



Missouri  
Department of  
Natural Resources

Use Attainability Analysis

for

WBID 0176 Paris Branch

Submitted by  
MEC Water Resources, Inc.

to

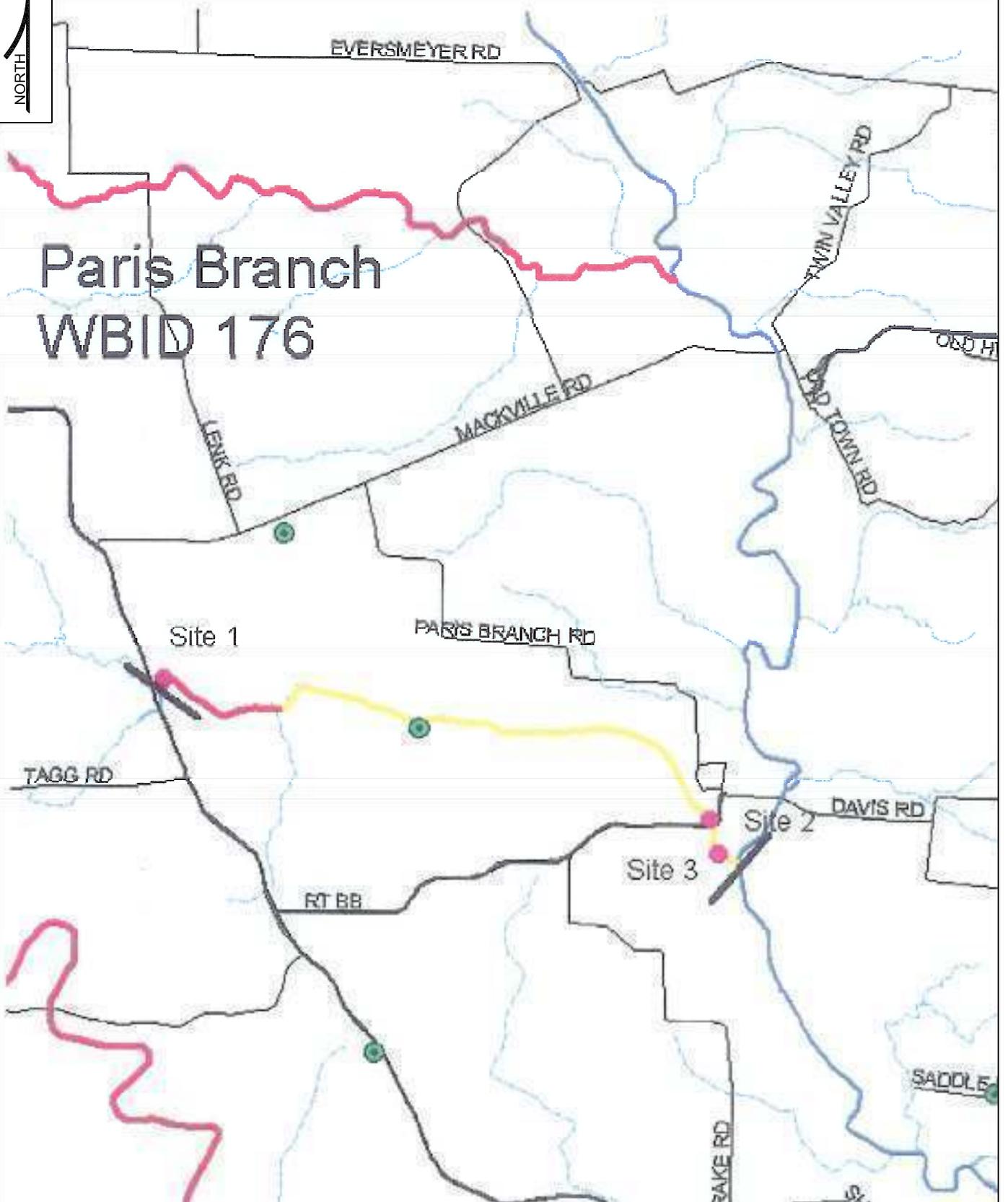
Missouri Department of Natural Resources  
Water Protection Program

