Water Quality Trading Plan

Village of Albany
December 2020

Report prepared by

Mead & Hunt

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1. Executive Summary

The Village of Albany (Village) is submitting this Water quality Trading Plan to comply with the phosphorus limit requirements of their Wisconsin Pollution Discharge Elimination System (WPDES) permit. The Village proposes to upgrade the existing wastewater treatment facility (WWTF) with chemical phosphorus precipitation to reduce the effluent phosphorus concentration to 0.8 mg/l. The Village would then enter into agreements with up to four (4) property owners to control land use on their properties to generate phosphorus credits to meet the WPDES permit phosphorus requirements. Over the past five (5) years the Village's WWTF has discharged an average of 602 pounds per year with an average effluent flow of 56,773 gallons per day. At current flow rates and an effluent phosphorus concentration of 0.8 mg/l, the WWTF would discharge 138 pounds per year. The permitted phosphorus discharge at current average flow is 17 pounds per year so121 pounds per year of phosphorus credit is needed. To cover flow variability and future growth, the Village intents to contract for an additional 30% of credits for a total of 157 pounds per year. Upon approval of this Water Quality Trading Report, the Village will conclude their negotiations with the property owners for the necessary phosphorus trades.

2. Introduction

The Village owns and operates a municipal WWTF. The Village's WWTF is authorized to operate by the Wisconsin Department of Resources (WDNR) under its current WPDES permit WI-0021199-0--0. This permit is due to expire June 30, 2020.

The existing WWTF was constructed in 1970 with upgrades in 1995 and 2012. The WWTF is a three-cell stabilization pond system that is operated in a fill and draw mode. Transfer piping between the cells have valves to control flow between the cells. There is a flow control valve and effluent meter located on the outfall to the Sugar River. The outfall is located in HUC 070900040605.

A. Background and Need

The current WPDES permit, effective date July 1, 2015, Item 4.1, Water Quality Based Effluent Limits (WQBELs) for Total Phosphorus, contained a schedule to meet the future final phosphorus limit of 0.1 mg/l, six-month average and 0.3 mg/l monthly average. The current phosphorus limit is 5.0 mg/l which is being met.

Phosphorus data on the WWTF influent and effluent has been being collected for many years. A summary of the WWTF influent and effluent data for 2015 - 2019 is presented in **Appendix A**. The effluent phosphorus concentration ranged from 7.59 – 0.86 mg/l. The annual average effluent flow ranged from 67,624 – 34,863 gallons per day. The annual average effluent phosphorus mass discharge ranged from 903 – 311 pounds per year. The lowest annual average effluent flow rate and phosphorus mass discharge were both reported in 2015. Annual average effluent flow rate and phosphorus mass discharge were relatively consistent in the years 2016-2019.

The Village conducted an Operational Evaluation of the WWTF in 2016 and a Compliance Alternatives, Source Reduction, Improvements and Modifications Status report in 2017. Operational changes and source reduction was determined to not be capable of meeting the effluent limits.

The Village intends to add chemical feed equipment to reduce the effluent phosphorus concentration to 0.8 mg/l. This can be achieved with chemical feed addition only and tertiary treatment will not be required. To achieve

compliance with the 0.1 mg/l limit would require tertiary treatment and probably a lift station to provide the necessary hydraulic gradient.

3. Project and Credit Locations

Three areas near the Village of Albany have been identified as potential significant sources of phosphorus reduction for offsetting costs associated with state phosphorus load restrictions from point sources. The project areas are subdivided into 12 fields totaling 368.4 acres. Fields 1, 2, 10, 11, and 12 comprise the previous 18-holes of the Decatur Lake Golf Course. The former Front 9 of the golf course (fields 10-12) is now known as Three Waters Reserve (TWR). The Back 9 of the golf course are fields 1 and 2. Fields 3-6 encompass an area surrounding the Searles Creek 1.5 miles west of Decatur Lake. Fields 7 and 8 are part of the Riemer Family Farm on Riemer Road approximately 3 miles west of Decatur Lake. Field 9 is within the southwest corner of the Village of Albany. See Figure A in **Appendix B** of this plan for a field location map.

The Village of Albany intends to enter directly into water quality trading agreements with the owners and operators of these fields. The ownership and who operates these fields is presented in **Table 1**.

