

Region SCR County Grant Report Date 10/1991 Classification 2WNFF
 Water Body: Potosi Creek
 Discharger: Potosi 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:

10/1991 - Roger Schlessner

Additional Comments/How to improve report:

- report states that WNFF is appropriate - is this right?
- check w/ region

POTOSI CREEK (9 - 3)
AT POTOSI, GRANT COUNTY

STREAM CLASSIFICATION
POTOSI WWTP

OCTOBER, 1991

ROGER SCHLESSER, SOUTHERN DISTRICT

BUREAU OF WATER RESOURCES MANAGEMENT
WISCONSIN DEPARTMENT OF NATURAL RESOURCES

SUMMARY

The Village of Potosi has considered a relocation of their discharge to Potosi Cr. (9-3) which flows adjacent to their present WWTF. Physical, chemical, and biological data collected indicate that Potosi Cr. (9-3) should be classified as a Warm Water Forage Fish Community (WWFF).

GENERAL DESCRIPTION

The Potosi WWTF is located on the southern edge of the Village adjacent to STH "133". STH "133" travels essentially northeast to southwest through the Village of Potosi and is crossed by Potosi Cr. twice by the WWTF. STH "133" makes an abrupt turn to the west as it approaches the Mississippi River. This is the last crossing by Potosi Cr. before it enters the backwaters and the Mississippi River Channel.

STREAM HABITAT AND BIOLOGY

Most of Potosi Cr. is lined by houses and businesses which make up the Village of Potosi. Land adjacent to the Village is very steep wooded hillsides. Some farmland or pasture is present in the headwaters and at the mouth of the stream.

Biological and water quality data were collected on Potosi Cr. between the STH "133" bridges adjacent to the WWTF on June 24, 1991 and October 15, 1991. Fish were collected in June using a backpack shocker (*Table II*). The sample consisted of Stickleback, Johnny Darters, Stonerollers, and Redbelly Dace. Historical data from Grant County also indicates that this stream is a forage fishery. Shortly before the June sampling, 7 inches of rain fell in the Potosi area. Much of the streambed had been relocated due to the storm events, which wreaked havoc on the biological community.

A macroinvertebrate sample was also collected in June (*Table I*). The sample was dominated by intolerant species. By this time of the year, most of the aquatic insects have emerged or are too small to identify. But the only "typical" families which weren't present in the sample were the mayflies.

Gammarus pseudolimnaeus does not emerge, so consequently it was present in high numbers. The Hilsenhoff Biotic Index was used to determine water quality based on the macroinvertebrate community. According to this index (4.596), Potosi Cr. had "good water quality."

Water quality samples were collected on both sampling dates, and the results are listed below.

Date:	6/24/91	10/15/91
Time:	11:20	11:55
Field pH:	8.23 s.u.	—
Lab ph:	8.20 s.u.	—
Field Temp:	14.7°C	—
Total P:	0.09 mg/l	0.06 mg/l
TKN:	<0.2 mg/l	<0.2 mg/l
NH ₃ -N:	0.03 mg/l	0.01 mg/l
NO ₂ -N+NO ₃ -N:	2.97 mg/l	1.37 mg/l
Ca:	80 mg/l	87 mg/l
Mg:	46 mg/l	50 mg/l
Hardness:	390 mg/l	420 mg/l
BOD ₅ :	<3 mg/l	—

According to the water chemistry data, the stream has very good water quality. Normal flow in the stream is probably somewhere between 0.35 cfs and 0.5 cfs. Historical data from Grant County indicated a metered flow of 0.369 cfs at the mouth in September, 1970. According to an estimate by USGS, the Q₇₁₀ is 0.15 cfs.

Fish habitat is lacking in the stream due mainly to its steep gradient (*100 feet/mile*). Most large storm events will cause significant movement of the substrate and infilling of the pools. The substrate adjacent to the WWTF is primarily boulder, rubble, and gravel. At the mouth of the stream, the gradient drops out and the substrate is primarily silt which was covered with aquatic macrophytes during the summer.

