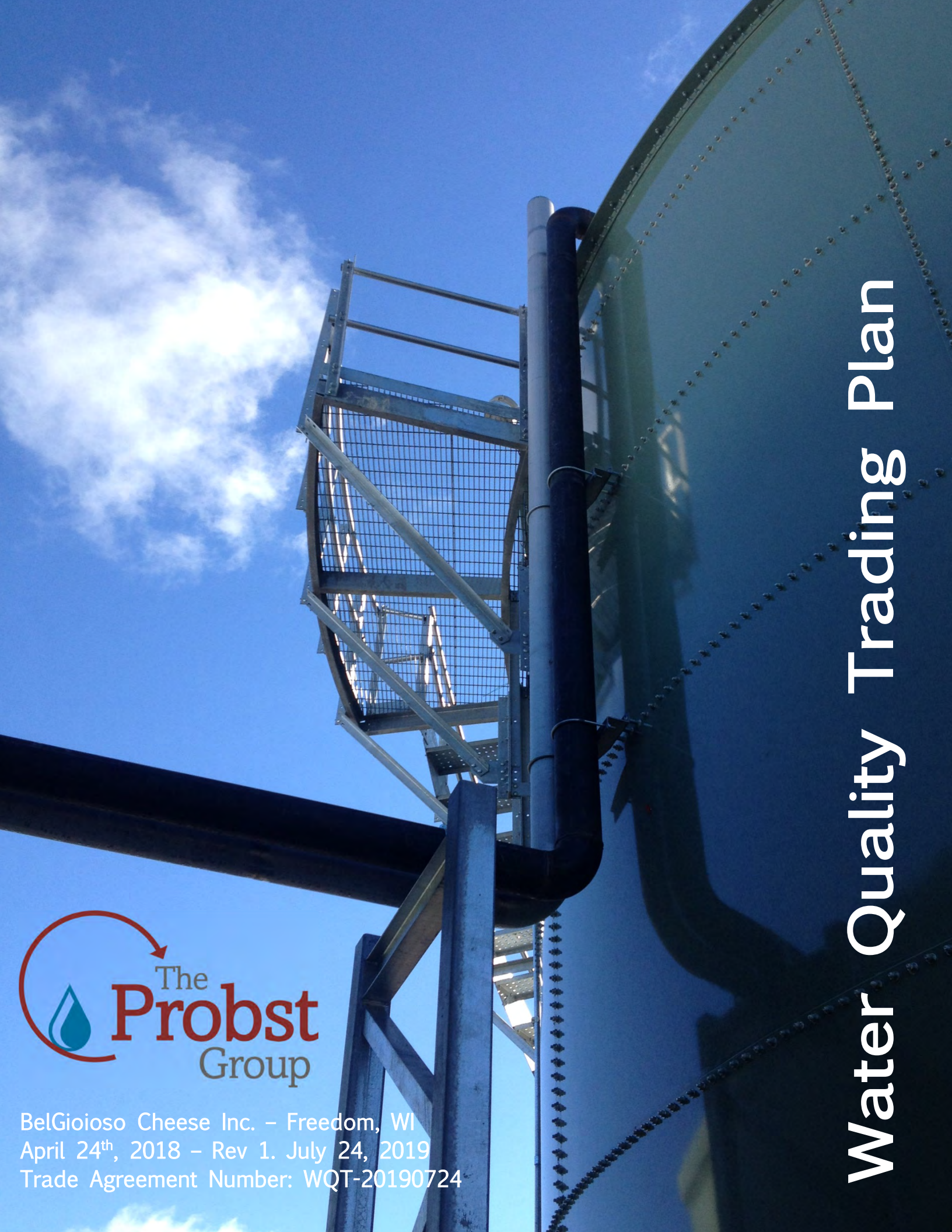

Water Quality Trading Plan

The Probst Group

BelGioioso Cheese Inc. – Freedom, WI
April 24th, 2018 – Rev 1. July 24, 2019
Trade Agreement Number: WQT-20190724

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B – Watershed, Subwatershed, and Field Maps
C – Existing Farming Practices Questionnaire
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1 Introduction

This water quality trading plan summarizes the plan for BelGioioso Cheese Inc. (BelGioioso) in Freedom, WI to use water quality trading to comply with Total Phosphorus (TP) and Total Suspended Solids (TSS) discharge limits in its Wisconsin Discharge Elimination System (WPDES) permit for Outfall 001. To assist in complying with BelGioioso's TP and TSS discharge limits, BelGioioso has installed and will maintain permanent vegetative cover (aka. grassland) on previously farmed fields within the same subwatershed as Outfall 001 on property owned by BelGioioso.

BelGioioso has used SnapPlus modeling to quantify the amount of potentially tradable TP and TSS from the fields assuming current farming practices continued, and then the amount after installation and maintenance of a permanent vegetative cover. Using a trade ratio of 1.2:1, BelGioioso calculated the TP and TSS water quality trading credits available per year based on the change in management practice from farming in corn and soybean rotation to permanent vegetative cover at their existing fields onsite. BelGioioso will use these credits to demonstrate compliance with the TP and TSS limits in their WPDES permit.

2 Background

2.1 Purpose for Water Quality Trade

The purpose of this Water Quality Trading Plan is to describe BelGioioso's use of water quality trading to comply with the TP and TSS limits at Outfall 001 of WPDES permit WI-0066176-01-0. This Water Quality Trading Plan was developed pursuant to the Notice of Intent to Conduct Water Quality Trading included in Attachment A.

In particular, BelGioioso will trade with property owned by BelGioioso in the same HUC-12 subwatershed as Outfall 001. These fields have been placed into perennial vegetation and BelGioioso will use the phosphorus and TSS credits generated from this management practice to comply with the TP and TSS limits their WPDES permit. Because BelGioioso is both the credit generator and the credit user, BelGioioso is entering into a trade agreement with the Wisconsin Department of Natural Resources (WDNR).

The Freedom facility is located within the Lower Fox River Total Maximum Daily Load (TMDL). Unfortunately, this TMDL was developed without reserve capacity for new or expanded facilities. Onsite wastewater treatment at the Freedom facility will be new to the facility and this will be the first issuance of an individual permit for this facility. As such, there was no allocation for TP or TSS to be discharged from the process wastewater outfall of Freedom's new wastewater treatment plant (WWTP). BelGioioso will use water quality trading to offset the entire phosphorus and TSS load discharged from

the process wastewater outfall of the new WWTP. Noncontact cooling water will continue to be discharged via a separate outfall and be covered under the Noncontact Cooling Water or Condensate and Boiler Water General Permit (WI-0044938-6).

Assuming zero mass net discharge of phosphorus and TSS from Outfall 001, BelGioioso expects to need 36 to 53 lbs of TP credits per year assuming a WWTP effluent of 0.04 – 0.06 mg/L phosphorus. In a wastewater treatment plant designed for biological phosphorus removal like BelGioioso Freedom, total phosphorus makes up approximately 6% of the total solids. Using that standard, BelGioioso expects to discharge between 0.67 and 1 mg/L of TSS. However, 1 mg/L is commonly the limit of detection, so for concentrations less than 1 mg/L, mass will register as 0 lbs. Therefore, BelGioioso expects to need up to 880 lbs/yr of TSS credit This also assumes an average yearly design flow rate of 0.241 MGD. BelGioioso will be able to control the phosphorus and TSS concentrations of their process wastewater via chemical addition to ensure final compliance with the permitted phosphorus and TSS limits and the available annual trade credits discussed further in Tables 10 and 12 of Section 5.

2.2 *Purpose for New Surface Water Outfall*

BelGioioso has historically hauled their wastewater to Appleton's wastewater treatment plant (WWTP). When weather allows, BelGioioso can also land apply their normal strength wastewater under the Land Application of Liquid Industrial Waste General Permit. Historically, this land application of industrial liquid waste was done on Fields B and D that are proposed for conversion to permanent grassland as part of this trade as well as Fields E & F on BelGioioso's property and 20 other fields owned by others located in the same HUC-12 which are not proposed for conversion as part of this trade. See map in Attachment B of approved land application sites within the HUC-12 entitled "Land Application Sites within HUC-12". Following implementation of cropping changes, land application will no longer occur on the fields used to generate trade credits. In the future, a SnapPlus Nutrient Management Plan report will be run for any other sites on which industrial liquid waste or WWTP sludge is land applied to ensure that there is no overloading of those fields as a result of this trade.

Noncontact cooling water is currently discharged via a drainage ditch (WBIC 5019845) to Duck Creek (WBIC 409700) and is covered under the Noncontact Cooling Water or Condensate and Boiler Water General Permit (NCCW GP). The NCCW discharge will continue to be covered by the NCCW GP.

Hauling wastewater off-site for treatment is expensive, so BelGioioso is pursuing their own on-site WWTP. BelGioioso plans to discharge treated process wastewater from their new WWTP via a new discharge pipe to Duck Creek. This surface water outfall for treated process wastewater will allow them to discharge year-round and in all weather conditions.

2.3 WWTP Overview

BelGioioso intends to build a wastewater treatment plant across the street from their Freedom facility. A full design report with plans was submitted electronically to WDNR for review on April 23rd, 2018 with paper copies that followed in the mail. Those plans were subsequently approved by WDNR on June 8th, 2018. However, based on conversations with WDNR regarding TMDL allocations, it was determined that the treated process wastewater and NCCW outfalls should remain separate. As such, updates to the approved design report were submitted on December 11th, 2018 and subsequently approved on February 19th, 2019. A summary of the December 11th report is provided in this section of the Water Quality Trading plan with additional detail related to treatment design in that report.

The new WWTP will include an influent lift station and screening before wastewater enters the equalization tank. Primary solid/liquid separation will then take place in the dissolved air floatation (DAF). Solids removed from the DAF will be sent to the sludge storage tanks. Liquid from the DAF will progress to the selector silo and aeration basin for further treatment. Additional solid/liquid separation will occur in the ultrafiltration membrane system. Solids from the membranes can be wasted to the sludge storage tanks where they will be mixed with the solids removed from the DAF. Permeate from the membranes will flow to the tertiary sand filters before entering the effluent lift station. As needed, wastewater can be passed through the facility's cooling tower for final treatment before being discharged to surface water.

Sludge removed from the treatment system via the DAF and the UF membranes will be stored in the sludge storage tanks until it can be hauled offsite. Sludge will either be land applied on approved sites or will be disposed of via other methods of disposal such as treatment in a digester offsite, or other alternatives. Sludge will be sampled as required by the WPDES permit and reporting will be done on WDNR's form 3400-49 Characteristic Report. Sampling requirements in the permit are expected to include total solids, total kjeldahl nitrogen, chloride, pH, ammonia nitrogen, total phosphorus, water extractable phosphorus, and total recoverable potassium. If the sludge is land applied, volumes and locations will be reported on the 3400-55 form, and if sludge is hauled to other methods of disposal, volumes and locations will be reported on the 3400-52 form. No land application will occur on the fields used to generate trade credits. A SnapPlus Nutrient Management Plan report will be run for any sites on which waste is land applied to ensure that there is no overloading of those fields as a result of this trade.

A majority of the process wastewater is currently hauled to the Appleton WWTP where wastewater is treated. The resulting sludge is land applied on WDNR approved sites. Land application of raw wastewater is not expected to occur frequently following construction of the new WWTP, but land application of sludge generated by the WWTP is likely to occur. Because Appleton currently land applies the sludge generated from

BelGioioso's wastewater treatment, and BelGioioso will land apply this on their own in the future, there is no net increase in sludge being land applied. No land application will occur on the fields being used for this trade. A SnapPlus Nutrient Management Plan report will be run for any other sites on which industrial liquid waste or WWTP sludge is land applied to ensure that there is no overloading of those fields as a result of this trade.

Chemical addition can occur at several locations in the wastewater treatment process with quantities that will vary based on operational setpoints. Acid and caustic can be added in the mix line of the equalization tank to regulate pH of the wastewater entering the WWTP. Polymer can be added prior to the DAF to improve solid/liquid separation efficiency. Ferric can be added to the selector silo and/or aeration basin mix lines to encourage flocculation of solids and removal of phosphorus from the wastewater effluent. Ferric, polymer, and/or cerium chloride can be added prior to sand filtration to remove additional phosphorus and TSS from the discharge.

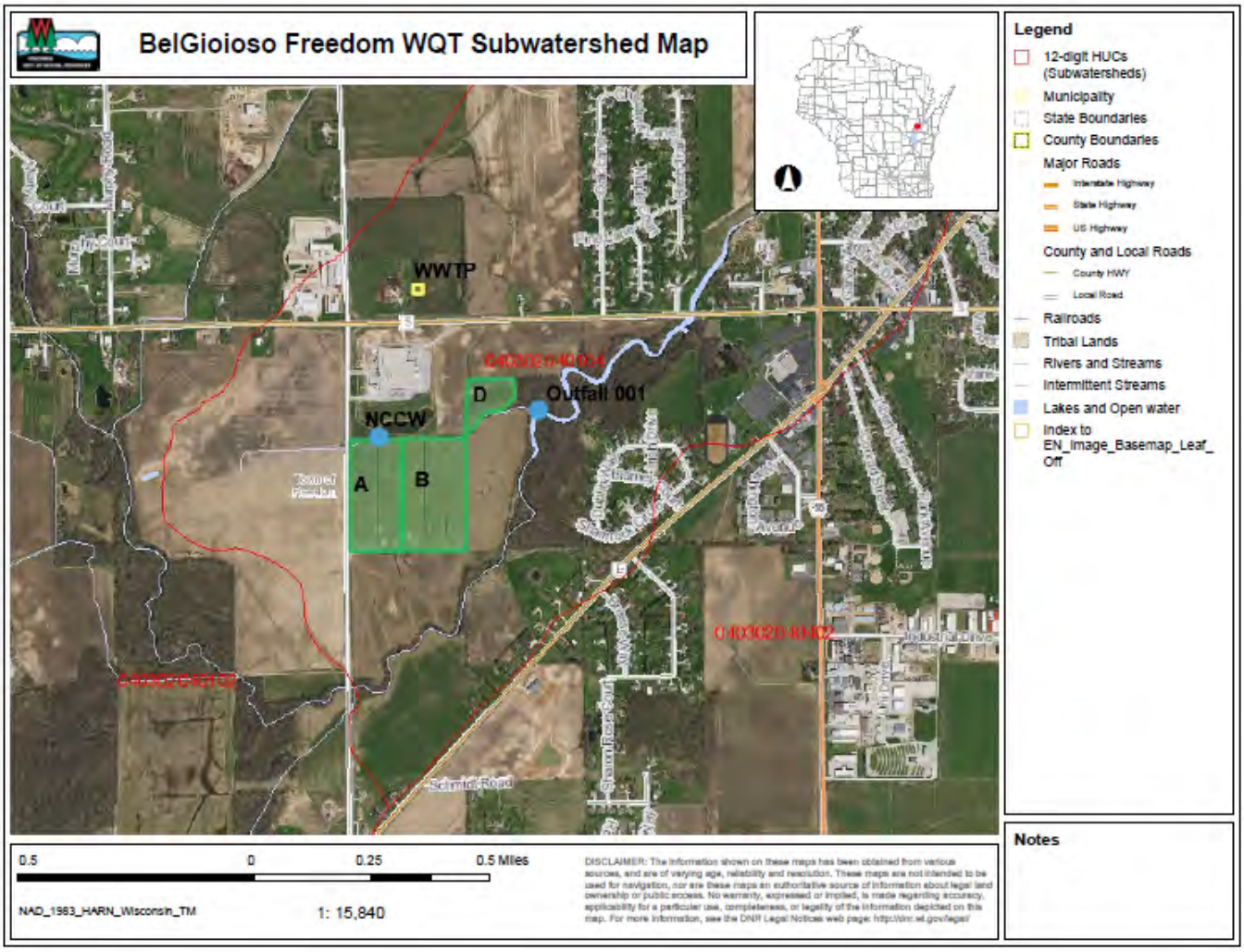
Probst has extensive experience in design and operation of wastewater treatment plants, especially in the dairy industry. Similar treatment systems have process wastewater effluent that consistently ranges from 0.03 – 0.05 mg/L phosphorus depending on the amount of polymer and ferric dosed into the system. Cerium chloride can also be dosed as needed to achieve extremely low phosphorus in the effluent. BelGioioso will be able to achieve a phosphorus effluent concentration in the range of 0.03 – 0.05 mg/L, as discussed in Section 2.1 above. At such low levels of phosphorus, the TSS is likely to be below the level of detection for most samples. Operators will ensure that appropriate chemical dosing occurs to ensure compliance with the permitted phosphorus and TSS mass discharged from the Outfall, taking the available phosphorus and TSS credits generated by the water quality trade into account. BelGioioso understands the quantity of phosphorus and TSS credits that are available as a result of this trade and will apply the necessary chemicals to ensure compliance with their permitted requirements.

2.4 Location of Outfall and Fields

2.4.1 Location of Outfall 001

BelGioioso will discharge treated process wastewater to Duck Creek (WBIC 409700) via Outfall 001 at approximately 44.38474°N and 88.30250°W. Outfall 001 is located in HUC12 Subwatershed 040302040104, which is also known as the Middle Duck Creek Subwatershed. The Middle Duck Creek Subwatershed is part of the larger Duck Creek – Frontal Green Bay Watershed (0403020401), which drains to Green Bay on its way to Lake Michigan. The Middle Duck Creek Subwatershed is subject to the Lower Fox River TMDL. Figure 1 below depicts the location of Outfall 001 in the Subwatershed. This is also given in Attachment B.

Figure 1
Subwatershed Map with Outfall and Fields shown



2.4.2 Location of the Fields

BelGioioso will implement the management practices to generate TP and TSS credits on portions of BelGioioso's fields which are also within the Middle Duck Creek Subwatershed. All 36.9 acres of the proposed trade fields are upstream of Outfall 001 and are within the Middle Duck Creek Subwatershed. There is no drain tile in these fields. A map is included in Attachment B which shows the portions of the fields which are upstream and downstream of Outfall 001.

The trade fields are located within Outagamie County near the Town of Freedom on Parcel 090040000 and portions of Parcel 090039800. These parcels are all located in SEC 15 TWP 22N 18E. BelGioioso also owns Parcel 023223 and 090039900 within the

Middle Duck Creek Subwatershed. Parcel 023223 will be the location of the new WWTP and Parcel 090039900 is not able to meet the TMDL baseline thresholds for the trade so no credits could be generated from these fields during this permit term. These fields will not be converted to permanent vegetation at this time.

Land application of liquid industrial wastewater from the Freedom facility is expected to decrease dramatically with the installation of the new wastewater treatment plant. Any land application of liquid industrial wastewater that may occur would occur infrequently and would be the result of an upset at the WWTP. All land application that does occur will be done in accordance with the requirements and limits of the WPDES permit. No land application will occur on fields being used to generate trade credits. A SnapPlus Nutrient Management Plan report will be generated annually for each field on which waste was land applied. The Nutrient Management Plan report will show nutrient loading compared to University of Wisconsin recommendations for the crop planted to ensure that the fields receiving waste (industrial liquid waste or WWTP sludge) are not overloaded. The reports will be used to model the original phosphorus non-point load to surface waters before and after land application of waste (industrial liquid waste or WWTP sludge) and will help verify that waste application does not increase phosphorus load to surface waters.

Table 1 below describes the current and future land use.

Table 1
Parcels owned by BelGioioso Impacted by Water Quality Trade

Parcel ID	Legal Description	WQT Field Name	Total Acreage	Previously Farmed Acreage	Acreage Converted to Permanent Grassland
090040000	W1/2 SW NW Less HY Sec 15 T22N R18E	A	18.67	14.8	14.8
090039800	CSM 5542 LOT2 (PRT SE NW & PRT SW NW & PRT NE NW SEC 15-22-18)	B	27.68	17.5	17.5
		D	4.6	4.6	4.6
		TOTAL	50.9	36.9	36.9

3 Existing Conditions and Potentially Tradeable TP and TSS Modeling

3.1 Existing Land Use of the Fields

Table 1 above shows how much land is currently farmed on each parcel. A portion of this land will be converted to generate credits for this water quality trade. The unfarmed acreage, which will not be converted to grassland for use in the water quality trade, is made up of some areas of the production facility (Parcel 090039800), agricultural ditches (Parcel 090040000) and a fallow field (Parcel 090039900). It was also determined that fields E and F do not meet the baseline criteria of the TMDL to generate credits during this permit term. As such, these fields will not be converted to permanent vegetation at this time.

The previously farmed acreage at BelGioioso has been cropped primarily for purposes of land application of industrial liquid wastewater. As such, cropping rotations have been a function of time of year that planting can occur due to land application restrictions rather than following typical crop rotation practices which might be used for strictly agricultural purposes. There is no drain tile present on the site.

3.2 Soil Sampling

Soil samples were taken on June 28, 2017 for five fields (A, B, D, E, F) located on the BelGioioso properties. At the request of WDNR based on preliminary review of water quality trade modeling, soil samples were done a second time on November 13, 2017 to confirm results. Phosphorus results from both sample dates were higher than would be typical for agricultural application because portions of these fields have historically been used for land application. Some portions of Field B were not able to be sampled on the November sampling date due to active land application on those portions of the fields. Variability between the two sample dates for all fields is likely due primarily to the amount of time between land application and sample collection. Fields E and F had soil phosphorus concentrations that were too high to achieve baseline thresholds established by the TMDL so those fields will not be converted to permanent vegetation at this time.

A NRCS soils map of the five fields is given in Attachment B and soil sample results from both dates, as well as an average of the two sample dates is given in Attachment D. A map of the sample locations is also included with the results in Attachment D. The average values were used to calculate the current and future potentially tradeable phosphorus and TSS for the water quality trade. Results of the SnapPlus reports using these average soil conditions can be found in Attachments F and G.

3.3 SnapPlus Modeling

SnapPlus (version 18.1, build 19015.1024) was used to model the five fields under current conditions. The five fields had all seen identical cropping in 2014, 2015, and 2016: Fallow, Soy Beans, and Corn Grain, respectively. The fields also had the following fertilizer applications:

- 2014: N/A
- 2015: N/A
- 2016: 11,000 gallons manure injected in the Spring

These fields have been cropped primarily for the purpose of land application at BelGioioso. In addition to manure application to ensure healthy crops, industrial liquid wastewater has also been applied historically on Fields B and D in the amounts shown in Table 2 below. There was no land application of industrial liquid wastewater in 2018 because these fields were converted to permanent prairie in June of 2018 to generate credits for the water quality trade.

Table 2: Land Application on BGC/F1 and BGC/F2 (Proposed Trade Fields B & D)

Field	Year	Acres Land Applied	Amount of Waste [gal]	P [mg/L]*	P [lbs/yr]	P2O5 [lbs/ac]	N [lbs/ac]
B	2014	18.5	814,000	42.6	15.6	35.8	44
	2015	18.5	451,000	36.2	7.4	16.9	22
	2016	18.5	-	-	-	-	-
	2017	18.5	302,500	32.2	4.4	10.0	16
D	2014	4.6	151,800	42.6	11.7	26.9	33
	2015	4.6	77,587	36.2	5.1	11.7	15
	2016	4.6	101,200	38.2	7.0	16.1	22
	2017	4.6	101,200	32.2	5.9	13.5	22

*Average of all reported samples for each year

Attachment C includes information regarding existing farming practices including a completed Existing Farming Practices (EFP) questionnaire completed by BelGioioso with their farmer as well as maps from NRCS CropScape which confirms the crops that were grown. This cropping and application data was modeled as a 3-year rotation through the year 2023.

There were a few deviations in the modeling from the CropScape maps because the farmer would not have planted different crops on each field. Deviations are as follows:

- **2014:** The CropScape map shows that portions of Fields A and E were planted in corn with a few spots of soybean, winter wheat, and fallow field. The farmer would only plant one crop at the site per year and in 2014 all fields were left fallow.

- **2015:** The CropScape map accurately shows that soybeans were planted on all fields.
- **2016:** The CropScape map accurately shows that corn was planted on all fields.
- **2017:** The CropScape map shows that a portion of E was planted in soybeans. The farmer would only plant one crop at the site per year and in 2017 all fields were left fallow.

3.4 Trading Requirements Within a TMDL

A credit threshold is the pollutant loading below which reductions are made to generate credits. The credit threshold establishes the amount of pollutant reduction that is necessary before credits may be generated. For agricultural areas addressed by an approved TMDL, the credit threshold is set to reflect the TMDL load allocation (LA). Fields E and F, which were initially intended to be included in the water quality trade, do not meet this credit threshold and will therefore not be converted to permanent vegetation as part of the water quality trade during this permit term.

Agricultural nonpoint source credit generators, like the fields that BelGioioso will use for their water quality trade, that are located in a watershed with an approved TMDL generate two types of credits; interim credits and long-term credits. Interim credits are generated by load reductions that achieve the credit threshold and, therefore, can be generated only when the current pollutant load exceeds the applicable LA. Long-term credits are generated by load reductions obtained below the LA credit threshold.

The duration of interim credits equals the lifespan of the management practice employed to reduce pollutant loads, or 5 years, whichever is shorter. In discussions with WDNR, BelGioioso has confirmed that the interim credits will begin when the WPDES permit is issued regardless of whether the facility is using those credits yet. Once interim credits have expired, the credit user may replace them with new interim credits, which would last another 5 years or life of the management practice, or they may utilize long-term credits. BelGioioso's current trade generates enough interim credits to meet their currently projected TP and TSS loads, but does not currently generate enough long-term credits to offset their load beyond the first 5 years. Improvements in effluent quality or additional water quality trade credits will be required during the next permit term for BelGioioso to continue to comply with their effluent limits. BelGioioioso will pursue compliance options as needed during this permit term to meet their long-term TP and TSS credit needs.

From an implementation standpoint, short-term and long-term credits must be calculated on a field-by-field basis rather than the total from the whole farm. Baseline phosphorus and sediment loss values were set by WDNR for each subwatershed with associated loss goals for each parameter as well. WDNR assumes a transport of 10% for total

suspended solids. The Freedom facility is in LF051300 and has the following baseline losses and goals shown in Table 3 below:

Table 3
Watershed TP and TSS Baseline Losses and TMDL Goals

Subwatershed	Baseline P Loss [lbs/ac/yr]	Baseline TSS Loss [tons/ac/yr]	TMDL P Loss Goal [lbs/ac/yr]	TMDL TSS Loss Goal [tons/ac/yr]
LF051300	1.9	0.85	0.44	0.35

Credits cannot be generated when the PTP and PTTSS calculated for the future condition (permanent grassland, not harvested) are greater than the TMDL loss goals in Table 3 above.

3.5 Modeled PTP/PTTSS Under Current Conditions

Attachment E includes the following SnapPlus reports:

- Narrative and Crop Report
- Soil Test Report
- Application Summary Report
- Manure Tracking Report
- Fields Data and 590 Assessment Plan
- Nutrient Management Report
- P Trade Report
- Annual Soil Loss

Potentially Tradeable Phosphorus (PTP) and Potentially Tradeable TSS (PTTSS) are summarized in Tables 4 and 5, respectively, below using the current crop and application rotation.

