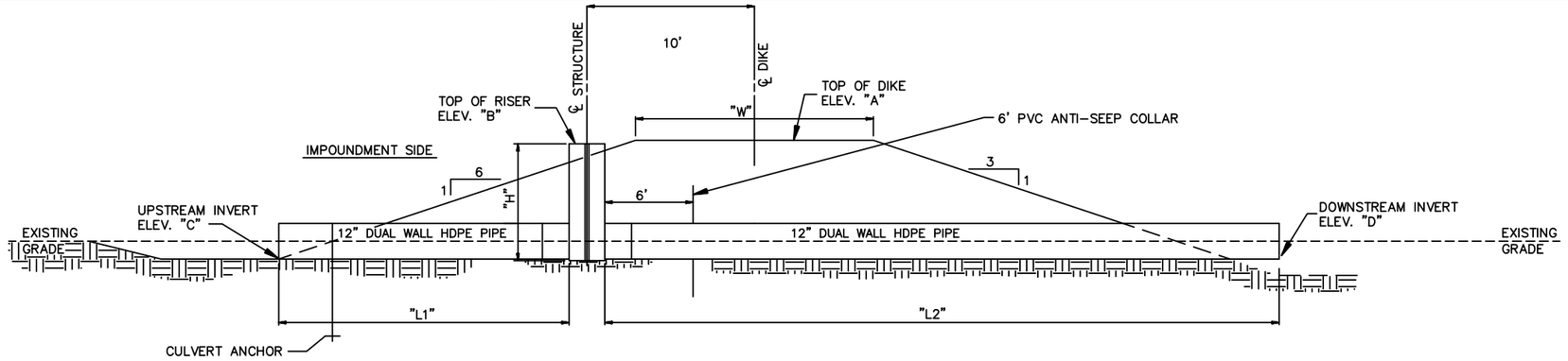


PROFILE OF AGRI-DRAIN® WATER CONTROL STRUCTURE

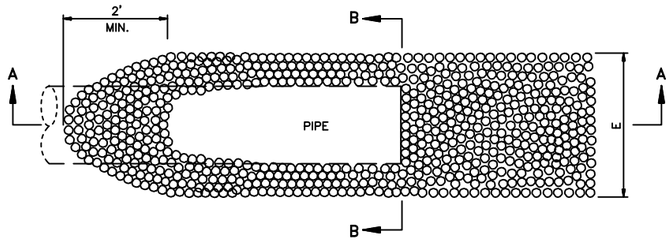
NOT TO SCALE

STRUCTURE	PIPE SIZE	RISER SIZE	TOP OF DIKE EL. "A"	TOP OF RISER EL. "B"	FULL SERVICE LEVEL	INLET I.E. EL. "C"	OUTLET I.E. EL. "D"	TOP WIDTH "W"	INLET LENGTH "LI"	OUTLET LENGTH "L2"	℄ – ℄ OFFSET	RISER HEIGHT "H"
EAST	12	16	804.6	806.0	803.0	799.0	796.0	30	300	550	10	8
WEST	12	16	800.5	802.0	798.0	796.0	791.0	20	100	275	10	7

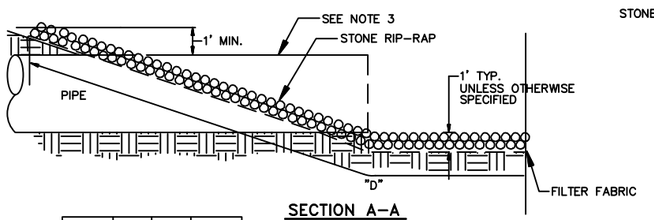
NOTES:
1. EAST WATER CONTROL STRUCTURE USES EXISTING GROUND, WHICH MEETS REQUIRED EMBANKMENT ELEVATION.

GRADATION OF ROCK

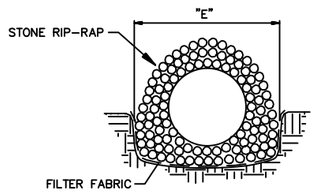
PERCENT PASSING BY WEIGHT	SIZE (INCHES)
100	14"
60–85	11"
25–50	7"
5–20	4"
0–5	2"



PLAN VIEW



SECTION A–A



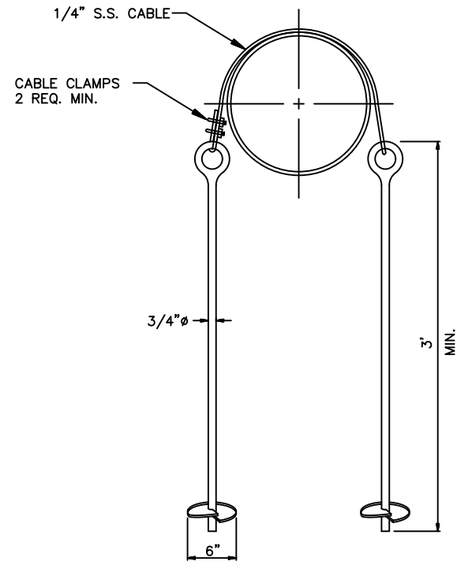
SECTION B–B

PIPE DIA.	D	E	Sq.Yds.
12"	17'	3'	5.5
15"	18'	3.75'	7.2
18"	19'	4.5'	8.3
21"	20'	5.25'	11.0
24"	21'	6'	13.2
27"	22'	6.75'	15.4
30"	27'	10'	28.7
36"	29'	10'	30.3
42"	31'	10'	31.8
48"	33'	10'	33.2
54"	35'	10'	34.5
60"	37'	10'	35.7

NOTES:
1. IF THE RIPRAP CLASS DESIGNATION IS NOT SPECIFIED ON THE CONSTRUCTION PLANS, D50 7" ROCK RIPRAP SHALL BE UTILIZED. THE ROCK SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
2. UNLESS OTHERWISE SPECIFIED, CLASS I GEOTEXTILE BE UTILIZED IN THE INSTALLATION OF RIP RAP.
3. DOWNSTREAM PIPE OUTLET SHALL CONFORM TO SLOPE FOR PIPE DIAMETERS 30" AND LARGER

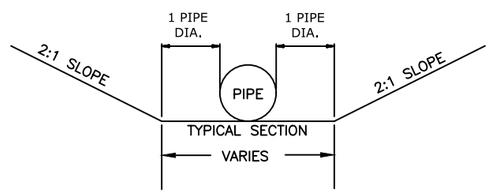
OUTLET AND STONE RIP–RAP DETAIL

NOT TO SCALE



CULVERT ANCHOR

NO SCALE



PIPE INSTALLATION & REMOVAL DETAIL

NOT TO SCALE

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AGRI DRAIN WATER CONTROL STRUCTURE
WATERTOWN WQT
JEFFERSON COUNTY
WISCONSIN

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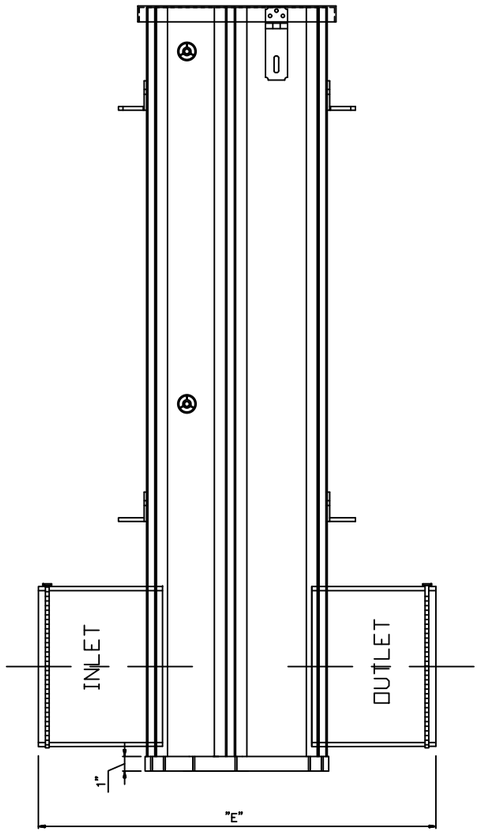
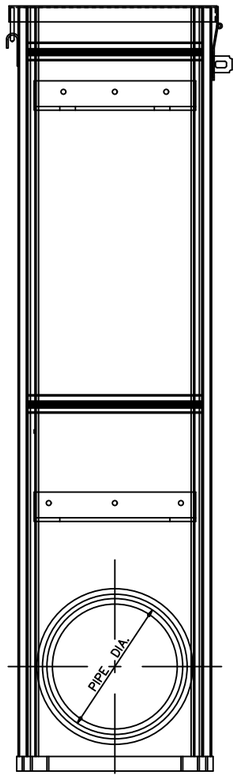
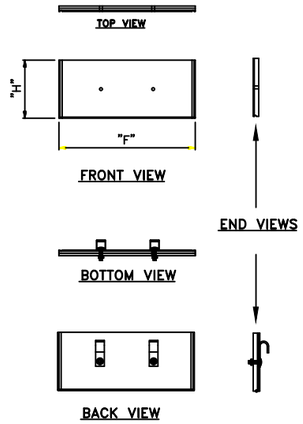


SECTION "A"–"A"



SECTION "B"–"B"



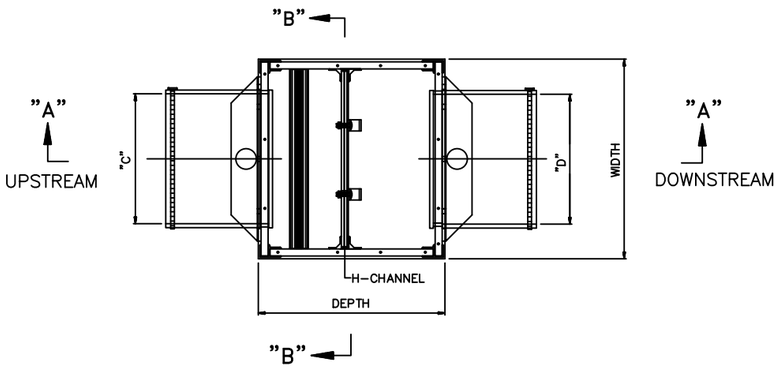
STOPLOG DETAIL
NOT TO SCALE

STRUCTURE SIZING CHART									
PIPE* DIA.	INSIDE DIM.		COUPLING DIM.		COUPLING LENGTH	STOPLOG DIM.			
	WIDTH	DEPTH	"C" (I.D.)	"D" (I.D.)		WIDTH		HEIGHT	
					"E"	"F"	"G"	"H"	"I"
4"	8"	10"	4.42"	4.42"	17.5"	7.75"	7.75"	5"	7"
6"	8"	10"	6.38"	6.38"	17.5"	7.75"	7.75"	5"	7"
8"	12"	12"	8.50"	8.50"	23.5"	11.75"	11.75"	5"	7"
10"	14"	16"	10.60"	10.60"	27.5"	13.75"	13.75"	5"	7"
12"	16"	20"	12.83"	12.83"	31.5"	15.75"	15.75"	5"	7"
15"	20"	24"	17.85"	17.85"	43.5"	19.75"	19.75"	5"	7"
18"	24"	28"	21.70"	21.70"	47.5"	23.75"	23.75"	5"	7"
24"	31"	39"	29.00"	29.00"	58.5"	30.75"	30.75"	5"	7"

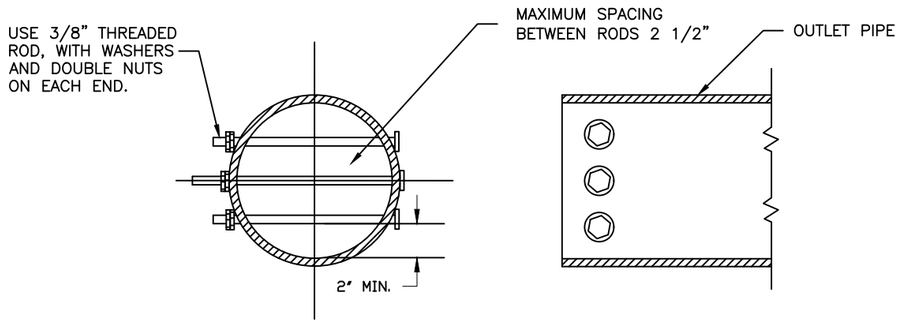
* ALL APPLICATIONS WILL UTILIZE SCHEDULE 40 PVC PIPE

AGRI–DRAIN® (OR EQUIVALENT) INLINE WATER LEVEL CONTROL STRUCTURE DETAIL

NOT TO SCALE



PLAN VIEW
(DRAWN WITH FERNCO 1056 COUPLER)



END ELEVATION

SIDE ELEVATION
Not to Scale

NOTE: OTHER OPTIONS FOR SECURING THE RODS IN PLACE INCLUDE COTTER PINS, OR SIMPLY BENDING THE RODS AT RIGHT ANGLE TO THE PIPE. SMOOTH ROD WOULD BE ACCEPTABLE IF THESE METHODS ARE USED.

ANIMAL GAURD
NOT TO SCALE

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AGRI DRAIN WATER CONTROL STRUCTURE
WATERTOWN WQT
JEFFERSON COUNTY
WISCONSIN

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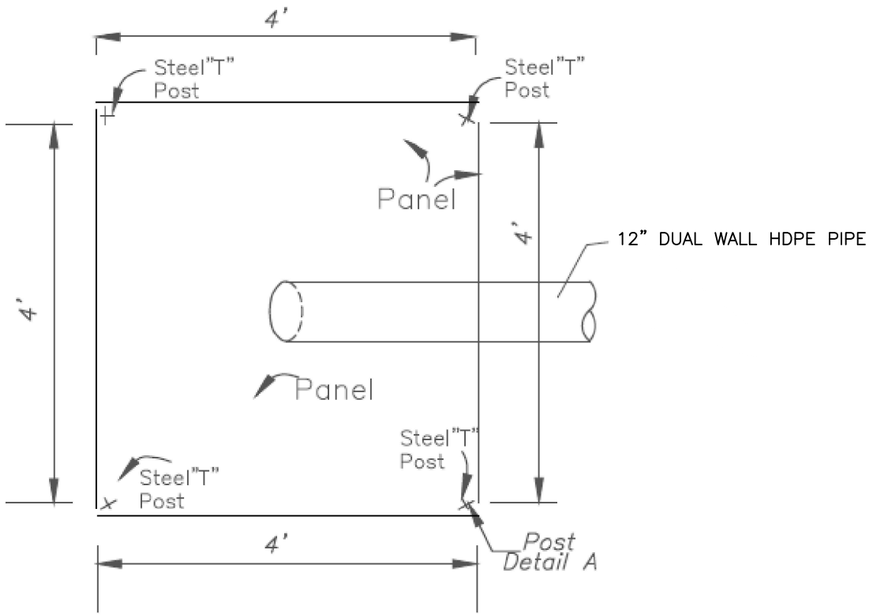
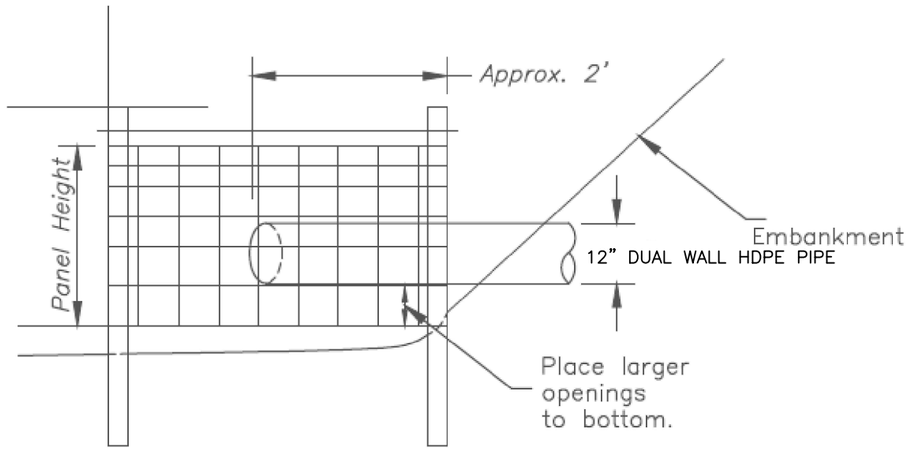
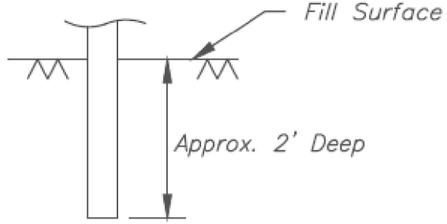
DETAILS OF TRASH RACK INLET SIDE OF WATER CONTROL STRUCTURE



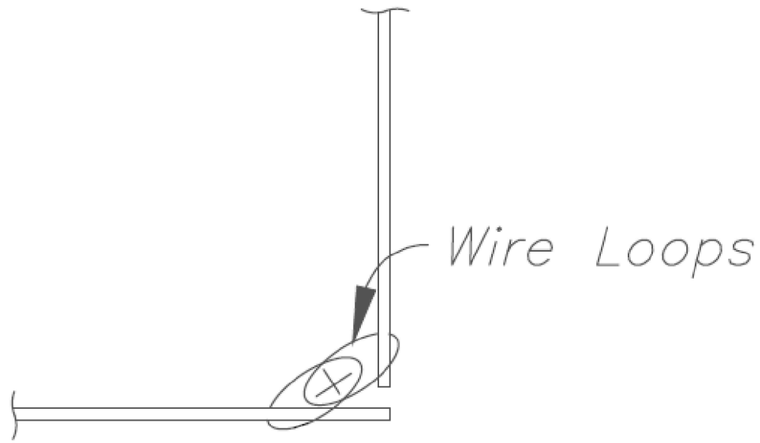
PLANVIEW



SIDE ELEVATION



POST ANCHORAGE



STANDARD DETAIL A

NOTES:

1. Minimum height of panel to be 3 feet. The minimum length of steel posts shall be 5 feet.
2. The panels shall be fastened to each post with a minimum of 2 strands per loop of 10 gage insulated copper wire securely twisted. Spacing of wire loops shall not exceed 2 feet with minimum 2 loops per post.
3. Panels (sold as Hog or Cattle Panels) shall be ¼" galvanized steel rods welded together to form a panel. Maximum spacing of rods shall be 6 inches vertical and 8 inches horizontal.

