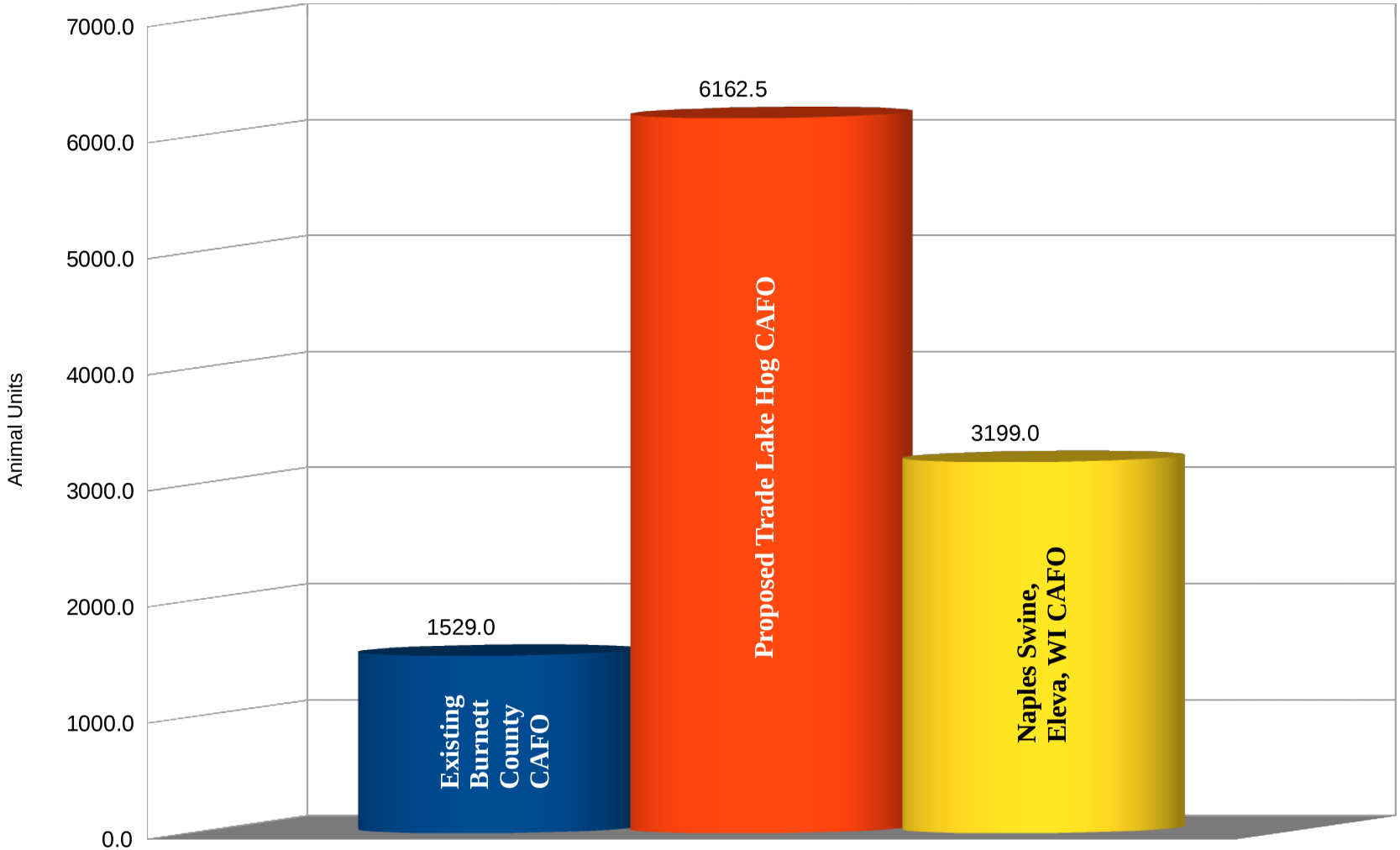
Animal Units Size Comparison

Information Derived from: https://permits.dnr.wi.gov/water/sitepages/permit%20search.aspx



NOTE: The Proposed Trade Lake CAFO animal units is derived from the Cumberland LLC, Application. The Proposed Trade Lake CAFO Manure output is derived by a calculation of animal units to manure output of the existing Naples Swine Hog facility in Eleva WI.See enclosed manure output chart.