Table 4
SnapPlus Potentially Tradable Phosphorus (PTP) Report – Current (lbs/yr)

		Acres	2019	2020	2021	2022	2023	2024
No Land App	Field A	14.8	26.68	24.13	29.22	26.44	23.88	28.93
	Field B	17.5	23.39	20.86	25.34	23.09	20.55	24.99
	Field D	4.6	7.38	6.73	8.14	7.30	6.65	8.04
	SUB TOTAL	36.9	57.45	51.72	62.70	56.83	51.08	61.96
Land App Only	Field A	14.8	0.00	0.00	0.00	0.00	0.00	0.00
	Field B	17.5	1.29	23.19	11.90	1.99	23.94	12.79
	Field D	4.6	2.03	4.67	2.35	2.23	4.89	2.61
	SUB TOTAL	36.9	3.32	27.86	14.25	4.22	28.83	15.4
Total	Field A	14.8	26.68	24.13	29.22	26.44	23.88	28.93
	Field B	17.5	24.68	44.05	37.24	25.08	44.49	37.77
	Field D	4.6	9.41	11.40	10.49	9.53	11.54	10.65
	TOTAL	36.9	60.77	79.58	76.94	61.05	79.91	77.36

Table 5
SnapPlus Potentially Tradable TSS (PTTSS) Report – Current (tons/yr)

		Acres	2019	2020	2021	2022	2023	2024
No Land App	Field A	14.8	34.504	28.100	34.920	34.481	28.094	34.916
	Field B	17.5	95.104	77.454	96.251	95.042	77.437	96.240
	Field D	4.6	7.904	6.437	8.000	7.899	6.436	7.999
	SUB TOTAL	36.9	137.512	111.991	139.171	137.422	111.967	139.155
Land App Only	Field A	14.8	0.000	0.000	0.000	0.000	0.000	0.000
	Field B	17.5	0.088	1.759	0.658	0.087	1.759	0.658
	Field D	4.6	0.007	0.146	0.055	0.007	0.146	0.055
	SUB TOTAL	36.9	0.095	1.905	0.713	0.094	1.905	0.713
Total	Field A	14.8	34.504	28.100	34.920	34.481	28.094	34.916
	Field B	17.5	95.192	79.213	96.909	95.130	79.196	96.898
	Field D	4.6	7.912	6.583	8.055	7.906	6.582	8.054
	TOTAL	36.9	137.607	113.896	139.884	137.516	113.872	139.868

3.6 Modeled PTP/PTTSS with Proposed Permanent Grassland

The fields were then modeled by replacing the current crop rotation with a permanent grassland, not harvested. The same SnapPlus reports as were done for the current crop rotation are available for the permanent grassland modeling in Attachment F. Tables 6 and 7 below summarize the PTP/PTTSS given in the Trade Reports for future conditions with permanent grassland, not harvested.

Table 6
SnapPlus PTP – Permanent Grassland, not harvested (lbs/yr)

		Acres	2019	2020	2021	2022	2023	2024
No Land App	Field A	14.8	5.56	4.84	4.35	4.14	4.02	3.95
	Field B	17.5	4.40	3.80	3.41	3.24	3.14	3.09
	Field D	4.6	1.66	1.45	1.31	1.24	1.21	1.19
	SUB TOTAL	36.9	11.62	10.09	9.07	8.62	8.37	8.23
Land App Only	Field A	14.8	0.00	0.00	0.00	0.00	0.00	0.00
	Field B	17.5	0.57	0.51	0.47	0.45	0.44	0.43
	Field D	4.6	0.15	0.13	0.12	0.12	0.11	0.11
	SUB TOTAL	36.9	0.72	0.64	0.59	0.57	0.55	0.54
Total	Field A	14.8	5.56	4.84	4.35	4.14	4.02	3.95
	Field B	17.5	4.96	4.31	3.87	3.68	3.58	3.52
	Field D	4.6	1.81	1.58	1.43	1.36	1.32	1.30
	TOTAL	36.9	12.33	10.73	9.65	9.18	8.92	8.77

Table 7
SnapPlus PTTSS – Permanent Grassland, not harvested (tons/yr)

		Acres	2019	2020	2021	2022	2023	2024
No Land App	Field A	14.8	0.705	0.312	0.132	0.082	0.059	0.046
	Field B	17.5	1.942	0.860	0.363	0.226	0.164	0.127
	Field D	4.6	0.161	0.071	0.030	0.019	0.014	0.011
	SUB TOTAL	36.9	2.808	1.243	0.525	0.327	0.237	0.184
Land App Only	Field A	14.8	0.000	0.000	0.000	0.000	0.000	0.000
	Field B	17.5	0.000	0.000	0.000	0.000	0.000	0.000
	Field D	4.6	0.000	0.000	0.000	0.000	0.000	0.000
	SUB TOTAL	36.9	0.000	0.000	0.000	0.000	0.000	0.000
Total	Field A	14.8	0.705	0.312	0.132	0.082	0.059	0.046
	Field B	17.5	1.942	0.860	0.363	0.226	0.164	0.127
	Field D	4.6	0.161	0.071	0.030	0.019	0.014	0.011
	TOTAL	36.9	2.808	1.243	0.525	0.327	0.237	0.184

3.7 Calculation Interim PTP/PTTSS Based on Modified Land Use

Based on the change in land use from cropped agricultural land in corn and soybeans to a permanent grassland, not harvested, total interim PTP/PTTSS was then calculated. Tables 8 and 9 calculate the difference of the values in Tables 3 and 4 from Tables 5 and 6 above. Tables 8 and 9 do not incorporate the trade ratio which is discussed further in Section 4 of this report. The trade ratio must be included to determine final credits generated.

Table 8
Calculated Interim PTP – Permanent Grassland, not harvested (lbs/yr)

		Acres	2019	2020	2021	2022	2023	2024
No Land App	Field A	14.8	21.12	19.29	24.87	22.30	19.85	24.98
	Field B	17.5	18.99	17.05	21.93	19.86	17.40	21.90
	Field D	4.6	5.72	5.28	6.83	6.06	5.44	6.85
	SUB TOTAL	36.9	45.83	41.62	53.63	48.22	42.69	53.73
Land App Only	Field A	14.8	0.00	0.00	0.00	0.00	0.00	0.00
	Field B	17.5	0.72	22.68	11.43	1.54	23.50	12.36
	Field D	4.6	1.88	4.54	2.22	2.12	4.78	2.50
	SUB TOTAL	36.9	2.60	27.22	13.65	3.66	28.28	14.86
Total	Field A	14.8	21.12	19.29	24.87	22.30	19.85	24.98
	Field B	17.5	19.71	39.73	33.37	21.40	40.91	34.26
	Field D	4.6	7.60	9.82	9.05	8.18	10.22	9.35
	TOTAL	36.9	48.43	68.84	67.29	51.88	70.98	68.59

Table 9
Calculated Interim PTTSS – Permanent Grassland, not harvested (tons/yr)

		Acres	2019	2020	2021	2022	2023	2024
No Land App	Field A	14.8	33.799	27.788	34.788	34.399	28.034	34.870
	Field B	17.5	93.162	76.595	95.888	94.816	77.273	96.113
	Field D	4.6	7.743	6.366	7.970	7.880	6.422	7.988
	SUB TOTAL	36.9	134.704	110.749	138.646	137.095	111.729	138.971
Land App Only	Field A	14.8	0.000	0.000	0.000	0.000	0.000	0.000
	Field B	17.5	0.088	1.759	0.658	0.088	1.759	0.658
	Field D	4.6	0.007	0.146	0.055	0.007	0.146	0.055
	SUB TOTAL	36.9	0.095	1.905	0.713	0.095	1.905	0.713
Total	Field A	14.8	33.799	27.788	34.788	34.399	28.034	34.870
	Field B	17.5	93.250	78.354	96.546	94.903	79.032	96.771
	Field D	4.6	7.750	6.512	8.024	7.888	6.569	8.043
	TOTAL	36.9	134.799	112.654	139.358	137.190	113.635	139.684

4 Trade Ratio Calculation

The PTP and PTTSS generated by the SnapPlus modeling is adjusted by the applicable trade ratio to determine the amount of credits the credit user can receive for the management practice. As described in WDNR's "Guidance for Implementing Water Quality Trading in WPDES Permits" dated August 21, 2013 ("WQT Guidance"), the trade ratio is the sum of the delivery, downstream, equivalency, and uncertainty factors less any habitat adjustment factor. The trade ratio can be summarized as:

Trade Ratio = (Delivery + Downstream + Equivalency + Uncertainty – Habit Adjustment):1

See WQT Guidance at Section 2.11. For trades between point sources and nonpoint sources, there is a minimum trade ratio of 1.2:1. See WQT Guidance at Section 2.11.6.

As described in further detail by factor below, BelGioioso's management practice results in the minimum trade ratio of 1.2:1.

4.1 Individual Trade Ratio Factors

4.1.1 Delivery factor:

As discussed earlier, the trade fields subject to the permanent vegetative cover management practice are within the same HUC12, the Middle Duck Creek Subwatershed as BelGioioso Outfall 001. Because the Fields are within the same HUC12 as the Outfall, the delivery factor is not needed (i.e., it is zero). See WQT Guidance at § 2.11.1.

4.1.2 Downstream factor:

All 36.9 acres of the proposed trade fields are upstream of Outfall 001. Because the fields are located upstream of the Outfall, the downstream is not needed for these fields (i.e., it is zero). See WQT Guidance at Section 2.11.2.

4.1.3 Equivalency factor:

The permanent vegetative cover management practice on the fields will reduce phosphorus and suspended solids loadings to the subwatershed. BelGioioso is using the phosphorus and TSS credits generated by the permanent vegetative cover management practice to comply with the TP and TSS limits on Outfall 001. Because phosphorus and TSS reductions are being used to generate phosphorus and TSS credits, an equivalency factor is not needed (i.e., it is zero). See WQT Guidance at § 2.11.3.

4.1.4 Uncertainty factor:

The Fields will be placed in permanent vegetative cover, as described in Section 6. According to Table 4 of the WQT Guidance, land in perennial vegetation that was established and is maintained consistent with NRCS Technical Standard 327 results in an uncertainty factor of 1. See WQT Guidance at § 2.11.4, Table 4.

4.1.5 Habitat Adjustment factor:

BelGioioso is not claiming any beneficial habitat adjustment, so a habitat adjustment is not needed (i.e., it is zero). See WQT Guidance at § 2.11.5.

4.2 Calculation of Trade Ratio Based on Individual Factors

Inserting the above factors into the WQT Guidance's trade ratio formula results in a trade ratio of 1:1:

Trade Ratio = (Delivery + Downstream + Equivalency + Uncertainty – Habit Adjustment):1

36.9 Upstream Acres Trade Ratio = (0 + 0 + 0 + 1 – 0):1
= 1:1

Because the minimum allowed trade ratio by WDNR is 1.2:1, BelGioioso will use a 1.2:1 trade ratio for the entire 36.9 acres for estimating credits generated by the management practice.

5 Interim Credit Generation Calculation

For each year, the interim credit generated from the management practice is the difference between the PTP/PTTSS based on SnapPlus modeling assuming the prior crop rotation was continued and the PTP/PTTSS based on SnapPlus modeling assuming a permanent vegetative cover is installed and maintained on the Fields, divided by the credit ratio as shown in the equation below. Tables 10 and 11 show the results of this calculation for each field.

Interim Credits Per Year = (PTP or PTTSS Assuming Crops Rotation Continued – PTP or PTTSS Assuming Permanent Vegetative Cover) ÷ trade ratio

Table 10
SnapPlus Interim PTP (lbs/year) - (trade ratio of 1.2 applied)

		Acres	2019	2020	2021	2022	2023	2024
No Land App	Field A	14.8	17.60	16.07	20.73	18.58	16.54	20.82
	Field B	17.5	15.83	14.21	18.28	16.55	14.50	18.25
	Field D	4.6	4.77	4.40	5.69	5.05	4.53	5.71
	SUB TOTAL	36.9	38.19	34.68	44.69	40.18	35.58	44.78
Land App Only	Field A	14.8	0.00	0.00	0.00	0.00	0.00	0.00
	Field B	17.5	0.60	18.90	9.53	1.28	19.59	10.30
	Field D	4.6	1.57	3.78	1.85	1.77	3.98	2.08
	SUB TOTAL	36.9	2.17	22.68	11.38	3.05	23.57	12.38
Total	Field A	14.8	17.60	16.07	20.73	18.58	16.54	20.82
	Field B	17.5	16.43	33.11	27.81	17.83	34.09	28.55
	Field D	4.6	6.34	8.18	7.55	6.81	8.51	7.79
	TOTAL	36.9	40.37	57.37	56.08	43.23	59.15	57.15

For example, in 2019 for Field B phosphorus Total:

PTP Assuming Crop Rotation Continues: 24.68 lbs P/yr (from Table 4)
PTP Assuming Permanent Vegetative Cover: 4.96 lbs P/yr (from Table 6)
Difference: 19.72 lb P/yr (24.68-4.96)
Trade ratio: 1.2:1 (from Section 4.2)
PTP including Trade Ratio: 16.43 lbs P/yr (19.72/1.2)

Table 11
SnapPlus Interim PTTSS (tons/year) - (trade ratio of 1.2 applied)

		Acres	2019	2020	2021	2022	2023	2024
No Land App	Field A	14.8	0.000	23.157	28.990	28.666	23.362	29.058
	Field B	17.5	0.000	0.000	79.907	79.013	64.395	80.094
	Field D	4.6	6.452	5.305	6.641	6.567	5.352	6.657
	SUB TOTAL	36.9	6.452	28.462	115.538	114.246	93.109	115.809
Land App Only	Field A	14.8	0.000	0.000	0.000	0.000	0.000	0.000
	Field B	17.5	0.074	1.466	0.549	0.073	1.465	0.548
	Field D	4.6	0.006	0.122	0.046	0.006	0.122	0.046
	SUB TOTAL	36.9	0.080	1.588	0.594	0.079	1.587	0.594
Total	Field A	14.8	0.000	23.157	28.990	28.666	23.362	29.058
	Field B	17.5	0.000	0.000	80.455	79.086	65.860	80.643
	Field D	4.6	6.459	5.427	6.687	6.573	5.474	6.702
	TOTAL	36.9	6.459	28.584	116.132	114.325	94.696	116.403

For TSS, WDNR assumes that only 10% of the modeled sediment loss makes it to the waterway. All values in Table 11 are direct from SnapPlus. To incorporate the 10% rule, Table 12 shows the final interim PTTSS calculations for each field.

Table 12
SnapPlus Final Interim PTTSS (ton/year) - (trade ratio and 10% rule applied)

		Acres	2019	2020	2021	2022	2023	2024
No Land App	Field A	14.8	0.000	2.316	2.899	2.867	2.336	2.906
	Field B	17.5	0.000	0.000	7.991	7.901	6.440	8.009
	Field D	4.6	0.645	0.531	0.664	0.657	0.535	0.666
	SUB TOTAL	36.9	0.645	2.846	11.554	11.425	9.311	11.581
Land App Only	Field A	14.8	0.000	0.000	0.000	0.000	0.000	0.000
	Field B	17.5	0.007	0.147	0.055	0.007	0.147	0.055
	Field D	4.6	0.001	0.012	0.005	0.001	0.012	0.005
	SUB TOTAL	36.9	0.008	0.159	0.059	0.008	0.159	0.059
Total	Field A	14.8	0.000	2.316	2.899	2.867	2.336	2.906
	Field B	17.5	0.000	0.000	8.046	7.909	6.586	8.064
	Field D	4.6	0.646	0.543	0.669	0.657	0.547	0.670
	TOTAL	36.9	0.646	2.858	11.613	11.433	9.470	11.640

For example, in 2019 for Field D TSS Total:

PTTSS Assuming Crop Rotation Continues: 7.912 tons TSS/yr (from Table 5)
PTTSS Assuming Permanent Vegetative Cover: 0.161 tons TSS/yr (from Table 7)
Difference: 7.751 tons *TSS/yr (7.912 - 0.161) (from Table 9)*
Trade ratio: 1.2:1 (from Section 4.2)
PTTSS Using Trade Ratio: 6.459 tons TSS/yr (7.751/1.2) (from Table 11)
Percent of Modeled TSS to Waterway: 10%
Final PTTSS: 0.646 tons **TSS/yr (6.459*0.1)**

The same math applies for credits based on land application. The sum of the credits based on land application and those based on fertilizer or manure application is the total credits generated on site.

Planting of the permanent prairie was completed in June 2018. Full establishment of the prairie was expected by mid-September 2018. Construction of the wastewater treatment plant is expected in the summer of 2019. Because the prairie was fully established in 2018, no proration of credits is necessary for 2019. Interim credit for TP and TSS are summarized in Table 13 below. Values for PTTSS are in lbs/yr for ease of input into the WPDES permit rather than in tons/yr as they appear in Table 12.

Table 13
Total Interim PTP and PTTSS (lbs/yr)

Interim Credits	2019	2020	2021	2022	2023*	2024*
PTP [lbs/yr]	40.37	57.37	56.08	43.23	59.15	57.15
PTTSS [lbs/yr]	1,292	5,717	23,226	22,865	18,939	23,281

*Credits will be either interim or long term in 2023 and 2024 depending on the permit issuance schedule. Interim and long-term credits are not generated in the same year.

6 Long-Term Credit Generation Calculation

For long-term credits, each field must meet the TMDL credits threshold so credits must be calculated on a field-by-field basis rather than considering the whole farm. These credits will not apply until 5 years from the issuance of the permit, but are included in this report for clarity of long-term compliance needs. Field-specific calculations are included in Attachment H. Table 14 below summarizes the total long term PTP/PTTSS credits calculated.

Table 14
Total Long-Term PTP and PTTSS (lbs/yr)

Long-Term Credits	2023*	2024*	2025	2026	2027	2028
PTP [lbs/yr]	6.09	6.22	6.30	6.34	6.37	6.38
PTTSS [lbs/yr]	164	172	177	179	181	181

*Credits will be either interim or long term in 2023 and 2024 depending on the permit issuance schedule. Interim and long term credits are not generated in the same year.

7 Land Application Nutrient Management Plans

In an effort to track phosphorus & TSS throughout the entire trade, nutrient management plans will be completed for fields where industrial liquid waste or WWTP sludge is land applied. These plans model the original phosphorus & TSS non-point load to surface waters before and after land application of wastes from BelGioioso, showing that land application does not increase phosphorus or TSS loads to surface waters.

To establish a non-point phosphorus & TSS load baselines for land application in this Water Quality Trading Report, eight (8) likely fields for land application have been modeled using SnapPlus. These fields were used for land application of raw wastewaters at an assumed rate of 20,133 gallons/acre/year. This assumed rate is an average of the total land applied volumes from BelGioioso Freedom in 2016 and 2017.

Assumptions were made based on cropping information available on CropScape, assumed soil sample results of 101 ppm P, and usual farming practices. These assumptions may overestimate baseline phosphorus and TSS loss from the fields. The nutrient management plans for these fields will be completed along with the Land Application Management Plan as required by the WPDES permit once this information is available, and may result in less phosphorus & TSS loss than estimated in Tables 15 & 16 below. The completed nutrient management plans will be shared with the respective landowner(s).

Table 15
Land Application Fields – Potential Tradeable Phosphorus Baseline (lbs P/yr)

BelGioioso Field Name	Verhasselt Field Name	Acres	2019	2020	2021	2022	2023
DR/3	DR/3	70	406	270	135	391	257
DR/4	DR/4	81.8	393	261	130	378	248
JV/1	HF1-1	34	77	74	38	73	69
JV/2	HF1-2	32	90	76	38	85	71
	HF1-5	8	13	14	7	12	13
JV/3	HF1-3	39	109	92	46	104	87
	HF1-4	25	70	59	30	67	55
JV/4	HF2-4	17.8	60	51	26	57	48
	HF2-5	45.5	218	145	72	210	138
	HF2-6	38.7	88	84	43	83	79
JV/5	HF2-1	43	97	93	48	92	88
	HF2-2	57	331	220	110	318	209
	HF2-3	15	87	58	29	84	55
WS/1	WS/1	115	362	347	178	343	326
	TOTAL	**621.5**	**2,402**	**1,843**	**930**	**2,298**	**1,743**

Table 16
Land Application Fields – Potential Tradeable TSS Baseline (lbs TSS/yr)

BelGioioso Field Name	Verhasselt Field Name	Acres	2019	2020	2021	2022	2023
DR/3	DR/3	70	8,029	3,921	2,079	8,080	3,951
DR/4	DR/4	81.8	5,177	2,528	1,341	5,209	2,547
JV/1	HF1-1	34	690	420	215	695	424
JV/2	HF1-2	32	1,389	713	373	1,399	719
	HF1-5	8	1,693	869	454	1,705	876
JV/3	HF1-3	39	1,085	557	291	1,093	561
	HF1-4	25	104	64	33	105	65
JV/4	HF2-4	17.8	873	532	272	879	536
	HF2-5	45.5	6,538	3,193	1,693	6,579	3,217
	HF2-6	38.7	1,721	840	446	1,731	847
JV/5	HF2-1	43	1,229	631	330	1,238	636
	HF2-2	57	2,879	1,406	746	2,898	1,417
	HF2-3	15	786	478	244	791	482
WS/1	WS/1	115	8,809	5,364	2,739	8,869	5,406
	TOTAL	**621.5**	**41,003**	**21,517**	**11,256**	**41,269**	**21,683**

Figure 2 below shows the approximate location of these land application fields in relation to the trade fields/Outfall. Figures 3, 4 and 5 are closer views of the location of the land application fields.

Figure 2
Location of Land Application Fields and Outfall/Trade Fields

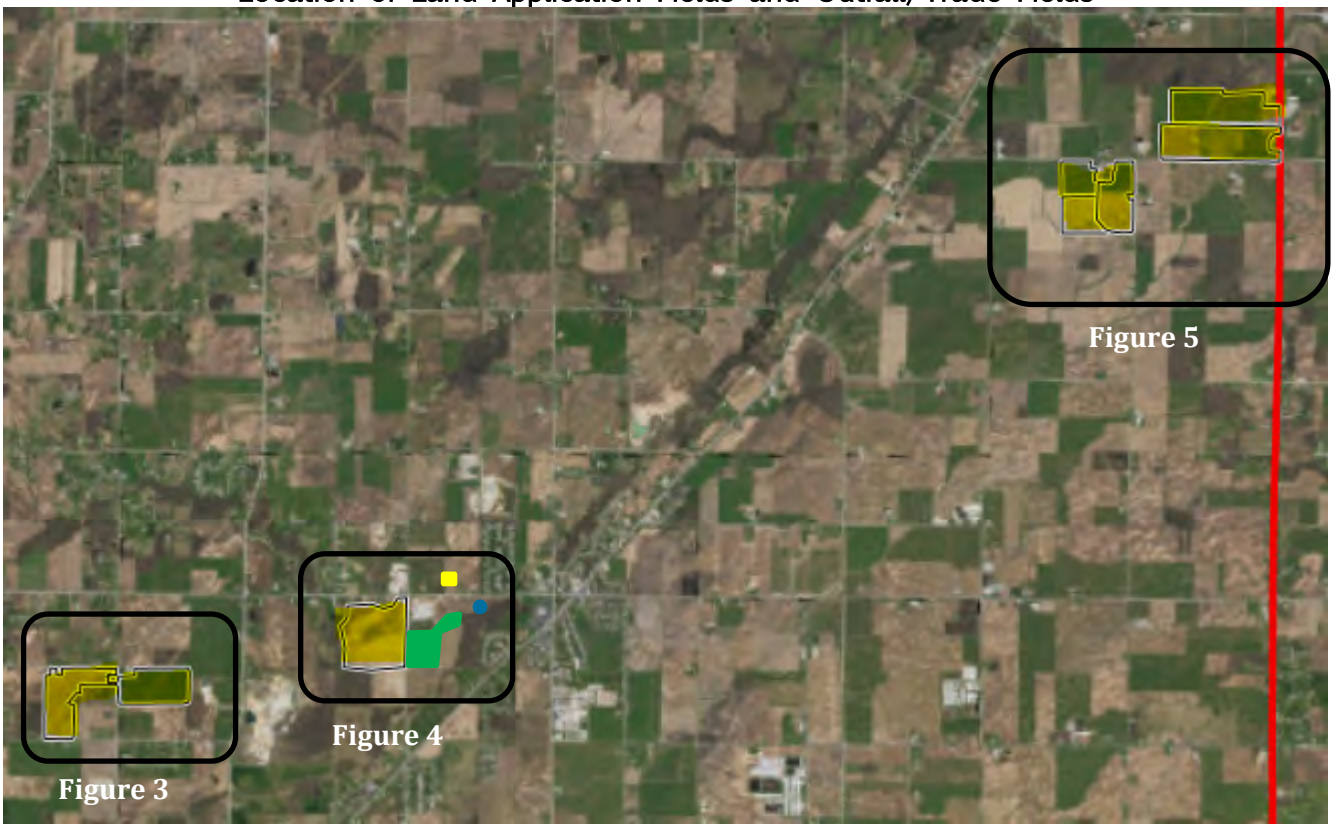


Figure 3
Location of Land Application Fields

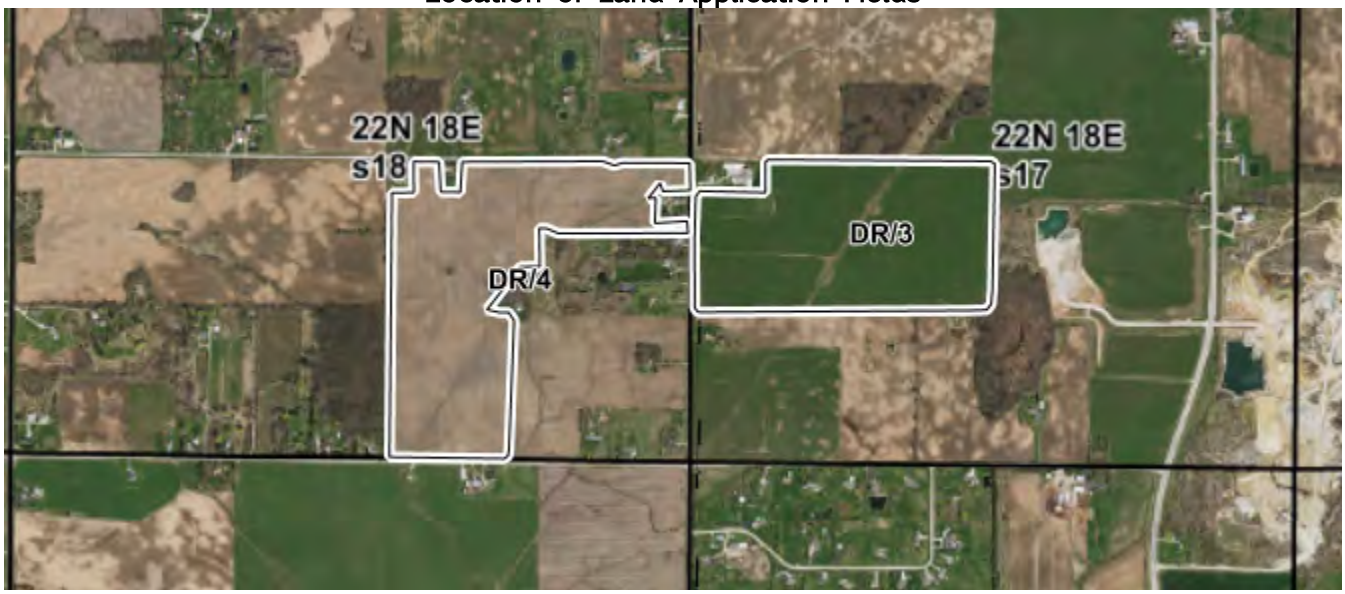


Figure 4
Location of Land Application Fields

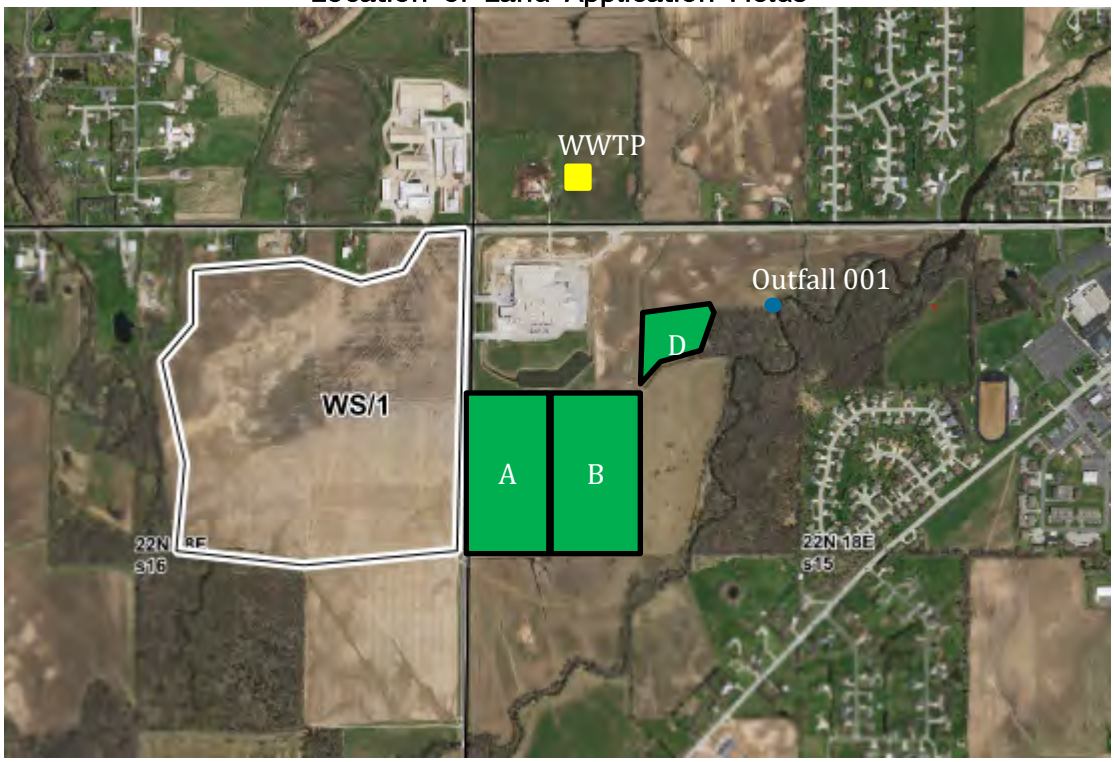


Figure 5
Location of Land Application Fields

Since phosphorus and TSS do not have natural gaseous forms, all phosphorus and TSS that enter the WWTP will either need to leave in the treated wastewater or through the sludge byproduct. Table 17 below is a rough mass balance table for phosphorus and TSS before and after WWTP construction and phosphorus trading.

