To:

Mr. Russ Anderson
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Subject: Concerns about Saratoga's Water Resource

Introduction

The Wysocki organization, variously know as Ellis Industries Saratoga, LLC, Wysocki Produce Farm, Inc., Wysocki CAFO and Golden Sands Dairy CAFO (Concentrated Animal Feeding Operation) has proposed to locate an approximately 8,000 acre combination dairy CAFO and irrigated produce farm in Saratoga with a relatively small extension into western Portage County adjacent to County Trunk U. Approximately 6,400 acres will be cleared and irrigated. The area of Saratoga is approximately 32,778 acres of dry land and 1,152 acres of water along the Wisconsin River to the west. Therefore, the proposed Wysocki operation will encompass almost one fourth of the total land area of Saratoga. Currently this land is mostly industrial forest and is the habitat for a healthy population of wild turkeys, white tailed deer, partridge, coyotes, a few prairie chickens, and other species.

A good bit of this land is nearly adjacent to 10 Mile Creek on both sides of the creek. Ten Mile is a viable trout stream enjoyed by many anglers during the fishing season. (A map is included later in this report). The Wysocki organization has submitted ten applications for high capacity wells to the Wisconsin DNR for a total of 49 wells. Forty-seven of those wells are proposed to be located in the town of Saratoga. Of those 47 wells, 45 would be capable of pumping 1000 gpm (gallons/minute) and 2 of them would be consigned to the dairy operation and would pump substantially less volume.

Needless to say a majority of the 5,000 plus residents of Saratoga, as well as our neighbors in the surrounding communities within this Central Sands watershed are quite concerned about this Wysocki proposal. Currently the water supply and water quality available to Saratoga residences and surrounding communities represents some of the best water in Central Wisconsin. In addition, many of the residents of this community enjoy the abundance of wild game and the rural atmosphere afforded by our largely

forested landscape. That is why a number of us chose this area to live in the first place.

Background

The aquifer in southeastern Wood County, commonly referred to as the Central Sands Plain, is the best aquifer in Wood County. This aquifer extends well into Portage County, Waushara, and Adams County as well The sand and gravel deposits in this area of Wood County are approximately 40- to 100-feet thick. Horizontal hydraulic conductivity of the sand and gravel deposits ranges from about 155 to about 280-feet/day. [1] (Hydraulic conductivity is a scientific measure of the ease of water flow through a porous media. Higher numbers indicate more rapid flow through the media.) By contrast, the hydraulic conductivity of the northern part of Wood County ranges from 0.02 to 2 feet/day. [1] The recharge rate (the rate at which an aquifer is recharged in inches/year from precipitation) for the Central Sands area ranges from about 7 – 12 inches/year. By contrast the central and northern part of the county has a recharge rate of about 1 – 4 inches/year.

These are the hydrogeology factors that make this area particularly enticing to the proposed Wysocki operation. The coarse sand in this area allows for high capacity irrigation pumps to pump water continually at a high rate and the aquifer holds a lot of water. He who has the deepest well, within the sand and gravel layer, and the biggest pump will get the lion's share of the water. Those of us that have shallow sand points may well end up with nothing in a short period of time.

Of course there is a downside to this coarse sand soil in the Central Sands area. Loam topsoil ranges from non-existent to, maybe, 4 inches. Puddles are a rarity after a rainstorm for most of us due to the porosity of the soil. The sandy soil does not hold water well. Most residents that have a yard and/or garden or small farm are forced to irrigate frequently if the rains are meager and they want to maintain their foliage.

It is expected that the Wysocki organization will also be irrigating frequently, probably continuously, during the growing season. They will also be using a lot of fertilizer as this sandy, porous, soil does not hold fertilizer well either. A certain percentage of that excess fertilizer will end up contaminating the aquifer that we all share. Herbicides and pesticides that do not break down quickly will also be contaminating the aquifer.

After the original forests were harvested from Saratoga and surrounding areas, dairy farming was tried. It was never really viable as this era predated the modern high capacity well and irrigation was impractical or impossible. During the dust bowl years of the 1930's many farmers sold out to the paper companies, sometimes for as little as $1.00/acre. The paper companies such as Nekoosa Edwards Paper Company were quite progressive for the times and started planting sustainable red pine plantations to feed the paper mills. The Central Sands area turned out to be ideal for plantation pine forests. Unfortunately with the downsizing and general decline of the paper industry, the

forestlands were largely sold off to companies such as Plum Creek and now these lands are being sold off again.

South-western Portage County, also part of the Central Sand Plain, has had a high concentration of high capacity irrigation, municipal, and industrial wells starting in about 1960 and increasing to the current time period.[3] The Little Plover River, which at an early time was a highly rated trout stream, has undergone a continuous degradation during this time period. At times in recent years the Little Plover has been completely dried up in stretches. Clancy, Kraft, and Mechenich completed an exhaustive scientific study of the slow demise of the Little Plover and concluded that: [3]

> Specifically answering the question, "Is it drought or groundwater pumping causing the recent extreme Little Plover low flow conditions?" all indicators show that pumping is the far larger cause.

In a subsequent and even more exhaustive study on the water resources of the Central Sands Plain, Kraft and Mechenich have concluded that among other things: [4]

> The amount of missing water only explainable by pumping amounts to several feet in some lakes high in the groundwater flow system where high capacity wells are prevalent. Far from high densities of high capacity wells and lower in the groundwater flow system the impacts are muted. Impacts on streams may reach half of their average baseflow in headwater locations.

It is easy to see that 10 Mile Creek, 7 Mile Creek, and probably to a lesser extent, 14 Mile Creek will be adversely affected by the 49 high capacity wells if the Wysocki project is allowed to proceed. 10 Mile Creek, which will be blanketed with high capacity wells on both sides, is the most vulnerable.

Analysis

As mentioned in the Introduction, the Wysocki organization is planning on purchasing a reported 8,000-forested acres in Saratoga, clearing most of the forest and replacing it with 6,400 acres of irrigated cropland in conjunction with a large CAFO. The Wysocki organization has filed 10 high capacity well applications with the Wisconsin DNR for a total of 49 high capacity wells, two of which will be located just east of County Trunk U in Portage County. The remaining 47 wells will be located in Saratoga. According to the applications, 47 of these wells will draw on average 720,000 gallons/day for 7 months of the year. Two wells will be devoted to the CAFO dairy and draw considerably less water, 137,000 and 144,000 gallons/day for 12 months/year. The average yearly consumption of water is calculated to be 7,344,325,000 gallons.

The average rainfall in southern Wood County is approximately 31 inches and the high end of the recharge rate (the amount of water that actually returns to the water table) is 12

inches/year[1]. What this translates to is that the 8,000 acres that Wysocki plans on purchasing will return 2,606,811,429 net gallons/year to the water table or reservoir. So they are only "supplying" 35% of their water needs. The rest of the water, a total of 4,737,53,571 gallons/year will come from the rest of us in the watershed.

The Excel spreadsheet supporting this analysis follows. All the well data are from Wysocki's 10 applications to the Wisconsin DNR.

As mentioned in the introduction there are approximately 32,778 acres in Saratoga so the Wysocki organization will end up owning and irrigating about 1/4 of the total land area of Saratoga. There are approximately 5,102 people in the town and approximately 2,011 households. Almost everyone has their own well and many of them, such as mine, are shallow well sand points. We will all have water problems in the not too distant future. In addition the 7 Mile, 10 Mile, and 14 Mile creeks will be adversely affected if this enterprise is allowed to proceed.

Why should we, the residents of Saratoga and neighboring communities in the watershed, be forced to subsidize the Wysocki CAFO with our water, a precious resource that we all treasure?

WATER USE CALCULATIONS
Wysocki CAFO in Saratoga, WI, Wood County with two wells in Portage County

49 Number of Wells Applied for
10 Applications for the 49 Wells

	Well Number	Maximum Flow Rate, gpm	Average Flow Rate, Gallons/day	Maximum Flow Rate, Gallons/Day	Months/year Used	Average Gallons/Year
Application 1	PC1	1,000	720,000	1,440,000	7	154,080,000
	PC2	1,000	720,000	1,440,000	7	154,080,000
	PC3	1,000	720,000	1,440,000	7	154,080,000
	PC5	1,000	720,000	1,440,000	7	154,080,000
	PC6	1,000	720,000	1,440,000	7	154,080,000
	PC7	1,000	720,000	1,440,000	7	154,080,000
	PC4,12	1,000	720,000	1,440,000	7	154,080,000
	PC8	1,000	720,000	1,440,000	7	154,080,000
	PC15	1,000	720,000	1,440,000	7	154,080,000
	PC16,22	1,000	720,000	1,440,000	7	154,080,000
	PC21	1,000	720,000	1,440,000	7	154,080,000
	PC38	1,000	720,000	1,440,000	7	154,080,000
	PC9,13	1,000	720,000	1,440,000	7	154,080,000
	PC10	1,000	720,000	1,440,000	7	154,080,000
	PC17,18	1,000	720,000	1,440,000	7	154,080,000
	PC23	1,000	720,000	1,440,000	7	154,080,000
	PC11,19,20	1,000	720,000	1,440,000	7	154,080,000
	PC24	1,000	720,000	1,440,000	7	154,080,000
	PC25	1,000	720,000	1,440,000	7	154,080,000
	PC26	1,000	720,000	1,440,000	7	154,080,000
Application 2	PC33	1,000	720,000	1,440,000	7	154,080,000
	PC34,35	1,000	720,000	1,440,000	7	154,080,000
	PC37	1,000	720,000	1,440,000	7	154,080,000
Application 3	PC55	1,000	720,000	1,440,000	7	154,080,000
	PC56	1,000	720,000	1,440,000	7	154,080,000
	PC41,44	1,000	720,000	1,440,000	7	154,080,000
	PC42,45	1,000	720,000	1,440,000	7	154,080,000
Application 4	PC27	1,000	720,000	1,440,000	7	154,080,000
	PC28	1,000	720,000	1,440,000	7	154,080,000
Application 5	PC30	1,000	720,000	1,440,000	7	154,080,000
	PC31	1,000	720,000	1,440,000	7	154,080,000
Application 6	PC46	1,000	720,000	1,440,000	7	154,080,000
	PC48	1,000	720,000	1,440,000	7	154,080,000
	PC51	1,000	720,000	1,440,000	7	154,080,000
	PC53	1,000	720,000	1,440,000	7	154,080,000
	PC54	1,000	720,000	1,440,000	7	154,080,000
	PC58,64	1,000	720,000	1,440,000	7	154,080,000
	PC59	1,000	720,000	1,440,000	7	154,080,000
	PC67	1,000	720,000	1,440,000	7	154,080,000
	PC68	1,000	720,000	1,440,000	7	154,080,000
	PC69,70	1,000	720,000	1,440,000	7	154,080,000
Application 7	PC55	1,000	720,000	1,440,000	7	154,080,000
	PC56	1,000	720,000	1,440,000	7	154,080,000
	PC60	1,000	720,000	1,440,000	7	154,080,000
	PC61	1,000	720,000	1,440,000	7	154,080,000
Application 8	D1	275	137,000	396,000	12	50,005,000
	PC31	200	144,000	288,000	12	52,560,000
Application 9	PC72	1,000	720,000	1,440,000	7	154,080,000
Application 10	PC71	1,000	720,000	1,440,000	7	154,080,000
					Total Gallons/year	**7,344,325,000**

1000 gallons/minute capacity/well
31 Average precipitation/year in this area, inches
8000 Acres
6400 Acres Cropland
12 Maximum recharge rate for southern Wood County and Surrounds

6.02173E+11 net cubic inches of water/year falling on the 8000 acres
2,606,811,429 net gallons/year falling on the 8000 acres

35 Percentage of water the Golden Sands Dairy would be receiving on its 8000 acres due to precipitation vs estimated usage of water

Another way of looking at it:

4,737,513,571 number of gallons per year that we, the neighbors of the proposed Wisocki CAFO would be contributing to the Wysocki CAFO

At our request the Wood County Planning & Zoning Office prepared a map with some assistance from the U.S. Geological Survey – Wisconsin Water Science Center.

