TRIENNIAL REVIEW
MEEME RIVER
JUNE, 1995
TIM DOELGER

The Meeme River is presently classified as a Limited Forage Fish Community from its origin at Pigeon Lake to the Spring Valley Dam. The River was surveyed in August, 1990 and based on that survery it appears that the classification should be changed.

Physical and biological information was collected (attached) to support this change. The data shows adaquate flow and habitat to support a Warm Water Forage Fish Community and the Biotic Index also supports this classification.

A more appropriate classification should be that the River is a Limited Forage Fish Community from its origin at Pigeon Lake downstream to Ucker Point Road and from that point to its confluence with the Pigeon River is a Warm Water Forage Community.

LOW FLOW STREAM CROSS SECTION & DISCHARGE DATA

STP: _____ Date: 9/12/80

Location GH X MEEME R

_____ or Stake # _____

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

Time 11:30 Stream Width _____ # Measurements _____

Distance from Bank (ft)	Depth (ft)	Velocity	Area (ft^2)	Discharge	Comments: (Vegetation-Sludge)
0	.1	0			
1	.2	.1	.2	.02	
2	.6	.25	.6	.15	
3	.7	.01	.7	.004	
4	.7	.32	.7	.128	
5	.5	.9	.5	.45	
6	.5	.4	.5	.2	
7	.4	.3	.4	.12	
8	.5	.22	.5	.11	
9	.5	.11	.5	.66	
10	.5	.09	.5	.045	
11	.5	.06	.5	.03	
12	.4	0	.4		
13 BANK	.3	0	.2		
				1.91 CFS	
T.					

SEGMENT DATA SHEET

Treatment Plant: _____ Segment # _____

Date: 3/14/90 Observation # _____

Recorders Int.: _____ Stake &/or Sample # _____

Distance Downstream Cut X paces or feet _____

Time 11:30 pH _____ Measurement Conditions

DO 12 (Unit #) ~~Sun~~ - Shade

Temp 17 °C Riffle - Run - Pool

Before - With - After/Dye

% Overcast 5

% Shade 5

Est. Stream Width 12 Est. Stream Depth Ave .5'

Bottom Type Rock Gravel

	% Stream Found		Comments
SLUDGE	0 %	Depth _____	
MUD	20 %	Depth _____	
MACROPHYTES	5 %		

