



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 1780 Nations Creek

Submitted by

Environmental Resource Coalition

To

Missouri Department of Natural Resources

Water Protection Program

On

January 7, 2008

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet A - Water Body Identification

I. Water Body Information (For water body being surveyed)

Water Body Name (from USGS 7.5' quad):	Nations Creek		
Missouri Water Body Identification (WBID) Number:	1780		
8-digit HUC:	07140105	County:	Perry
Upstream Legal Description (from Table H):	8, 34N, 9E		
Downstream Legal Description (from Table H):	15, 34N, 9E		
Number of sites evaluated	3		
List all sites numbers, listed consequently upstream to downstream:	Sites 1, 2, 3		

II. Subsegmentation (fill this section out only in cases where subsegmentation is being proposed)

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Upstream Coordinates:		Downstream Coordinates:	
UTM X	Y	UTM X	Y
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± _____ Feet or ± _____ Meters		
PDOP		± _____ Feet or ± _____ Meters	

III. Discharger Facility Information (list all permitted dischargers on the stream)

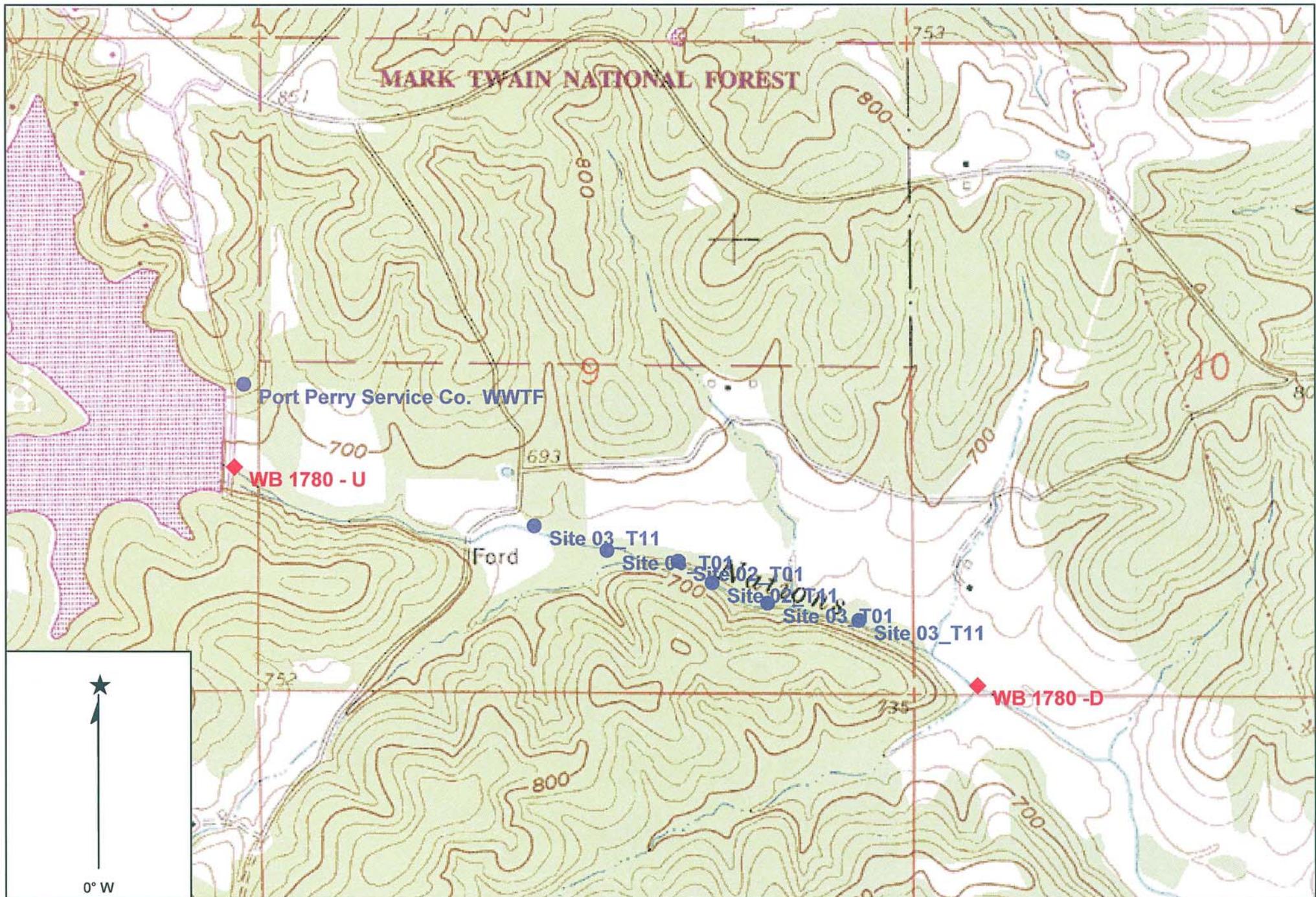
Discharger Facility Name(s):	Port Perry Service Co.
Discharger Permit Number(s):	MO 0116998