Projected Animal Unit Calculation Numbers

Name of site CUMBERLAND LLC

Animal Type	I. Mixed Animal Units			II. Non-mixed Animal Units		
	b. Equiv. factor	c. Current Number	d. No. of AUs	e. Equiv. factor	f. Current Number	g. No. of Aus
Example - Broilers (non-liquid manure):	*0.005 x*	*150,000*	*= 750*	*0.008 x*	*150,000*	*= 1200*
Dairy Calves (under 400 lbs)	0.2 x	0	0.0			
Beef Calves (under 400 lbs)	0.2 x	0	0.0			
Dairy Cattle – Milking & Dry Cows	1.40 x	0	0.0	1.43 x	0	0.0
Dairy Cattle – Heifers (800 lbs to 1200 lbs)	1.10 x	0	0.0	1.00 x	0	0
Dairy Cattle – Heifers (400 lbs to 800 lbs)	0.60 x	0	0.0			
Beef – Steers or Cows (400 lbs to market)	1 .00 x	0	0	1.00 x	0	0.0
Beef – Bulls (each)	1.40 x	0	0.0			
Veal Calves	0.50 x	0	0.0	1.00 x	0	0.0
Swine – Pigs (up to 55 lbs)	0.10 x	14,625	1,462.5	0.10 x	14,625	1,462.5
Swine – Pigs (55 lbs to market)	0.40 x	4,125	1,650.0	0.40 x	11,725	4,690.0
Swine – Sows (each)	0.40 x	7,500	3,000.0			
Swine – Boars (each)	0.50 x	100	50.0			
Chickens – Layers (each) -non-liquid manure system	0.01 x	0	0.0	0.0123 x	0	0.0
Chickens – Broilers/Pullets (each) -non-liquid manure system	0.005	0	0.0	0.008 x	0	0.0
Chickens – Per Bird -liquid manure system	0.033	0	0.0	0.0333 x	0	0.0
Ducks – Ducks (each) -liquid manure system	0.2 x	0	0.0	0.2 x	0	0.0
Ducks – Ducks (each) -non-liquid manure system	0.01 x	0	0.0	0.0333 x	0	0.0
Turkeys (each)	0.018 x	0	0.0	0.018 x	0	0.0
Sheep (each)	0.1 x	0	0.0	0.1 x	0	0.0
Horses (each)	2 x	0	0	2 x	0	0

Total Animal Units	**Total Mixed Animal Units=** (add all rows above)	**Total Non -Mixed Animal Units=** (Enter the single highest number from any row above; DO NOT add the totals)
	6,162.5	4,690.0

SnapPlus Animal Units Calculator Report

Crop Year	2019
Reported For	Four Cubs Farm
Printed	2019-03-29
Plan Completion/Update Date	2017-03-24
C:\SnapPlus2\MySnapPlusData\4 CUBS farmTables.03-22-2015 VER 2.snapDb	

Prepared for:
Four Cubs Farm
attn:Ben, Gary, and Chris Peterson
23250 South Williams Road
Grantsburg, 54840

Prepared by: FRASE CROP CONSULTING, LLC

Animal Type		I. Mixed Animal Units (current NR 243 equivalencies)			II. Non-Mixed Animal Units (federal equivalencies)		
		b. Equiv. factor	c. Number of Animals	d. Equivalent Animal Units	e. Equiv. factor	f. Number of Animals	g. Equivalent Animal Units
Example- Broilers (non-liquid manure):		0.005	150,000	750	0.008	150,000	1,200
					Fed. numbers in this column comply with 40 CFRs. 122.23		
Dairy Cattle	Dairy/Beef Calves (under 400 lbs)	0.2	75	15	0	0	15
	Milking and Dry Cows	1.4	1,050	1,470	1.43	1,050	1,470
	Heifers (800 to 1200 lbs)	1.1	40	44	1	40	44
	Heifers (400 to 800 lbs)	0.6	0	0	1	40	0
Beef	Steers or Cows (400 lbs to market)	1	0	0	1	0	0
	Bulls (each)	1.4	0	0	1	0	0
	Veal Calves (each)	0.5	0	0	1	0	0
Swine	Pigs (Up to 55 lbs)	0.1	0	0	0.1	0	0
	Pigs (55 lbs to market)	0.4	0	0	0.4	0	0
	Sows (each)	0.4	0	0	0.4	0	0
	Boars (each)	0.5	0	0	0.4	0	0
Chickens	Layers (each)-non-liquid system	0.01	0	0	0.0123	0	0
	Broilers/Pullets (each)-non-liquid system	0.005	0	0	0.008	0	0
	Layers or Broilers-liquid system	0.033	0	0	0.0333	0	0
Ducks	Ducks (each)-liquid system	0.2	0	0	0.2	0	0
	Ducks (each)-non-liquid system	0.01	0	0	0.0333	0	0
Other	Turkeys (each)	0.018	0	0	0.018	0	0
	Sheep (each)	0.1	0	0	0.1	0	0
	Horses (each)	2	0	0	2	0	0
	Goats (each)	0.1	0	0	0.1	0	0
Total	Animal Units		Mixed AU=	1,529		Non-Mixed AU=	1,502

