

**MAIN DITCH
WBID 2814**

Recreational Use Attainability Analysis

May 2007

PREPARED FOR:
RFP No: B3Z07134
Water Quality Monitoring & Assessment Section
Water Protection Program
Division of Environmental Quality
MISSOURI DEPARTMENT OF NATURAL RESOURCES
301 West High Street
Jefferson City, MO 65102

PREPARED BY:
MEC WATER RESOURCES, INC.
1123 Wilkes Blvd., Ste. 400
Columbia, MO 65201

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):	Main Ditch
Missouri Water Body Identification (WBID) Number:	2814
8-digit HUC: 11010007	County: Butler
Upstream Legal Description (from Table H):	10, 24 N, 6 E
Downstream Legal Description (from Table H):	18, 22 N, 6 E
Number of sites evaluated	7
List all sites numbers, listed consequently upstream to downstream:	5411, 2, 3, 4, 5, 6, 7

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 _____ ± _____ Feet or ± _____ Meters	
EPE	± _____ Feet or ± _____ Meters		
PDOP			

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

Discharger Facility Name(s):	Poplar Bluff WWTF
Discharger Permit Number(s):	MO 0043648

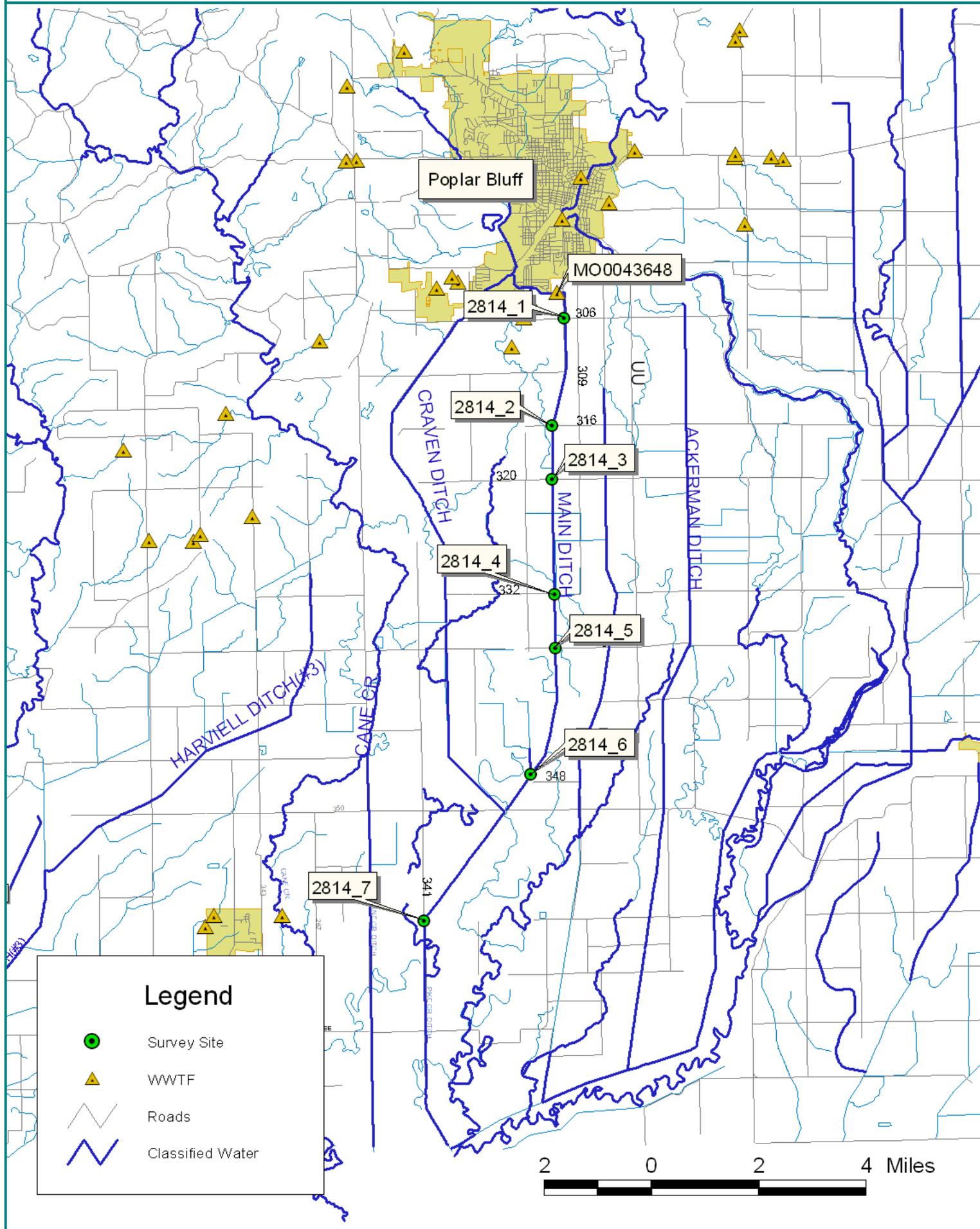
IV. UAA Surveyor (please print legibly)