IV. UAA Surveyor (please print legibly)

Name of Surveyor	Robert R. Bacon	Telephone Number:	(573) 634-7071
Organization/Employer:	ERC		
Position:	Field Manager		

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Signed: Robert R. Bacon Date: 8-28-2007



Name: PARKER LAKE
Date: 10/12/2007
Scale: 1 inch equals 1000 feet

Location: 15 0760763 E 4172418 N

WBID # 1780

Site # 01

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>9-21-2007 17:13</u>	Site Location Description (e.g., road crossing): <u>Just downstream of Perry County Road 726</u>
Personnel (Data Collectors): <u>Bob Bacon, Matt Nelson</u>	
Current Weather Conditions: <u>83°F Sunny, Partly Cloudy</u>	Facility Name: <u>Port Perry Service Co</u>
Weather Conditions for Past 10 days: <u>see sheet</u>	Permit Number: <u>MO 0116998</u>
Drought Conditions?: No drought <input type="checkbox"/> ; Phase I <input checked="" type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): <u>152 0760638</u>	Northing (UTM Y): <u>4172168</u>	Horizontal Accuracy: (EPE) / FOM / PDOP <u>10</u> Meters
Site 11	Easting (UTM X): <u>155 0760458</u>	Northing (UTM Y): <u>4172224</u>	Horizontal Accuracy: (EPE) / FOM / PDOP <u>6</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>T11-I51</u>	<u>upstream view</u>	<u>T01-I52</u>	<u>downstream view</u>		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview when conducting interviews.)				

WBID # 1780

Site # 01

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: <i>thick forest</i>				

Evidence of Human Use*: (Attach photos and reference in "Photos" section)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
Comments / Other: <i>None</i>				

Substrate*: (These values should add up to 100%.)

<i>20</i> % Cobble	<i>70</i> % Gravel	% Sand	% Silt	% Mud/Clay	<i>10</i> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

<i>< 5% aquatic veg cover</i>

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

WBID # 1780

Site # 01

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

upstream section of classified reach very hard to locate required second trip to site

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: Paul A. Bunn Date of Survey: 9-21-2007

