

MINNESOTA DEPARTMENT OF NATURAL RESOURCES

RIVER OR STREAM SURVEY

DATE(S) OF FIELD WORK 8/25, 8/26, 8/31/81

Initial Survey ☐  
Resurvey ☒

LEADER Richard Thompson  
ASSISTANT(S) Steve Hirsch

NAME, LOCATION, AND FLOW CHARACTERISTICS

- (1) Stream Name Wyman Creek  
(2) Alternate Name(s) None  
(3) Tributary Number S-2-57-3  
(4) Counties St. Louis  
(5) Watershed Name and Number St. Louis 1  
(6) Sequence of Waterways to Basin To Partridge River to St. Louis River to Lake Superior to St. Lawrence River.  
(7) Map(s) Used U.S.G.S. Quadrangle: Allen, Minn, 1962 (photo-revised 1969)  
(8) Length of Stream 9.4 miles (main stream plus west fork)  
(9) Average Width — Upper Station .5 feet Lower Station 14.6 feet  
(10) Mouth Location T. 58N R. 14W S. 4  
(11) Flow at Mouth No Data cfs, Date \_\_\_\_\_  
(12) Flow at Gaging Station — Minimum \_\_\_\_\_ cfs Average \_\_\_\_\_ cfs  
(13) Location of Gaging Station \_\_\_\_\_  
(14) Initial Source of Sustained Flow Springs in cedar-spruce bog, T. 59; R. 14; S. 11.  
(15) Gradient 17.3 ft/mile  
(16) Sinuosity 1.7

WATERSHED DESCRIPTION AND USE

(17) Description of Watershed (soil types, cover types, topography, land usage and ownership)

- a) Entire watershed The area surrounding the creek varies between large flat bogs to rather flat forested terrain. Lowland cover is alder, shrubs and grasses some spruce and cedar. Upland is mainly birch, aspen and balsam. Soils are mainly sand and gravel. The creek skirts Erie Mining Company dump and #2 pit in the upper stretches.
- b) Land adjacent to stream Ownerships 10% private, 35% Erie Mining, 45% federal, and 10% state. Vegetative cover is about 90% trees and shrubs, 10% open bogs.

# GENERAL INFORMATION ON THE STREAM

(18) Reason for Survey Inventory purposes and to determine its suitability for improvement work.

(19) Previous Investigations and Surveys Survey September 11, 1968

(20) Special Problems or Conditions Beaver activity has caused siltation in several areas. Station #4 and below tributary #2 stream choked with filamentous algae and covered with iron precipitate.

## (21) Sources of Pollution

Source	Loc. (mi. from mouth)	Substance discharged
Tributary #2	1.5 miles	Iron precipitate
Ground Water (natural)	7.5 miles	Iron precipitate

## (22) Erosion

Type	Degree	Affected reach
None		

(23) Stream Alterations (dredging, channeling) — location and date None

## (24) Dams and other obstructions (include beaver dams)

Type	Mi. from Mouth	Head	Length of Dam	Type of Control Structure	Use	Fish Barrier	Owner	Condition or Status
Beaver Dam	6.3	1.5'	Extensive	-	-	yes	-	Active
Beaver Dam	2.3	1'	6'	-	-	yes	-	Active
Beaver Dam	2.2	1'	8'	-	-	yes	-	Active
Beaver Dam	2.1	1'	6'	-	-	yes	-	Active
Beaver Dam	.9	2'	Extensive	-	-	yes	-	Active

(25) Use of Water: Fishing XX Recreation \_\_\_\_\_ Commercial navigation \_\_\_\_\_ Power \_\_\_\_\_ Irrigation \_\_\_\_\_  
Livestock watering \_\_\_\_\_ Other (specify) Erie Mining is using stream to discharge water from old mine

(26) Access (location and ownership) The stream is accessible from Erie Mining, Forest Road #117 and County Road #110.

(27) Shoreline Developments Stream goes through Erie Mining's complex. At upper end, it skirts a mine dump and flows under a dike and road.