Table 1. Field Ownership and Operators

Field	Acres	Owner	Operator
1	73.2	Darkar Properties LLP	Riemer Family Farm
2	20.8	Darkar Properties LLP	Riemer Family Farm
3	41.5	Stephen and Cynthia Wallace	Riemer Family Farm
4	27.3	Mauermann Farms LLC	Riemer Family Farm
5	17.9	Mauermann Farms LLC	Riemer Family Farm
6	22.1	Mauermann Farms LLC	Riemer Family Farm
7	36.1	Loren and Kathleen Riemer Revocable Living Trust	Riemer Family Farm
8	33.1	Loren and Kathleen Riemer Revocable Living Trust	Riemer Family Farm
9	46.4	Sugar River Highlands Inc.	Sugar River Highlands Inc.
10	20.7	Southern Wisconsin Land Conservancy Inc.	Southern Wisconsin Land Conservancy Inc.
11	18.6	Southern Wisconsin Land Conservancy Inc.	Southern Wisconsin Land Conservancy Inc.
12	10.7	Southern Wisconsin Land Conservancy Inc.	Southern Wisconsin Land Conservancy Inc.

4. Existing Land Uses

A. Field Land Use Descriptions

Fields 1, 2, 10, 11, and 12 was an 18-hole golf course with highly manicured and fertilized lawns and has been in place since 1926. The golf course has been discontinued and land application of fertilizer has ceased. The Front 9 (Fields 10, 11, and 12) had a cover crop planted in 2018 and is in transition to prairie, savanna, and wetland vegetation for this project. The Back 9 (Fields 1 and 2) has not yet been transitioned from lawn.

Fields 3-9 have historically been and is currently row crop agriculture (corn and bean rotation) with yearly fertilizer applications.

SnapPlus version 18.1 was used to model existing field conditions. The inputs to the model include field characteristics; mainly location (SnapMaps), soil test results, annual fertilizer rates per field (based on actual rates applied and from UW recommended rates provided in SnapPlus), actual crop species and annual rotations, and length of study period. The results of the anticipated phosphorus loss from these fields with current land use are summarized in **Table 2**. The SnapPlus Model files have been provided to the Wisconsin Department of Natural Resources in an email to Sean Spencer from Joe Miller dated July 8, 2020.

Table 2. Annual Phosphorus Loos Prior to Implementing Conservation Practices (Baseline Scenario)

Field No.	Existing Land Use	Existing Fertilizer Application (lbs/acre/yr, N-P_2O_5-K_2O	Phosphorus Loss (lb/yr) 2019	2020	2021	2022	2023	2024	2025	Avg.
1	Fertilized Golf Course Sod	348-148-150	20.0	21.0	22.0	24.0	26.0	28.0	31.0	24.6
2	Fertilized Golf Course Sod	348-148-150	6.0	5.0	5.0	6.0	6.0	7.0	7.0	6.0
3	Fertilized Corn/Soybeans Rotation	Corn 140-0-60 Beans 0-0-21	195.9	320.1	186.9	309.0	180.1	298.5	173.5	237.7
4	Pasture - Grazing	None	29.8	29.5	29.3	29.1	28.9	28.7	28.5	29.1
5	Fertilized Corn/Soybeans Rotation	Corn 140-0-105 Beans 0-0-46	102.7	58.0	98.1	55.2	93.9	52.6	89.8	78.6
6	Fertilized Corn/Soybeans Rotation	Corn 191-0-247 Beans 0-0-116	244.3	132.0	235.2	127.1	226.9	122.3	218.7	186.6
7	Fertilized Corn/Soybeans Rotation	Corn 140-0-61 Beans 0-0-21	65.5	96.0	61.4	91.1	58.1	86.4	54.7	73.3
8	Fertilized Alfalfa/Corn/Soybeans Rotation	Alfalfa 0-0-0 Corn 60-56-214 Beans 9-23-85	47.0	34.2	86.5	56.3	39.6	28.1	80.4	53.2
9	Fertilized Corn/Soybeans Rotation	Corn 221-71-31 Beans 100-71-31	118.8	132.7	222.2	115.2	130.0	218.3	112.7	150.0
10	Fertilized Golf Course Sod	218-148-150	19.0	19.0	20.0	21.0	23.0	24.0	26.0	21.7
11	Fertilized Golf Course Sod	348-148-150	3.0	3.0	4.0	4.0	5.0	5.0	6.0	4.3
12	Fertilized Golf Course Sod	218-85-100	6.0	6.0	6.0	7.0	7.0	7.0	8.0	6.7
Total			**858.0**	**856.5**	**976.7**	**845.0**	**824.5**	**905.9**	**836.3**	**871.8**

B. Soil Sampling

The UW Soil and Forage Lab sampling guidance was used for field soil sampling methods. The guidance document can be found here: https://soils.wisc.edu/extension/pubs/A2100.pdf. Sampling was completed for

fields 1-9 in the spring of 2019. Sampling for fields 10-12 was completed in the spring of 2018. GIS maps were created depicting field boundaries and soil types to be used with sub-meter GPS units during sampling. Soil samples in 5-acre subareas according to soil types in each field. The USGS soil mapping was used to locate soils in each field. The soil test results were entered in the SnapPlus model as the existing soil condition. The results of the soil testing are summarized in **Table 3**.