	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 80 % Stream

SLIMES _____ % Stream

LITTER & DETRITUS _____ % Depth _____

Fish Observed Minnows

Land marks (major) _____

Land Use _____

Other _____

Department of Natural Resources

STREAM SYSTEM HABITAT RATING FORM
Form 3200-68 1-85

Stream MEEME R Reach Location UECKER POINT RD Reach Score/Rating 164/FAIR

County Manitowoc Date [illegible] Evaluator [illegible] Classification ______

Rating Item	Category: Excellent	Good	Fair	Poor
Watershed Erosion	No evidence of significant erosion. Stable forest or grass land. Little potential for future erosion. 8	Some erosion evident. No significant "raw" areas. Good land mgmt. practices in area. Low potential for significant erosion. (10)	Moderate erosion evident. Erosion from heavy storm events obvious. Some "raw" areas. Potential for significant erosion. 14	Heavy erosion evident. Probable erosion from any run off. 16
Watershed Nonpoint Source	No evidence of significant source. Little potential for future problem. 8	Some potential sources (roads, urban area, farm fields). (10)	Moderate sources (small wetlands, tile fields, urban area, intense agriculture). 14	Obvious sources (major wetland drainage, high use urban or industrial area, feed lots, impoundment). 16
Bank Erosion, Failure	No evidence of significant erosion or bank failure. Little potential for future problem. 4	Infrequent, small areas, mostly healed over. Some potential in extreme floods. (8)	Moderate frequency and size. Some "raw" spots. Erosion potential during high flow. 16	Many eroded areas. "Raw" areas frequent along straight sections and bends. 20
Bank Vegetative Protection	90% plant density. Diverse trees, shrubs, grass. Plants healthy with apparently good root system. 6	70-90% density. Fewer plant species. A few barren or thin areas. Vegetation appears generally healthy. (9)	50-70% density. Dominated by grass, sparse trees and shrubs. Plant types and conditions suggest poorer soil binding. 15	<50% density. Many raw areas. Thin grass, few if any trees and shrubs. 18
Lower Bank Channel Capacity	Ample for present peak flow plus some increase. Peak flow contained. W/D ratio <7. (8)	Adequate. Overbank flows rare. W/D ratio 8-15. 10	Barely contains present peaks. Occasional overbank flow. W/D ratio 15-25. 14	Inadequate, overbank flow common. W/D ratio >25. 16
Lower Bank Deposition	Little or no enlargement of channel or point bars. 6	Some new increase in bar formation, mostly from coarse gravel. 9	Moderate deposition of new gravel and coarse sand on old and some new bars. (15)	Heavy deposits of fine material, increased bar development. 18
Bottom Scouring and Deposition	Less than 5% of the bottom affected by scouring and deposition. 4	5-30% affected. Scour at constrictions and where grades steepen. Some deposition in pools. 8	30-50% affected. Deposits and scour at obstructions, constrictions and bends. Some filling of pools. (16)	More than 50% of the bottom changing nearly year long. Pools almost absent due to deposition. 20
Bottom Substrate/ Available Cover	Greater than 50% rubble, gravel or other stable habitat. 2	30-50% rubble, gravel or other stable habitat. Adequate habitat. 7	10-30% rubble, gravel or other stable habitat. Habitat availability less than desirable. 17	Less than 10% rubble gravel or other stable habitat. Lack of habitat is obvious. 22
Avg. Depth Riffles and Runs	Cold >1' 0 Warm >1.5' 0	6" to 1' 6 10" to 1.5' 6	3" to 6" 18 6" to 10" 18	<3" 24 <6" (24)
Avg. Depth of Pools	Cold >4' 0 Warm >5' 0	3' to 4' 6 4' to 5' 6	2' to 3' 18 3' to 4' 18	<2' 24 <3' (24)
Flow, at Rep. Low Flow	Cold >2 cfs 0 Warm >5 cfs 0	1-2 cfs 6 2-5 cfs 6	.5-1 cfs 18 1-2 cfs (18)	<.5 cfs 24 <1 cfs 24
Pool/Riffle, Run/Bend Ratio (distance between riffles ÷ stream width)	5-7. Variety of habitat. Deep riffles and pools. 4	7-15. Adequate depth in pools and riffles. Bends provide habitat. (8)	15-25. Occasional riffle or bend. Bottom contours provide some habitat. 16	>25. Essentially a straight stream. Generally all flat water or shallow riffle. Poor habitat. 20
Aesthetics	Wilderness characteristics, outstanding natural beauty. Usually wooded or unpastured corridor. 8	High natural beauty. Trees, historic site. Some development may be visible. 10	Common setting, not offensive. Developed but uncluttered area. (14)	Stream does not inhance aesthetics. Condition of stream is offensive. 16
Column Totals:	8	45	63	48

Column Scores E 8 +G 45 +F 63 +P 48 = 164 = Score

<70 = Excellent, 71-129 = Good, 130-200 = Fair, >200 = Poor

FIELD MEASUREMENTS

D.O._____ TEMP_____ pH_____ AVG WIDTH_____

AVG DEPTH_____ FLOW MEAS_____ LENGTH OF SEGMENT_____

OBSERVATIONS SCARCE (S), COMMON (C), ABUNDANT (A)

SLUDGE_____ MUD_____ MACROPHYTES_____ SLIMES_____

FILAMENTOUS ALGAE_____ LITTER & DETRITUS_____

PLANKTONIC ALGAE_____ IRON BACTERIA_____ TURBIDITY_____

COMMENTS:

EXTERNAL IMPACTS SEVERE (S), MODERATE (M), LIGHT (L)

