not curr in code

Reviewed by UBub Date 2/2004

Region NER **County** Manitowoc **Report Date** 1/1987 **Classification** LAL

Water Body: West Twin River, unnamed trib

Discharger: Manibel WWTP

If stream is classified as Limited Forage Fish (LFF) or Limited Aquatic Life (LAL), check any of the following Use Attainability Analysis factors that are identified in the classification report:

_____ Naturally occurring pollutant concentrations prevent the attainment of use

_____ Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met

_____ Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place

_____ Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or operate such modification in a way that would result in the attainment of the use

_____ Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses

_____ Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact

Supporting Evidence in the report (include comments on how complete/thorough data is)

_____ Biological Data (fish/invert)

✓ Chemical Data (temp, D.O., etc.)

✓ Physical Data (flow, depth, etc.)

_____ Habitat Description

✓ Site Description/Map

✓ Other: photos

Historical Reports in file:

1/15/87 - Tim Doelger

Additional Comments/How to improve report:

- report states that @ time of assessment, flow was adequate to support balanced macro community
- not clear justification for LAL classification.
- ~~text~~

potential

MARIBEL

CORRESPONDENCE/MEMORANDUM — **State of Wisconsin**

DATE: May 30, 1995 FILE REF: 3200

TO: Bill Baumann - WW/2
ATTN: Mulazim Nasir

FROM: Duane Schuettpelz - WR/2

SUBJECT: Water Quality-Based Effluent Limitations for a Proposed Discharge from the Village of Maribel

This is in response to a March 20, 1995 letter from David Schlichting of Robert E. Lee and Associates, Inc. to me which requested water quality-based effluent limitations for a proposed surface water discharge from the Village of Maribel to three alternative discharge sites at a dry-weather design flow of 50,000 gallons per day. Those limitations are provided below pursuant to chs. NR 102, 105, 106, 207 and 210 of the Wisconsin Administrative Code. The three alternative sites are as follows (designated as Points B, C and D, respectively, in Mr. Schlichting's letter):

(1) - The proposed discharge is to an intermittent-flowing unnamed tributary to Kriwanek Creek near the existing seepage cell discharge. The proposed outfall is located in the SE 1/4 of Section 23, T21N-R22E (Cooperstown Twsp.) in Manitowoc County.

(2) - The proposed discharge is to the Devils River approximately 1.5 miles north of the existing seepage cell system. The proposed outfall is located on the border of Sections 10 and 11, T21N-R22E (Cooperstown Twsp.) in Manitowoc County.

(3) - The proposed discharge is to the West Twin River immediately downstream of the mouth of Kriwanek Creek two miles east of the existing seepage cell system. The proposed outfall is located in the SE 1/4 of the SE 1/4 of Section 19, T21N-R23E (Gibson Twsp.) in Manitowoc County.

Mr. Schlichting's letter also requested evaluation of limits on a discharge to groundwater at the existing site. The limitations on this fourth alternative, designated as Point A in the request, are not provided in this response since it does not represent a surface water discharge.

The recommended effluent limitations for the surface water discharge alternatives are summarized below based on the requested design flow of 50,000 gpd. Limitations are provided based on the full assimilative capacity of the receiving water and 1/3 of that capacity, the latter being needed to prevent significant lowering of water quality at

Receiving Water Information:

Three different streams are proposed as receiving waters for the discharge from the Village of Maribel. The first stream is an unnamed tributary of Kriwanek Creek near the existing seepage cell site. The tributary is not currently classified under ch. NR 104, Wis. Adm. Code (see note below), and therefore is evaluated as a warmwater sport fish community. At the discharge site, the stream flows intermittently, so a background flow of zero is used for limits calculation. It was noted by the Lake Michigan District that a discharge to this tributary may seep into groundwater during dry weather periods, and as such it may also be necessary to evaluate this alternative under groundwater standards in ch. NR 140. This memo shall not cover that portion of this alternative, focusing solely on limits related to surface water quality. The facility plan reviewer and/or permit drafter should note, however, that limits based only upon surface water quality may not provide a complete evaluation of this alternative.