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TRASH RACK
WATERTOWN WQT
JEFFERSON COUNTY
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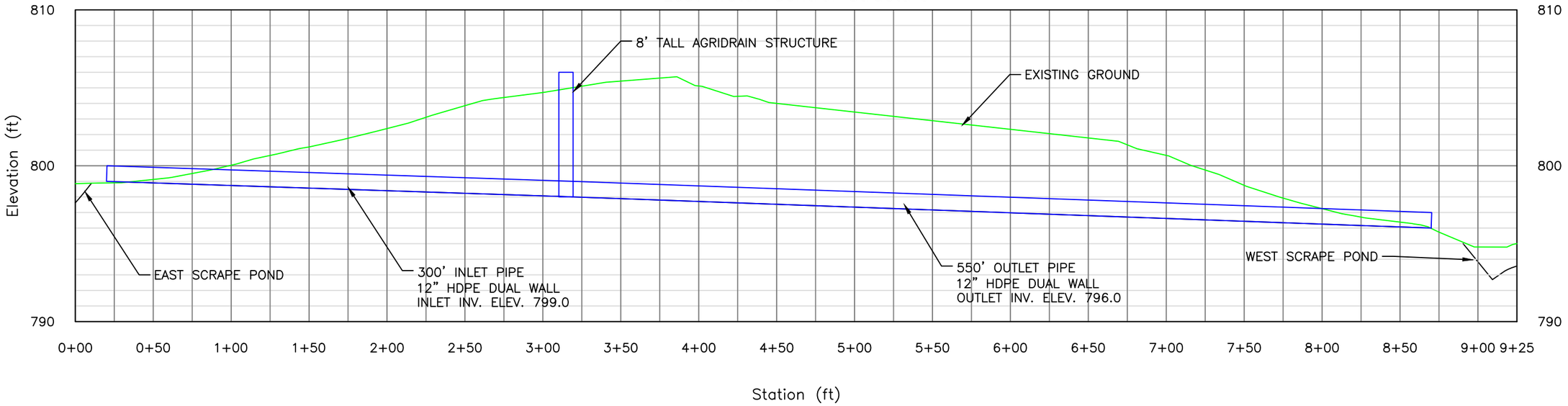
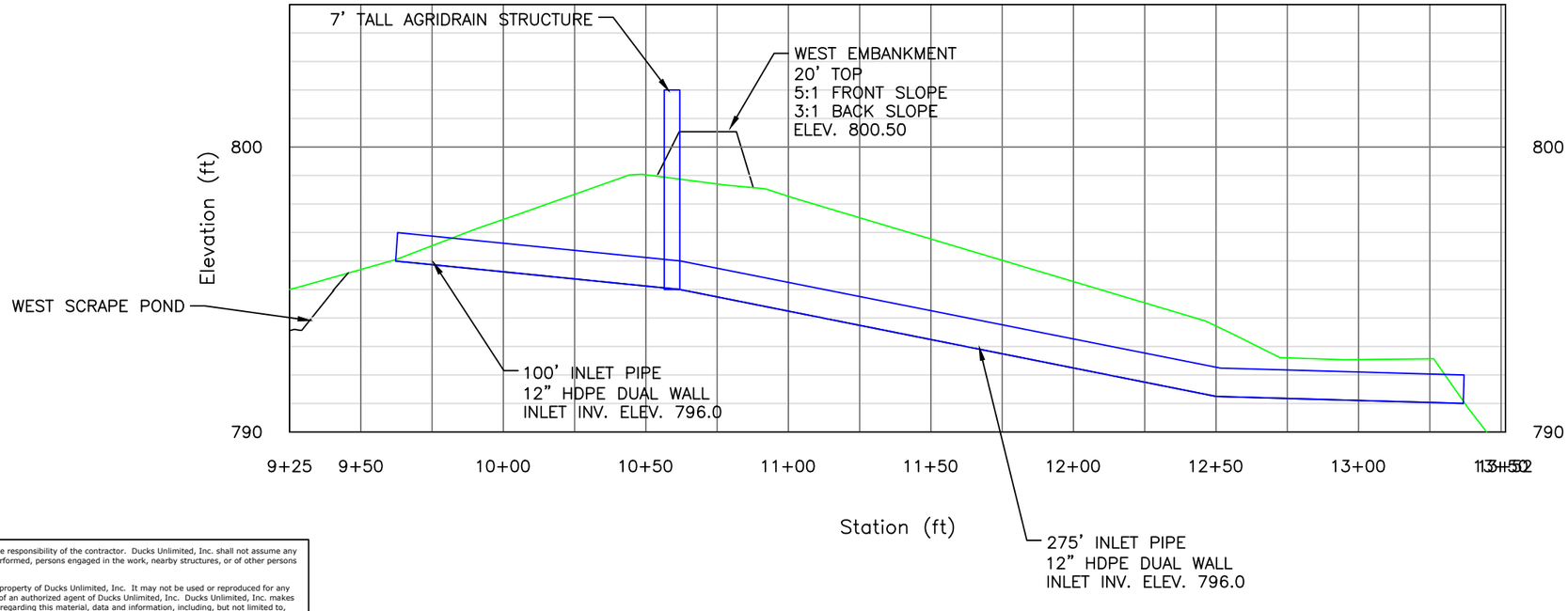
East Water Control Structure



West Water Control Structure



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WATER CONTROL STRUCTURES
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SEEDING DATES — CENTRAL

TIME PERIOD	DATES			TYPE OF SEEDING
Spring	April 15	through	June 1	Permanent
Summer	June 2	through	see WI-710ss pg 2	Temporary *
Late Summer	August 1	through	August 21	Permanent
Fall	August 22	through	see WI-710ss pg 2	Temporary *
Late Fall	November 1	through	Snow Cover	Dormant
Winter	Snow Cover	through	April 14	Not Allowed

MATERIALS

If no soil test is available, apply a minimum of 150 pounds of 20-10-10 fertilizer per acre. This is equivalent to 30 pounds nitrogen (N), 15 pounds phosphate (P205), and 15 pounds potash (K2O) per acre. Apply two tons / acre of 80-89 lime or equivalent. (See page 2 for equivalent)

* Seed a temporary cover crop of Annual Ryegrass at 20 # /ac (0.8 bu/ac)
A permanent seeding shall be completed during the next acceptable time period following a temporary seeding.

MINIMUM PURE LIVE SEED (PLS) [1] RATE PER ACRE AND TOTAL POUNDS OF SEED NEEDED

SEEDING MIX 17 (DESIGN)	LOCATION: DIST ACRES: 0.20	
SPECIES	RATE	POUNDS
Redtop	1.3	0.3
Timothy	3.8	0.8
Red Clover	6.3	1.3
** Annual Ryegrass	6.0	1.2

[PLS lbs./ac] = [total % Germination / 100 * % Purity / 100] * Net Weight [lbs.]

SEEDING MIX (AS-BUILT)	LOCATION ACRES	
SPECIES	RATE	POUNDS

ADDITIONAL SEED PERCENT: 25 %
Mulching Require Yes

** Companion Crop

Total % Germination may also be termed *Total %* Viable Seed on a tag. If a tag only shows % Germination, the user must *include percentage of the seed that germinated during the lab test* (% Germination) **plus** the *percentage of hard and/or dormant seed.* Hard seed and dormant seed are seeds that are still capable of germinating and producing a plant but did not germinate under the conditions of the test in the lab.

Additional native seeds may be required by permitting agencies. These addition are allowed.

Seed mixture shall meet all requirements of the WI weed laws.

Species identified as restricted or prohibited by law shall not be planted.

Certified seed shall be used, and the seeding rates will be based on pure live seed.

For dormant seedings, increase the seeds per square foot by 15%.

SEEDBED PREPARATION

Seedbed preparation shall immediately follow construction activities.

Prepare a fine, firm seedbed to a minimum depth of three inches. A seedbed is considered firm when a footprint penetrates less than 1/4 inch deep.

SEEDING

Inoculate legumes with the specific inoculum for the species in accordance with the manufacturer's recommendations. When using a hydroseeder, five times the recommended rate of inoculant shall be added to the hydroseeder. Inoculant shall not be mixed with liquid fertilizer.

Seed may be broadcast or drilled as appropriate to the site.
Seed, fertilize, and lime as soon as possible after construction.
Seeding perpendicular to direction of flow is required to limit erosion.

Seed grasses and legumes no more than 1/4 inch deep.

Consider seeding at a lower rate and making 2 passes to ensure more uniform distribution.

TEMPORARY SEEDING OPTIONS

Select one of the following species for temporary cover if:

1) The required seeds or plant stock are not available or the normal permanent seeding period for the species has passed
   - Forage Sorghum - 1/2 bushel per acre (May 15-July 15)
   - Sorghum - Sudangrass Hybrid - 1 bushel per acre (May 15-July 15)
   - Sudangrass - 1 bushel per acre (May 15-July 15)
   - Winter Wheat - 2 bushels per acre (Aug 1-Oct 1)
   - Winter Cereal Rye - 2 bushels per acre (Aug 1-Oct 15)
   - Oats - 2 bushels per acre (Apr 1-Sept 1)
   - Annual Ryegrass - 20 Pounds per acre (Apr 1-Sept 1)

2) Triazine herbicide carryover will not allow establishment of permanent cover immediately.
   - Forage Sorghum - 1/2 Bushel per acre (May 15-July 15)
   - Sorghum - Sudangrass Hybrid - 1 Bushel per acre (May 15-July 15)
   - Sudangrass - 1 Bushel per acre (May 15-July 15)

DORMANT SEEDING

Seed is broadcast and incorporated, no-tilled, or drilled into the seedbed .
Seedbed preparations and conditions are similar to conventional seeding.

MULCHING WILL BE COMPLETED ON EMBANKMENT

Mulching shall be done immediately after seedbed preparation and seeding.
Mulch shall be applied immediately after final grading for areas seeded at a later date.
Mulch material shall be relatively free of disease, pesticides, chemicals, noxious weed seeds, and other pests and pathogens.

Spread straw and hay mulch uniformly and at the rate of 1.5-2.0 tons per acre (60-70 bales). This application results in a layer of 6 to 7 stems, 1 to 2 inches thick, and provides a minimum 70% ground cover. Some soil surface can be seen after the application. Crimping (disking), wood cellulose fiber, tackifiers, netting, pinning, or other acceptable methods of anchoring will be used if needed to hold the mulch in place.

If other mulch materials are used, the rate of application shall meet the manufacturer's recommendations.
Two (2) tons/ac of 80-89 lime or equivalent from UW-EXT A3671

Lime Quality	Tons / AC.	Lime Quality	Tons / AC.
40-49	3.9	70-79	2.3
50-59	3.2	90-99	1.9
60-69	2.7	100+	1.6

GREAT LAKES/ATLANTIC REGIONAL OFFICE
7322 NEWMAN BOULEVARD, BUILDING 1
DEXTER, MICHIGAN 48130
(734) 623-2000 www.ducks.org
DUCKS UNLIMITED

SEEDING
WDNR - REIGER II
JEFFERSON COUNTY
WISCONSIN

By | Date | Revisions | Sheet | Revision

CAD FILE: Watertown
DESIGNED BY: MJS
DRAWN BY:
SURVEYED BY: MJS
BIOLOGIST: BG
DATE: 11/1/2021
PROJECT NUMBER: US-WI-453-1

THE CITY OF WATERTOWN
Opportunity runs through it.

Water Systems
800 Hoffmann Drive • P.O. Box 477 • Watertown WI 53094-0477
WASTEWATER (920) 262-4085 • WATER (920) 262-4075

October 7, 2022

Luke Roffler

Water Management Specialist
Wisconsin Department of Natural Resources (WDNR)
141 NW Barstow Street
Waukesha, WI 53188

Re: Wetland Rule General Permit
City of Watertown Wastewater Treatment Facility
Permit No. GP-SC-2021-28-04594

Dear Mr. Roffler,

This letter serves as notification of project completion for the City of Watertown Wastewater Utility regarding the Water Quality Trade land restoration project.

The completion of this project allows the wastewater treatment plant to achieve water quality-based effluent limits (WQBEL) as part of the active Wisconsin Pollution Discharge Elimination Permit modified and effective October 1, 2022.

Background: The City of Watertown submitted their WQBEL Total Phosphorus Final Compliance Alternative Plan report on September 26, 2018. In that report Watertown summarized that the compliance plan would include water quality trading (WQT), and the multi-discharge variance (MDV) which the WDNR conditionally approved on May 8, 2019, for the months of April and June to include a possible annual Jefferson County payment as requirements of the MDV.

Watertown Wastewater had a busy past year with working with Ducks Unlimited on our property for the WQT plan on active farmland adjacent to the treatment plant complex. We have now completed the land restoration of approximately 30 acres as our targeted Phase I WQT.

Watertown Wastewater is actively engaged with environmental scientists and engineers for our vegetative maintenance and management plan to ensure performance standards are met and full P reduction credits are achieved.

The WDNR just recently issued our modified permit with the WQT included September 30, 2022, and we now have available credits to use as of October 1, 2022. With this completed Watertown has done its part to meet our effluent permit requirements now and into the future by finishing what was started in September of 2015.

If you need additional information, please contact me anytime.