Name of Surveyor	Telephone Number:
Jerrold Roberts	573-785-9621
Organization/Employer:	
Smith & Co	
Position:	
Field Technician	

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

Signed: Jerry Bradford for Jerrold Roberts Date: 5-29-07

Main Ditch (2814), Length = 14.0 mi., Permit # MO0043648



WBID# 2814
 Site# 1

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>5/26/07 7:30</u>	Site Location Description (e.g., road crossing): <u>Co. Rd. 306</u>
Personnel (Data Collectors): <u>JR/JP</u>	
Current Weather Conditions: <u>Overcast</u>	Facility Name: <u>Poplar Bluff WWTP</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MO 0043648</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input 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>0732543</u>	Y: <u>4067238</u>
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the location data.) Global Positioning System (GPS)	
Static Mode	Interpolation
Dynamic Mode (Kinematic)	Topographic Map or DRG
Precise Positioning Service	Aerial Photograph or DOQQ
Signal Averaging	Satellite Imagery
Real Time Differential Processing	Interpolation Other
HORIZONTAL ACCURACY ESTIMATE	
GPS Data Quality	
FOM	± _____ Meters
EPE	± <u>10.2</u> Feet or ± _____ Meters
PDOP	
Interpolation Data Quality	
Source Map Scale: 1:24,000 1:100,000 Other _____	
± _____ Feet or ± _____ Meters	

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>2814-1-237</u>	<u>Down Stream</u>		
<u>" " 238</u>	<u>Up "</u>		
<u>Photos taken @ trans. # 1</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 checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:

WBID# 2814
 Site# 1

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: <p style="text-align: center;">none</p>					

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	1	0 m	4.20 m	5 m	0.13 m	0.20 m
RUN	11	150 m	5.30 m	15 m	0.44 m	0.70 m
POOL	4	10 m	10.10 m	15 m	0.34 m	0.50 m

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%.)

10 % Cobble	15 % Gravel	0 % Sand	20 % Silt	55 % Mud/Clay	0 % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

algae (moderate amount)

Water Characteristics*: (Mark all that apply.)

ODOR:	<input checked="" type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input type="checkbox"/> Clear	<input checked="" 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 checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input checked="" type="checkbox"/> Scum	<input checked="" type="checkbox"/> Foam	<input 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: 5-26-07

Organization: SH Smith & Co. Position: Field number

algae
slump

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 2814 Site #: 1 (WBID_Site#)

Estimated Channel Incision: 9.10 (m) (height between low bank width and water)

GPS Location (taken at transect 1):
 UTM X: 0732543 UTM Y: 4067238
 Horizontal Accuracy Estimate (GPS Data Quality): +/- 10.2 (feet)

Average Stream Width: 7 (meters) Length of Survey Segment: 150 (meters)
 (20x average stream width)

Field Staff: Jerrold Roberts Joe Pulliam

Dissolved Oxygen: 3.41 (mg/L)

Dissolved Oxygen: 41.5 (% sat)

Specific Cond: _____ (µS/cm)

Water Temperature: 24.6 (°C)

Measurement	01		02		03		04		05		06		07		08		09		10		11		
	Distance (m)	Depth (m)																					
1	70	10	40	10	20	10	80	10	20	10	30	10	30	10	30	10	30	10	20	10	10	10	
2	94	10	11	15	20	20	164	35	85	40	76	15	40	84	15	34	79	15	79	15	59	35	
3	118	10	82	20	20	23	248	50	150	40	122	20	132	0	138	15	130	35	138	22	108	40	
4	142	15	53	28	20	28	332	40	215	40	168	40	193	0	192	20	130	30	197	30	157	60	
5	166	18	24	30	20	34	416	30	280	40	214	0	254	12	246	25	230	30	256	40	206	70	
6	190	20	45	33	20	45	500	30	345	40	260	0	315	18	300	30	280	25	315	30	255	55	
7	214	20	66	33	20	43	584	35	410	40	306	25	376	20	354	38	330	22	374	30	304	55	
8	238	20	37	28	20	50	668	45	475	40	352	25	437	17	408	0	380	25	433	30	353	60	
9	262	20	08	22	20	40	752	50	540	40	398	20	498	19	462	0	430	25	492	40	402	45	
10	286	20	79	24	20	30	836	35	605	45	444	20	559	24	516	20	480	25	551	30	451	35	
11	310	15	50	10	20	12	920	12	670	44	490	25	620	14	570	10	530	18	610	10	500	15	
12	420	0	00	0	20	0	1010	0	at	bank	500	0	670	0	590	0	at	bank	630	0	530	0	
Feature Type (riffle, run, or pool)	110 riffle	30 pool	30 pool	30 pool	90 pool	0	10	run	50	run	run	run	run										

Notes: Transsects will be measured beginning on left descending bank and finishing on right descending bank. GPS location corresponds to Transsect 01. Transsects entered in upstream to downstream order. Transsects in order of up to downstream. Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1. Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: Jerrold Roberts Date: 5-26-07