Table 3. Soil Test Results

Field	PH	OM (%)	P (ppm)	K (ppm)
1	6.4	1.2	33.9	65.8
2	7.1	1.9	27.3	61.0
3	6.4	3.1	81.7	186.0
4	6.5	5.5	35.6	191.2
5	6.6	3.2	40.7	155.7
6	6.6	2.8	39.4	126.0
7	6.9	3.5	70.0	191.0
8	6.9	4.1	33.7	109.3
9	6.1	1.5	27.6	83.8
10	6.1	1.9	22.0	61.0
11	6.0	2.1	18.0	76.0
12	6.8	3.1	26.0	101.0

5. Proposed Conditions Trade Ratios and Credit Generation

A. Proposed Conditions

All fields would transition to prairie or grassland vegetation. These changes will be done in accordance with Natural Resources Conservation Service (NRCS) Conservation Practice Standard Conservation Cover Code 327. Fields 4 and 8 would be used for proscribed grazing. Fields 1 and 2 will be harvested for production of forage for livestock. These fields would be management in accordance with NRCS Conservation Practice Standard 512 Forage and Biomass Planting, NRCS Conservation Practice Standards 528 Proscribed Grazing, and NRCS, and Conservation Practice Standard 590 Nutrient Management.

SnapPlus version 18.1 was used to model proposed field conditions. The inputs to the model include field characteristics; mainly location (SnapMaps), soil test results, historic annual fertilizer rates per field (based on actual rates applied and from UW recommended rates provided in SnapPlus), actual crop species and annual rotations, and length of study period. The results of the anticipated phosphorus loss from these fields with proposed land use are summarized in **Table 4**. Modeling assumptions include: Model period: 2017-2025; Phosphorus reduction period: 2020-2025; the first year of phosphorus reduction transitioned from existing conditions to the final cropping condition.

The SnapPlus Model files have been provided to the Wisconsin Department of Natural Resources in an email to Sean Spencer from Joe Miller dated October 27, 2020.

Table 4. Annual Phosphorus Loss After Implementing Conservation Practices (Conservation Scenario)

Field No.	Proposed Land Use	Proposed Fertilizer Application (lbs/acre/yr, N-P_2O_5-K_2O)	Phosphorus Loss (lb/yr) 2019	2020	2021	2022	2023	2024	2025	Avg.
1	Prairie/Grassland – Forage Harvest	None	15.0	13.0	13.0	12.0	12.0	12.0	12.0	12.7
2	Prairie/Grassland – Forage Harvest	None	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.3
3	Prairie/Grassland	None	167.3	84.1	26.9	22.2	19.6	18.5	17.8	50.9
4	Prairie/Grassland	None	30.0	14.0	9.0	10.0	9.0	8.0	7.0	12.4
5	Prairie/Grassland	None	26.0	9.0	4.0	4.0	3.0	3.0	3.0	7.4
6	Prairie/Grassland	None	16.7	9.7	5.9	5.2	4.8	4.6	4.5	4.3
7	Prairie/Grassland	None	34.0	19.0	16.0	14.0	13.0	13.0	13.0	17.4
8	Prairie/Grassland - Grazing	Manure Load 32-24-56	47.0	24.0	17.0	14.0	13.0	13.0	13.0	20.1
9	Prairie/Grassland	None	119.0	133.0	16.0	9.0	7.0	6.0	5.0	42.1
10	Prairie/Grassland	None	19.0	4.0	3.0	3.0	3.0	3.0	3.0	5.4
11	Prairie/Grassland	None	5.0	1.0	1.0	1.0	1.0	1.0	0.0	1.4
12	Prairie/Grassland	None	4.0	2.0	2.0	1.0	1.0	1.0	1.0	1.7
Total			**486.0**	**315.8**	**115.8**	**97.4**	**88.5**	**85.1**	**81.3**	**181.4**

Table 5 summarizes estimated annual phosphorus reductions from converting the existing land uses. Annual reductions in phosphorus loss from all the fields in the project will total 532.7 lb. by 2025.