This map is included below. It is quite clear from this map that:

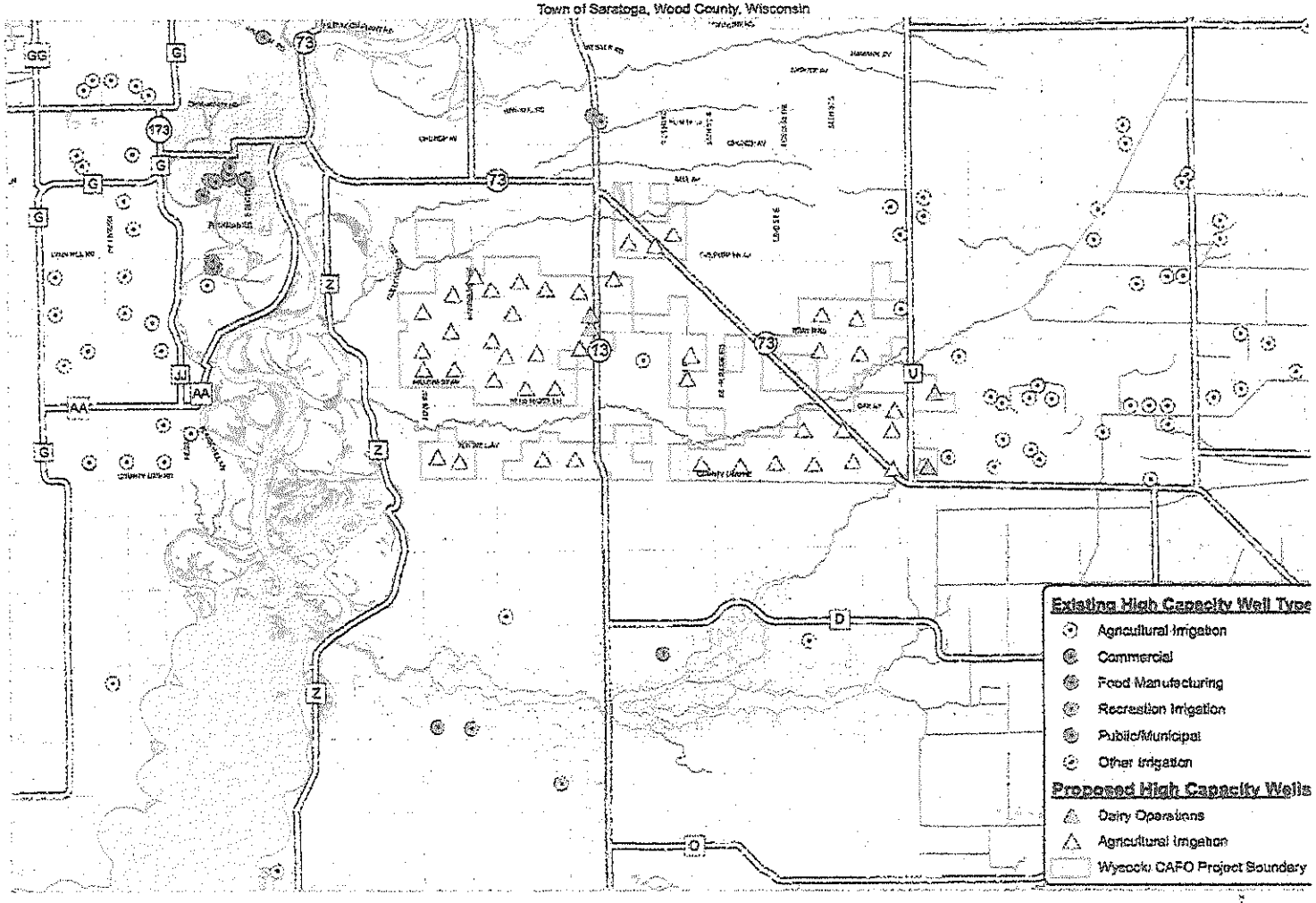
- The Wysocki CAFO project would deprive 10 Mile Creek of a significant amount of the ground water needed to maintain the current flow rate and likewise, but to a lesser extent. 7 Mile Creek. Although further away, the Rome Lakes Region, including 14 Mile Creek and its tributaries may be affected. Spring Branch may be particularly vulnerable.
- As can be seen from the map, there is already a high concentration of high capacity wells in southwestern Portage County. These wells are draining the same Central Sands aquifer that the proposed Wysocki CAFO will affect. A number of these wells in Portage County are owned by the Wysocki organization.
- Anyone who lives in Saratoga and nearby surrounding communities and has a private well, especially a shallow well, has the potential to be adversely affected by the great quantity of water that the Wysocki operation will be pumping from our shared aquifer.

While the authors of this report do not pretend to have a sophisticated mathematical model predictive of exactly what will happen to the water table of Saratoga and the surrounding communities if the Wysocki operation is allowed to move forward, we stand by the data that we have presented as being factual and alarming to all who reside in this watershed.

The impacts of irrigated agriculture on both the quality and quantity of ground water are hardly a mystery in the Central Sands area. The noted hydrologist, George Kraft and associates have studied and written extensively on the subject[2].

> Sandy irrigated areas in humid regions with shallow ground water are particularly prone to agricultural ground water pollution. Though irrigated agriculture in the United States has been historically common in the dry west, irrigation development increased eight-fold over the past 30 years in the humid north-central region, mainly in sandy areas with easily tapped shallow water table aquifers.

Town of Saratoga, Wood County, Wisconsin



Existing High Capacity Well data provided by U.S. Geological Survey - Wisconsin Water Science Center.

There may be other wells not identified.
Search excludes low-capacity wells (property withdrawal rate is <70 gpm), which are typically potable uses (eg domestic supply wells).

Conclusions, Concerns, and Contingencies

Residents of the 7, 10 and 14 Mile Creek watersheds have accumulated data supporting our concerns of the Wysocki proposal to build a concentrated animal feeding operation and associated irrigated cropland in the Town of Saratoga. We are concerned and well aware of the long-term effects of high capacity well irrigation and contamination, as well as the drawdown of the ground water affecting our families' health and our posterity. We would like to express that we are not against the traditional Wisconsin family farm or farmer, it is the large scale businesses that exploit our natural resources and drive out the small farmer that is the problem.

We as the group that studied the effects of ground water quantity have read and understand the two documents published by the UW Extension entitled "Knowledge Development for Groundwater Withdrawal-Management Around the Little Plover River-Portage County Wisconsin" and " Groundwater Pumping effects on Groundwater Levels, Lake levels and Stream flows in the Wisconsin Central Sands" and are concerned with the detrimental effects of high capacity wells proposed by the Ellis Industries Saratoga, LLC. Enclosed are the study results. This information is public knowledge obtained from many sources including the Internet. The following are points that must be considered.

- Formulas for the high capacity wells output conversion to stream flows. (See Appendix 1)

- The DNR has regulated, stocked, purchased property for public access to the 7 and 10 Mile trout streams and published regulations to the public for the preservation of these category 1,2 and 5 streams. (See Appendix 2)

- Comparisons of high capacity well areas to non-irrigated areas and their affect on stream flows during irrigation seasons. (See Appendix 3)

- We respectfully demand that the DNR include the existing 40 high capacity wells on the watershed be included in the environmental impact study noting that the Wysocki family already owns 21 of these wells and also noting that the DNR has no authority to regulate cranberry marsh wells. (See Appendix 4)

- We understand that the southeastern Wood County depth to water average is primarily less than 20 ft. (see Appendix 5)

- Recent Wisconsin Supreme Court decisions warrant increased consideration to high capacity well permitting. (See Appendix 6)

- We respectfully request that the Wisconsin DNR resume stocking of trout in the 10 Mile Creek to ensure the future heritage of the Wisconsin sportsman. (See Appendix 7).

- Appendix 8 illustrates the flow variability that 10 Mile Creek is already experiencing. Some of that variability is due to agricultural practices already in place.

- Appendix 9 is a graph of recent flow rates of 10 Mile Creek and calculations that indicate the severity of the impact on the flow rate if the Wysocki project is permitted.

- Appendix 10 is a copy of Chapter NR 820 GROUNDWATER QUANTITY PROTECTION.

Contingencies

- In the event that the proposed HCW's or any part thereof are approved by the Wisconsin DNR, we respectfully demand that a well head protection plan, including agreed upon test wells, be developed to monitor groundwater levels, nitrate levels etc. Local paper mills already are required to meet this condition.

- We demand that a contingency plan be developed in the event of DNR approval of the proposed HCW's including an escrow account funded by the Wysocki operation to compensate residents of Saratoga to cover the costs of (including, but not limited to) recovering water from dried up wells, providing drinking water to residents with nitrate levels in excess of 10 PPM and cover any costs associated with digging new wells or lowering of residents existing pumps.

- The above-mentioned escrow would also be funded to include losses associated with damage to forest property due to the lower water table and permeability of the soil. A number of Saratoga residents have red pine plantations as well as Christmas tree plantations that are susceptible to a lower water table.

LITERATURE CITED

1. Batten, W.G., Hydrogeology of Wood County, Wisconsin, United States Department of the Interior Geological Survey, Information Circular 60 (1989)
2. Kraft, G.J., Stites, W., and Mechenich, D.J., Impacts of Irrigated Vegetable Agriculture on a Humid North-Central U.S. Sand Plain Aquifer, GROUND WATER, Vol. 37, No. 4, (July-August 1999)
3. Clancy, Katherine, Kraft, George J., and Mechenich, David J., "Knowledge Development for Groundwater Withdrawal Management around the Little Plover River, Portage County Wisconsin." A Report to the Wisconsin Department of Natural Resources in Completion of Project: NMG000000253, (January 14, 2009)
4. Kraft, George J. and Mechenich, David J., "Groundwater Pumping Effects on

Groundwater Levels, Lake Levels, and Streamflows in the Wisconsin Central Sands." A Report to the Wisconsin Department of Natural Resources in Completion of Project: NMI000000247, (March 15, 2010)

Respectfully Submitted by

Bruce Dimick

Water Resources Committee, Town of Saratoga,
And the Committee Members

Appendix 1

FILE COPY

USGS Home
Contact USGS
Search USGS

National Water Information System: Web Interface

USGS Water Resources

Data Category: Current Conditions | Geographic Area: Wisconsin | GO

News - updated July 2012

USGS 05401050 TENMILE CREEK NEAR NEKOOSA, WI

PROVISIONAL DATA SUBJECT TO REVISION

Available data for this site | Time-series: Current/Historical Observations | GO

LOCATION.--Lat 44°15'44", long 89°48'38", in NE 1/4 sec.32, T.21 N., R.6 E., Wood County, Hydrologic Unit 07070003, on left bank upstream from bridge on State Highway 13, 5.8 mi southeast of Nekoosa.

DRAINAGE AREA.--73.3 square miles.

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1962-63. October 1963 to September 1979, October 1987 to September 1994, February 1998 to current year.

REVISED RECORDS.--WDR WI-77-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 967.33 ft above sea level at NAVD of 1988. Prior to May 13, 1964, and June 2, 1988 to May 2, 1989, non-recording gage at present site and datum.

REMARKS.--Approximately 40 mi of drainage ditches and 22 check dams are used to control the water table in the basin. Sprinkler irrigation from ground-water sources affects natural flow of creek.

Operated in Cooperation With:

Wisconsin Department of Natural Resources

Boating safety tips

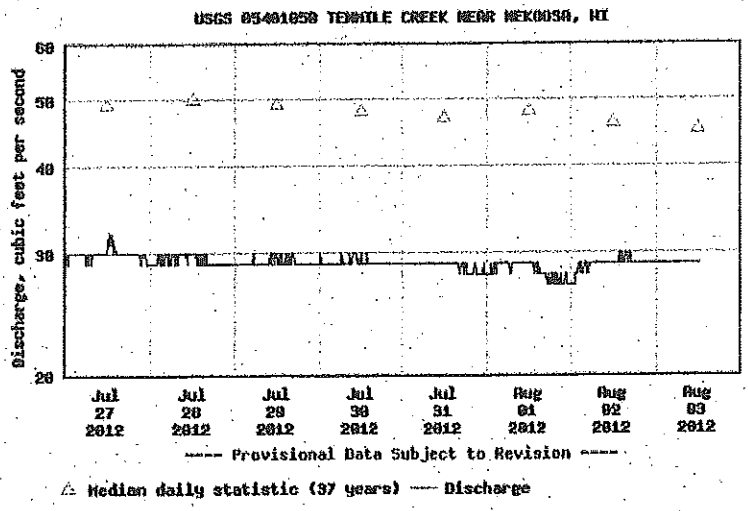
This station managed by the USGS Wisconsin Water Science Center - Middleton WI.