AGRICULTURAL_____ CHANNELIZATION_____ CONSTRUCTION_____

STORM SEWERS_____ POINT SOURCES_____

COMMENTS:

BIOTA	HBI	FBI	OTHER
MACROINVERTEBRATES	_____	_____	
FISH OBSERVED			
WILDLIFE USES			

WATER CHEMISTRY

BOD5_____ TOT P_____ CHLORIDE_____ LEAD_____ MFFC_____

DISS P_____ CADMIUM_____ MAGNESIUM_____ HARDNESS_____

MFFS_____ TOT D N_____ CALCIUM_____ MANGANESE_____

COPPER_____ NH3N_____ NICKLE_____ SUSP SOLIDS_____

NO2-N+NO3-N_____ ZINC_____ IRON_____

CLASSIFICATION

GREAT LAKES COMMUNITY_____ WARM WATER FORAGE_____

COLD WATER COMMUNITY_____ LIMITED FORAGE FISH_____

WARM WATER SPORT FISH_____ LIMITED AQUATIC LIFE_____

Department of Natural Resources

STREAM SYSTEM HABITAT RATING FORM

Form 3200-68 1-85

Stream MEEME R Reach Location CMX DOWNSTREAM Reach Score/Rating 153/FAIR

County MANITOWOC Date 8/14/90 Evaluator DNR Classification WWI FORAGE

Rating Item	Category			
	Excellect	Good	Fair	Poor
Watershed Erosion	No evidence of significant erosion. Stable forest or grass land. Little potential for future erosion. 8	Some erosion evident. No significant "raw" areas. Good land mgmt. practices in area. Low potential for significant erosion. (10)	Moderate erosion evident. Erosion from heavy storm events obvious. Some "raw" areas. Potential for significant erosion. 14	Heavy erosion evident. Probable erosion from any run off. 16
Watershed Nonpoint Source	No evidence of significant source. Little potential for future problem. 8	Some potential sources (roads, urban area, farm fields). (10)	Moderate sources (small wetlands, tile fields, urban area, intense agriculture). 14	Obvious sources (major wetland drainage, high use urban or industrial area, feed lots, impoundment). 16
Bank Erosion, Failure	No evidence of significant erosion or bank failure. Little potential for future problem. (4)	Infrequent, small areas, mostly healed over. Some potential in extreme floods. 8	Moderate frequency and size. Some "raw" spots. Erosion potential during high flow. 16	Many eroded areas. "Raw" areas frequent along straight sections and bends. 20
Bank Vegetative Protection	90% plant density. Diverse trees, shrubs, grass. Plants healthy with apparently good root system. (6)	70-90% density. Fewer plant species. A few barren or thin areas. Vegetation appears generally healthy. 9	50-70% density. Dominated by grass, sparse trees and shrubs. Plant types and conditions suggest poorer soil binding. 15	<50% density. Many raw areas. Thin grass, few if any trees and shrubs. 18
Lower Bank Channel Capacity	Ample for present peak flow plus some increase. Peak flow contained. W/D ratio <7. (8)	Adequate. Overbank flows rare. W/D ratio 8-15. 10	Barely contains present peaks. Occasional overbank flow. W/D ratio 15-25. 14	Inadequate, overbank flow common. W/D ratio >25. 16
Lower Bank Deposition	Little or no enlargement of channel or point bars. 6	Some new increase in bar formation, mostly from coarse gravel. 9	Moderate deposition of new gravel and coarse sand on old and some new bars. 15	Heavy deposits of fine material, increased bar development. (18)
Bottom Scouring and Deposition	Less than 5% of the bottom affected by scouring and deposition. 4	5-30% affected. Scour at constrictions and where grades steepen. Some deposition in pools. (8)	30-50% affected. Deposits and scour at obstructions, constrictions and bends. Some filling of pools. 16	More than 50% of the bottom changing nearly year long. Pools almost absent due to deposition. 20
Bottom Substrate/ Available Cover	Greater than 50% rubble, gravel or other stable habitat. 2	30-50% rubble, gravel or other stable habitat. Adequate habitat. (7)	10-30% rubble, gravel or other stable habitat. Habitat availability less than desirable. 17	Less than 10% rubble gravel or other stable habitat. Lack of habitat is obvious. 22
Avg. Depth Riffles and Runs	Cold >1' 0 Warm >1.5' 0	6" to 1' 6 10" to 1.5' 6	3" to 6" 18 6" to 10" (18)	<3" 24 <6" 24
Avg. Depth of Pools	Cold >4' 0 Warm >5' 0	3' to 4' 6 4' to 5' 6	2' to 3' 18 3' to 4' 18	<2' 24 <3' (24)
Flow, at Rep. Low Flow	Cold >2 cfs 0 Warm >5 cfs 0	1-2 cfs 6 2-5 cfs 6	.5-1 cfs 18 1-2 cfs (18)	<.5 cfs 24 <1 cfs 24
Pool/Riffle, Run/Bend Ratio (distance between riffles ÷ stream width)	5-7. Variety of habitat. Deep riffles and pools. 4	7-15. Adequate depth in pools and riffles. Bends provide habitat. (8)	15-25. Occasional riffle or bend. Bottom contours provide some habitat. 16	>25. Essentially a straight stream. Generally all flat water or shallow riffle. Poor habitat. 20
Aesthetics	Wilderness characteristics, outstanding natural beauty. Usually wooded or unpastured corridor. 8	High natural beauty. Trees, historic site. Some development may be visible. 10	Common setting, not offensive. Developed but uncluttered area. (14)	Stream does not inhance aesthetics. Condition of stream is offensive. 16
Column Totals:	18	43	50	42