Table 5. Phosphorus Reductions

Field No.	Acreage	Phosphorus Reduction (lb/yr) 2019	2020	2021	2022	2023	2024	2025	Avg.
1	73.20	5.0	8.0	9.0	12.0	14.0	16.0	19.0	11.9
2	20.80	3.0	2.0	3.0	4.0	4.0	5.0	5.0	3.7
3	41.50	-0.3	190.9	132.1	242.8	132.4	236.5	128.2	151.8
4	27.30	-0.2	16.0	20.0	19.0	19.0	21.0	22.0	16.9
5	17.90	77.0	49.0	94.0	51.0	91.0	50.0	87.0	71.3
6	22.10	16.3	12.3	24.1	13.8	21.2	12.4	18.5	16.9
7	36.10	31.5	77.0	45.0	77.0	45.0	73.0	42.0	55.9
8	33.10	0.0	10.0	69.0	42.0	27.0	15.0	67.0	32.9
9	46.40	-0.2	-0.3	206.0	106.0	123.0	212.0	108.0	107.9
10	20.70	0.0	15.0	17.0	18.0	20.0	21.0	23.0	16.3
11	18.60	-2.0	2.0	3.0	3.0	4.0	4.0	6.0	2.9
12	10.70	2.0	4.0	4.0	6.0	6.0	6.0	7.0	5.0
Total	**368.4**	**133.0**	**386.2**	**626.2**	**594.6**	**507.5**	**671.9**	**532.7**	**493.2**

B. Trade Ratios and Credit Generation

Calculation of Project Benefits and Trade Ratios

Trade ratios were computed using the WDNR publication "A Water Quality Trading How to Manual". Below are the formulas used to calculate the trade ratio.

$$\text{Trade Ratio} = (\text{A})\text{Delivery Factor} + (\text{B})\text{Downstream Factor} + (\text{C})\text{Uncertainty Factor}$$

$$(\text{A})\ \text{Delivery Factor (for fields outside the facility HUC 12)} = (1/\text{Sparrow Delivery Fraction}) - 1$$

For field 1, delivery factor = (1/0.9696)-1 = 0.03
For fields, 3-8, delivery factor = (1/0.9615)-1 = 0.04
All other fields are within the HUC 12 of the facility and have no delivery factor
SPARROW delivery fraction determined from WDNR Surface Water Data Viewer

$(\text{B})\ \text{Downstream Factor} =$ From PRESTO modeling: If Percent Difference Between Credit User's Load and Total Load at the Point of the Credit User's Discharge is <25%, Downstream Factor = 0.10
Field 9 is upstream of the facility, so a downstream factor was not applied. All other fields = 0.10.

$(\text{C})\ \text{Uncertainty Factor} = 1$ for fields transitioning to perennial vegetation or companion crops, which is the case for all fields.

Table 6 Shows the fields and their associated Trade Ratios based on the above calculations

Table 6. Calculated and Actual Trade Ratios

Field ID	Calculated Trade Ratio	Trade Ratio Used*
1	0.03 + 0.10 + 1.0 = 1.13	1.20
2	0.10 + 1 = 1.10	1.20
3	0.04 + 0.10 + 1.0 = 1.14	1.20
4	0.04 + 0.10 + 1.0 = 1.14	1.20
5	0.04 + 0.10 + 1.0 = 1.14	1.20
6	0.04 + 0.10 + 1.0 = 1.14	1.20
7	0.04 + 0.10 + 1.0 = 1.14	1.20
8	0.04 + 0.10 + 1.0 = 1.14	1.20
9	1.00	1.20
10	0.10 + 1 = 1.10	1.20
11	0.10 + 1 = 1.10	1.20
12	0.10 + 1 = 1.10	1.20

*Guidance requires a minimum trade ratio of 1.20

Table 7 outlines the phosphorus credits generated based on the phosphorus reduction and calculated trade ratios. 475.8 lb./yr. of phosphorus credits are available for use by the Village of Albany Treatment Plant for offsetting phosphorus load reduction requirements.