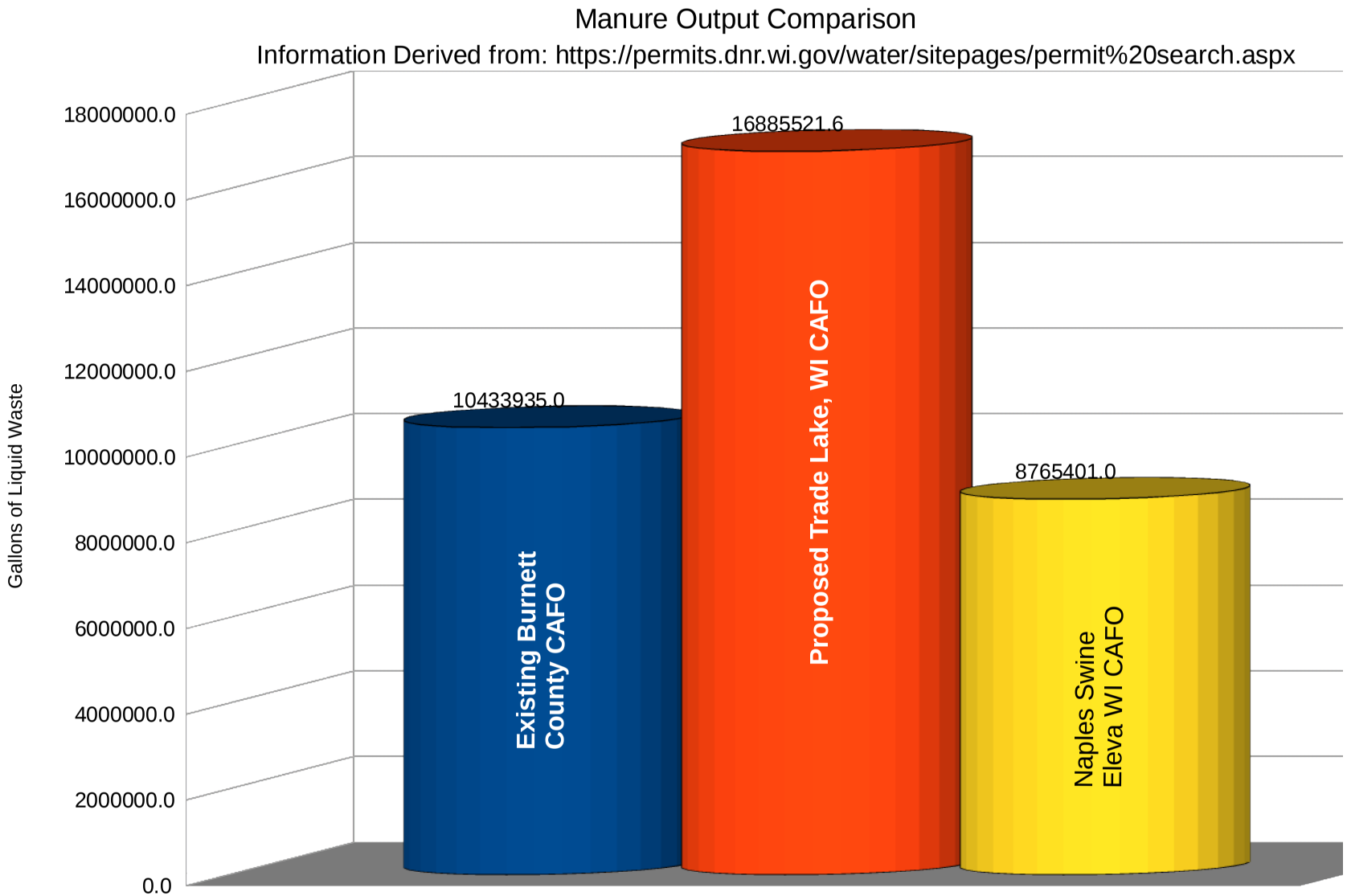
SnapPlus Animal Units Calculator Report

Crop Year	**2018**
Reported For	Naples Swine LLC
Printed	2019-01-08
Plan Completion/Update Date	2018-11-01
C:\Users\nwagner\OneDrive - GROWMARK, Inc\MySnapPlusData \NaplesSwineLLCReissuance.snapDb	