ORUC 5-29-07

WBID# 2814
 Site# 2

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>5/26/07 9:05</u>	Site Location Description (e.g., road crossing): <u>Co. Rd. 316</u>
Personnel (Data Collectors): <u>JR / JP</u>	Facility Name: <u>Poplar Bluff WWTP</u>
Current Weather Conditions: <u>cloudy</u>	Permit Number: <u>MO 0043648</u>
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input 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>0732178</u>		Y: <u>4064032</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	± <u>16.3</u> Feet or ± _____ 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>2814-2-239</u>	<u>Down Stream</u>		
<u>" " 240</u>	<u>Up Stream</u>		
<u>Photos taken @ trans. # 1</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 checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments:				

WBID# 2814
 Site# 2

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: <p style="text-align: center;">none</p>					

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)
RIFPLE	1	0m	3.60 m	15 m	0.16 m	0.25 m
RUN	7	105m	9.10 m	15 m	0.55 m	0.80 m
POOL	3	45m	8.20 m	15 m	0.67 m	>1 m

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)
RIFPLE					
RUN					
POOL					

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

5 % Cobble	10 % Gravel	0 % Sand	30 % Silt	55 % Mud/Clay	0 % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

algae (some)

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 checked="" type="checkbox"/> Other: brown
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input 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: James Robert Date of Survey: 5-26-07

Organization: S.H. Smith & Co. Position: Field member

RUC 5-29-07

0.155

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>2814</u> Site #: <u>2</u> (WBID_Site#) Estimated Channel Incision: <u>0.30</u> (m) (height between low bank width and water) GPS Location (taken at transect 1): UTM X: <u>4732178</u> UTM Y: <u>4064032</u> Horizontal Accuracy Estimate (GPS Data Quality): <u>+/- 16.3</u> (feet) Average Stream Width: <u>8</u> (meters) Length of Survey Segment: <u>160</u> (meters) (20x average stream width) Field Staff: <u>Jerrold Roberts</u> <u>Joe Pulliam</u>	Dissolved Oxygen: <u>7.47</u> (mg/L) Dissolved Oxygen: <u>95.2</u> (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>24.1</u> (°C)
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Measurement	01		02		03		04		05		06		07		08		09		10		11			
	Distance (m)	Depth (m)																						
1	1.50	.10	.30	.10	.10	.10	.10	.10	.30	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.40	.10	
2	1.71	.15	.86	.25	.89	.31	.77	.37	1.11	.30	.83	.51	.99	.50	.94	.30	1.00	.40	1.10	.40	1.04	.20	.20	
3	1.92	.15	1.47	.30	1.68	.60	1.44	.50	1.92	.45	1.56	.60	1.88	.70	1.78	.65	1.90	.40	2.10	.30	1.68	.20	.20	
4	1.13	.25	1.98	.30	2.47	>1	2.11	.51	2.73	.51	2.29	.60	2.77	.70	2.62	.70	2.86	.50	3.10	.50	2.32	.10	.10	
5	1.34	.20	2.54	.25	3.26	>1	2.78	.58	3.54	.60	3.02	.60	3.66	.76	3.46	.70	3.70	.60	4.10	.55	2.96	.20	.20	
6	1.55	.20	3.10	.30	4.05	>1	3.45	.52	4.35	.60	3.75	.50	4.55	.75	4.30	.60	4.60	.60	5.10	.50	3.60	.20	.20	
7	1.76	.22	3.66	.30	4.84	>1	4.12	.60	5.16	.60	4.148	.50	5.44	.80	5.14	.60	5.40	.70	6.10	.55	4.24	.22	.22	
8	1.97	.20	4.22	.30	5.63	>1	4.79	.49	5.97	.60	5.21	.45	6.33	.70	5.98	.60	6.30	.60	7.10	.60	4.88	.20	.20	
9	2.18	.20	4.78	.30	6.42	>1	5.46	.36	6.78	.45	5.94	.40	7.22	.50	6.82	.58	7.20	.45	8.10	.40	5.52	.21	.21	
10	2.39	.10	5.34	.25	7.21	.28	6.13	.25	7.59	.40	6.67	.30	8.11	.40	7.66	.50	8.10	.30	9.10	.30	6.16	.18	.18	
11	2.60	.12	5.90	.10	8.06	.13	6.80	.12	8.40	.20	7.40	.20	9.00	.18	8.50	.24	9.60	.16	10.10	.18	6.80	.11	.11	
12	3.60	0	6.20	0	8.20	0	7.10	0	8.60	0	7.70	0	9.10	0	8.60	0	9.10	0	10.30	0	6.90	0	0	
Feature Type (riffle, run, or pool)	30	pool	30	pool	30	pool	30	run	30	run	30	run	10	run	10	pool	10	pool	10	pool	10	run	run	run

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
 GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.
 Transects in order of up to downstream.
 Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1
 Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: Jerrold Roberts Date: 5-26-07
AWC 5-29-07

WBID# 2814
 Site# 3

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>5-26-07 10:20</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>JR / JP</u>	<u>Co. Rd. 320</u>
Current Weather Conditions: <u>cloudy</u>	Facility Name: <u>Poplar Bluff WWTP</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MO 0043648</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input 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>0732190</u>	Y: <u>4062398</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 ± <u>11.2</u> Feet or ± _____ 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>2814-3-241</u>	<u>Down Stream</u>		
<u>" " 242</u>	<u>Up "</u>		
<u>Photos taken @ trans. #1</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 checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:

WBID# 2814
 Site# 3

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: <p style="text-align: center;">none</p>					

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	2	30 m		10 m	0.15 m	0.20 m
RUN	6	90 m		15 m	0.27 m	0.36 m
POOL	4	60 m		5 m	0.24 m	0.35 m

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%.)