The tributary joins with Kriwanek Creek approximately 1.5 miles downstream (east) of the proposed outfall. Below the tributary, Kriwanek Creek as well as the West Twin River, which Kriwanek Creek empties into another half mile downstream (east), are classified as Class II trout streams in the 1980 document titled Wisconsin Trout Streams. Neither are classified in ch. NR 102 as outstanding or exceptional resource waters.

Since the background flow at the outfall is set equal to zero, surface water quality-based limitations are expected to be very low for this alternative. As such, they are also considered to be protective of downstream water quality, so background conditions at the outfall are used to develop limits for this alternative.

Background conditions for Alternative 1:
Stream classification = Warm water sport fish community
7Q10 = zero
pH = 8.21 summer, 7.97 winter (basin assumption)
Temperature = 25°C summer, 5°C winter (assumed)
Ammonia Nitrogen = 0.04 mg/L summer, 0.16 mg/L winter (basin assumption)
Dissolved Oxygen = 7 mg/L (assumed)

NOTE: It should be noted that this receiving water is proposed for reclassification under the revisions to ch. NR 104, Wis. Adm. Code. The tributary at Maribel is proposed to be reclassified as a Limited Aquatic Life stream (marginal surface water). Effluent limitations shall be provided here under both scenarios, using the existing assumption of a classification as a warmwater sport fish community and the proposed revision as a Limited Aquatic Life stream.

The second stream is Devils River, a tributary to the West Twin River. The proposed discharge site is approximately two miles from the mouth of the river. At the proposed

Tom

January 15, 1987 3200

Linda Vogen

Tim Doelger Doelger LMD

JAN 21 1987

Maribel Discharge & Classification of an Unnamed Tributary to the West Twin River

On October 15, 1986 Jeff Haack and I surveyed this tributary for the purpose of determining its suitability as a discharge location for the Village of Maribel.

The survey was predicated on the possibility that the village's seepage cell discharge is entering groundwater in unsuitable quantities and that adding some additional treatment, sealing the lagoon, and discharging to surface water is a more environmentally sound alternative.

Water chemistries, flows and macroinvertebrate samples were collected at three locations indicated on the map and are (except macros) attached. Due to time constraints the macroinvertabrates will not be analyzed, but visual inspection at the time collection indicate a non-existent to poor population.

At the time of the survey, flows and water quality were adequate to support a balanced macro community and in most of the stream suitable habitat is also present, but it was a very wet fall and it could be assumed that under normal or below normal precipitation conditions the stream would probably be dry at least to the area east of CTH R.

Based on macroinvertebrates and flow I am recommending that from the Maribel STP downstream to CTH R this stream be classified as Noncontinuous Marginal. Below CTH R there is a dramatic change in topography with upland agriculture giving way to swamp hardwood and cedar with numerous seeps and springs adding considerably to the flow. Because of the

completely different nature of the land, the stream, and its proximity to the West Twin River it should be classified as Continuous Fish and Aquatic below CTH R. Careful consideration should be given to the attached memo from Rick Stoll prior to discharging to surface water in the area. Although there is no concrete evidence one way or the other the possibility of a subsurface discharge does exist and this question should be resolved or the area avoided.

In addition there are plans to build a private campground just west of I-43. Extending a pipe to CTH R would effectively short circuit both of these potential problems.

TD:cks

Attach.

cc: Jeff Haack
Bob Behrens
Duane Schuettpelz

(AD-75)

CORRESPONDENCE/MEMORANDUM

STATE OF WISCONSIN

Date: January 8, 1987 *File Ref:* 3400

To: Tim Doelger

From: Rick Stoll R. Stoll

Subject: Possible Karst Features Near the Town of Maribel Sewage Disposal Ponds

A recent inquiry regarding the possible discharge of sewage treatment effluent from the Town of Maribel to an intermittent creek in Township 21N Range 22E Sections 23 and 24 raises some questions regarding any possible impact to groundwater. Although there are not any technical reports or mapping studies that indicate specific incipient karst features at this location, local public knowledge and geologic associations indicate karst features to be quite likely here. Nearby Maribel Caves County Park is a local feature that evidences the development of local karst. Although the glacial drift thickness here of 20-50' is moderate, the underlying bedrock is the same as that in Door County where some known karst does eixist.