Available Parameters	Available Period	Output format	Days (7)	
☐ All 2 Available Parameters for this site		◉ Graph		
☑ 00060 Discharge	2007-10-01 2012-08-03	○ Graph w/ stats	-- or --	GO
☑ 00065 Gage height	2012-04-05 2012-08-03	○ Graph w/o stats	Begin date 2012-07-27	
		○ Table		
		○ Tab-separated	End date 2012-08-03	

Summary of all available data for this site
Instantaneous-data availability statement

Discharge, cubic feet per second

Most recent instantaneous value: 29 08-03-2012 12:30 CDT



Create presentation-quality / stand-alone graph. Subscribe to WaterAlert

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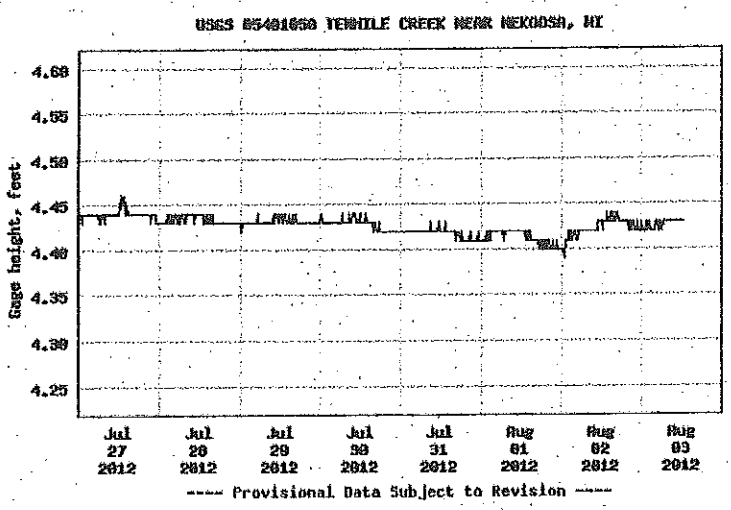
Daily discharge, cubic feet per second -- statistics for Aug 3 based on 37 years of record more

Min (1964)	Most Recent Instantaneous Value Aug 3	25th percentile	Median	Mean	75th percentile	Max (1993)
19	29	34	45	50.	67	104

Gage height, feet

Most recent instantaneous value: 4.43 08-03-2012 12:30 CDT



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U.S. Department of the Interior | U.S. Geological Survey
Title: USGS Current Conditions for Wisconsin
URL: http://waterdata.usgs.gov/wi/nwis/uv?

Page Contact Information: Wisconsin Water Data Support Team
Page Last Modified: 2012-08-03 15:58:47 EDT
1.03 0.89 vaww01

1 Cubic ft/second = 4448.8 Gallons/minute (gpm)

Appendix 2

WAUPACA (TOMORROW) RIVER—River Road upstream to Durant Road in Portage County—Category 5
Gear Restriction: only artificial lures may be used
Daily Bag Limit: 1 trout
Length Limit: brook trout and rainbow trout 12", brown trout 18"
WAUPACA (TOMORROW) RIVER—All except portion listed above—Category 2

WAUSHARA

ALL WATERS NOT LISTED—Category 2
JOHNS LAKE—Category 2
Open Season: May 5 at 5: 00 a.m. to March 3, 2013
GILBERT LAKE—Category 2
Open Season: May 5 at 5: 00 a.m. to March 3, 2013
LONG LAKE (TOWN OF SAXEVILLE)—Category 2
Open Season: May 5 at 5: 00 a.m. to March 3, 2013
MECAN RIVER AND SPRINGS—Category 3
PEARL LAKE—Category 2
Open Season: May 5 at 5: 00 a.m. to March 3, 2013
PINE LAKE—Category 2
Open Season: May 5 at 5: 00 a.m. to March 3, 2013
PINE RIVER (LOWER)—Downstream from Wild Rose millpond—Category 3
PINE RIVER (UPPER)—Upstream from Wild Rose millpond—Category 2
SPRING LAKE—Category 2
Open Season: May 5 at 5: 00 a.m. to March 3, 2013
WHITE RIVER POND (WEST BRANCH)—Category 2
Open Season: May 5 at 5: 00 a.m. to March 3, 2013
WHITE RIVER (MAIN BRANCH)—Upstream from Lower White River millpond—Category 5
Gear Restriction: only artificial lures may be used
Daily Bag and Length Limit: 3 trout per day, only 1 brown trout over 15"
Length Limit: 12"
WHITE RIVER—Category 3
WHITE RIVER (WEST BRANCH)—Category 2
Open Season: May 5 at 5: 00 a.m. to Sept. 30
WILD ROSE MILL POND—Category 2
Open Season: May 5 at 5: 00 a.m. to March 3, 2013
WILLOW CREEK—Downstream from Blackhawk Road—Category 3

WINNEBAGO

ALL WATERS—Category 2

WOOD

ALL WATERS NOT LISTED—Category 2
TEN MILE CREEK—Upstream for Rangeline Road—Category 2
TEN MILE CREEK—Downstream from Rangeline Road—Category 5
Gear Restriction: only artificial lures may be used
Daily Bag Limit: 1 trout
Length Limit: 15"

Protect Wisconsin's Trout Streams!
Do your part to stop invasive species.

Wisconsin's streams are unique and fragile resources. Before you leave any water, please…

- **Inspect** all equipment
- **Remove** all plants, mud, and debris
- **Drain** all water from boots and equipment
- **Never move** live fish or bugs
- **Consider** replacing felt-soled boots with hard rubber

Visit

http://dnr.wi.gov

for more information about invasive species threatening our rivers and streams

A message brought to you by the River Alliance of Wisconsin, Trout Unlimited, and the Wisconsin Department of Natural Resources.

Public or Private?
How Do I Know If I'm Trespassing?

- Navigability determines whether a waterway is public or private. Navigable lakes and streams are public waterways.
- A waterway is navigable if it has a bed and banks and it is possible to float a canoe or other small craft at sometime of the year—even if only during spring floods.
- Because they are public, you may use navigable waters for fishing, boating, swimming or other recreational activities, provided public access is available, or you have permission of the land owner to cross their property to reach the waterway. Once on a navigable waterway, AS LONG AS YOU KEEP YOUR FEET WET, YOU MAY WALK ALONG THE BED OF THE STREAM, FISH, SWIM, OR BOAT IN ANY NAVIGABLE LAKE OR STREAM.

Is Your Favorite Stream in Jeopardy?
Any physical altering of a stream requires specific permits and should be carefully supervised.

Dredging, dam building, filling, pond building, irrigating, stream channelization and straightening are all carefully controlled activities. If you see any suspicious activities in Wisconsin's streams, please notify your local DNR office. If you are a land owner, please get the proper information before altering any stream.

Report Hunting and Fishing Violations
Call 1-800-TIP-WDNR (847-9367)
Toll Free Statewide • 24 hour • Confidential
General information call:
toll free 1-888-WDNRINFO (1-888-936-7463) or
608-266-1877 or local DNR office

Appendix 3

Recent data from UWSP's Watershed Center show water levels in streams in irrigated areas in the Central Sands are in rapid states of decline. Not so with streams and lakes outside of areas of concentrated irrigation.

Water Levels Tank in Irrigated Areas in 2012

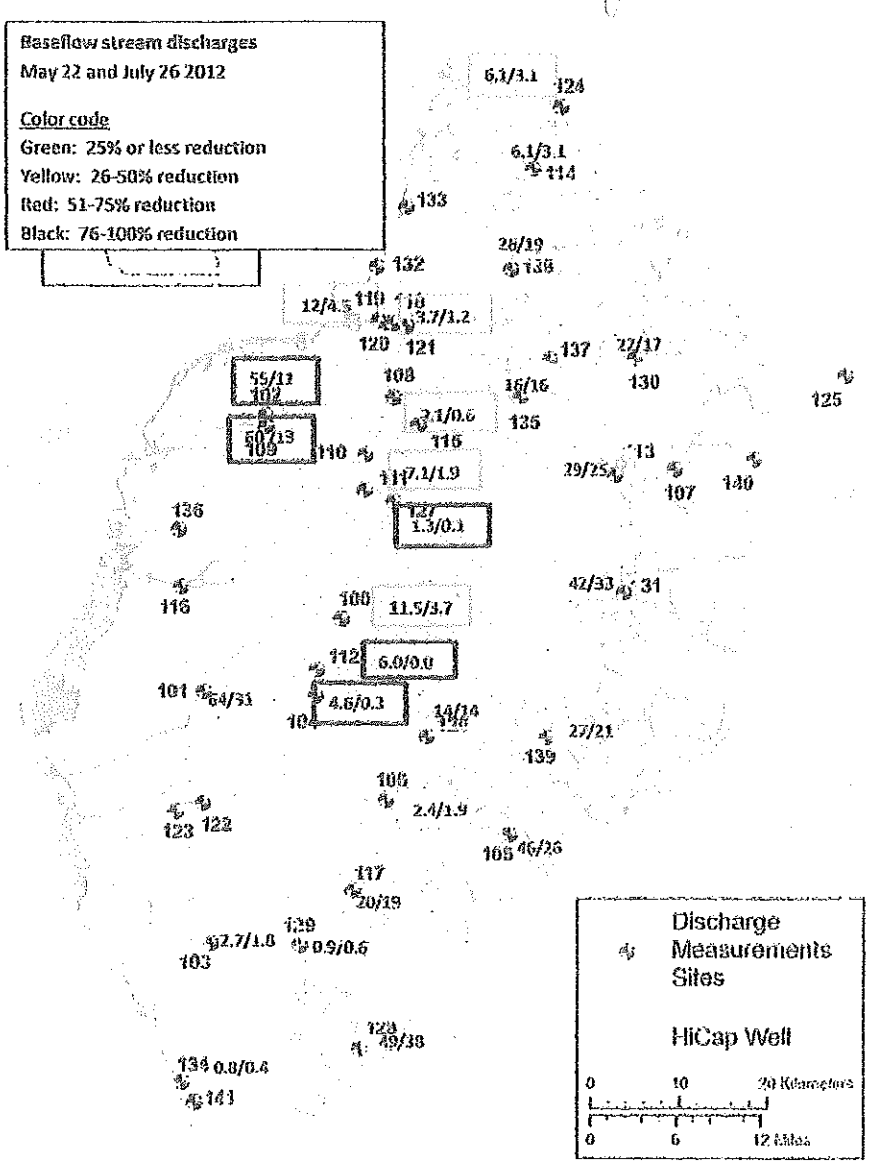
Recent streamflow and water level measurements in the irrigated area of the central sands show alarming declines, according to a USGS gauge and measurements taken by the Center for Watershed Science and Education. Streamflow declines in irrigated areas since the beginning of the growing season were often 60-100% (100% means drying). Largest declines were in the Roche a Cri, Little Roche a Cri systems, and Carter Creek systems (Adams and Waushara Counties), Buena Vista Creek (Wood and Portage Counties), and the Little Plover River (Portage County).

The Little Plover River may be headed to another dry-up, as streamflows are now down only 1.5 cubic feet per second at Eisenhower Road, well below the [WINDOWS-1252?]"healthy [WINDOWS-1252?]flow" level of 4.0 cfs.