5 % Cobble	5 % Gravel	20 % Sand	30 % Silt	40 % Mud/Clay	0 % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

algae (some)

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 checked="" type="checkbox"/> Fine sediments	<input 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: Jessie Roberts Date of Survey: 5-26-07

Organization: SH Smith & Co. Position: Field monitor

BAC 5-29-07

MEG Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 2814 Site #: 3 (WBID_Site#)

Estimated Channel Incision: 0.20 (m) (height between low bank width and water)

GPS Location (taken at transect 1): UTM X: 0732190 UTM Y: 4062399

Horizontal Accuracy Estimate (GPS Data Quality): +/- 11.2 (feet)

Average Stream Width: 8 (meters) Length of Survey Segment: 16 (meters)
(20x average stream width)

Field Staff: Jessod Roberts Joe Pulliam

Dissolved Oxygen: 14.9 (mg/L)

Dissolved Oxygen: 179.2 (% sat)

Specific Cond: _____ (µS/cm)

Water Temperature: 25.3 (°C)

Measurement	01		02		03		04		05		06		07		08		09		10		11		
	Distance (m)	Depth (m)																					
1	1.20	1.0	4.0	1.0	0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0	1.0	0	1.0	1.0	1.0	1.0
2	9.2	0.1	9.4	1.4	7.1	2.0	8.6	2.0	1.01	3.0	2.8	1.17	3.0	1.0	1.0	2.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0
3	1.64	0.1	1.48	1.0	1.42	2.0	1.62	3.5	1.82	3.0	3.2	2.04	3.5	1.70	4.0	1.30	2.5	1.30	2.5	1.62	3.5	1.44	3.0
4	2.36	1.5	2.02	2.0	2.13	2.2	2.38	3.5	2.63	3.5	2.65	3.5	2.91	4.0	2.50	3.5	1.95	2.5	2.28	3.0	2.06	3.0	3.0
5	3.08	1.0	2.56	1.5	2.84	3.0	3.14	2.5	3.44	2.8	3.50	3.6	3.78	2.5	3.30	2.5	2.60	3.0	2.94	3.0	2.68	3.0	3.0
6	3.80	2.0	3.10	1.0	3.55	3.0	3.90	2.5	4.25	2.4	4.35	3.0	4.65	2.5	4.10	2.0	3.25	3.0	3.60	3.0	3.30	2.5	2.5
7	4.52	2.0	3.64	1.5	4.26	2.5	4.66	2.5	5.06	2.5	5.20	3.0	5.52	2.5	4.90	2.4	3.90	3.0	4.26	2.8	3.92	2.5	2.5
8	5.24	1.5	4.18	2.0	4.97	3.0	5.42	2.5	5.87	2.0	6.05	2.5	6.39	3.0	5.70	2.8	4.55	3.0	4.92	2.5	4.54	2.0	2.0
9	5.96	1.5	4.72	2.0	5.68	2.0	6.18	2.5	6.68	2.2	6.90	3.0	7.26	3.5	6.50	2.4	5.20	3.0	5.58	2.5	5.16	2.0	2.0
10	6.68	1.3	5.26	2.0	6.39	2.0	6.94	2.5	7.49	2.0	7.75	3.0	8.13	2.0	7.30	2.4	5.85	3.2	6.24	2.5	5.78	1.5	1.5
11	7.40	1.0	5.80	1.4	7.10	1.3	7.70	1.1	8.30	1.5	8.60	1.4	9.00	1.2	8.10	1.0	6.50	3.0	6.90	1.4	6.40	1.5	1.5
12	8.60	0	6.20	0	7.50	0	8.10	0	8.50	0	8.90	0	9.40	0	8.80	0	at	bank	7.10	0	6.70	0	0
Feature Type (riffle, run, or pool)	no riffle	no riffle	no riffle																				

Transect Cross-Section

Notes: Transects will be measured beginning on left descending bank and finishing on right ascending bank.
 GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.
 Transects in order of up to downstream.
 Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1
 Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: Jessod Roberts Date: 5-26-07

mw c 5-29-07

WBID# 2814
 Site# 4

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>5-26-07 11:50</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>JR/JP</u>	<u>Co. Rd. 322</u>
Current Weather Conditions: <u>partly cloudy</u>	Facility Name: <u>Poplar Bluff WWTP</u>
	Permit Number: <u>MO 0043648</u>
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input 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>0732249</u>	Y: <u>4058975</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 ± <u>17.2</u> Feet or ± _____ 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>2814-4-243</u>	<u>Down stream</u>		
<u>" " 244</u>	<u>UP "</u>		
<u>Photos taken @ trans. #1</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 checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments:				

WBID# 2814
 Site# 4

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: <p style="text-align: center;">none</p>					

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	1	0		10 m	0.25 m	0.40 m
POOL	2	15 m		15 m	0.38 m	0.55 m

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%.)