The Maribel area also shows some fairly well developed surface drainage patterns. However rumors of sinkholes and swallets are known. In fact the subject of this writing is based on the premise that the creek in question is thought to be one which dissappears through a sink hole to the subsurface.

Until the flow of this creek can be verified as not losing to the subsurface through any karst features, I would not consider recommending it as a receptor of Maribel treatment effluent. Aside from local resident inquiries and field reconnaissance, Norb Cox of the UWGB branch Speleologic Club may be able to provide additional local karst feature information.

RS:dh

cc: Jeff Haack

SEGMENT DATA SHEET

Treatment Plant: MARIBEL

Date: 10/15/86

Recorders Int.: _____

Segment # _____

Observation # _____

Stake &/or Sample # _____

Distance Downstream Above (#-1) paces or feet

Time _____ pH _____

DO 12.0 (Unit #)

Temp 5.5 °C

% Overcast 50

% Shade 0

Est. Stream Width 15' Ave. Est. Stream Depth 3"

Bottom Type _____

Measurement Conditions

Sun - Shade

Riffle - Run - Pool

Before - With - After/Dye

	% Stream Found		Comments
SLUDGE	0 %	Depth _____	Flooded wet
MUD	30 %	Depth _____	late summer/early
MACROPHYTES	20 %		fall

	Scarce	Common	Abundant
- Elodea	s	c	a
- Potomageton	s	c	a
- Sagittaria	s	c	a
- Myriophyllum	s	c	a
- Vallisineria	s	c	a
-	s	c	a
-	s	c	a

FILAMENTOUS ALGAE 0 % Stream

SLIMES 0 % Stream

LITTER & DETRITUS 5" % Depth _____

Fish Observed 0

Land marks (major) STP

Land Use Rec.

Other _____

LOW FLOW STREAM CROSS SECTION & DISCHARGE DATA

STP: _____ Date: 10/15/86

Location Above M-1

_____ or Stake # _____

Tapedown (opt.) _____ Flow Meter # MM 2 Recorders Initials RD

Time 10:00 Stream Width 18" # Measurements _____

Distance from Bank (ft)	Depth (ft)	Velocity	Area (ft^2)	Discharge	Comments: (Vegetation-Sludge)
0	0	0			
3	.2	.5	.05	.025	
6	.3	2.3	.075	.172	
9	.25	1.6	.062	.1	
12	.15	.8	.037	.03	
15	0	0			
18					
				.327	CFS

T.

SEGMENT DATA SHEET

Treatment Plant: MARIBEL

Date: 10/15

Recorders Int.: TDD

Segment # _____

Observation # _____

Stake &/or Sample # _____

Distance Downstream 2004DS paces or feet M-2

Time 10:35 pH _____

DO 11.6 (Unit #)

Temp 6 °C

% Overcast _____

% Shade _____

Est. Stream Width _____ Est. Stream Depth Ave _____

Bottom Type _____

Measurement Conditions

Sun - Shade
Riffle - Run - Pool
Before - With - After/Dye

	% Stream Found		Comments
SLUDGE	0 %	Depth _____	
MUD	10 %	Depth _____	Natural Channel
MACROPHYTES	2 %		Grassy bottom

	Scarce	Common	Abundant
- Elodea	s	c	a
- Potomageton	s	c	a
- Sagittaria	s	c	a
- Myriophyllum	s	c	a
- Vallisineria	s	c	a
-	s	c	a
-	s	c	a

FILAMENTOUS ALGAE 0 % Stream

SLIMES 0 % Stream

LITTER & DETRITUS 15 % Depth 1"

Fish Observed None

Land marks (major) ROCK PILE ON N. BANK

Land Use N

Other _____

LOW FLOW STREAM CROSS SECTION & DISCHARGE DATA

STP: Whitbeck #1-2 Date: 10/15/86

Location 200 YDS Down

or Stake # _____

Tapedown (cont.) _____ Flow Meter # _____ Recorders Initials _____

Time 10:30 Stream Width _____ # Measurements _____

Distance from Bank (ft)	Depth (ft)	Velocity	Area (ft^2)	Discharge	Comments: (Vegetation-Sludge)
0	.1	0			
.6"	.2	0			
+2'	.2	0			
1.5	.3	.3	.15	.045	
2	.35	.7	.175	.122	
2.5	.35	.6	.175	.105	
3	.1	.4	.2	.08	
3.5	.35	.1	.175	.017	
4	.2	0			
4.5	BANK			.369 CFS	

T.