Table 17
Approximate Average Mass Balance (lbs/ac/yr)

	Phosphorus (lb/yr)	TSS (lbs/yr)
CURRENT		
Raw Wastewater to Land Application[a]	2,749	45,817
AFTER WWTP		
Discharge from WWTP to Stream	44.02[b]	733.628[c]
Credits Generated from Trade (average from 2019-2024 before trade ratio)	-52.23	-129.554
Biosolids from WWTP applied as land application[a]	2,705	45,083

[a]Note that this mass is what is land applied and NOT the load to surface waters
[b]Assumes a discharge of 0.06 mg/L
[c]Assumes a discharge of 1 mg/L

8 Management Practice Description

8.1 Installation Plan

An Establishment Plan has been developed by Carl Korfmacher of Midwest Prairies and has been included as Attachment I. The plan outlines what soil preparation, seed mix, erosion control measures, and other measures are required to install the native prairie consistent with NRCS Technical Standard 327. The seed mix includes all native grasses and sedges. The plan is specific to each field and a map is included. The plan outlines other activities that may or may not be required to establish the prairie during the first couple of months.

8.2 Operation and Maintenance Plan

A separate operations plan was also prepared by Carl Korfmacher of Midwest Prairies and has been included as Attachment J. This plan outlines regular maintenance requirements to keep the prairie healthy. It also includes other irregular activities that may be required after inspections by a prairie expert.

9 Timeline

9.1 Schedule for Construction and Initial Operation of WWTP

BelGioioso will begin constructing the Industrial Wastewater Treatment Plant in the Spring of 2019. Estimated start-up date and discharge of treated wastewater in accordance with Outfall 001 of their WPDES permit will occur in the Summer of 2019.

9.2 Schedule for Installation of Permanent Vegetative Practice

Date	Action
June 2018	Initial Planting of prairie (including cover crop)
July 2018	First inspection (one month after planting)
August 2018	Germination of all seed
August thru Nov 2018	Mowing and herbicide application as needed for weed control
August 2018	Second inspection
September 2018	Prairie established (bare spots greater than 100 yd^2 will be reseeded)
September 2018	BelGioioso will follow the Operation and Maintenance plan after this date

Between the time of the original submittal and this plan revision, BelGioioso planted the permanent vegetation as described in this plan in order to ensure that, if approved, credits would be available for use by the Summer of 2019.

10 Inspections and Reporting

10.1 Water Quality Trading Management Practice Registration

WDNR Practice Registration Form 3400-207 for Water Quality Trading Management Practice Registration ("Practice Registration Form") has been included in Attachment G.

10.2 Monthly Certification

Each month, BelGioioso will inspect the Fields generating the phosphorus and TSS reduction credits to confirm continued cover of the permanent vegetative management practices. If during these inspections any attention is needed to the permanent vegetative management practice, the issue will be addressed immediately. Any photos taken during these inspections can be used to supplement the annual inspections described further in Section 10.3. If larger issues are encountered, BelGioioso will have their prairie expert out to the site to address any issues observed. This may include regrading and reseeding if necessary. BelGioioso will also reach out to WDNR within 24 hours of becoming aware of the issue. Follow-up documentation explaining the issue and prevention of future issues will be documented if requested by WDNR.

Each month, BelGioioso shall also certify that the permanent vegetative cover management practice installed to generate TP and TSS reduction credits is operated and maintained in a manner consistent with that specified in this Water Quality Trading Plan or a statement noting noncompliance with this Plan. 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 water quality trading plan as the source of phosphorus and TSS reduction credits is installed, established and properly maintained.

Usage and reporting of phosphorus and TSS credits will also occur on a monthly basis and be submitted on the DMRs.

10.3 Annual Inspections

Once per year, BelGioioso's prairie restoration consultant will inspect the fields generating the TP and TSS reduction credits to confirm implementation of the permanent vegetative cover management practice and that the management practice is being appropriately maintained. This annual inspection shall occur between mid-August and mid-September each year and shall include at least one photograph of each of the Fields; one overall site photo, and one close-up photo of a representative area of the field.

10.4 Notification of Problems with Management Practice

In accordance with the Operation and Maintenance Plan, BelGioioso will notify the regional WDNR wastewater compliance staff verbally within 24 hours of becoming aware that the phosphorus reduction credits used or intended for use by BelGioioso are not being implemented or generated as set forth in this Water Quality Trading Plan. Additionally, WDNR within five (5) days of becoming aware of noncompliance, written notification will be provided to the regional WDNR wastewater compliance staff. Both notifications will include the nature of the noncompliance, a description of how the issues will be addressed, and an appropriate timeline to address the issues. BelGioioso shall work to rectify such problems in accordance with the Operation and Maintenance Plan.

10.5 Annual Water Quality Trading Report

BelGioioso shall report to WDNR by January 31 of each year the following:

- The number of TP and TSS reduction credits (lbs/month) used each month of the previous year to demonstrate compliance;
- Photographs from the annual inspection of the permanent vegetative cover management practice that generated the TP and TSS reduction credits used during the previous years;

- Identification of noncompliance or failure to implement any terms or conditions WPDES permit WI-0066176-01-0 with respect to water quality trading that have not been reported in discharge monitoring reports; and
- SnapPlus Nutrient Management Plan report of all fields receiving land applied waste (industrial liquid waste or WWTP sludge) will be submitted to WDNR annually to demonstrate that there has not been overloading of any field as a result of this trade. Land application management plans will also be reviewed annually to determine whether updates are necessary.

10.6 WDNR Right to Inspect the Fields

WDNR has the right to inspect the permanent vegetative cover management practice at any time upon giving reasonable notice to BelGioioso to ensure the management practice is in compliance with the NRCS Technical Standard 327 and the terms of this Plan.

11 Compliance with Water Quality Trading Checklist

This Water Quality Trading Plan complies with the Water Quality Trading Checklist in Table 8 set forth at page 37 of the WQT Guidance. BelGioioso's water quality trade must comply with the requirements for Credit Source (e) in Table 8. Credit Source (e) includes sources where "credits are obtained from a construction project or implementation of a plan undertaken by the credit user for sources other than that covered by the credit user's WPDES permit." BelGioioso will be installing permanent vegetative cover on the Fields, which are not currently covered by their WPDES permit.

Below is a list of the elements of a Water Quality Trading plan for credit sources classified as (e) under Table 8 and references the section of this Water Quality Trading Plan in which each element is addressed:

- Permittee's/credit user's WPDES permit number. BelGioioso WPDES permit number is WI-0066176-01-0 and is included in Section 2.1.
- Permittee's/credit user's contact information. BelGioioso contact information is included in Section 12.
- Pollutant(s) for which credits will be generated. Credits will be generated for phosphorus and TSS as discussed in Section 2.1.
- Amount of credits available from each location/management practice/local governmental unit when acting as a broker. The amount of interim credits generated per year by installing and maintaining permanent vegetative cover on the Fields are set forth in Tables 10 and 12 in Section 5.
- Certification that the content of the trading application is accurate and correct. Certification that the content of this trading application is accurate and correct is included in Section 12.

- Signature and date of signature of permittee's/credit user's authorized representative. BelGioioso authorized representative's signature and date of signature is included in Section 12.
- Location(s) where credits will be generated (e.g., map of field or site where management practice will be applied including major drainage way(s) from the project). Maps indicating the location of the Fields and Outfall 001 are included in Section 2.4 and in Attachment B.
- Identification of method(s) including management practice(s) that will be used to generate credits at each location. The management practice applied to the Fields is permanent vegetative cover consistent with NRCS Technical Standard 327 and is explained in Section 8 and Attachments I and J.
- Duration of agreement (e.g., the design life of the management practice) with each credit generator. The design life of the permanent vegetative management practice is perpetual as described in Section 10.
- Schedule for installation/construction of each management practice. The schedule for installation of the permanent vegetative practice is included in Section 9.2.
- Operation and maintenance plan for each management practice used to generate credits. The operation and maintenance plan for the permanent vegetative cover management practice is summarized in Section 8.2 and included in full in Attachment J.
- Date when credits become available for each management practice (i.e., when practice is established and effective). The date when credits become available is September 1, 2018 and is referenced in Section 9.
- Model(s) used to derive the amount of credits. The model used to derive the amount of credits is SnapPlus V2 version 18..1, build 19015.1024 as referenced in Section 3.3.
- The applicable trade ratio for each for each management practice including supporting technical basis (see Table 4 on p. 20 of WQT Guidance). The applicable trade ratio is 1.2:1 and the technical basis and calculation of the trade ratio is included in Section 4.

12 Certification of Water Quality Trade Report

The undersigned hereby certifies that this Water Quality Trade Report is, to the best of his knowledge, accurate and correct.

BELGIOIOSO CHEESE INC – Freedom, WI.

By: _____
Gustavo Badino

920-863-2123
4200 Main Street
Green Bay, WI 54311

ATTACHMENT A

Notice of Intent (NOI) to Conduct Water Quality Trading

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
BelGioioso Cheese Inc	WI- 066176-01-0	

Facility Address	City	State	ZIP Code
N4056 Vine Road	Kaukauna	WI	54130

Project Contact Name (if applicable)	Address	City	State	ZIP Code
Lynn Morrison - Probst Group	17035 W. Wisconsin Ave Suite 120	Brookfield	WI	53005

Project Name: BelGioioso Freedom New WWTP

Receiving Water Name	Parameter(s) being traded	HUC 12(s)
Duck Creek	Total Phosphorus, Total Suspended Solids	040302040104

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:

Conservation Easement (natural prairie restoration) with Parcel 09004000 and portions of Parcel 090039800 in Outagamie County in the Town of Freedom, WI owned by BelGioioso Cheese Inc.

Method for quantifying credits generated:
- ☐ Monitoring
- ☒ Modeling, Names: SnapPlus V2 18.1
- ☐ Other: _____

Projected date credits will be available: 09/01/2018

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
[signature]	7/30/2019

Authorized Representative Signature

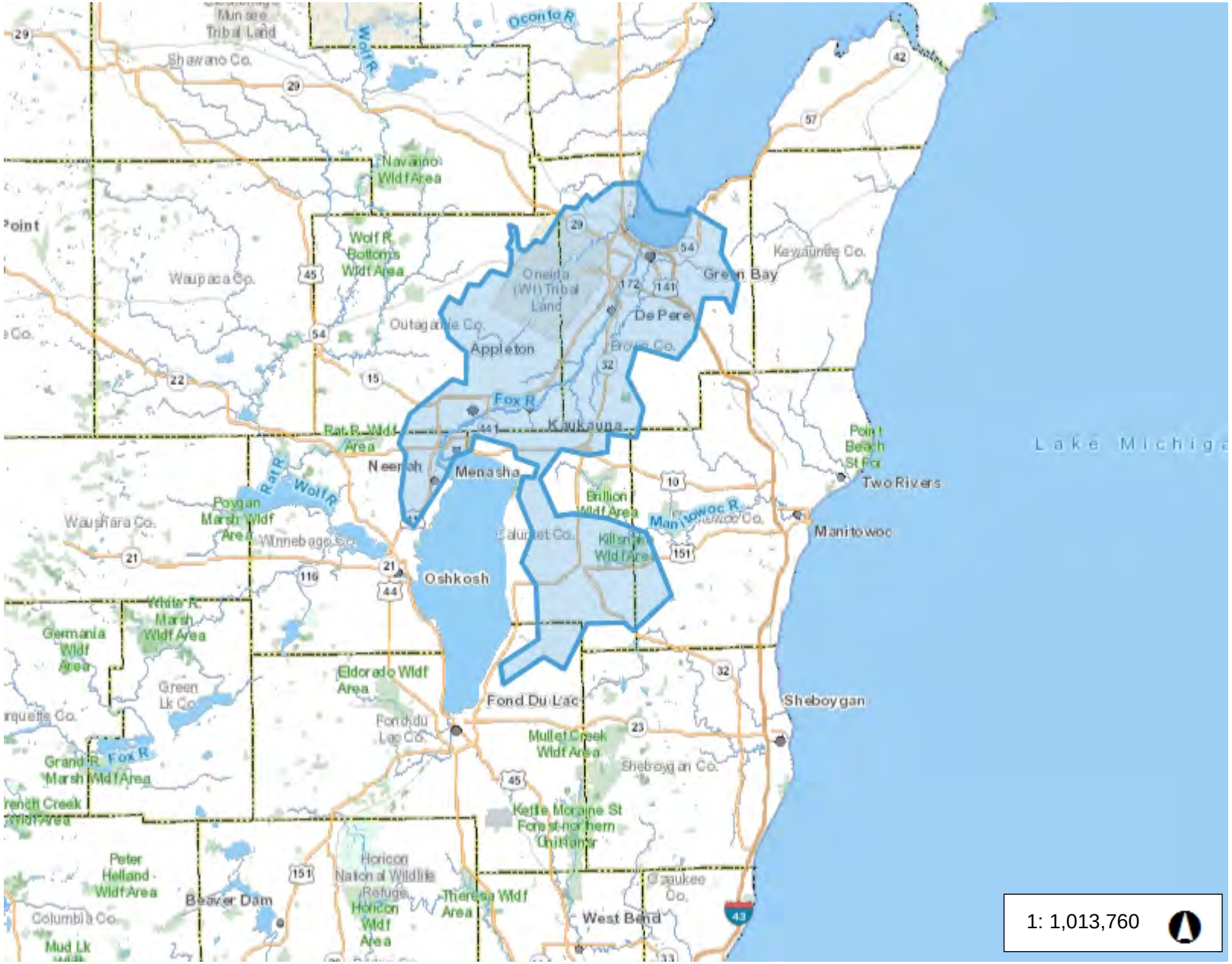
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. 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]	07/30/19

ATTACHMENT B

Watershed, Subwatershed, and Field Maps

Lower Fox TMDL Area



Legend

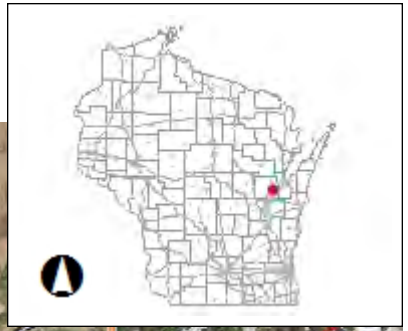
▲ Surface Water Outfalls

Notes

32.0 0 16.00 32.0 Miles

NAD_1983_HARN_Wisconsin_TM

BelGioioso Freedom WQT Subwatershed 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
- Index to EN_Image_Basemap_Leaf_Off

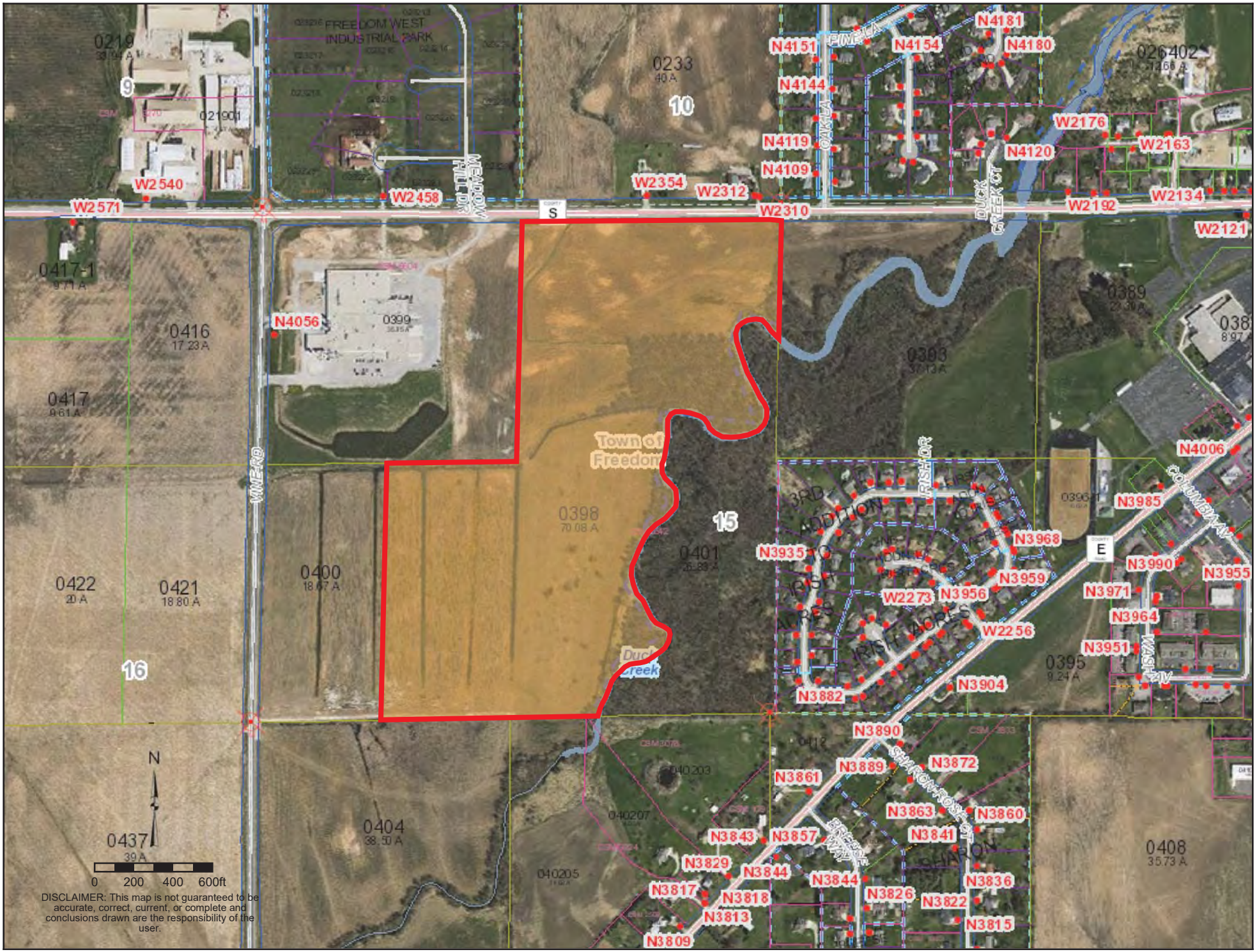
Notes

0.5 0 0.25 0.5 Miles

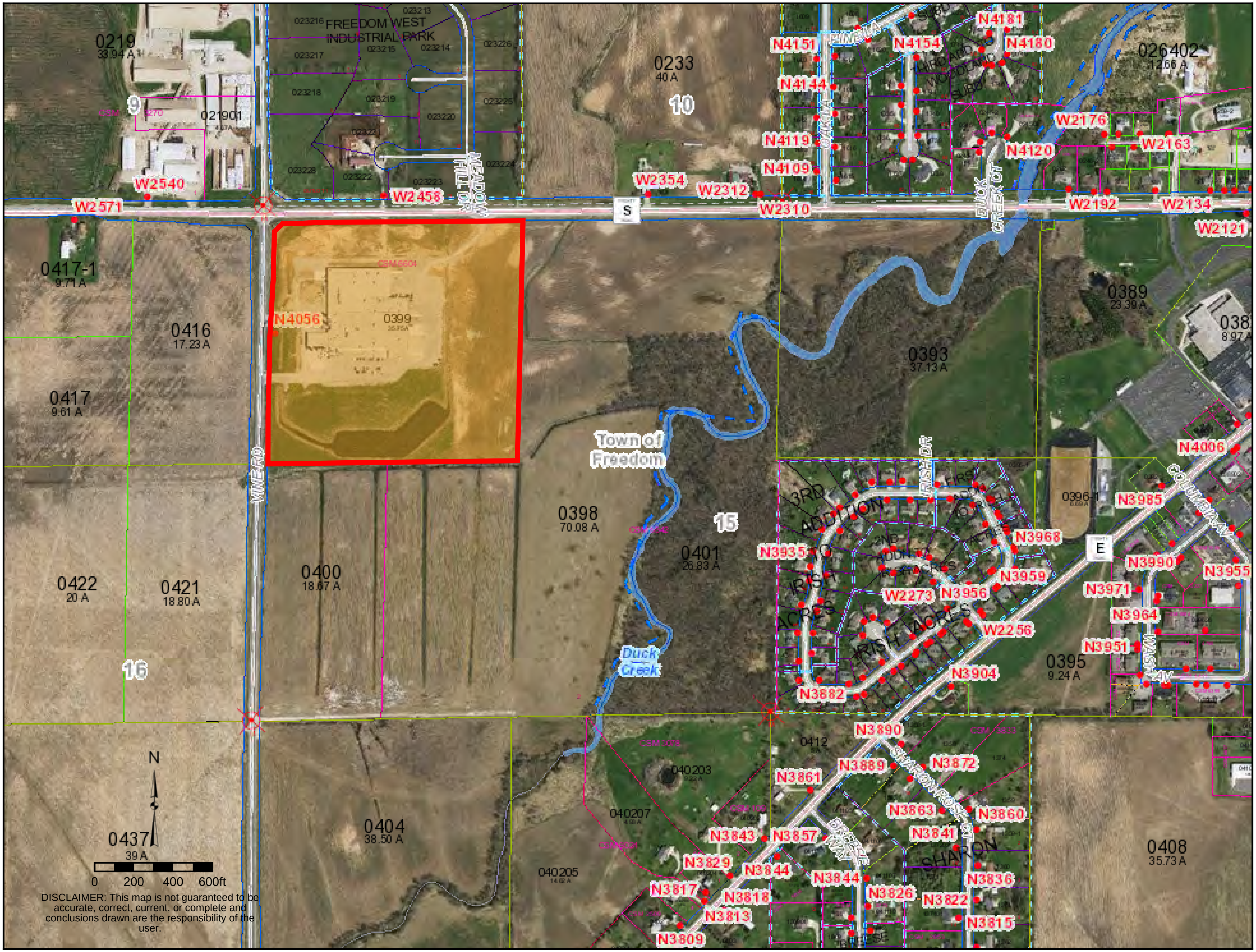
NAD_1983_HARN_Wisconsin_TM

1: 15,840


W2598
W2540
W2571
W2599
W2458
W2354
W2310
W2312
9
10
S
0417-1
9.71 A
0416
17.23 A
0417
9.61 A
0422
20 A
0421
18.80 A
16
0400
18.67 A
0399
N4056
Town of Freedom
0398
70.08 A
15
0401
26.83 A
Duck Creek
0393
37.13 A
0404
38.50 A
0437
39 A
N
0 200 400 600ft
DISCLAIMER: This map is not guaranteed to be accurate, correct, current, or complete and conclusions drawn are the responsibility of the user.
3RD ADDITION
2ND ADDITION
IRISH ACRES
N3963
N3990
N3935
N3929
W2273
N3940
N3904
N3882
E
0412
040203
040207
040205
N3889
N3872
N3861
N3879
N3863
N3850
N3857
N3843
N3829
N3844
N3841
N3836
N3817
N3813
N3826
N3822
N3818
N3809
SHARON



DISCLAIMER: This map is not guaranteed to be accurate, correct, current, or complete and conclusions drawn are the responsibility of the user.



DISCLAIMER: This map is not guaranteed to be accurate, correct, current, or complete and conclusions drawn are the responsibility of the user.