<input type="checkbox"/> % Cobble	<input type="checkbox"/> % Gravel	10 % Sand	30 % Silt	60 % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

none

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 checked="" type="checkbox"/> Fine sediments	<input 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: 5-26-07

Organization: St. Smith & Co. Position: Field monitor

AUC 5-29-07

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>2814</u> Site #: <u>4</u> (WBID_Site#) Estimated Channel Incision: <u>0.20</u> (m) (height between low bank width and water) GPS Location (taken at transect 1): UTM X: <u>0732249</u> UTM Y: <u>4058975</u> Horizontal Accuracy Estimate (GPS Data Quality): <u>+/- 17.2</u> (feet) Average Stream Width: <u>7</u> (meters) Length of Survey Segment: <u>150</u> (meters) (20x average stream width) Field Staff: <u>Jerrod Roberts</u> <u>Joe Pulliam</u>	Dissolved Oxygen Dissolved Oxygen: <u>12.30</u> (mg/L) Dissolved Oxygen: <u>160.1</u> (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>25.4</u> (°C)
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Measurement	01		02		03		04		05		06		07		08		09		10		11			
	Distance (m)	Depth (m)																						
1	1.10	.10	0	.10	.20	.10	0	.20	.10	.10	.10	.10	.10	.20	.10	.30	.10	.30	.10	.10	.10	.10	.10	
2	1.60	.10	.84	.30	.76	.20	.55	.30	.72	.20	.40	.35	.40	.90	.75	.60	.35	.99	.25	.98	.25	.89	.35	
3	1.10	.25	1.68	.34	1.32	.30	1.10	.35	1.34	.20	.70	.47	1.60	1.60	.40	1.20	.35	1.68	.35	1.86	.25	1.68	.40	
4	1.60	.30	2.52	.45	1.88	.30	1.65	.40	1.96	.30	1.00	.40	2.30	2.30	.40	1.80	.40	2.37	.35	2.74	.35	2.47	.38	
5	2.10	.35	3.36	.46	2.44	.35	2.20	.40	2.58	.30	1.30	.40	3.00	3.00	.40	2.40	.25	3.06	.40	3.62	.36	3.26	.32	
6	2.60	.40	4.20	.44	3.00	.30	2.75	.40	3.20	.25	1.60	.45	3.70	3.70	.35	3.00	.25	3.75	.38	4.50	.30	4.05	.30	
7	3.10	.35	5.04	.55	3.56	.30	3.30	.35	3.86	.25	1.90	.50	4.40	4.40	.30	3.60	.22	4.44	.25	5.38	.40	4.84	.30	
8	3.60	.30	5.88	.45	4.12	.40	3.85	.35	4.44	.20	2.20	.53	5.10	5.10	.30	4.20	.15	5.13	.40	6.26	.42	5.63	.30	
9	4.10	.30	6.72	.52	4.68	.30	4.40	.30	5.06	.15	2.50	.44	5.80	5.80	.25	4.20	.15	5.82	.40	7.14	.30	6.42	.28	
10	4.60	.20	7.56	.45	5.24	.30	4.95	.30	5.68	.15	2.80	.30	6.50	6.50	.15	5.40	.13	6.51	.20	8.02	.20	7.21	.24	
11	5.10	.15	8.40	.15	5.80	.20	5.50	.14	6.30	.12	3.10	.25	7.20	7.20	.10	6.00	.10	7.20	.14	8.90	.10	8.00	.15	
12	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
13	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
14	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
15	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
16	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
17	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
18	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
19	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
20	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
21	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
22	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
23	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
24	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
25	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
26	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
27	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
28	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
29	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
30	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
31	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
32	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
33	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
34	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
35	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
36	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
37	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
38	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
39	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
40	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
41	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
42	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
43	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
44	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
45	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
46	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
47	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
48	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
49	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
50	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
51	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
52	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30	0	8.20	0	8.20	0
53	5.30	0	at bank	5.90	0	5.60	0	5.60	0	6.60	0	at bank	7.50	0	6.50	0	7.50	0	9.30					

WBID# 2814
 Site# 5

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>5/26/07 1:00</u>	Site Location Description (e.g., road crossing): <u>Co. Rd. 334</u>
Personnel (Data Collectors): <u>JR/JP</u>	Facility Name: <u>Poplar Bluff WWTP</u>
Current Weather Conditions: <u>partly cloudy</u>	Permit Number: <u>MO 0043648</u>
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input 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>0732286</u>		Y: <u>4057362</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	± <u>15.0</u> Feet or ± _____ 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>2814-5-245</u>	<u>Down Stream</u>		
<u>" " 246</u>	<u>up "</u>		
<u>Photos taken @ trans. # 1</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 checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments:				

WBID# 2814
 Site# 5

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: <p style="text-align: center;">none</p>					