Table 7. Annual Phosphorus credits generated with a calculated credit ratio

Field No.	Trade Ratio Used	Phosphorus Credits Generated (lb/yr)						
		2019	2020	2021	2022	2023	2024	2025
1	1.20	4.2	6.7	7.5	10.0	11.7	13.3	15.8
2	1.20	2.5	1.7	2.5	3.3	3.3	4.2	4.2
3	1.20	-0.3	159.1	110.1	202.3	110.3	197.1	106.8
4	1.20	0.0	13.3	16.7	15.8	16.7	17.5	18.3
5	1.20	64.2	40.8	78.3	42.5	75.8	41.7	72.5
6	1.20	13.6	10.3	20.1	11.5	17.6	10.3	15.4
7	1.20	26.7	64.2	37.5	64.2	37.5	60.8	35.0
8	1.20	0.0	8.3	57.5	35.0	22.5	12.5	55.8
9	1.20	0.0	0.0	171.7	88.3	102.5	176.7	90.0
10	1.20	0.0	12.5	14.2	15.0	16.7	17.5	19.2
11	1.20	-1.7	1.7	2.5	2.5	3.3	3.3	5.0
12	1.20	1.7	3.3	3.3	5.0	5.0	5.0	5.8
	Totals	**110.8**	**321.8**	**521.9**	**495.5**	**422.9**	**559.9**	**443.9**

6. Timeline

The WPDES permit includes a schedule for compliance with the phosphorus limit. The compliance schedule is presented in **Table 8.**

Table 8. Phosphorus Compliance Schedule

Submittal	Due Date
Trade Agreements Signed by all Parties	1/30/2021
Final Plans and Specifications for WWTF Upgrade	6/30/2021
Begin Construction of NRCS Conservation Standards	9/30/2021
Begin Construction of WWTF Upgrade	2/1/2022
First Inspection to Verify Practices	5/31/2022
Completion of NRCS Conservation Standards Construction	5/31/2022
Inspection of Completed Conservation Practices	5/31/2022
Management Practices Registration	6/15//2022
Credit Generation Begins	6/15/2022
Complete WWTF Construction Upgrade	6/15/2022
Achieve Compliance with Phosphorus Limits	6/30/2022

7. Inspections and Reporting

A. Management Practice Registration

The Village will file a completed registration form 3400-207 for Water Quality Trading Management Practice Registration separately from this plan. Registration is anticipated by June 2022.

B. Monthly Reporting

The Village will track credits used monthly and report it to the WDNR in the monthly Discharge Monitoring Reports (DMRs).

C. Annual Reporting

The Village will submit an annual report to WDNR summarizing the 12 months of credit usage and credit generation. The annual report will include any concerns the Village may have that may result in a need to modify the trade agreement and or the trade plan.

D. Inspections and Notification of Problems with Permanent Grass Cover

Inspections of the BMPs shall occur during the construction phase to ensure the BMPs are installed per design. Once completed, inspections of the established BMPs shall occur each month at a minimum or following heavy rain events. A licensed professional engineer will perform an annual certification to ensure the BMPs are performing as designed. Inspection reports will be generated during each inspection visit and be submitted with the annual water quality trading report.

The annual certification will include the evaluation of the BMP to determine if the vegetative cover is meeting the planned purpose as recommended for Operation and Maintenance of the BMP in the relevant NRCS Conservation Practice Standards.

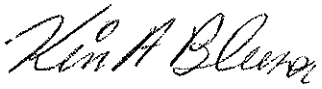
8. Compliance with Water Quality Trading Checklist

A copy of the signed Form 3400-208 Water Quality Trading Checklist is included in this plan as **Appendix C**.

9. Certification of Water Quality Trading Plan

The undersigned hereby certifies that this Water Quality Trading Plan is accurate and correct to the best of his knowledge.