BelGioioso Freedom Trade Fields

Farm: BelGioioso Freedom, V18 Generated:3/1/2019, Crop year: 2019, Township Range Section:22N 18E s15

- Counties
- Township/Range
- Areas contributing runoff to direct conduits to groundwater
- Nutrient prohibited areas (buffers vary by feature)
- Nutrient prohibited areas (drawn manure prohibited areas)
- Grassed waterway
- Non-eroding channel
- Ephemeral erosion channel
- Ditch
- Gully
- Headland stacks
- Not farmed
- Grass filter area
- Vegetated buffer
- Non-metallic mine
- Water
- Sinkhole/other karst feature
- Other
- Municipal wells
- County Defined Karst Features
- Fields
- Drinking Well
- Public well
- Irrigation well
- Sinkhole
- Non-metallic mine
- Fractured bedrock at surface
- Other direct conduit
- Tile outlet

Converted Acres for WQT:

Field A = 14.8 acres

Field B = 17.5 acres

Field D = 4.6 acres

TOTAL = 36.9 acres

Soil Map—Outagamie County, Wisconsin
(BelGioioso Freedom Trade)

Map Scale: 1:4,620 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Outagamie County, Wisconsin
Survey Area Data: Version 12, Sep 11, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Oct 31, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Fu	Fluvaquents	1.0	2.2%
HrB	Hortonville silt loam, 2 to 6 percent slopes	2.0	4.4%
McA	Manawa silty clay loam, 0 to 3 percent slopes	4.1	8.9%
MuA	Mundelein silt loam, 0 to 3 percent slopes	37.9	82.3%
Pf	Poy silty clay loam, 0 to 2 percent slopes	0.6	1.2%
SyA	Symco silt loam, 0 to 3 percent slopes	0.5	1.1%
Totals for Area of Interest		**46.0**	**100.0%**

BelGioioso Freedom Trade Fields Upstream of Discharge

1: 23,760

Legend

Notes

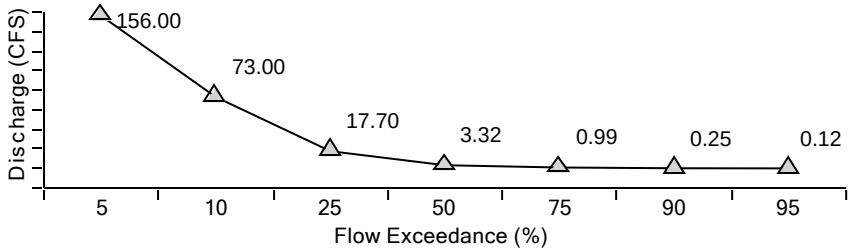
0.8 0 0.38 0.8 Miles

NAD_1983_HARN_Wisconsin_TM

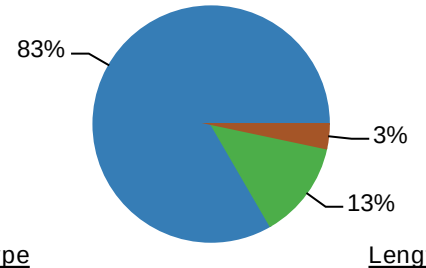
PRESTO-Lite Watershed Delineation Report

Reach ID: 200098593
Watershed Name: Middle Duck Creek
Waterbody Name: Duck Creek
HUC08: Lower Fox
Watershed Area: 49.3 mi²
Average Annual Precipitation: 30.79in

Stream Flow

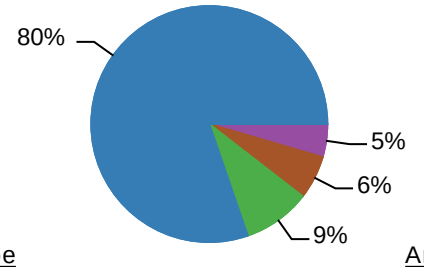


Tributary Stream Type



Type	Length
Macroinvertebrates	103963 ft
Cold Headwater	16598 ft
Cool-Cold Headwater	4129 ft
Coldwater	0 ft
Cool-Cold Mainstem	0 ft
Cold Mainstem	0 ft
Large River	0 ft
Warm Headwater	0 ft
Warm Mainstem	0 ft

Landcover



Type	Area
Agriculture	39.28 mi²
Forest	4.52 mi²
Urban	2.92 mi²
Wetland	2.21 mi²
Barren	0.18 mi²
Grassland	0.16 mi²

PRESTO Phosphorus Load Estimate

Avg. Annual Nonpoint Phosphorous Load (80% Confidence Interval)	28,105 (11,228 - 70,351) lbs
Number of Facilities (Individual Facility Information below)	0
Avg. Annual Point-source Phosphorous Load (2010 - 2012 total of all facilities)	0lbs
Most Likely Point : Nonpoint Phosphorous Ratio	0% : 100%
Low Estimate Point : Nonpoint Phosphorous Ratio (Adaptive Management)	0% : 100%

Adaptive Management Results

Facilities Discharging to the Middle Duck Creek Watershed:

Facility Name	Permit #	Outfall #	Waste Type	Receiving Water	Avg. Phosphorus Load (lbs.) (2010 - 2012)
No Facilities Found	-	-	-	-	-

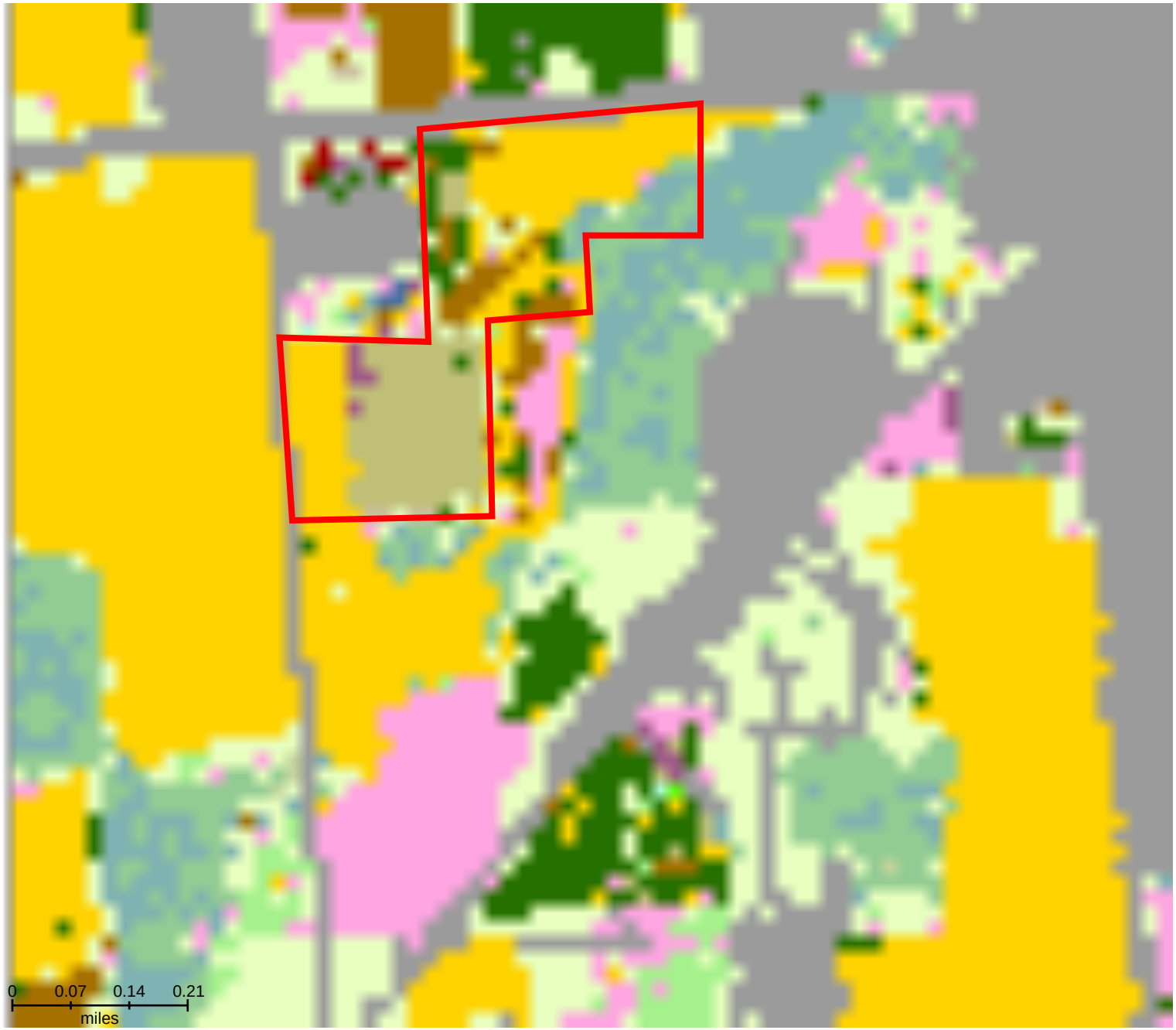
Watershed Analysis Limitations

- This analysis relies on pre-defined catchments from the Wisconsin Hydrography Data-Plus and may not delineate from the exact location required. When assessing phosphorus loads for specific facility in support of efforts such as adaptive management, care should be taken to ensure that additional downstream point sources do not exist. For adaptive management information related to specific facilities please reference the PRESTO website http://dnr.wi.gov/topic/surfacewater/presto.html
- Delineation of watersheds is based on a topographic assessment and therefore do not account for modified drainage networks such as stormwater sewer systems and ditched agriculture.
- If a watershed requires delineation from an exact location the user may use the desktop version of PRESTO that requires ESRI ArcGIS. The PRESTO tool and default datasets can be downloaded at http://dnr.wi.gov/topic/surfacewater/presto.html
- Data sources for this report originate from the WDNR's Wisconsin Hydrography Data-Plus value-added dataset and the point and non-point source loading information including in the WDNR's PRESTO model.
- If you have questions about the report generated from the PRESTO-Lite application please contact: DNRWATERQUALITYMODELING@wisconsin.gov

ATTACHMENT C

Existing Farming Practices Questionnaire

Cropland Data Layer 2014



Land Cover Categories

(by decreasing acreage)

AGRICULTURE

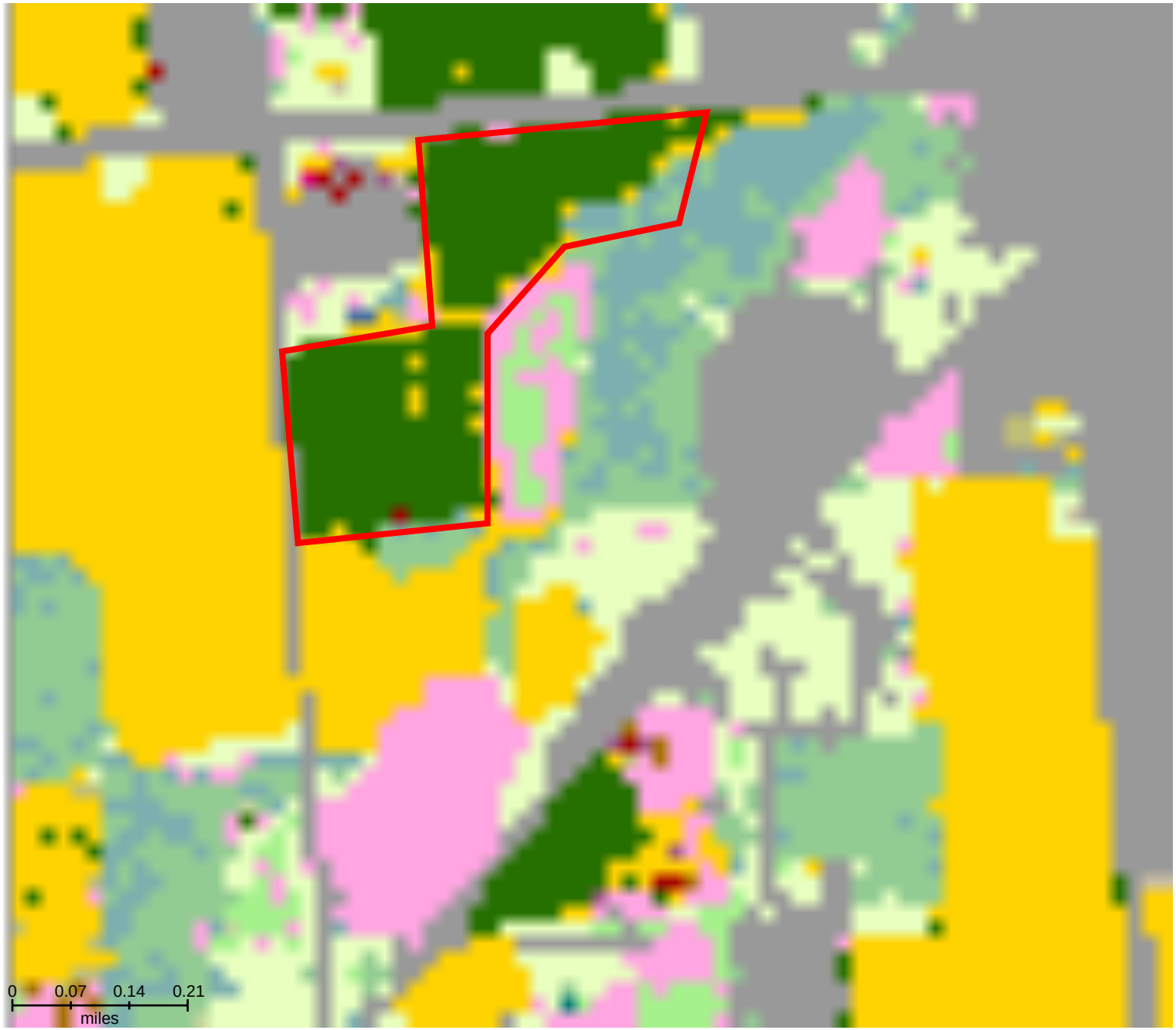
- Corn
- Grass/Pasture
- Alfalfa
- Soybeans
- Fallow/Idle Cropland
- Winter Wheat
- Other Hay/Non Alfalfa
- Oats
- Dry Beans
- Sod/Grass Seed
- Peas
- Triticale

NON-AGRICULTURE*

- Developed/Low Intensity
- Deciduous Forest
- Developed/Open Space
- Developed/Medium Intensity
- Woody Wetlands
- Developed/High Intensity

* Only top 6 non-agriculturecategories are listed.

Cropland Data Layer 2015



Land Cover Categories

(by decreasing acreage)

AGRICULTURE

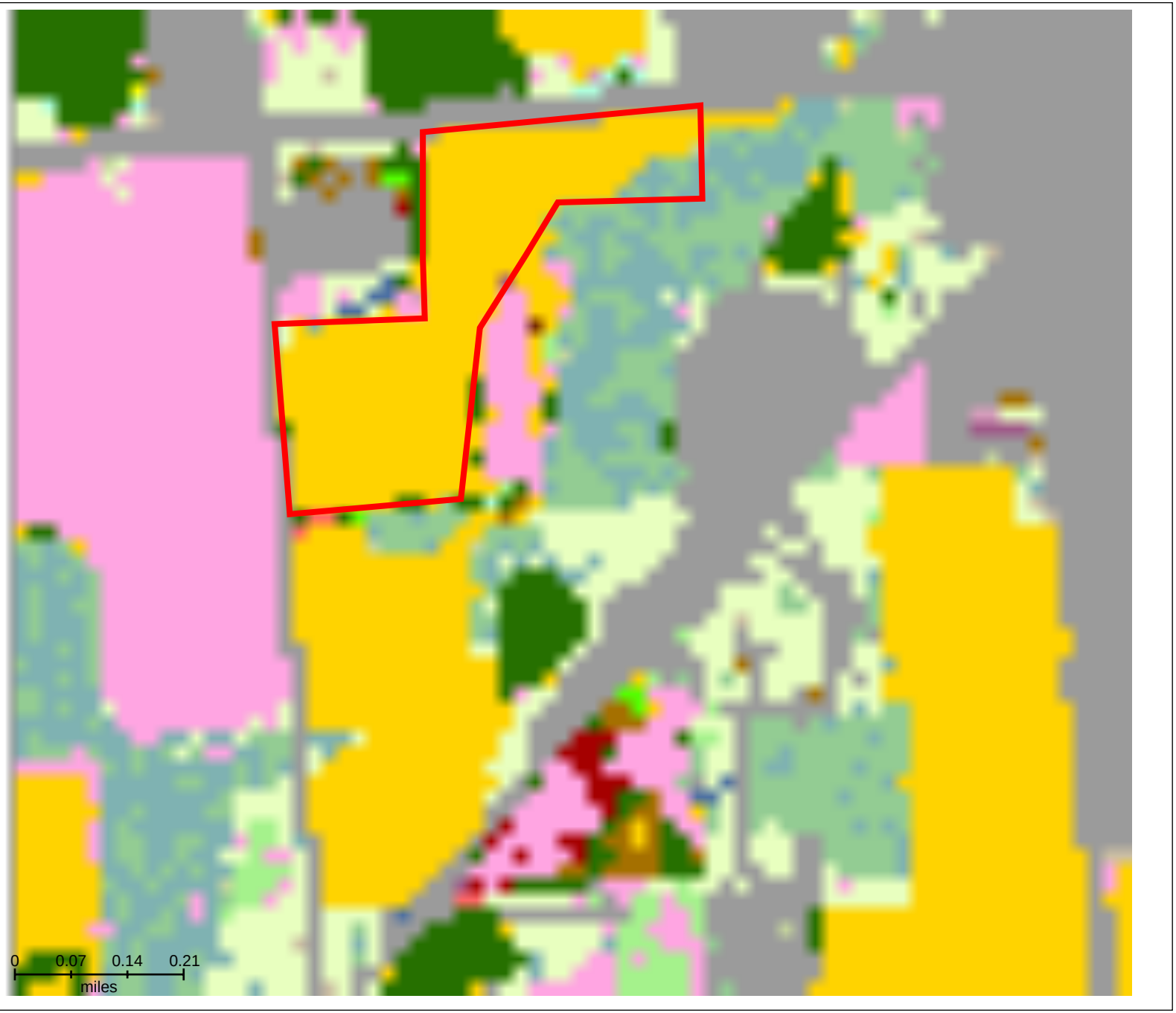
- Corn
- Grass/Pasture
- Soybeans
- Alfalfa
- Other Hay/Non Alfalfa
- Fallow/Idle Cropland
- Winter Wheat
- Dry Beans
- Oats
- Barley
- Christmas Trees

NON-AGRICULTURE*

- Developed/Low Intensity
- Deciduous Forest
- Developed/Open Space
- Developed/Medium Intensity
- Woody Wetlands
- Developed/High Intensity

* Only top 6 non-agriculturecategories are listed.

Cropland Data Layer 2016



Land Cover Categories

(by decreasing acreage)

AGRICULTURE

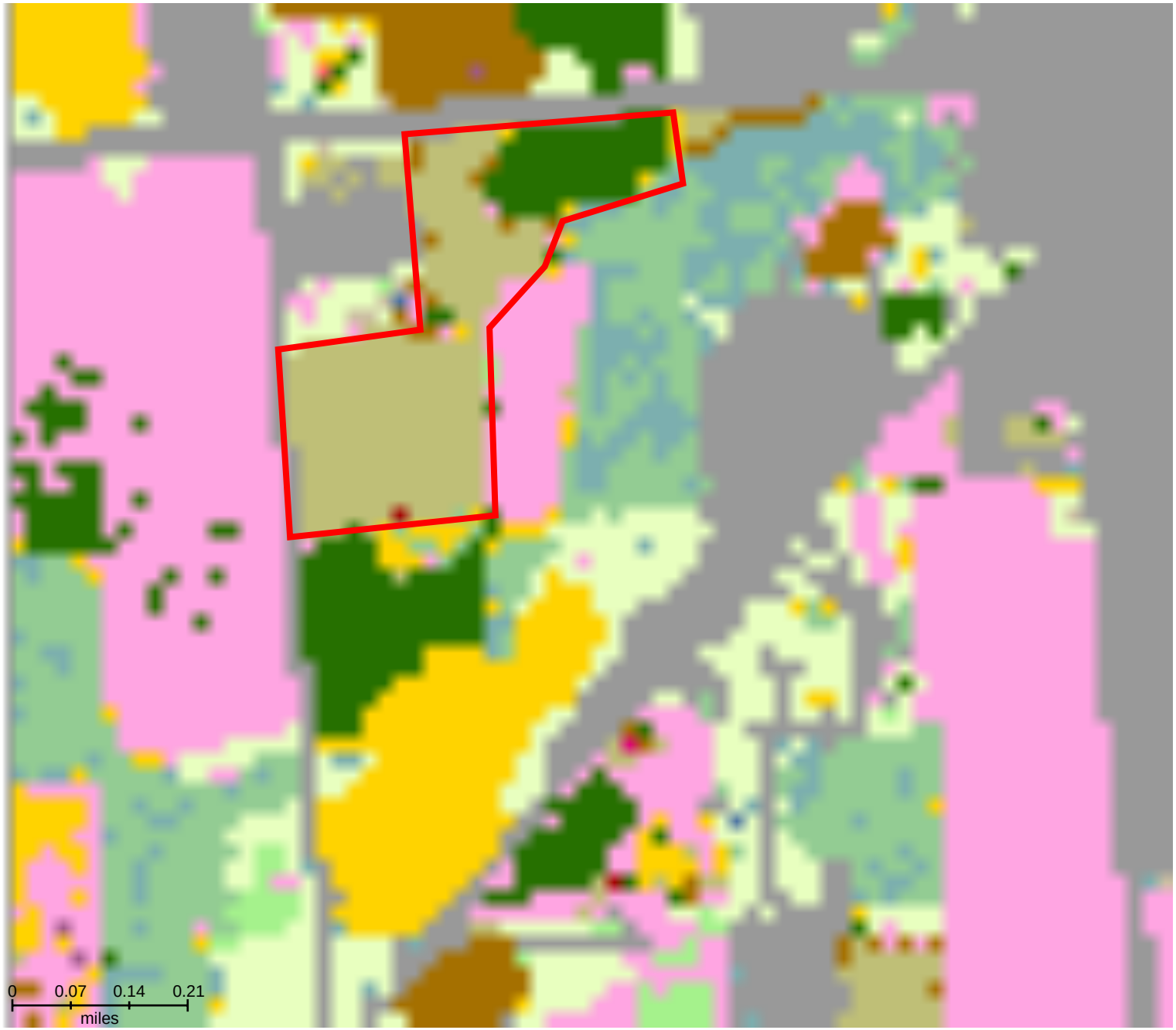
- Corn
- Alfalfa
- Grass/Pasture
- Soybeans
- Other Hay/Non Alfalfa
- Winter Wheat
- Dry Beans
- Sod/Grass Seed
- Oats
- Peas
- Cabbage
- Triticale
- Sunflowers
- Potatoes

NON-AGRICULTURE*

- Developed/Low Intensity
- Deciduous Forest
- Developed/Open Space
- Woody Wetlands
- Developed/Medium Intensity
- Developed/High Intensity

* Only top 6 non-agriculturecategories are listed.

Cropland Data Layer 2017



Land Cover Categories

(by decreasing acreage)

AGRICULTURE

- Alfalfa
- Grass/Pasture
- Corn
- Soybeans
- Fallow/Idle Cropland
- Winter Wheat
- Other Hay/Non Alfalfa
- Oats
- Dry Beans
- Squash
- Barley

NON-AGRICULTURE*

- Developed/Low Intensity
- Deciduous Forest
- Developed/Open Space
- Developed/Medium Intensity
- Woody Wetlands
- Developed/High Intensity

* Only top 6 non-agriculturecategories are listed.

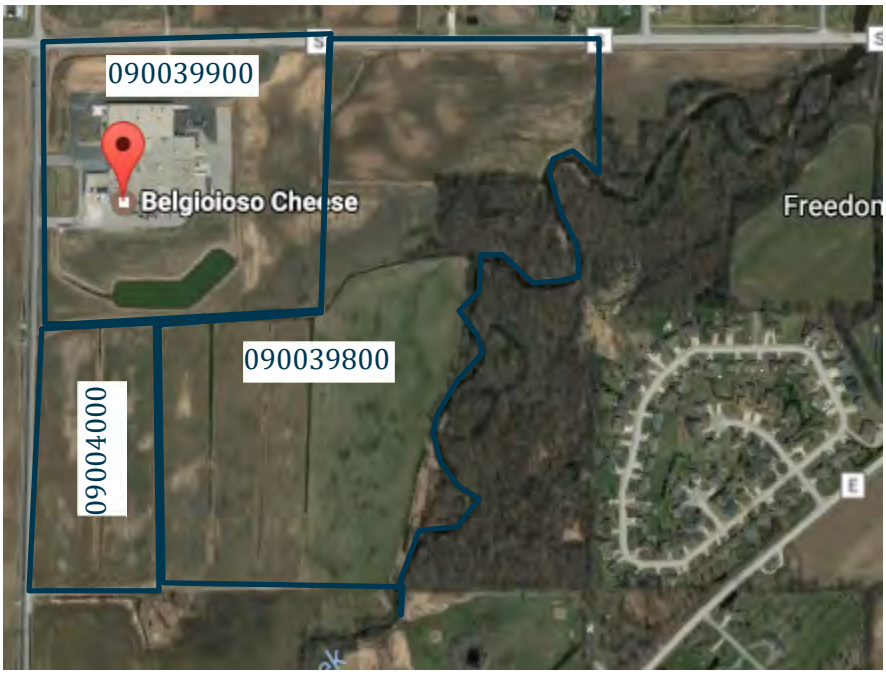
17035 W. Wisconsin Avenue, Suite 120
Brookfield, WI 53005
Phone: (262) 264-5665
Web: probstgroup.com

WATER QUALITY TRADING – FIELD QUESTIONAIRE

Date: June 13, 2017 (Rev 1 November 13, 2017)

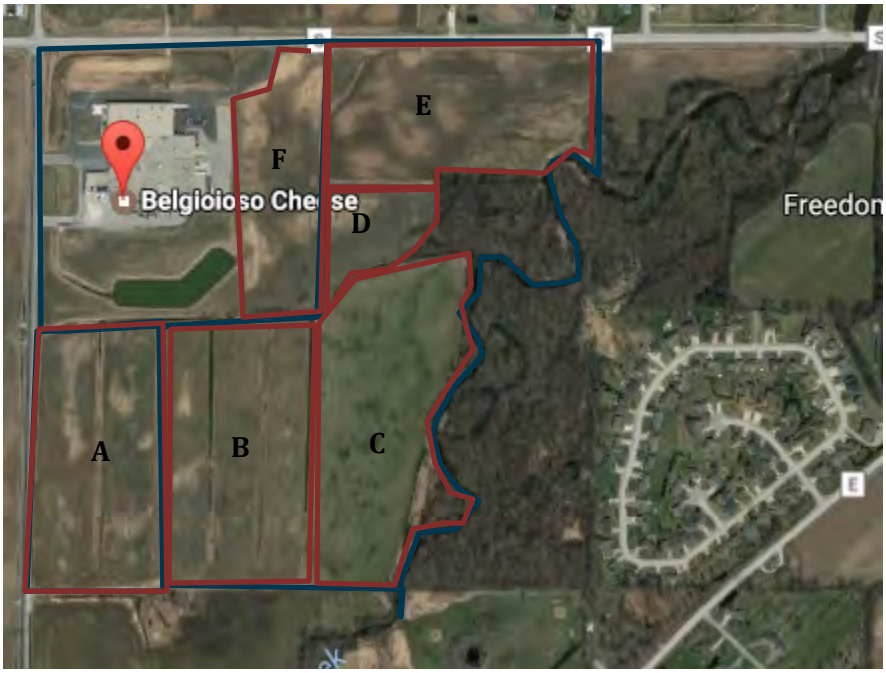
BelGioioso owns 3 parcels in Outagamie County, WI near the Freedom production facility for a total of 124.5 Acres:

- 090040000 18.67 Acres
- 090039800 70.08 Acres
- 090039900 35.75 Acres



The potentially viable land to be used for Water Quality Trading is shown on the map below along with the potentially tradeable acres. BelGioioso owns a total of approximately 96 potentially tradeable acres.

- 09004000 (14.8 Acres Potentially Eligible of 18.67 Total Acres)
  - A 14.8 Acres
- 090039800 (59.9 Acres Potentially Eligible of 70.08 Total Acres)
  - B 17.5 Acres
  - C 22.5 Acres
  - D 4.6 Acres
  - E 15.3 Acres
- 090039900 (10.7 Acres Potentially Eligible of 35.75 Total Acres)
  - F 10.7 Acres



Several variables can impact the acreage required for trading. An increase in acreage converted to protective practices (prairie restoration, waterway setbacks, grassed waterways, etc) results in an increase in operational flexibility to ensure compliance with the final phosphorus limit. Based on preliminary calculations, Freedom could need 60-100 acres. This range can be narrowed significantly with site specific phosphorus loss calculations that will be completed using the data you provide in the table below.