Sincerely,

Peter Hartz
Watertown - Water Systems Manager

Photos of project –





















APPENDIX G: WATER QUALITY TRADING CHECKLIST

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison WI 53707-7921
dnr.wi.gov

Water Quality Trading Checklist

Notice: Pursuant to s. 283.84, Wis. Stats., this form must be completed by any WPDES permittee that intends to pursue pollutant trading as a method of complying with a permit limitation. Failure to complete this form would not result in penalties. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

Applicant Information

Permittee Name	Permit Number	Facility Site Number
City of Watertown	WI- 0028541-09-2	

Facility Address	City	State	ZIP Code
800 Hoffman Drive	Watertown	WI	53094

Project Contact Name (if applicable)	Address	City	State	ZIP Code
Peter Hartz	800 Hoffman Drive	Watertown	WI	53094

Project Name
City of Watertown Wastewater Treatment Plant WQT Plan for TSS

Receiving Water Name	Parameter(s) being traded	HUC 12(s)
Rock River	TSS	070900011103

Credit Generator Information

Credit generator type (select all that apply):

- ☐ Permitted Discharge (non-MS4CAFO)
- ☐ Permitted MS4
- ☐ Permitted CAFO
- ☐ Urban nonpoint source discharge
- ☒ Agricultural nonpoint source discharge
- ☐ Other - Specify: _____

Are any of the credit generators in a different HUC 12 than the applicant?
- ○ Yes; HUC 12: _____
- ◉ No

Are any of the credit generators downstream of the applicant?
- ◉ Yes
- ○ No

Will a broker/exchange be used to facilitate trade?
- ○ Yes *(include description and contact information in WQT plan)*
- ◉ No

Point to Point Trades (Traditional Municipal / Industrial, MS4, CAFO)

Are each of the point source credit generators identified in this section in compliance with their WDPES permit requirements?
- ○ Yes
- ○ No

Discharge Type	Permit Number	Name	Contact Information	Trade Agreement Number
○ Traditional ○ MS4 ○ CAFO				
○ Traditional ○ MS4 ○ CAFO				
○ Traditional ○ MS4 ○ CAFO				
○ Traditional ○ MS4 ○ CAFO				
○ Traditional ○ MS4 ○ CAFO				

Point to Point Trades (Traditional Municipal / Industrial, MS4, CAFO) *cont.*

Does plan have a narrative that describes:			Plan Section
a. Summary of discharge and existing treatment including optimization	◯ Yes	◯ No	
b. Amount of credit being generated	◯ Yes	◯ No	
c. Timeline for credits and agreements	◯ Yes	◯ No	
d. Method for quantifying credits	◯ Yes	◯ No	
e. Tracking and verification procedures	◯ Yes	◯ No	
f. Location of credit generator in proximity to receiving water and credit user	◯ Yes	◯ No	
g. Other: ____________________	◯ Yes	◯ No	

Point to Nonpoint Trades (Non-Permitted Urban, Agricultural, Other)

Discharge Type	Practices Used to Generate Credits	Method of Quantification	Trade Agreement Number	Have the practice(s) been formally registered?
◯ Urban NPS ◉ Agricultural NPS ◯ Other	Wetland Restoration, Perennial Vegetation	SnapPlus	WQT-2022-	◉ Yes ◯ No ◯ Only in part
◯ Urban NPS ◯ Agricultural NPS ◯ Other				◯ Yes ◯ No ◯ Only in part
◯ Urban NPS ◯ Agricultural NPS ◯ Other				◯ Yes ◯ No ◯ Only in part
◯ Urban NPS ◯ Agricultural NPS ◯ Other				◯ Yes ◯ No ◯ Only in part
◯ Urban NPS ◯ Agricultural NPS ◯ Other				◯ Yes ◯ No ◯ Only in part
◯ Urban NPS ◯ Agricultural NPS ◯ Other				◯ Yes ◯ No ◯ Only in part
◯ Urban NPS ◯ Agricultural NPS ◯ Other				◯ Yes ◯ No ◯ Only in part
◯ Urban NPS ◯ Agricultural NPS ◯ Other				◯ Yes ◯ No ◯ Only in part

Does plan have a narrative that describes:			Plan Section
a. Description of existing land uses	◉ Yes	◯ No	2.2
b. Management practices used to generate credits	◉ Yes	◯ No	3.1
c. Amount of credit being generated	◉ Yes	◯ No	2.6
d. Description of applicable trade ratio per agreement/management practice	◉ Yes	◯ No	2.4
e. Location where credits will be generated	◉ Yes	◯ No	2.1
f. Timeline for credits and agreements	◉ Yes	◯ No	3.1, 4.1
g. Method for quantifying credits	◉ Yes	◯ No	2.5

Does plan have a narrative that describes:			Plan Section
h. Tracking procedures	◉ Yes	○ No	5.1
i. Conditions under which the management practices may be inspected	◉ Yes	○ No	5.4
j. Reporting requirements should the management practice fail	◉ Yes	○ No	5.2
k. Operation and maintenance plan for each management practice	◉ Yes	○ No	3.1
l. Location of credit generator in proximity to receiving water and credit user	◉ Yes	○ No	2.1
m. Practice registration documents, if available	◉ Yes	○ No	6.1
n. History of project site(s)	◉ Yes	○ No	2.2
o. Other: _____	○ Yes	○ No	

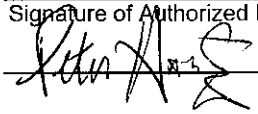
The preparer certifies all of the following:

- I am familiar with the specifications submitted for this application, and I believe all applicable items in this checklist have been addressed.
- I have completed this document to the best of my knowledge and have not excluded pertinent information.
- I certify that the information in this document is true to the best of my knowledge.

Signature of Preparer	Date Signed

Authorized Representative Signature

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative	Date Signed
	12-21-2022

Water Quality Trade Agreement

Permittee Information

Credit User Name (Permittee)	Permit Number
City of Watertown	WI-0028541-09-0

Credit User Address
800 Hoffman Drive, Watertown, WI 53094

Permittee/Broker/Exchange Name (if applicable)	Trade Agreement Number
N/A	WQT-2021-

Permittee/Broker/Exchange Address (if applicable)

Street Address	City	State	ZIP Code
N/A			

Project Name
BE06 and BE08 – Wetland Restoration, Perennial Vegetation

Name of Credit Generator (Landowner/Operator) (Last, First, M.I.)
City of Watertown

Street Address	City	State	ZIP Code
800 Hoffman Drive	Watertown	WI	53094

Property Information

Name of Landowner(s) (if not Operator) (Last, First, M.I.)
City of Watertown

Street Address	City	State	ZIP Code
800 Hoffman Drive	Watertown	WI	53094

Legal Description of Property - Contiguous sites under the same ownership: (add additional sheets if necessary)
See attached.

Parcel ID(s):
291-0815-0831-000

Site Locator for Construction Projects

County	Township	Range E / W	Section	Quarter/Quarter (e.g., NW ¼ of the NE ¼)
Jefferson	T8 N	R15E	8	NE1/4 of SW1/4
	N			
	N			
	N			

Agreement

The property described above is enrolled in a Water Quality Trade Agreement. Funds are provided to the landowner/ operator in return for the installation, operation and maintenance of best management practices (BMPs) designed to enhance water quality. This agreement commits the landowner/operator, their heirs, successors and assigns to fulfill the trade agreement until a satisfaction or release is filed by the grantee.

Addenda which describe the BMPs, costs, installation schedule, and conditions are hereby incorporated into this agreement and are on file with the grantee and may be given to Wisconsin DNR upon request by the Department.

Landowner/Operator

Signed this 7 & 21 day of April & December, 2022.

Peter Hartz DNR # 32167 Peter Hartz 12-21-22
Signature of Landowner/Operator

City of Watertown
Typed Name of Landowner/Operator

Signature of Landowner/Operator

Typed Name of Landowner/Operator

STATE OF WISCONSIN)
)
_____ County) ss.
)
)

Personally came before me this _____ day of _____, 20 _____.

The above named _____ to me known to be the person(s) who executed the foregoing instrument and acknowledge the same.

Signature of Notary Public

Typed Name of Notary Public

Notary Public _____ County, Wisconsin

My commission (is permanent) (expires _____).

Landowners (if not operator)

If the landowner section is not completed, check (X) one or both of the following that apply

☒ Landowner is also operator

☐ Trade agreement contains only high residue management, nutrient management, pesticide management, cropland protection cover (green manure)

Signed this _____ day of _____, 20 _____.

Signature of Landowner (if not operator)

Typed Name of Landowner (if not operator)

Signature of Landowner (if not operator)

Typed Name of Landowner (if not operator)

STATE OF WISCONSIN)
)
_____ County) ss.
)
)

Personally came before me this _____ day of _____, 20 _____.

The above named _____ to me known to be the person(s) who executed the foregoing instrument and acknowledge the same.

Signature of Notary Public

Typed Name of Notary Public

Notary Public _____ County, Wisconsin

My commission (is permanent) (expires _____).

Credit user/broker/exchange

Signed this 7 & 21 day of April & December, 2022.

Peter Hartz DNR # 32167 Peter Hartz 12-21-22 City of Watertown
Signature of credit user/broker/exchange

Typed Name of credit user/broker/exchange

STATE OF WISCONSIN)
)
_____ County) ss.
)
)

Personally came before me this _____ day of _____, 20 _____.

The above named _____ to me known to be the person(s) who executed the foregoing instrument and acknowledge the same.

Signature of Notary Public

Notary Public _____ County, Wisconsin

My commission (is permanent) (expires _____).

Department of Natural Resources

Other Signer- Specify title or relationship: Department of Natural Resources

Signed this _____ day of _____, 20 ____.

_____ Signature

_____ Typed Name

_____ Signature

_____ Typed Name

STATE OF WISCONSIN)
)
_____ County) ss.
)
)

Personally came before me this _____ day of _____, 20 ____.

The above named _____ to me known to be the person(s) who executed the foregoing instrument and acknowledge the same.

_____ Signature of Notary Public

_____ Typed Name of Notary Public

Notary Public _____ County, Wisconsin

My commission (is permanent) (expires _____).

Other Signer- Specify title or relationship: _____

Signed this _____ day of _____, 20 ____.

_____ Signature

_____ Typed Name

_____ Signature

_____ Typed Name

STATE OF WISCONSIN)
)
_____ County) ss.
)
)

Personally came before me this _____ day of _____, 20 ____.

The above named _____ to me known to be the person(s) who executed the foregoing instrument and acknowledge the same.

_____ Signature of Notary Public

_____ Typed Name of Notary Public

Notary Public _____ County, Wisconsin

My commission (is permanent) (expires _____).

Other Signer- Specify title or relationship: _____

Signed this _____ day of _____, 20 ____.

_____ Signature

_____ Typed Name

_____ Signature

_____ Typed Name

STATE OF WISCONSIN)
)
_____ County) ss.
)
)

Personally came before me this _____ day of _____, 20 ____.

The above named _____ to me known to be the person(s) who executed the foregoing instrument and acknowledge the same.

_____ Signature of Notary Public

_____ Typed Name of Notary Public

Notary Public _____ County, Wisconsin

My commission (is permanent) (expires _____).

☐ Check this box if this page is purposely left blank.

Section A – General Requirements

A 1. This agreement may be amended by mutual agreement of either party, so long as the agreement has not yet expired.
A 2. If a significant archeological or historical site is found, construction is to cease immediately and the BMP will be relocated, redesigned, or deleted to prevent damage to the archeological or historical site. The BMP may be deleted only if approved in writing by the Department of Natural Resources.

Section B – Landowner/Operator Shall:

B 1. Design, install, operate and maintain BMPs listed in Addendum 2 of this agreement.
B 2. Allow access to the installed BMP by the grantee, or an authorized representative of the grantee for site inspection of the BMP for installation, operation and maintenance, following written or verbal authorization from landowner.

TA Number	Typed Name of Landowner/Operator	Initials of Landowner/Operator	Date
	City of Watertown	PAH	4-7-2022
		PAH	12-21-2022

The cost-share recipient shall implement and maintain all best management practices listed in this Addendum, unless otherwise amended in accordance with this agreement.

							Installation Period			
							From (MM/YY) 08/22		To (MM/YY) 12/28	
Field #	DNR BMP Code	Practice Name	Quantity	Unit	Unit Cost	Estimated Total Cost	Reimburs-ement Rate (%)	Estimated Cost-Share Amt.	Cost-Share Amt. From Other Programs*	Estimated Year to be Installed
BE06	NRCS 327	Perennial Vegetation	12.7	Acres	-	-	-	-	-	2022
BE06	NRCS 657	Wetland Restoration	7.8	Acres	-	-	-	-	-	2022
BE08	NRCS 327	Perennial Vegetation	15.8	Acres	-	-	-	-	-	2022
					TOTALS					

* Identify Program Names: _____

CSA Number	Typed Name of Landowner/Operator	Initials of Landowner/Operator	Date
	City of Watertown	PAH	1-7-2022

PAH 12-21-2022

APPENDIX H:
WPDES PERMIT

WPDES PERMIT

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

PERMIT TO DISCHARGE UNDER THE WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM

CITY OF WATERTOWN

is permitted, under the authority of Chapter 283, Wisconsin Statutes, to discharge from a facility located at
800 HOFFMAN DRIVE, WATERTOWN, WISCONSIN
to
Rock River (Middle Rock River Watershed, UR01 – Upper Rock River Basin)
in Jefferson County

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 _____
Thomas Bauman
Wastewater Field Supervisor

_____
Date Permit Signed/Issued

PERMIT TERM: EFFECTIVE DATE - October 01, 2020 **EXPIRATION DATE - September 30, 2025**
Modification Date Effective – October 1, 2022

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1 Influent Requirements

1.1 Sampling Point(s)

Sampling Point Designation	
Sampling Point Number	**Sampling Point Location, WasteType/Sample Contents and Treatment Description (as applicable)**
701	Influent: 24-Hr flow proportional sampler located after raw influent screening. Flow meter located after raw wastewater pumps.

1.2 Monitoring Requirements

The permittee shall comply with the following monitoring requirements.

1.2.1 Sampling Point 701 - INFLUENT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD_5, Total		mg/L	5/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total		mg/L	5/Week	24-Hr Flow Prop Comp	
Cadmium, Total Recoverable		µg/L	Quarterly	24-Hr Flow Prop Comp	
Chromium, Total Recoverable		µg/L	Quarterly	24-Hr Flow Prop Comp	
Copper, Total Recoverable		µg/L	Quarterly	24-Hr Flow Prop Comp	
Lead, Total Recoverable		µg/L	Quarterly	24-Hr Flow Prop Comp	
Nickel, Total Recoverable		µg/L	Quarterly	24-Hr Flow Prop Comp	
Zinc, Total Recoverable		µg/L	Quarterly	24-Hr Flow Prop Comp	
Mercury, Total Recoverable		ng/L	Quarterly	24-Hr Flow Prop Comp	See Mercury Monitoring section

1.2.1.1 Total Metals Analyses

Measurements of total metals and total recoverable metals shall be considered as equivalent.

1.2.1.2 Sample Analysis

Samples shall be analyzed using a method which provides adequate sensitivity so that results can be quantified at a level of quantitation below the calculated/potential effluent limit, unless not possible using the most sensitive approved method.

1.2.1.3 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 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. The permittee shall collect at least one mercury field blank 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). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

2 In-Plant Requirements

2.1 Sampling Point(s)

Sampling Point Designation	
Sampling Point Number	**Sampling Point Location, WasteType/Sample Contents and Treatment Description (as applicable)**
102	Collect the mercury field blank using sample handling procedures specified in NR 106.145(9), Wisconsin Administrative Code.
103	Sample point for reporting diverted flow from the primary clarifiers during high flow events. Flow bypasses the aeration basins and final clarifiers but receives disinfection prior to discharge. Department approval for blending shall be obtained prior to use of this sample point. Any flow diverted prior to blending approval shall be considered to be a bypass, is prohibited, and should be reported to the Department as such. The permittee shall notify the Department when blending occurs. See Blending requirements in the Standard Requirements section of the permit.

2.2 Monitoring Requirements and Limitations

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

2.2.1 Sampling Point 102 - GEN PLANT (Hg blank)

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Mercury, Total Recoverable		ng/L	Quarterly	Blank	See Mercury Monitoring section

2.2.1.1 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 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. The permittee shall collect at least one mercury field blank 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). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

2.2.2 Sampling Point 103 - BLENDING

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Per Occurrence	Continuous	See Blending Flow permit section.
Time		hours	Per Occurrence	Calculated	Report the total duration of blending within a given day (12:00 am - 11:59 pm) in which blending occurs. See Blending Flow permit

					section.

2.2.2.1 Blending Flow

Flow measurement shall start at the commencement of blending operations and shall be maintained for the duration of the blending operation. Measure flow in daily increments until operation ends and report daily flow on the eDMR. The permittee shall report the volume of wastewater that is diverted around secondary treatment processes whenever in-plant diversion (blending) occurs. See “Blending” requirements in the Standard Requirements section for additional requirements.

3 Surface Water Requirements

3.1 Sampling Point(s)

Sampling Point Designation	
Sampling Point Number	**Sampling Point Location, WasteType/Sample Contents and Treatment Description (as applicable)**
001	Effluent: 24-Hr flow proportional sampler located prior to UV disinfection. Grab samples taken post aeration prior to discharge to the Rock River.