Prepared for:
Naples Swine LLC
attn:Ross Kruger
N49494 County Rd Y
Eleva, 54738

Prepared by: Insight FS
814 Lewellen St
Marshall, 53559
(608) 574-1417, nwagner@insightfs.com

Animal Type		I. Mixed Animal Units (current NR 243 equivalencies)			II. Non-Mixed Animal Units (federal equivalencies)		
		b. Equiv. factor	c. Number of Animals	d. Equivalent Animal Units	e. Equiv. factor	f. Number of Animals	g. Equivalent Animal Units
Example- Broilers (non-liquid manure):		0.005	150,000	750	0.008	150,000	1,200
					Fed. numbers in this column comply with 40 CFRs. 122.23		
Swine	Boars (each)	0.5	30	15	0.4	7,780	15
Chickens	Broilers/Pullets (each)-non-liquid system	0.005	0	0	0.008	0	0
Beef	Bulls (each)	1.4	0	0	1	0	0
Dairy Cattle	Dairy/Beef Calves (under 400 lbs)	0.2	0	0	0	0	0
	Milking and Dry Cows	1.4	0	0	1.43	0	0
Ducks	Ducks (each)-non-liquid system	0.01	0	0	0.0333	0	0
	Ducks (each)-liquid system	0.2	0	0	0.2	0	0
Other	Goats (each)	0.1	0	0	0.1	0	0
Dairy Cattle	Heifers (800 to 1200 lbs)	1.1	0	0	1	0	0
	Heifers (400 to 800 lbs)	0.6	0	0	1	0	0
Other	Horses (each)	2	0	0	2	0	0
Chickens	Layers (each)-non-liquid system	0.01	0	0	0.0123	0	0
	Layers or Broilers-liquid system	0.033	0	0	0.0333	0	0
Swine	Pigs (Up to 55 lbs)	0.1	840	84	0.1	840	84
	Pigs (55 lbs to market)	0.4	2,100	840	0.4	7,780	840
Other	Sheep (each)	0.1	0	0	0.1	0	0
Swine	Sows (each)	0.4	5,650	2,260	0.4	7,780	2,260
Beef	Steers or Cows (400 lbs to market)	1	0	0	1	0	0
Other	Turkeys (each)	0.018	0	0	0.018	0	0
Beef	Veal Calves (each)	0.5	0	0	1	0	0
Total	Animal Units		Mixed AU=	3,199		Non-Mixed AU=	3,112



NOTE: The Proposed Trade lake CAFO animalunits is derived from the Cumberland LLC, Application. The Proposed Trade Lake CAFO Manure output is derived by a calculation of animal units to manure output of the existing Naples Swine Hog facility in Eleva WI. Naples Swine LLC was presented to the Trade Lake community as closest facility in size according to the representative from Cumberland LLC.

Section II: Site Information *(Must be completed for each site.)*

This operation uses the site for (check all that apply):

- [x] Animal housing
- [x] Manure storage
- [x] Feed storage

INSTRUCTIONS: Read the attached instructions before entering the site description information. A separate Site Information section must be filled out for the main site and any other site(s) which are owned or operated by your farm for the purpose of housing animals, storing manure, or storing feed associated with your operation. Remember a site map and Current/Projected AU Calculation Worksheet(s) must also be included with each Site Information section.

Name & Physical Location of Operation

Name of Farm/Operation (Site Name): CUMBERLAND LLC

Location Address	City	State	Zip
12884 STATE RD 48	GRANTSBURG	WI	54840

County		Township		Range		Section	Q	QQ
7	○ City ◉ Town ○ Village TRADE LAKE;T	37	N	18	○ E ◉ W	07	SE	NW

Current/Projected Animal Units & Expansion Dates

1. Use the Current AU Calculations Worksheet (Form 3400-025A) to calculate the total number of animal units presently held in confinement or feeding facilities for more than 45 days in a 12 month period at this site. Attach the corresponding Current AU Calculations Worksheet to this Site Description section.

- [x] Check here if there are no animals housed at this site for more than 45 days in a 12 month period.