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)
RIFPLE						
RUN	1	0m	9.20 m	15m	0.46 m	0.72 m
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)
RIFPLE					
RUN					
POOL					

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

<input type="checkbox"/> % Cobble	<input type="checkbox"/> % Gravel	<input type="checkbox"/> % Sand	<input type="checkbox"/> % Silt	<input type="checkbox"/> % Mud/Clay	<input type="checkbox"/> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

none

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 checked="" type="checkbox"/> Fine sediments	<input 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: Jessica Roberts Date of Survey: 5-26-07
 Organization: SFT Smith & Co. Position: Field monitor

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>2814</u> Site #: <u>5</u> (WBID_Site#) Estimated Channel Incision: <u>.10</u> (m) (height between low bank width and water) GPS Location (taken at transect 1): UTM X: <u>0732286</u> UTM Y: <u>4657362</u> Horizontal Accuracy Estimate (GPS Data Quality): <u>+/- 15.0</u> (feet) Average Stream Width: <u>9</u> (meters) Length of Survey Segment: <u>180</u> (meters) (20x average stream width) Field Staff: <u>Jerrad Roberts</u> <u>Jose Pulliam</u>	Dissolved Oxygen Dissolved Oxygen: <u>12.30</u> (mg/L) Dissolved Oxygen: <u>153.8</u> (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>26.6</u> (°C)
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Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11			
	Distance (m)	Depth (m)																						
1	1.10	.10	.20	.10	.30	.10	.20	.10	.30	.10	.20	.10	.30	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	
2	.99	.55	.47	.30	.88	.35	.86	.40	.16	.32	1.11	.30	.93	.30	.94	.30	1.18	.60	.97	.60	.83	.30	.30	
3	1.88	.70	1.74	.30	1.76	.35	1.62	.30	2.02	.35	1.92	.38	1.86	.10	1.78	.45	2.26	.58	1.84	.55	1.56	.35	.35	
4	2.77	.71	2.51	.31	2.64	.40	2.38	.30	2.88	.35	2.73	.35	2.79	.41	2.62	.40	3.34	.50	2.71	.50	2.29	.45	.45	
5	3.66	.72	3.28	.35	3.52	.44	3.14	.35	3.74	.40	3.54	.40	3.72	.35	3.46	.36	4.12	.45	3.58	.54	3.02	.61	.61	
6	4.55	.61	4.05	.45	4.40	.45	3.90	.32	4.60	.36	4.35	.35	4.65	.30	4.30	.35	5.50	.40	4.45	.50	3.75	.51	.51	
7	5.44	.60	4.82	.50	5.28	.35	4.66	.40	5.46	.35	5.16	.32	5.58	.32	5.14	.32	6.58	.39	5.32	.55	4.48	.60	.60	
8	6.33	.40	5.59	.55	6.16	.40	5.42	.40	6.32	.35	5.97	.35	6.51	.32	5.98	.32	7.66	.40	6.19	.42	5.21	.55	.55	
9	7.22	.35	6.36	.50	7.04	.40	6.18	.44	7.18	.40	6.78	.38	7.44	.31	6.82	.40	8.74	.40	7.06	.40	5.94	.50	.50	
10	8.11	.26	7.13	.30	7.92	.41	6.94	.30	8.04	.30	7.59	.28	8.37	.32	7.66	.38	9.82	.30	7.43	.30	6.67	.45	.45	
11	9.00	.10	7.90	.10	8.80	.12	7.70	.10	8.90	.13	8.40	.10	9.30	.12	8.50	.11	10.90	.10	8.80	.10	7.40	.10	.10	
12	9.20	0	8.00	0	8.90	0	7.90	0	9.00	0	8.60	0	9.50	0	8.70	0	11.00	0	9.00	0	7.50	0	0	
Feature Type (riffle, run, or pool)	run		run																					

Notes: GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order. Transects in order of up to downstream.

Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1

Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: Jerrad Roberts Date: 5-26-07

Jose Pulliam

WBID# 2814
 Site# 6

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>5/26/07 1:55</u>	Site Location Description (e.g., road crossing): <u>Hwy 142</u>
Personnel (Data Collectors): <u>JR/JP</u>	
Current Weather Conditions: <u>partly cloudy</u>	Facility Name: <u>Poplar Bluff WWTP</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MO 0043648</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input 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>0731550</u>	Y: <u>4053586</u>
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the location data.)	
Global Positioning System (GPS)	
Static Mode	Interpolation
Dynamic Mode (Kinematic)	Topographic Map or DRG
Precise Positioning Service	Aerial Photograph or DOQQ
Signal Averaging	Satellite Imagery
Real Time Differential Processing	Interpolation Other
HORIZONTAL ACCURACY ESTIMATE	
GPS Data Quality	
FOM	Interpolation Data Quality
± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____
EPE	± _____ Feet or ± _____ Meters
± <u>14.2</u> 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>2314 - 6 - 247</u>	<u>Down Stream</u>		
<u>" " 248</u>	<u>Up "</u>		
<u>Photos taken @ trans # 1</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 checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments:				