Date Received: June 5, 2007





# Paris Branch WBID 176



**PICKETT RAY & SILVER**  
Civil Engineers Land Surveyors Natural Resources

Address:  
333 Mid Rivers Mall Drive  
St. Peters, Missouri 63376

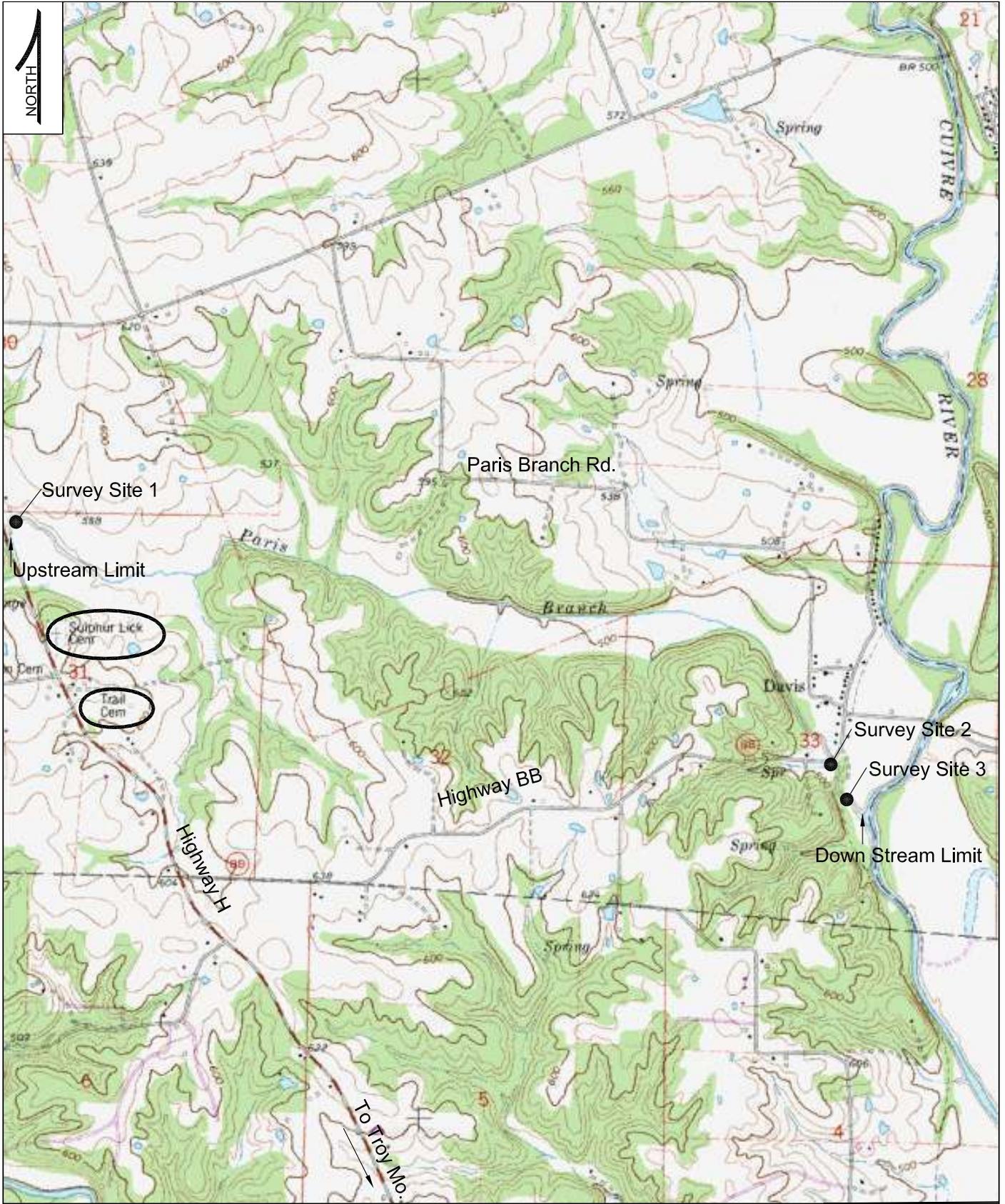
Phone: (636) 397-1211  
Fax: (636) 397-1104  
Web: [www.prs.com](http://www.prs.com)

WBID #: 0176  
Name: Paris Branch  
GIS MAP



NOT TO SCALE

\\Projects\07031\dwg\Task 5 Paris Branch.dwg, 5/24/2007 6:32:12 PM, 1:2000, MATT COSBY

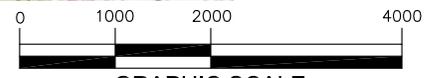


**PICKETT RAY & SILVER**  
 Civil Engineers Land Surveyors Natural Resources

Address:  
 333 Mid Rivers Mall Drive  
 St. Peters, Missouri 63376

Phone: (636) 397-1211  
 Fax: (636) 397-1104  
 Website: www.prs3.com

WBID #: 0176  
 Name: Paris Branch  
 County: Lincoln  
 UCCS Location Map



GRAPHIC SCALE  
 1 inch = 2000ft.