Village of Albany Wastewater Treatment Facility



Kim Blumer
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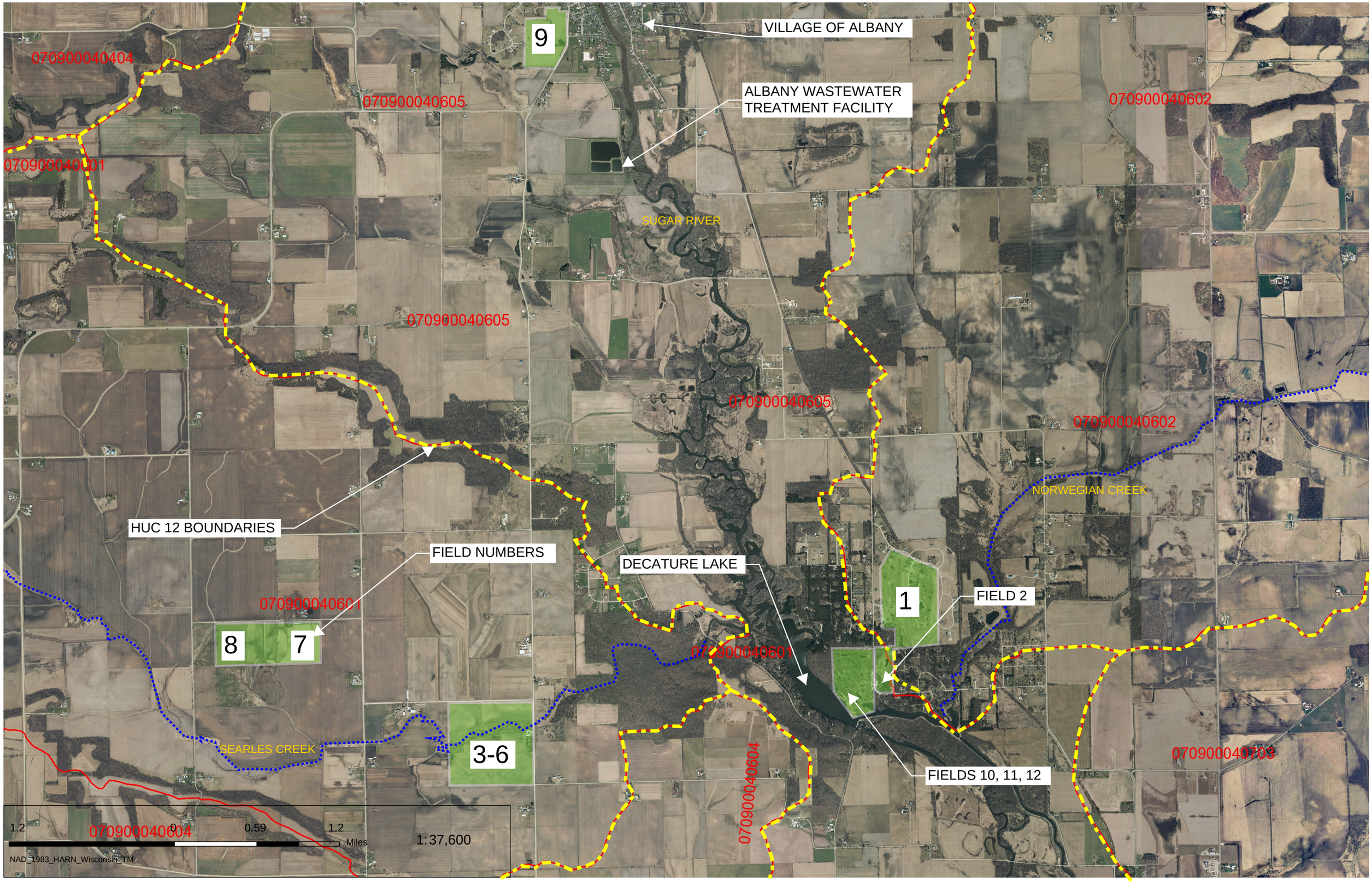
APPENDIX A: WWTF Influent and Effluent Data 2015-2019