2. Use the Projected AU Calculations Worksheet (Form 3400-025A) to determine the proposed number of animal units that will be held in confinement or feeding facilities for more than 45 days in a 12 month period at this site within the next five years. Attach the corresponding Projected AU Calculations Worksheet to this Site Description section.

- [ ] Check here if there is no proposed expansion(s) at this site within the next five years.

3. List the date of proposed expansion(s) (i.e. increase in animals, constructing new structures, modifying existing structures) at this site within the next five years (MM/YY). These dates should correlate with the information provided for the proposed structures and systems listed in the tables below and the projected animal numbers provided on the Projected AU Calculations Worksheet:

Expansion 1: 7/1/2019 Expansion 2: 6/3/2024 Expansion 3: Expansion 4: Expansion 5 :

- [x] Check here if your expansions(s) will disturb one (1) acre or more of soil.

Types of Manure Storage/Composting Facilities/Wastewater Storage/Treatment Facilities

List all **existing** and **proposed** manure storage, composting facilities, process wastewater storage, and treatment facilities located at this site. These may include earthen, earthen with a concrete floor, synthetically lined, concrete, steel above ground tank, below ground storage tank, anaerobic lagoon, roofed storage shed, under-floor storage, stacking slab (clay or concrete), unconfined manure stack, etc. Identify the type of waste(s) (e.g. solid manure, liquid manure, feed storage runoff or lot runoff, process wastewater, septic waste, digester, etc.) that is stored and the date the storage was built or the proposed date of construction. Specify the type of design documentation such as plans and specifications, post construction documentation, and/or an engineering evaluation you may have of the structure. If no documentation exists, indicate none in the space provided. All the existing and proposed structures must be identified on the site map associated with this description.

Waste containing Facility #	*Existing or Proposed*	*Storage Type*	*Type of Waste*	*Total Volume (gallons/tons)*	*Year Built*	*Storage Facility Design Documents*
1	Proposed	Under-floor storage	Liquid manure	6.8 M		Plans and Specifications

Types of Outside Animal Lots / Confinement Areas

List all **existing** and **proposed** outside animal lots/confinement areas located at this site. These may include outdoor barn yard or feedlot, housed under roof or partially housed under roof, or outdoor vegetated area. This does not need to include total confinement barns. Identify the number, avg. weight, and type of animals (e.g. 50/800lbs/heifers) and whether or not there is a runoff control system associated with the lot. Types of runoff control systems may include vegetated treatment area, collection tank, roof, etc. Specify the type of design documentation such as plans and specifications, post construction documentation, and/or an engineering evaluation you may have of the area. If no documentation exists, indicate none in the space provided. All the existing and proposed outside animal lots and confinement areas must be identified on the site map associated with this description.

Confinement Area #	*Existing or Proposed*	*Outdoor Lot / Confinement Area Type*	*Number/Avg. weight(in lbs.)/Type*	*Runoff Control*	*Confinement Area Design Document*

Types of Feed Storage Areas

List all **existing** and **proposed** feed storage areas located at this site. These may include upright silos, earthen/concrete bunkers, etc. Identify the type and amount of feed stored (e.g. corn silage/100 tons). Specify the type of design documentation such as plans and specifications, post construction

Liquid Waste Storage Volume Calculation Worksheet

Four Cubs Farm

Client: **Dsn by:** **Date:** 4/15/2019

Total Annual Liqud Waste Generation	
Liquids Collected/Stored	Annual Gallons
Manure and Bedding	9,493,650
Parlor Wastewater	300,000
Feed Storage Leachate	591,665
Feed Storage Runoff Collected *	48,620
Feedlot Runoff	0
Net Precipitation on Storage Surface(s) **	
Offsite Wastes	
Other	
Other	
Other	
Other	
Other	
TOTAL:	**10,433,935**

Total Liquid Waste Storage Capacity (gallons)					
Waste Storage	Total Vol. from Settled Top to Bottom	-Solids Storage	-25-yr, 24-hr Precip. on Storage	-Freeboard Vol.	Max. Operating Level (MOL) Vol.
#1	9,586,000	215,000	0	828,000	8,543,000
#2					0
#3					0
#4					0
#5					0
#6					0
				Total MOL Vol:	8,543,000
				Days of Storage:	**299**
				Meets Days of Storage Criteria:	**YES**

Feb. 2014

* Feed storage runoff volume can be calculated in the NRCS "Feed Storage Area Runoff - Treatment" spreadsheet, Tab 5.