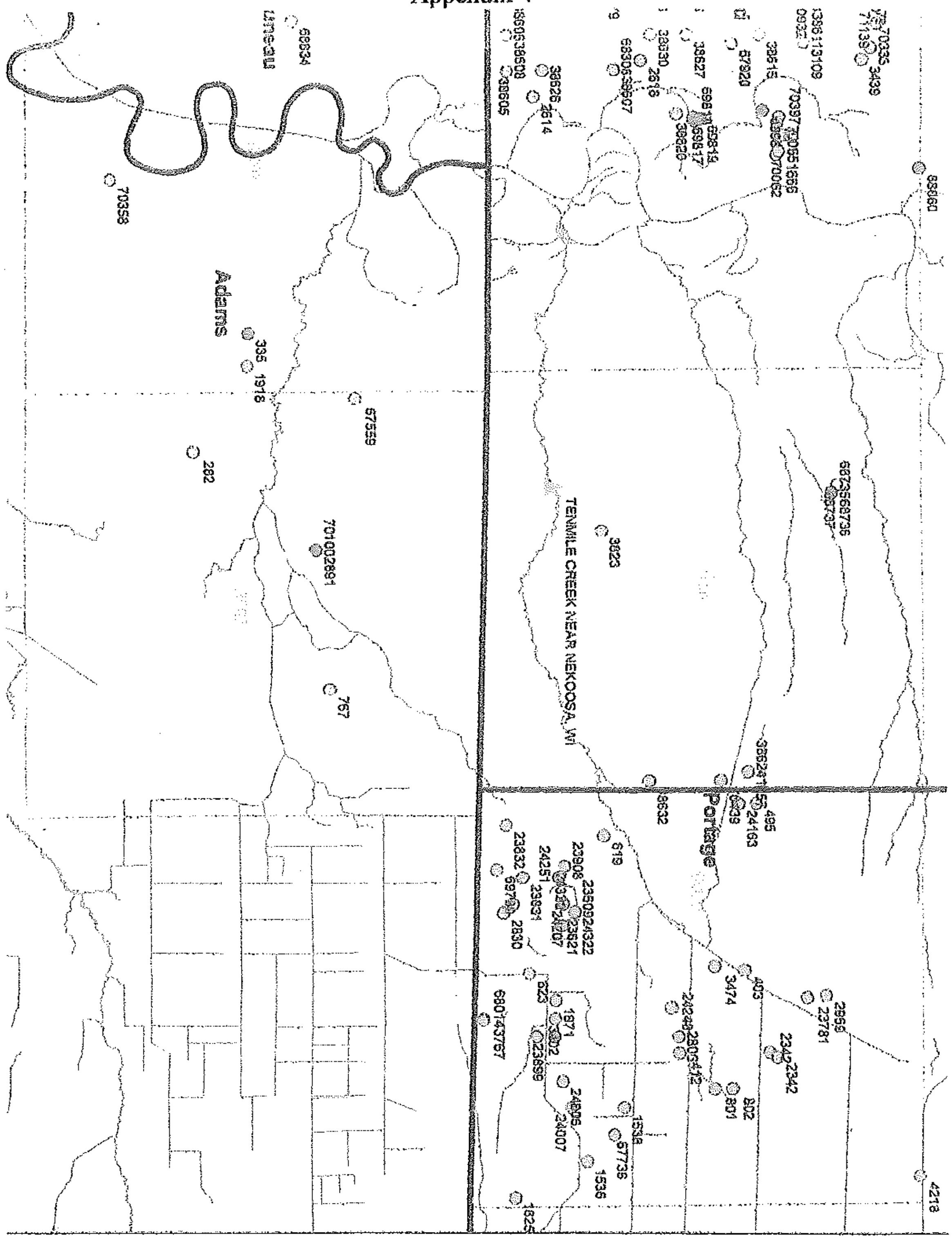
By comparison, comparable streams outside the irrigated area are doing well. Emmons Creek (Wauapca County), Lawrence Creek, the White River (Waushara County), and Spring Creek (Portage County) have declined only a small amount, 0 to 20%.

Water levels at the USGS Hancock monitoring well, located in a heavily irrigated area, has been declining about an inch every two days. This is a six times faster than what would occur under natural, non-pumping conditions.

Attached is a flow survey comparing late May and late July streamflows at select locations.


Baseflow stream discharges
May 22 and July 26 2012
Color code
Green: 25% or less reduction
Yellow: 26-50% reduction
Red: 51-75% reduction
Black: 76-100% reduction
6.1/3.1
124
6.1/3.1
114
133
26/19
138
132
12/4.5
110
10
3.7/1.2
120
121
137
22/17
55/11
102
108
16/16
130
125
2.1/0.6
135
60/13
109
110
116
13
29/25
107
140
117
7.1/1.9
136
127
1.3/0.1
42/33
31
116
100
11.5/3.7
112
6.0/0.0
101
64/31
4.6/0.3
10
14/14
126
27/21
139
106
2.4/1.9
123
122
165
46/26
117
20/19
129
2.7/1.8
0.9/0.6
103
128
49/38
134
0.8/0.4
141
Discharge Measurements Sites
HiCap Well
0
10
20 Kilometers
0
6
12 Miles

Appendix 4



COUNTY	HICAP	WUWN	OWNER	DIR	TWP	RNG
Wood	68737	UC065	PIRCO INC	4	21	6
Wood	69817	US602	WISCONSIN RIVER CRANBERRY CO	4	21	5
Wood	69818	UY112	WISCONSIN RIVER CRANBERRY CO	4	21	5
Wood	69819	US603	WISCONSIN RIVER CRANBERRY CO	4	21	5
Adams	67559	TB492	HOFFMAN, AGNES	4	20	6
Adams	767	DN585	MORTENSON BROTHERS FARM INC	4	20	6
Portage	1536		CYCHOSZ, ERNEST	4	21	7
Portage	495	DN513	ELLIS INDUSTRIES LLC	4	21	7
Portage	24163	BD185	ELLIS INDUSTRIES LLC	4	21	7
Portage	24007	BD048	ELLIS INDUSTRIES LLC	4	21	7
Portage	24006	BD047	ELLIS INDUSTRIES LLC	4	21	7
Portage	71653	WQ593	ELLIS INDUSTRIES LLC	4	21	7
Portage	24322		ELLIS INDUSTRIES LLC	4	21	7
Portage	24251	BD270	ELLIS INDUSTRIES LLC	4	21	7
Portage	23832	BC886	ELLIS INDUSTRIES LLC	4	21	7
Portage	24255	BD274	ELLIS INDUSTRIES LLC	4	21	7
Portage	23831	BC885	ELLIS INDUSTRIES LLC	4	21	7
Portage	2830	MY642	ELLIS INDUSTRIES LLC	4	21	7
Portage	69789	UY113	ELLIS INDUSTRIES LLC	4	21	7
Portage	623	DN592	ELLIS INDUSTRIES LLC	4	21	7
Portage	23901	BC950	JOHN HANCOCK LIFE INSURANCE CO	4	21	7
Portage	3402	OC577	JOHN HANCOCK LIFE INSURANCE CO	4	21	7
Portage	1871	FL925	JOHN HANCOCK LIFE INSURANCE CO	4	21	7
Portage	23899	BC948	JOHN HANCOCK LIFE INSURANCE CO	4	21	7
Portage	2342	ME920	JOHN HANCOCK LIFE INSURANCE CO	4	21	7
Portage	4218	RT824	KAMINSKI, STEVEN W.	4	21	7
Portage	619	DN544	KERTIS, LINDA	4	21	7
Portage	2806	OT683	Leedle, William	4	21	7
Portage	403	EK087	M.S. & S. ENTERPRISES	4	21	7
Portage	2959		MOODIE, DAVID W	4	21	7
Portage	1825	LT632	PETRUSKY, RICHARD	4	21	7
Portage	1538	LI676	WEDEKIND, JOHN	4	21	7
Portage	67738	RB786	WEDEKIND, JOHN	4	21	7

COUNTY	HICAP	WUWN	OWNER
Wood	68737	UC065	PIRCO INC
Wood	69817	US602	WISCONSIN RIVER CRANBERRY CO
Wood	69818	UY112	WISCONSIN RIVER CRANBERRY CO
Wood	69819	US603	WISCONSIN RIVER CRANBERRY CO
Adams	67559	TB492	HOFFMAN, AGNES
Adams	767	DN585	MORTENSON BROTHERS FARM INC
Portage	1536		CYCHOSZ, ERNEST
Portage	495	DN513	ELLIS INDUSTRIES LLC
Portage	24163	BD185	ELLIS INDUSTRIES LLC
Portage	24007	BD048	ELLIS INDUSTRIES LLC
Portage	24006	BD047	ELLIS INDUSTRIES LLC
Portage	71653	WQ593	ELLIS INDUSTRIES LLC
Portage	24322		ELLIS INDUSTRIES LLC
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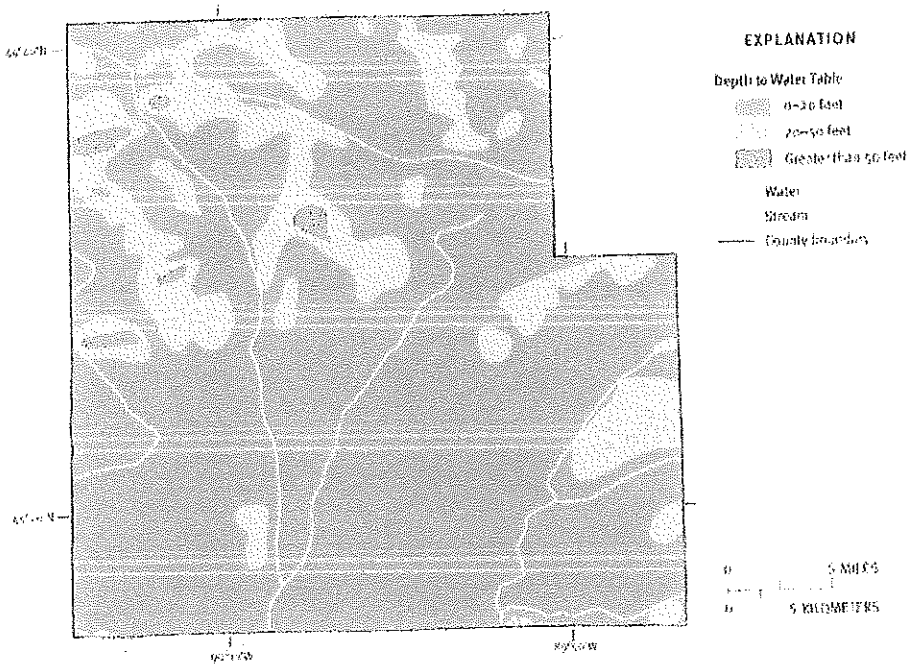
Portage	23832	BC886	ELLIS INDUSTRIES LLC
Portage	24255	BD274	ELLIS INDUSTRIES LLC
Portage	23831	BC885	ELLIS INDUSTRIES LLC
Portage	2830	MY642	ELLIS INDUSTRIES LLC
Portage	69789	UY113	ELLIS INDUSTRIES LLC
Portage	623	DN592	ELLIS INDUSTRIES LLC
Portage	23901	BC950	JOHN HANCOCK LIFE INSURANCE CO
Portage	3402	OC577	JOHN HANCOCK LIFE INSURANCE CO
Portage	1871	FL925	JOHN HANCOCK LIFE INSURANCE CO
Portage	23899	BC948	JOHN HANCOCK LIFE INSURANCE CO
Portage	2342	ME920	JOHN HANCOCK LIFE INSURANCE CO
Portage	4218	RT824	KAMINSKI, STEVEN W.
Portage	619	DN544	KERTIS, LINDA
Portage	2806	OT683	Leedle, William
Portage	403	EK087	M.S. & S. ENTERPRISES
Portage	2959		MOODIE, DAVID W
Portage	1825	LT632	PETRUSKY, RICHARD
Portage	1538	LI676	WEDEKIND, JOHN
Portage	67738	RB786	WEDEKIND, JOHN
Portage	23908	BC957	WYSOCKI FARMS INC
Portage	24207	BD226	WYSOCKI PRODUCE FARMS INC
Portage	23621	BC683	WYSOCKI PRODUCE FARMS INC
Portage	23609	BC671	WYSOCKI PRODUCE FARMS INC
Portage	24322		WYSOCKI PRODUCE FARMS INC
Wood	38628	BE262	B&D FARMS
Wood	68779	TY616	BAUMGART, HENRY M.
Wood	38610	BE246	ELLIS INDUSTRIES LLC
Wood	2618	MY638	ELLIS INDUSTRIES LLC
Wood	68306	TB478	ELLIS INDUSTRIES LLC
Wood	38630	BE263	ELLIS INDUSTRIES LLC
Wood	38607	BE243	ELLIS INDUSTRIES LLC
Wood	71166	VC281	ELLIS INDUSTRIES LLC