Field	A	B	C	D	E	F
Nutrient Management Plan available?	YES	YES	YES	YES	YES	YES
2016 crop & estimated yield	CORN 180 BUSH	CORN 180 BUSH	GRASS	CORN 180 BUSH	CORN 180 BUSH	CORN 180 BUSH
2015 crop & estimated yield	SOY 40-50 BUSH	SOY 40-50 BUSH	GRASS	SOY 40-50 BUSH	SOY 40-50 BUSH	SOY 40-50 BUSH
2014 crop & estimated yield	N/A	N/A	N/A	N/A	N/A	N/A
2016 fertilizer (incl. quantity)	NONE	NONE	SPRING 150# UREA 100# POTASH 100# PHOSPHATE	NONE	NONE	NONE
2015 fertilizer (incl. quantity)	NONE	NONE	NONE	NONE	NONE	NONE
2014 fertilizer (incl. quantity)	NONE	NONE	NONE	NONE	NONE	NONE
2016 manure quantity	SPRING 11,000	SPRING 11,000	N/A	SPRING 11,000	SPRING 11,000	SPRING 11,000
2015 manure quantity	NONE	NONE	NONE	NONE	NONE	NONE
2014 manure quantity	NONE	NONE	NONE	NONE	NONE	NONE
Is manure incorporated?	YES INJECTED	YES INJECTED	N/A	YES INJECTED	YES INJECTED	YES INJECTED
Irrigated?	NO	NO	NO	NO	NO	NO
2016 tilling[1]	FALL CHISELED	FALL CHISELED	FALL CHISELED	FALL CHISELED	FALL CHISELED	FALL CHISELED
2015 tilling[1]	SPRING CHISELED	SPRING CHISELED	SPRING CHISELED	SPRING CHISELED	SPRING CHISELED	SPRING CHISELED
2014 tilling[1]	FALL CHISELED	FALL CHISELED	FALL CHISELED	FALL CHISELED	FALL CHISELED	FALL CHISELED

[1]Choose one of the following:

- Fall chiseled, disked
- Fall chiseled, no disked
- Fall cultivated
- Fall MB Plow
- Fall vertical tillage
- No Till
- Spring chiseled, disked
- Spring chiseled, no disked
- Spring cultivated
- Spring MB Plow
- Spring vertical tillage

ATTACHMENT D
Soil Sampling Results

Attachment D

Soil Sample Results Summary

Lab ID	Lab Sample ID	Sample Date	Farm Name	Field Name	Size	Plow Depth	Soil Sample ID	PH	OM	P	K
Soil & Forage Analysis Lab	3790	6/30/2017	Freedom	A	18.7	7	1	7.9	4	71	216
Soil & Forage Analysis Lab	3790	6/30/2017	Freedom	A	18.7	7	2	8	3.1	56	194
Soil & Forage Analysis Lab	3790	6/30/2017	Freedom	A	18.7	7	3	7.8	4	60	177
Soil & Forage Analysis Lab	3790	6/30/2017	Freedom	B	20.4	7	4	8	2.8	42	182
Soil & Forage Analysis Lab	3790	6/30/2017	Freedom	B	20.4	7	5	8.1	2.7	39	197
Soil & Forage Analysis Lab	3790	6/30/2017	Freedom	B	20.4	7	6	8.2	2.5	42	171
Soil & Forage Analysis Lab	3790	6/30/2017	Freedom	D	5.3	7	7	8	2.9	55	182
Soil & Forage Analysis Lab	3790	6/30/2017	Freedom	D	5.3	7	8	8.1	3.3	70	206
Soil & Forage Analysis Lab	3790	6/30/2017	Freedom	E	17	7	9	7.8	3.7	93	221
Soil & Forage Analysis Lab	3790	6/30/2017	Freedom	E	17	7	10	8	3.4	107	239
Soil & Forage Analysis Lab	3790	6/30/2017	Freedom	E	17	7	11	7.9	4	53	203
Soil & Forage Analysis Lab	3790	6/30/2017	Freedom	F	12.2	7	12	8.1	3.6	104	251
Soil & Forage Analysis Lab	3790	6/30/2017	Freedom	F	12.2	7	13	8.3	3.1	131	256
Soil & Forage Analysis Lab	3790	6/30/2017	Freedom	F	12.2	7	14	8.1	3.2	82	219

Lab ID	Lab Sample ID	Sample Date	Farm Name	Field Name	Size	Plow Depth	Soil Sample ID	PH	OM	P	K
Soil & Forage Analysis Lab	6653	11/16/2017	Freedom	A	18.7	7	1	7.9	4.7	100	350
Soil & Forage Analysis Lab	6653	11/16/2017	Freedom	A	18.7	7	2	7.8	3.4	54	181
Soil & Forage Analysis Lab	6653	11/16/2017	Freedom	A	18.7	7	3				
Soil & Forage Analysis Lab	6653	11/16/2017	Freedom	B	20.4	7	4				
Soil & Forage Analysis Lab	6653	11/16/2017	Freedom	B	20.4	7	5				
Soil & Forage Analysis Lab	6653	11/16/2017	Freedom	B	20.4	7	6				
Soil & Forage Analysis Lab	6653	11/16/2017	Freedom	D	5.3	7	7	7.7	2	38	108
Soil & Forage Analysis Lab	6653	11/16/2017	Freedom	D	5.3	7	8	7.7	2.8	63	154
Soil & Forage Analysis Lab	6653	11/16/2017	Freedom	E	17	7	9	7.6	3.5	34	111
Soil & Forage Analysis Lab	6653	11/16/2017	Freedom	E	17	7	10	7.6	3	47	128
Soil & Forage Analysis Lab	6653	11/16/2017	Freedom	E	17	7	11	7.6	2.9	96	175
Soil & Forage Analysis Lab	6653	11/16/2017	Freedom	F	12.2	7	12	8	3.3	131	304
Soil & Forage Analysis Lab	6653	11/16/2017	Freedom	F	12.2	7	13	7.5	3.6	102	237
Soil & Forage Analysis Lab	6653	11/16/2017	Freedom	F	12.2	7	14	7.5	1.9	24	94

Attachment D

Soil Sample Results Summary

Lab ID	Lab Sample ID	Sample Date	Farm Name	Field Name	Size	Plow Depth	Soil Sample ID	PH	OM	P	K
Soil & Forage Analysis Lab	NA	Average	Freedom	A	18.7	7	1	7.9	4.35	85.5	283
Soil & Forage Analysis Lab	NA	Average	Freedom	A	18.7	7	2	7.9	3.25	55	187.5
Soil & Forage Analysis Lab	NA	Average	Freedom	A	18.7	7	3	7.8	4	60	177
Soil & Forage Analysis Lab	NA	Average	Freedom	B	20.4	7	4	8	2.8	42	182
Soil & Forage Analysis Lab	NA	Average	Freedom	B	20.4	7	5	8.1	2.7	39	197
Soil & Forage Analysis Lab	NA	Average	Freedom	B	20.4	7	6	8.2	2.5	42	171
Soil & Forage Analysis Lab	NA	Average	Freedom	D	5.3	7	7	7.85	2.45	46.5	145
Soil & Forage Analysis Lab	NA	Average	Freedom	D	5.3	7	8	7.9	3.05	66.5	180
Soil & Forage Analysis Lab	NA	Average	Freedom	E	17	7	9	7.7	3.6	63.5	166
Soil & Forage Analysis Lab	NA	Average	Freedom	E	17	7	10	7.8	3.2	77	183.5
Soil & Forage Analysis Lab	NA	Average	Freedom	E	17	7	11	7.75	3.45	74.5	189
Soil & Forage Analysis Lab	NA	Average	Freedom	F	12.2	7	12	8.05	3.45	117.5	277.5
Soil & Forage Analysis Lab	NA	Average	Freedom	F	12.2	7	13	7.9	3.35	116.5	246.5
Soil & Forage Analysis Lab	NA	Average	Freedom	F	12.2	7	14	7.8	2.55	53	156.5

N
W E
S

SAMPLI NG PLAN
SCALE: N.T.S.

The Probst Group
17035 W. WISCONSIN AVE.
SUITE 120
BROOKFIELD, WIS. 53005
TEL: (262) 264-5665
FAX: (262) 436-1359

BELGIOIOSO CHEESE, INC.
FREEDOM, WISCONSIN
INDUSTRIAL WASTEWATER TREATMENT FACILITY
SOIL SAMPLING MAP

REVISIONS

NO.	DATE

DRAWN BY:	MJM
CHK'D BY:	
PROJ. ENG:	HS
ISSUE DATE:	5-12-15

PROJECT NUMBER:
5175

SHEET
C-1

PRELIMINARY

ATTACHMENT E

SnapPlus Modeling Reports (Current)

NM1: Narrative and Crops Report

Starting Year	**2014**
Reported For	**BelGioioso Freedom**
Printed	**2019-05-07**
Plan Completion/Update Date:	**2017-07-05**
SnapPlus Version 18.1 built on 2019-01-15	
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Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

Farm has 3 fields totalling 36.9 acres
Farm Narrative: None

Annual Farm Notes:

No Annual Farm Notes

Spreader Calibration Methods: No spreader calibration rate documentation has been selected.

Narrative and Crops:

Field Name	Acres	2014	2015	2016	2017	2018	2019	2020	2021
A	14.8	Idle Land Disk 0-0 none/acre	Soybeans 7-10 inch row Spring Chisel, no disk 46-55 bu/acre	Corn grain, 18 inch rows Fall Chisel, disked 171-190 bu/acre	Idle Land Disk 0-0 none/acre	Soybeans 7-10 inch row Spring Chisel, no disk 46-55 bu/acre	Corn grain, 18 inch rows Fall Chisel, disked 171-190 bu/acre	Idle Land Disk 0-0 none/acre	Soybeans 7-10 inch row Spring Chisel, no disk 46-55 bu/acre
B	17.5	Idle Land Disk 0-0 none/acre	Soybeans 7-10 inch row Spring Chisel, no disk 46-55 bu/acre	Corn grain, 18 inch rows Fall Chisel, disked 171-190 bu/acre	Idle Land Disk 0-0 none/acre	Soybeans 7-10 inch row Spring Chisel, no disk 46-55 bu/acre	Corn grain, 18 inch rows Fall Chisel, disked 171-190 bu/acre	Idle Land Disk 0-0 none/acre	Soybeans 7-10 inch row Spring Chisel, no disk 46-55 bu/acre
D	4.6	Idle Land Disk 0-0 none/acre	Soybeans 7-10 inch row Spring Chisel, no disk 46-55 bu/acre	Corn grain, 18 inch rows Fall Chisel, disked 171-190 bu/acre	Idle Land Disk 0-0 none/acre	Soybeans 7-10 inch row Spring Chisel, no disk 46-55 bu/acre	Corn grain, 18 inch rows Fall Chisel, disked 171-190 bu/acre	Idle Land Disk 0-0 none/acre	Soybeans 7-10 inch row Spring Chisel, no disk 46-55 bu/acre

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

Crops Grouped By Category		2014	2015	2016	2017	2018	2019	2020	2021
Corn grain, 18 inch rows	Acres bu			37 6,679			37 6,679		
Idle Land	Acres none	37 0			37 0			37 0	
Soybeans 7-10 inch row	Acres bu		37 1,869			37 1,869			37 1,869

NM1: Narrative and Crops Report

Starting Year	**2022**
Reported For	**BelGioioso Freedom**
Printed	**2019-05-07**
Plan Completion/Update Date:	**2017-07-05**
SnapPlus Version 18.1 built on 2019-01-15	
W:\Clients\BelGioioso\Freedom\5175_New WWTP\Permitting & Regulations\Water Quality Trading\BelGioioso Freedom Current.snapDb	

Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

Farm has 3 fields totalling 36.9 acres
Farm Narrative: None

Annual Farm Notes:

No Annual Farm Notes

Spreader Calibration Methods: No spreader calibration rate documentation has been selected.

Narrative and Crops:

Field Name	Acres	2022	2023	2024
A	14.8	Corn grain, 18 inch rows Fall Chisel, disked 171-190 bu/acre	Idle Land Disk 0-0 none/acre	Soybeans 7-10 inch row Spring Chisel, no disk 46-55 bu/acre
B	17.5	Corn grain, 18 inch rows Fall Chisel, disked 171-190 bu/acre	Idle Land Disk 0-0 none/acre	Soybeans 7-10 inch row Spring Chisel, no disk 46-55 bu/acre
D	4.6	Corn grain, 18 inch rows Fall Chisel, disked 171-190 bu/acre	Idle Land Disk 0-0 none/acre	Soybeans 7-10 inch row Spring Chisel, no disk 46-55 bu/acre

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

Crops Grouped By Category		2022	2023	2024
Corn grain, 18 inch rows	Acres bu	37 6,679		
Idle Land	Acres none		37 0	
Soybeans 7-10 inch row	Acres bu			37 1,869

FM6: Soil Test Report

Reported For	BelGioioso Freedom
Printed	2019-05-07
Plan Completion/Update Date	2017-07-05
SnapPlus Version 18.1 built on 2019-01-15	
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Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

			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
A		14.8	MuA	MUNDELEIN	2018-03-04	Soil & Forage Analysis Lab	3791	**3**	**3**	7.9	3.9	67	216	0	0
B		17.5	MuA	MUNDELEIN	2018-03-04	Soil and Forage Analysis Lab	3791	**3**	**3**	8.1	2.7	41	183	0	0
D		4.6	MuA	MUNDELEIN	2018-03-04	Soil & Forage Analysis Lab	3791	**1**	**2**	7.9	2.8	57	163	0	0

Crop Year Soil Test Needed

Field Name	Soil Test Date	2018	2019	2020	2021	2022	2023	2024
A	2018-03-04					X		
B	2018-03-04					X		
D	2018-03-04					X		

FM2: Application Summary Report

Starting Year	**2014**
Reported For	**BelGioioso Freedom**
Printed	**2019-05-07**
Plan Completion/Update Date:	**2017-07-05**
SnapPlus Version 18.1 built on 2019-01-15	
W:\Clients\BelGioioso\Freedom\5175_New WWTP\Permitting & Regulations\Water Quality Trading\BelGioioso Freedom Current.snapDb	

Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

Annual Manure Production And Use By Source

Total Value = $ Value of all nutrients, incorporated including S.

Source		2014	2015	2016	2017	2018	2019	2020
Land Application	Production (Gallons) Used (Gallons) Analysis Date Analysis (N/Ninc/Ninj-P2O5-K2O) Dry Matter (%) Total Value	0 892,100 - 1/0/0-1-0 0.00	0 487,328 - 1/0/0-1-0 0.00	0 107,800 - 1/0/0-1-0 0.00	0 892,100 - 1/0/0-1-0 0.00	0 487,328 - 1/0/0-1-0 0.00	0 107,800 - 1/0/0-1-0 0.00	0 892,100 - 1/0/0-1-0 0.00
Manure	Production (Gallons) Used (Gallons) Analysis Date Analysis (N/Ninc/Ninj-P2O5-K2O) Dry Matter (%) Total Value	11,000 0 - 7/10/12-6-17 6 0.00	11,000 0 - 7/10/12-6-17 6 0.00	11,000 390,500 - 7/10/12-6-17 6 0.00	11,000 0 - 7/10/12-6-17 6 0.00	11,000 0 - 7/10/12-6-17 6 0.00	11,000 390,500 - 7/10/12-6-17 6 0.00	11,000 0 - 7/10/12-6-17 6 0.00

Application Results Reported For Farm All

Annual Pounds Of Available N, P2O5 And K2O Applied From Manure and Fertilizer.

		2014	2015	2016	2017	2018	2019	2020
Produced from Manure (lb)	Ninj P2O5 K2O	132 66 187	132 66 187	132 66 187	132 66 187	132 66 187	132 66 187	132 66 187
Total Available Manure Nutrients Applied (lb)	Ninj P2O5 K2O	0 723 0	0 336 0	4,686 2,422 6,639	0 544 0	0 395 0	4,686 2,430 6,639	0 723 0
Total Fertilizer Nutrients Applied (lb)	N P2O5 K2O	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
Total Crop Removal (lb)	P2O5 K2O	0 0	1,476 2,583	2,583 1,845	0 0	1,476 2,583	2,583 1,845	0 0
Nutrient Balance (Applied - Crop removal, lb)	P2O5 K2O	723 0	-1,140 -2,583	-161 4,794	544 0	-1,081 -2,583	-153 4,794	723 0

FM2: Application Summary Report

Starting Year	**2021**
Reported For	**BelGioioso Freedom**
Printed	**2019-05-07**
Plan Completion/Update Date:	**2017-07-05**
SnapPlus Version 18.1 built on 2019-01-15	
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Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

Annual Manure Production And Use By Source

Total Value = $ Value of all nutrients, incorporated including S.

Source		2021	2022	2023	2024
Land Application	Production (Gallons) Used (Gallons) Analysis Date Analysis (N/Ninc/Ninj-P2O5-K2O) Dry Matter (%) Total Value	0 487,328 - 1/0/0-1-0 0.00	0 107,800 - 1/0/0-1-0 0.00	0 892,100 - 1/0/0-1-0 0.00	0 487,328 - 1/0/0-1-0 0.00
Manure	Production (Gallons) Used (Gallons) Analysis Date Analysis (N/Ninc/Ninj-P2O5-K2O) Dry Matter (%) Total Value	11,000 0 - 7/10/12-6-17 6 0.00	11,000 390,500 - 7/10/12-6-17 6 0.00	11,000 0 - 7/10/12-6-17 6 0.00	11,000 0 - 7/10/12-6-17 6 0.00

Application Results Reported For Farm All

Annual Pounds Of Available N, P2O5 And K2O Applied From Manure and Fertilizer.

		2021	2022	2023	2024
Produced from Manure (lb)	Ninj P2O5 K2O	132 66 187	132 66 187	132 66 187	132 66 187
Total Available Manure Nutrients Applied (lb)	Ninj P2O5 K2O	0 395 0	4,686 2,430 6,639	0 723 0	0 395 0
Total Fertilizer Nutrients Applied (lb)	N P2O5 K2O	0 0 0	0 0 0	0 0 0	0 0 0
Total Crop Removal (lb)	P2O5 K2O	1,476 2,583	2,583 1,845	0 0	1,476 2,583
Nutrient Balance (Applied - Crop removal, lb)	P2O5 K2O	-1,081 -2,583	-153 4,794	723 0	-1,081 -2,583

NM4: Manure Tracking Report

Starting Year	**2014**
Reported For	**BelGioioso Freedom**
Printed	**2019-05-07**
Plan Completion/Update Date:	**2017-07-05**
SnapPlus Version 18.1 built on 2019-01-15	
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Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

Acres/ CropYear	2014	2015	2016	2017	2018	2019	2020	2021
Acres in plan	36.9	36.9	36.9	36.9	36.9	36.9	36.9	36.9
Acres receiving manure	21.5	21.5	35.5	21.5	21.5	35.5	21.5	21.5

Annual Manure Production And Use By Source

Total Value = $ Value of all nutrients, incorporated including S.

Source		2014	2015	2016	2017	2018	2019	2020	2021
Land Application	Production (Gallons) Used (Gallons) Analysis Date Analysis (N/Ninc/Ninj-P2O5-K2O) Dry Matter (%) Total Value	0 892,100 - 1/0/0-1-0 0.00	0 487,328 - 1/0/0-1-0 0.00	0 107,800 - 1/0/0-1-0 0.00	0 892,100 - 1/0/0-1-0 0.00	0 487,328 - 1/0/0-1-0 0.00	0 107,800 - 1/0/0-1-0 0.00	0 892,100 - 1/0/0-1-0 0.00	0 487,328 - 1/0/0-1-0 0.00
Manure	Production (Gallons) Used (Gallons) Analysis Date Analysis (N/Ninc/Ninj-P2O5-K2O) Dry Matter (%) Total Value	11,000 0 - 7/10/12-6-17 6 0.00	11,000 0 - 7/10/12-6-17 6 0.00	11,000 390,500 - 7/10/12-6-17 6 0.00	11,000 0 - 7/10/12-6-17 6 0.00	11,000 0 - 7/10/12-6-17 6 0.00	11,000 390,500 - 7/10/12-6-17 6 0.00	11,000 0 - 7/10/12-6-17 6 0.00	11,000 0 - 7/10/12-6-17 6 0.00

Estimated Livestock Manure Production For 2014

No Livestock Found

Manure Storage For 2014

No Storages Found

Spreaders For 2014

No Spreaders Found

NM4: Manure Tracking Report

Starting Year	**2022**
Reported For	**BelGioioso Freedom**
Printed	**2019-05-07**
Plan Completion/Update Date:	**2017-07-05**
SnapPlus Version 18.1 built on 2019-01-15	
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Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

Acres/ CropYear	2022	2023	2024
Acres in plan	36.9	36.9	36.9
Acres receiving manure	35.5	21.5	21.5

Annual Manure Production And Use By Source

Total Value = $ Value of all nutrients, incorporated including S.

Source		2022	2023	2024
Land Application	Production (Gallons) Used (Gallons) Analysis Date Analysis (N/Ninc/Ninj-P2O5-K2O) Dry Matter (%) Total Value	0 107,800 - 1/0/0-1-0 0.00	0 892,100 - 1/0/0-1-0 0.00	0 487,328 - 1/0/0-1-0 0.00
Manure	Production (Gallons) Used (Gallons) Analysis Date Analysis (N/Ninc/Ninj-P2O5-K2O) Dry Matter (%) Total Value	11,000 390,500 - 7/10/12-6-17 6 0.00	11,000 0 - 7/10/12-6-17 6 0.00	11,000 0 - 7/10/12-6-17 6 0.00

Estimated Livestock Manure Production For 2022

No Livestock Found

Manure Storage For 2022

No Storages Found

Spreaders For 2022

No Spreaders Found

NM3: Field Data and 590 Assessment Plan

Reported For	BelGioioso Freedom
Printed	2019-05-07
Plan Completion/Update Date	2017-07-05
SnapPlus Version 18.1 built on 2019-01-15	
W:\Clients\BelGioioso\Freedom\5175_New WWTP\Permitting & Regulations\Water Quality Trading\BelGioioso Freedom Current.snapDb	

Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

Field Data: 37 Total Acres Reported.

Field Name	SubFarm	FSA Trct	FSA Fld	Acres	County	Critical Soil Series & Symbol	F. Slp %	F.Slp Len ft	Below Field Slope To Water %	Dist.To Water ft	Contour/ Filters	Irrig	Tiled	Rotation	Tillage	Report Period	Field "T" t/ac	Rot Avg Soil Loss t/ac	SCI	Rot Avg PI	Soil Test P ppm	Rot P2O5 Bal lb/ac	P2O5 Bal Target lb/ac
A				14.8	Outagamie	MANAWA McA	2	250	0 - 2	1001 - 5000	No / No	No	No	IL-Sg7-Cg18	D-SCND-FCD	2014-2016	**3**	**1.1**	**0.4**	**2**	67	-44	0
B				17.5	Outagamie	MUNDELEIN MuA	2	250	0 - 2	301 - 1000	No / No	No	No	IL-Sg7-Cg18	D-SCND-FCD	2014-2016	**5**	**1.1**	**0.3**	**2**	41	9	-
D				4.6	Outagamie	HORTONVILLE HrB	4	200	0 - 2	0 - 300	No / No	No	No	IL-Sg7-Cg18	D-SCND-FCD	2014-2016	**5**	**3.7**	**0.1**	**5**	57	11	0

Crop Abbreviations

Abbreviation	Crop
Cg18	Corn grain, 18 inch rows
IL	Idle Land
Sg7	Soybeans 7-10 inch row

Tillage Abbreviations

Abbreviation	Tillage
D	Disk
FCD	Fall Chisel, disked
SCND	Spring Chisel, no disk

FM9: Nutrient Management Report

Crop Year	**2015**
Reported For	**BelGioioso Freedom**
Printed	**2019-05-07**
Plan Completion/Update Date	**2017-07-05**
SnapPlus Version 18.1 built on 2019-01-15	
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Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

Field data: 37 total acres reported.

Field Data			Soil Test ppm		Crop Data				Recommendations			Planned Applications and Credits			Over(+)/Under(-) UW Recs		
Field Name	Ac	Predominant Soil and N Restrictions	Avg P	Avg K	2014 Crop	2015 Crop	Yield Goal	Tillage	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac
A	14.8	MUNDELEIN MuA	67	216	Idle Land	Soybeans 7-10 inch row	46-55	Spring Chisel, no disk	0	0	0	0	0	0	0	0	0
B	17.5	MUNDELEIN MuA W	41	183	Idle Land	Soybeans 7-10 inch row	46-55	Spring Chisel, no disk	0	0	20	24	17	0	24	17	-20
D	4.6	MUNDELEIN MuA W	57	163	Idle Land	Soybeans 7-10 inch row	46-55	Spring Chisel, no disk	0	0	20	17	12	0	17	12	-20

Restriction Legend

Code	Description of Code
S	Field is in SWQMA
D	Drinking water well within 50 feet of field.
C	Conduit to groundwater within 300 feet
L	Local restrictions on nutrient applications.
%	Slope restriction for winter applications
P	High permeability N restricted soils
R	N restricted soils with less than 20 inches to bedrock
W	N restricted soils with less than 12 inches to apparent water table
+	This map unit may have any of the N restrictive features, however an on-site investigation is needed to identify which restrictions may actually be present.

FM9: Nutrient Management Report

Crop Year	**2016**
Reported For	**BelGioioso Freedom**
Printed	**2019-05-07**
Plan Completion/Update Date	**2017-07-05**
SnapPlus Version 18.1 built on 2019-01-15	
W:\Clients\BelGioioso\Freedom\5175_New WWTP\Permitting & Regulations\Water Quality Trading\BelGioioso Freedom Current.snapDb	

Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

Field data: 37 total acres reported.

Field Data			Soil Test ppm		Crop Data				Recommendations			Planned Applications and Credits			Over(+)/Under(-) UW Recs		
Field Name	Ac	Predominant Soil and N Restrictions	Avg P	Avg K	2015 Crop	2016 Crop	Yield Goal	Tillage	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac
A	14.8	MUNDELEIN MuA	67	216	Soybeans 7-10 inch row	Corn grain, 18 inch rows	171-190	Fall Chisel, disked	140 0.05 /MRTN	0	0	132	66	187	-8	66	187
B	17.5	MUNDELEIN MuA W	41	183	Soybeans 7-10 inch row	Corn grain, 18 inch rows	171-190	Fall Chisel, disked	140 0.05 /MRTN	0	15	132	66	187	-8	66	172
D	4.6	MUNDELEIN MuA W	57	163	Soybeans 7-10 inch row	Corn grain, 18 inch rows	171-190	Fall Chisel, disked	140 0.05 /MRTN	0	15	154	82	187	14	82	172

Restriction Legend

Code	Description of Code
S	Field is in SWQMA
D	Drinking water well within 50 feet of field.
C	Conduit to groundwater within 300 feet
L	Local restrictions on nutrient applications.
%	Slope restriction for winter applications
P	High permeability N restricted soils
R	N restricted soils with less than 20 inches to bedrock
W	N restricted soils with less than 12 inches to apparent water table

+	This map unit may have any of the N restrictive features, however an on-site investigation is needed to identify which restrictions may actually be present.

FM9: Nutrient Management Report

Crop Year	**2017**
Reported For	**BelGioioso Freedom**
Printed	**2019-05-07**
Plan Completion/Update Date	**2017-07-05**
SnapPlus Version 18.1 built on 2019-01-15	
W:\Clients\BelGioioso\Freedom\5175_New WWTP\Permitting & Regulations\Water Quality Trading\BelGioioso Freedom Current.snapDb	

Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

Field data: 37 total acres reported.

Field Data			Soil Test ppm		Crop Data				Recommendations			Planned Applications and Credits			Over(+)/Under(-) UW Recs		
Field Name	Ac	Predominant Soil and N Restrictions	Avg P	Avg K	2016 Crop	2017 Crop	Yield Goal	Tillage	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac
A	14.8	MUNDELEIN MuA	67	216	Corn grain, 18 inch rows	Idle Land	0-0	Disk	0	0	0	0	0	0	0	0	0
B	17.5	MUNDELEIN MuA W	41	183	Corn grain, 18 inch rows	Idle Land	0-0	Disk	0	0	0	44	27	0	44	27	0
D	4.6	MUNDELEIN MuA W	57	163	Corn grain, 18 inch rows	Idle Land	0-0	Disk	0	0	0	33	20	0	33	20	0

Restriction Legend

Code	Description of Code
S	Field is in SWQMA
D	Drinking water well within 50 feet of field.
C	Conduit to groundwater within 300 feet
L	Local restrictions on nutrient applications.
%	Slope restriction for winter applications
P	High permeability N restricted soils
R	N restricted soils with less than 20 inches to bedrock
W	N restricted soils with less than 12 inches to apparent water table
+	This map unit may have any of the N restrictive features, however an on-site investigation is needed to identify which restrictions may actually be present.

FM9: Nutrient Management Report

Crop Year	**2018**
Reported For	**BelGioioso Freedom**
Printed	**2019-05-07**
Plan Completion/Update Date	**2017-07-05**
SnapPlus Version 18.1 built on 2019-01-15	
W:\Clients\BelGioioso\Freedom\5175_New WWTP\Permitting & Regulations\Water Quality Trading\BelGioioso Freedom Current.snapDb	

Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

Field data: 37 total acres reported.

Field Data			Soil Test ppm		Crop Data				Recommendations			Planned Applications and Credits			Over(+)/Under(-) UW Recs		
Field Name	Ac	Predominant Soil and N Restrictions	Avg P	Avg K	2017 Crop	2018 Crop	Yield Goal	Tillage	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac
A	14.8	MUNDELEIN MuA	67	216	Idle Land	Soybeans 7-10 inch row	46-55	Spring Chisel, no disk	0	0	0	0	0	0	0	0	0
B	17.5	MUNDELEIN MuA W	41	183	Idle Land	Soybeans 7-10 inch row	46-55	Spring Chisel, no disk	0	0	0	24	20	0	24	20	0
D	4.6	MUNDELEIN MuA W	57	163	Idle Land	Soybeans 7-10 inch row	46-55	Spring Chisel, no disk	0	0	0	17	14	0	17	14	0

Restriction Legend

Code	Description of Code
S	Field is in SWQMA
D	Drinking water well within 50 feet of field.
C	Conduit to groundwater within 300 feet
L	Local restrictions on nutrient applications.
%	Slope restriction for winter applications
P	High permeability N restricted soils
R	N restricted soils with less than 20 inches to bedrock
W	N restricted soils with less than 12 inches to apparent water table
+	This map unit may have any of the N restrictive features, however an on-site investigation is needed to identify which restrictions may actually be present.