Albany WWTF Data 2015 - 2019

Year	Month	Influent Flow (MG/mo.)	Influent BOD (mg/l)	Influent TSS (mg/l)	Influent Phos. (mg/l)	Effluent Flow (MG/mo.)	Effluent BOD (mg/l)	Effluent TSS (mg/l)	Effluent pH (S.U.)	Effluent Phos. (mg/l)	Influent BOD (lb./mo.)	Influent TSS (lb./mo.)	Influent Phos. (lb./mo.)	Effluent BOD (lb./mo.)	Effluent TSS (lb./mo.)	Effluent Phos. (lb./mo.)	Precip. (inches)
2019	Jan	2.151	207	193	8.01	0.000					3,721	3,463	144	0	0	0	0.85
	Feb	1.974	251	204	7.48	0.000					4,136	3,358	123	0	0	0	1.35
	Mar	3.996	203	156	8.36	6.423	6	8	7.50	4.22	6,749	5,199	279	321	402	226	1.61
	Apr	2.059	228	184	6.21	2.759	5	8	7.62	5.00	3,907	3,152	107	115	184	115	3.22
	May	3.912	255	198	7.9	0.000					8,321	6,469	258	0	0	0	6.25
	Jun	2.413	222	198	5.07	2.729	2	4	7.80	2.80	4,468	3,985	102	46	91	64	4.35
	Jul	2.631	252	197	5.17	1.738	7	4	7.52	3.33	5,533	4,318	113	101	58	48	7.86
	Aug	2.205	218	140	7.7	0.000					4,014	2,566	142	0	0	0	5.41
	Sep	2.261	185	145	7.34	3.184	4	10	7.42	6.25	3,492	2,738	138	106	266	166	8.14
	Oct	3.388	192	159	3.91	6.540	2	3	7.46	5.21	5,432	4,499	110	109	164	284	4.27
	Nov	2.186	225	144	9.38	0.000					4,107	2,630	171	0	0	0	2.02
	Dec	2.261	217	205	7.36	0.000					4,089	3,862	139	0	0	0	1.04
2018	Jan	2.223	221	175	7.51	0.000					4,102	3,252	139	0	0	0	1.80
	Feb	2.531	280	231	8.87	0.000					5,904	4,865	187	0	0	0	3.00
	Mar	2.040	243	178	7.39	0.000					4,139	3,033	126	0	0	0	0.47
	Apr	2.424	240	196	7.5	3.092	2	7	7.52	7.47	4,857	3,962	152	52	181	193	0.90
	May	2.078	249	215	7.1	0.000					4,309	3,720	123	0	0	0	6.69
	Jun	2.487	229	171	8.88	2.518	2	3	7.40	2.56	4,745	3,547	184	42	63	54	9.31
	Jul	2.477	217	197	5.46	5.337	2	4	7.57	0.84	4,487	4,061	113	89	156	37	3.66
	Aug	2.742	183	177	6.03	0.000					4,179	4,036	138	0	0	0	10.41
	Sep	4.767	100	125	3.96	3.039	2	2	7.47	3.96	3,985	4,949	157	51	51	100	12.11
	Oct	6.611	102	98	3.88	3.911	2	2	7.59	5.23	5,602	5,392	214	65	65	171	5.30
	Nov	2.410	233	191	8.33	6.787	2	2	7.40	3.24	4,688	3,834	167	113	113	183	1.07
	Dec	2.105	280	173	8.74	0.000					4,911	3,029	153	0	0	0	2.79
2017	Jan	2.410	208	166	6.47	0.000					4,172	3,340	130			0	1.16
	Feb	1.922	308	230	7.44	0.000					4,941	3,679	119			0	1.98
	Mar	2.205	325	207	6.09	2.820	2	11	7.72	4.58	5,975	3,809	112	47	259	108	2.34
	Apr	3.017	195	186	5.60	2.602	2	3	7.51	5.60	4,912	4,667	141	43	65	122	8.60
	May	3.888	171	188	5.37	2.541	2	3	7.50	2.71	5,538	6,102	174	42	64	57	5.15
	Jun	2.397	188	162	5.67	2.990	2	3	7.20	1.08	3,759	3,244	113	50	75	27	9.29
	Jul	4.174	139	132	5.44	0.000					4,839	4,578	189			0	9.41
	Aug	2.892	115	118	3.81	2.761	2	3	7.55	0.66	2,764	2,837	92	46	69	15	4.59
	Sep	2.041	248	178	5.25	2.596	2	3	8.13	1.36	4,221	3,021	89	43	65	29	0.41
	Oct	2.149	241	211	7.54	2.914	3	2	7.68	2.19	4,320	3,782	135	73	49	53	5.91
	Nov	1.941	224	188	9.10	0.000					3,629	3,039	147			0	1.33
	Dec	1.989	289	219	7.35	2.658	2	2	7.89	5.35	4,790	3,633	122	44	44	119	0.17
2016	Jan	2.260	217	218	6.43	0.000					4,081	4,100	121			0	0.58
	Feb	5.576	252	150	5.89	0.000					11,720	6,967	274			0	0.33
	Mar	2.234	245	568	7.55	2.787	4	10	7.06	4.41	4,558	10,579	141	93	232	103	3.07
	Apr	2.099	274	184	11.18	2.321	12	14	7.11	7.59	4,800	3,221	196	232	271	147	3.40
	May	2.031	262	179	3.95	0.000					4,432	3,039	67			0	1.80
	Jun	1.911	356	229	5.60	2.122	2	5	7.26	2.90	5,677	3,653	89	35	88	51	4.34
	Jul	1.987	234	164	2.21	0.000					3,875	2,725	37			0	5.14
	Aug	2.048	202	193	4.80	2.309	2	3	7.11	0.86	3,453	3,293	82	39	58	17	7.62
	Sep	2.048	315	199	3.19	2.735	2	4	7.40	1.25	5,372	3,399	54	46	91	29	5.63
	Oct	2.134	181	154	5.55	2.851	2	2	7.09	1.71	3,212	2,736	99	48	48	41	3.46
	Nov	1.999	316	186	7.15	2.850	2	2	7.40	2.93	5,265	3,095	119	48	48	70	3.05
	Dec	2.160	267	244	5.34	2.974	2	2	7.16	2.96	4,815	4,387	96	50	50	73	0.83
2015	Jan	1.819	399	214		0.000					6,056	3,246				0	0.00
	Feb	1.690	307	216		0.000					4,331	3,041				0	0.00
	Mar	2.091	280	290		0.000					4,884	5,055				0	0.00
	Apr	1.747	285	246		2.626	4	4	7.88	3.32	4,144	3,583		88	88	73	1.71
	May	1.890	283	238		2.384	2	3	8.09	1.52	4,457	3,748		40	60	30	3.56
	Jun	2.011	341	315		0.000										0	7.78
	Jul	2.003	222	179		2.344	2	3	7.37	1.67	3,705	2,986		39	59	33	4.11
	Aug	2.436	232	96		1.461	3	7	7.88	2.33	4,718	1,945		37	85	28	2.58
	Sep	1.902	246	192		0.000					3,901	3,048				0	5.27
	Oct	1.892	269	341		1.757	4	3	7.29	4.31	4,244	5,377		59	37	63	2.28
	Nov	1.979	237	186		2.152	2	2	7.28	4.68	3,918	3,073		36	36	84	5.21
	Dec	2.416	161	144		0.000					3,240	2,898				0	3.60
Average		2.495	238	196	6.49	1.727	3	4	7.50	3.41	4,688	3,879	138	54	81	50	3.83
Maximum		6.611	399	568	11.18	6.787	12	14	8.13	7.59	11,720	10,579	279	321	402	284	12.11
Minimum		1.690	100	96	2.21	0.000	2	2	7.06	0.66	2,764	1,945	37	0	0	0	0.00