SEGMENT DATA SHEET

Treatment Plant: MARIBEL

Segment #

Date: 10/25/88

Observation #

Recorders Int.:

Stake &/or Sample #

CMR M-3

Distance Downstream 1.25 miles paces or feet

Time 11:09 pH

DO 12.2 (Unit #)

Temp 6 °C

Measurement Conditions

Sun - (Shade)

(Riffle) - Run - Pool

Before - With - After/Dye

% Overcast

% Shade

Est. Stream Width Ave. Est. Stream Depth

Bottom Type Rock

	% Stream Found		Comments
SLUDGE	0 %	Depth	PRETTY
MUD	5 %	Depth	
MACROPHYTES	0 %		

	Scarce	Common	Abundant
- Elodea	s	c	a
- Potomageton	s	c	a
- Sagittaria	s	c	a
- Myriophyllum	s	c	a
- Vallisineria	s	c	a
-	s	c	a
-	s	c	a

FILAMENTOUS ALGAE 5 % Stream

SLIMES 0 % Stream

LITTER & DETRITUS 5 % Depth

Fish Observed None

Land marks (major) CMR

Land Use Pasture/Woods

Other

LOW FLOW STREAM CROSS SECTION & DISCHARGE DATA

STP: Madison Date: 10/15/96

Location CTH R M-3

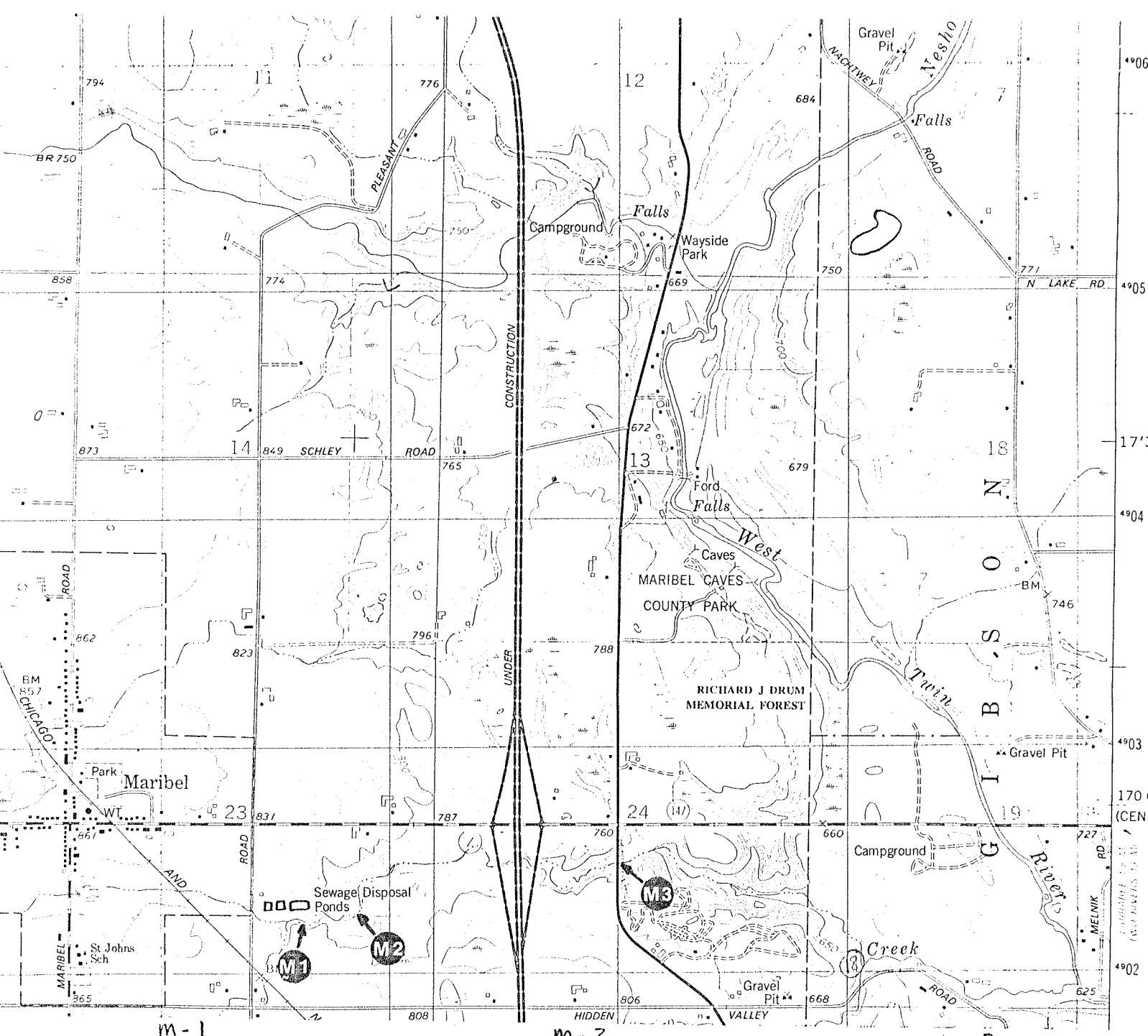
or Stake #

Tapedown (oft.) Flow Meter # Recorders Initials

Time Stream Width # Measurements

Distance from Bank (ft)	Depth (ft)	Velocity	Area (ft^2)	Discharge	Comments: (Vegetation-Sludge)
0	.0	0			
1	.3	.0			
2	.3	.1	.3	.03	
3	.5		.5		
4	.55	.1	.55	.055	
5	.50	.2	.5	.1	
6	.3	.1	.3	.03	
7	.1				
8	.1	0		.215 CFS	
Bank					

T.



m-1
MARIBEL ABOVE

WATER	TEMP	CENT	5.5
DO		MG/L	12
BOD	5 DAY	MG/L	1.5
LAB	PH	SU	8.0
RESIDUE	TOT NFLT	MG/L	<2
PHOS-TOT		MG/L	0.16
PHOS-DIS	ORTHO	MG/L P	0.142
TOT KJEL	DL N	MG/L	1.0
NH3-N	DISS	MG/L	<0.02
NO2&NO3	N-DISS	MG/L	1.08
CHLORIDE	CL	MG/L	24