Wood	38606	BE242	ELLIS INDUSTRIES LLC
Wood	38626	BE260	ELLIS INDUSTRIES LLC
Wood	38605	BE241	ELLIS INDUSTRIES LLC
Wood	38608	BE244	ELLIS INDUSTRIES LLC
Wood	2614	ME940	ELLIS INDUSTRIES LLC
Wood	38624	BE258	ELLIS INDUSTRIES LLC
Wood	1657		ELLIS INDUSTRIES LLC
Wood	70439	UY091	ELLIS INDUSTRIES LLC
Wood	38632	BE265	ELLIS INDUSTRIES LLC
Wood	38627	BE261	GOODNESS, ALLEN G. & CHRISTINE
Wood	38636	CO521	HO CHUNK NATION
Wood	38646	DN521	HO CHUNK NATION
Wood	70932	OC527	MALEK, JOSEPH
Wood	70933	UY121	MALEK, JOSEPH
Wood	3439	RN354	OURADA, SAMUEL & ELIZABETH
Wood	3823	RI646	WOLOSEK, JAN
Wood	70333	US645	WYSOCKI FARMS INC
Wood	2994	NO895	WYSOCKI FARMS INC
Wood	71139	VC271	WYSOCKI FARMS INC
Wood	479	DS503	WYSOCKI FARMS INC
Wood	68834	TY620	WYSOCKI FARMS INC
Wood	3109	OC509	WYSOCKI FARMS INC
Wood	38615	BE251	WYSOCKI FARMS INC
Wood	67920	TY625	WYSOCKI FARMS INC
Wood	38611	BE247	WYSOCKI PRODUCE FARMS INC
Portage	412	DN551	PATRYKUS FARMS INC
Portage	24248	BD267	PATRYKUS FARMS INC
Portage	802	FN804	16 WEST ERIE LLC
Portage	801		16 WEST ERIE LLC
Portage	68014	TB452	BULA LAND COMPANY
Portage	3767	RF167	BULA LAND COMPANY
Portage	2342	ME920	JOHN HANCOCK LIFE INSURANCE CO
Portage	23781	BC836	MYRON SOIK & SONS INC
Portage	3474	RB732	TMPC, LLC
Wood	38620	BE255	WISCONSIN RIVER CRANBERRY CO
Adams	1918	LW016	LAKE ARROWHEAD ASSOC
Adams	282	BB562	LAKE ARROWHEAD ASSOC
Wood	70397	HC118	NEKOOSA PUBLIC SCHOOLS
Wood	70398		NEKOOSA PUBLIC SCHOOLS
Wood	1666	KY291	NEKOOSA PUBLIC SCHOOLS
Wood	70062	KY292	NEKOOSA PUBLIC SCHOOLS
Wood	70063	KY293	NEKOOSA PUBLIC SCHOOLS
Wood	70064	KY294	NEKOOSA PUBLIC SCHOOLS
Wood	70065	KY295	NEKOOSA PUBLIC SCHOOLS
Adams	70358	UL597	BARNUM BAY CONDO ASSOC
Adams	2891	OV251	ROME WATER UTILITY
Adams	70100	SB752	ROME WATER UTILITY

Appendix 5

Wood County – Depth to Water Table



This resource characteristic map was derived from generalized statewide information at small scales, and cannot be used for any site-specific purposes.

Map source: Schmidt, K.D., 1987, Groundwater contamination susceptibility map and evaluation, Wisconsin Department of Natural Resources, Wisconsin's Groundwater Management Plan Report 5, PUBL-WR-177-87, 27 p.

Figure created for the 'Protecting Wisconsin's Groundwater Through Comprehensive Planning' web site, 2007, http://wi.water.usgs.gov/gwcomp/

It is important to know where the water table is when trying to determine groundwater contamination susceptibility. The closer the water table is to the land surface, the less contact contaminants have with filtering materials overlying the water table. The depth to water table is difficult to map on a statewide basis because it's almost as variable as the terrain. The information used in this mapping project identified where the water table was less than 20 feet, between 20 and 50 feet, and greater than 50 feet from the land surface.

Appendix 6

The Department of Natural Resources said Thursday it will reconsider a key permit for a large dairy farm proposed in Adams County after the agency received an analysis by a University of Wisconsin-Stevens Point hydrogeologist who concluded the farm is likely to reduce local water supplies.

The DNR had made a preliminary determination that groundwater pumping by the 4,200-cow Richfield Dairy would not harm local conditions.

And a spokesman for the company developing the farm also emphasized that the pumping of more than 50 million gallons of water annually won't be more than the irrigation now used for potatoes on the same land.

The Richfield Dairy is being developed by Kaukauna-based Milk Source, which owns the state's largest dairy farm, Rosendale Dairy, in Fond du Lac County. It operates two other farms and a third is slated to open early next year.

If Richfield Dairy is constructed, Milk Source will own five dairy farms with about 26,500 cows, according to the company. In addition, it owns a separate 9,200-calf operation near De Pere.

At Richfield Dairy, the company needs DNR permits for a high-capacity well and wastewater discharge, along with an environmental assessment of the project. Approvals on all three are pending, according to the DNR.

The DNR said it is reconsidering the permit for the high-capacity well after George Kraft of UW-Stevens Point said the farm would harm local water bodies and draw down the aquifer.

Kraft uses more sophisticated water modeling software than the state agency, the DNR acknowledged.

The decision to revisit the issue comes after a Wisconsin Supreme Court case this year involving municipal wells near Lake Beulah in Walworth County. In that case, the court said the DNR has the duty to consider adverse impacts of wells if presented with scientific evidence.

Three Democratic lawmakers said Kraft's work shows that the DNR is likely to "grossly understate" the impact of groundwater pumping and urged the agency to more closely scrutinize the environmental effect of the dairy farm.

Eric Ebersberger, water use section chief of the DNR, said the agency will evaluate the research. Depending on the outcome, the DNR could put conditions on the farm or deny the permit altogether.

Environmentalists and some residents opposed Rosendale during its development, and the same has been true with Richfield.

In the latest case, the Pleasant Lake Management District asked Kraft to study the effect of Richfield Dairy's water use on local groundwater and surface supplies. He was not paid for that work.

The lake is about 3 miles from the two proposed wells that would draw up to 500 gallons a minute.

Kraft has studied groundwater in the Central Sands region of Wisconsin for years and in a 2010 study he found that between 2000 and 2008, climate conditions alone could not account for depressed water levels and stream flows where many large wells are located.

In his most recent analysis, Kraft said in a letter to the DNR he was taking into account the replacement of an existing well with two new wells.

He concluded that the effect of the new dairy farm would increase the drawdown of the water table and divert water from several streams and Pleasant Lake.

For example, Kraft said, portions of many streams closest to the wells would experience a 10% reduction or more in recharge from groundwater.

Near Pleasant Lake, the well would draw down the aquifer by 11%, thus affecting the lake levels.

But Bill Harke, director of public affairs for Milk Source, said Richfield Dairy should not harm local groundwater conditions.

In addition to the DNR's work, he said, two other studies supplied to the DNR by the company showed the new wells won't have an effect.

Harke said the analysis by Kraft appeared to be little more than a letter to the DNR describing past research.

The DNR, he said, is obligated to review data submitted in such cases "and we encourage them to review it."

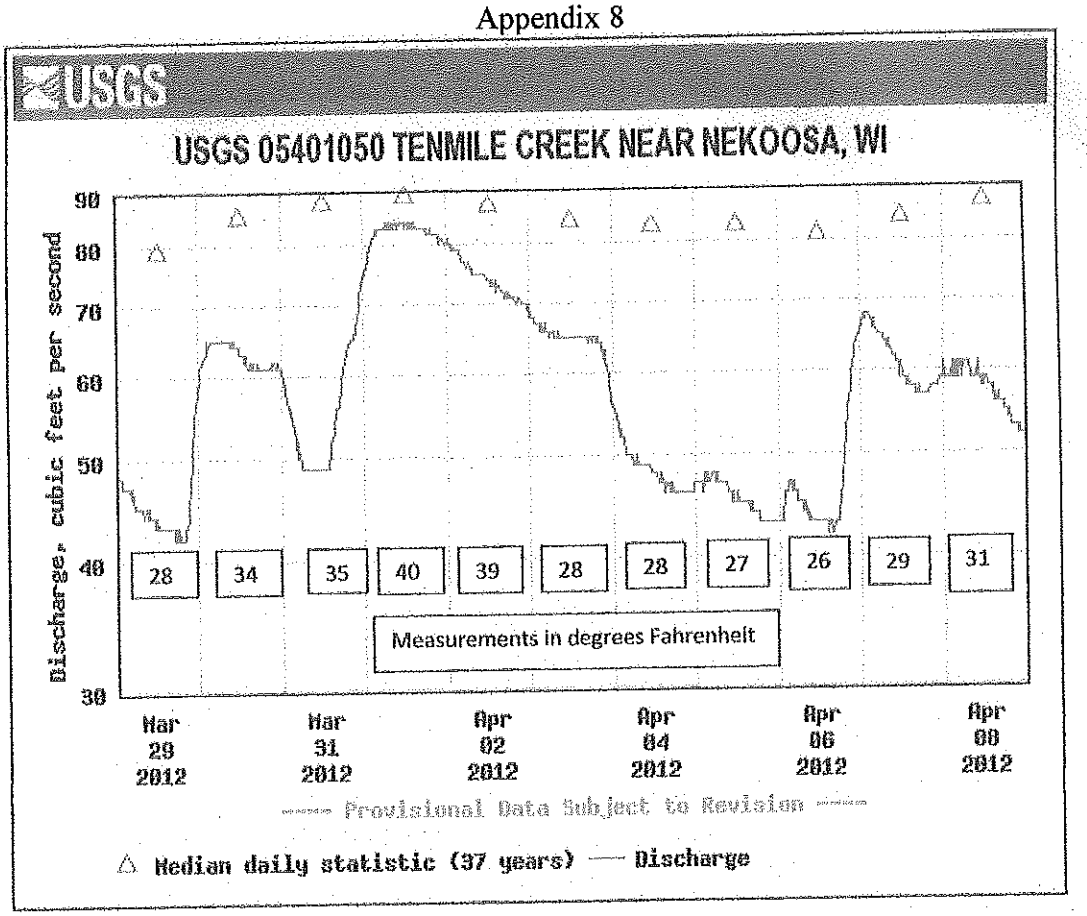
Wisconsin Department of Natural Resources
Fish Stocking Summary
DNR Hatcheries, Ponds, and Coop Ponds
05-AUG-12

County Name [WOOD] | Waterbody Name [TENMILE CREEK] | Local Waterbody Name [ ] | Location (TRS) [ ]

Year	Stocked Waterbody Name	Local Waterbody Name	Location	Species	Strain (Stock)	Age Class	Number Fish Stocked	Avg Fish Length (IN)
1972	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	UNSPECIFIED	YEARLING	5,000	8.00
1973	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	UNSPECIFIED	YEARLING	5,000	9.00
1974	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	UNSPECIFIED	YEARLING	5,000	10.00
1975	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	UNSPECIFIED	YEARLING	5,000	
1976	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	UNSPECIFIED	YEARLING	5,000	
1977	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	UNSPECIFIED	YEARLING	5,000	
1978	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	UNSPECIFIED	YEARLING	5,000	
1979	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	UNSPECIFIED	YEARLING	5,000	
1980	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	UNSPECIFIED	YEARLING	5,000	
1981	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	UNSPECIFIED	YEARLING	5,000	
1982	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	UNSPECIFIED	YEARLING	5,000	
1983	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	UNSPECIFIED	YEARLING	5,000	8.00
1984	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	UNSPECIFIED	YEARLING	5,000	9.00
1985	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	UNSPECIFIED	YEARLING	5,000	10.00
1986	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	UNSPECIFIED	YEARLING	5,000	9.00
1987	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	UNSPECIFIED	YEARLING	15,000	9.00
1988	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	UNSPECIFIED	YEARLING	5,000	9.00
1989	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	UNSPECIFIED	YEARLING	10,800	8.67
1991	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	UNSPECIFIED	YEARLING	5,000	8.20
1992	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	UNSPECIFIED	YEARLING	5,005	8.00
1993	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	UNSPECIFIED	YEARLING	5,000	7.57
1994	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	UNSPECIFIED	YEARLING	1,000	7.00
1996	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	UNSPECIFIED	YEARLING	3,000	7.20