(28) Recreational Boating — a) Navigable reach None  
b) Type of boating None



$\frac{1}{2}$        $\frac{1}{2}$   
 $\frac{1}{2}$        $\frac{1}{2}$

a)	Station no.	1	1-a	*2	3
b)	Date	8/31/81	8/31/81	8/31/81	8/31/81
c)	Loc. (mi. from mouth)	.5	1.1	1.4	2
d)	Length of station	661 feet	100 feet	325 feet	775 feet
e)	% of station in:				
	Pools	7%	No	-	-
	Riffles and rapids	82%	Data	-	-
	Runs	11%		100%	100%
	Other (list)				
f)	Average width (ft.)	14.6'		3'	9.5'
g)	Average depth (ft.)	.7'		.6'	1'
h)	Flow (cfs)	Not Measurable		.4 cfs	9 cfs
i)	High water mark	1' above present		-	1' above present
j)	Present stream stage (high, normal, low)	Normal		Normal	Normal
k)	Banks:				
	Average height	1.5'		1.5'	1.5'
	Height range	1.5' - 3'		1' - 2'	1' - 3'
	Erosion (lt., mod., severe)	Light		Light	Light
	% grazed				
	% ditched or channeled				
l)	Shade <sup>1</sup>	Light		Heavy	Light
m)	Pools <sup>2</sup>				
	Average width	12.5'		N.A.	
	Width range				
	Average depth	1.4'			
	Maximum depth	1.8'			
	Type -- No. of each				
	A				
	B				
	C				
	D	1			
	Bottom type -- % <sup>3</sup>				
	Boulder	20%			
	Rubble	60%			
	Gravel	10%			
	Muck	10%			
n)	Riffles and rapids			N.A.	
	Average width	15.2'			
	Width range	6.1' - 22'			
	Average depth	.6'			
	Maximum depth	1.3'			
	Max. velocity range (fps)	No Information			
	Bottom type -- %				
	Boulder	80%			
	Rubble	20%			

(30) Stream Physical Characteristics

a)	Station no.	4	5		
b)	Date	8/31/81	8/31/81		
c)	Loc. (mi. from mouth)	6.6	7.5		
d)	Length of station	275 feet	200 feet		
e)	% of station in:				
	Pools				
	Riffles and rapids	36%			
	Runs	64%			
	Other (list)		100%		
f)	Average width (ft.)	9.4	.5		
g)	Average depth (ft.)	.8	.1		
h)	Flow (cfs)	20.4	Not Measurable		
i)	High water mark	1' above present	Present level		
j)	Present stream stage (high, normal, low)	Normal	Normal		
k)	Banks:				
	Average height	1.3'	.5'		
	Height range	1' - 1.5'	-		
	Erosion (lt., mod., severe)	Light	-		
	% grazed				
	% ditched or channeled				
l)	Shade <sup>1</sup>	Moderate	Heavy		
m)	Pools <sup>2</sup>				
	Average width				
	Width range				
	Average depth				
	Maximum depth				
	Type -- No. of each				
	A				
	B				
	C				
	D				
	Bottom type -- % <sup>3</sup>				
n)	Riffles and rapids				
	Average width	9.5'			
	Width range	-			
	Average depth	.5'			
	Maximum depth	.6'			
	Max. velocity range (fps)	No Data			
	Bottom type -- %				
	Boulder	70%			
	Rubble	30%			

(30) Stream Physical Characteristics (continued)

	1	1-a	*2	3
o) Runs:				
Average width	9.5'		3.2'	9.5'
Width range	6' - 14'		1.8' - 5.5'	6' - 14'
Average depth	1'		.6'	1'
Maximum depth	1.5'		1'	1.5'
Max. velocity range (fps)	No Data		No Data	No Data
Bottom type -- %				
Boulder	70%		5%	15%
Rubble	30%		15%	15%
Gravel			30%	10%
Sand			25%	10%
Muck			25%	50%
Other (describe)				
Average width				
Width range				
Average depth				
Maximum depth				
Max. velocity range (fps)				
Bottom type -- %				
DATA PERTAINING TO SIMILAR REACH				
q) Location (mi. to mi.)	0 - 1	1 - 1.9	.6 - 2.3	1.9 - 5.1
r) Gradient (ft./mi.)	36 ft/mi	24 ft/mi	17 ft/mi	13 ft/mi
s) Sinuosity	1.3	1.2	1	1.3
t) Channel changes (slight, mod., exten.)	None	None	None	None

Remarks <sup>channel</sup> \* Station #2 is located on the west of Wyman Creek. Location is measured from mouth.