3.2 Monitoring Requirements and Effluent Limitations

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

3.2.1 Sampling Point (Outfall) 001 - EFFLUENT

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD_5, Total	Monthly Avg	30 mg/L	5/Week	24-Hr Flow Prop Comp	Effective January through May
BOD_5, Total	Monthly Avg	16 mg/L	5/Week	24-Hr Flow Prop Comp	Effective June
BOD_5, Total	Monthly Avg	12 mg/L	5/Week	24-Hr Flow Prop Comp	Effective July and October
BOD_5, Total	Monthly Avg	10 mg/L	5/Week	24-Hr Flow Prop Comp	Effective August and September
BOD_5, Total	Monthly Avg	25 mg/L	5/Week	24-Hr Flow Prop Comp	Effective November
BOD_5, Total	Monthly Avg	29 mg/L	5/Week	24-Hr Flow Prop Comp	Effective December
BOD_5, Total	Weekly Avg	31 mg/L	5/Week	24-Hr Flow Prop Comp	Effective January
BOD_5, Total	Weekly Avg	35 mg/L	5/Week	24-Hr Flow Prop Comp	Effective February
BOD_5, Total	Weekly Avg	45 mg/L	5/Week	24-Hr Flow Prop Comp	Effective March through May
BOD_5, Total	Weekly Avg	16 mg/L	5/Week	24-Hr Flow Prop Comp	Effective June
BOD_5, Total	Weekly Avg	12 mg/L	5/Week	24-Hr Flow Prop Comp	Effective July and October
BOD_5, Total	Weekly Avg	10 mg/L	5/Week	24-Hr Flow Prop Comp	Effective August and September

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
BOD_5, Total	Weekly Avg	25 mg/L	5/Week	24-Hr Flow Prop Comp	Effective November
BOD_5, Total	Weekly Avg	29 mg/L	5/Week	24-Hr Flow Prop Comp	Effective December
BOD_5, Total	Weekly Avg	1,400 lbs/day	5/Week	Calculated	Effective January
BOD_5, Total	Weekly Avg	1,500 lbs/day	5/Week	Calculated	Effective February
BOD_5, Total	Weekly Avg	690 lbs/day	5/Week	Calculated	Effective June
BOD_5, Total	Weekly Avg	530 lbs/day	5/Week	Calculated	Effective July and October
BOD_5, Total	Weekly Avg	450 lbs/day	5/Week	Calculated	Effective August
BOD_5, Total	Weekly Avg	440 lbs/day	5/Week	Calculated	Effective September
BOD_5, Total	Weekly Avg	1,100 lbs/day	5/Week	Calculated	Effective November
BOD_5, Total	Weekly Avg	1,300 lbs/day	5/Week	Calculated	Effective December
Suspended Solids, Total	Monthly Avg	30 mg/L	5/Week	24-Hr Flow Prop Comp	Effective January through May
Suspended Solids, Total	Monthly Avg	16 mg/L	5/Week	24-Hr Flow Prop Comp	Effective June
Suspended Solids, Total	Monthly Avg	12 mg/L	5/Week	24-Hr Flow Prop Comp	Effective July and October
Suspended Solids, Total	Monthly Avg	10 mg/L	5/Week	24-Hr Flow Prop Comp	Effective August and September
Suspended Solids, Total	Monthly Avg	25 mg/L	5/Week	24-Hr Flow Prop Comp	Effective November
Suspended Solids, Total	Monthly Avg	29 mg/L	5/Week	24-Hr Flow Prop Comp	Effective December
Suspended Solids, Total	Weekly Avg	31 mg/L	5/Week	24-Hr Flow Prop Comp	Effective January
Suspended Solids, Total	Weekly Avg	35 mg/L	5/Week	24-Hr Flow Prop Comp	Effective February
Suspended Solids, Total	Weekly Avg	45 mg/L	5/Week	24-Hr Flow Prop Comp	Effective March through May
Suspended Solids, Total	Weekly Avg	16 mg/L	5/Week	24-Hr Flow Prop Comp	Effective June
Suspended Solids, Total	Weekly Avg	12 mg/L	5/Week	24-Hr Flow Prop Comp	Effective July and October
Suspended Solids, Total	Weekly Avg	10 mg/L	5/Week	24-Hr Flow Prop Comp	Effective August and September
Suspended Solids, Total	Weekly Avg	25 mg/L	5/Week	24-Hr Flow Prop Comp	Effective November
Suspended Solids, Total	Weekly Avg	29 mg/L	5/Week	24-Hr Flow Prop Comp	Effective December
Suspended Solids, Total	Monthly Avg	1,270 lbs/day	5/Week	Calculated	Effective January, March, and May
Suspended Solids, Total	Monthly Avg	1,410 lbs/day	5/Week	Calculated	Effective February
Suspended Solids, Total	Monthly Avg	1,310 lbs/day	5/Week	Calculated	Effective April

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Suspended Solids, Total	Monthly Avg	700 lbs/day	5/Week	Calculated	Effective June
Suspended Solids, Total	Monthly Avg	510 lbs/day	5/Week	Calculated	Effective July and October
Suspended Solids, Total	Monthly Avg	430 lbs/day	5/Week	Calculated	Effective August
Suspended Solids, Total	Monthly Avg	440 lbs/day	5/Week	Calculated	Effective September
Suspended Solids, Total	Monthly Avg	1,100 lbs/day	5/Week	Calculated	Effective November
Suspended Solids, Total	Monthly Avg	1,230 lbs/day	5/Week	Calculated	Effective December
Suspended Solids, Total	Weekly Avg	1,400 lbs/day	5/Week	Calculated	Effective January
Suspended Solids, Total	Weekly Avg	1,500 lbs/day	5/Week	Calculated	Effective February
Suspended Solids, Total	Weekly Avg	2,270 lbs/day	5/Week	Calculated	Effective March and May
Suspended Solids, Total	Weekly Avg	2,340 lbs/day	5/Week	Calculated	Effective April
Suspended Solids, Total	Weekly Avg	690 lbs/day	5/Week	Calculated	Effective June
Suspended Solids, Total	Weekly Avg	530 lbs/day	5/Week	Calculated	Effective July and October
Suspended Solids, Total	Weekly Avg	450 lbs/day	5/Week	Calculated	Effective August
Suspended Solids, Total	Weekly Avg	440 lbs/day	5/Week	Calculated	Effective September
Suspended Solids, Total	Weekly Avg	1,100 lbs/day	5/Week	Calculated	Effective November
Suspended Solids, Total	Weekly Avg	1,300 lbs/day	5/Week	Calculated	Effective December
Nitrogen, Ammonia (NH_3-N) Total	Daily Max	20 mg/L	5/Week	24-Hr Flow Prop Comp	Effective November through March
Nitrogen, Ammonia (NH_3-N) Total	Weekly Avg	20 mg/L	5/Week	24-Hr Flow Prop Comp	Effective November through March
Nitrogen, Ammonia (NH_3-N) Total	Weekly Avg	17 mg/L	5/Week	24-Hr Flow Prop Comp	Effective June
Nitrogen, Ammonia (NH_3-N) Total	Weekly Avg	9.0 mg/L	5/Week	24-Hr Flow Prop Comp	Effective July
Nitrogen, Ammonia (NH_3-N) Total	Weekly Avg	6.4 mg/L	5/Week	24-Hr Flow Prop Comp	Effective August
Nitrogen, Ammonia (NH_3-N) Total	Weekly Avg	8.9 mg/L	5/Week	24-Hr Flow Prop Comp	Effective September
Nitrogen, Ammonia (NH_3-N) Total	Weekly Avg	13 mg/L	5/Week	24-Hr Flow Prop Comp	Effective October

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrogen, Ammonia (NH_3-N) Total	Monthly Avg	20 mg/L	5/Week	24-Hr Flow Prop Comp	Effective November through March
Nitrogen, Ammonia (NH_3-N) Total	Monthly Avg	17 mg/L	5/Week	24-Hr Flow Prop Comp	Effective June
Nitrogen, Ammonia (NH_3-N) Total	Monthly Avg	9.0 mg/L	5/Week	24-Hr Flow Prop Comp	Effective July
Nitrogen, Ammonia (NH_3-N) Total	Monthly Avg	6.4 mg/L	5/Week	24-Hr Flow Prop Comp	Effective August
Nitrogen, Ammonia (NH_3-N) Total	Monthly Avg	8.9 mg/L	5/Week	24-Hr Flow Prop Comp	Effective September
Nitrogen, Ammonia (NH_3-N) Total	Monthly Avg	9.3 mg/L	5/Week	24-Hr Flow Prop Comp	Effective October
Dissolved Oxygen	Daily Min	6.0 mg/L	Daily	Grab	
pH Field	Daily Max	9.0 su	Daily	Grab	
pH Field	Daily Min	6.0 su	Daily	Grab	
E. coli	Geometric Mean - Monthly	126 #/100 ml	2/Week	Grab	Limit effective May - September annually, per the "Effluent Limitations for E. coli" Schedule.
E. coli	% Exceedance	10 Percent	Monthly	Calculated	Limit effective May - September annually. See the "E. coli Percent Limit" section below. Enter the result in the DMR on the last day of the month.
Phosphorus, Total	Monthly Avg	1.0 mg/L	5/Week	24-Hr Flow Prop Comp	Effective July to March and May. This technology-based limit is retained as it represents a minimum control level to prevent backsliding. See "Water Quality Trading (WQT)" sections for more information.
Phosphorus, Total	Monthly Avg	0.8 mg/L	5/Week	24-Hr Flow Prop Comp	Effective April and June. The MDV limit for April and June is retained for anti-backsliding purposes.
Phosphorus, Total		lbs/day	5/Week	Calculated	Report daily mass discharged using Equation 1a. in the "Water Quality Trading (WQT)" section.

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
WQT Credits Used (TP)		lbs/month	Monthly	Calculated	Report WQT TP Credits used per month using Equation 2b. in the "Water Quality Trading (WQT)" section. Available TP Credits are specified in Table 2 and in the approved Water Quality Trading Plan.
WQT Computed Compliance (TP)	Monthly Avg	13.7 lbs/day	Monthly	Calculated	Effective January. Report the WQT TP Computed Compliance value using Equation 4a. in the "Water Quality Trading (WQT)" section. Value entered on the last day of the month.
WQT Computed Compliance (TP)	Monthly Avg	19.5 lbs/day	Monthly	Calculated	Effective February. Calculate using Eq. 4a.
WQT Computed Compliance (TP)	Monthly Avg	18.4 lbs/day	Monthly	Calculated	Effective March. Calculate using Eq. 4a.
WQT Computed Compliance (TP)	Monthly Avg	18.3 lbs/day	Monthly	Calculated	Effective April. Calculate using Eq. 4a.
WQT Computed Compliance (TP)	Monthly Avg	16.5 lbs/day	Monthly	Calculated	Effective May. Calculate using Eq. 4a.
WQT Computed Compliance (TP)	Monthly Avg	17.6 lbs/day	Monthly	Calculated	Effective June. Calculate using Eq. 4a.
WQT Computed Compliance (TP)	Monthly Avg	17.7 lbs/day	Monthly	Calculated	Effective July. Calculate using Eq. 4a.
WQT Computed Compliance (TP)	Monthly Avg	16.2 lbs/day	Monthly	Calculated	Effective August. Calculate using Eq. 4a.
WQT Computed Compliance (TP)	Monthly Avg	14.8 lbs/day	Monthly	Calculated	Effective September Calculate using Eq. 4a..
WQT Computed Compliance (TP)	Monthly Avg	12.3 lbs/day	Monthly	Calculated	Effective October and November. Calculate using Eq. 4a.
WQT Computed Compliance (TP)	Monthly Avg	11.9 lbs/day	Monthly	Calculated	Effective December. Calculate using Eq. 4a.
WQT Credits Used (TP)	Annual Total	25.5 lbs/yr	Annual	Calculated	Effective 2022.The sum of total monthly credits used after the effective date of the permit modification may not exceed Table 2 values listed below.
WQT Credits Used (TP)	Annual Total	102 lbs/yr	Annual	Calculated	Effective 2023-2025. The sum of total monthly credits used may not exceed Table 2 values listed below.

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Chloride		mg/L	4/Month	24-Hr Flow Prop Comp	Monitoring only in 2024
Mercury, Total Recoverable	Daily Max	3.7 ng/L	Quarterly	Grab	This is an Alternative Mercury Effluent Limit. See Mercury section and schedule.
Temperature Maximum		deg F	3/Week	Continuous	
Acute WET		TU_a	See Listed Qtr(s)	24-Hr Flow Prop Comp	See WET section.
Chronic WET	Monthly Avg	1.5 TUc	See Listed Qtr(s)	24-Hr Flow Prop Comp	See WET section.
Cadmium, Total Recoverable		µg/L	Quarterly	24-Hr Flow Prop Comp	
Chromium, Total Recoverable		µg/L	Quarterly	24-Hr Flow Prop Comp	
Copper, Total Recoverable		µg/L	Quarterly	24-Hr Flow Prop Comp	
Lead, Total Recoverable		µg/L	Quarterly	24-Hr Flow Prop Comp	
Nickel, Total Recoverable		µg/L	Quarterly	24-Hr Flow Prop Comp	
Zinc, Total Recoverable		µg/L	Quarterly	24-Hr Flow Prop Comp	
Nitrogen, Total Kjeldahl		mg/L	Quarterly	24-Hr Flow Prop Comp	
Nitrogen, Nitrite + Nitrate Total		mg/L	Quarterly	24-Hr Flow Prop Comp	
Nitrogen, Total		mg/L	Quarterly	Calculated	Total Nitrogen shall be calculated as the sum of reported values for Total Kjeldahl Nitrogen and Total Nitrite + Nitrate Nitrogen.

3.2.1.1 Annual Average Design Flow

The annual average design flow of the permittee's wastewater treatment facility is 5.2 MGD.

3.2.1.2 *E. coli* Percent Limit

No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 #/100 ml. Bacteria samples may be collected more frequently than required. All samples shall be reported on the monthly discharge monitoring reports (DMRs). The following calculation should be used to calculate percent exceedances.

$$\frac{\#\ of\ Samples\ greater\ than\ 410\ \#/100}{Total\ \#\ of\ samples} \times 100 = \%\ Exceedance$$

3.2.1.3 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), Wis. Adm. 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. The permittee shall collect at least one mercury field blank 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). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

3.2.1.4 Mercury Variance – Implement Pollutant Minimization Program Plan

This permit contains a variance to the water quality-based effluent limit (WQBEL) for mercury granted in accordance with s. 283.15, Stats. As conditions of this variance the permittee shall (a) maintain effluent quality at or below the interim effluent limitation specified in the table above, (b) follow the Pollutant Minimization Program Plan and (c) perform the actions listed in the compliance schedule (See the Schedules section herein

3.2.1.5 Effluent Temperature Monitoring

For monitoring temperature continuously, collect measurements in accordance with s. NR 218.04(13), Wis. Adm Code. This means that discrete measurements shall be recorded at intervals of not more than 15 minutes during the 24-hour period. Report the maximum temperature measured during the day on the DMR.

3.2.1.6 TMDL Limitations for Total Suspended Solids

The Rock River TMDL for Total Phosphorus (TP) and Total Suspended Solids (TSS) was approved by the Environmental Protection Agency (EPA) September 2011. The TMDL derived TSS limits are expressed as weekly average and monthly average effluent limits and are effective immediately. The approved TSS TMDL limits for this permittee are included in the following table*:

Total Suspended Solids Effluent Limitations

Month	Monthly Average TSS Effluent Limit (lbs/day)	Weekly Average TSS Effluent Limit (lbs/day)*
Jan	1270	2270
Feb	1410	2500
March	1270	2270
April	1310	2340
May	1270	2270
June	700	1250
July	510	910
Aug	430	760
Sept	440	770
Oct	510	910
Nov	1100	1950
Dec	1230	2190

* The TMDL derived weekly average TSS limits in the table

above are superseded by more stringent water quality based effluent limits for the months of June through February.

3.2.1.7 TMDL Limitations for Total Phosphorus

The Rock River TMDL for Total Phosphorus (TP) and Total Suspended Solids (TSS) was approved by the Environmental Protection Agency (EPA) September 2011. The TMDL derived phosphorus limits are expressed as monthly average effluent limits. The approved total phosphorus TMDL limits for this permittee are included in the following table:

Total Phosphorus Effluent Limitations

Month	Monthly Average Total P Effluent Limit (lbs/day)
Jan	13.7
Feb	19.5
March	18.4
April	18.3
May	16.5
June	17.6
July	17.7
Aug	16.2
Sept	14.8
Oct	12.3
Nov	12.3
Dec	11.9

3.2.1.8 Phosphorus Water Quality Trading (WQT)

The permittee may use water quality trading to demonstrate compliance with TMDL derived WQBELs for total phosphorus (TP) in the list above. Pollutant reduction credits for total phosphorus are available as specified in Water Quality Trading Plan **WQT-2022-0006** or approved amendments thereof.

Table 2. Available Phosphorus Credits per WQT-2022-0006

Year	Available TP Credits (lbs/yr) – Total
2022	25.5
2023	102
2024	102

2025	102
2026	102
2027	102

*In the event that this permit is not reissued prior to the expiration date, 102 lbs/yr of long-term credits will be available in subsequent year(s).