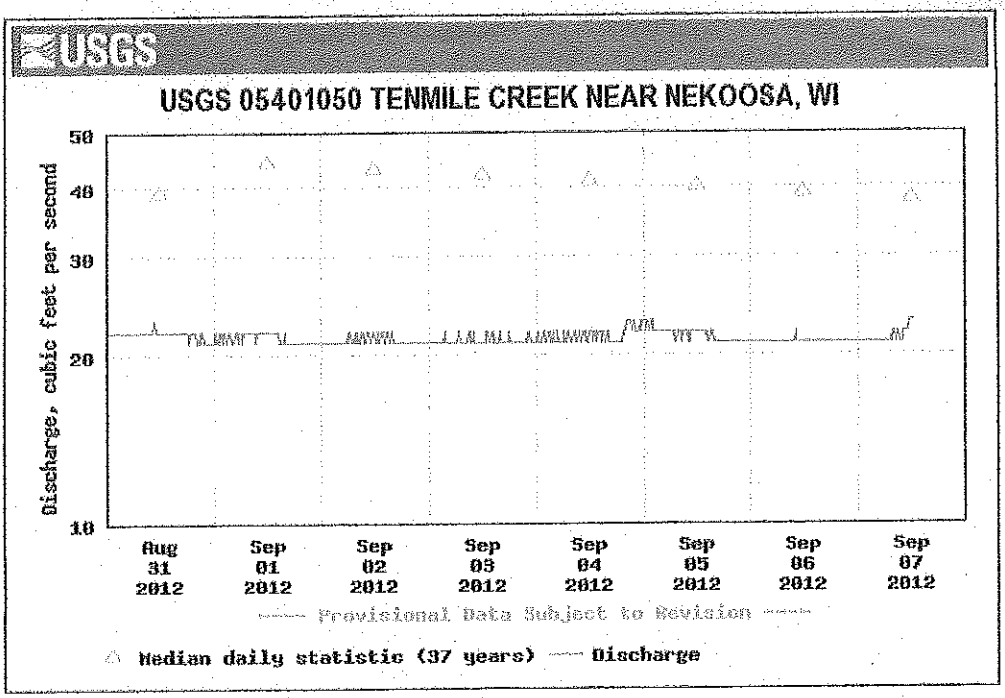
1997	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	WILD ROSE	YEARLING	3,625	8.20
1998	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	WILD ROSE	YEARLING	2,988	7.95
1999	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	WILD ROSE	YEARLING	5,565	7.50
2000	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	WILD ROSE	YEARLING	5,004	8.20
2001	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	WILD ROSE	YEARLING	5,002	7.73
2002	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	WILD ROSE	YEARLING	5,000	8.87
2003	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	WILD ROSE	YEARLING	5,200	8.63
2005	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	WILD ROSE	LARGE FINGERLING	4,310	7.90
2005	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	WILD ROSE	YEARLING	3,582	9.60
2007	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	ST. CROIX	YEARLING	3,500	7.40
2007	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	WILD ROSE	YEARLING	3,500	7.40
2008	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	ST. CROIX	YEARLING	6,099	8.88
2009	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	ST. CROIX	YEARLING	3,400	9.10
2010	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	ST. CROIX	YEARLING	3,300	9.20
2011	TENMILE CREEK	DITCH # 10	21N-5E-34	BROWN TROUT	ST. CROIX	YEARLING	827	9.06

Appendix 8



This graph represents the flow rate of Ten Mile Creek. Some of the fluctuation is due to agricultural activities. The normal flow of the creek at the water gauge recording center located on State Highway 13 South averages 85 cubic feet per second.

Appendix 9



During the time period of September first through September seventh of 2012 Ten Mile Creek held a steady flow rate of 21 cubic feet/second.

Discounting the two high capacity wells devoted to the dairy, there will be 47 nearby high capacity wells impacting the flow rate of Ten Mile Creek. According to the 10 Applications submitted by the Wysocki organization for these high capacity wells, the average pumping rate during the irrigation season will be 500 gallons/minute.

So on average these 47 wells will draw 500 gpm x 47 wells = 23,500 GPM. 23,500 gpm translates to 52.36 cubic feet of water/second. (1 CFS = 448.8 GPM).

A study done by W. Stites, D.J. Mechenich, G.J. Kraft indicates that approximately 25 % of the draw from nearby high capacity wells will negatively impact the flow rate of a stream through lowered amounts in the ground water supply. This means that the flow rate of 10 Mile Creek could easily be lowered from 21 cubic feet/second to 8 cubic feet/second. <u>This is hardly insignificant!</u>

Appendix 10

Chapter NR 820

GROUNDWATER QUANTITY PROTECTION

Subchapter I — General Provisions
NR 820.10 Purpose.
NR 820.11 Applicability.
NR 820.12 Definitions.
NR 820.13 High capacity wells annual pumping reports.
Subchapter II — Groundwater Management Areas
NR 820.20 Groundwater management area designation.
Subchapter III — Environmental Review of High Capacity Well Applications
NR 820.29 Review periods.
NR 820.30 High capacity wells in groundwater protection areas.
NR 820.31 High capacity wells near springs.
NR 820.32 Projects with high water loss.
NR 820.33 Public utility wells.

Subchapter I — General Provisions

NR 820.10 Purpose. The purpose of this chapter is to designate areas of the state, consistent with s. 281.34 (9) (a), Stats., in which impacts from groundwater drawdown and pumpage are such that regional planning and management is necessary to avoid, minimize and manage future impacts. This chapter also establishes review criteria applicable to high capacity well applications involving wells situated near springs, trout streams, outstanding resource waters, and exceptional resources waters, and involving groundwater withdrawals with high water loss.

History: CR 06–121: cr. Register August 2007 No. 620, eff. 9–1–2007.

NR 820.11 Applicability. This chapter applies to all counties, cities, towns, villages, utility districts under s. 66.0827, Stats., that provide water, public inland lake protection and rehabilitation districts that have town sanitary district powers under s. 33.22 (3), Stats., joint water authorities created under s. 66.0823, Stats., and municipal water districts under s. 198.22, Stats. This chapter also applies to persons who are owners of high capacity wells and high capacity well systems including persons that propose to construct a high capacity well.

History: CR 06–121: cr. Register August 2007 No. 620, eff. 9–1–2007.

NR 820.12 Definitions. In this chapter:

(1) "Approval" means an approval issued by the department under s. 281.17 (1), 2001 Stats., s. 281.34 (2) or 281.41, Stats., prior to construction of a high capacity well.

(2) "Class 1 trout stream" means a stream, portion of a stream or a farm drainage ditch with a prior stream history that contains a self–sustaining population of trout and is classified as such in Wisconsin Department of Natural Resources publication PUB–FH–806 2002, Wisconsin Trout Streams. Farm drainage ditches that support self–sustaining populations of trout but do not have a prior stream history are not trout streams for purposes of this chapter.

Note: Copies of this document may be obtained from the Department of Natural Resources, Bureau of Fisheries Management and Habitat Protection, 101 South Webster Street, Natural Resources Building, PO Box 7921, Madison, Wisconsin 53707–7921.

(3) "Class 2 trout stream" means a stream, portion of a stream or a farm drainage ditch with a prior stream history that contains a population of trout made up of one or more age groups, above the age one year, in sufficient numbers to indicate substantial survival from one year to the next, but in which stocking is necessary to fully utilize the available trout habitat or to sustain the fishery and is classified as such in Wisconsin Department of Natural Resources publication PUB–FH–806 2002, Wisconsin Trout Streams. Farm drainage ditches that meet these criteria but do not have a prior stream history are not trout streams for purposes of this chapter.

(4) "Class 3 trout stream" means a stream or portion of a stream that has marginal trout habitat with no natural reproduction of trout occurring, requiring annual stocking of trout to provide trout fishing, and generally without carryover of trout from one year to the next and is classified as such in Wisconsin Department of Natural Resources publication PUB–FH–806 2002, Wisconsin Trout Streams. Farm drainage ditches that meet these criteria but do not have a prior stream history are not trout streams for the purpose of this chapter.

(5) "Consumptive use coefficient" has the meaning specified in s. NR 142.02 (4).

Note: s. NR 142.02 (4) defines "consumptive use coefficient" to mean "a constant numerical measure, as determined under s. NR 142.04 (1) to (4) which is used to determine the consumptive use portion of a facility's withdrawal".

(6) "Department" means the department of natural resources.

(7) "80% exceedance flow" means the flow in a stream that, based on statistical probability, will be exceeded 80% of the time on an annual basis.

(8) "Groundwater management area" means a multi–jurisdictional area including towns, cities, villages and counties within which the level of the groundwater potentiometric surface in any of its underlying aquifers has been reduced by 150 feet or more from the level at which the potentiometric surface would be if no groundwater withdrawals had occurred.

(9) "Groundwater protection area" has the meaning specified in s. 281.34 (1) (a), Stats.

Note: s. 281.34 (1) (a), Stats., defines "groundwater protection area" to mean "an area within 1,200 feet of any of the following:

(a) An outstanding resource water identified under s. 281.15 that is not a trout stream.

(b) An exceptional resource water identified under s. 281.15 that is not a trout stream.

(c) A class 1, class 2, or class 3 trout stream, other than a class 1, class 2, or class 3 trout stream that is a farm drainage ditch with no prior stream history as identified under subd. (8) (a).

(10) "High capacity property" has the meaning specified in s. NR 812.07 (52).

Note: s. NR 812.07 (52) defines "high capacity property" to mean "one property on which a high capacity well system exists or is to be constructed."

(11) "High capacity well" has the meaning specified in s. 281.34 (1) (b), Stats.

Note: s. 281.34 (1) (b), Stats., defines "high capacity well" to mean "a well that, together with all other wells on the same property, has a capacity of more than 100,000 gallons per day."

(12) "High capacity well system" has the meaning specified in s. NR 812.07 (53).

Note: s. NR 812.07 (53) defines "high capacity well system" to mean "one or more wells, drillholes, or mine shafts used or to be used to withdraw water for any purpose on one property, if the total pumping or flowing capacity of all wells, drillholes or mine shafts on one property is 70 or more gallons per minute based on the pump curve at the lowest system pressure setting, or based on the flow rate."

(13) "Local governmental unit" has the meaning specified in s. 281.34 (1) (c), Stats.

Note: s. 281.34 (1) (c), Stats., defines "local governmental unit" to mean a "city, village, town, county, town sanitary district, utility district under s. 66.0827 that provides water, public inland lake protection and rehabilitation district that has town sanitary district powers under s. 33.22 (3), joint local water authority created under s. 66.0823 or municipal water district under s. 198.22.

(14) "One property" has the meaning specified in s. NR 812.07 (68).

Note: s. NR 812.07 (68) defines "one property" to mean "all contiguous land controlled by one owner, lessee, or any other person having a possessory interest. Lands under single ownership bisected by highways or railroad right-of-ways are considered contiguous."

(15) "Owner" has the meaning specified in s. 281.34 (1) (d), Stats.

Note: s. 281.34 (1) (d), Stats., defines "owner" to mean "a person who owns property on which a well is located or proposed to be located or the designated representative of that person."

(16) "Potentiometric surface" has the meaning specified in s. 281.34 (1) (e), Stats.

Note: s. 281.34 (1) (e), Stats., defines "potentiometric surface" to mean "a measure of pressure of groundwater in an aquifer based on the level to which groundwater will rise in a well placed in the aquifer."

(17) "Prior stream history" means a determination made by the department that an artificial waterway or a portion of such waterway was originally a navigable stream before it was ditched or channelized.

(18) "Reconstruction" has the meaning specified in s. NR 812.07 (85).

Note: s. NR 812.07 (85) defines "reconstruction" to mean "modifying the original construction of a well. Reconstruction includes, but is not limited to deepening, lining, installing or replacing a screen, underreaming, hydrofracturing and blasting."

(19) "Significant adverse environmental impact" means alteration of groundwater levels, groundwater discharge, surface water levels, surface water discharge, groundwater temperature, surface water temperature, groundwater chemistry, surface water chemistry, or other factors to the extent such alterations cause significant degradation of environmental quality including biological and ecological aspects of the affected water resource.

(20) "Spring" has the meaning specified in s. 281.34 (1) (f), Stats.

Note: s. 281.34 (1) (f), Stats., defines "spring" to mean "an area of concentrated groundwater discharge occurring at the surface of the land that results in a flow of at least one cubic foot per second at least 80% of the time."

(21) "Water loss" has the meaning specified in s. 281.34 (1) (g), Stats.

Note: s. 281.34 (1) (g), Stats., defines "water loss" to mean "a loss of water from the basin from which it is withdrawn as a result of interbasin diversion, as defined in s. 281.35 (1) (g) or consumptive use or both."

(22) "Well" has the meaning specified in s. 281.34 (1) (h), Stats.