Column Scores E 18 +G 43 +F 50 +P 42 = 153 = Score

<70 = Excellent, 71-129 = Good, 130-200 = Fair, >200 = Poor

FIELD MEASUREMENTS

D.O._____ TEMP_____ pH_____ AVG WIDTH_____

AVG DEPTH_____ FLOW MEAS_____ LENGTH OF SEGMENT_____

OBSERVATIONS SCARCE (S), COMMON (C), ABUNDANT (A)

SLUDGE_____ MUD_____ MACROPHYTES_____ SLIMES_____

FILAMENTOUS ALGAE_____ LITTER & DETRITUS_____

PLANKTONIC ALGAE_____ IRON BACTERIA_____ TURBIDITY_____

COMMENTS:

EXTERNAL IMPACTS SEVERE (S), MODERATE (M), LIGHT (L)

AGRICULTURAL_____ CHANNELIZATION_____ CONSTRUCTION_____

STORM SEWERS_____ POINT SOURCES_____

COMMENTS:

BIOTA	HBI	FBI	OTHER
MACROINVERTEBRATES	_____	_____	
FISH OBSERVED			
WILDLIFE USES			

WATER CHEMISTRY

BOD5_____ TOT P_____ CHLORIDE_____ LEAD_____ MFFC_____

DISS P_____ CADMIUM_____ MAGNESIUM_____ HARDNESS_____

MFFS_____ TOT D N_____ CALCIUM_____ MANGANESE_____

COPPER_____ NH3N_____ NICKLE_____ SUSP SOLIDS_____

NO2-N+NO3-N_____ ZINC_____ IRON_____

CLASSIFICATION

GREAT LAKES COMMUNITY_____ WARM WATER FORAGE_____

COLD WATER COMMUNITY_____ LIMITED FORAGE FISH_____

WARM WATER SPORT FISH_____ LIMITED AQUATIC LIFE_____

LAKE MICHIGAN District Biotic Index Report

HBI _ 6.214 Rep1 _ 0.000 Rep2 _ 0.000 Rep3 _____

Sample ID # _900814-36-01 Waterbody Name _MEEME R.

