

-WATER QUALITY TRADING AGREEMENT-

between

Village of Hawkins Nonpoint source WQT-2018-0001

And

Village of Conrath, Point Source

February, 2019

Revised 4-1-2019

PRELIMINARY

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PRELIMINARY
-WATER QUALITY TRADE AGREEMENT -
BETWEEN
VILLAGE OF HAWKINS AND THE VILLAGE OF CONRATH

Introduction

The Village of Conrath will purchase phosphorus credits from the Village of Hawkins in order to remain in compliance with the phosphorus WQBEL limits of the WPDES permit. Alternatives such as discharging to a wetland, alternate discharge location, “regionalization”, chemical addition, and purchasing land to develop a WQT plan were all dismissed due to technical and financial limitations. However, the Village of Hawkins has an approved Water Quality Trading Plan (WQT-2018-0001), which generates more phosphorus credits than the Village of Hawkins needs to meet their own effluent limits. This allows Hawkins to then sell the remaining phosphorus credits. The Village of Hawkins on an annual basis has 606 to 686 pounds of Potentially Tradeable Phosphorus available for sale. The Village of Conrath has agreed to purchase 70 pounds annually.

Water Quality Trading

1. **Purpose:** The purpose of Water Quality Trading is to provide an alternative method for communities to remain in compliance with WPDES effluent limits, without having to fully upgrade their existing WWTF. Water Quality trading allows a WPDES permit holder to allocate reductions in phosphorus runoff from other sources in their watershed, to offset their own point source discharge. The phosphorus reduction can either be generated directly by a Water Quality Trading Plan prepared and managed by the WPDES permit holder, or by a Credit Producer/Broker with an approved Water Quality Trading Plan (WQT Plan). The Credit Producer/Broker prepares a WQT Plan and installs the practices outlined therein, that reduce phosphorus runoff. This reduction in phosphorus runoff is considered Potentially Tradeable Phosphorus (PTP), which can then be sold to WPDES permit holders not wishing prepare their own WQT Plan. The Village of Hawkins is a Credit Producer/Broker with an approved WQT Plan.

2. **Credit Producer/Broker:** The Village of Hawkins completed a Water Quality Trading Plan (WQT-2018-0001) to comply with final phosphorus limit requirements of their WPDES Permit and to produce Potentially Tradeable Phosphorus to sell. The Village of Hawkins purchased an active dairy farm and converted the farm to permanent hay to produce PTP. The Village used some of their PTP to trade with themselves to meet their phosphorus requirements. On an annual basis, over the last ten years, the Village of Hawkins discharged an average of 117 pounds per year of phosphorus. The rate varied from a low of 9 pounds per year to a maximum of 355 pounds per year. Hawkins’ WPDES Permit limits their phosphorus discharged to Main Creek at approximately 22 pounds per year. For design purposes, the Village of Hawkins proposed to mitigate $(350 \text{ lb. /year} - 22 \text{ lb. /year}) \times 1.2(\text{trade ratio}) = 400$ pounds PTP/year by Water Quality Trading with themselves. The former dairy farm, converted to permanent hay, will generate on average approximately 1,000 pounds of PTP for the Village of Hawkins. The Village of Hawkins proposes to sell the remaining 600± pounds of PTP.

2.1. Location of Property Generating PTP: The farm generating PTP discharges to an unnamed perennial waterway that flows into Stony Creek and then into the South Fork of Main Creek. All upstream of the Village of Conrath's outfall. The farm is located in HUC 070500040303 and consists of the NE ¼ of the NW ¼, and the SE ¼ of the NW ¼, Section 7, T.35N.-R.2W., located in the Town of Kennan, Price County.

2.2. Farm (Baseline): Prior to the Village of Hawkins purchasing the farm it was under the management of Brian Olson as a dairy farm. The 80 acre farm was home to a continuous milking herd of approximately 50 cows plus associated dry cows and young stock. Manure from the dairy herd was applied to all the tillable acreage on the farm. The primary crop grown was corn silage, due to the small land base available to feed their livestock. Spring moldboard plowing and disking was performed to create a seed bed for the following corn crop. The above practices were modeled with SnapPlus nutrient management software to quantify the amount of Potentially Tradeable Phosphorus (PTP) leaving the farm in runoff. The tillage and cropping practices modeled, cause high levels of soil erosion which carry sediment bound and dissolved phosphorus into the adjoining surface water eventually entering Main Creek. The model indicated that annually 900-1100 lb. of PTP left the farm in runoff.