WQ1: P Trade Report

Reported For	BelGioioso Freedom
Printed	2019-05-07
Plan Completion/Update Date	2017-07-05
SnapPlus Version 18.1 built on 2019-01-15	
W:\Clients\BelGioioso\Freedom\5175_New WWTP\Permitting & Regulations\Water Quality Trading\BelGioioso Freedom Current.snapDb	

Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

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											
Field Name	Soil Series	Soil Symbol	Acres	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
A	MUNDELEIN	MuA	15	28	25	30	27	24	29	26	24	29	26	24
B	MUNDELEIN	MuA	18	25	39	37	25	44	37	25	44	38	26	45
D	MUNDELEIN	MuA	5	10	10	10	9	11	10	10	12	11	10	12
Total			**37**	**63**	**74**	**77**	**61**	**80**	**77**	**61**	**80**	**77**	**61**	**80**

PTP	
2027	2028
29	26
38	26
11	10
78	**62**

SL2: Annual Soil Loss Report

Reported For	BelGioioso Freedom
Printed	2019-05-07
Plan Completion/Update Date	2017-07-05
SnapPlus Version 18.1 built on 2019-01-15	
W:\Clients\BelGioioso\Freedom\5175_New WWTP\Permitting & Regulations\Water Quality Trading\BelGioioso Freedom Current.snapDb	

Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

									Annual Soil Loss (t/ac)		
Field	Soil Series & Symbol (critical)	Slope	Slope Len	Contour/ Filters	Rotation	Tillage	Field "T" t/ac/yr	Rot Avg Soil Loss t/ac/yr	2014	2015	2016
A	MANAWA McA	2	250	No / No	IL-Sg7-Cg18	D-SCND-FCD	3	1.1	0.9	1.2	1.2
B	MUNDELEIN MuA	2	250	No / No	IL-Sg7-Cg18	D-SCND-FCD	5	1.1	0.9	1.1	1.2
D	HORTONVILLE HrB	4	200	No / No	IL-Sg7-Cg18	D-SCND-FCD	5	3.7	3.0	3.9	4.1

* This column shows estimated sediment delivery through a **designed** field edge grass filter area when that field management option is selected.

Crop Abbreviations

Abbreviation	Crop
Cg18	Corn grain, 18 inch rows
IL	Idle Land
Sg7	Soybeans 7-10 inch row

Tillage Abbreviations

Abbreviation	Tillage
D	Disk
FCD	Fall Chisel, disked
SCND	Spring Chisel, no disk

ATTACHMENT F

SnapPlus Modeling Reports (Prairie)

NM1: Narrative and Crops Report

Starting Year	**2014**
Reported For	**BelGioioso Freedom**
Printed	**2019-05-07**
Plan Completion/Update Date:	**2017-07-05**
SnapPlus Version 18.1 built on 2019-01-15	
W:\Clients\BelGioioso\Freedom\5175_New WWTP\Permitting & Regulations\Water Quality Trading\BelGioioso Freedom Future.snapDb	

Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

Farm has 3 fields totalling 36.9 acres
Farm Narrative: None

Annual Farm Notes:

No Annual Farm Notes

Spreader Calibration Methods: No spreader calibration rate documentation has been selected.

Narrative and Crops:

Field Name	Acres	2014	2015	2016	2017	2018	2019	2020	2021
A	14.8	Idle Land Disk 0-0 none/acre	Soybeans 7-10 inch row Spring Chisel, no disk 46-55 bu/acre	Corn grain, 18 inch rows Fall Chisel, disked 171-190 bu/acre	Idle Land Disk 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
B	17.5	Idle Land Disk 0-0 none/acre	Soybeans 7-10 inch row Spring Chisel, no disk 46-55 bu/acre	Corn grain, 18 inch rows Fall Chisel, disked 171-190 bu/acre	Idle Land Disk 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
D	4.6	Idle Land Disk 0-0 none/acre	Soybeans 7-10 inch row Spring Chisel, no disk 46-55 bu/acre	Corn grain, 18 inch rows Fall Chisel, disked 171-190 bu/acre	Idle Land Disk 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		2014	2015	2016	2017	2018	2019	2020	2021
Corn grain, 18 inch rows	Acres bu			37 6,679					
Grasslands, permanent, not harvested	Acres none					37 0	37 0	37 0	37 0
Idle Land	Acres none	37 0			37 0				
Soybeans 7-10 inch row	Acres bu		37 1,869						

NM1: Narrative and Crops Report

Starting Year	**2022**
Reported For	**BelGioioso Freedom**
Printed	**2019-05-07**
Plan Completion/Update Date:	**2017-07-05**
SnapPlus Version 18.1 built on 2019-01-15	
W:\Clients\BelGioioso\Freedom\5175_New WWTP\Permitting & Regulations\Water Quality Trading\BelGioioso Freedom Future.snapDb	

Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

Farm has 3 fields totalling 36.9 acres
Farm Narrative: None

Annual Farm Notes:

No Annual Farm Notes

Spreader Calibration Methods: No spreader calibration rate documentation has been selected.

Narrative and Crops:

Field Name	Acres	2022	2023	2024
A	14.8	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
B	17.5	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
D	4.6	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		2022	2023	2024
Grasslands, permanent, not harvested	Acres	37	37	37
	none	0	0	0

FM6: Soil Test Report

Reported For	BelGioioso Freedom
Printed	2019-05-07
Plan Completion/Update Date	2017-07-05
SnapPlus Version 18.1 built on 2019-01-15	
W:\Clients\BelGioioso\Freedom\5175_New WWTP\Permitting & Regulations\Water Quality Trading\BelGioioso Freedom Future.snapDb	

Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

			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
A		14.8	MuA	MUNDELEIN	2018-03-04	Soil & Forage Analysis Lab	3791	**3**	**3**	7.9	3.9	67	216	0	0
B		17.5	MuA	MUNDELEIN	2018-03-04	Soil and Forage Analysis Lab	3791	**3**	**3**	8.1	2.7	41	183	0	0
D		4.6	MuA	MUNDELEIN	2018-03-04	Soil & Forage Analysis Lab	3791	**1**	**2**	7.9	2.8	57	163	0	0

Crop Year Soil Test Needed

Field Name	Soil Test Date	2018	2019	2020	2021	2022	2023	2024
A	2018-03-04					X		
B	2018-03-04					X		
D	2018-03-04					X		

FM2: Application Summary Report

Starting Year	**2014**
Reported For	**BelGioioso Freedom**
Printed	**2019-05-07**
Plan Completion/Update Date:	**2017-07-05**
SnapPlus Version 18.1 built on 2019-01-15	
W:\Clients\BelGioioso\Freedom\5175_New WWTP\Permitting & Regulations\Water Quality Trading\BelGioioso Freedom Future.snapDb	

Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

Annual Manure Production And Use By Source

Total Value = $ Value of all nutrients, incorporated including S.

Source		2014	2015	2016	2017	2018	2019	2020
Land Application	Production (Gallons)	0	0	0	0	0	0	0
	Used (Gallons)	892,100	487,328	107,800	892,100	0	0	0
	Analysis Date	-	-	-	-	-	-	-
	Analysis (N/Ninc/Ninj-P2O5-K2O)	1/0/0-1-0	1/0/0-1-0	1/0/0-1-0	1/0/0-1-0	1/0/0-1-0	1/0/0-1-0	1/0/0-1-0
	Dry Matter (%)							
	Total Value	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manure	Production (Gallons)	11,000	11,000	11,000	11,000	11,000	11,000	11,000
	Used (Gallons)	0	0	390,500	0	0	0	0
	Analysis Date	-	-	-	-	-	-	-
	Analysis (N/Ninc/Ninj-P2O5-K2O)	7/10/12-6-17	7/10/12-6-17	7/10/12-6-17	7/10/12-6-17	7/10/12-6-17	7/10/12-6-17	7/10/12-6-17
	Dry Matter (%)	6	6	6	6	6	6	6
	Total Value	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Application Results Reported For Farm All

Annual Pounds Of Available N, P2O5 And K2O Applied From Manure and Fertilizer.

		2014	2015	2016	2017	2018	2019	2020
Produced from Manure (lb)	Ninj P2O5 K2O	132 66 187	132 66 187	132 66 187	132 66 187	132 66 187	132 66 187	132 66 187
Total Available Manure Nutrients Applied (lb)	Ninj P2O5 K2O	0 723 0	0 336 0	4,686 2,422 6,639	0 544 0	0 0 0	0 0 0	0 0 0
Total Fertilizer Nutrients Applied (lb)	N P2O5 K2O	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0
Total Crop Removal (lb)	P2O5 K2O	0 0	1,476 2,583	2,583 1,845	0 0	0 0	0 0	0 0
Nutrient Balance (Applied - Crop removal, lb)	P2O5 K2O	723 0	-1,140 -2,583	-161 4,794	544 0	0 0	0 0	0 0

FM2: Application Summary Report

Starting Year	**2021**
Reported For	**BelGioioso Freedom**
Printed	**2019-05-07**
Plan Completion/Update Date:	**2017-07-05**
SnapPlus Version 18.1 built on 2019-01-15	
W:\Clients\BelGioioso\Freedom\5175_New WWTP\Permitting & Regulations\Water Quality Trading\BelGioioso Freedom Future.snapDb	

Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

Annual Manure Production And Use By Source

Total Value = $ Value of all nutrients, incorporated including S.

Source		2021	2022	2023	2024
Land Application	Production (Gallons) Used (Gallons) Analysis Date Analysis (N/Ninc/Ninj-P2O5-K2O) Dry Matter (%) Total Value	0 0 - 1/0/0-1-0 0.00	0 0 - 1/0/0-1-0 0.00	0 0 - 1/0/0-1-0 0.00	0 0 - 1/0/0-1-0 0.00
Manure	Production (Gallons) Used (Gallons) Analysis Date Analysis (N/Ninc/Ninj-P2O5-K2O) Dry Matter (%) Total Value	11,000 0 - 7/10/12-6-17 6 0.00	11,000 0 - 7/10/12-6-17 6 0.00	11,000 0 - 7/10/12-6-17 6 0.00	11,000 0 - 7/10/12-6-17 6 0.00

Application Results Reported For Farm All

Annual Pounds Of Available N, P2O5 And K2O Applied From Manure and Fertilizer.

		2021	2022	2023	2024
Produced from Manure (lb)	Ninj P2O5 K2O	132 66 187	132 66 187	132 66 187	132 66 187
Total Available Manure Nutrients Applied (lb)	Ninj P2O5 K2O	0 0 0	0 0 0	0 0 0	0 0 0
Total Fertilizer Nutrients Applied (lb)	N P2O5 K2O	0 0 0	0 0 0	0 0 0	0 0 0
Total Crop Removal (lb)	P2O5 K2O	0 0	0 0	0 0	0 0
Nutrient Balance (Applied - Crop removal, lb)	P2O5 K2O	0 0	0 0	0 0	0 0

NM4: Manure Tracking Report

Starting Year	**2014**
Reported For	**BelGioioso Freedom**
Printed	**2019-05-07**
Plan Completion/Update Date:	**2017-07-05**
SnapPlus Version 18.1 built on 2019-01-15	
W:\Clients\BelGioioso\Freedom\5175_New WWTP\Permitting & Regulations\Water Quality Trading\BelGioioso Freedom Future.snapDb	

Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

Acres/ CropYear	2014	2015	2016	2017	2018	2019	2020	2021
Acres in plan	36.9	36.9	36.9	36.9	36.9	36.9	36.9	36.9
Acres receiving manure	21.5	21.5	35.5	21.5	0.0	0.0	0.0	0.0

Annual Manure Production And Use By Source

Total Value = $ Value of all nutrients, incorporated including S.

Source		2014	2015	2016	2017	2018	2019	2020	2021
Land Application	Production (Gallons) Used (Gallons) Analysis Date Analysis (N/Ninc/Ninj-P2O5-K2O) Dry Matter (%) Total Value	0 892,100 - 1/0/0-1-0 0.00	0 487,328 - 1/0/0-1-0 0.00	0 107,800 - 1/0/0-1-0 0.00	0 892,100 - 1/0/0-1-0 0.00	0 0 - 1/0/0-1-0 0.00	0 0 - 1/0/0-1-0 0.00	0 0 - 1/0/0-1-0 0.00	0 0 - 1/0/0-1-0 0.00
Manure	Production (Gallons) Used (Gallons) Analysis Date Analysis (N/Ninc/Ninj-P2O5-K2O) Dry Matter (%) Total Value	11,000 0 - 7/10/12-6-17 6 0.00	11,000 0 - 7/10/12-6-17 6 0.00	11,000 390,500 - 7/10/12-6-17 6 0.00	11,000 0 - 7/10/12-6-17 6 0.00	11,000 0 - 7/10/12-6-17 6 0.00	11,000 0 - 7/10/12-6-17 6 0.00	11,000 0 - 7/10/12-6-17 6 0.00	11,000 0 - 7/10/12-6-17 6 0.00

Estimated Livestock Manure Production For 2014

No Livestock Found

Manure Storage For 2014

No Storages Found

Spreaders For 2014

No Spreaders Found

NM4: Manure Tracking Report

Starting Year	**2022**
Reported For	**BelGioioso Freedom**
Printed	**2019-05-07**
Plan Completion/Update Date:	**2017-07-05**
SnapPlus Version 18.1 built on 2019-01-15	
W:\Clients\BelGioioso\Freedom\5175_New WWTP\Permitting & Regulations\Water Quality Trading\BelGioioso Freedom Future.snapDb	

Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

Acres/ CropYear	2022	2023	2024
Acres in plan	36.9	36.9	36.9
Acres receiving manure	0.0	0.0	0.0

Annual Manure Production And Use By Source

Total Value = $ Value of all nutrients, incorporated including S.

Source		2022	2023	2024
Land Application	Production (Gallons) Used (Gallons) Analysis Date Analysis (N/Ninc/Ninj-P2O5-K2O) Dry Matter (%) Total Value	0 0 - 1/0/0-1-0 0.00	0 0 - 1/0/0-1-0 0.00	0 0 - 1/0/0-1-0 0.00
Manure	Production (Gallons) Used (Gallons) Analysis Date Analysis (N/Ninc/Ninj-P2O5-K2O) Dry Matter (%) Total Value	11,000 0 - 7/10/12-6-17 6 0.00	11,000 0 - 7/10/12-6-17 6 0.00	11,000 0 - 7/10/12-6-17 6 0.00

Estimated Livestock Manure Production For 2022

No Livestock Found

Manure Storage For 2022

No Storages Found

Spreaders For 2022

No Spreaders Found

NM3: Field Data and 590 Assessment Plan

Reported For	BelGioioso Freedom
Printed	2019-05-07
Plan Completion/Update Date	2017-07-05
SnapPlus Version 18.1 built on 2019-01-15	
W:\Clients\BelGioioso\Freedom\5175_New WWTP\Permitting & Regulations\Water Quality Trading\BelGioioso Freedom Future.snapDb	

Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

Field Data: 37 Total Acres Reported.

Field Name	SubFarm	FSA Trct	FSA Fld	Acres	County	Critical Soil Series & Symbol	F. Slp %	F.Slp Len ft	Below Field Slope To Water %	Dist.To Water ft	Contour/ Filters	Irrig	Tiled	Rotation	Tillage	Report Period	Field "T" t/ac	Rot Avg Soil Loss t/ac	SCI	Rot Avg PI	Soil Test P ppm	Rot P2O5 Bal lb/ac	P2O5 Bal Target lb/ac
A				14.8	Outagamie	MANAWA McA	2	250	0 - 2	1001 - 5000	No / No	No	No	Gnh-Gnh-Gnh	None-None-None	2018-2020	**3**	**0**	**1.9**	**0**	67	0	0
B				17.5	Outagamie	MUNDELEIN MuA	2	250	0 - 2	301 - 1000	No / No	No	No	Gnh-Gnh-Gnh	None-None-None	2018-2020	**5**	**0**	**1.6**	**0**	41	0	-
D				4.6	Outagamie	HORTONVILLE HrB	4	200	0 - 2	0 - 300	No / No	No	No	Gnh-Gnh-Gnh	None-None-None	2018-2020	**5**	**0**	**1.6**	**0**	57	0	0

Crop Abbreviations

Abbreviation	Crop
Gnh	Grasslands, permanent, not harvested

Tillage Abbreviations

Abbreviation	Tillage
None	None

FM9: Nutrient Management Report

Crop Year	**2015**
Reported For	**BelGioioso Freedom**
Printed	**2019-05-07**
Plan Completion/Update Date	**2017-07-05**
SnapPlus Version 18.1 built on 2019-01-15	
W:\Clients\BelGioioso\Freedom\5175_New WWTP\Permitting & Regulations\Water Quality Trading\BelGioioso Freedom Future.snapDb	

Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

Field data: 37 total acres reported.

Field Data			Soil Test ppm		Crop Data				Recommendations			Planned Applications and Credits			Over(+)/Under(-) UW Recs		
Field Name	Ac	Predominant Soil and N Restrictions	Avg P	Avg K	2014 Crop	2015 Crop	Yield Goal	Tillage	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac
A	14.8	MUNDELEIN MuA	67	216	Idle Land	Soybeans 7-10 inch row	46-55	Spring Chisel, no disk	0	0	0	0	0	0	0	0	0
B	17.5	MUNDELEIN MuA W	41	183	Idle Land	Soybeans 7-10 inch row	46-55	Spring Chisel, no disk	0	0	20	24	17	0	24	17	-20
D	4.6	MUNDELEIN MuA W	57	163	Idle Land	Soybeans 7-10 inch row	46-55	Spring Chisel, no disk	0	0	20	17	12	0	17	12	-20

Restriction Legend

Code	Description of Code
S	Field is in SWQMA
D	Drinking water well within 50 feet of field.
C	Conduit to groundwater within 300 feet
L	Local restrictions on nutrient applications.
%	Slope restriction for winter applications
P	High permeability N restricted soils
R	N restricted soils with less than 20 inches to bedrock
W	N restricted soils with less than 12 inches to apparent water table
+	This map unit may have any of the N restrictive features, however an on-site investigation is needed to identify which restrictions may actually be present.

FM9: Nutrient Management Report

Crop Year	**2016**
Reported For	**BelGioioso Freedom**
Printed	**2019-05-07**
Plan Completion/Update Date	**2017-07-05**
SnapPlus Version 18.1 built on 2019-01-15	
W:\Clients\BelGioioso\Freedom\5175_New WWTP\Permitting & Regulations\Water Quality Trading\BelGioioso Freedom Future.snapDb	

Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

Field data: 37 total acres reported.

Field Data			Soil Test ppm		Crop Data				Recommendations			Planned Applications and Credits			Over(+)/Under(-) UW Recs		
Field Name	Ac	Predominant Soil and N Restrictions	Avg P	Avg K	2015 Crop	2016 Crop	Yield Goal	Tillage	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac
A	14.8	MUNDELEIN MuA	67	216	Soybeans 7-10 inch row	Corn grain, 18 inch rows	171-190	Fall Chisel, disked	140 0.05 /MRTN	0	0	132	66	187	-8	66	187
B	17.5	MUNDELEIN MuA W	41	183	Soybeans 7-10 inch row	Corn grain, 18 inch rows	171-190	Fall Chisel, disked	140 0.05 /MRTN	0	15	132	66	187	-8	66	172
D	4.6	MUNDELEIN MuA W	57	163	Soybeans 7-10 inch row	Corn grain, 18 inch rows	171-190	Fall Chisel, disked	140 0.05 /MRTN	0	15	154	82	187	14	82	172

Restriction Legend

Code	Description of Code
S	Field is in SWQMA
D	Drinking water well within 50 feet of field.
C	Conduit to groundwater within 300 feet
L	Local restrictions on nutrient applications.
%	Slope restriction for winter applications
P	High permeability N restricted soils
R	N restricted soils with less than 20 inches to bedrock
W	N restricted soils with less than 12 inches to apparent water table

+	This map unit may have any of the N restrictive features, however an on-site investigation is needed to identify which restrictions may actually be present.

FM9: Nutrient Management Report

Crop Year	**2017**
Reported For	**BelGioioso Freedom**
Printed	**2019-05-07**
Plan Completion/Update Date	**2017-07-05**
SnapPlus Version 18.1 built on 2019-01-15	
W:\Clients\BelGioioso\Freedom\5175_New WWTP\Permitting & Regulations\Water Quality Trading\BelGioioso Freedom Future.snapDb	

Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

Field data: 37 total acres reported.

Field Data			Soil Test ppm		Crop Data				Recommendations			Planned Applications and Credits			Over(+)/Under(-) UW Recs		
Field Name	Ac	Predominant Soil and N Restrictions	Avg P	Avg K	2016 Crop	2017 Crop	Yield Goal	Tillage	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac
A	14.8	MUNDELEIN MuA	67	216	Corn grain, 18 inch rows	Idle Land	0-0	Disk	0	0	0	0	0	0	0	0	0
B	17.5	MUNDELEIN MuA W	41	183	Corn grain, 18 inch rows	Idle Land	0-0	Disk	0	0	0	44	27	0	44	27	0
D	4.6	MUNDELEIN MuA W	57	163	Corn grain, 18 inch rows	Idle Land	0-0	Disk	0	0	0	33	20	0	33	20	0

Restriction Legend

Code	Description of Code
S	Field is in SWQMA
D	Drinking water well within 50 feet of field.
C	Conduit to groundwater within 300 feet
L	Local restrictions on nutrient applications.
%	Slope restriction for winter applications
P	High permeability N restricted soils
R	N restricted soils with less than 20 inches to bedrock
W	N restricted soils with less than 12 inches to apparent water table
+	This map unit may have any of the N restrictive features, however an on-site investigation is needed to identify which restrictions may actually be present.

FM9: Nutrient Management Report

Crop Year	**2018**
Reported For	**BelGioioso Freedom**
Printed	**2019-05-07**
Plan Completion/Update Date	**2017-07-05**
SnapPlus Version 18.1 built on 2019-01-15	
W:\Clients\BelGioioso\Freedom\5175_New WWTP\Permitting & Regulations\Water Quality Trading\BelGioioso Freedom Future.snapDb	

Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

Field data: 37 total acres reported.

Field Data			Soil Test ppm		Crop Data				Recommendations			Planned Applications and Credits			Over(+)/Under(-) UW Recs		
Field Name	Ac	Predominant Soil and N Restrictions	Avg P	Avg K	2017 Crop	2018 Crop	Yield Goal	Tillage	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac
A	14.8	MUNDELEIN MuA	67	216	Idle Land	Grasslands, permanent, not harvested	0-0	None	0	0	0	0	0	0	0	0	0
B	17.5	MUNDELEIN MuA W	41	183	Idle Land	Grasslands, permanent, not harvested	0-0	None	0	0	0	0	0	0	0	0	0
D	4.6	MUNDELEIN MuA W	57	163	Idle Land	Grasslands, permanent, not harvested	0-0	None	0	0	0	0	0	0	0	0	0

Restriction Legend

Code	Description of Code
S	Field is in SWQMA
D	Drinking water well within 50 feet of field.
C	Conduit to groundwater within 300 feet
L	Local restrictions on nutrient applications.
%	Slope restriction for winter applications
P	High permeability N restricted soils
R	N restricted soils with less than 20 inches to bedrock
W	N restricted soils with less than 12 inches to apparent water table

+	This map unit may have any of the N restrictive features, however an on-site investigation is needed to identify which restrictions may actually be present.

FM9: Nutrient Management Report

Crop Year	**2019**
Reported For	**BelGioioso Freedom**
Printed	**2019-05-07**
Plan Completion/Update Date	**2017-07-05**
SnapPlus Version 18.1 built on 2019-01-15	
W:\Clients\BelGioioso\Freedom\5175_New WWTP\Permitting & Regulations\Water Quality Trading\BelGioioso Freedom Future.snapDb	

Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

Field data: 37 total acres reported.

Field Data			Soil Test ppm		Crop Data				Recommendations			Planned Applications and Credits			Over(+)/Under(-) UW Recs		
Field Name	Ac	Predominant Soil and N Restrictions	Avg P	Avg K	2018 Crop	2019 Crop	Yield Goal	Tillage	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac	N lb/ac	P2O5 lb/ac	K2O lb/ac
A	14.8	MUNDELEIN MuA	67	216	Grasslands, permanent, not harvested	Grasslands, permanent, not harvested	0-0	None	0	0	0	0	0	0	0	0	0
B	17.5	MUNDELEIN MuA W	41	183	Grasslands, permanent, not harvested	Grasslands, permanent, not harvested	0-0	None	0	0	0	0	0	0	0	0	0
D	4.6	MUNDELEIN MuA W	57	163	Grasslands, permanent, not harvested	Grasslands, permanent, not harvested	0-0	None	0	0	0	0	0	0	0	0	0

Restriction Legend

Code	Description of Code
S	Field is in SWQMA
D	Drinking water well within 50 feet of field.
C	Conduit to groundwater within 300 feet
L	Local restrictions on nutrient applications.
%	Slope restriction for winter applications
P	High permeability N restricted soils
R	N restricted soils with less than 20 inches to bedrock
W	N restricted soils with less than 12 inches to apparent water table

+	This map unit may have any of the N restrictive features, however an on-site investigation is needed to identify which restrictions may actually be present.

WQ1: P Trade Report

Reported For	BelGioioso Freedom
Printed	2019-05-07
Plan Completion/Update Date	2017-07-05
SnapPlus Version 18.1 built on 2019-01-15	
W:\Clients\BelGioioso\Freedom\5175_New WWTP\Permitting & Regulations\Water Quality Trading\BelGioioso Freedom Future.snapDb	

Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

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											
Field Name	Soil Series	Soil Symbol	Acres	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
A	MUNDELEIN	MuA	15	28	25	9	6	5	4	4	4	4	4	4
B	MUNDELEIN	MuA	18	25	39	8	5	4	4	4	4	4	3	3
D	MUNDELEIN	MuA	5	10	10	3	2	2	1	1	1	1	1	1
Total			**37**	**63**	**74**	**20**	**12**	**11**	**10**	**9**	**9**	**9**	**9**	**9**

PTP		
2027	2028	2029
4	4	4
3	3	3
1	1	1
9	**9**	**9**

SL2: Annual Soil Loss Report

Reported For	BelGioioso Freedom
Printed	2019-05-07
Plan Completion/Update Date	2017-07-05
SnapPlus Version 18.1 built on 2019-01-15	
W:\Clients\BelGioioso\Freedom\5175_New WWTP\Permitting & Regulations\Water Quality Trading\BelGioioso Freedom Future.snapDb	

Prepared for:
BelGioioso Freedom
attn:BelGioioso Freedom

									Annual Soil Loss (t/ac)		
Field	Soil Series & Symbol (critical)	Slope	Slope Len	Contour/ Filters	Rotation	Tillage	Field "T" t/ac/yr	Rot Avg Soil Loss t/ac/yr	2018	2019	2020
A	MANAWA McA	2	250	No / No	Gnh-Gnh-Gnh	None-None-None	3	0.0	0.0	0.0	0.0
B	MUNDELEIN MuA	2	250	No / No	Gnh-Gnh-Gnh	None-None-None	5	0.0	0.0	0.0	0.0
D	HORTONVILLE HrB	4	200	No / No	Gnh-Gnh-Gnh	None-None-None	5	0.0	0.0	0.0	0.0

* This column shows estimated sediment delivery through a **designed** field edge grass filter area when that field management option is selected.