<sup>1</sup>Shade:

light 0-25 percent shaded  
moderate 26-75 percent shaded  
heavy over 75 percent shaded

<sup>2</sup>Pool types:

Type A -- Good cover, 3 ft. or deeper  
B -- Good cover, less than 3 ft.  
C -- Poor cover, 3 ft. or deeper  
D -- Poor cover, less than 3 ft.

<sup>3</sup>Bottom types:

Ledge rock -- large mass of solid rock  
Boulder -- over 10" in diameter  
Rubble -- 3" to 10" in diameter  
Gravel -- 1/8" to 3" in diameter  
Sand -- less than 1/8" in diameter  
Silt -- fine material with little grittiness  
Clay -- compact, sticky material  
Muck -- decomposed organic material, usually black  
Detritus -- organic material composed of sticks, leaves, decaying plants, etc.  
Marl -- calcareous material

(30) Stream Physical Characteristics (continued)

4

\*5

o) Runs:			
Average width	9.4'		
Width range	8.5'-10'		
Average depth	.9'		
Maximum depth	1.3'		
Max. velocity range (fps)	No Data		
Bottom type — %			
Boulder	60%		
Rubble	40%		
Other (describe)			
Average width			
Width range			
Average depth			
Maximum depth			
Max. velocity range (fps)			
Bottom type — %			
DATA PERTAINING TO SIMILAR REACH			
q) Location (mi. to mi.)	5.1 - 6.7	6.7 - 7.7	
r) Gradient (ft./mi.)	34 ft/mi	20 ft/mi	
s) Sinuosity	1.3	1.1	
t) Channel changes (slight, mod., exten.)	None	None	

Remarks \* Station #5 stream is very small and disappears underground frequently.

<sup>1</sup>Shade:

light 0-25 percent shaded  
moderate 26-75 percent shaded  
heavy over 75 percent shaded

<sup>2</sup>Pool types:

Type A — Good cover, 3 ft. or deeper  
B — Good cover, less than 3 ft.  
C — Poor cover, 3 ft. or deeper  
D — Poor cover, less than 3 ft.

<sup>3</sup>Bottom types:

Ledge rock — large mass of solid rock  
Boulder — over 10" in diameter  
Rubble — 3" to 10" in diameter  
Gravel — 1/8" to 3" in diameter  
Sand — less than 1/8" in diameter  
Silt — fine material with little grittiness  
Clay — compact, sticky material  
Muck — decomposed organic material, usually black  
Detritus — organic material composed of sticks, leaves, decaying plants, etc.  
Marl — calcareous material

(31) Characteristics of Water

a)	Station no.	1.	1-a	2	3
b)	Date	8/25/81	8/25/81	8/25/81	8/25/81
c)	Loc. (mi. from mouth)	.5	1.1	1.4	2
d)	Length of station	661 feet	100 feet	325 feet	775 feet
e)	Time	11:30	2:00	12:30	10:00
f)	Air temp. °F.	71°	71°	71°	71°
g)	Water temp. °F.	66°	66°	63°	64°
h)	Color	Brown	Brown	Brown	Clear
i)	Cause of color	Iron Precipitate	Iron Precipitate	Iron Precipitate	
j)	Secchi disc. (ft.)				
FIELD DETERMINATIONS:					
	Diss. oxygen (ppm)	5 ppm	5 ppm	3 ppm	9 ppm
	Free carbon dioxide (ppm)	15 ppm	10 ppm	15 ppm	15 ppm
FIELD DETERMINATION OR LABORATORY ANALYSIS (Indicate by F or L)					
	Total alkalinity (ppm)	103 ppm	103 ppm	137 ppm	103 ppm
	Conductivity (micromhos/cm) Chart	125 mic/cm	125 mic/cm	185 mic/cm	125 mic/cm
	pH	7	7	6.9	7.3
LABORATORY ANALYSIS					
	Total nitrogen (ppm)				
	NH <sub>3</sub> (ppm)				
	NO <sub>2</sub> (ppm)				
	NO <sub>3</sub> (ppm)				
	Total phosphorus (ppm)				
	Orthophosphates (ppm)				
	Sulfate ion (ppm)				
	Chloride ion (ppm)				
	B.O.D. (ppm)				
	or C.O.D. (ppm)				
	Turbidity (JTU)				
	Tot. diss. solids (ppm)				

Remarks Iron precipitate in suspension causing brownish colored water in Station #1 and 4. Some precipitate in 1-a and 2.