2.3. Farm (Future Operation): After the Water Quality Trading Plan (WQT-2018-0001) was approved by the DNR the Village of Hawkins, purchased the Olson Farm. The home, farm buildings, barnyard, and impervious surfaces were removed. The entire farm, including: former building sites, farm roads, cropland, and pastures were seeded to permanent grass cover. The grass cover will be maintained to have a high stand count to trap sediments and utilize nutrients in those sediments. The permanent grass cover will be harvested for grass hay by a local farmer and removed from the farm. Removing grass hay from the farm will draw down phosphorus levels in the soils and also in any sediments leaving the farm. The farm will be soil tested periodically and fertilized according to UW recommendations. Phosphorus levels will be maintained at or below the optimum level. The above farm operating conditions were modeled with SnapPlus nutrient management software. The farm model, after the establishment year of the permanent grass cover, indicated that annually 20-50 lb. of PTP would leave the farm in runoff.

2.4. Summary of Potentially Tradeable Phosphorus (PTP) Generated by Hawkins

TABLE 1

Hawkins' Summary of PTP from 2019 through 2023				
Year	CURRENT PRACTICES (BASELINE) PTP	PERMANENT GRASS HAY PTP	PTP TO BE USED BY THE VILLAGE OF HAWKINS	REMAINING PTP TO BE SOLD
2019	1058	-52	-400	606
2020	1091	-36	-400	655
2021	1094	-27	-400	667
2022	1109	-23	-400	686
2023	1109	-23	-400	686

Note: all years after 2022 will generate 1109 lb. PTP

3. **Village of Conrath (Phosphorus Credit Use):** The Village of Conrath has a sub-surface sand filter treatment facility. Primary sewage treatment takes place in individual septic tanks located at each service. Individual septic tanks discharge into the small-diameter (combination pressure/gravity) collection system. A master lift station pumps all collected domestic strength wastewater to the two final septic tanks, which drain into the headworks of the WWTF. Following treatment in the sand filter, the effluent is seasonally disinfected by a UV unit prior to discharge to Main Creek. The annual hydraulic design flow is 0.0086 million gallons per day, however the average 2015-2017 flow has been 0.0047 million gallons per day. The original design did not address or require phosphorus removal. Therefore, Conrath's WWTF has no components for phosphorus removal. The average effluent phosphorus concentration, from October 2015 thru January 2017, was 4.46 mg/l; the proposed WPDES effluent limit is 1.5 mg/l.

3.1. **Location of the Outfall:** The Village of Conrath WWTF outfall discharges into Main Creek at approximate Latitude 45.3826°, Longitude 91.0432°. The outfall is located in HUC 070500040305.

3.2. **WPDES Permit:** The final effluent limit of 1.5 mg/l TP will be met by using water quality trading. The Village of Conrath will purchase phosphorus credits from the Village of Hawkins to remain in compliance with the final phosphorus effluent limits. Conrath's current WPDES permit will expire 9-30-2020, future WPDES permit terms will be synchronized with those of Hawkins. The upcoming permit term will be three years to coincide with Hawkins reissuance date of 10-1-2023.

3.3. **Total Phosphorus Testing:** The Village of Conrath was not required to start testing for Total Phosphorus (TP) until October of 2015.

- 2015 October-December the average discharge rate was 0.0048 MGD with an effluent monthly average Total Phosphorus of 4.6 mg/l which if extrapolated for the year would be $(0.0048 \text{ MGD} \times 4.6 \text{ mg/l} \times 8.34 \times 365 \text{ days}) = 67 \text{ lb. of TP}$
- 2016 the average discharge rate was 0.00476 MGD with an effluent monthly average Total Phosphorus of 4.78 mg/l $(0.00476 \text{ MGD} \times 4.78 \text{ mg/l} \times 8.34 \times 365 \text{ days}) = 69 \text{ lb. of TP}$
- 2017 the average discharge rate was 0.00448 MGD with an effluent monthly average Total Phosphorus of 4.12 mg/l $(0.00448 \text{ MGD} \times 4.12 \text{ mg/l} \times 8.34 \times 365 \text{ days}) = 56 \text{ lb. of TP}$
- 2018 the average discharge rate was 0.00353 MGD with an effluent monthly average Total Phosphorus of 2.91 mg/l $(0.00353 \text{ MGD} \times 2.91 \text{ mg/l} \times 8.34 \times 365 \text{ days}) = 31 \text{ lb. of TP}$