Crop Abbreviations

Abbreviation	Crop
Gnh	Grasslands, permanent, not harvested

Tillage Abbreviations

Abbreviation	Tillage
None	None

ATTACHMENT G

"Practice Registration Form" 3400-207

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
BelGioioso Cheese Inc	WI- 0066176-01-0	

Facility Address	City	State	ZIP Code
N4056 Vine Road	Kaukauna	WI	54130

Project Contact Name (if applicable)	Address	City	State	ZIP Code
Lynn Morrison, Probst Group	17035 W Wisconsin Ave Suite 120	Brookfield	WI	53005

Project Name
BelGioioso Freedom New WWTP

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 TP / TSS	Trade Ratio	Method of Quantification
○ Urban NPS ◉ Agricultural NPS ○ Other	WQT-20190724	Conversion of agricultural land to permanent vegetation	'19 40.57 / 1292 '20 57.37 / 5317 '21 56.08 / 23224 '22 43.23 / 22465 '23 59.15 / 18939 '24 57.15 / 23281	1.2:1	SnapPlus

County	Closest Receiving Water Name	Land Parcel ID(s)	Parameter(s) being traded
Outagamie	Duck Creek	090040000,090039800	TP & 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
[signature]	7/24/2019

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]	07/30/19

Leave Blank – For Department Use Only

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

ATTACHMENT H

Long-Term P and TSS Credit Calculation

Given:

Watershed	LF051300				
P Loss [lb/ac/yr]	1.9	TSS Loss [ton/ac/yr]	0.85	TSS Loss [lb/ac/yr]	1700
P Loss Goal [lb/ac/yr]	0.44	TSS Loss Goal [ton/ac/yr]	0.35	TSS Loss Goal [lb/ac/yr]	700
P Loss [%]	23.16%	TSS Loss [%]	41.18%	TSS Loss [%]	41.18%
P Difference [lb/ac/yr]	1.46	TSS Difference [ton/ac/yr]	0.5	TSS Difference [lb/ac/yr]	1000
P Threshold	0.44	TMDL TSS Threshold	0.035	TMDL TSS Threshold [lb/ac/yr]	70

Attachment H

Interim and Long-Term TP Credit Calculation

Field A [acres]		PTP	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
14.8		Baseline	29.59	26.68	24.13	29.22	26.44	23.88	28.93	26.21	23.63	28.64	25.98
		Reduction	8.83	5.56	4.84	4.35	4.14	4.02	3.95	3.91	3.89	3.87	3.87
		Savings	20.76	21.12	19.29	24.87	22.30	19.85	24.98	22.30	19.74	24.77	22.12
		Trade Ratio	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Interim Credit	17.30	17.60	16.07	20.73	18.58	16.54	20.82				
		Useable Interim Credit	0.00	17.60	16.07	20.73	18.58	16.54	20.82				
2.a	TMDL credit Threshold	lbs/ac	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
2.b	Baseline	lbs/ac	2.00	1.80	1.63	1.97	1.79	1.61	1.95	1.77	1.60	1.94	1.76
2.b	Reduction	lbs/ac	0.60	0.38	0.33	0.29	0.28	0.27	0.27	0.26	0.26	0.26	0.26
2.c	Difference	lbs/ac	-0.16	0.06	0.11	0.15	0.16	0.17	0.17	0.18	0.18	0.18	0.18
2.d	Difference x field acres	lbs	-2.3	0.9	1.7	2.2	2.4	2.5	2.6	2.6	2.6	2.6	2.6
2.e	Trade Ratio		1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Final Credit						2.07	2.13	2.17	2.19	2.20	2.21
		Useable Final Credit						2.07	2.13	2.17	2.19	2.20	2.21

Note: Credits will be either interim or long term in 2023 and 2024 depending on the permit issuance schedule. Interim and long term credits are not generated in the same year for these fields.

Field B [acres]		PTP	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
17.5		Baseline	36.76	24.68	44.05	37.24	25.08	44.49	37.77	25.50	44.95	38.31	25.93
		Reduction	8.16	4.96	4.31	3.87	3.68	3.58	3.52	3.48	3.46	3.45	3.44
		Savings	28.60	19.71	39.73	33.37	21.40	40.91	34.26	22.02	41.49	34.87	22.49
		Trade Ratio	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Interim Credit	23.83	16.43	33.11	27.81	17.83	34.09	28.55				
		Useable Interim Credit	0.00	16.43	33.11	27.81	17.83	34.09	28.55				
2.a	TMDL credit Threshold	lbs/ac	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
2.b	Baseline	lbs/ac	2.10	1.41	2.52	2.13	1.43	2.54	2.16	1.46	2.57	2.19	1.48
2.b	Reduction	lbs/ac	0.47	0.28	0.25	0.22	0.21	0.20	0.20	0.20	0.20	0.20	0.20
2.c	Difference	lbs/ac	-0.03	0.16	0.19	0.22	0.23	0.24	0.24	0.24	0.24	0.24	0.24
2.d	Difference x field acres	lbs	-0.5	2.7	3.4	3.8	4.0	4.1	4.2	4.2	4.2	4.3	4.3
2.e	Trade Ratio		1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Final Credit						3.43	3.49	3.52	3.53	3.54	3.55
		Useable Final Credit						3.43	3.49	3.52	3.53	3.54	3.55

Note: Credits will be either interim or long term in 2023 and 2024 depending on the permit issuance schedule. Interim and long term credits are not generated in the same year for these fields.

Attachment H

Interim and Long-Term TP Credit Calculation

Field D [acres]		PTP	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
4.6		Baseline	10.34	9.41	11.40	10.48	9.54	11.54	10.64	9.66	11.68	10.81	9.79
		Reduction	2.79	1.81	1.58	1.43	1.36	1.32	1.30	1.29	1.28	1.27	1.27
		Savings	7.55	7.61	9.82	9.05	8.18	10.22	9.35	8.38	10.40	9.53	8.52
		Trade Ratio	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Interim Credit	6.29	6.34	8.18	7.55	6.81	8.51	7.79				
		Useable Interim Credit	0.00	6.34	8.18	7.55	6.81	8.51	7.79				
2.a	TMDL credit Threshold	lbs/ac	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
2.b	Baseline	lbs/ac	0.70	0.64	0.77	0.71	0.64	0.78	0.72	0.65	0.79	0.73	0.66
2.b	Reduction	lbs/ac	0.61	0.39	0.34	0.31	0.30	0.29	0.28	0.28	0.28	0.28	0.28
2.c	Difference	lbs/ac	-0.17	0.05	0.10	0.13	0.14	0.15	0.16	0.16	0.16	0.16	0.16
2.d	Difference x field acres	lbs	-0.8	0.2	0.4	0.6	0.7	0.7	0.7	0.7	0.7	0.8	0.8
2.e	Trade Ratio		1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Final Credit						0.58	0.60	0.61	0.62	0.63	0.63
		Useable Final Credit						0.58	0.60	0.61	0.62	0.63	0.63

Note: Credits will be either interim or long term in 2023 and 2024 depending on the permit issuance schedule. Interim and long term credits are not generated in the same year for these fields.

TOTAL INTERIM CREDITS	**0.00**	**40.37**	**57.37**	**56.08**	**43.23**	**59.15**	**57.15**				
TOTAL LONG-TERM CREDITS						**6.09**	**6.22**	**6.30**	**6.34**	**6.37**	**6.38**

Attachment H

Interim and Long-Term TP Credit Calculation

Field A [acres]		PTP	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
14.8		Baseline	29.59	26.68	24.13	29.22	26.44	23.88	28.93	26.21	23.63	28.64	25.98
		Reduction	8.83	5.56	4.84	4.35	4.14	4.02	3.95	3.91	3.89	3.87	3.87
		Savings	20.76	21.12	19.29	24.87	22.30	19.85	24.98	22.30	19.74	24.77	22.12
		Trade Ratio	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Interim Credit	17.30	17.60	16.07	20.73	18.58	16.54	20.82				
		Useable Interim Credit	0.00	17.60	16.07	20.73	18.58	16.54	20.82				
2.a	TMDL credit Threshold	lbs/ac	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
2.b	Baseline	lbs/ac	2.00	1.80	1.63	1.97	1.79	1.61	1.95	1.77	1.60	1.94	1.76
2.b	Reduction	lbs/ac	0.60	0.38	0.33	0.29	0.28	0.27	0.27	0.26	0.26	0.26	0.26
2.c	Difference	lbs/ac	-0.16	0.06	0.11	0.15	0.16	0.17	0.17	0.18	0.18	0.18	0.18
2.d	Difference x field acres	lbs	-2.3	0.9	1.7	2.2	2.4	2.5	2.6	2.6	2.6	2.6	2.6
2.e	Trade Ratio		1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Final Credit						2.07	2.13	2.17	2.19	2.20	2.21
		Useable Final Credit						2.07	2.13	2.17	2.19	2.20	2.21

Note: Credits will be either interim or long term in 2023 and 2024 depending on the permit issuance schedule. Interim and long term credits are not generated in the same year for these fields.

Field B [acres]		PTP	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
17.5		Baseline	25.76	23.38	20.86	25.34	23.09	20.55	24.99	22.82	20.25	24.64	22.54
		Reduction	7.25	4.40	3.80	3.41	3.24	3.14	3.09	3.06	3.04	3.03	3.02
		Savings	18.51	18.99	17.05	21.93	19.86	17.40	21.90	19.76	17.21	21.61	19.52
		Trade Ratio	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Interim Credit	15.42	15.82	14.21	18.28	16.55	14.50	18.25				
		Useable Interim Credit	15.42	15.82	14.21	18.28	16.55	14.50	18.25				
2.a	TMDL credit Threshold	lbs/ac	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
2.b	Baseline	lbs/ac	1.47	1.34	1.19	1.45	1.32	1.17	1.43	1.30	1.16	1.41	1.29
2.b	Reduction	lbs/ac	0.41	0.25	0.22	0.19	0.18	0.18	0.18	0.17	0.17	0.17	0.17
2.c	Difference	lbs/ac	0.03	0.19	0.22	0.25	0.26	0.26	0.26	0.27	0.27	0.27	0.27
2.d	Difference x field acres	lbs	0.4	3.3	3.9	4.3	4.5	4.6	4.6	4.6	4.7	4.7	4.7
2.e	Trade Ratio		1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Final Credit						3.80	3.84	3.87	3.89	3.90	3.90
		Useable Final Credit						3.80	3.84	3.87	3.89	3.90	3.90

Note: Credits will be either interim or long term in 2023 and 2024 depending on the permit issuance schedule. Interim and long term credits are not generated in the same year for these fields.

Attachment H

Interim and Long-Term TP Credit Calculation

Field D [acres]		PTP	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
4.6		Baseline	8.26	7.38	6.73	8.14	7.30	6.65	8.04	7.22	6.56	7.94	7.15
		Reduction	2.57	1.66	1.45	1.31	1.24	1.21	1.19	1.18	1.17	1.16	1.16
		Savings	5.69	5.72	5.28	6.83	6.06	5.44	6.85	6.05	5.39	6.77	5.98
		Trade Ratio	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Interim Credit	4.74	4.77	4.40	5.69	5.05	4.53	5.71				
		Useable Interim Credit	0.00	4.77	4.40	5.69	5.05	4.53	5.71				
2.a	TMDL credit Threshold	lbs/ac	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
2.b	Baseline	lbs/ac	1.79	1.61	1.46	1.77	1.59	1.44	1.75	1.57	1.43	1.73	1.55
2.b	Reduction	lbs/ac	0.56	0.36	0.32	0.28	0.27	0.26	0.26	0.26	0.25	0.25	0.25
2.c	Difference	lbs/ac	-0.12	0.08	0.12	0.16	0.17	0.18	0.18	0.18	0.19	0.19	0.19
2.d	Difference x field acres	lbs	-0.5	0.4	0.6	0.7	0.8	0.8	0.8	0.8	0.9	0.9	0.9
2.e	Trade Ratio		1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Final Credit						0.68	0.70	0.71	0.71	0.72	0.72
		Useable Final Credit						0.68	0.70	0.71	0.71	0.72	0.72

Note: Credits will be either interim or long term in 2023 and 2024 depending on the permit issuance schedule. Interim and long term credits are not generated in the same year for these fields.

TOTAL INTERIM CREDITS	**15.42**	**38.20**	**34.69**	**44.70**	**40.18**	**35.58**	**44.77**				
TOTAL LONG-TERM CREDITS						**6.55**	**6.67**	**6.74**	**6.79**	**6.81**	**6.82**

Attachment H

Interim and Long-Term TP Credit Calculation

Field A [acres]		PTP	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
14.8		Baseline	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Savings	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Trade Ratio	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Interim Credit	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
		Useable Interim Credit	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
2.a	TMDL credit Threshold	lbs/ac	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
2.b	Baseline	lbs/ac	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.b	Reduction	lbs/ac	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.c	Difference	lbs/ac	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
2.d	Difference x field acres	lbs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.e	Trade Ratio		1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Final Credit						0.00	0.00	0.00	0.00	0.00	0.00
		Useable Final Credit						0.00	0.00	0.00	0.00	0.00	0.00

Note: Credits will be either interim or long term in 2023 and 2024 depending on the permit issuance schedule. Interim and long term credits are not generated in the same year for these fields.

Field B [acres]		PTP	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
17.5		Baseline	11.00	1.29	23.19	11.90	1.99	23.94	12.79	2.69	24.71	13.68	3.39
		Reduction	0.91	0.57	0.51	0.47	0.45	0.44	0.43	0.42	0.42	0.42	0.42
		Savings	10.10	0.72	22.68	11.43	1.54	23.50	12.36	2.26	24.28	13.26	2.96
		Trade Ratio	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Interim Credit	8.41	0.60	18.90	9.53	1.28	19.59	10.30				
		Useable Interim Credit	8.41	0.60	18.90	9.53	1.28	19.59	10.30				
2.a	TMDL credit Threshold	lbs/ac	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
2.b	Baseline	lbs/ac	0.63	0.07	1.33	0.68	0.11	1.37	0.73	0.15	1.41	0.78	0.19
2.b	Reduction	lbs/ac	0.05	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02
2.c	Difference	lbs/ac	0.39	0.41	0.41	0.41	0.41	0.42	0.42	0.42	0.42	0.42	0.42
2.d	Difference x field acres	lbs	6.8	7.1	7.2	7.2	7.3	7.3	7.3	7.3	7.3	7.3	7.3
2.e	Trade Ratio		1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Final Credit						6.05	6.06	6.06	6.06	6.07	6.07
		Useable Final Credit						6.05	6.06	6.06	6.06	6.07	6.07

Note: Credits will be either interim or long term in 2023 and 2024 depending on the permit issuance schedule. Interim and long term credits are not generated in the same year for these fields.

Attachment H

Interim and Long-Term TP Credit Calculation

Field D [acres]		PTP	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
4.6		Baseline	2.08	2.03	4.67	2.35	2.23	4.89	2.61	2.44	5.12	2.87	2.65
		Reduction	0.23	0.15	0.13	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.11
		Savings	1.86	1.88	4.54	2.22	2.12	4.78	2.50	2.33	5.01	2.76	2.54
		Trade Ratio	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Interim Credit	1.55	1.57	3.78	1.85	1.77	3.98	2.08				
		Useable Interim Credit	1.55	1.57	3.78	1.85	1.77	3.98	2.08				
2.a	TMDL credit Threshold	lbs/ac	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
2.b	Baseline	lbs/ac	0.45	0.44	1.02	0.51	0.49	1.06	0.57	0.53	1.11	0.62	0.58
2.b	Reduction	lbs/ac	0.05	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02
2.c	Difference	lbs/ac	0.39	0.41	0.41	0.41	0.41	0.42	0.42	0.42	0.42	0.42	0.42
2.d	Difference x field acres	lbs	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
2.e	Trade Ratio		1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Final Credit						1.59	1.59	1.59	1.60	1.60	1.60
		Useable Final Credit						1.59	1.59	1.59	1.60	1.60	1.60

Note: Credits will be either interim or long term in 2023 and 2024 depending on the permit issuance schedule. Interim and long term credits are not generated in the same year for these fields.

TOTAL INTERIM CREDITS	**9.96**	**2.17**	**22.68**	**11.38**	**3.05**	**23.57**	**12.38**				
TOTAL LONG-TERM CREDITS						**7.65**	**7.65**	**7.66**	**7.66**	**7.66**	**7.66**

Attachment H

Interim and Long-Term TSS Credit Calculation

Field A [acres]		PTTSS	PTTSS Units	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
14.8			tons/ac	2.366	2.331	1.899	2.359	2.330	1.898	2.359	2.330	1.898	2.359	2.330
		Baseline	tons/yr	35.013	34.504	28.100	34.920	34.481	28.094	34.916	34.480	28.094	34.916	34.480
			tons/ac	0.324	0.048	0.021	0.009	0.006	0.004	0.003	0.003	0.002	0.002	0.002
		Reduction	tons/yr	4.803	0.705	0.312	0.132	0.082	0.059	0.046	0.039	0.034	0.032	0.030
			tons/ac	2.041	2.284	1.878	2.351	2.324	1.894	2.356	2.327	1.896	2.357	2.328
		Savings	tons/yr	30.211	33.799	27.788	34.788	34.399	28.035	34.870	34.441	28.059	34.884	34.450
		Trade Ratio		1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Interim Credit	tons/yr	25.175	28.166	23.157	28.990	28.666	23.362	29.058				
		Useable Interim Credit	tons/yr	0.00	0.00	23.157	28.990	28.666	23.362	29.058				
2.a	TMDL credit Threshold		tons/ac	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035
2.b	Baseline		tons/ac	2.366	2.331	1.899	2.359	2.330	1.898	2.359	2.330	1.898	2.359	2.330
2.b	Reduction		tons/ac	0.324	0.048	0.021	0.009	0.006	0.004	0.003	0.003	0.002	0.002	0.002
2.c	Difference		tons/ac	-0.289	-0.013	0.014	0.026	0.029	0.031	0.032	0.032	0.033	0.033	0.033
2.d	Difference x field acres		tons	-4.3	-0.2	0.2	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5
2.e	Trade Ratio			1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Final Credit	tons/yr						0.38	0.39	0.40	0.40	0.41	0.41

Note: Credits will be either interim or long term in 2023 and 2024 depending on the permit issuance schedule. Interim and long term credits are not generated in the same year for these fields.

Attachment H

Interim and Long-Term TSS Credit Calculation

Field B [acres]		PTTSS	PTTSS Units	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
17.5			tons/ac	5.552	5.440	4.526	5.538	5.436	4.525	5.537	5.436	4.525	5.537	5.436
		Baseline	tons/yr	97.168	95.192	79.213	96.909	95.130	79.196	96.898	95.127	79.195	96.898	95.126
			tons/ac	0.766	0.111	0.049	0.021	0.013	0.009	0.007	0.006	0.005	0.005	0.005
		Reduction	tons/yr	13.408	1.942	0.859	0.362	0.226	0.164	0.127	0.107	0.095	0.088	0.084
			tons/ac	4.786	5.329	4.477	5.517	5.423	4.516	5.530	5.430	4.520	5.532	5.431
		Savings	tons/yr	83.760	93.250	78.354	96.546	94.903	79.032	96.771	95.020	79.100	96.810	95.043
		Trade Ratio		1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Interim Credit	tons/yr	69.800	77.708	65.295	80.455	79.086	65.860	80.642				
		Useable Interim Credit	tons/yr	0.00	0.00	0.000	80.455	79.086	65.860	80.642				
2.a	TMDL credit Threshold		tons/ac	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035
2.b	Baseline		tons/ac	5.552	5.440	4.526	5.538	5.436	4.525	5.537	5.436	4.525	5.537	5.436
2.b	Reduction		tons/ac	0.766	0.111	0.049	0.021	0.013	0.009	0.007	0.006	0.005	0.005	0.005
2.c	Difference		tons/ac	-0.731	-0.076	-0.014	0.014	0.022	0.026	0.028	0.029	0.030	0.030	0.030
2.d	Difference x field acres		tons	-10.8	-1.1	-0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4
2.e	Trade Ratio			1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Final Credit	tons/yr						0.32	0.34	0.36	0.36	0.37	0.37

Note: Credits will be either interim or long term in 2023 and 2024 depending on the permit issuance schedule. Interim and long term credits are not generated in the same year for these fields.

Attachment H

Interim and Long-Term TSS Credit Calculation

Field D [acres]		PTTSS	PTTSS Units	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
4.6			tons/ac	1.756	1.720	1.431	1.751	1.719	1.431	1.751	1.719	1.431	1.751	1.719
		Baseline	tons/yr	8.076	7.912	6.584	8.054	7.906	6.582	8.054	7.906	6.582	8.053	7.906
			tons/ac	0.242	0.035	0.016	0.007	0.004	0.003	0.002	0.002	0.002	0.002	0.002
		Reduction	tons/yr	1.114	0.161	0.071	0.030	0.019	0.014	0.011	0.009	0.008	0.007	0.007
			tons/ac	1.513	1.685	1.416	1.744	1.715	1.428	1.748	1.717	1.429	1.749	1.717
		Savings	tons/yr	6.962	7.750	6.512	8.024	7.888	6.569	8.043	7.897	6.574	8.046	7.899
		Trade Ratio		1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Interim Credit	tons/yr	5.801	6.459	5.427	6.687	6.573	5.474	6.702				
		Useable Interim Credit		0.00	6.459	5.427	6.687	6.573	5.474	6.702				
2.a	TMDL credit Threshold		tons/ac	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035
2.b	Baseline		tons/ac	1.756	1.720	1.431	1.751	1.719	1.431	1.751	1.719	1.431	1.751	1.719
2.b	Reduction		tons/ac	0.242	0.035	0.016	0.007	0.004	0.003	0.002	0.002	0.002	0.002	0.002
2.c	Difference		tons/ac	-0.207	0.000	0.019	0.028	0.031	0.032	0.033	0.033	0.033	0.033	0.033
2.d	Difference x field acres		tons	-1.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
2.e	Trade Ratio			1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Final Credit	tons/yr						0.12	0.13	0.13	0.13	0.13	0.13

Note: Credits will be either interim or long term in 2023 and 2024 depending on the permit issuance schedule. Interim and long term credits are not generated in the same year for these fields.

TOTAL INTERIM CREDITS [tons/yr]	0.00	0.65	2.86	11.61	11.43	9.47	11.64				
TOTAL LONG-TERM CREDITS [tons/yr]						0.08	0.09	0.09	0.09	0.09	0.09
TOTAL INTERIM CREDITS [lbs/yr]	**0**	**1,292**	**5,717**	**23,226**	**22,865**	**18,939**	**23,281**				
TOTAL LONG-TERM CREDITS [lbs/yr]						**164**	**172**	**177**	**179**	**181**	**181**

Attachment H

Interim and Long-Term TSS Credit Calculation

Field A [acres]		PTTSS	PTTSS Units	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
14.8			tons/ac	2.366	2.331	1.899	2.359	2.330	1.898	2.359	2.330	1.898	2.359	2.330
		Baseline	tons/yr	35.013	34.504	28.100	34.920	34.481	28.094	34.916	34.480	28.094	34.916	34.480
			tons/ac	0.324	0.048	0.021	0.009	0.006	0.004	0.003	0.003	0.002	0.002	0.002
		Reduction	tons/yr	4.803	0.705	0.312	0.132	0.082	0.059	0.046	0.039	0.034	0.032	0.030
			tons/ac	2.041	2.284	1.878	2.351	2.324	1.894	2.356	2.327	1.896	2.357	2.328
		Savings	tons/yr	30.211	33.799	27.788	34.788	34.399	28.035	34.870	34.441	28.059	34.884	34.450
		Trade Ratio		1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Interim Credit	tons/yr	25.175	28.166	23.157	28.990	28.666	23.362	29.058				
		Useable Interim Credit	tons/yr	0.00	0.00	23.16	28.99	28.67	23.36	29.06				
2.a		TMDL credit Threshold	tons/ac	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035
2.b		Baseline	tons/ac	2.366	2.331	1.899	2.359	2.330	1.898	2.359	2.330	1.898	2.359	2.330
2.b		Reduction	tons/ac	0.324	0.048	0.021	0.009	0.006	0.004	0.003	0.003	0.002	0.002	0.002
2.c		Difference	tons/ac	-0.289	-0.013	0.014	0.026	0.029	0.031	0.032	0.032	0.033	0.033	0.033
2.d		Difference x field acres	tons	-4.3	-0.2	0.2	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5
2.e		Trade Ratio		1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Final Credit	tons/yr						0.38	0.39	0.40	0.40	0.41	0.41

Note: Credits will be either interim or long term in 2023 and 2024 depending on the permit issuance schedule. Interim and long term credits are not generated in the same year for these fields.

Attachment H

Interim and Long-Term TSS Credit Calculation

Field B [acres]		PTTSS	PTTSS Units	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
17.5			tons/ac	5.515	5.435	4.426	5.500	5.431	4.425	5.499	5.431	4.425	5.499	5.431
		Baseline	tons/yr	96.508	95.104	77.454	96.251	95.042	77.437	96.240	95.039	77.436	96.240	95.039
			tons/ac	0.756	0.111	0.049	0.021	0.013	0.009	0.007	0.006	0.005	0.005	0.005
		Reduction	tons/yr	13.237	1.942	0.860	0.363	0.226	0.164	0.127	0.107	0.095	0.088	0.084
			tons/ac	4.758	5.324	4.377	5.479	5.418	4.416	5.492	5.425	4.420	5.494	5.426
		Savings	tons/yr	83.271	93.162	76.595	95.888	94.816	77.273	96.113	94.932	77.341	96.152	94.955
		Trade Ratio		1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Interim Credit	tons/yr	69.392	77.635	63.829	79.907	79.013	64.395	80.094				
		Useable Interim Credit	tons/yr	0.00	0.00	0.00	79.91	79.01	64.39	80.09				
2.a		TMDL credit Threshold	tons/ac	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035
2.b		Baseline	tons/ac	5.515	5.435	4.426	5.500	5.431	4.425	5.499	5.431	4.425	5.499	5.431
2.b		Reduction	tons/ac	0.756	0.111	0.049	0.021	0.013	0.009	0.007	0.006	0.005	0.005	0.005
2.c		Difference	tons/ac	-0.721	-0.076	-0.014	0.014	0.022	0.026	0.028	0.029	0.030	0.030	0.030
2.d		Difference x field acres	tons	-12.6	-1.3	-0.2	0.2	0.4	0.4	0.5	0.5	0.5	0.5	0.5
2.e		Trade Ratio		1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Final Credit	tons/yr						0.37	0.40	0.42	0.43	0.44	0.44

Note: Credits will be either interim or long term in 2023 and 2024 depending on the permit issuance schedule. Interim and long term credits are not generated in the same year for these fields.

Attachment H

Interim and Long-Term TSS Credit Calculation

Field D [acres]	PTTSS	PTTSS Units	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
4.6		tons/ac	1.744	1.718	1.399	1.739	1.717	1.399	1.739	1.717	1.399	1.739	1.717
	Baseline	tons/yr	8.021	7.904	6.437	8.000	7.899	6.436	7.999	7.899	6.436	7.999	7.899
		tons/ac	0.239	0.035	0.016	0.007	0.004	0.003	0.002	0.002	0.002	0.002	0.002
	Reduction	tons/yr	1.100	0.161	0.071	0.030	0.019	0.014	0.011	0.009	0.008	0.007	0.007
		tons/ac	1.505	1.683	1.384	1.733	1.713	1.396	1.737	1.715	1.397	1.737	1.716
	Savings	tons/yr	6.921	7.743	6.366	7.970	7.880	6.422	7.988	7.890	6.428	7.991	7.892
	Trade Ratio		1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
	Interim Credit	tons/yr	5.767	6.452	5.305	6.641	6.567	5.352	6.657				
	Useable Interim Credit	tons/yr	0.00	6.45	5.30	6.64	6.57	5.35	6.66				
2.a	TMDL credit Threshold	tons/ac	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035
2.b	Baseline	tons/ac	1.744	1.718	1.399	1.739	1.717	1.399	1.739	1.717	1.399	1.739	1.717
2.b	Reduction	tons/ac	0.239	0.035	0.016	0.007	0.004	0.003	0.002	0.002	0.002	0.002	0.002
2.c	Difference	tons/ac	-0.204	0.000	0.019	0.028	0.031	0.032	0.033	0.033	0.033	0.033	0.033
2.d	Difference x field acres	tons	-0.9	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
2.e	Trade Ratio		1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
	Final Credit	tons/yr						0.12	0.13	0.13	0.13	0.13	0.13

Note: Credits will be either interim or long term in 2023 and 2024 depending on the permit issuance schedule. Interim and long term credits are not generated in the same year for these fields.