Organization: ERC Position: Field Manager

Field Data Sheets for Recreational Use Stream Surveys

01-T11 051 up stream
01-T01 052 down

Data Sheet C - Field Survey Results

Waterbody ID: <u>1780</u> Site #: <u>01</u> Estimated Channel Incision: <u>.20</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE) PDOP / FOM 01 UTM X: <u>1520760638</u> UTM Y: <u>4172168</u> +/- <u>10</u> (meters) 013 11 UTM X: <u>1520760458</u> UTM Y: <u>4172224</u> +/- <u>06</u> (meters) 014 Average Stream Width: <u>3.5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Bob Bacon & Matt Nelson</u>	<h3 style="text-align: center; margin: 0;">Dissolved Oxygen</h3> Date: <u>9-21-2007</u> Time: <u>13:13</u> Dissolved Oxygen: <u>7.80</u> (mg/L) Dissolved Oxygen: <u>86.5</u> (% sat) Specific Cond: <u>267</u> (µS/cm) Water Temperature: <u>19.84</u> (°C)
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Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	.32	.18	.18	.01	.28	.01	.26	.01	.38	0	.25	.06	.48	.02	.49	.12	.54	.02	.54	.01	.35	.02
	2	.64	.42	.36	0	.56	.02	.72	.01	.76	0	.70	.04	.96	.02	.98	.16	1.08	.04	1.08	0	.70	.06
	3	.96	.54	.54	.06	.84	.02	1.08	.02	1.14	.01	1.05	.10	1.44	.04	1.47	.22	1.62	.04	1.62	.01	1.05	.16
	4	1.28	.44	.72	.02	1.12	.04	1.44	0	1.52	.02	1.40	.14	1.92	0	1.96	.20	2.16	.02	2.16	.01	1.40	.24
	5	1.60	.36	.90	.10	1.40	.02	1.80	0	1.90	.04	1.75	.14	2.40	0	2.45	.16	2.70	.04	2.70	0	1.75	.26
	6	1.92	.22	1.08	.08	1.68	0	2.16	.01	2.28	.04	2.10	.18	2.88	0	2.94	.12	3.24	.01	3.24	0	2.10	.28
	7	2.24	.20	1.26	.14	1.96	.01	2.52	0	2.66	.02	2.45	.18	3.36	0	3.43	.10	3.78	.01	3.78	.01	2.45	.26
	8	2.56	.14	1.44	.10	2.24	.01	2.88	0	3.04	.08	2.80	.14	3.84	.01	3.92	.08	4.22	.01	4.32	.02	2.80	.20
	9	2.88	.06	1.62	.10	2.52	0	3.24	.01	3.42	.04	3.15	.06	4.32	.01	4.41	.06	4.86	0	4.86	0	3.15	.16
Right Bank		3.20	0	1.80	0	2.80	0	2.60	0	3.80	0	3.50	0	4.80	0	4.90	0	5.40	0	5.40	0	3.50	0
Feature Type		pool		run		riffle		riffle		run		run		riffle		run		run		riffle		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.
 Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)
 Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)
 All measurements to be taken to the nearest 0.01 meter.

Signed: Bob Bacon Date: 9-21-2007

WBID# 1780
 Site# 02

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization
 (must be completed for each site)

Date & Time: <u>8-27-2007 16:40</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>Bob Bacon</u>	<u>downstream of county road 726</u>
Current Weather Conditions: <u>clear sunny hot ~90F</u>	Facility Name: <u>Port Perry Service Co.</u>
Weather Conditions for Past 10 days: <u>see weather sheet</u>	Permit Number: <u>MO 0116998</u>
Drought Conditions?: No drought <input type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input checked="" type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>15 S 0760704</u>		Y: <u>4172149</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the location data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± _____ Feet or ± <u>7</u> Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>I-003</u>	<u>T11 upstream picture</u>	<u>I-004</u>	<u>T01 downstream picture</u>

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments: thick forest

WBID# 1780
 Site# 02

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization
 (must be completed for each site)

Indications of Human Use*: (attach photos)

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites		<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:
Comments: <u>None</u>					

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? Yes No
 If so, is there an obvious current? Yes No very low flow

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? Yes No
 If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Substrate*: (These values should add up to 100%.)

<u>60</u> % Cobble	<u>25</u> % Gravel	% Sand	% Silt	% Mud/Clay	<u>15</u> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

< 5% vegetation cover some stick periphyton on rock

Water Characteristics*: (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Surveyor's Signature: [Signature] Date of Survey: 8-27-2007
 Organization: ERC Position: Field Manager

T11 003 upstream
T01 004 downstream

ERC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 1780 Site #: 02 (WBID Site#)

Estimated Channel Incision: 0 (meters) (height between low bank vegetation and water surface)

GPS Location: 004 003
Transect 1 Transect 11

UTM X: 1550760704 UTM Y: 4172149 UTM X: 1550760907 UTM Y: 4172094

Accuracy (GPS Data Quality): +/- 7 (meters) +/- 10 (meters)

Average Stream Width: 5.0 (meters) Length of Survey Segment: 150 (meters)
(20x average stream width)

Field Staff: Bob Bacon

Water Quality Information

Dissolved Oxygen: 7.62 (mg/L)

DO Saturation: 87.5 (% sat)

Specific Cond: 275 (µS/cm)

Water Temperature: 21.84 (°C)