3.4. **Trade Ratio:** The Village of Conrath will purchase Potentially Tradeable Phosphorus (PTP) from the Village of Hawkins. The DNR requires a trade ratio be applied to ensure that the reduction in farm phosphorus runoff results in a net water quality improvement at Conrath's point of standards application. The trade ratio accounts uncertainty in practices reducing phosphorus runoff, and losses to stream assimilation. The Trade Ratio between the Village of Conrath and Hawkins is as follows:

- Delivery Factor = The Village of Conrath WWTF discharge is located in HUC 070500040305 downstream of the credit generator being located in HUC

070500040303, (.942 user delivery fraction - .942 generator delivery fraction)/0.942 user delivery fraction) = 0 delivery fraction

- Downstream Trading Factor = N/A credit user is downstream of the credit generator
- Equivalency Factor = 0 for TP
- Uncertainty Factor = 1:1 per. Table 16, Pg. 57 of a WQT How To Manual, WI DNR
- Habitat Adjustment = N/A no habitat work

0 delivery factor + N/A downstream trading factor + 0 equivalency factor + 1:1 uncertainty factor + N/A habitat adjustment = 1:1. However, the minimum trade ratio allowed by the DNR from a non-point source to a point source is 1.2:1

3.5. Credit Calculation: Since the Village of Conrath has only been testing Total Phosphorus (TP) since October of 2015, a safety factor will be applied to insure that the Village of Hawkins reserves sufficient PTP for the Village of Conrath. PTP must be used in the year it is generated or it will be lost; so enough credit must be reserved to cover the **worst anticipated year (2016)** plus a safety factor. In 2016, the Village of Conrath discharged 69 pounds of TP into Main Creek. However, the WPDES allows 22 pounds of phosphorus to be discharged into Main Creek. ((0.00476MGD “2016 flow” x 1.5 mg/l x 8.34) x 365 days =22 lb. TP) Therefore:

- (69 lb. TP 2016 - 22 lb. TP permitted) x 1.2 Trade Ratio = 56 lb. of PTP would have been required in 2016 had the final effluent limits been in place.
- The Village of Conrath decided to purchase 70 Lb. PTP from the Village of Hawkins, giving them a safety factor of (14lb./1.2)=11.66 lb., over their greatest annual TP discharge.

3.6. Summary of Potentially Tradeable Phosphorus after trade with Conrath:

TABLE 2

BALANCE SHEET OF PTP REMAINING FOR SALE BY THE VILLAGE OF HAWKINS AFTER TRADE WITH CONRATH			
Year	PTP AVAILABE FOR SALE - SEE TABLE 1	PTP BUDGETED FOR CONRATH W/1.2:1 TRADE RATIO	REMAINING PTP TO SELL AFTER TTRADING WITH CONRATH
2019	606	70	536
2020	655	70	585
2021	667	70	597
2022*	686	70	616
2023*	686	70	616

Note: PTP generated by Hawkins WQT Plan in 2023 and beyond will be based upon the 2022 PTP of 686 lb. per year.