APPENDIX B: Figure A: Field Location Map


VILLAGE OF ALBANY
ALBANY WASTEWATER TREATMENT FACILITY
9
070900040404
070900040605
070900040602
070900040601
SUGAR RIVER
070900040605
070900040605
070900040602
HUC 12 BOUNDARIES
FIELD NUMBERS
DECATURE LAKE
NORWEGIAN CREEK
070900040601
8
7
1
FIELD 2
070900040601
SEARLES CREEK
3-6
070900040604
070900040703
FIELDS 10, 11, 12
070900040604
1.2
0
0.59
1.2
Miles
1:37,600
NAD_1983_HARN_Wisconsin_TM

APPENDIX C: Form 3400-208 Water Quality Trading Checklist

Save... Clear Data

State of WisconsinDepartment of Natural Resources101 South Webster Street
Madison WI 53707-7921dnr.wi.gov

Water Quality Trading Checklist

Form 3400-208 (1/14)

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
Village of Albany	WI-1199-09-0	

Facility Address	City	State	ZIP Code
	Albany	WI	53502

Project Contact Name (if applicable)	Address	City	State	ZIP Code
Lonnie Gill	206 N. Water St.	Albany	WI	53502

Project Name
Albany WWTF Phosphorus Water Quality Trading

Receiving Water Name	Parameter(s) being traded	HUC 12(s)
Sugar River	Phosphorus	070900040605

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: 070900040601
- ○ 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	Conversion from row crops to cover crops	SnapPlus Model version 18.1		◯ 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
◯ 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	*4. A.*
b. Management practices used to generate credits	◉ Yes	◯ No	*5. A.*
c. Amount of credit being generated	◉ Yes	◯ No	*5. B.*
d. Description of applicable trade ratio per agreement/management practice	◉ Yes	◯ No	*5. B.*
e. Location where credits will be generated	◉ Yes	◯ No	*Appendix B*
f. Timeline for credits and agreements	◉ Yes	◯ No	*6.0*
g. Method for quantifying credits	◉ Yes	◯ No	*5. A.*

Water Quality Trading Checklist

Form 3400-208 (1/14)

Does plan have a narrative that describes:			Plan Section
h. Tracking procedures	◉ Yes	○ No	7.0
i. Conditions under which the management practices may be inspected	◉ Yes	○ No	7.0 D.
j. Reporting requirements should the management practice fail	◉ Yes	○ No	7.0 D.
k. Operation and maintenance plan for each management practice	◉ Yes	○ No	7.0 D.
l. Location of credit generator in proximity to receiving water and credit user	◉ Yes	○ No	Appendix B
m. Practice registration documents, if available	○ Yes	○ No	
n. History of project site(s)	◉ Yes	○ No	2. A.
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
Timothy J Critchlow	12-14-2020

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
Kirk A Blumer	12-14-2020