Only those pollutant reduction credits established by a water quality trading plan approved by the Department may be used by the permittee to demonstrate compliance with the WQBELs identified in this subsection. If the permittee wishes to use pollutant reduction credits not identified in an approved water quality trading plan, the permittee must amend the plan or develop a new plan and obtain Department approval of the amended or new plan prior to use of the new pollutant reduction credits. Prior to Department approval, the amended or new water quality trading plan will be subject to notice and opportunity for public comment. Any change in the number of available credits requires a permit modification.

In the event pollutant reduction credits as defined in the approved water quality trading plan are no longer generated, the permittee shall comply with the WQBELs for TP contained in this subsection. The sum of available interim and long-term credits shown in Table 2 may be used to demonstrate compliance for a given year. Interim credits are subject to duration limits and may not be used past the duration defined in Water Quality Trading Plan **WQT-2022-0006.**

3.2.1.9 Demonstrating Compliance with TP WQBELs Using Water Quality Trading

Use the following methods to demonstrate compliance with the TP WQBELs contained in the Water Quality Trading subsection above.

TOTAL POLLUTANT DISCHARGED (TP)

Use the following equations to calculate the amount of pollutant discharged for Monthly Avg TP [lbs/day].

TP Discharged [lbs/day] = TP Discharged [mg/L] × Daily Flow [MGD] × 8.34 *(Eq. 1a.)*

Monthly or Weekly Average = Σ daily results ÷ # of results *(Eq. 1b.)*

WQT CREDITS USED (TOTAL PHOSPHORUS)

Use the following method to calculate the credits to be used expressed as a mass in lbs/month:

WQT TP Credits Needed [lbs/day] = Monthly Avg TP [lbs/day] – {the Monthly Avg limit} [lbs/day] *(Eq. 2a.)*

Note: When the TP discharge is less than {the monthly average limit} lbs/day as a monthly avg, report 0 (zero) as the "WQT Credits Used (TP)". The monthly limit for each month ({Monthly Avg limit} [lbs/day]) is located in the Total Phosphorus TMDL WQBELS Table above at 2.1.2.7.

WQT TP Credits Used [lbs/month] = WQT TP Credits Needed [lbs/day] × # of days of discharge/month *(Eq. 2b.)*

WQT COMPUTED COMPLIANCE (TOTAL PHOSPHORUS)

Use the following method to demonstrate compliance with TP WQBELs expressed as a mass in lbs/day:

WQT TP Computed Compliance [lbs/day] = Monthly Avg TP [lbs/day] – [WQT TP Credits Needed [lbs/day] *(Eq. 4a.)*

Negative computed compliance values should be entered as zero - "0".

3.2.1.10 Additional Water Quality Trading Requirements

When using water quality trading to demonstrate compliance with WQBELs for TP, the permittee shall comply with the following:

• Failure to implement any of the terms or conditions of the approved water quality trading plan is a violation of this permit.

• Each month the permittee shall certify that the nonpoint source management practices installed to generate pollutant reduction credits are operated and maintained in a manner consistent with that specified in the approved water quality trading plan. Such a certification may be made by including the following statement as a comment on the monthly discharge monitoring report:

> I certify that management practices identified in the approved water quality trading plan as the source of pollutant reduction credits are installed, established and properly maintained.

• At least once a year the permittee or the permittee's agent shall inspect each nonpoint source management practice that generates pollutant reduction credits to confirm the implementation of the management practice and their appropriate operation and adequate maintenance.

• The permittee shall notify WDNR by telephone within 24 hours or next business day of becoming aware that pollutant reduction credits used or intended for use by the permittee are not being implemented or generated as defined in the approved trading plan. A written notification shall be submitted to the Department within 5 days regarding the status of the permittee's pollutant reduction credits.

• The permittee shall provide WDNR written notice within 7 days of the trade agreement upon which the approved water quality trading plan is based being amended, modified, or revoked. This notification shall include the details of any amendment or modification in addition to the justification for the changes.

• The permittee shall not use pollutant reduction credits for the demonstration of compliance when pollutant reduction credits are not being generated.

3.2.1.11 Water Quality Trading Reopener Clause

Under any of the following conditions as provided by s. 283.53(2), Wis. Stats. and Wis. Adm. Code NR 203.135 and 203.136, the Department may modify or revoke and reissue this permit to modify or eliminate permit terms and conditions related to water quality trading:

• The permittee fails to implement the water quality trading plan as approved;

• The permittee fails to comply with permit terms and conditions related to water quality trading;

• New information becomes available that would change the number of credits available for the water quality trade or would change the Department's determinations that water quality trading is an acceptable option.

3.2.1.12 Submittal of Permit Application for Next Reissuance and Pollutant Trading Plan

The permittee shall submit the permit application for the next reissuance at least 6 months prior to expiration of this permit.

The permittee has submitted a Water Quality Trading Plan that was approved by WDNR on June 9, 2022. If the permittee intends to pursue pollutant trading to achieve compliance in a future permit term, and updated water quality trading plan is due with the application for the next reissuance. If system upgrades will be used in combination with pollutant trading the permittee shall submit plans for any system upgrade.

3.2.1.13 MDV (Multi-Discharger Variance) Requirements

Watershed Provisions: The permittee is required to implement watershed measures to reduce the amount of phosphorus entering the receiving water. The permittee has selected the following approved watershed measure.

Payment to County for Phosphorus Reduction: The permittee shall make payments for phosphorus reduction to the county or counties approved by the Department per s. 283.16(8), Wis. Stats. The permittee shall make a total payment by March 1 of each year in the amount equal to the per pound amount of $54.23 times the number of pounds by which the effluent phosphorus discharged during the previous year exceeded the permittee's target value or $640,000, whichever is less. The target value is based on the TMDL-derived limit per s. 283.16(1)(h), Wis. Stats., and is applicable during the months that the MDV is in effect. The MDV is in effect for April and June. Refer to the Schedules section for the scheduled annual requirements.

Annual Payment Calculation: The annual payment is equal to the phosphorus load that exceeds the target value multiplied by $54.23 per pound. Use the steps shown below to calculate the annual payment. In addition, the Department shall send a statement to the permittee specifying total payment due to the participating counties each year in accordance with the Schedules section.

Annual Payment = [Annual Phosphorus Load – Annual Target Load] × Price Per Pound
Calculation Steps:
●Calculate pounds of phosphorus discharged for each month that the MDV is in effect:

Monthly Phosphorus Load (lbs/month) = Total Monthly Flow (MG) × Monthly Avg. TP effluent conc. (mg/L) × 8.34

●Sum the lbs/month discharged for the months that the MDV is in effect to calculate the annual phosphorus load:

Annual Phosphorus Load (lbs/year) = ∑ [Monthly Phosphorus Load (lbs/month)]

ROCK RIVER TMDL Target Value Calculations:

Target Value = TMDL Derived Limit

Month	Monthly Ave Total P Effluent Limit (lbs/day)	Monthly Target Load = Monthly Ave. TP Limit (lbs/day) × Number of Days in Month
April	18.3	549.04
June	17.6	528.7

●Calculate the monthly payment for each month the MDV is in effect:

Monthly Payment = [Monthly Phosphorus Load (lbs/month) – Monthly Target Load (lbs/month)] × Price Per Pound

●Calculate the annual payment:

Annual Payment ($) = ∑ [Monthly Payment ($)]

3.2.1.14 Whole Effluent Toxicity (WET) Testing

Primary Control Water: Rock River

Instream Waste Concentration (IWC): 67%

Acute Mixing Zone Concentration: N/A

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 by the permittee.
- **Chronic:** 100, 75, 50, 25, 12.5% and any additional selected by the permittee.

WET Testing Frequency:

Acute tests shall be conducted once each year rotating quarters in order to collect seasonal information about the discharge. Tests are required during the following quarters.

- **Acute:** October – December 2020; January – March 2021; April – June 2022; July – September 2023; January – March 2024; April – June 2025

Acute WET testing shall continue after the permit expiration date (until the permit is reissued) in accordance with the WET requirements specified for the last full calendar year of this permit. For example, the next test would be required in January – March 2026.

Chronic tests shall be conducted once each year in rotating quarters in order to collect seasonal information about the discharge. Tests are required during the following quarters.

- **Chronic:** October – December 2020; January – March 2021; April – June 2022; July – September 2023; January – March 2024; April – June 2025

Chronic WET testing shall continue after the permit expiration date (until the permit is reissued) in accordance with the WET requirements specified for the last full calendar year of this permit. For example, the next test would be required in January – March 2026.

Testing: WET testing shall be performed during normal operating conditions. Permittees are not allowed to turn off or otherwise modify treatment systems, production processes, or change other operating or treatment conditions during WET tests.

Reporting: The permittee shall report test results on the Discharge Monitoring Report form, and also complete the "Whole Effluent Toxicity Test Report Form" (Section 6, "*State of Wisconsin Aquatic Life Toxicity Testing Methods Manual, 2nd Edition*"), 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 Water Quality, 101 S. Webster St., P.O. Box 7921, Madison, WI 53707-7921, within 45 days of test completion. The Discharge Monitoring Report (DMR) form shall be submitted electronically 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: $TU_a = 100 \div LC_{50}$. A chronic toxicity test shall be considered positive if the Toxic Unit - Chronic (TU_c) is greater than 1.5 for either species. The TU_c shall be calculated as follows: $TU_c = 100 \div IC_{25}$.

Additional Testing Requirements: Within 90 days of a test which showed positive results, the permittee shall submit the results of at least 2 retests to the Biomonitoring Coordinator on "Whole Effluent Toxicity

Test Report Forms". The 90 day reporting period shall begin the day after the test which showed a positive result. The retests shall be completed using the same species and test methods specified for the original test (see the Standard Requirements section herein).

4 Land Application Requirements

4.1 Sampling Point(s)

The discharge(s) shall be limited to land application of the waste type(s) designated for the listed sampling point(s) on Department approved land spreading sites or by hauling to another facility.

Sampling Point Designation	
Sampling Point Number	**Sampling Point Location, WasteType/Sample Contents and Treatment Description (as applicable)**
002	Representative samples of class B, anaerobically digested liquid sludge shall be collected from the secondary digester, if this sludge is land applied. If this sample point is activated, the sludge shall be analyzed for List 2 parameters (Nutrients) just prior to land application and DNR shall be notified prior to land application.
004	Representative samples of class B, anaerobically digested cake sludge shall be collected from the centrifuge.

4.2 Monitoring Requirements and Limitations

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

4.2.1 Sampling Point (Outfall) 002 - LIQUID SLUDGE and 004- CAKE SLUDGE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Quarterly	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Quarterly	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Quarterly	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Quarterly	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Quarterly	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Quarterly	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Quarterly	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Quarterly	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Quarterly	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Quarterly	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Quarterly	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Quarterly	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Quarterly	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Quarterly	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Quarterly	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Quarterly	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Quarterly	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Quarterly	Composite	
Nitrogen, Total Kjeldahl		Percent	Quarterly	Composite	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrogen, Ammonium (NH_4-N) Total		Percent	Quarterly	Composite	
Phosphorus, Total		Percent	Quarterly	Composite	
Phosphorus, Water Extractable		% of Tot P	Quarterly	Composite	
Potassium, Total Recoverable		Percent	Quarterly	Composite	
Radium 226 Dry Wt		pCi/g	Annual	Composite	
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	Monitor for PCB's as part of the priority pollutant scan in 2022.
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	Monitor for PCB's as part of the priority pollutant scan in 2022.
Municipal Sludge Priority Pollutant Scan			Once	Composite	As specified in ch. NR 215.03 (1-4), Wis. Adm. Code

Other Sludge Requirements	
Sludge Requirements	**Sample Frequency**
List 3 Requirements – Pathogen Control: The requirements in List 3 shall be met prior to land application of sludge.	**Annual**
List 4 Requirements – Vector Attraction Reduction: The vector attraction reduction shall be satisfied prior to, or at the time of land application as specified in List 4.	**Annual**

4.2.1.1 List 2 Analysis

If the monitoring frequency for List 2 parameters is more frequent than "Annual" then the sludge may be analyzed for the List 2 parameters just prior to each land application season rather than at the more frequent interval specified.

4.2.1.2 Changes in Feed Sludge Characteristics

If a change in feed sludge characteristics, treatment process, or operational procedures occurs which may result in a significant shift in sludge characteristics, the permittee shall reanalyze the sludge for List 1, 2, 3 and 4 parameters each time such change occurs.

4.2.1.3 Multiple Sludge Sample Points (Outfalls)

If there are multiple sludge sample points (outfalls), but the sludges are not subject to different sludge treatment processes, then a separate List 2 analysis shall be conducted for each sludge type which is land applied, just prior to land application, and the application rate shall be calculated for each sludge type. In this case, List 1, 3, and 4 and PCBs need only be analyzed on a single sludge type, at the specified frequency. If there are multiple sludge sample points (outfalls), due to multiple treatment processes, List 1, 2, 3 and 4 and PCBs shall be analyzed for each sludge type at the specified frequency.

4.2.1.4 Sludge Which Exceeds the High Quality Limit

Cumulative pollutant loading records shall be kept for all bulk land application of sludge which does not meet the high quality limit for any parameter. This requirement applies for the entire calendar year in which any exceedance of Table 3 of s. NR 204.07(5)(c), is experienced. Such loading records shall be kept for all List 1 parameters for each site land applied in that calendar year. The formula to be used for calculating cumulative loading is as follows:

[(Pollutant concentration (mg/kg) x dry tons applied/ac) ÷ 500] + previous loading (lbs/acre) = cumulative lbs pollutant per acre

When a site reaches 90% of the allowable cumulative loading for any metal established in Table 2 of s. NR 204.07(5)(b), the Department shall be so notified through letter or in the comment section of the annual land application report (3400-55).

4.2.1.5 Sludge Analysis for PCBs

The permittee shall analyze the sludge for Total PCBs one time during **2022**. The results shall be reported as "PCB Total Dry Wt". Either congener-specific analysis or Aroclor analysis shall be used to determine the PCB concentration. The permittee may determine whether Aroclor or congener specific analysis is performed. Analyses shall be performed in accordance with Table EM in s. NR 219.04, Wis. Adm. Code and the conditions specified in Standard Requirements of this permit. PCB results shall be submitted by January 31, following the specified year of analysis.

4.2.1.6 Lists 1, 2, 3, and 4

List 1 **TOTAL SOLIDS AND METALS** See the Monitoring Requirements and Limitations table above for monitoring frequency and limitations for the List 1 parameters
Solids, Total (percent)
Arsenic, mg/kg (dry weight)
Cadmium, mg/kg (dry weight)
Copper, mg/kg (dry weight)
Lead, mg/kg (dry weight)
Mercury, mg/kg (dry weight)
Molybdenum, mg/kg (dry weight)
Nickel, mg/kg (dry weight)
Selenium, mg/kg (dry weight)
Zinc, mg/kg (dry weight)

List 2 **NUTRIENTS** See the Monitoring Requirements and Limitations table above for monitoring frequency for the List 2 parameters
Solids, Total (percent)
Nitrogen Total Kjeldahl (percent)
Nitrogen Ammonium (NH4-N) Total (percent)
Phosphorus Total as P (percent)
Phosphorus, Water Extractable (as percent of Total P)
Potassium Total Recoverable (percent)

List 3
PATHOGEN CONTROL FOR CLASS B SLUDGE

The permittee shall implement pathogen control as listed in List 3. The Department shall be notified of the pathogen control utilized and shall be notified when the permittee decides to utilize alternative pathogen control.

The following requirements shall be met prior to land application of sludge.

Parameter	Unit	Limit
Fecal Coliform*	MPN/gTS or CFU/gTS	2,000,000
OR, ONE OF THE FOLLOWING PROCESS OPTIONS		
Aerobic Digestion	Air Drying	
Anaerobic Digestion	Composting	
Alkaline Stabilization	PSRP Equivalent Process	

***** The Fecal Coliform limit shall be reported as the geometric mean of 7 discrete samples on a dry weight basis.

List 4
VECTOR ATTRACTION REDUCTION

The permittee shall implement any one of the vector attraction reduction options specified in List 4. The Department shall be notified of the option utilized and shall be notified when the permittee decides to utilize an alternative option.

One of the following shall be satisfied prior to, or at the time of land application as specified in List 4.