TOTAL INTERIM CREDITS [tons/yr]	0.00	0.65	2.85	11.55	11.42	9.31	11.58				
TOTAL LONG-TERM CREDITS [tons/yr]						0.09	0.09	0.09	0.10	0.10	0.10
TOTAL INTERIM CREDITS [lbs/yr]	**0**	**1,290**	**5,692**	**23,108**	**22,849**	**18,622**	**23,162**				
TOTAL LONG-TERM CREDITS [lbs/yr]						**176**	**185**	**190**	**192**	**194**	**195**

Attachment H

Interim and Long-Term TSS Credit Calculation

Field A [acres]		PTTSS	PTTSS Units	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
14.8			tons/ac	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		Baseline	tons/yr	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			tons/ac	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		Reduction	tons/yr	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			tons/ac	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		Savings	tons/yr	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		Trade Ratio		1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Interim Credit	tons/yr	0.000	0.000	0.000	0.000	0.000	0.000	0.000				
Useable Interim Credit			tons/yr	0.000	0.000	0.000	0.000	0.000	0.000	0.000				
2.a	TMDL credit Threshold		tons/ac	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035
2.b	Baseline		tons/ac	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2.b	Reduction		tons/ac	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2.c	Difference		tons/ac	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035
2.d	Difference x field acres		tons	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
2.e				1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
			tons/yr						0.43	0.43	0.43	0.43	0.43	0.43

Attachment H

Interim and Long-Term TSS Credit Calculation

Field B [acres]		PTTSS	PTTSS Units	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
17.5			tons/ac	0.038	0.005	0.101	0.038	0.005	0.100	0.038	0.005	0.100	0.038	0.005
		Baseline	tons/yr	0.660	0.088	1.759	0.658	0.087	1.759	0.658	0.087	1.758	0.658	0.087
			tons/ac	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		Reduction	tons/yr	0.170	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			tons/ac	0.028	0.005	0.101	0.038	0.005	0.100	0.038	0.005	0.100	0.038	0.005
		Savings	tons/yr	0.489	0.088	1.759	0.658	0.088	1.759	0.658	0.087	1.758	0.658	0.087
		Trade Ratio		1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Interim Credit	tons/yr	0.408	0.074	1.466	0.549	0.073	1.465	0.548				
		Useable Interim Credit	tons/yr	0.408	0.074	1.466	0.549	0.073	1.465	0.548				
2.a		TMDL credit Threshold	tons/ac	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035
2.b		Baseline	tons/ac	0.038	0.005	0.101	0.038	0.005	0.100	0.038	0.005	0.100	0.038	0.005
2.b		Reduction	tons/ac	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2.c		Difference	tons/ac	0.025	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035
2.d		Difference x field acres	tons	0.4	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
2.e				1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
			tons/yr						0.51	0.51	0.51	0.51	0.51	0.51

Attachment H

Interim and Long-Term TSS Credit Calculation

Field D [acres]		PTTSS	PTTSS Units	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
4.6			tons/ac	0.012	0.002	0.032	0.012	0.002	0.032	0.012	0.002	0.032	0.012	0.002
		Baseline	tons/yr	0.055	0.007	0.146	0.055	0.007	0.146	0.055	0.007	0.146	0.055	0.007
			tons/ac	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		Reduction	tons/yr	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
			tons/ac	0.009	0.002	0.032	0.012	0.002	0.032	0.012	0.002	0.032	0.012	0.002
		Savings	tons/yr	0.041	0.007	0.146	0.055	0.007	0.146	0.055	0.007	0.146	0.055	0.007
		Trade Ratio		1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
		Interim Credit	tons/yr	0.034	0.006	0.122	0.046	0.006	0.122	0.046				
		Useable Interim Credit	tons/yr	0.034	0.006	0.122	0.046	0.006	0.122	0.046				
2.a		TMDL credit Threshold	tons/ac	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035
2.b		Baseline	tons/ac	0.012	0.002	0.032	0.012	0.002	0.032	0.012	0.002	0.032	0.012	0.002
2.b		Reduction	tons/ac	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2.c		Difference	tons/ac	0.032	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035
2.d		Difference x field acres	tons	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
2.e				1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1	1.2:1
			tons/yr						0.13	0.13	0.13	0.13	0.13	0.13

TOTAL INTERIM CREDITS [tons/yr]	0.044	0.008	0.159	0.059	0.008	0.159	0.059				
TOTAL LONG-TERM CREDITS [tons/yr]						0.11	0.11	0.11	0.11	0.11	0.11
TOTAL INTERIM CREDITS [lbs/yr]	**88**	**16**	**318**	**119**	**16**	**317**	**119**				
TOTAL LONG-TERM CREDITS [lbs/yr]						**215**	**215**	**215**	**215**	**215**	**215**

ATTACHMENT I

Prairie Establishment Plan

Belgioioso Cheese Prairie Plantings
Freedom, Wisconsin Site
Establishment Plan

This Establishment Plan was developed to establish permanent conservation cover consistent with the requirements and recommendations of NRCS Technical Standard 327. The primary purpose of the installation of conservation cover at the sites is to reduce downstream surface water quality degradation by nutrients and sedimentation.

Soil Preparation

In late May, any weeds growing on site will be sprayed with Round Up and 2,4-D killing. The soil will not be tilled prior to planting in order to minimize erosion.

Seed Products

Seed, with the exception of cover crop, shall be species native to Outagamie, Oconto or Brown County, Wisconsin and from a genetic source within the Midwest. Species selected are known to grow in Outagamie, Octonto or Brown County, WI, as listed by the University of Wisconsin's state herbarium records. Seed provided shall be measured as pure live seed, properly labeled and shipped in accordance with Wisconsin law. The species chosen have been carefully selected to ensure they are adapted to the local soils, ecological conditions and climactic conditions of the region.

Three seeding mixes will be used to ensure that species planted are adapted to the particular area of the site where they will be installed. The seed mixes include a heavier seeding of grasses than is typical because the primary purpose of the conservation cover is to reduce downstream surface water quality degradation by nutrients and sedimentation and to ensure quick site stabilization. Further, each unit includes a fairly dense seeding of Elymus canadensis (Canada wild rye), which establishes quickly. Unlike the other prairie grass species, Elymus canadensis is a cool season grass that typically germinates more readily without stratification and will provide a secondary cover after the oat cover crop (described below) begins to senesce in the mid-summer. The remaining warm season grasses are slower to establish, but will eventually come to dominate the site and provide a permanent cover that, if properly maintained, will last indefinitely. These species have deep root systems and will completely stabilize the soil at maturity.

In order to ensure that the primary purpose of the conservation cover will be met, seed for native grass species will be applied at a minimum rate of 10 lbs/acre with the exception of planting zone 3. This zone, being quite wet, will receive a higher proportion of sedges. Sedge seed is smaller and therefore a smaller quantity by weight is needed. A total of 8.15 lbs of grass and sedge seed is specified for zone 3. Live plants will also be installed in zone 3 (see below).

Oats will be seeded at a rate of 35 lbs/acre and used as a cover crop during the first year. Oats will be used as a cover crop because they germinate quickly and will provide ample cover within a few weeks. Other cover crop species have various drawbacks that oats do not have, such as an allelopathic effect (winter rye or winter wheat) and or they tend to persist longer than desired (annual rye).

The property has been broken into three units: Planting Zone 1 (higher and drier knolls), Planting Zone 2 (channels and gently sloped areas at the bottom of the knolls) and Planting Zone 3 (flat and wetter areas). In addition, a seed mix specifically designed to reduce erosion will be installed under erosion control blanket where required. The seed species and quantities are described below:

Planting Zone 1: These areas are on the top and sides of drier knolls to the north. These areas have silt loam soils that are gently sloped and well drained. They will support and mesic prairie habitat.

Planting Zone 1 10.3 ac
Grasses and Sedges

Scientific Name	*Common Name*	*Rate/Ac*	*Unit*	*Total Seed Qty*
Andropogon scoparius	Little Bluestem	3.000	lb	30.900
Bouteloua curtipendula	Side-oats Grama	2.000	lb	20.600
Andropogon gerardii	Big bluestem	0.500	lb	5.150
Sorghastrum nutans	Indiangrass	0.500	lb	5.150
Elymus canadensis	Canada Wild Rye	3.000	lb	30.900
Panicum virgatum	Switch Grass	1.000	lb	10.300
	Total grasses and sedges	*10.000*	*lb*	*103.00*

Planting Zone 2**:** These units are fairly flat to gently sloped. They include the major drainage ways in the northern part of the site. Soils are also silt loam with some sandier areas. The seed mix includes both mesic and wet mesic prairie species.

Planting Zone 2 9.5 ac
Grasses and Sedges

Scientific Name	*Common Name*	*Rate/Ac*	*Unit*	*Total Seed Qty*
Andropogon scoparius	Little Bluestem	1.000	lb	9.500
Bouteloua curtipendula	Side-oats Grama	0.700	lb	6.650
Andropogon gerardii	Big bluestem	2.000	lb	19.000
Sorghastrum nutans	Indiangrass	1.000	lb	9.500
Carex scoparia	Broom sedge	0.100	lb	0.950
Carex brevior	Plains oval sedge	0.100	lb	0.950
Carex crinita	Fringed sedge	0.100	lb	0.950
Elymus canadensis	Canada Wild Rye	3.000	lb	28.500
Panicum virgatum	Switch Grass	2.000	lb	19.000
	Total grasses and sedges	*10.000*	lb	*95.00*

Planting Zone 3: This unit is at the bottom of the slope and is flat to slightly sloped. It includes the confluence of a number of eroded channels. Soils are silt loam and poorly drained. The seed mix includes both wet mesic species with a bias toward wetter species than Zone 2. We will also plant 1,280 Spartina pectinata (prairie cord grass) plugs. Most will go along the creek in the northeastern part of the site. This species will provide excellent erosion control but germination from seed can be slow.

Planting Zone 3 40.8 ac

Grasses and Sedges

Scientific Name	*Common Name*	*Rate/Ac*	*Unit*	*Total Seed Qty*
Andropogon scoparius	Little Bluestem	0.200	lb	8.160
Bouteloua curtipendula	Side-oats Grama	0.200	lb	8.160
Andropogon gerardii	Big bluestem	2.000	lb	81.600
Sorghastrum nutans	Indiangrass	2.000	lb	81.600
Carex brevior	Plains oval sedge	0.250	lb	10.200
Carex vulpinoidea	Brown Fox Sedge	0.250	lb	10.200
Carex scoparia	Broom sedge	0.250	lb	10.200
Elymus canadensis	Canada Wild Rye	1.000	lb	40.800
Panicum virgatum	Switch Grass	2.000	lb	81.600
	Total grasses and sedges	*8.150*	lb	*332.52*

Erosion Control: Any areas that are to receive type 1 and Type 2 erosion matting will be seeded with the seed mix that corresponds to the Planting Zone they are located in. Before installing the mat, seed from the species below will also be installed.

Scientific Name	*Common Name*	*Qty*	*Unit*	*Total Seed Qty*
Spartina pectinata	Cord grass	1.000	lb	1.000
Bromus ciliatus	Fringed brome	1.000	lb	1.000
Carex comosa	Bristly sedge	2.000	lb	1.000

The seeding mixes will be installed in the planting zones in accordance with the attached map.

Plant Products

Live plants shall be 2” potted material or equivalent. Plants shall be well rooted and healthy, free of disease and kept well-watered while in transit and on site prior to planting.

Seed Installation

After soil preparation described above, seed will be planted prior to June 30, 2018 with a target of mid-May to early June depending on site conditions. Seed will be installed using a no-till drill specifically manufactured for the purpose of planting prairie seed.

Plant Installation

Live plants shall be planted in locations appropriate to their ecological niche so they are able to thrive. Planting holes will be dug approximately 2x the size of the plug and soil shall be firmly tamped by hand to ensure air pockets are removed. If soil conditions require, plants will be watered immediately after planting.

Erosion Control

At this time all swales are stable and no erosion control activities are planned. However, if erosion develops in any areas at any time, erosion matting will be placed per manufacturer's recommendations. Type 1 and Type 2 erosion mat may be used depending on the severity and slope of the erosion issue.

Type 1 is defined as: Class 1 Type A Urban (EG1SNN) is the single net straw with biodegradable net

- Single net straw: 100% straw with a single biodegradable jute netting. It is designed to provide erosion protection and assist with vegetation establishment for 8 to 12 months on slopes up to 3:1 and low-flow channels.

Type 2 is defined as: Class 1 Type B Urban (EG2SNN) is the double net straw with biodegradable nets

- Double net straw: 100% straw between two biodegradable jute nettings. It is designed to provide erosion control and assist with vegetation establishment assistance for 8 to 12 months on 2:1 to 3:1 slopes and in moderate-flow channels.

Seed Establishment Standards

Standards for 2018, the Year of Planting

- Germination of cover crop shall occur within 20 days of installation. Cover crop establishment shall be uniform and consistent. Any area of more than 1 square yard that is devoid of cover crop shall be reseeded within three weeks of installation.
- Germination of native grass species shall be apparent by mid-July. Areas of erosion where seed has likely been lost will be reseeded and appropriate erosion control measures applied.
- Establishment of native grasses should be consistent and widespread by the middle of September 2018, although seedlings are likely to be inconspicuous. Areas greater than 100 square yards that do not have native grasses shall be reseeded with native grasses in November.

Seed Establishment Activities

<u>Mowing:</u> The purpose of mowing is to keep weeds from going to seed and to allow sunlight to penetrate to native grasses seedlings and to limit competition for water by weed species.

During the Year of Planting, seeded areas shall be mowed at a height of 8 to 12 inches when vegetation has reached a height of 18 inches. Depending on the growing conditions, this may require mowing as frequently as every two weeks. In no event will mowing be conducted at a height less than 8 inches.

Herbicide Applications: Herbicide shall be applied to perennial weeds such as Canada thistle or woody plants that invade the areas seeded with prairie seed. The herbicide used shall be the most selective possible given the target species and shall be applied only to the target species to the extent practicable. Herbicide shall not be applied to annual weeds unless they cannot be controlled by mowing and if they have a developed a monoculture that precludes establishment of native grasses.

Site Inspections

The site will be informally inspected periodically by BelGiosioso employees instructed on how to identify erosion problems. The site will be formally inspected one month after installation to ensure cover crop germination and compliance with establishment standards. The site will also be inspected to confirm initial germination of native grasses in mid-July 2018. A final inspection will occur in October. After that, the sites will be inspected per the operation and maintenance standards. Reports with photographic records will be generated for these three formal inspections.

Plan Preparation

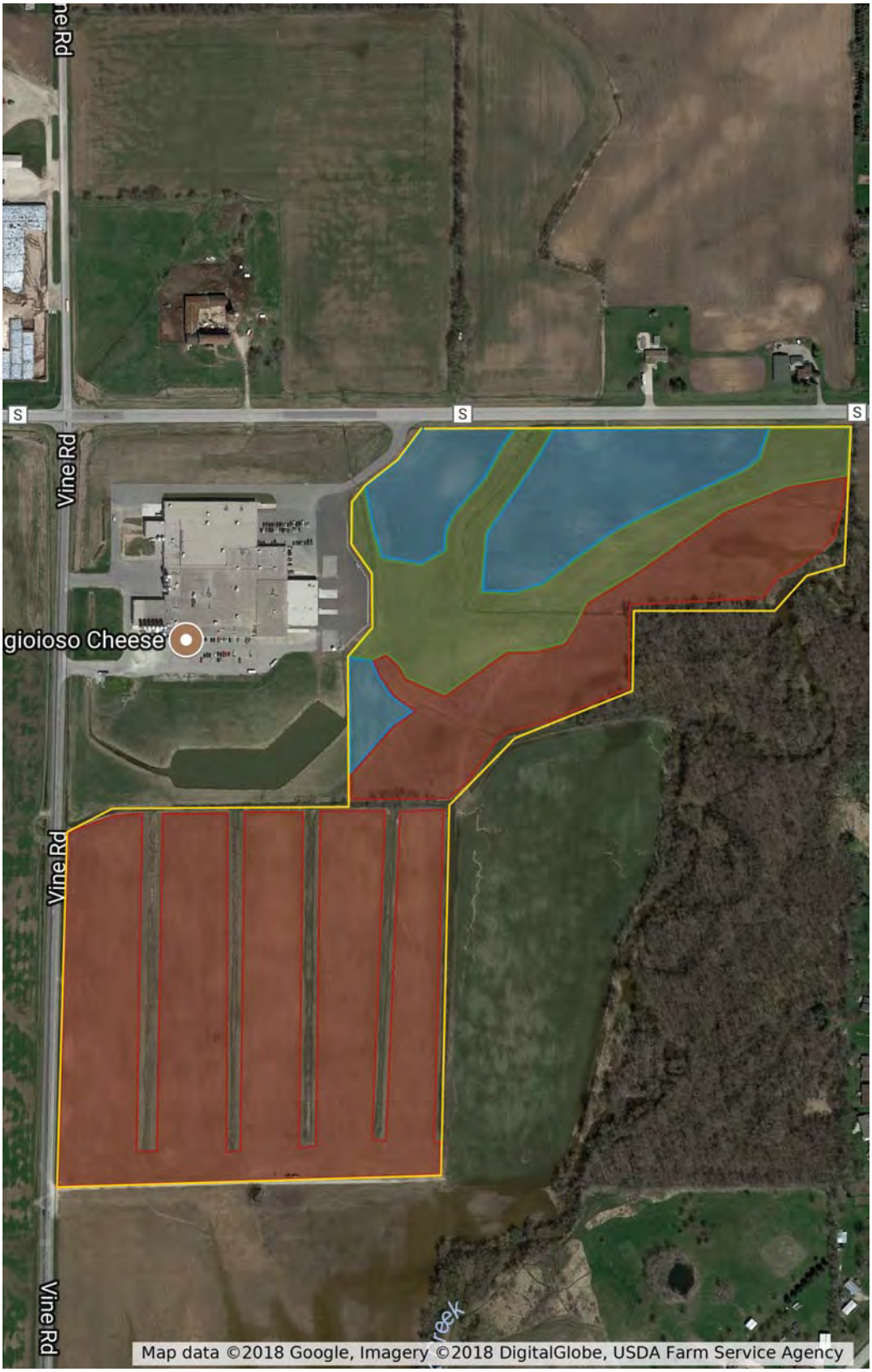
This Plan was prepared by Carl Korfmacher, Owner, Midwest Prairies, LLC, 11847 Washington Road Edgerton, WI 53534, 800.382.1132, on behalf of The Probst Group and Belgioioso Cheese for inclusion in the Water Quality Trading Plan.

Belgioioso Freedom

Seeding and Planting Zones

- Boundary
- Zone 1a - 3.0 ac
- Zone 1b - 6.4 ac
- Zone 1c - 1.0 ac
- Zone 2 - 9.5 ac
- Zone 3a - 10.2 ac
- Zone 3b - 30.6 ac

Phosphorous Trade Planting Plan



ATTACHMENT J
Prairie O&M Plan

Belgioioso Cheese Prairie Plantings
Freedom, Wisconsin Site
Operation and Maintenance Plan

The goal of this Operation and Maintenance Plan is to ensure native cover remains consistently and exclusively throughout the site in perpetuity. The primary purpose of the installation and maintenance of conservation cover at the site is to reduce downstream surface water quality degradation by nutrients and sedimentation. This Maintenance Plan was developed to ensure this goal is achieved and is consistent with the requirements and recommendations of NRCS Technical Standard 327.

Prairie plants require regular maintenance and management to remain healthy. The concept of adaptive management is critical. Adaptive management implies that while we can and will prepare for certain activities to occur on site, we also must respond to changing conditions that are not always predictable. As a result, this Plan outlines certain activities to ensure the prairie plants remain healthy, but management practices will remain flexible and consistent with the principles outlined below, in order to adapt to any changing circumstances on-site.

As outlined below, the site will be inspected to ensure that management tools are used appropriately. The inspector will walk the entire site and take photos and notes regarding plant diversity, density, overall ecological health, and any erosion issues. Based on those findings, a more detailed prescription for remedial and maintenance activities will be developed specific to the current conditions on the site to ensure that consistent, perennial native cover remains on the site. The prescriptions for such activities will follow the standards and practices below.

Prairie Cover Standards for Seasons after the First Season

Standards for Second Growing Season:

- Native grasses shall be found consistently throughout the site by mid-July 2019. Areas greater than 25 square yards that exclusively have plants that are not native grasses shall be reseeded with native grasses prior to November 30, 2019.

Standards for Third and Fourth Growing Seasons:

- Native grasses shall be found consistently throughout the site by mid-July 2020 and 2021. Areas greater than 5 square yards that exclusively have plants that are not native grasses shall be reseeded with native grasses prior to the end of November 2020 and 2021. Alternatively, native grasses may be installed with a no-till drill in the spring.

Standards for the Fifth Growing Season and Subsequent Seasons:

- Native grasses shall be found consistently throughout the site as determined during the annual inspection each year. Areas greater than 5 square yards that exclusively have plants that are not native grasses shall be reseeded with native grasses in November of that same year. Alternatively, native grasses may be installed with a no-till drill in the spring.

Reseeding activities shall continue in following seasons as necessary to ensure the standards for the Fifth Growing Season continue to be met in later years.

Early Maintenance Activities for Prairie Through 2022

Herbicide Applications: Herbicide shall be applied to perennial weeds such as Canada thistle or woody plants that invade the areas seeded with prairie seed. The herbicide used shall be the most selective possible given the target species and shall be applied only to the target species to the extent practicable. Herbicide shall not be applied to annual weeds unless they cannot be controlled by mowing or burning and if they have a developed a monoculture that precludes native grasses.

Prescribed Burning: The primary management tool for prairies is prescribed burning. Prescribed burning simulates the effects of wildfires that were part of Wisconsin's pre-settlement environment in which native plant communities, including prairies, thrived. Native prairie grasses, including those species planted at the site, develop deep roots and buds beneath the soil, enabling them to withstand the heat of a fire. The deep roots of native prairie plants also stabilize the site after a fire and enable native prairie plants to quickly regenerate. The Wisconsin Department of Natural Resources has additional information regarding prescribed burning and its benefits to native plant communities, such as prairies, on its website at: http://dnr.wi.gov/topic/wildlifehabitat/burn.html.

Because fire is a critical element in sustaining native prairies, prescribed burning will be used as a management tool at the site. If fuel levels allow, seeded areas may be burned in the spring of 2020 or 2021. Prescribed burning will only occur if fuel levels and weather conditions are appropriate to ensure a prescribed burn can be conducted in a safe and controlled manner and that the site will benefit ecologically from the burn. Because burning will occur at the earliest in the fourth growing season after native vegetation is well-established, nutrient runoff is not expected. However, after a burn is conducted, the site will be monitored for any erosion issues. If erosion issues are identified, they will be addressed pursuant to the below sections titled, "Methods to Address Minor Erosion Control Concerns" and "Methods to Address Effects of Catastrophic and Anomalous Events."

Long-Term Maintenance and Management of Prairie after 2022

Prescribed Burning: As described in the immediately preceding section, the primary management tool for prairies is prescribed burning. Prescribed burning is ecologically beneficial to native prairie plants and will be used as a management tool, as appropriate, to ensure the continued health of the prairie at the site. Generally speaking, after 2022, one third of the site should be burned every year, creating a 3 year rotation. However, certain weeds and woody invasive species may be controlled with more or less frequent fire. In light of that, the determination of which area will be burned and when that area will be burned will be based on the best judgment of the inspector and his/her prescription for maintenance activities.

Prescribed burning will only occur if fuel levels and weather conditions are appropriate to ensure a prescribed burn can be conducted in a safe and controlled manner and that the site will benefit ecologically from the burn. Because burning will occur when the site is well-established, nutrient runoff is not expected. However, after a burn is conducted, the site will be monitored for any erosion issues. If erosion issues are identified, they will be addressed pursuant to the below sections titled, "Methods to Address Minor Erosion Control Concerns" and "Methods to Address Effects of Catastrophic and Anomalous Events."

Herbicide Applications: Management of some invasive species can often only be accomplished through the use of herbicides. Herbicide shall be applied to perennial weeds such as Canada thistle or woody plants that invade the areas seeded with prairie seed. The herbicide used shall be the most selective possible given the target species and shall be applied only to the target species to the extent practicable. Herbicide shall not be applied to annual weeds unless they cannot be controlled by burning and if they have a developed a monoculture that precludes native grasses.

Site Inspections

The site will be inspected one time each during the spring, summer, and fall in the second, third, and fourth growing seasons. Thereafter, the site will be inspected once on an annual basis. This annual inspection will occur between mid-August and mid-September of each year. The site inspections will ensure compliance with seed establishment standards and identify any erosion issues. The site will also be inspected following any major events that could cause erosion as soon as the safety of the inspector can be assured, and if any erosion issues are identified, they will be addressed in accordance with the seed establishment standards above and erosion control sections below. During inspections, the inspector will walk the site and take close-up and distant photos of the site. The inspector will also take notes regarding plant diversity, density, overall ecological health, and any erosion issues. Based on those findings, a more detailed prescription for remedial and maintenance activities will be developed that will ensure that consistent, perennial native cover remains on the site. If the inspection identifies areas at the site that are not meeting the applicable seed establishment standards for the growing season, the

remedial action identified in each standard will be taken. If the inspection identifies erosion issues, they will be addressed pursuant to the sections in this Plan titled “Methods to Address Minor Erosion Control Concerns” and “Methods to Address Effects of Catastrophic and Anomalous Events.”

The inspection reports and associated documentation will be submitted to the Wisconsin Department of Natural Resources with the Belgioioso Cheese Annual Report, which is described in the Water Quality Trading Plan.

Methods to Address Minor Erosion Control Concerns

The site will be inspected for any bare spots, gullies, or other erosion control concerns. Erosion concerns will be addressed as follows:

- If bare spots larger than five square yards are identified during the growing season (May 15 through September 30), they will be immediately reseeded with cover crop and covered with a light straw mulch.
- If bare spots larger than five square yards occur outside the growing season, they will be addressed with temporary erosion matting, mulching, or the application of polyacrylamide, as necessary. Erosion events that occur outside of the growing season will be seeded with cover crop once the growing season begins.
- In the event of a major erosion event, such as the formation of a gully greater than one foot wide and one foot deep, the area will be regraded first and then reseeded per above.

All bare spots or gullies described above will also be reseeded with native grasses. Reseeding of native grasses in eroded areas must occur prior to July 15 or after November 1. Any eroded areas that are reseeded will be treated as newly established prairie and must meet the requirements for each growing season per the standards in the Establishment Plan and listed above.

Methods to Address Effects of Catastrophic and Anomalous Events

Certain catastrophic events may require the development of a more intense and urgent plan than the events outlined under the “Methods to Address Minor Erosion Control Concerns” above. These primarily include events that would cause flooding. For instance, in 1996 the Joliet, Illinois, area received over seventeen inches of rain in less than 48 hours. The level of flooding and related erosion was greater than had ever been experienced. Should such an event take place, it would be very difficult if not impossible to address while the event was in progress.

It is impossible to predict all the potential catastrophic or anomalous events that could cause significant damage to prairie plantings. If a catastrophic or anomalous event occurs, a site inspection would be done as soon as the safety of the inspector can be assured and an emergency plan will be developed and

implemented promptly following inspection unless weather or other conditions indicate it should be implemented later. The emergency plan will be consistent with the standards and practices outlined in the Establishment Plan and this Plan to ensure native perennial cover remains consistently throughout the site.

If a catastrophic flood event occurs during the growing season, an erosion plan that includes practices that closely resemble the standards and practices outlined in the Establishment Plan and in this Plan would be developed and implemented. If such an event occurred in mid-September or later, it would be impossible to establish cover prior to winter. Therefore, an erosion plan that includes standard physical erosion control structures would have to be prepared and implemented. This might include placing silt fence, straw wattles or perhaps even the excavation of a settling basin, if so warranted. In addition, a plan would be developed for the next growing season to grade if necessary and reseed in accordance with the standards and practices outlined in the Establishment Plan and this Plan. That plan would be implemented prior to July 1 of that growing season unless weather or other conditions indicate that it should be implemented later.

Other catastrophic events may be wind-based events, such as a tornado or intense straight-line winds, and these may cause trees to fall into the site from the surrounding fence lines. A site inspection would be done as soon as the safety of the inspector can be assured. Any fallen trees will be promptly removed and to the extent the prairie plantings are damaged, erosion issues will be addressed and the area reseeded per the standards and practices above.

Vandalism is another possible hazard. This would most likely involve off road vehicles illegally accessing the property and creating ruts. Ruts would be promptly filled, erosion issues would be addressed, and the area would be reseeded per the standards and practices above.

As previously stated, it is impossible to predict all the possible hazards. However, prairie plantings, in the form of Conservation Reserve Program plantings, private prairies, and remnant prairie plant communities have been shown to be exceptionally resilient in the face of disturbance.

Plan Preparation

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