Even if the habitat is unstable, there is an abundant availability of macroinvertebrate living space. Bank stability is fair with an abundance of grass or woody vegetation in the lower section which provides some additional habitat.

STREAM CLASSIFICATION

According to the macroinvertebrate community and water chemistry results, Potosi Cr. (9-3) has good to very good water quality. The lack of good fish habitat restricts it from having an abundant forage fishery but intolerant species were present — even after recent storm events which dropped 7 inches of rain in the watershed. A diverse and abundant intolerant macroinvertebrate community was also still present. Stream flow is not large enough to support anything but a forage fishery, yet it is sufficient to support an intolerant macroinvertebrate community. Based on these conditions, it is recommended that Potosi Cr. (9-3) be classified as a Warm Water Forage Fish Community (WWFF).

RAS:kas

A\POTOSI.RAS

TABLE: I. Taxonomic List of Macroinvertebrates for 910624-22-01

Date: 6/24/91 Location: Potosi Creek, (9 - 3), Directly East of the WWTF.

<u>GENUS/SPECIES</u>	<u>INSECTS (n)</u>	<u>B.I. VALUE (a)</u>	<u>a x n</u>
Gammarus pseudolimnaeus	76	4	304
Stenelmis spp. (larvae)	1	5	5
Stenelmis crenata	1	5	5
Optioservus spp. (larvae)	2	4	8
Optioservus fastiditus	4	4	16
Dicranota spp.	1	3	3
Tipula spp.	1	4	4
Agabus spp.	(2)	-	-
Ceratopsyche slossane	7	4	28
Asellus intermedius	16	8	128
TOTAL	109		501

Biotic Index: 4.596; good, some organic pollution.

TABLE: II List of fish for sampling site: Adjacent to the Potosi WWTF

DATE: 6/24/91 Twn 2N Rng 3W Sec 4 1/4 1/4 SW SE STREAM: Potosi Creek (9-3)