Note: s. 281.34 (1) (h), Stats., defines "well" to mean "any drillhole or other excavation or opening deeper than it is wide that extends more than 10 feet below the ground surface and is constructed for the purpose of obtaining groundwater."

History: CR 06-121: cr. Register August 2007 No. 620, eff. 9-1-2007.

NR 820.13 High capacity wells annual pumping reports. (1) Owners of high capacity wells shall record pumpage data on a monthly basis and shall report the information to the department at no less than an annual frequency using methods and forms provided by the department. Reports of annual pumpage for a given calendar year shall be submitted to the department no later than the first day of March in the following calendar year.

Note: Appropriate forms, description of acceptable estimation methodology and reporting procedures will be sent to owners of each high capacity well each year by the department. Copies of these documents may be obtained from the Department of Natural Resources, Bureau of Drinking Water and Groundwater, 101 South Webster Street, Natural Resources Building, PO Box 7921, Madison, Wisconsin 53707-7921.

(2) Individual reports shall be prepared for any high capacity wells with the capacity to withdraw water at a rate of 100,000 gallons per day or more.

(3) If one high capacity property does not contain any single high capacity well with an individual capacity to withdraw water at a rate of 100,000 gallons per day or more, the annual pumpage may be reported as a composite volume for the entire property based on estimated water usage using a method prescribed by the department.

(4) If one high capacity property contains high capacity wells with individual capacity to withdraw water at a rate of at least 100,000 gallons per day and high capacity wells with maximum pumping capacity less than 100,000 gallons per day, a composite pumpage volume based on estimated water usage using a method prescribed by the department may be reported for those wells with individual maximum pumping capacity less than 100,000 gallons per day.

History: CR 06-121: cr. Register August 2007 No. 620, eff. 9-1-2007.

Subchapter II — Groundwater Management Areas

NR 820.20 Groundwater management area designation. The areas specified in subs. (1) and (2) are designated as groundwater management areas. Any local governmental unit contained within these areas shall be considered to be part of the groundwater management area unless it is explicitly excluded in sub. (1) or (2).

(1) Southeast Wisconsin Groundwater Management Area consisting of the following:

(a) All of Kenosha county.

(b) All of Milwaukee county.

(c) All of Ozaukee county.

(d) All of Racine county.

(e) All of Waukesha county.

(f) The portions of Walworth county consisting of the U.S. Public Land Survey townships of East Troy, Spring Prairie, Lyons, Bloomfield, Linn and Geneva, with the exception of the village of Williams Bay and city of Elkhorn, and including the portion of the U.S. Public Land Survey township of Troy that includes part of the Village of East Troy.

(g) All of Washington county with the exception of the U.S. Public Land Survey townships of Wayne and Kewaskum.

(2) Northeast Wisconsin Groundwater Management Area consisting of the following:

(a) All of Brown county.

(b) The portions of Calumet county consisting of the U.S. Public Land Survey townships of Woodville and Harrison and the village of Sherwood.

(c) The portions of Outagamie county consisting of the U.S. Public Land Survey townships of Grand Chute, Van den Broek, Buchanan, Freedom and Kaukauna, including the cities of Appleton and Kaukauna and the villages of Kimberly, Combined Locks and Little Chute.

History: CR 06-121: cr. Register August 2007 No. 620, eff. 9-1-2007.

Subchapter III — Environmental Review of High Capacity Well Applications

NR 820.29 Review periods. (1) HIGH CAPACITY WELLS IN GROUNDWATER PROTECTION AREAS. Unless another time period is specified by law, the department shall complete its review and make a determination on all applications for approval of proposed high capacity wells in groundwater protection areas within 65 business days after receipt of a complete application unless the department notifies the applicant under s. NR 820.30 (4) (a) or (b) that additional information is needed in order for the department to prepare an environmental assessment for the proposed high capacity well.

(2) HIGH CAPACITY WELLS NEAR SPRINGS. Unless another time period is specified by law, the department shall complete its review and make a determination on all applications for approval of proposed high capacity wells near springs within 65 business days after receipt of a complete application unless the department notifies the applicant under s. NR 820.31 (4) (a) or (b) that additional information is needed in order for the department to prepare an environmental assessment for the proposed high capacity well.

History: CR 06-121: cr. Register August 2007 No. 620, eff. 9-1-2007.

NR 820.30 High capacity wells in groundwater protection areas. (1) Except as provided in sub. (2), an application for approval of a high capacity well within a ground-

Note: s. NR 812.07 (68) defines "one property" to mean "all contiguous land controlled by one owner, lessee, or any other person having a possessory interest. Lands under single ownership bisected by highways or railroad right-of-ways are considered contiguous."

(15) "Owner" has the meaning specified in s. 281.34 (1) (d), Stats.

Note: s. 281.34 (1) (d), Stats., defines "owner" to mean "a person who owns property on which a well is located or proposed to be located or the designated representative of that person."

(16) "Potentiometric surface" has the meaning specified in s. 281.34 (1) (e), Stats.

Note: s. 281.34 (1) (e), Stats., defines "potentiometric surface" to mean "a measure of pressure of groundwater in an aquifer based on the level to which groundwater will rise in a well placed in the aquifer."

(17) "Prior stream history" means a determination made by the department that an artificial waterway or a portion of such waterway was originally a navigable stream before it was ditched or channelized.

(18) "Reconstruction" has the meaning specified in s. NR 812.07 (85).

Note: s. NR 812.07 (85) defines "reconstruction" to mean "modifying the original construction of a well. Reconstruction includes, but is not limited to deepening, lining, installing or replacing a screen, underreaming, hydrofracturing and blasting."

(19) "Significant adverse environmental impact" means alteration of groundwater levels, groundwater discharge, surface water levels, surface water discharge, groundwater temperature, surface water temperature, groundwater chemistry, surface water chemistry, or other factors to the extent such alterations cause significant degradation of environmental quality including biological and ecological aspects of the affected water resource.

(20) "Spring" has the meaning specified in s. 281.34 (1) (f), Stats.

Note: s. 281.34 (1) (f), Stats., defines "spring" to mean "an area of concentrated groundwater discharge occurring at the surface of the land that results in a flow of at least one cubic foot per second at least 80% of the time."

(21) "Water loss" has the meaning specified in s. 281.34 (1) (g), Stats.

Note: s. 281.34 (1) (g), Stats., defines "water loss" to mean "a loss of water from the basin from which it is withdrawn as a result of interbasin diversion, as defined in s. 281.35 (1) (g) or consumptive use or both."

(22) "Well" has the meaning specified in s. 281.34 (1) (h), Stats.

Note: s. 281.34 (1) (h), Stats., defines "well" to mean "any drillhole or other excavation or opening deeper than it is wide that extends more than 10 feet below the ground surface and is constructed for the purpose of obtaining groundwater."

History: CR 06-121: cr. Register August 2007 No. 620, eff. 9-1-2007.

NR 820.13 High capacity wells annual pumping reports. (1) Owners of high capacity wells shall record pumpage data on a monthly basis and shall report the information to the department at no less than an annual frequency using methods and forms provided by the department. Reports of annual pumpage for a given calendar year shall be submitted to the department no later than the first day of March in the following calendar year.

Note: Appropriate forms, description of acceptable estimation methodology and reporting procedures will be sent to owners of each high capacity well each year by the department. Copies of these documents may be obtained from the Department of Natural Resources, Bureau of Drinking Water and Groundwater, 101 South Webster Street, Natural Resources Building, PO Box 7921, Madison, Wisconsin 53707-7921.

(2) Individual reports shall be prepared for any high capacity wells with the capacity to withdraw water at a rate of 100,000 gallons per day or more.

(3) If one high capacity property does not contain any single high capacity well with an individual capacity to withdraw water at a rate of 100,000 gallons per day or more, the annual pumpage may be reported as a composite volume for the entire property based on estimated water usage using a method prescribed by the department.

(4) If one high capacity property contains high capacity wells with individual capacity to withdraw water at a rate of at least 100,000 gallons per day and high capacity wells with maximum pumping capacity less than 100,000 gallons per day, a composite pumpage volume based on estimated water usage using a method prescribed by the department may be reported for those wells with individual maximum pumping capacity less than 100,000 gallons per day.

History: CR 06-121: cr. Register August 2007 No. 620, eff. 9-1-2007.

Subchapter II — Groundwater Management Areas

NR 820.20 Groundwater management area designation. The areas specified in subs. (1) and (2) are designated as groundwater management areas. Any local governmental unit contained within these areas shall be considered to be part of the groundwater management area unless it is explicitly excluded in sub. (1) or (2).

(1) Southeast Wisconsin Groundwater Management Area consisting of the following:

(a) All of Kenosha county.

(b) All of Milwaukee county.

(c) All of Ozaukee county.

(d) All of Racine county.

(e) All of Waukesha county.

(f) The portions of Walworth county consisting of the U.S. Public Land Survey townships of East Troy, Spring Prairie, Lyons, Bloomfield, Linn and Geneva, with the exception of the village of Williams Bay and city of Elkhorn, and including the portion of the U.S. Public Land Survey township of Troy that includes part of the Village of East Troy.

(g) All of Washington county with the exception of the U.S. Public Land Survey townships of Wayne and Kewaskum.

(2) Northeast Wisconsin Groundwater Management Area consisting of the following:

(a) All of Brown county.

(b) The portions of Calumet county consisting of the U.S. Public Land Survey townships of Woodville and Harrison and the village of Sherwood.

(c) The portions of Outagamie county consisting of the U.S. Public Land Survey townships of Grand Chute, Van den Broek, Buchanan, Freedom and Kaukauna, including the cities of Appleton and Kaukauna and the villages of Kimberly, Combined Locks and Little Chute.

History: CR 06-121: cr. Register August 2007 No. 620, eff. 9-1-2007.

Subchapter III — Environmental Review of High Capacity Well Applications

NR 820.29 Review periods. (1) HIGH CAPACITY WELLS IN GROUNDWATER PROTECTION AREAS. Unless another time period is specified by law, the department shall complete its review and make a determination on all applications for approval of proposed high capacity wells in groundwater protection areas within 65 business days after receipt of a complete application unless the department notifies the applicant under s. NR 820.30 (4) (a) or (b) that additional information is needed in order for the department to prepare an environmental assessment for the proposed high capacity well.

(2) HIGH CAPACITY WELLS NEAR SPRINGS. Unless another time period is specified by law, the department shall complete its review and make a determination on all applications for approval of proposed high capacity wells near springs within 65 business days after receipt of a complete application unless the department notifies the applicant under s. NR 820.31 (4) (a) or (b) that additional information is needed in order for the department to prepare an environmental assessment for the proposed high capacity well.

History: CR 06-121: cr. Register August 2007 No. 620, eff. 9-1-2007.

NR 820.30 High capacity wells in groundwater protection areas. (1) Except as provided in sub. (2), an application for approval of a high capacity well within a ground-

water protection area shall be supplemented to include all of the following information:

(a) The name of each class 1, 2 or 3 trout stream, outstanding resource water or exceptional resource water that is located within 1,200 feet of the proposed well location.

Note: Outstanding resource waters and exceptional resource waters are identified in ss. NR 102.10 and 102.11. Chapter NR 102 is available for viewing and printing at the internet site for the Wisconsin Legislature, Legislative Reference Bureau: http://www.legis.state.wi.us/rsb/code/nr/nr102.pdf. Paper copies of ch. NR 102 may be obtained from the Department of Natural Resources, Bureau of Watershed Management, 101 South Webster Street, Natural Resources Building, PO Box 7921, Madison, Wisconsin 53707–7921.

(b) The distance from each proposed high capacity well to the class 1, 2 or 3 trout stream, outstanding resource water or exceptional resource water.

(c) If the potentially affected water body is a stream, a description of the stream channel at the point nearest to the proposed well location including stream width, depth of water, publicly available information regarding seasonal flow and nature of the substrate.

(d) If the potentially affected water body is a lake or flowage, a description of the lake or flowage including identification and approximate flows of major inlets and outlets, surface area of the lake or flowage, approximate elevation of the current lake or flowage level, analysis of publicly available information pertaining to historic lake level fluctuations, and nature of the lake bed.

(e) A description of all other wells on the high capacity property including location relative to the class 1, 2 or 3 trout stream, or outstanding or exceptional resource water, maximum pumping capacity, estimated actual annual pumpage for each well and frequency of pumping for each well.