Water Temp (Celsius) _17.0___ Dissolved Oxygen (mg/l) _12.0 _

Sample Location: NE NE S16 T17N R22E_ Master Waterbody # _

Project Name _TRIENNIAL REVIEW Storet Station # _

Ave. Stream Width (Ft.) at Site _12.0 Ave. Stream Depth (Ft.) at Site _0.5

Collector _DOELGER, T. Field # 01 Rep 1_

Measured Velocity (fps) _

Sorter _ASCHENBACH, T. Est. Velocity (fps)

Est % of sample sorted _14

Taxonomist _DIMICK, J. _____

Sampled Habitat

Location Description _FIELD # MX - 50 FEET DOWNSTREAM OF _1. Riffle

_CTH X

_

Est. Time Spent Sampling (Min.) _ 5__

Sampling Device _1. D Frame

Substrate at Site Location (%)

0.0 Bedrock	30.0 Rubble	5.0 Sand	0.0 Clay	0.0 Muck
0.0 Boulders	50.0 Gravel	15.0 Silt	0.0 Detritus	0.0 Debris/Veg

Substrate Sampled (%) (Same as above No_)

0.0 Bedrock	0.0 Rubble	0.0 Sand	0.0 Clay	0.0 Muck
0.0 Boulders	0.0 Gravel	0.0 Silt	0.0 Detritus	0.0 Debris/Veg

Aquatic Vegetation 0 % of Total Stream Channel at Sampling Site

Observed Instream Water Quality Indicators (Perceived WQ _____)

	Not Present	Insig-nificant	Sig-nificant	Comments
Turbidity	1			
Chlorine or Toxic Scour	1			
Macrophytes		2		
Filamentous Algae			3	
Planktonic Algae	1			
Slimes	1			
Iron Bacteria	1			

Factors Which May Be Affecting Habitat Quality

Sludge Deposits	1			
Silt and Sediment			3	UPSTREAM OF SITE
Channel Ditching	1			
Down/Up Stream Impoundment	1			
Low Flows		2		
Wetlands	1			

Pollutant Sources

Livestock Pasturing			3	
Barnyard Runoff		2		
Cropland Runoff		2		
Tile Drains		2		
Septic Systems	1			
Stream Bank Erosion				
Urban Runoff		2		
Construction Runoff	1			IN ISOLATED AREAS
Point Source(Specify Type)		2		
Other (Specify)				

*** TAXA ***	SPECIES	TAXONOMIC KEY USED	TOL VAL	ORGANISM ID	ORGANISM COUNT REP1	REP2	REP3
EPHEMEROPTERA							
BAETIDAE							
BAETIS	FLAVISTRIGA	*1	4.00	02010104	3	0	0
HEPTAGENIIDAE							
STENACRON	INTERPUNCTATUM	*2	7.00	02060501	2	0	0
TRICHOPTERA							
HYDROPSYCHIDAE							
CHEUMATOPSYCHE		*2	5.00	04040100	10	0	0
HYDROPSYCHE	BETTENI	*3	5.00	04040201	5	0	0
CERATOPSYCHE	BRONTA	*3	5.00	04040703	1	0	0
	SLOSSONAE	*3	4.00	04040706	27	0	0
COLEOPTERA							
ELMIDAE							
OPTIOSERVUS		*2	4.00	07020500	12	0	0
	FASTIDITUS	*1	4.00	07020501	1	0	0
STENELMIS	CRENATA	*4	5.00	07020601	3	0	0
DIPTERA							
CHIRONOMIDAE							
	PUPAE	*5		08050002	1	0	0
CRICOTOPUS		*2	7.00	08051300	2	0	0
	NR.BICINCTUS	*4	6.00	08051301	1	0	0
	SP.A	*4	6.00	08051304	1	0	0
MICROTENDIPES		*2	6.00	08053500	7	0	0
POLYPEDILUM	NR.CONVICTUM	*4	5.00	08055001	6	0	0
	NR.FALLAX	*4	4.00	08055002	2	0	0
CONCHAPELOPIA		*4	6.00	08058200	5	0	0
SIMULIIDAE							
SIMULIUM	VITTATUM	*6	7.00	08110217	1	0	0
TIPULIDAE							
DICRANOTA		*2	3.00	08140200	1	0	0
AMPHIPODA							
GAMMARIDAE							
GAMMARUS	PSEUDOLIMNAEUS	*7	4.00	09010201	3	0	0
ISOPODA							
ASELLIDAE							
ASELLUS	INTERMEDIUS	*8	9.00	10010101	75	0	0
GASTROPODA							
PHYSIDAE		*5		14040000	1	0	0
DECAPODA							
ASTACIDAE		*9		18010000	1	0	0