m-2
200 YDS BELOW

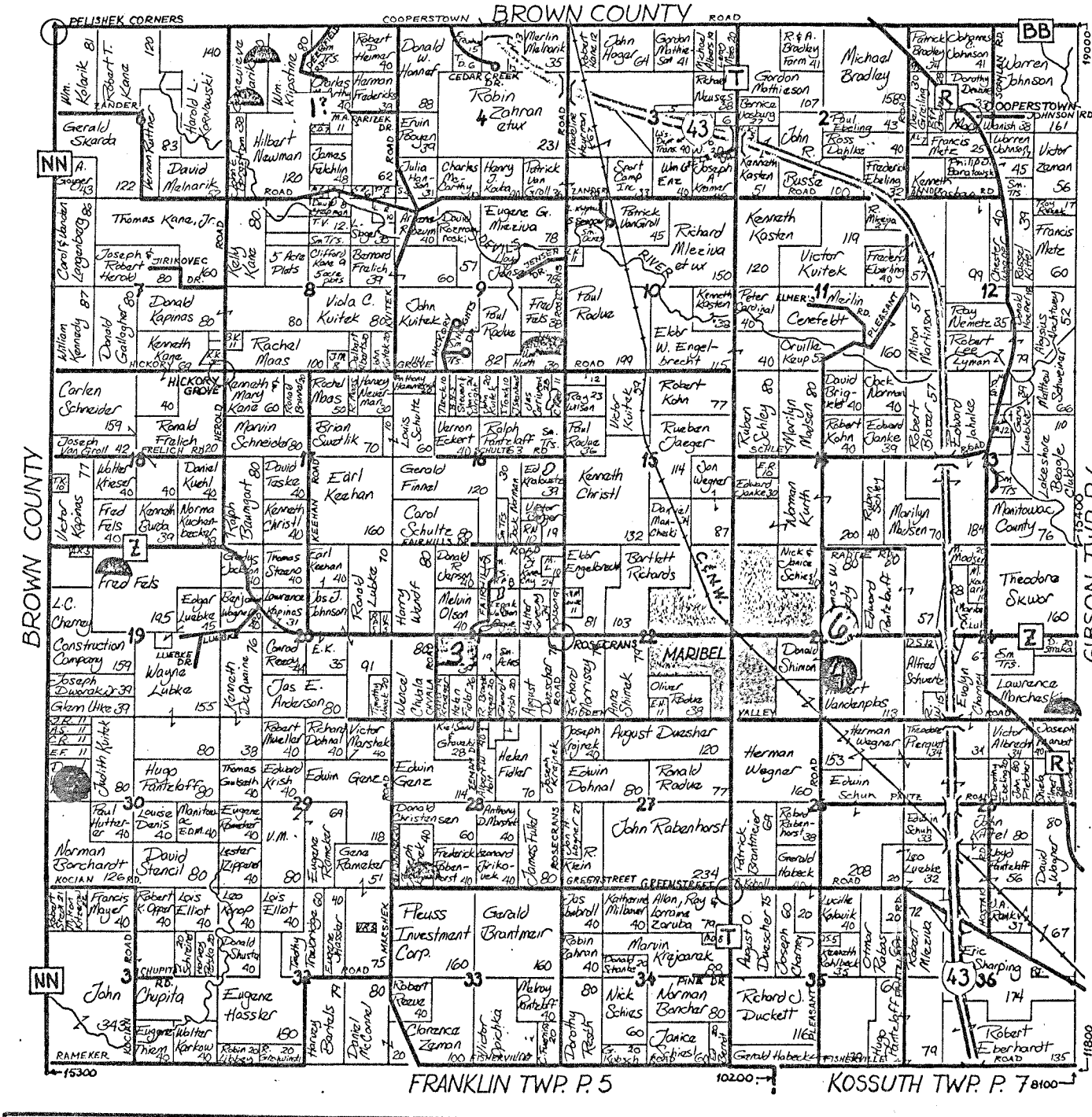
WATER	TEMP	CENT	6
DO		MG/L	11.6
BOD	5 DAY	MG/L	0.9
LAB	PH	SU	7.9
RESIDUE	TOT NFLT	MG/L	<2
PHOS-TOT		MG/L	0.16
PHOS-DIS	ORTHO	MG/L P	0.149
TOT KJEL	DL N	MG/L	1.0
NH3-N	DISS	MG/L	<0.02
NO2&NO3	N-DISS	MG/L	1.01
CHLORIDE	CL	MG/L	24