Option	Limit	Where/When it Shall be Met
Volatile Solids Reduction	≥38%	Across the process
Specific Oxygen Uptake Rate	≤1.5 mg O_2/hr/g TS	On aerobic stabilized sludge
Anaerobic bench-scale test	<17 % VS reduction	On anaerobic digested sludge
Aerobic bench-scale test	<15 % VS reduction	On aerobic digested sludge
Aerobic Process	>14 days, Temp >40°C and Avg. Temp > 45°C	On composted sludge
pH adjustment	>12 S.U. (for 2 hours) and >11.5 (for an additional 22 hours)	During the process
Drying without primary solids	>75 % TS	When applied or bagged
Drying with primary solids	>90 % TS	When applied or bagged
Equivalent Process	Approved by the Department	Varies with process
Injection	-	When applied
Incorporation	-	Within 6 hours of application

4.2.1.7 Daily Land Application Log

Daily Land Application Log		
Discharge Monitoring Requirements and Limitations The permittee shall maintain a daily land application log for biosolids land applied each day when land application occurs. The following minimum records must be kept, in addition to all analytical results for the biosolids land applied. The log book records shall form the basis for the annual land application report requirements**.**		
Parameters	**Units**	**Sample Frequency**
DNR Site Number(s)	Number	Daily as used
Outfall number applied	Number	Daily as used
Acres applied	Acres	Daily as used
Amount applied	As appropriate * /day	Daily as used
Application rate per acre	unit */acre	Daily as used
Nitrogen applied per acre	lb/acre	Daily as used
Method of Application	Injection, Incorporation, or surface applied	Daily as used

*gallons, cubic yards, dry US Tons or dry Metric Tons

5 Schedules

5.1 Mercury Pollutant Minimization Program

Required Action	Due Date
Annual Mercury Progress Reports: Submit an annual mercury progress report. The annual mercury progress report shall: Indicate which mercury pollutant minimization activities or activities outlined in the approved Pollutant Minimization Plan have been implemented; Include an analysis of trends in monthly and annual total effluent mercury concentrations based on mercury sampling; and Include an analysis of how influent and effluent mercury varies with time and with significant loading of mercury such as loads from industries into the collection system. The first annual mercury progress report is to be submitted by the Due Date.	01/31/2021
Annual Mercury Progress Report #2: Submit a mercury progress report as defined above.	01/31/2022
Annual Mercury Progress Report #3: Submit a mercury progress report as defined above.	01/31/2023
Annual Mercury Progress Report #4: Submit a mercury progress report as defined above.	01/31/2024
Final Mercury Report: Submit a final report documenting the success in reducing mercury concentrations in the effluent, as well as the anticipated future reduction in mercury sources and mercury effluent concentrations. The report shall summarize mercury pollutant minimization activities that have been implemented during the current permit term and state which, if any, pollutant minimization activities from the approved pollutant minimization plan were not pursued and why. The report shall include an analysis of trends in monthly and annual total effluent mercury concentrations based on mercury sampling during the current permit term. The report shall also include an analysis of how influent and effluent mercury varies with time and with significant loading of mercury such as loads from industries into the collection system. If the permittee intends to reapply for a mercury variance per s. NR 106.145, Wis. Adm. Code, for the reissued permit, a detailed pollutant minimization plan outlining the pollutant minimization activities proposed for the upcoming permit term shall be submitted along with the final report.	01/31/2025
Annual Mercury Reports After Permit Expiration: In the event that this permit is not reissued on time, the permittee shall continue to submit annual mercury reports each year covering pollutant minimization activities implemented and mercury concentration trends.	

5.2 Effluent Limitations for E. coli (Outfall 001)

Required Action	Due Date
Status Update: The permittee shall submit information within the discharge monitoring report (DMR) comment section documenting the steps taken in preparation for properly monitoring and testing for E. coli including, but not limited to, selected test method and location of sampling.	11/21/2020
Operational Evaluation Report: The permittee shall prepare and submit an Operational Evaluation Report to the Department for review and approval. The report shall include an evaluation of collected	10/31/2021

effluent data and proposed operational improvements that will optimize efficacy of disinfection at the treatment plant during the period prior to complying with final E. coli limitations and, to the extent possible, enable compliance with the final E. coli limitations. The report shall include a plan and schedule for implementation of the operational improvements. These improvements shall occur as soon as possible, but not later than April 30, 2022. The report shall state whether the operational improvements are expected to result in compliance with the final E. coli limitations. The permittee shall implement the operational improvements in accordance with the approved plan and schedule specified in the Operational Evaluation Report and in no case later than April 30, 2022 If the Operational Evaluation Report concludes that the operational improvements are expected to result in compliance with the final E. coli limitations, the permittee shall comply with the final E. coli limitations by April 30, 2022 and the permittee is not required to comply with subsequent milestones identified below in this compliance schedule (‘Submit Facility Plan’, 'Final Plans and Specifications', 'Treatment Plant Upgrade to Meet Limitations', ‘Construction Upgrade Progress Report’, 'Complete Construction', 'Achieve Compliance'). FACILITY PLAN - If the Operational Evaluation Report concludes that operational improvements alone are not expected to result in compliance with the final E. coli limitations, the permittee shall initiate development of a facility plan for meeting final E. coli limitations and comply with the remaining required actions in this schedule of compliance. If the Department disagrees with the conclusion of the report, and determines that the permittee can achieve final E. coli limitations using the existing treatment system with only operational improvements, the Department may reopen and modify the permit to include an implementation schedule for achieving the final E. coli limitations sooner than April 30, 2025.	
Achieve Compliance: The permittee shall achieve compliance with final E. coli limitations.	05/01/2022

5.3 Water Quality Trading (WQT) Management Plan

Required Action	Due Date
Complete Installation of Management Practices: Complete the installation of management practices as identified in the Water Quality Management Plan WQT-2022-0006 as approved by the Department.	09/30/2022
Management Practices: The Management Practices as identified in the Water Quality Trading Plan shall become effective and the permittee shall submit a completed Management Practice Registration Form 3400-207 for each site.	09/30/2022

5.4 Annual Water Quality Trading (WQT) Report

Required Action	Due Date
Annual WQT Report: Submit an annual WQT report that shall cover the first year of the permit term. The WQT Report shall include: The number of pollutant reduction credits (lbs/month) used each month of the previous year to demonstrate compliance; The source of each month’s pollutant reduction credits by identifying the approved water quality	01/31/2023

trading plan that details the source; A summary of the annual inspection of each nonpoint source management practice that generated any of the pollutant reduction credits used during the previous year; and Identification of noncompliance or failure to implement any terms or conditions of this permit with respect to water quality trading that have not been reported in discharge monitoring reports.	
Annual WQT Report #2: Submit an annual WQT report that shall cover the previous year.	01/31/2024
Annual WQT Report #3: Submit the 3rd annual WQT report. If the permittee wishes to continue to comply with phosphorus limits through WQT in subsequent permit terms, the permittee shall submit a revised WQT plan including a demonstration of credit need, compliance record of the existing WQT, and any additional practices needed to maintain compliance over time.	01/31/2025
Annual WQT Report Required After Permit Expiration: In the event that this permit is not reissued by the expiration date, the permittee shall continue to submit annual WQT reports by January 31 each year covering the total number of pollutant credits used, the source of the pollution reduction credits, a summary of annual inspection reports performed, and identification of noncompliance or failure to implement any terms or conditions of the approved water quality trading plan for the previous calendar year.	

5.5 Phosphorus Schedule - Optimization Plan

The permittee is required to optimize performance to control phosphorus discharges per the following schedule.

Required Action	Due Date
Optimization Plan: The permittee shall prepare an Optimization Plan and submit it for Department approval. The plan shall include an evaluation of collected effluent data, possible source reduction measures and operational improvements to optimize performance to control phosphorus discharges. The plan shall contain a schedule for implementation of the measures and improvements. Once the plan is approved by the Department, the permittee shall take the steps called for in the Optimization Plan and follow the schedule of implementation as approved.	06/30/2021
Progress Report #1: Submit a progress report on optimizing removal of phosphorus.	06/30/2022

5.6 Phosphorus Payment per Pound to County

The permittee is required to make annual payments for phosphorus reductions to the participating county or counties in accordance with s. 283.16(8), Wis. Stats, and the following schedule. The price per pound will be set at the time of permit reissuance and will apply for the duration of the permit.

Required Action	Due Date
Annual Verification of Phosphorus Payment to County: The permittee shall make a total payment to the participating county or counties approved by the Department by March 1 of each calendar year. The amount due is equal to the following: (lbs of phosphorus discharged minus the permittee's target value) times ($54.23 per pound) or $640,000, whichever is less. See the payment calculation steps in the Surface Water section. The permittee shall submit Form 3200-151 to the Department by March 1 of each calendar year indicating total amount remitted to the participating counties to verify that the correct payment was made. The first payment verification form is due by the specified Due Date. Note: The applicable Target Value is the TMDL derived limit value as defined by s. 283.16(1)(h),	03/01/2021

Wis. Stats. The "per pound" value is $50.00 adjusted for CPI.	
Annual Verification of Payment #2: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2022
Annual Verification of Payment #3: Submit Form 3200-151 to the Department indicating total amount remitted to the participating counties.	03/01/2023

6 Standard Requirements

NR 205, Wisconsin Administrative Code: The conditions in ss. NR 205.07(1) and NR 205.07(2), 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(2).

6.1 Reporting and Monitoring Requirements

6.1.1 Monitoring Results

Monitoring results obtained during the previous month shall be summarized and reported on a Department Wastewater Discharge Monitoring Report. The report may require reporting of any or all of the information specified below under 'Recording of Results'. This report is to be returned to the Department no later than the date indicated on the form. A copy of the Wastewater Discharge Monitoring Report Form or an electronic file of the report shall be retained by the permittee.

Monitoring results shall be reported on an electronic discharge monitoring report (eDMR). The eDMR shall be certified electronically by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The 'eReport Certify' page certifies that the electronic report form is true, accurate and complete.

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.

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.

6.1.2 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 permit.

6.1.3 Pretreatment Sampling Requirements

Sampling for pretreatment parameters (cadmium, chromium, copper, lead, nickel, zinc, and mercury) shall be done during a day each month when industrial discharges are occurring at normal to maximum levels. The sampling of the influent and effluent for these parameters shall be coordinated. All 24 hour composite samples shall be flow proportional.

6.1.4 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.

6.1.5 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 purposes of calculating NR 101 fees, the 2 mg/l lower reporting limits for BOD_5 and Total Suspended Solids shall be considered to be limits of quantitation

- For the purposes of reporting a calculated result, 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. 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.

6.1.6 Compliance Maintenance Annual Reports

Compliance Maintenance Annual Reports (CMAR) shall be completed using information obtained over each calendar year regarding the wastewater conveyance and treatment system. The CMAR shall be submitted and certified by the permittee in accordance with ch. NR 208, Wis. Adm. Code, by June 30, each year on an electronic report form provided by the Department.

In the case of a publicly owned treatment works, a resolution shall be passed by the governing body and submitted as part of the CMAR, verifying its review of the report and providing responses as required. Private owners of wastewater treatment works are not required to pass a resolution; but they must provide an Owner Statement and responses as required, as part of the CMAR submittal.

The CMAR shall be certified electronically by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The certification verifies that the electronic report is true, accurate and complete.

6.1.7 Records Retention

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings or electronic data records 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. All pertinent sludge information, including permit application information and other documents specified in this permit or s. NR 204.06(9), Wis. Adm. Code shall be retained for a minimum of 5 years.

6.1.8 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.

6.1.9 Reporting Requirements – Alterations or Additions

The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is only required when:

- The alteration or addition to the permitted facility may meet one of the criteria for determining whether a facility is a new source.
- The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification requirement applies to pollutants which are not subject to effluent limitations in the existing permit.
- The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use of disposal sites not reported during the permit application process nor reported pursuant to an approved land application plan. Additional sites may not be used for the land application of sludge until department approval is received.

6.2 System Operating Requirements

6.2.1 Noncompliance Reporting

Sanitary sewer overflows and sewage treatment facility overflows shall be reported according to the 'Sanitary Sewer Overflows and Sewage Treatment Facility Overflows' section of this permit.

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 a 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, either for effluent or sludge.

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.

A scheduled bypass approved by the Department under the 'Scheduled Bypass' section of this permit shall not be subject to the reporting required under this section.

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 permit. **The discharge of a hazardous substance that is not authorized by this permit or that violates this permit may be a hazardous substance spill**. **To report a hazardous substance spill, call DNR's 24-hour HOTLINE at 1-800-943-0003.**

6.2.2 Flow Meters

Flow meters shall be calibrated annually, as per s. NR 218.06, Wis. Adm. Code.

6.2.3 Raw Grit and Screenings

All raw grit and screenings shall be disposed of at a properly licensed solid waste facility or picked up by a licensed waste hauler. If the facility or hauler are located in Wisconsin, then they shall be licensed under chs. NR 500-555, Wis. Adm. Code.

6.2.4 Sludge Management

All sludge management activities shall be conducted in compliance with ch. NR 204 "Domestic Sewage Sludge Management", Wis. Adm. Code.

6.2.5 Prohibited Wastes

Under no circumstances may the introduction of wastes prohibited by s. NR 211.10, Wis. Adm. Code, be allowed into the waste treatment system. Prohibited wastes include those:

- which create a fire or explosion hazard in the treatment work;
- which will cause corrosive structural damage to the treatment work;
- solid or viscous substances in amounts which cause obstructions to the flow in sewers or interference with the proper operation of the treatment work;
- wastewaters at a flow rate or pollutant loading which are excessive over relatively short time periods so as to cause a loss of treatment efficiency; and
- changes in discharge volume or composition from contributing industries which overload the treatment works or cause a loss of treatment efficiency.

6.2.6 Bypass

This condition applies only to bypassing at a sewage treatment facility that is not a scheduled bypass, approved blending as a specific condition of this permit, a sewage treatment facility overflow or a controlled diversion as provided in the sections titled ‘Scheduled Bypass’, ‘Blending’ (if approved), ‘SSO’s and Sewage Treatment Facility Overflows’ and ‘Controlled Diversions’ of this permit. Any other bypass at the sewage treatment facility is prohibited and the Department may take enforcement action against a permittee for such occurrences under s. 283.89, Wis. Stats. The Department may approve a bypass if the permittee demonstrates all the following conditions apply:

- 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 or adequate back-up equipment, retention of untreated wastes, reduction of inflow and infiltration, 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 preventative maintenance. When evaluating feasibility of alternatives, the department may consider factors such as technical achievability, costs and affordability of implementation and risks to public health, the environment and, where the permittee is a municipality, the welfare of the community served; and
- The bypass was reported in accordance with the Noncompliance Reporting section of this permit.

6.2.7 Scheduled Bypass

Whenever the permittee anticipates the need to bypass for purposes of efficient operations and maintenance and the permittee may not meet the conditions for controlled diversions in the ‘Controlled Diversions’ section of this permit,

the permittee shall obtain prior written approval from the Department for the scheduled bypass. A permittee's written request for Department approval of a scheduled bypass shall demonstrate that the conditions for bypassing specified in the above section titled 'Bypass' are met and include the proposed date and reason for the bypass, estimated volume and duration of the bypass, alternatives to bypassing and measures to mitigate environmental harm caused by the bypass. The department may require the permittee to provide public notification for a scheduled bypass if it is determined there is significant public interest in the proposed action and may recommend mitigation measures to minimize the impact of such bypass.

6.2.8 Controlled Diversions

Controlled diversions are allowed only when necessary for essential maintenance to assure efficient operation. Sewage treatment facilities that have multiple treatment units to treat variable or seasonal loading conditions may shut down redundant treatment units when necessary for efficient operation. The following requirements shall be met during controlled diversions:

- Effluent from the sewage treatment facility shall meet the effluent limitations established in the permit. Wastewater that is diverted around a treatment unit or treatment process during a controlled diversion shall be recombined with wastewater that is not diverted prior to the effluent sampling location and prior to effluent discharge;
- A controlled diversion does not include blending as defined in s. NR 210.03(2e), Wis. Adm. Code, and as may only be approved under s. NR 210.12. A controlled diversion may not occur during periods of excessive flow or other abnormal wastewater characteristics;
- A controlled diversion may not result in a wastewater treatment facility overflow; and
- All instances of controlled diversions shall be documented in sewage treatment facility records and such records shall be available to the department on request.