(31) Characteristics of Water

a)	Station no.	4	5		
b)	Date	8/25/81	8/25/81		
c)	Loc. (mi. from mouth)	6.6	7.6		
d)	Length of station	275 feet	200 feet		
e)	Time	12:30	11:00		
f)	Air temp. °F.	73°	69°		
g)	Water temp. °F.	63°	58°		
h)	Color	Orange	Clear		
i)	Cause of color	Iron Precipitate -			
j)	Secchi disc. (ft.)				
FIELD DETERMINATIONS:					
	Diss. oxygen (ppm)	3 ppm	5 ppm		
	Free carbon dioxide (ppm)	No Test Taken	15 ppm		
FIELD DETERMINATION OR LABORATORY ANALYSIS (Indicate by F or L)					
	Total alkalinity (ppm)	137 ppm	120 ppm		
	Conductivity (micromhos/cm)	185 mic/cm	160 mic/cm		
	pH	7.1	6.8		
LABORATORY ANALYSIS					
	Total nitrogen (ppm)				
	NH <sub>3</sub> (ppm)				
	NO <sub>2</sub> (ppm)				
	NO <sub>3</sub> (ppm)				
	Total phosphorus (ppm)				
	Orthophosphates (ppm)				
	Sulfate ion (ppm)				
	Chloride ion (ppm)				
	B.O.D. (ppm)				
	or C.O.D. (ppm)				
	Turbidity (JTU)				
	Tot. diss. solids (ppm)				

Remarks \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Remarks \_\_\_\_\_

A — abundant  
C — common  
O — occasional  
R — rare  
P — present

a)	Station no.	4	5	
b)	Date	8/25/81	8/25/81	
c)	Loc. (miles from mouth)	6.6	7.5	
d)	Length of station	275 feet	200 feet	

f) Distribution of aquatic plants Filamentous algae distributed throughout Station #4. Other plants scattered.

[illegible]

A — abundant  
C — common  
O — occasional  
R — rare  
P — present

[illegible]

Species:

[illegible]

Remarks \*Water too deep for effective shocking.

[illegible]

Species:

[illegible]

Remarks

Species Total Length in Inches	Brook Trout	White Sucker	Yellow Perch	North- ern Pike	Burbot				
3.0 - 3.4									
3.5 - 3.9									
4.0 - 4.4			1		1				
4.5 - 4.9									
5.0 - 5.4		1							
5.5 - 5.9									
6.0 - 6.4		3			1				
6.5 - 6.9		2			1				
7.0 - 7.4		2							
7.5 - 7.9		1							
8.0 - 8.4		7							
8.5 - 8.9	1	1							
9.0 - 9.4	3	6		1	1				
9.5 - 9.9	1	2							
10.0 - 10.4	1								
10.5 - 10.9									
11.0 - 11.4									
11.5 - 11.9									
12.0 - 12.4									
12.5 - 12.9									
13.0 - 13.4									
13.5 - 13.9									
14.0 - 14.9									
15.0 - 15.9									
16.0 - 16.9									
17.0 - 17.9									
18.0 - 18.9									
19.0 - 19.9									
20.0 - 20.9									
21.0 - 21.9									
22.0 - 22.9									
23.0 - 23.9									
24.0 - 24.9									
25.0 - 25.9									
26.0 - 26.9									
27.0 - 27.9									
28.0 - 28.9									
29.0 - 29.9									
30.0 - 30.9									
31.0 - 31.9									
32.0 - 32.9									
33.0 - 33.9									
34.0 - 34.9									
35.0 - 35.9									
Totals	6	25	1	1	4				

(37) Escape Cover for Gamefish

No. Miles	Similar reach	Type <sup>1</sup> and Amount <sup>2</sup> of Cover
1 (0-1)		B-0; IV-0; LJ-S
1a(1-1.9)		IV-F
2 (.6-2.3)		OV-0
3 (1.9-5.1)		B-F; VB-F; LJ-0
4 (5.1-6.7)		VB-0
5 (6.7-7.7)		VB-0