WBID# 2814
 Site# 6

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: <p style="text-align: center;">none</p>					

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	7	105 m	8.90 m	10 m	0.10 m	0.15 m
RUN	4	60 m	7.00 m	15 m	0.21 m	0.35 m
POOL	1	0 m	6.90 m	5 m	0.40 m	>1 m

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>0</u> % Cobble	<u>5</u> % Gravel	<u>10</u> % Sand	<u>30</u> % Silt	<u>55</u> % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

algae (very little)

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 checked="" type="checkbox"/> Fine sediments	<input 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: James Robert Date of Survey: 5-26-07

Organization: SH Smith & Co. Position: Field member

RUC 5-29-07

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01/14/2017

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>2814</u> Site #: <u>6</u> (WBID_Site#) Estimated Channel Incision: <u>.20</u> (m) (height between low bank width and water) GPS Location (taken at transect 1): UTM X: <u>0731550</u> UTM Y: <u>4053586</u> Horizontal Accuracy Estimate (GPS Data Quality): <u>+/- 14.2</u> (feet) Average Stream Width: <u>8</u> (meters) Length of Survey Segment: <u>160</u> (meters) (20x average stream width) Field Staff: <u>Jerrod Roberts</u> <u>Joe Pulliam</u>	Dissolved Oxygen: <u>12.10</u> (mg/L) Dissolved Oxygen: <u>156.9</u> (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>29.1</u> (°C)
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Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11		
	Distance (m)	Depth (m)																					
1	1.10	.48	.20	.10	.10	.10	.10	.10	.10	.10	.40	.10	.50	.10	.30	.10	.10	.16	.10	.10	.40	.10	
2	.53	.91	.86	.30	.91	.30	.76	.30	.70	.70	1.25	.20	1.31	.13	.95	.22	.91	.30	.88	.30	1.31	.30	
3	.96	>1	1.52	.40	1.72	.35	1.42	.35	1.64	.30	2.10	.25	2.12	.13	1.60	.25	1.72	.30	1.66	.30	2.22	.25	
4	1.39	>1	2.18	.35	2.53	.40	2.08	.15	2.16	.25	2.95	.25	2.93	.14	2.25	.22	2.53	.25	2.44	.26	3.13	.25	
5	1.82	>1	2.84	.28	3.34	.30	2.74	.25	3.28	.20	3.80	.21	3.74	<0.1	2.90	.24	3.34	.25	3.22	.25	4.04	.21	
6	2.25	>1	3.50	.30	4.15	.20	3.40	.30	4.10	.15	4.65	.10	4.55	<0.1	3.55	.15	4.15	.20	4.00	.20	4.95	.20	
7	2.68	.95	4.16	.22	4.96	.10	4.06	.30	4.92	<0.1	5.50	.11	5.36	<0.1	4.20	<0.1	4.96	.11	4.78	.15	5.86	.15	
8	3.11	.86	4.82	.10	5.77	<0.1	4.72	.15	5.74	.10	6.35	<0.1	6.17	.10	4.85	.10	5.77	<0.1	5.56	.15	6.77	.15	
9	3.54	.50	5.48	.11	6.58	<0.1	5.38	.14	6.56	<0.1	7.20	<0.1	6.98	.15	5.50	.10	6.58	.15	6.34	.16	7.68	.10	
10	3.97	.20	6.14	.10	7.39	.15	6.04	.12	7.38	<0.1	8.05	.14	7.79	.14	6.15	.11	7.39	.10	7.12	<0.1	8.59	.10	
11	4.40	.10	6.20	.10	8.20	.13	6.70	.12	8.20	.14	8.90	.12	8.60	.10	6.80	.10	8.20	.11	7.90	.10	9.50	.10	
12	6.90	0	8.40	0	8.40	0	7.00	0	9.20	0	9.30	0	8.90	0	8.30	0	9.10	0	8.40	0	9.90	0	
Feature Type (riffle, run, or pool)	pool	run	run	run	riffle	run	run	run	run	run	run	run	run	run	run								

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
 GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.
 Transects in order of up to downstream.

Mark dry depth measurements as 0; measurement less than 0.1m as <0.1; and greater than 1m as >1
 Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = Dim.

Signed: Jerrod Roberts Date: 5-26-07
NWC 5-29-07

WBID# 2814
 Site# 7

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>5/26/07</u> <u>3:10</u>	Site Location Description (e.g., road crossing): <u>Hwy 142 & Co Rds 261 and 341</u>
Personnel (Data Collectors): <u>JR / JP</u>	Facility Name: <u>Poplar Bluff WWTP</u>
Current Weather Conditions: <u>cloudy</u>	Permit Number: <u>MO 0043648</u>
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input 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>0728367</u>	Y: <u>4049171</u>
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the location data.)	
Global Positioning System (GPS)	
Static Mode	Interpolation
Dynamic Mode (Kinematic)	Topographic Map or DRG
Precise Positioning Service	Aerial Photograph or DOQQ
Signal Averaging	Satellite Imagery
Real Time Differential Processing	Interpolation Other
HORIZONTAL ACCURACY ESTIMATE	
GPS Data Quality	
FOM	± _____ Meters
EPE	± <u>15.6</u> Feet or ± _____ Meters
PDOP	
Interpolation Data Quality	
Source Map Scale: 1:24,000 1:100,000 Other _____	
± _____ Feet or ± _____ Meters	

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>2814-7-249</u>	<u>Down Stream</u>		
<u>" " 250</u>	<u>Up "</u>		
<u>Photos taken @ trans. #1</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 checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments:				

WBID# 2814
 Site# 7

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: <p style="text-align: center;">none</p>					

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	6	90 m	16.10 m	15 m	0.50 m	0.71 m
POOL	1	0 m	15.50 m	15 m	0.81 m	>1 m

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%.)