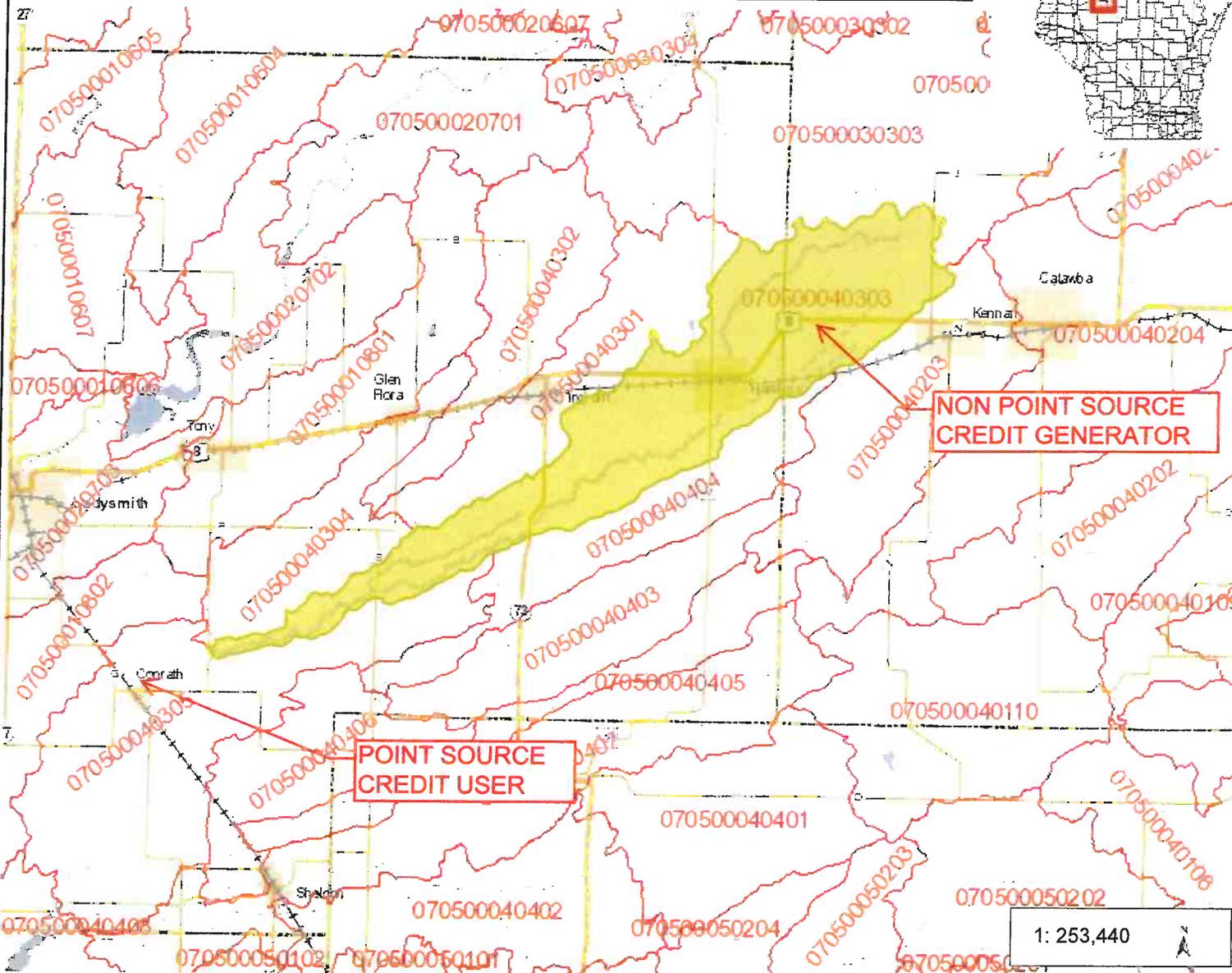


Surface Water Data Viewer Map



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



8.0 0 4.00 8.0 Miles

NAD_1983_HARN_Wisconsin_TM
© Latitude Geographics Group Ltd.

ATTACHMENT A HUC 12

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Notes

Hawkins WWTF HUC -12

Notice of Intent to Conduct Water Quality Trading

Form 3400-206 (1/14)

ATTACHMENT B

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 Village of Conrath		Permit Number WI- 0032522-06-0	Facility Site Number	
Facility Address Vine Avenue			City Conrath	State WI
			ZIP Code 54721	
Project Contact Name (if applicable) Donald Mataczynski	Address N2626 Railroad Street	City Conrath	State WI	ZIP Code 54731
Project Name Conrath WWCTF				
Receiving Water Name Main Creek	Parameter(s) being traded Phosphorus	HUC 12(s) 070500040305		

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):

<input type="checkbox"/> Permitted Discharge (non-MS4/CAFO)	<input type="checkbox"/> Urban nonpoint source discharge
<input type="checkbox"/> Permitted MS4	<input checked="" type="checkbox"/> Agricultural nonpoint source discharge
<input type="checkbox"/> Permitted CAFO	<input type="checkbox"/> Other - Specify: _____

Are any of the credit generators in a different HUC 12 than the applicant?
 Yes; HUC 12: 070500040305
 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: Village of Hawkins
 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?
<input type="radio"/> Traditional <input type="radio"/> MS4 <input type="radio"/> CAFO				<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure
<input type="radio"/> Traditional <input type="radio"/> MS4 <input type="radio"/> CAFO				<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure
<input type="radio"/> Traditional <input type="radio"/> MS4 <input type="radio"/> CAFO				<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure
<input type="radio"/> Traditional <input type="radio"/> MS4 <input type="radio"/> CAFO				<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure
<input type="radio"/> Traditional <input type="radio"/> MS4 <input type="radio"/> CAFO				<input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unsure

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

List the practices that will be used to generate credits:

The Village of Conrath proposes to purchase Phosphorous Credits from the Village of Hawkins. Refer to The Village of Hawkins Water Quality Trade Agreement, approved 5-30-2018. The Village of Hawkins is generating credits through perennial vegetation (conservation easement).