** Net annual precipitation on storage depth can be calculated in the NRCS "Waste Storage Design" spreadsheet and then multiplied by the storage top area to get the net annual precipitation volume.

NOTE 1: Formula for days of storage: (Total Storage Capacity/Annual Liquid Waste Generation)*365 = Days of storage

NOTE 2: The NRCS "Waste Storage Design" spreadsheet can be used to calculate the days of storage as well. Feed storage leachate and feed storage collected runoff volumes should be added to the average daily wastewater volume in cell D17, Tab 1 since there is no separate location to enter this. The storage sizing calculations work only for rectangular and circular storages. Calculations for net precipitation volumes are month specific and more precise than the average annual volume shown above.

NOTE 3: The NRCS "Waste Storage Design" and "Feed Storage Area Runoff - Treatment" spreadsheets may be downloaded from the Wisconsin NRCS Engineering Resources website:

http://www.nrcs.usda.gov/wps/portal/nrcs/detail/wi/technical/engineering/?cid=nrcs142p2_025422

Liquid Waste Storage Volume Calculation Worksheet

Naples Swine LLC :Permittee Name **# of A.U.'s** 3319 **Dsn by:** NCB **Date:** 3/15/2018

Total Annual Liqud Waste Volume (NRCS Table Values)	
Liquids Collected/Stored	Annual Gallons
Manure and Bedding	7,487,940
Parlor Wastewater	
Feed Storage Leachate	
Feed Storage Runoff Collected *	
Feedlot Runoff*	
Net Precipitation on Storage Surface(s) **	
Stacking Pad Runoff Collected*	
Offsite Waste	
Wastewater	1,277,461
Other	
Other	
Other	
Other	
TOTAL:	**8,765,401**

Total Annual Liquid Waste from Hauling Logs	**#DIV/0!**

Total Liquid Waste Storage Capacity (gallons)						
Waste Storage	Total Vol. from Settled Top to Bottom	-Solids Storage	-25-yr, 24-hr Precip. on Storage	25-yr, 24-hr Collected Runoff ***	-Freeboard Vol.	Max. Operating Level (MOL) Vol.
#1	697,449	0	0	0	348,725	348,724
#2	9,179,203	764,934	0	0	1,147,401	7,266,868
#3	2,581,123	322,640	0	0	483,960	1,774,523
#4	51,316	0	0	0	25,658	25,658
#5						0
#6						0
					Total MOL Vol:	9,415,773
					Days of Storage:	**392**
					Meets Days of Storage Criteria:	**YES**

1 Total Annual Volume Source (1=NRCS Table Values; 2=Hauling Log Values)

Jan. 2018

NOTE 1: The volumes above can be calculated in the NRCS "Waste Storage Design" spreadsheet downloaded from the Wisconsin NRCS Engineering Resources website below.

NOTE 2: The NRCS "Waste Storage Design" spreadsheet can be used to calculate the days of storage as well, however it is designed to be used with only one waste storage facility. Calculations for net precipitation and collected runoff volumes are month specific and can be more precise than the table above for storage periods much less than 365 days. The storage sizing calculations work only for rectangular and circular storages.