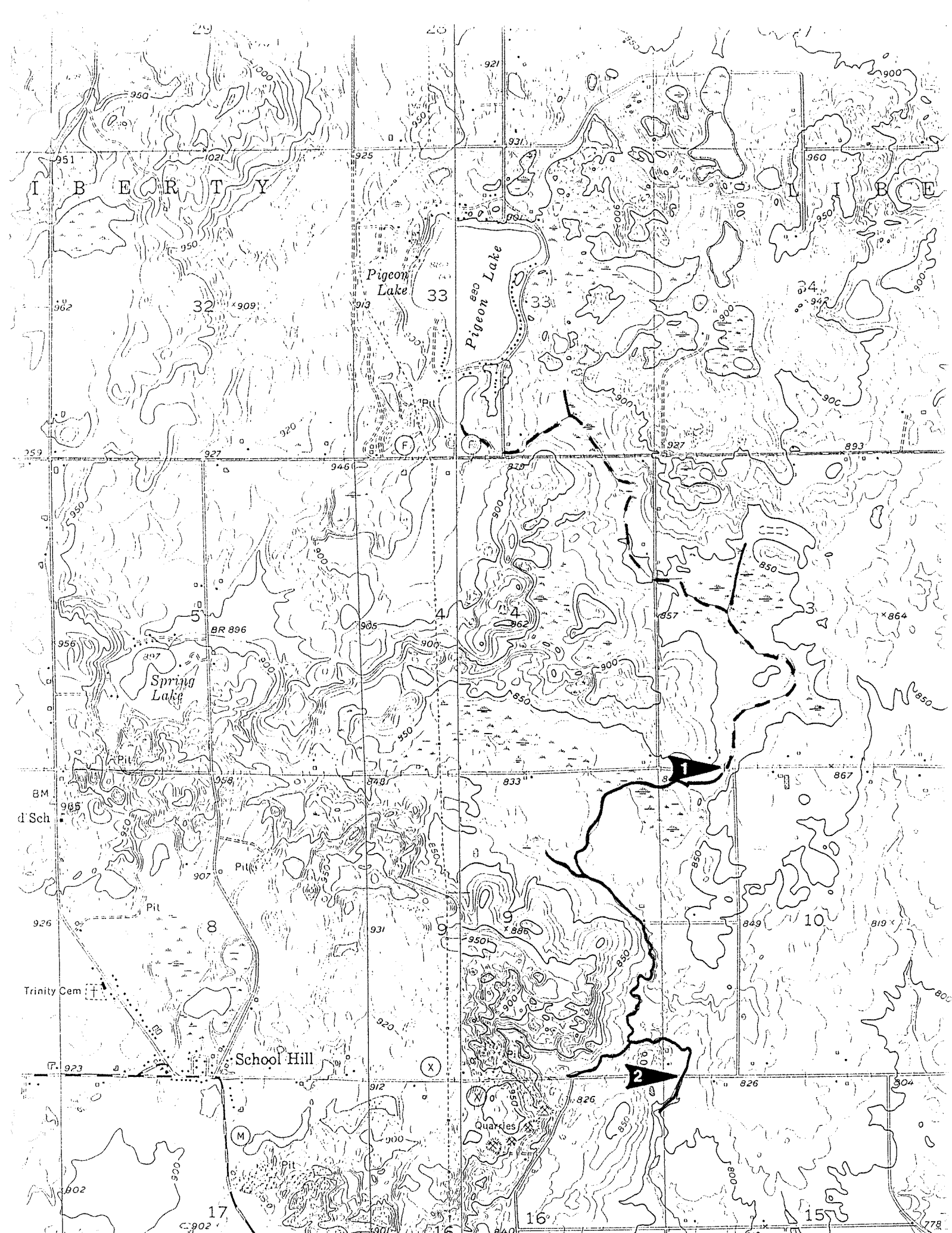
*** LAKE MICHIGAN DISTRICT BIOTIC INDEX REPORT ***