The Village of Conrath, on average, discharges 66# of phosphorus per year into Main Creek. The final permitted limit is 1.5 mg/l of phosphorus discharged into Main Creek or 21.5# allowed per year. The Village is seeking credit of (66# - 21.5#) = 44.5# of phosphorus per year from Hawkins.

Method for quantifying credits generated:

- Monitoring
- Modeling, Names: _____
- Other: Report approved by WI DNR 5-30-18

Projected date credits will be available:

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

Robert G. Parmling

Date Signed

10-10-2018

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

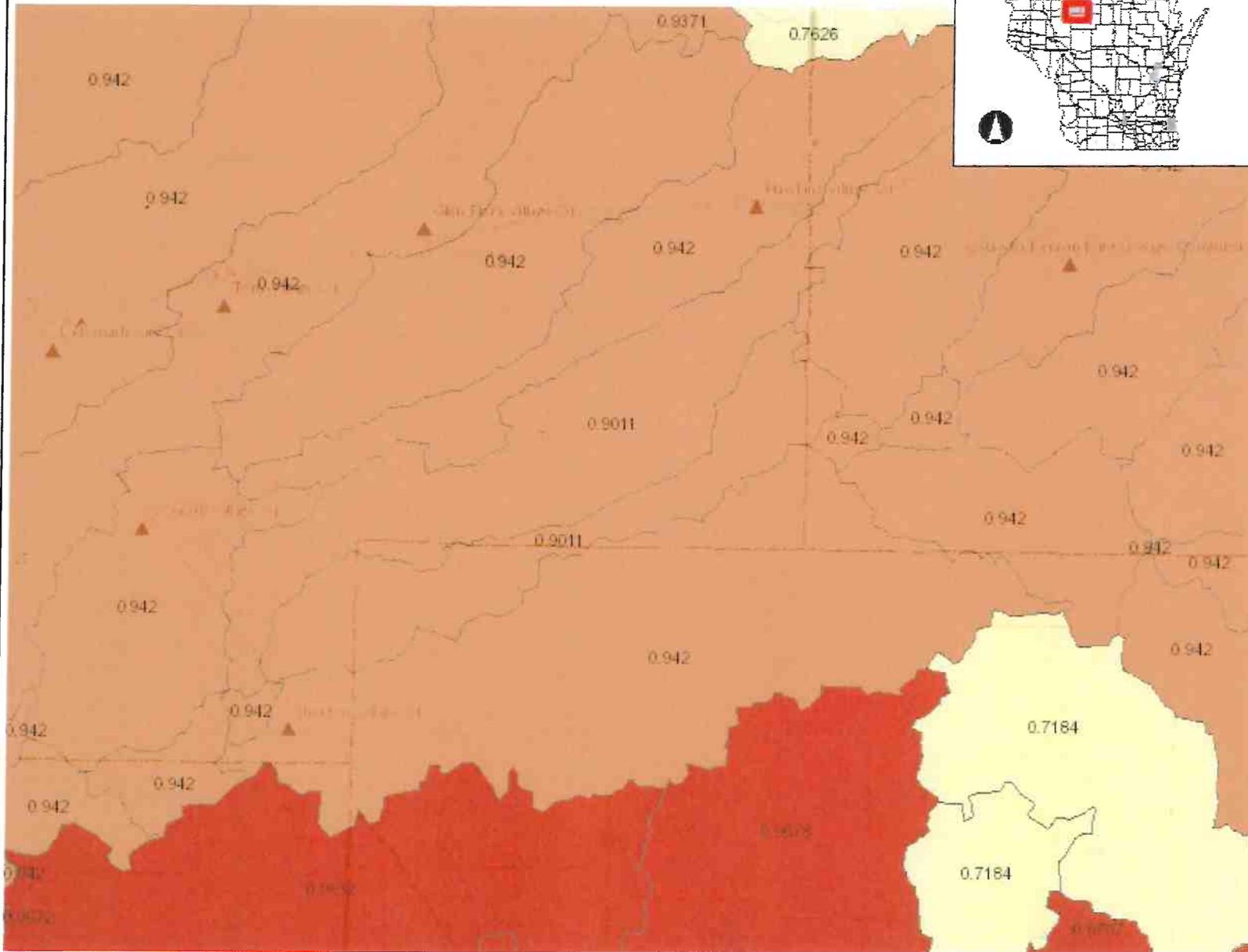
Don M. [Signature]