<sup>1</sup>Cover types:

LJ — log jam  
B — boulders  
OV — overhanging vegetation  
UB — undercut bank  
IV — instream vegetation

<sup>2</sup>Amount of cover:

S — scarce  
O — occasional  
F — frequent

(38) Portion of Stream Suitable for Gamefish

Species	No. Miles	Suitable Reach (mi. to mi.)
Brook Trout	1 (0-1) - Good	
	1a(1-1.9) - Good	
	2 (.6-2.3) West CHANNEL - Poor - low oxygen	
	3 (1.9-5.1) - Very Good	
	4 (5.1-6.7) - Poor - Low oxygen	
	5 (6.7-7.7) - Poor	

(39) History of Stream and Fishing Conditions

- a) Comparisons with past investigations and surveys The 1968 survey compares favorably to the data accumulated in this survey. Stream temperature runs 10-15 higher in this survey but could be due to lower evening temperatures common later in September when the 1968 survey was run. 1968 survey 1 trout for 350' sampled. 1981 survey 6 trout for 850' sampled. There is no note of iron precipitate in 1968 survey as was found in this survey.
- b) History of fishing conditions According to an individual that has fished the stream for many years mile (1.9-5.1) has been very good for brook trout with some success down stream. He said beaver activity has caused a decline in success.



- a) General characteristics Brook trout is the most commonly sought after fish in this stream. According to local reports fishing intensity is light and the quality of fishing has decreased in the past.

(40) Discussion of Fishery (continued)

b) Fish management problems Beaver activity has caused excessive siltation in similar reach #3. Stream bed is blocked with boulders in reach #1 and 1a blocking fish movement. Thick alder growth has limited access in reach #1a and upper section of #3. The lower section of reach #3 has been brushed providing good access.

(41) Ecological Classification of Waterway Similar reach #1, 1a, 3, 4 - Class I-C; similar reach #2, 5 Class I-D

(42) Summary Wyman Creek is a spring fed trout stream originating in a low cedar-spruce bog flowing 9.4 miles south into the Partridge River. The stream flows through the Erie Mining complex then into a low bog area surrounded by rolling upland forest. Bottom types are hard (gravel, rubble, boulders) but in some areas covered with muck. Water temperatures vary from 58° at the source to 67° down stream. Brook trout were found in the lower reaches of the stream. Beaver control could improve the stream by reducing siltation and impounding of water. Some stream improvement would be beneficial to improve cover and the number of pools. In several areas, boulders and rubble block the stream for some distance-improvement in this area would allow fish movement and provide additional room for trout to inhabit.

(43) Credits and Signatures

a) Funding U. S. Forest Service - National Forest Fish Management Program

b) Field work by  
Name of crew leader Richard Thompson  
Name of aide(s) Steve Hirsch

c) Completed report by  
Name Richard Thompson  
Title N. R. Specialist II

Approved by \_\_\_\_\_ Date \_\_\_\_\_

Regional Fisheries Manager

Typist's Initials:

MINNESOTA DEPARTMENT OF NATURAL RESOURCES  
FISHERIES RECOMMENDATIONS FOR STREAM MANAGEMENT

Stream name Wyman Creek  
Alternate name None  
Tributary no. S-2-57-3 Date \_\_\_\_\_  
Reach (mi. to mi.) \_\_\_\_\_  
Counties St. Louis

Management recommendations:

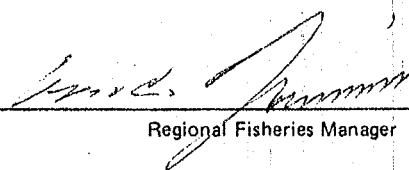
Stocking Continue present annual stocking of brook trout. Stock 800 yearlings annually and 750 fingerlings annually. With stream banks brushed out, stocking should be done at more locations.

Habitat Improvement Should funds become available, stream improvement should be done. Beaver dams removed, construction done to allow for more cover and pools, and remove large boulders that restrict the stream flow.