Date: 8-27-2007

Time: 16:40

Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11		
	Distance (m)	Depth (m)																					
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	.69	.20	.24	.01	.52	.04	.28	.18	.49	.03	.66	.05	.46	.07	.39	.01	.49	.19	.45	.04	.54	.05	
3	1.38	.21	.48	.01	1.04	.05	.56	.22	.98	.08	1.32	0	.92	.07	.78	.01	.98	.27	.90	.13	1.08	.06	
4	2.07	.22	.72	.01	1.56	.05	.84	.21	1.47	.09	1.98	.03	1.38	.07	1.17	.01	1.47	.29	1.35	.07	1.62	.11	
5	2.76	.18	.96	.02	2.08	.13	1.12	.18	1.96	.06	2.64	.04	1.84	.05	1.56	0	1.96	.29	1.80	.10	2.16	.14	
6	3.45	.18	1.20	.01	2.60	.08	1.40	.15	2.45	.09	3.30	.02	2.30	.03	1.95	.01	2.45	.33	2.25	.06	2.70	.19	
7	4.14	.11	1.44	.02	3.12	.08	1.68	.23	2.94	.05	3.96	.01	2.76	.06	2.34	.02	2.94	.39	2.70	.07	3.24	.20	
8	4.83	.18	1.68	.04	3.64	.11	1.96	.24	3.43	.09	4.62	.01	3.22	.03	2.73	.02	3.43	.33	3.15	.05	3.78	.28	
9	5.52	.14	1.92	.05	4.16	.06	2.24	.21	3.92	.08	5.28	.01	3.68	.02	3.12	.03	3.92	.16	3.60	.03	4.32	.39	
10	6.21	.16	2.16	.03	4.68	.03	2.52	.17	4.41	.01	5.94	.01	4.14	.02	3.51	.01	4.41	.04	4.05	.01	4.86	.38	
11	6.90	0	2.40	0	5.20	0	2.80	0	4.90	0	6.60	0	4.60	0	3.90	0	4.90	0	4.50	0	5.40	0	
Feature Type (riffle, run, or pool)	pool		riffle		run		run		run		riffle		run		riffle		pool		run		pool		

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank and in order of up to drowstream.

Signed: Bob D Bacon Date: 8-27-2007

WBID# 1790
 Site# 03

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization
 (must be completed for each site)

Date & Time: <u>8-27-2007 15110</u>	Site Location Description (e.g., road crossing): <u>downstream of county road 726</u>
Personnel (Data Collectors): <u>Bob Bacon</u>	Facility Name: <u>Park Perry Service Co</u>
Current Weather Conditions: <u>clear, sunny hot ~95°F</u>	Permit Number: <u>MO 0116998</u>
Weather Conditions for Past 10 days: <u>see weather sheet</u>	
Drought Conditions?: No drought <input type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input checked="" type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>15 J 0761043</u>		Y: <u>4172052</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the location data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± _____ Feet or ± <u>9</u> Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>I-002</u>	<u>T01 downstream view</u>	<u>I-001</u>	<u>T11 upstream view</u>

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments: <u>thick woods</u>				

WBID# 1780
 Site# 03

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization
 (must be completed for each site)

Indications of Human Use*: (attach photos)

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments: <u>None</u>					

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Substrate*: (These values should add up to 100%.)

<u>35</u> % Cobble	<u>40</u> % Gravel	<u>0</u> % Sand	<u>0</u> % Silt	<u>0</u> % Mud/Clay	<u>25</u> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

< 5% aquatic veg cover - some periphyton growth on rocks

Water Characteristics*: (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Surveyor's Signature: [Signature] Date of Survey: 8-27-2007
 Organization: ERC Position: Field Manager

TA1 ↗ upstem 001
 TA1 ↘ downstem 002

ERC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 1780 Site #: 03 (WBID Site#)

Estimated Channel Incision: .05 (meters) (height between low bank vegetation and water surface)

GPS Location: 002 001

Transect 1 **Transect 11**

UTM X: 1550761043 UTM Y: 4172052 UTM X: 1550761232 UTM Y: 4172016

Accuracy (GPS Data Quality): +/- 9 (meters) +/- 7 (meters)

Average Stream Width: 6.0 (meters) Length of Survey Segment: 150 (meters)
 (20x average stream width)

Field Staff: Bob Bacon

Water Quality Informaiton

Dissolved Oxygen: 6.99 (mg/L)

DO Saturation: 81.6 (% sat)

Specific Cond: 273 (µS/cm)

Water Temperature: 23.04 (°C)