<input type="checkbox"/> % Cobble	<input type="checkbox"/> % Gravel	<input type="checkbox"/> 10 % Sand	<input type="checkbox"/> 50 % Silt	<input type="checkbox"/> 40 % Mud/Clay	<input type="checkbox"/> 0 % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

none

Water Characteristics*: (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input 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 type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input checked="" type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input 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: Amad Rebut Date of Survey: 5-26-07

Organization: St Smith & Co. Position: Field member

AUC 5-29-07

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 2814 Site #: 7 (WBID_Site#)

Estimated Channel Incision: 10 (m) (height between low bank width and water)

GPS Location (taken at transect 1): UTM X: 0728367 UTM Y: 4049171

Horizontal Accuracy Estimate (GPS Data Quality): +/- 1.56 (feet)

Average Stream Width: 17 (meters) Length of Survey Segment: 300 (meters)
(20x average stream width)

Field Staff: Jerrold Roberts Joe Pulliam

Dissolved Oxygen

Dissolved Oxygen: 14.5 (mg/L)

Dissolved Oxygen: 188.6 (% sat)

Specific Cond: _____ (µS/cm)

Water Temperature: 27.6 (°C)

Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
1	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
2	1.63	76	1.71	52	1.78	50	1.65	50	1.73	40	1.68	50	1.61	50	1.72	50	1.81	50	1.58	49	1.69	60
3	3.16	>1	3.32	>1	3.46	52	3.20	51	3.36	40	3.26	50	3.12	50	3.34	61	3.52	50	3.06	61	3.28	61
4	4.69	>1	4.93	>1	5.14	50	4.75	50	4.99	41	4.84	70	4.63	71	4.96	62	5.23	52	4.54	60	4.87	60
5	6.22	>1	6.54	>1	6.82	60	6.30	49	6.62	40	6.42	61	6.14	60	6.58	50	6.94	51	6.02	60	6.46	62
6	7.75	>1	8.15	>1	8.50	60	7.85	50	8.25	39	8.00	70	7.65	61	8.20	59	8.65	50	7.50	52	8.05	60
7	9.28	>1	9.76	>1	10.18	61	9.40	50	9.88	40	9.58	71	9.16	59	9.82	50	10.36	50	8.98	50	9.64	59
8	10.81	>1	11.37	>1	11.86	59	10.95	51	11.51	38	11.16	68	10.67	60	11.44	53	12.07	50	10.46	51	11.23	60
9	12.34	>1	12.98	>1	13.54	50	12.50	48	13.14	39	12.74	50	12.18	51	13.06	49	13.78	52	11.94	50	12.82	58
10	13.87	92	14.59	71	15.22	30	14.05	29	14.77	26	14.32	32	13.69	34	14.68	30	15.49	40	13.42	34	14.41	40
11	15.40	10	16.20	12	16.90	10	15.6	10	16.40	10	15.90	13	15.20	11	16.30	12	17.20	14	14.90	11	16.00	12
12	16.50	0	16.30	0	17.00	0	15.80	0	16.50	0	16.10	0	15.40	0	16.40	0	17.40	0	15.00	0	16.10	0
Feature Type (fill, run, or pool)	10	pool	10	pool	10	run	20	run	10	run	20	run	20	run	10	run	20	run	10	run	10	run

Notes: Transsects will be measured beginning on left descending bank and finishing on right descending bank. GPS location corresponds to Transect 01. Transsects ordered in upstream to downstream order. Transsects in order of up to downstream. Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1. Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: Jerrold Roberts Date: 5-26-07

RWC 5-29-07

WBID# 2814 Main Ditch



Site# 1 Photo ID# 237, Downstream



Site# 1 Photo ID# 238, Upstream



Site# 2 Photo ID# 239, Downstream



Site# 2 Photo ID# 240, Upstream

WBID# 2814 Main Ditch



Site# 3 Photo ID# 241, Downstream



Site# 3 Photo ID# 242, Upstream



Site# 4 Photo ID# 243, Downstream



Site# 4 Photo ID# 244, Upstream

WBID# 2814 Main Ditch



Site# 5 Photo ID# 245, Downstream



Site# 5 Photo ID# 246, Upstream



Site# 6 Photo ID# 247, Downstream



Site# 6 Photo ID# 248, Upstream

WBID# 2814 Main Ditch



Site# 7 Photo ID# 249, Downstream



Site# 7 Photo ID# 250, Upstream