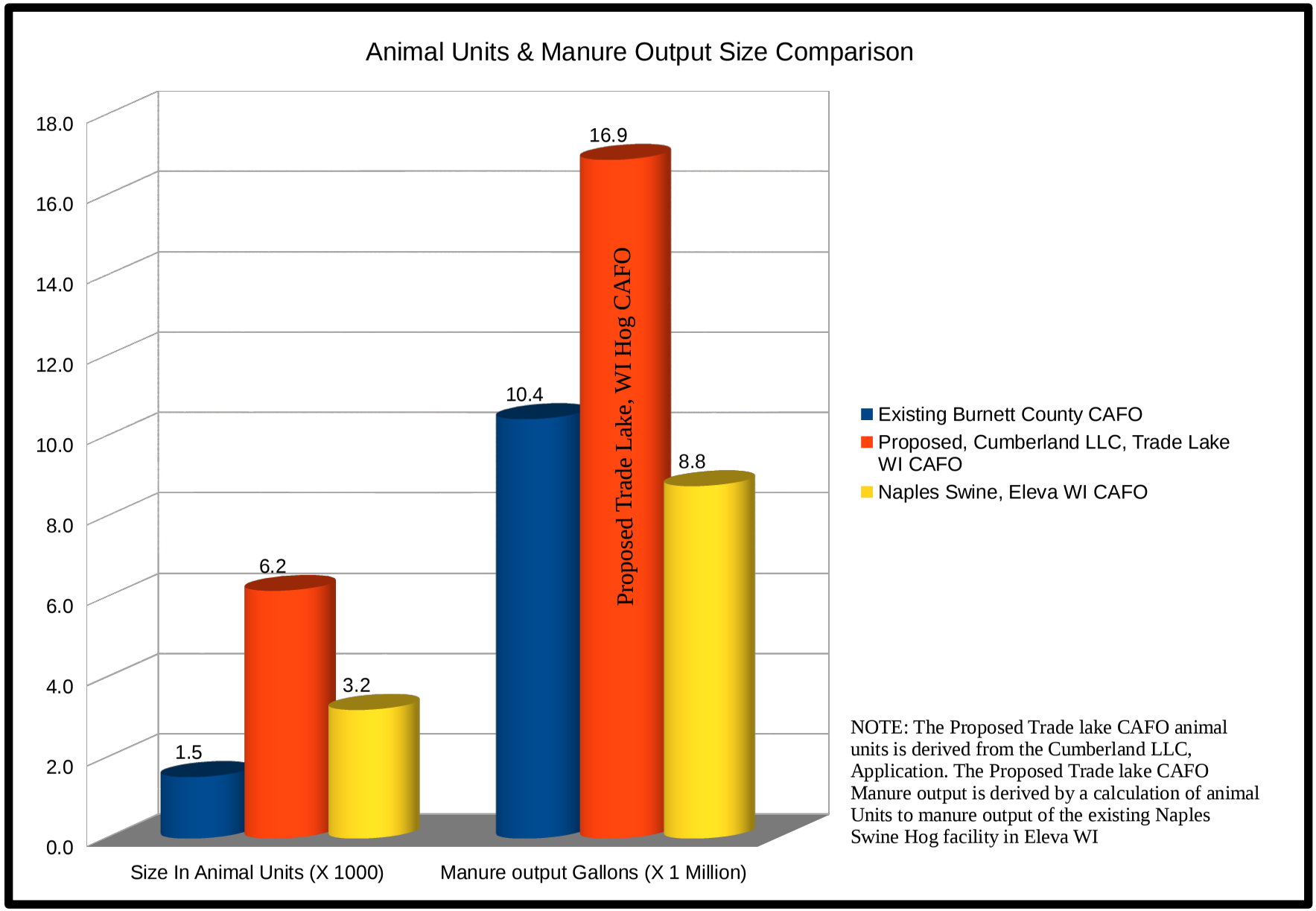
NOTE 3: Formula for days of storage: (Total Storage Capacity/Annual Liquid Waste Generation)*365 = Days of storage

* Collected Runoff Volumes can be calculated in the NRCS "Waste Storage Design" spreadsheet Monthly Runoff Section. Set the Days of Storage to 365.

** Net Precipitation on Storage Surface depth can be calculated in the NRCS "Waste Storage Design" spreadsheet and then multiplied by the storage top area to get the net annual precipitation volume. Set the Days of Storage to 365.