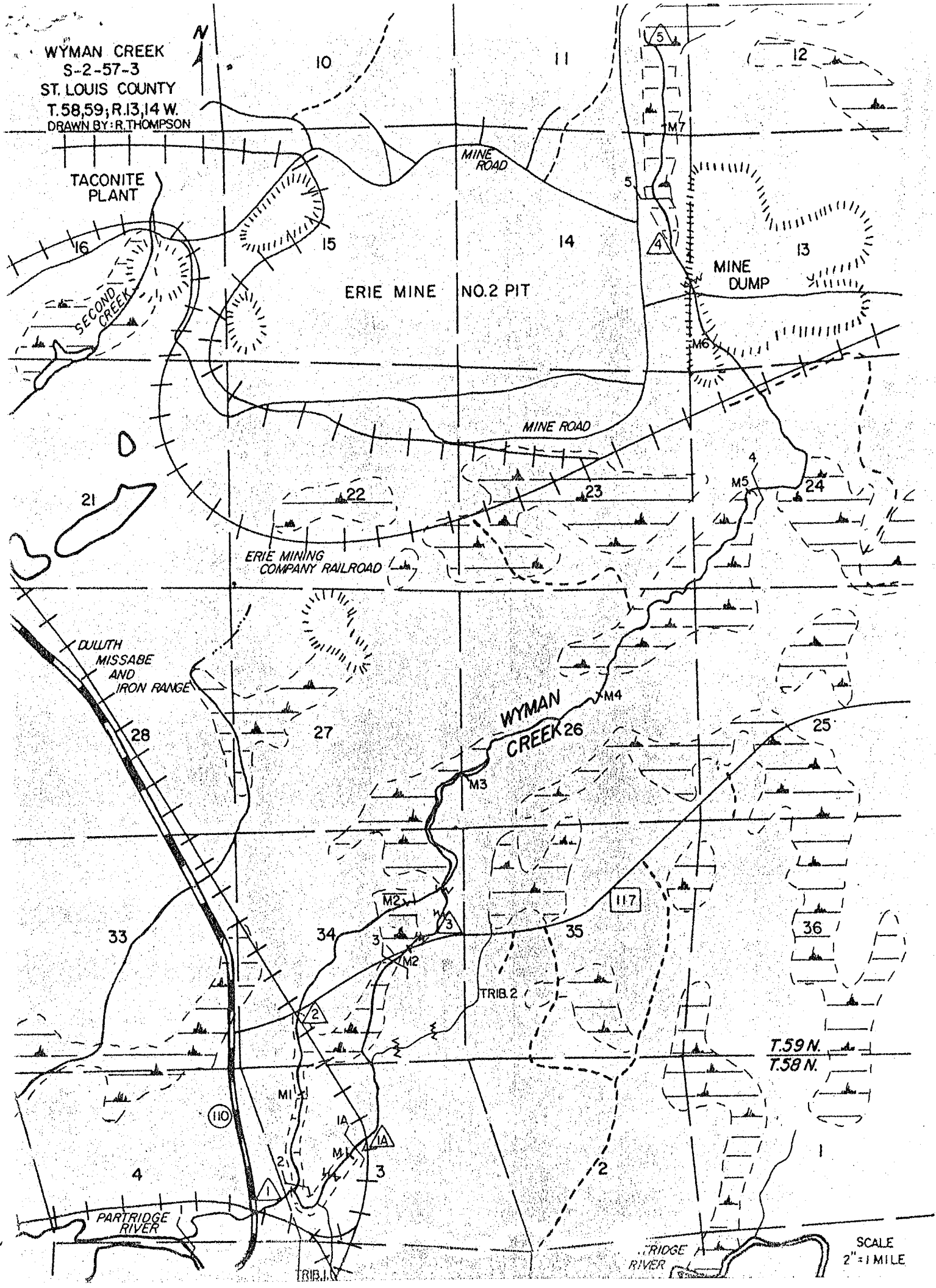
Land Acquisition \_\_\_\_\_

Additional Survey Work Stream should be re-assessed again in the summer of 1984.

Submitted by John Blakesley Date 4/9/82  
Area Fisheries Manager

Approved by  Date 4-27-82  
Regional Fisheries Manager

WYMAN CREEK  
S-2-57-3  
ST. LOUIS COUNTY  
T.58,59; R.13,14 W.  
DRAWN BY: R. THOMPSON



SCALE  
2" = 1 MILE