6.2.9 Blending

The Department has determined that blending as defined in s. NR 210.03(2e), Wis. Adm. Code, may occur at this sewage treatment facility. The following requirements shall apply whenever blending operations are in effect:

- Blending may occur temporarily only during wet weather or other high flow conditions when peak wastewater flow to the sewage treatment facility exceeds the maximum design and operating capacity of the biological treatment processes and when necessary to avoid severe property damage to the sewage treatment facility as described in NR 210.12 (2) (a), Wis. Adm. Code.;
- Untreated, or partially treated wastewater that is routed around the biological treatment process, or a portion of a biological treatment process, shall be recombined with the biologically treated wastewater and the combined flow shall be disinfected, if required by this permit, prior to discharge;
- Effluent from the sewage treatment facility shall be monitored to include all wastewater that is discharged from the facility, including those wastewaters that are diverted around the biological treatment process and shall meet the effluent limitations for Outfall 001 included in this permit; and
- Blending under this section and the circumstances that lead to blending shall be reported to the Department by telephone, fax or email no later than 24 hours from the time each blending operation ceases at the sewage treatment facility. Permittees shall also report the time, duration and volume of wastewater routed around the biological treatment process on the wastewater Discharge Monitoring Report (DMR) forms.

6.2.10 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. 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.

6.2.11 Operator Certification

The wastewater treatment facility shall be under the direct supervision of a state certified operator. In accordance with s. NR 114.53, Wis. Adm. Code, every WPDES permitted treatment plant shall have a designated operator-in-charge holding a current and valid certificate. The designated operator-in-charge shall be certified at the level and in all subclasses of the treatment plant, except laboratory. Treatment plant owners shall notify the department of any changes in the operator-in-charge within 30 days. Note that s. NR 114.52(22), Wis. Adm. Code, lists types of facilities that are excluded from operator certification requirements (i.e. private sewage systems, pretreatment facilities discharging to public sewers, industrial wastewater treatment that consists solely of land disposal, agricultural digesters and concentrated aquatic production facilities with no biological treatment).

6.3 Sewage Collection Systems

6.3.1 Sanitary Sewage Overflows and Sewage Treatment Facility Overflows

6.3.1.1 Overflows Prohibited

Any overflow or discharge of wastewater from the sewage collection system or at the sewage treatment facility, other than from permitted outfalls, is prohibited. The permittee shall provide information on whether any of the following conditions existed when an overflow occurred:

- The sanitary sewer overflow or sewage treatment facility overflow was unavoidable to prevent loss of life, personal injury or severe property damage;
- There were no feasible alternatives to the sanitary sewer overflow or sewage treatment facility overflow such as the use of auxiliary treatment facilities or adequate back-up equipment, retention of untreated wastes, reduction of inflow and infiltration, or preventative maintenance activities;
- The sanitary sewer overflow or the sewage treatment facility overflow was caused by unusual or severe weather related conditions such as large or successive precipitation events, snowmelt, saturated soil conditions, or severe weather occurring in the area served by the sewage collection system or sewage treatment facility; and
- The sanitary sewer overflow or the sewage treatment facility overflow was unintentional, temporary, and caused by an accident or other factors beyond the reasonable control of the permittee.

6.3.1.2 Permittee Response to Overflows

Whenever a sanitary sewer overflow or sewage treatment facility overflow occurs, the permittee shall take all feasible steps to control or limit the volume of untreated or partially treated wastewater discharged, and terminate the discharge as soon as practicable. Remedial actions, including those in NR 210.21 (3), Wis. Adm. Code, shall be implemented consistent with an emergency response plan developed under the CMOM program.

6.3.1.3 Permittee Reporting

Permittees shall report all sanitary sewer overflows and sewage treatment overflows as follows:

- The permittee shall notify the department by telephone, fax or email as soon as practicable, but no later than 24 hours from the time the permittee becomes aware of the overflow;
- The permittee shall, no later than five days from the time the permittee becomes aware of the overflow, provide to the department the information identified in this paragraph using department form number 3400-184. If an overflow lasts for more than five days, an initial report shall be submitted within 5 days as required in this paragraph and an updated report submitted following cessation of the overflow. At a minimum, the following information shall be included in the report:

◦The date and location of the overflow;
◦The surface water to which the discharge occurred, if any;
◦The duration of the overflow and an estimate of the volume of the overflow;
◦A description of the sewer system or treatment facility component from which the discharge occurred such as manhole, lift station, constructed overflow pipe, or crack or other opening in a pipe;
◦The estimated date and time when the overflow began and stopped or will be stopped;
◦The cause or suspected cause of the overflow including, if appropriate, precipitation, runoff conditions, areas of flooding, soil moisture and other relevant information;
◦Steps taken or planned to reduce, eliminate and prevent reoccurrence of the overflow and a schedule of major milestones for those steps;
◦A description of the actual or potential for human exposure and contact with the wastewater from the overflow;
◦Steps taken or planned to mitigate the impacts of the overflow and a schedule of major milestones for those steps;
◦To the extent known at the time of reporting, the number and location of building backups caused by excessive flow or other hydraulic constraints in the sewage collection system that occurred concurrently with the sanitary sewer overflow and that were within the same area of the sewage collection system as the sanitary sewer overflow; and
◦The reason the overflow occurred or explanation of other contributing circumstances that resulted in the overflow event. This includes any information available including whether the overflow was unavoidable to prevent loss of life, personal injury, or severe property damage and whether there were feasible alternatives to the overflow.

NOTE: A copy of form 3400-184 for reporting sanitary sewer overflows and sewage treatment facility overflows may be obtained from the department or accessed on the department's web site at http://dnr.wi.gov/topic/wastewater/SSOreport.html. As indicated on the form, additional information may be submitted to supplement the information required by the form.

- The permittee shall identify each specific location and each day on which a sanitary sewer overflow or sewage treatment facility overflow occurs as a discrete sanitary sewer overflow or sewage treatment facility overflow occurrence. An occurrence may be more than one day if the circumstances causing the sanitary sewer overflow or sewage treatment facility overflow results in a discharge duration of greater than 24 hours. If there is a stop and restart of the overflow at the same location within 24 hours and the overflow is caused by the same circumstance, it may be reported as one occurrence. Sanitary sewer overflow occurrences at a specific location that are separated by more than 24 hours shall be reported as separate occurrences; and
- A permittee that is required to submit wastewater discharge monitoring reports under NR 205.07 (1) (r) shall also report all sanitary sewer overflows and sewage treatment facility overflows on that report.

6.3.1.4 Public Notification

The permittee shall notify the public of any sanitary sewer and sewage treatment facility overflows consistent with its emergency response plan required under the CMOM (Capacity, Management, Operation and Maintenance) section of this permit and s. NR 210.23 (4) (f), Wis. Adm. Code. Such public notification shall occur promptly following any overflow event using the most effective and efficient communications available in the community. At minimum, a daily newspaper of general circulation in the county(s) and municipality whose waters may be affected by the overflow shall be notified by written or electronic communication.

6.3.2 Capacity, Management, Operation and Maintenance (CMOM) Program

- The permittee shall have written documentation of the Capacity, Management, Operation and Maintenance (CMOM) program components in accordance with s. NR 210.23(4), Wis. Adm. Code. Such documentation shall be available for Department review upon request. The Department may request that the permittee provide this documentation or prepare a summary of the permittee's CMOM program at the time of application for reissuance of the WPDES permit.
- The permittee shall implement a CMOM program in accordance with s. NR 210.23, Wis. Adm. Code.
- The permittee shall at least annually conduct a self-audit of activities conducted under the permittee's CMOM program to ensure CMOM components are being implemented as necessary to meet the general standards of s. NR 210.23(3), Wis. Adm. Code.

6.3.3 Sewer Cleaning Debris and Materials

All debris and material removed from cleaning sanitary sewers shall be managed to prevent nuisances, run-off, ground infiltration or prohibited discharges.

- Debris and solid waste shall be dewatered, dried and then disposed of at a licensed solid waste facility.
- Liquid waste from the cleaning and dewatering operations shall be collected and disposed of at a permitted wastewater treatment facility.
- Combination waste including liquid waste along with debris and solid waste may be disposed of at a licensed solid waste facility or wastewater treatment facility willing to accept the waste.

6.4 Surface Water Requirements

6.4.1 Permittee-Determined Limit of Quantitation Incorporated into this Permit

For pollutants with water quality-based effluent limits below the Limit of Quantitation (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.

6.4.2 Appropriate Formulas for Effluent Calculations

The permittee shall use the following formulas for calculating effluent results to determine compliance with average concentration limits and mass limits and total load limits:

Weekly/Monthly/Six-Month/Annual Average Concentration = the sum of all daily results for that week/month/six-month/year, divided by the number of results during that time period. [Note: When a six-month average effluent limit is specified for Total Phosphorus the applicable periods are May through October and November through April.]

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.

Six-Month 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 six-month period. [Note: When a six-month average effluent limit is specified for Total Phosphorus the applicable periods are May through October and November through April.]

Annual 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 entire year.

Total Monthly Discharge: = monthly average concentration (mg/L) x total flow for the month (MG/month) x 8.34.

Total Annual Discharge: = sum of total monthly discharges for the calendar year.

12-Month Rolling Sum of Total Monthly Discharge: = the sum of the most recent 12 consecutive months of Total Monthly Discharges.

6.4.3 Effluent Temperature Requirements

Weekly Average Temperature – The permittee shall use the following formula for calculating effluent results to determine compliance with the weekly average temperature limit (as applicable): Weekly Average Temperature = the sum of all daily maximum results for that week divided by the number of daily maximum results during that time period.

Cold Shock Standard – Water temperatures of the discharge shall be controlled in a manner as to protect fish and aquatic life uses from the deleterious effects of cold shock. 'Cold Shock' means exposure of aquatic organisms to a rapid decrease in temperature and a sustained exposure to low temperature that induces abnormal behavior or physiological performance and may lead to death.

Rate of Temperature Change Standard – Temperature of a water of the state or discharge to a water of the state may not be artificially raised or lowered at such a rate that it causes detrimental health or reproductive effects to fish or aquatic life of the water of the state.

6.4.4 Visible Foam or Floating Solids

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

6.4.5 Surface Water Uses and Criteria

In accordance with NR 102.04, Wis. Adm. Code, surface water uses and criteria are established to govern water management decisions. Practices attributable to municipal, industrial, commercial, domestic, agricultural, land development or other activities shall be controlled so that all surface waters including the mixing zone meet the following conditions at all times and under all flow and water level conditions:

a) Substances that will cause objectionable deposits on the shore or in the bed of a body of water, shall not be present in such amounts as to interfere with public rights in waters of the state.

b) Floating or submerged debris, oil, scum or other material shall not be present in such amounts as to interfere with public rights in waters of the state.

c) Materials producing color, odor, taste or unsightliness shall not be present in such amounts as to interfere with public rights in waters of the state.

d) Substances in concentrations or in combinations which are toxic or harmful to humans shall not be present in amounts found to be of public health significance, nor shall substances be present in amounts which are acutely harmful to animal, plant or aquatic life.

6.4.6 Percent Removal

During any 30 consecutive days, the average effluent concentrations of BOD_5 and of total suspended solids shall not exceed 15% of the average influent concentrations, respectively. This requirement does not apply to removal of total suspended solids if the permittee operates a lagoon system and has received a variance for suspended solids granted under NR 210.07(2), Wis. Adm. Code.

6.4.7 Fecal Coliform

The monthly limit for fecal coliform shall be expressed as a geometric mean. In calculating the geometric mean, a value of 1 is used for any result of 0.

6.4.8 *E. coli*

The monthly limit for *E. coli* shall be expressed as a geometric mean. In calculating the geometric mean, a value of 1 is used for any result of 0.

6.4.9 Seasonal Disinfection

Disinfection shall be provided from May 1 through September 30 of each year. Monitoring requirements and the limitations for Fecal Coliform (interim) and *E. coli* apply only during the period in which disinfection is required. Whenever chlorine is used for disinfection or other uses, the limitations and monitoring requirements for residual chlorine shall apply. A dechlorination process shall be in operation whenever chlorine is used.

6.4.10 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, 2nd 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 permit, 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 permittee's mixing zone and every attempt shall be made to avoid contact with any other discharge's mixing zone.

6.4.11 Whole Effluent Toxicity (WET) Identification and Reduction

Within 60 days of a retest which showed positive results, the permittee shall submit a written report to the Biomonitoring Coordinator, Bureau of Water Quality, 101 S. Webster St., PO Box 7921, Madison, WI 53707-7921, which details the following:

- A description of actions the permittee has taken or will take to remove toxicity and to prevent the recurrence of toxicity;

- A description of toxicity reduction evaluation (TRE) investigations that have been or will be done to identify potential sources of toxicity, including some or all of the following actions:

  (a) Evaluate the performance of the treatment system to identify deficiencies contributing to effluent toxicity (e.g., operational problems, chemical additives, incomplete treatment)
  (b) Identify the compound(s) causing toxicity
  (c) Trace the compound(s) causing toxicity to their sources (e.g., industrial, commercial, domestic)
  (d) Evaluate, select, and implement methods or technologies to control effluent toxicity (e.g., in-plant or pretreatment controls, source reduction or removal)

- Where corrective actions including a TRE have not been completed, an expeditious schedule under which corrective actions will be implemented;

- If no actions have been taken, the reason for not taking action.

The permittee may also request approval from the Department to postpone additional retests in order to investigate the source(s) of toxicity. Postponed retests must be completed after toxicity is believed to have been removed.

6.4.12 Reopener Clause

Pursuant to s. 283.15(11), Wis. Stat. and 40 CFR 131.20, the Department may modify or revoke and reissue this permit if, through the triennial standard review process, the Department determines that the terms and conditions of this permit need to be updated to reflect the highest attainable condition of the receiving water.

6.5 Pretreatment Program Requirements

The permittee is required to operate an industrial pretreatment program as described in the program initially approved by the Department of Natural Resources including any subsequent program modifications approved by the Department, and including commitments to program implementation activities provided in the permittee's annual pretreatment program report, and that complies with the requirements set forth in 40 CFR Part 403 and ch. NR 211, Wis. Adm. Code. To ensure that the program is operated in accordance with these requirements, the following general conditions and requirements are hereby established:

6.5.1 Inventories

The permittee shall implement methods to maintain a current inventory of the general character and volume of wastewater that industrial users discharge to the treatment works and shall provide an updated industrial user listing annually and report any changes in the listing to the Department by March 31 of each year as part of the annual pretreatment program report required herein.

6.5.2 Regulation of Industrial Users

6.5.2.1 Limitations for Industrial Users:

The permittee shall develop, maintain, enforce and revise as necessary local limits to implement the general and specific prohibitions of the state and federal General Pretreatment Regulations.

6.5.2.2 Control Documents for Industrial Users (IUs)

The permittee shall control the discharge from each significant industrial user through individual discharge permits as required by s. NR 211.235, Wis. Adm. Code and in accordance with the approved pretreatment program procedures and the permittee's sewer use ordinance. The discharge permits shall be modified in a timely manner during the stated term of the discharge permits according to the sewer use ordinance as conditions warrant. The discharge permits shall include at a minimum the elements found in s. NR 211.235(1), Wis. Adm. Code and references to the approved pretreatment program procedures and the sewer use ordinance.

6.5.2.3 Review of Industrial User Reports, Inspections and Compliance Monitoring

The permittee shall require the submission of, receive, and review self-monitoring reports and other notices from industrial users in accordance with the approved pretreatment program procedures. The permittee shall randomly sample and analyze industrial user discharges and conduct surveillance activities to determine independent of information supplied by the industrial users, whether the industrial users are in compliance with pretreatment standards and requirements. The inspections and monitoring shall also be conducted to maintain accurate knowledge of local industrial processes, including changes in the discharge, pretreatment equipment operation, spill prevention control plans, slug control plans, and implementation of solvent management plans.

The permittee shall inspect and sample the discharge from each significant industrial user as specified in the permittee's approved pretreatment program or as specified in NR 211.235(3). The permittee shall evaluate whether industrial users identified as significant need a slug control plan according to the requirements of NR 211.235(4). If a slug control plan is needed, the plan shall contain at a minimum the elements specified in s. NR 211.235(4)(b), Wis. Adm. Code.

6.5.2.4 Enforcement and Industrial User Compliance Evaluation & Violation Reports

The permittee shall enforce the industrial pretreatment requirements including the industrial user discharge limitations of the permittee's sewer use ordinance. The permittee shall investigate instances of noncompliance by collecting and analyzing samples and collecting other information with sufficient care to produce evidence admissible in enforcement proceedings or in judicial actions. Investigation and response to instances of noncompliance shall be in accordance with the permittee's sewer use ordinance and approved Enforcement Response Plan.