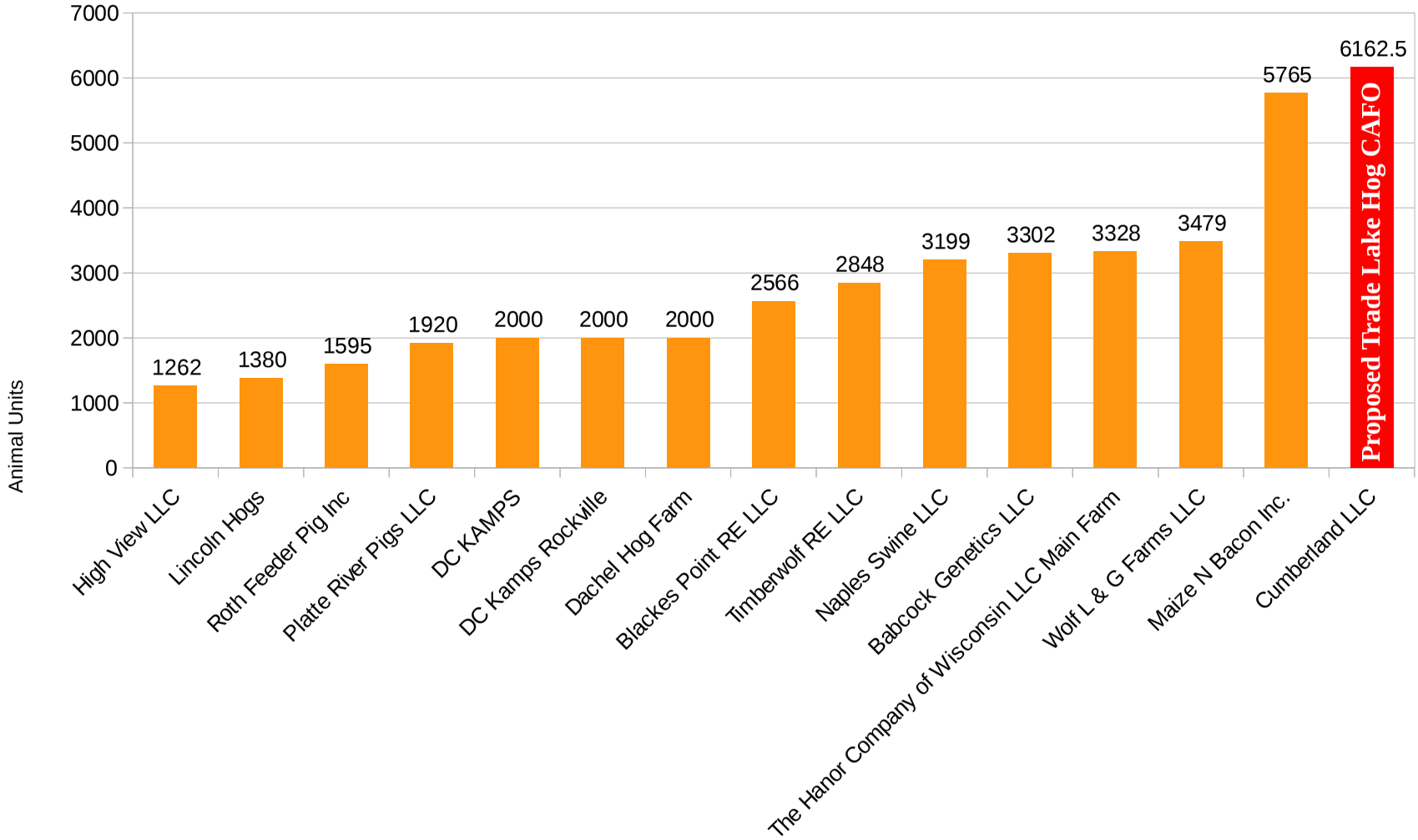
*** 25-yr Collected Runoff Volumes can be calculated in the NRCS "Waste Storage Design" spreadsheet 25-yr Runoff section.
http://www.nrcs.usda.gov/wps/portal/nrcs/detail/wi/technical/engineering/?cid=nrcs142p2_025422

Chart information derived from: https://permits.dnr.wi.gov/water/sitepages/permit%20search.aspx



Wisconsin Swine CAFO Size Comparison

Information Derived from: https://dnr.wi.gov/topic/agbusiness/data/cafo/



Information derived from: https://dnr.wi.gov/topic/AgBusiness/data/CAFO/

DNR Runoff Management CAFO Permittees
Swine Wisconsin Statewide

Results for animal search: **Swine**

Permit Number	Permittee Name		Animal	County	Region
0056529	Babcock Genetics LLC	3,302AU	Swine	La Crosse	WC
0065595	Blakes Point RE LLC	2,566AU	Swine	Grant	SC
0064734	DC KAMPS	2,000AU	Swine	Lafayette	SC
0066443	DC Kamps Rockville	2,000AU	Swine	Grant	SC
0063762	Dachel Hog Farm	2,000AU	Swine	Chippewa	WC
0063266	High View LLC	1,262AU	Swine	Richland	SC
0058955	Lincoln Hogs	1,380AU	Swine	Jackson	WC
0049042	Maize N Bacon Inc	5,765AU	Swine	Sauk	SC
0065307	Naples Swine LLC	3,199AU	Swine	Buffalo	WC
0065412	Platte River Pigs LLC	1,920AU	Swine	Grant	SC
0063878	Roth Feeder Pig Inc	1,595AU	Swine	Crawford	WC
0056260	The Hanor Company of Wisconsin LLC Main Farm	3,328AU	Swine	Sauk	SC
0066141	Timberwolf RE LLC	2,848AU	Swine	Grant	SC
0064963	Wolf L & G Farms LLC	3,479AU	Swine	Grant	SC

Proposed CAFO:	Cumberland LLC	6,162.5AU	Swine	Burnett	NO