SAMPLE ID# 900814-36-01

*** TAXA *** SPECIES	TAXONOMIC KEY USED	TOL VAL	ORGANISM ID	ORGANISM COUNT REP1	REP2	REP3
*** TOTALS: ***				171		
					0	
						0
*** BIOTIC INDEX: ***				6.214		

Taxanomic Key Code References

*1	Hilsenhoff 1981,82
*2	Hilsenhoff 1981
*3	Hilsenhoff 1981,86
*4	Hilsenhoff 1981,85
*5	Pennak 1978
*6	Hilsenhoff 1985
*7	Holsinger 1972
*8	Williams 1972
*9	Hobbs & Jass 1988


I B E R T Y
L I B C E
Pigeon Lake
Pigeon Lake
Spring Lake
School Hill
Trinity Cem
Quarries
Pit
BR 896
1
2

CORRESPONDENCE/MEMORANDUM

STATE OF WISCONSIN

Date: April 11, 1978

File Ref: 3200
(Duane Schuettpelz

To: Central Office - Madison

DNR
APR 18 1978

From: Dennis C. Weisensel

Subject: Stream Classification - Town of Liberty Sanitary District - Manitowoc County - Meeme River

Meeme River was classified as Continuous-intermediate aquatic life variance to Spring Valley Dam. From Spring Valley Dam, the Meeme River was classified Continuous-fish and aquatic life.

An intermediate aquatic life variance was applied to the Meeme River from Pigeon Lake to Spring Valley Dam because it did not provide habitat for fish and a fishery could not be maintained in that area. Minimal aquatic life is present in the stream downstream to the Spring Valley Dam. The morphalogy of the stream does not provide sufficient year round habitat for sustaining an agreeable fishery. This is the primary reason an intermediate aquatic life variance was applied. The local Fish Manager (Brian Belonger) indicated that, some years, during high flows, northern pike may be carried out of Little Pigeon Lake and some spawning activities may occur. This may not occur every year.