Date: 8-27-2007

Time: 15:10

Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	.37	.02	.62	.14	.46	.18	.77	.04	.46	.02	.39	.06	.42	.01	.44	.07	.66	.02	.68	.24	.59	.17
3	.74	.02	1.24	.24	.92	.29	1.54	.04	.92	.01	.78	.08	.84	.01	.88	.03	1.32	.02	1.36	.19	1.18	.20
4	1.11	.05	1.86	.26	1.38	.32	2.31	.03	1.38	.01	1.17	.05	1.26	.04	1.32	0	1.98	.06	2.04	.15	1.77	.21
5	1.48	.16	2.48	.26	1.84	.25	3.08	.12	1.84	.02	1.56	.14	1.68	.04	1.72	0	2.64	.04	2.72	.19	2.36	.17
6	1.85	.19	3.10	.28	2.30	.14	3.85	.23	2.3	.01	1.95	.11	2.10	.11	2.20	.01	3.30	.06	3.40	.16	2.95	.24
7	2.22	.21	3.72	.28	2.76	.20	4.62	.24	2.76	.01	2.34	.18	2.52	.12	2.64	.04	3.96	.04	4.08	.11	3.54	.19
8	2.59	.29	4.34	.27	3.22	.15	5.39	.18	3.22	.01	2.73	.20	2.94	.11	3.08	.06	4.62	.06	4.76	.10	4.13	.19
9	2.96	.25	4.96	.24	3.68	.09	6.16	.12	3.68	.01	3.12	.20	3.36	.06	3.52	.05	5.28	.07	5.44	.13	4.72	.22
10	3.33	.18	5.58	.12	4.14	.04	6.93	.06	4.14	.01	3.51	.05	3.78	.07	3.96	.03	5.94	.06	6.12	.15	5.31	.20
11	3.70	0	6.20	0	4.60	0	7.70	0	4.6	0	3.96	0	4.20	0	4.40	0	6.60	0	6.80	0	5.90	0
Feature Type (riffle, run, or pool)	run		pool		pool		pool		riffle		run		riffle		riffle		run		run		run	

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank and in order of up to drowstream.

Signed: Bob Bacon Date: 8-27-2007

Weather Conditions

Weather conditions ten days previous to stream assessment are listed in the tables below. The date(s) that the stream was assessed are shaded.

Data from the Midwest Regional Climate Center
Farmington, Missouri - Station ID: 232890

Date	Precipitation (Inches)	Min. Temp (°F)	Max. Temp (°F)	Avg. Temp (°F)
9/11/2007	0.03	58	77	68
9/12/2007	0.00	51	78	65
9/13/2007	0.00	50	84	67
9/14/2007	0.00	52	75	64
9/15/2007	0.00	45	66	56
9/16/2007	0.00	45	71	58
9/17/2007	0.00	55	86	71
9/18/2007	0.00	60	87	74
9/19/2007	0.00	63	87	75
9/20/2007	0.00	62	88	75
9/21/2007	0.00	58	88	73

Weather Conditions

Weather conditions ten days previous to stream assessment are listed in the tables below. The date(s) that the stream was assessed are shaded.

Data from the Midwest Regional Climate Center
Fredericktown, Missouri - Station ID: 233038

Date	Precipitation (Inches)	Min. Temp (°F)	Max. Temp (°F)	Avg. Temp (°F)
08/17/2007	0.00	70	95	83
08/18/2007	0.00	72	96	84
08/19/2007	0.00	72	97	85
08/20/2007	0.00	73	92	83
08/21/2007	0.00	72	83	78
08/22/2007	0.00	72	97	85
08/23/2007	0.00	71	99	85
08/24/2007	0.00	72	101	87
08/25/2007	0.00	69	86	78
08/26/2007	0.00	64	88	76
08/27/2007	0.00	58	88	73

WBID# 1780



Site# 1 Photo ID# T11-I51, Upstream



Site# 1 Photo ID# T01-I52, Downstream



Site# 2 Photo ID# I-003, Upstream



Site# 2 Photo ID# I-004, Downstream

WBID# 1780



Site# 3 Photo ID# I-002, Downstream



Site#3 Photo ID# I-001, Upstream

Notes:

This waterbody was visited on two separate occasions due to difficulty in determining the location of the upper portion of the classified reach. This difficulty is largely due to changes in the access road and surrounding area since the USGS map was published.