The permittee shall make a semiannual report on forms provided or approved by the Department. The semiannual report shall include an analysis of industrial user significant noncompliance (i.e. the Industrial User Compliance Evaluation, also known as the SNC Analysis) as outlined in s.NR 211.23(1)(j), Wis. Adm. Code, and a summary of the permittee's response to all industrial noncompliance (i.e. the Industrial User Violation Report). The Industrial User Compliance Evaluation Report shall include monitoring results received from industrial users pursuant to s. NR 211.15(1)-(5), Wis. Adm. Code. The Industrial User Violation Report shall include copies of all notices of noncompliance, notices of violation and other enforcement correspondence sent by the permittee to industrial users, together with the industrial user's response. The Industrial User Compliance Evaluation and Violation Reports for the period January through June shall be provided to the Department by September 30 of each year and for the period July through December shall be provided to the Department by March 31 of the succeeding year, unless alternate submittal dates are approved.

6.5.2.5 Publication of Violations

The permittee shall publish a list of industrial users that have significantly violated the municipal sewer use ordinance during the calendar year, in the largest daily newspaper in the area by March 31 of the following year pursuant to s. NR 211.23(1)(j), Wis. Adm. Code. A copy of the newspaper publication shall be provided as part of the annual pretreatment report specified herein.

6.5.2.6 Multijurisdictional Agreements

The permittee shall establish agreements with all contributing jurisdictions as necessary to ensure compliance with pretreatment standards and requirements by all industrial users discharging to the permittee's wastewater treatment system. Any such agreement shall identify who will be responsible for maintaining the industrial user inventory, issuance of industrial user control mechanisms, inspections and sampling, pretreatment program implementation, and enforcement.

6.5.3 Annual Pretreatment Program Report

The permittee shall evaluate the pretreatment program, and submit the Pretreatment Program Report to the Department on forms provided or approved by the Department by March 31 annually, unless an alternate submittal date is approved. The report shall include a brief summary of the work performed during the preceding calendar year, including the numbers of discharge permits issued and in effect, pollution prevention activities, number of inspections and monitoring surveys conducted, budget and personnel assigned to the program, a general discussion of program progress in meeting the objectives of the permittee's pretreatment program together with summary comments and recommendations.

6.5.4 Pretreatment Program Modifications

- Future Modifications: The permittee shall within one year of any revisions to federal or state General Pretreatment Regulations submit an application to the Department in duplicate to modify and update its approved pretreatment program to incorporate such regulatory changes as applicable to the permittee. Additionally, the Department or the permittee may request an application for program modification at any time where necessary to improve program effectiveness based on program experience to date.

- Modifications Subject to Department Approval: The permittee shall submit all proposed pretreatment program modifications to the Department for determination of significance and opportunity for comment in accordance with the requirements and conditions of s. NR 211.27, Wis. Adm. Code. Any substantial proposed program modification shall be subject to Department public noticing and formal approval prior to implementation. A substantial program modification includes, but is not limited to, changes in enabling legal authority to administer and enforce pretreatment conditions and requirements; significant changes in program administrative or operational procedures; significant reductions in monitoring frequencies; significant reductions in program resources including personnel commitments, equipment, and funding levels; changes (including any relaxation) in the local limitations for substances enforced and applied to users of the sewerage treatment works; changes in treatment works sludge disposal or management practices which impact the pretreatment program; or program modifications which increase pollutant loadings to the treatment works. The Department shall use the procedures outlined in s. NR 211.30, Wis. Adm. Code for review and approval/denial of proposed pretreatment program modifications. The permittee shall comply with local public participation requirements when implementing the pretreatment program.

6.5.5 Program Resources

The permittee shall have sufficient resources and qualified personnel to carry out the pretreatment program responsibilities as listed in ss. NR 211.22 and NR 211.23, Wis. Adm. Code.

6.6 Land Application Requirements

6.6.1 Sludge Management Program Standards And Requirements Based Upon Federally Promulgated Regulations

In the event that new federal sludge standards or regulations are promulgated, the permittee shall comply with the new sludge requirements by the dates established in the regulations, if required by federal law, even if the permit has not yet been modified to incorporate the new federal regulations.

6.6.2 General Sludge Management Information

The General Sludge Management Form 3400-48 shall be completed and submitted prior to any significant sludge management changes.

6.6.3 Sludge Samples

All sludge samples shall be collected at a point and in a manner which will yield sample results which are representative of the sludge being tested, and collected at the time which is appropriate for the specific test.

6.6.4 Land Application Characteristic Report

Each report shall consist of a Characteristic Form 3400-49 and Lab Report. The Characteristic Report Form 3400-49 shall be submitted electronically by January 31 following each year of analysis.

Following submittal of the electronic Characteristic Report Form 3400-49, this form shall be certified electronically via the ‘eReport Certify’ page by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The ‘eReport Certify’ page certifies that the electronic report is true, accurate and complete. The Lab Report must be sent directly to the facility’s DNR sludge representative or basin engineer unless approval for not submitting the lab reports has been given.

The permittee shall use the following convention when reporting sludge 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 1.0 mg/kg, report the pollutant concentration as < 1.0 mg/kg .

All results shall be reported on a dry weight basis.

6.6.5 Calculation of Water Extractable Phosphorus

When sludge analysis for Water Extractable Phosphorus is required by this permit, the permittee shall use the following formula to calculate and report Water Extractable Phosphorus:
Water Extractable Phosphorus (% of Total P) =
[Water Extractable Phosphorus (mg/kg, dry wt) ÷ Total Phosphorus (mg/kg, dry wt)] x 100

6.6.6 Monitoring and Calculating PCB Concentrations in Sludge

When sludge analysis for "PCB, Total Dry Wt" is required by this permit, the PCB concentration in the sludge shall be determined as follows.

Either congener-specific analysis or Aroclor analysis shall be used to determine the PCB concentration. The permittee may determine whether Aroclor or congener specific analysis is performed. Analyses shall be performed in accordance with the following provisions and Table EM in s. NR 219.04, Wis. Adm. Code.

- EPA Method 1668 may be used to test for all PCB congeners. If this method is employed, all PCB congeners shall be delineated. Non-detects shall be treated as zero. The values that are between the limit of detection and the limit of quantitation shall be used when calculating the total value of all congeners. All results shall be added together and the total PCB concentration by dry weight reported. **Note**: It is recognized that a number of the congeners will co-elute with others, so there will not be 209 results to sum.
- EPA Method 8082A shall be used for PCB-Aroclor analysis and may be used for congener specific analysis as well. If congener specific analysis is performed using Method 8082A, the list of congeners tested shall include at least congener numbers 5, 18, 31, 44, 52, 66, 87, 101, 110, 138, 141, 151, 153, 170, 180, 183, 187, and 206 plus any other additional congeners which might be reasonably expected to occur in the particular sample. For either type of analysis, the sample shall be extracted using the Soxhlet extraction (EPA Method 3540C) (or the Soxhlet Dean-Stark modification) or the pressurized fluid extraction (EPA Method 3545A). If Aroclor analysis is performed using Method 8082A, clean up steps of the extract shall be performed as necessary to remove interference and to achieve as close to a limit of detection of 0.11 mg/kg as possible. Reporting protocol, consistent with s. NR 106.07(6)(e), should be as follows: If all Aroclors are less than the LOD, then the Total PCB Dry Wt result should be reported as less than the highest LOD. If a single Aroclor is detected then that is what should be reported for the Total PCB result. If multiple Aroclors are detected, they should be summed and reported as Total PCBs. If congener specific analysis is done using Method 8082A, clean up steps of the extract shall be performed as necessary to remove interference and to achieve as close to a limit of detection of 0.003 mg/kg as possible for each congener. If the aforementioned limits of detection cannot be achieved after using the appropriate clean up techniques, a reporting limit that is achievable for the Aroclors or each congener for the sample shall be determined. This reporting limit shall be reported and qualified indicating the presence of an interference. The lab conducting the analysis shall perform as many of the following methods as necessary to remove interference:

3620C – Florisil	3611B - Alumina
3640A - Gel Permeation	3660B - Sulfur Clean Up (using copper shot instead of powder)
3630C - Silica Gel	3665A - Sulfuric Acid Clean Up

6.6.7 Annual Land Application Report

Land Application Report Form 3400-55 shall be submitted electronically by January 31, each year whether or not non-exceptional quality sludge is land applied. Non-exceptional quality sludge is defined in s. NR 204.07(4), Wis. Adm. Code. Following submittal of the electronic Annual Land Application Report Form 3400-55, this form shall be certified electronically via the 'eReport Certify' page by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The 'eReport Certify' page certifies that the electronic report form is true, accurate and complete.

6.6.8 Other Methods of Disposal or Distribution Report

The permittee shall submit electronically the Other Methods of Disposal or Distribution Report Form 3400-52 by January 31, each year whether or not sludge is hauled, landfilled, incinerated, or exceptional quality sludge is distributed or land applied. Following submittal of the electronic Report Form 3400-52, this form shall be certified electronically via the 'eReport Certify' page by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The 'eReport Certify' page certifies that the electronic report form is true, accurate and complete.

6.6.9 Approval to Land Apply

Bulk non-exceptional quality sludge as defined in s. NR 204.07(4), Wis. Adm. Code, may not be applied to land without a written approval letter or Form 3400-122 from the Department unless the Permittee has obtained permission from the Department to self approve sites in accordance with s. NR 204.06 (6), Wis. Adm. Code. Analysis of sludge characteristics is required prior to land application. Application on frozen or snow covered ground is restricted to the extent specified in s. NR 204.07(3) (l), Wis. Adm. Code.

6.6.10 Soil Analysis Requirements

Each site requested for approval for land application must have the soil tested prior to use. Each approved site used for land application must subsequently be soil tested such that there is at least one valid soil test in the four years prior to land application. All soil sampling and submittal of information to the testing laboratory shall be done in accordance with UW Extension Bulletin A-2100. The testing shall be done by the UW Soils Lab in Madison or Marshfield, WI or at a lab approved by UW. The test results including the crop recommendations shall be submitted to the DNR contact listed for this permit, as they are available. Application rates shall be determined based on the crop nitrogen recommendations and with consideration for other sources of nitrogen applied to the site.

6.6.11 Land Application Site Evaluation

For non-exceptional quality sludge, as defined in s. NR 204.07(4), Wis. Adm. Code, a Land Application Site Request Form 3400-053 shall be submitted to the Department for the proposed land application site. The Department will evaluate the proposed site for acceptability and will either approve or deny use of the proposed site. The permittee may obtain permission to approve their own sites in accordance with s. NR 204.06(6), Wis. Adm. Code.

6.6.12 Class B Sludge: Fecal Coliform Limitation

Compliance with the fecal coliform limitation for Class B sludge shall be demonstrated by calculating the geometric mean of at least 7 separate samples. (Note that a Total Solids analysis must be done on each sample). The geometric mean shall be less than 2,000,000 MPN or CFU/g TS. Calculation of the geometric mean can be done using one of the following 2 methods.

Method 1:

Geometric Mean = $(X_1 \times X_2 \times X_3 \ldots \times X_n)^{1/n}$

Where X = Coliform Density value of the sludge sample, and where n = number of samples (at least 7)

Method 2:
Geometric Mean = antilog[(X_1 + X_2 + X_3 …+ X_n) ÷ n]
Where X = $\log_{10}$ of Coliform Density value of the sludge sample, and where n = number of samples (at least 7)
Example for Method 2

Sample Number	Coliform Density of Sludge Sample	$\log_{10}$
1	6.0×10^5	5.78
2	4.2×10^6	6.62
3	1.6×10^6	6.20
4	9.0×10^5	5.95
5	4.0×10^5	5.60
6	1.0×10^6	6.00
7	5.1×10^5	5.71

The geometric mean for the seven samples is determined by averaging the $\log_{10}$ values of the coliform density and taking the antilog of that value.
(5.78 + 6.62 + 6.20 + 5.95 + 5.60 + 6.00 + 5.71) ÷ 7 = 5.98
The antilog of 5.98 = 9.5×10^5

6.6.13 Class B Sludge: Anaerobic Digestion

Treat the sludge in the absence of air for a specific mean cell residence time at a specific temperature. Values for the mean cell residence time and temperature shall be between 15 days at 35° C to 55° C and 60 days at 20° C. Straight-line interpolation to calculate mean cell residence time is allowable when the temperature falls between 35° C and 20° C.

6.6.14 Vector Control: Volatile Solids Reduction

The mass of volatile solids in the sludge shall be reduced by a minimum of 38% between the time the sludge enters the digestion process and the time it either exits the digester or a storage facility. For calculation of volatile solids reduction, the permittee shall use the Van Kleeck equation or one of the other methods described in "Determination of Volatile Solids Reduction in Digestion" by J.B. Farrell, which is Appendix C of EPA's *Control of Pathogens in Municipal Wastewater Sludge* (EPA/625/R-92/013). The Van Kleeck equation is:

$$VSR\% = \frac{VS_{IN} - VS_{OUT}}{VS_{IN} - (VS_{OUT} \times VS_{IN})} \times 100$$

Where: VS_{IN} = Volatile Solids in Feed Sludge (g VS/g TS)

VS_{OUT} = Volatile Solids in Final Sludge (g VS/g TS)

VSR% = Volatile Solids Reduction, (Percent)

6.6.15 Class B Sludge - Vector Control: Incorporation

Class B sludge shall be incorporated within 6 hours of surface application, or as approved by the Department.

6.6.16 Land Application of Sludge Which Contains Elevated Levels of Radium-226

When contributory water supplies exceed 2 pci per liter of Radium 226, monitoring for Radium 226 in sludge is required. Sludge containing Radium 226 shall be land applied in accordance with the requirements in s. NR 204.07(3)(n), Wis. Adm. Code.

7 Summary of Reports Due

FOR INFORMATIONAL PURPOSES ONLY

Description	Date	Page
Mercury Pollutant Minimization Program -Annual Mercury Progress Reports	January 31, 2021	23
Mercury Pollutant Minimization Program -Annual Mercury Progress Report #2	January 31, 2022	23
Mercury Pollutant Minimization Program -Annual Mercury Progress Report #3	January 31, 2023	23
Mercury Pollutant Minimization Program -Annual Mercury Progress Report #4	January 31, 2024	23
Mercury Pollutant Minimization Program -Final Mercury Report	January 31, 2025	23
Mercury Pollutant Minimization Program -Annual Mercury Reports After Permit Expiration	See Permit	23
Effluent Limitations for E. coli (Outfall 001) -Status Update	November 21, 2020	23
Effluent Limitations for E. coli (Outfall 001) -Operational Evaluation Report	October 31, 2021	24
Effluent Limitations for E. coli (Outfall 001) -Achieve Compliance	May 1, 2022	24
Water Quality Trading (WQT) Management Plan -Complete Installation of Management Practices	September 30, 2022	24
Water Quality Trading (WQT) Management Plan -Management Practices	September 30, 2022	24
Annual Water Quality Trading (WQT) Report -Annual WQT Report	January 31, 2023	24
Annual Water Quality Trading (WQT) Report -Annual WQT Report #2	January 31, 2024	25
Annual Water Quality Trading (WQT) Report -Annual WQT Report #3	January 31, 2025	25
Annual Water Quality Trading (WQT) Report -Annual WQT Report Required After Permit Expiration	See Permit	25
Phosphorus Schedule - Optimization Plan -Optimization Plan	June 30, 2021	25
Phosphorus Schedule - Optimization Plan -Progress Report #1	June 30, 2022	25
Phosphorus Payment per Pound to County -Annual Verification of Phosphorus Payment to County	March 1, 2021	25
Phosphorus Payment per Pound to County -Annual Verification of Payment #2	March 1, 2022	26
Phosphorus Payment per Pound to County -Annual Verification of Payment #3	March 1, 2023	26
Compliance Maintenance Annual Reports (CMAR)	by June 30, each year	28
Industrial User Compliance Evaluation and Violation Reports	Semiannual	38
Pretreatment Program Report	Annually	38

General Sludge Management Form 3400-48	prior to any significant sludge management changes	39
Characteristic Form 3400-49 and Lab Report	by January 31 following each year of analysis	39
Land Application Report Form 3400-55	by January 31, each year whether or not non-exceptional quality sludge is land applied	41
Other Methods of Disposal or Distribution Report Form 3400-52	by January 31, each year whether or not sludge is hauled, landfilled, incinerated, or exceptional quality sludge is distributed or land applied	41
Wastewater Discharge Monitoring Report	no later than the date indicated on the form	27

Report forms shall be submitted electronically in accordance with the reporting requirements herein. Any facility plans or plans and specifications for municipal, industrial, industrial pretreatment and non industrial wastewater systems shall be submitted to the Bureau of Water Quality, P.O. Box 7921, Madison, WI 53707-7921. All other submittals required by this permit shall be submitted to:
South Central Region, 3911 Fish Hatchery Road, Fitchburg, WI 53711-5397