Station mileage: N/A County: 22

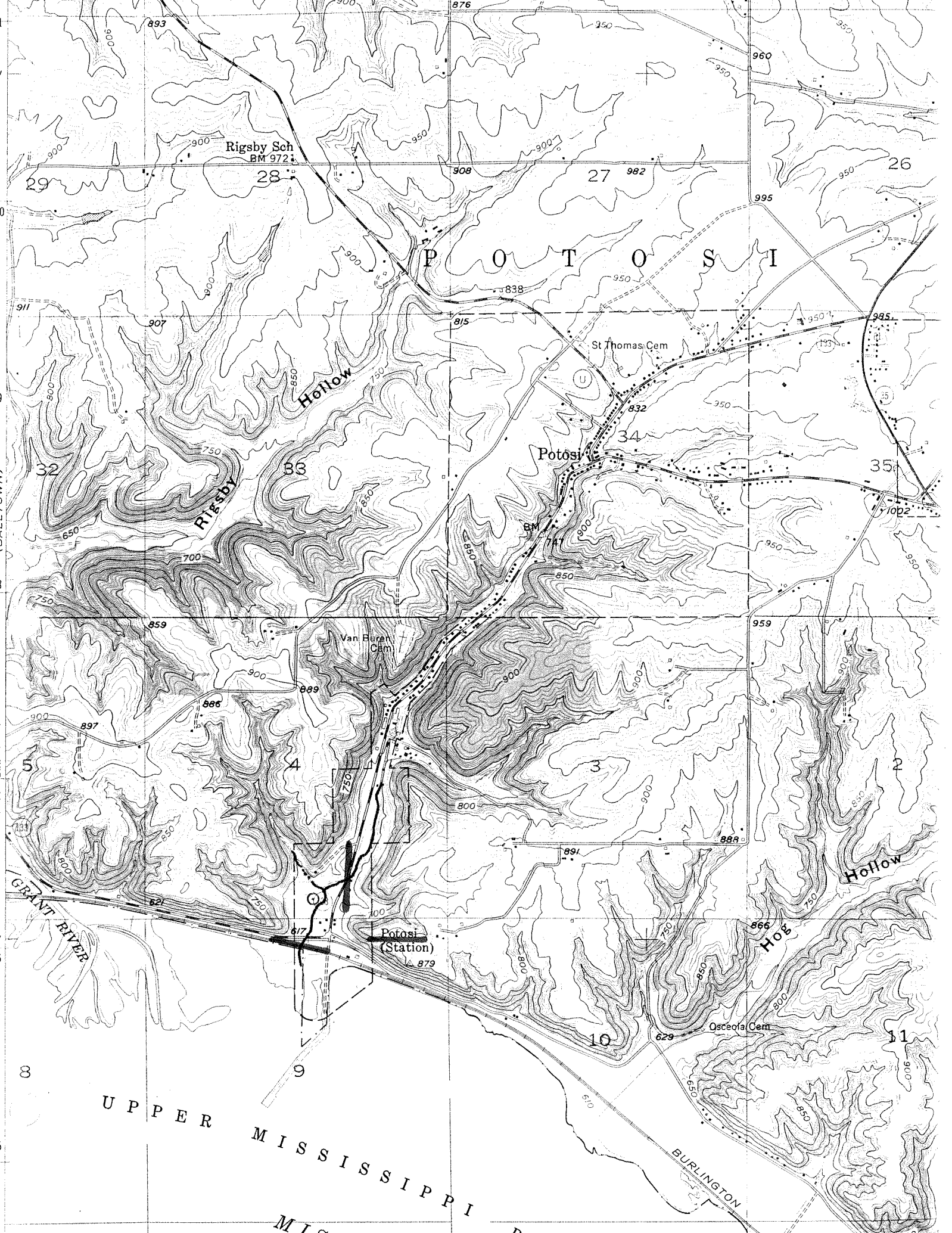
SOURCE OF DATA: WRM GEAR: 3 EFFORT: 01

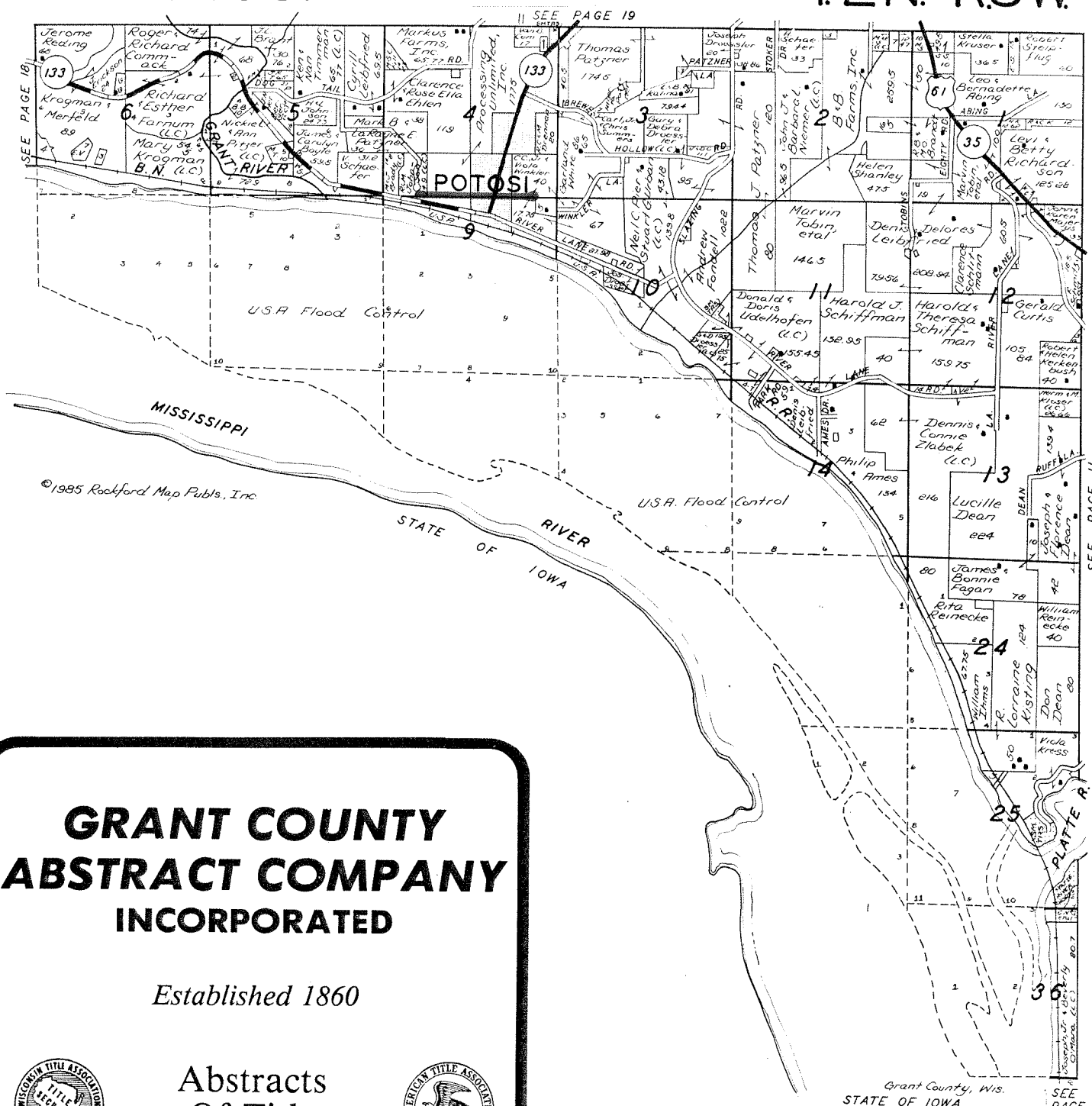
CODE	COMMON NAME	FAMILY	GENUS/SPECIES	# FISH	TOLERANCE LEVEL
M05	STONEROLLERS	CYPRINIDAE	Campostoma spp.	3	Intolerant
M43	SOUTHERN REDBELLY DACE	CYPRINIDAE	Phoxinus erythrogaster	1	Intolerant
U01	BROOK STICKLEBACK	GASTEROSTEIDAE	Culaea inconstans	13	Tolerant
X12	JOHNNY DARTER	PERCIDAE	Etheostoma nigrum	3	Tolerant

Stream Potosi (9-3) Reach Location Adjacent to and upstream of the WWF Reach Score/Rating 192/Fair
 County Grant Date 11/15/91 Evaluator R. Schlessner Classification WWFF

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. (10)	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. (11)	<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. (13)	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 un-pastured 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 enhance aesthetics. Condition of stream is offensive. 16
Column Totals:	— 27 93 72			

Column Scores E 0 + G 27 + F 93 + P 72 = 192 = Score





GRANT COUNTY ABSTRACT COMPANY INCORPORATED

Established 1860



Abstracts
Of Title
Title Insurance



Phone: (608) 723-4192

Box 71 - 138 South Madison Street
Lancaster, Wisconsin 53813

Homer D. Ralph, President

METCALFE-KUENSTER FUNERAL HOMES

POTOSI • 763-2281
CASSVILLE • 725-5790
BLOOMINGTON • 994-2796
LANCASTER • 723-6381

Serving All Faiths



Potosi WWTW



Potosi Creek (9-3)

Adjacent to the WWTW



Potosi Creek (9-3)

Adjacent to the WWTW



Potosi Creek (9-3)

Adjacent to the WWTF



Potosi Creek (9-3)

Adjacent to the WWTF



Potosi Creek (9-3)

Adjacent to the WWTF