(f) A description of the hydrogeologic conditions in the vicinity of the proposed well including flow direction, groundwater elevation, depth to groundwater, and a description of the aquifer characteristics including approximate thickness of each aquifer.

(g) A discussion and analysis of alternative well locations and feasibility of siting the high capacity well outside of the groundwater protection area.

(h) A determination by a registered professional engineer, registered professional geologist or registered professional hydrologist of the 80% exceedance flow for the stream and associated water level at the location closest to the proposed well location.

(i) If the affected water body is a lake, a determination by a registered professional engineer, registered professional geologist or registered professional hydrologist of the 80% exceedance flow and associated water level for the primary surface water outlet and the invert elevation of the primary surface water outlet.

(j) The appropriate consumptive use coefficient.

(2) (a) The department may approve a high capacity well as described in pars. (b) to (e) within a groundwater protection area without preparing an environmental assessment if it determines that construction and operation of the proposed well will not result in significant adverse environmental impact. The information specified under sub. (1) (h) to (j) is not required for a proposed well if any of the conditions in pars. (b) to (e) apply. Based on information submitted by the applicant under sub. (1) and other available information, the department may determine that supplemental information and review is needed in order to issue or deny the necessary approval. The department shall include in any approval issued using the standards under s. 281.34, Stats., conditions to ensure that the high capacity well will not result in significant adverse environmental impacts to trout streams, outstanding resource waters and exceptional resource waters. The conditions may include but are not limited to conditions as to location, depth of lower drillhole, depth interval of well screen, pumping capacity, pumpage schedule, months of operation, rate of flow and conservation measures.

(b) The proposed high capacity well is a well that does not have a pump capacity of greater than 20 gallons per minute and the well is to be used solely for domestic purposes for a single residence.

(c) The proposed high capacity well is intended to be used for purposes such as fire suppression and similar non–commercial, non–industrial and non–agricultural irrigation purposes, and the well will only be used on a sporadic basis averaging less than 30 days each year and will generally operate for no more than 2 consecutive days.

(d) The high capacity well application is for reconstruction of an existing high capacity well and the application does not seek an increase in the approved pumping capacity of the well.

(e) The high capacity well application is for temporary dewatering of a single construction site in unconsolidated deposits and the duration of the project will not extend more than one construction season.

(3) (a) The department may approve a proposed high capacity well without completing an environmental assessment under ch. NR 150 if the proposed well is not a well described in sub. (2) (b) to (e) and the department determines that construction and operation of the proposed well will not result in significant adverse environmental impacts to the stream or lake and at least one of the conditions in subd. 1. to 5. is satisfied. In making this determination, the department shall consider impacts caused by other wells on the high capacity property and take into account actual or current conditions of the Class 1, 2 or 3 trout stream, outstanding resource water or exceptional resource water.

1. The potentially affected water body is a trout stream and the proposed pumping capacity of the high capacity well is less than 10% of the value for the 80% exceedance flow for the stream.

2. The potentially affected water body is an outstanding or exceptional resource water that is a stream and the proposed pumping capacity of the high capacity well is less than 10% of the value for the 80% exceedance flow for the stream.

3. The potentially affected water body is an outstanding or exceptional resource water that is a lake with a surface outlet and the proposed pumping capacity of the high capacity well is less than 10% of the value for the 80% exceedance flow for the primary surface outlet from the lake.

4. The potentially affected water body is an outstanding or exceptional resource water that is a lake with a surface water outlet and a surface area of at least 600 acres.

5. The potentially affected water body is an outstanding or exceptional resource water that is a lake with a surface water outlet, a surface area of less than 600 acres and the volume of water that would be pumped from the well in 30 days of continuous pumping at maximum capacity is less than 5% of the volume of the lake.

(b) The department shall include in any approval issued using the standards under s. 281.34, Stats., conditions to ensure that the high capacity well will not result in significant adverse environmental impacts to trout streams, outstanding resource waters and exceptional resource waters. The conditions may include but are not limited to conditions as to location, depth of lower drillhole, depth interval of well screen, pumping capacity, pumpage schedule, months of operation, rate of flow and conservation measures. The department may also modify the approvals or place additional conditions on the approvals of other previously approved wells on the high capacity property to prevent significant adverse environmental impacts.

(4) All of the following provisions shall apply to proposed high capacity wells that are not included under sub. (3) (a) 1. to 5. and proposed wells that satisfy the conditions under sub. (3) (a) 1. to 5. but for which the department has determined that the proposed well may have a significant adverse environmental impact

on the trout stream, outstanding resource water or exceptional resource water:

(a) The department shall notify the applicant that the proposed high capacity well may have a significant impact on the stream or lake and may require additional information concerning flow characteristics of the affected stream or lake, site–specific geologic and hydrogeologic information and pertinent regional information.

(b) Within 65 business days of receipt of a complete application, the department shall identify additional informational requirements necessary to evaluate the proposed well and may determine that the applicant shall develop and submit an environmental impact report in accordance with s. NR 150.25.

(c) Following receipt of the requested information, the department shall prepare an environmental assessment in accordance with the procedures of s. NR 150.22 and shall develop and publish a news release in accordance with s. NR 150.21.

(d) If the department determines that operation of the proposed high capacity well will not result in significant adverse environmental impact on critical resources within the stream or lake and other uses of the stream or lake, the department shall approve the well and include in any approval issued using the standards under s. 281.34, Stats., conditions to ensure that operation of the proposed well will not cause significant adverse environmental impact to critical aquatic resources or other existing uses of the stream or lake. The conditions may include but are not limited to conditions as to location, depth of casing, depth of lower drillhole, depth interval of well screen, pumping capacity, pumpage schedule, months of operation, rate of flow, ultimate use and conservation measures. In the case of Class 1, 2 and 3 trout streams and outstanding or exceptional resource waters that contain warm water sport fisheries, flow conditions in the stream shall be maintained such that the fish populations and critical habitat are not adversely affected.

(5) As part of an approval issued using the standards under s. 281.34, Stats., the department may require the owner of the high capacity well to implement a monitoring plan to document stream flow or lake level conditions in the vicinity of any well located within a groundwater protection area and based on results of the monitoring program may revise the approval.

(6) The department may not issue an approval using the standards under s. 281.34, Stats., for a high capacity well within a groundwater protection area unless it is able to include and includes conditions that ensure that the well does not cause significant adverse environmental impact.

(7) The department may order the owner of a high capacity well constructed prior to May 7, 2004 that is located in a groundwater protection area to mitigate the effects of the well. Mitigation may include abandonment of the well, replacement of the well, if necessary, and management strategies. If mitigation is ordered, the department shall provide funding for the full cost of the mitigation, except that full funding is not required if the department is authorized under ch. 280, Stats., to require the well to be abandoned because of issues regarding public health.

History: CR 06–121: cr. Register August 2007 No. 620, eff. 9–1–2007.

NR 820.31 High capacity wells near springs. (1) For any application for approval of a high capacity well under s. 281.34, Stats., the department shall determine if there is a spring, as defined in this chapter, located in the vicinity of the proposed well.

(2) If the department determines that a proposed high capacity well is located near a spring the department shall assess the proposed well to determine whether construction and operation of the well will result in substantially reduced flow from the spring and significant adverse environmental impact to the spring. The department shall consider the location of the well relative to the spring, well construction details, information regarding construction and operation of all other wells on the property, available information concerning the geology and hydrogeology of the area, historical flow data for the spring and other pertinent information.

(3) If the department determines that construction and operation of the proposed high capacity well will not result in a substantial reduction in flow from the spring or result in significant adverse environmental impact to the spring, the department may approve the proposed well and shall include in any approval issued using the standards under s. 281.34, Stats., conditions to ensure that the well will not result in significant adverse environmental impact to the spring. The conditions may include but are not limited to conditions as to location, depth of casing, depth of lower drillhole, depth interval of well screen, pumping capacity, pumpage schedule, months of operation, rate of flow, ultimate use and conservation measures.

(4) All of the following provisions shall apply to proposed high capacity wells that are determined to reduce flow in a spring such that significant adverse environmental impact to the spring or related aquatic and terrestrial resources may result:

(a) The department shall notify the applicant that the proposed high capacity well may have a significant adverse environmental impact on a spring and may require additional information concerning flow characteristics of the affected spring, site–specific geologic and hydrogeologic information, a discussion and analysis of alternative well locations, and pertinent regional information.

(b) Within 65 business days of receipt of a complete application, the department shall identify additional informational requirements necessary to evaluate the proposed well and may determine that the applicant shall develop and submit an environmental impact report in accordance with s. NR 150.25.

(c) Following receipt of the requested information, the department shall prepare an environmental assessment in accordance with the procedures of s. NR 150.22 and shall develop and publish a news release in accordance with s. NR 150.21.

(d) If the department determines that operation of the proposed high capacity well will not result in significant adverse environmental impact to the spring and related resources, the department shall approve the well and include in any approval issued under s. 281.34, Stats., conditions to ensure that operation of the proposed well will not cause significant adverse environmental impacts to the spring or critical resources related to the spring. The conditions may include but are not limited to conditions as to location, depth of casing, depth of lower drillhole, depth interval of well screen, pumping capacity, pumpage schedule, months of operation, rate of flow, ultimate use and conservation measures. The department may approve a proposed high capacity well that is predicted to result in a reduction of flow in a spring only if the predicted reduction would not cause permanent and irreversible impacts to the spring and related resources. The department may not approve a proposed high capacity well that is predicted to result in a reduction in flow from a spring such that the spring does not flow at one cubic foot per second or greater at least 80% of the time or that will reduce the average annual flow from a spring by greater than 20%.

(5) As part of an approval issued using the standards under s. 281.34, Stats., the department may require the owner of the high capacity well to implement a monitoring plan to document conditions of the spring and related resources and based on results of the monitoring program may revise the approval.

History: CR 06–121: cr. Register August 2007 No. 620, eff. 9–1–2007.

NR 820.32 Projects with high water loss. (1) For any application for approval of a high capacity well under s. 281.34, Stats., the applicant shall identify and the department shall verify whether the proposed use of the well will result in an annual water loss of greater than 95%. The department may require submittal

of a detailed water balance as part of the application in order to determine the approximate water loss.

(2) If the department determines that a proposed high capacity well will result in an annual water loss of greater than 95%, the department shall notify the applicant that the proposed well may result in a water loss of greater than 95%. Within 65 business days of receipt of a complete application, the department shall identify additional informational requirements necessary to evaluate the proposed well and may determine that the applicant shall develop and submit an environmental impact report in accordance with s. NR 150.25.

(3) Following receipt of all requested information, the department shall prepare an environmental assessment in accordance with the procedures of s. NR 150.22, and shall develop and publish a news release in accordance with s. NR 150.21.

(4) If the department determines that construction and operation of the proposed high capacity well will not result in significant environmental impact to surface and groundwater resources, the department shall approve the well and include in any approval issued using the standards under s. 281.34, Stats., conditions to ensure that operation of the proposed well will not cause significant adverse environmental impact to surface water or groundwater resources. The conditions may include but are not limited to conditions as to location, depth of casing, depth of lower drillhole, depth interval of well screen, pumping capacity, pumpage schedule, months of operation, rate of flow, ultimate use and conservation measures.

(5) As part of an approval issued using the standards under s. 281.34, Stats., the department may require the owner of the high capacity well to develop and implement a water conservation and management plan that minimizes, to the extent technically and economically feasible, the degree of water loss related to operation of the high capacity well system.

(6) As part of an approval issued using the standards under s. 281.34, Stats., the department may require the owner of the high capacity well system to implement a monitoring plan to evaluate environmental impacts caused by operation of the high capacity well system and based on results of the monitoring program may revise the approval.

History: CR 06–121: cr. Register August 2007 No. 620, eff. 9–1–2007.

NR 820.33 Public utility wells. Sections NR 820.30 to 820.32 do not apply to proposed high capacity wells that are water supplies for public water systems operated by a public utility, as defined by s. 196.01, Stats., engaged in supplying water to or for the public, if the department determines that there is no other reasonable alternative location for the well and includes in the approval conditions that ensure that the environmental impact of the well is balanced by the public benefit of the well related to public health and safety. Conditions of the approval for the well may include, but are not limited to, conditions as to location, depth, pumping capacity, rate of flow, and ultimate use.

History: CR 06–121: cr. Register August 2007 No. 620, eff. 9–1–2007.