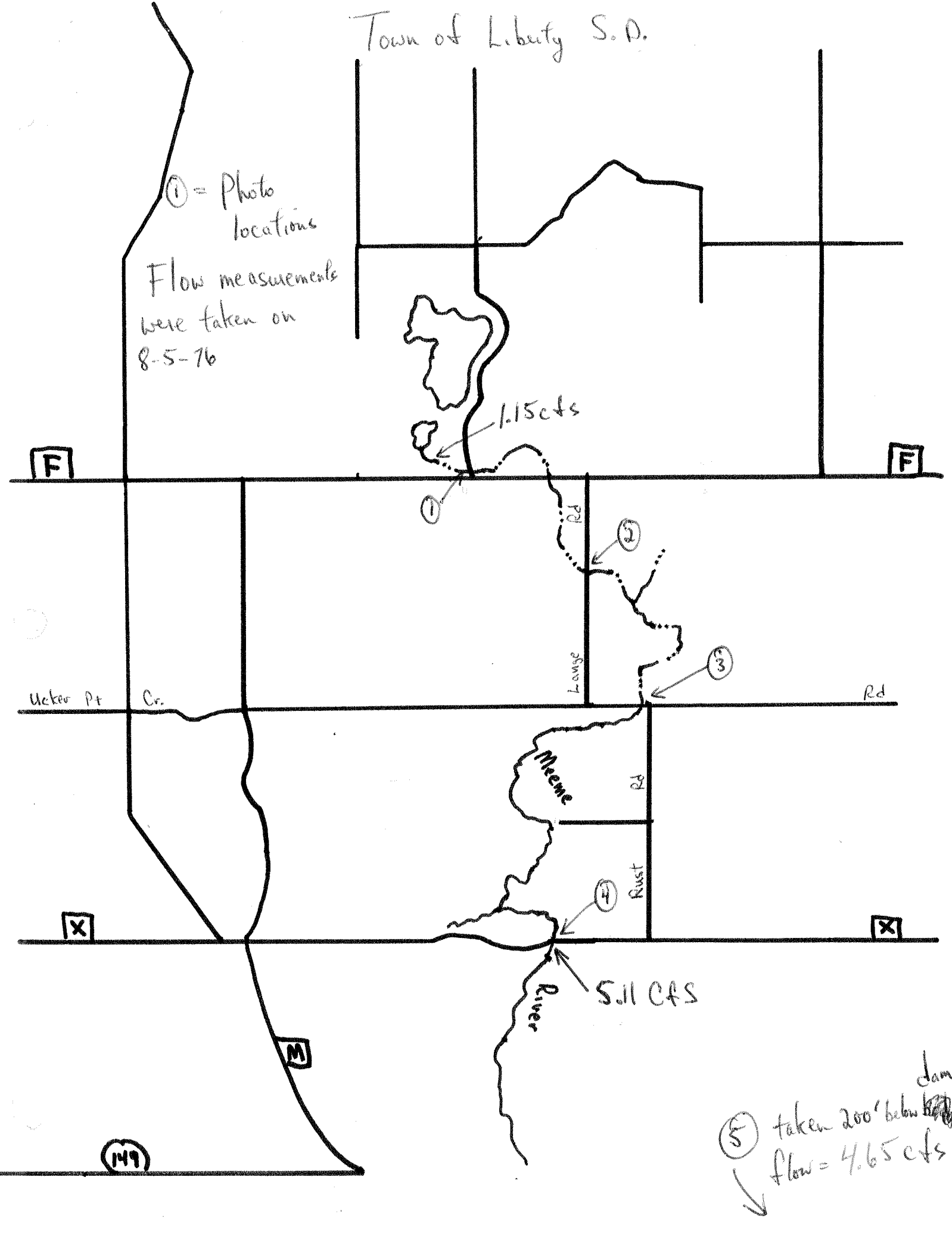
Should you have any comments or additional questions please contact me by April 25, 1978.

DCW:sh

cc: Bob Lucas

NOTED:

_____ Date_____


Town of Liberty S.D.
① = Photo locations
Flow measurements were taken on 8-5-76
1.15 cfs
F
F
①
Rd
②
Lange
③
Rd
Ucker Pt
Cr.
Meeme
Rd
Rust
④
X
X
5.11 CFS
River
M
149
dam
⑤ taken 200' below
flow = 4.65 cfs

— = Continuous, intermediate aquatic life

— = Continuous, fish and aquatic life

August 31, 1976

Survey Date: May 5, 1976

Town of Liberty Sanitary District - Manitowoc County

A treatment plant has been proposed for the Town of Liberty Sanitary District to serve development around Pigeon Lake and Little Pigeon Lake. The only stream in the area is the Meeme River which originates at the outlet of Little Pigeon Lake. This stream flows over a moderate gradient in a southeast direction and meets the Pigeon River near the county line.

At the outlet, the stream was about 2 feet wide and one foot deep with muck and gravel as the principle bottom materials. Several intermittent tributaries influence the river downstream. Flow measurements taken on August 5, 1976 are indicated on the map. The fishery below the Spring Valley Dam consists of northern pike and suckers with a fall trout and salmon run.

Recommendation:

Continuous, intermediate aquatic life from Little Pigeon Lake outlet to Spring Valley Dam. Continuous, fish and aquatic life from Spring Valley Dam to Pigeon River.

Robert B. Lucas

Dennis C. Weisenel

Town of Liberty S.O.

#1 Meeme River — Near outlet of Little Pigeon Lake

#2 About 1½ Miles SE of outlet

#3 About 1½ miles SE of outlet

#4 Downstream view from CTH "X"

#5 Upstream view from approx 200' below Spring Valley Dam