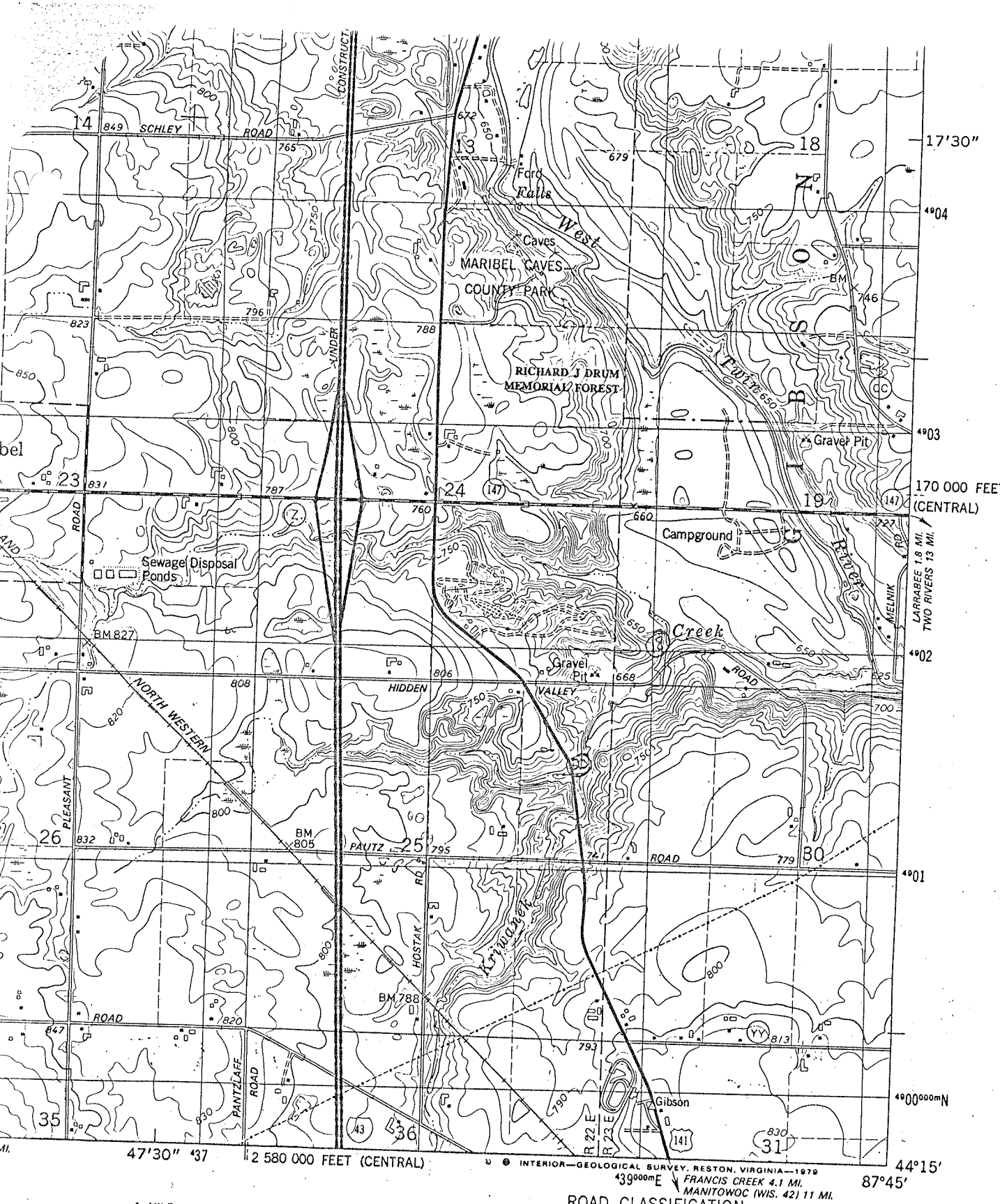
m-3
AT CTH R

WATER	TEMP	CENT	6
DO		MG/L	12.2
BOD	5 DAY	MG/L	1.5
LAB	PH	SU	8.1
RESIDUE	TOT NFLT	MG/L	2
PHOS-TOT		MG/L	0.12
PHOS-DIS	ORTHO	MG/L P	0.090
TOT KJEL	DL N	MG/L	1.0
NH3-N	DISS	MG/L	<0.02
NO2&NO3	N-DISS	MG/L	0.92
CHLORIDE	CL	MG/L	34

COOPERSTOWN

T.21N. - R.22E.





1 MILE

7000 FEET

1 KILOMETER

ROAD CLASSIFICATION

Primary highway, hard surface

Secondary highway, hard surface

Light-duty road, hard or improved surface

Unimproved road

Interstate Route U. S. Route State Route

WISCONSIN

QUADRANGLE LOCATION

INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1979

DENMARK, WIS.

SE/4 DENMARK 15' QUADRANGLE

N4415—W8745/7.5

115

HALF WAY BETWEEN
I43 AND THE STP
NOTE LACK OF CHANNEL

200 YARDS WEST OF I-43
NOTE OVERLAND FLOW

M-3 WEST SIDE OF CTH R

200 YARDS ABOVE
FACING NORTH

M-1 ABOVE
FACING WEST

M-2 200 YARDS BELOW
FACING WEST