Date Signed

10-12-18

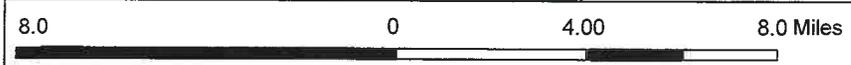


Surface Water Data Viewer Map



- Legend**
- SPARROW Model Catchment**
 - 0.092600 - 0.459700
 - 0.459701 - 0.621400
 - 0.621401 - 0.825600
 - 0.825601 - 0.947100
 - 0.947101 - 1.000000
 - ▲ Surface Water Outfalls
 - 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

ATTACHMENT C



NAD_1983_HARN_Wisconsin_TM

1: 253,440

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Notes

VILLAGE OF CONRATH - VILLAGE OF HAWKINS

TRADE AGREEMENT

POINT TO NON POINT SOURCE TRADE

Permittee Information			
Credit User (Permittee) Village of Conrath	Permit Number WI-0032522-06-0	Facility Site Number	
Facility Address Vine Avenue	Village Conrath	State WI	Zip Code 54731
Contact Person Address Donald Mataczynski N26226 Railroad St.	Village Conrath	State WI	Zip Code 54731
Receiving Water Name Main Creek	parameter being traded Phosphorus	HUC 12 070500040305	
Credit Producer/Broker			
Credit producer Village of Hawkins	Permit Number N/A Non Point Source Generator		WQT plan Number WQT-2018-0001
Contact Person Address Carl Hartman PO BOX 108	Village Hawkins	State WI	Zip Code 54530
Address of Credit Producer W11945 USH 8	Village Hawkins	State WI	Zip Code 54530
Receiving Water Name Main Creek	parameter being traded Phosphorus	HUC 12 070500040303	
Legal Description of property NE 1/4 of the NW 1/4 and the SE 1/4 of the NW 1/4, Section 7, T.35N.-R.2W., located in the Township of Kennan, Price County			

Agreement

The property described above is enrolled in a Water Quality Trading Agreement. Improvements to the property used to generate phosphorus credits have been installed and approved in Water Quality Trading Plan WQT-2018-0001. The property generates phosphorus credits in excess of what the Village of Hawkins needs for their own use. The Village of Hawkins agrees to sell 70 pounds of available phosphorus to the Village of Conrath for \$30.00 per pound of phosphorus. The WPDES term for Conrath was adjusted by the DNR to coincide with the expiration date of the Hawkins WPDES permit. This agreement will be for the WPDES permit terms of October 1, 2020 - September 30, 2023 and October 1, 2023 - September 30, 2028, unless for any reason the WPDES permit is modified by the DNR, either Village, at their discretion, may opt not to renew the agreement for the second WPDES term. The Village of Conrath will annually make two payments to the Village of Hawkins, being October 1st and April 1st, each installment will be \$1,050.00 for an annual total of \$2,100 (\$30.00 per lb. X 70 Lb.) The effective date of this agreement will be October 1, 2020.

Village Board Resolution of the Credit Producer/Broker:

Resolved, that this water quality trade agreement, is hereby approved by the Village Board of the Village of Hawkins.

DATE: _____ APPROVED: _____
Kyle Austad, President

DATE: _____ SIGNED: _____
Kyle Austad, President

I hereby certify that the foregoing is a copy of a resolution adopted by the Village Board of the Village of Hawkins.

Alicia Valentine, Village Clerk

STATE OF WISCONSIN)
RUSK COUNTY)ss

I, Alicia Valentine, being the duly appointed, qualified and acting clerk of the Village of Hawkins, Rusk County, do hereby certify that the Village of Hawkins passed resolution number _____ on _____, authorizing me to issue an approval of this Water Quality Trading Agreement granted and effective on the _____ day of _____, 20____.

DATE: _____ SIGNED: _____
Alicia Valentine, Village Clerk

Village Board Resolution of the credit user (permittee):

Resolved, that this water quality trade agreement, is hereby approved by the Village Board of the Village of Conrath.

DATE: _____ APPROVED: _____
Donald Mataczynski, President