PRS Job Number: 07031 MODN.00E

WBID# 0176  
 Site# 1

**Field Data Sheets for Recreational Use Stream Surveys**  
**Data Sheet B - Site Characterization**  
 (must be completed for each site)

Date & Time: 5/14/07 1740	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): Renee Martin	<b>Paris Branch @ Hwy. H</b>
Current Weather Conditions: Clear	Facility Name: Eolia WWTF/Non-Point Source
Weather Conditions for Past 10 days: Unknown	Permit Number: MO 0112470
Drought Conditions?: No drought <input type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input checked="" type="checkbox"/>	

**Site Locations:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: 0667875		Y: 4325690	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	x	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other Real Time Differential Correction with	
Real Time Differential Processing		Post Processing	
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± 16 Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

**Photos:**

Upstream Photos		Downstream Photos		Other Photos	
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<b>See Attached Photos</b>		0176-1-93 0176-1-94	Upstream @ Site #1, Transect #1 Downstream @ Site #1, Transect #1		

**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 checked="" type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input checked="" type="checkbox"/> Other:

Comments: **Farm ground on both sides of stream**

**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 checked="" 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:

**Stream Morphology:**

Upstream View's Physical Dimensions: 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					

Downstream View's Physical Dimensions: 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%.)

-	% Cobble	50	% Gravel	-	% Sand	-	% Silt	50	% Mud/Clay	-	% Bedrock
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Aquatic Vegetation\*: (Note amount of vegetation or algal growth at the assessment site)

Large amounts of algae & duckweed & grass in stream.

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:
Surface Deposit:	<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 effect another use.

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

Surveyor's Signature: Renee Martin Date of Survey: 5/14/07

Organization: AE Solutions Position: Environmental Specialist

### Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>0176</u> Site #: <u>0176-1</u> Estimated Channel Incision: <u>&lt;1.0</u> (m) (height between low bank width and water) GPS Location: <u>0667872</u> UTM Y: <u>4325687</u> UTM X: <u>0667872</u> UTM Y: <u>4325687</u> Horizontal Accuracy Estimate (GPS Data Quality): <u>+/- 15</u> (feet)      PDOP: _____ Average Stream Width: <u>3</u> (meters)      Length of Survey Segment: <u>150</u> (meters) (20x average stream width) Field Staff: <u>Renee Martin &amp; Jenny Hrabik</u>	<b style="text-align: center;">Dissolved Oxygen</b> Dissolved Oxygen: <u>8.73</u> (mg/L) Dissolved Oxygen: <u>109.0</u> (% sat) Specific Cond: <u>575</u> (µS/cm) Water Temperature: <u>26.2</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	0.4	0.1	0.4	0.1	0.5	0.1	0.0	<0.1	0.0	0.3	0.4	0.1	0.3	0.1	0.0	<0.1	0.0	<0.1	0.4	0.1	0.0	0.1
2	0.65	0.15	0.6	0.1	0.7	0.2	0.07	<0.1	0.45	0.5	0.9	0.2	0.4	0.1	0.15	<0.1	0.3	<0.1	0.6	0.25	0.15	0.2
3	0.9	0.3	0.8	0.1	0.9	0.2	0.14	<0.1	0.9	0.5	1.4	0.2	0.5	0.1	0.30	<0.1	0.6	<0.1	0.8	0.3	0.30	0.2
4	1.15	0.2	1.0	0.1	1.1	0.15	0.21	<0.1	1.35	0.5	1.9	0.1	0.6	0.1	0.45	<0.1	0.9	<0.1	1.0	0.3	0.45	0.2
5	1.4	0.2	1.2	0.1	1.3	0.15	0.28	<0.1	1.8	0.5	2.4	0.2	0.7	0.1	0.60	<0.1	1.2	<0.1	1.2	0.3	0.60	0.2
6	1.65	0.2	1.4	0.1	1.5	0.1	0.35	<0.1	2.25	0.6	2.9	0.3	0.8	0.1	0.75	<0.1	1.5	<0.1	1.4	0.2	0.75	0.1
7	1.9	0.2	1.6	0.1	1.7	0.1	0.42	<0.1	2.7	0.5	3.4	0.3	0.9	0.1	0.90	<0.1	1.8	<0.1	1.6	0.2	0.90	0.2
8	2.15	0.2	1.8	<0.1	1.9	0.1	0.49	<0.1	3.15	0.6	3.9	0.3	1.0	0.1	1.05	<0.1	2.1	<0.1	1.8	0.2	1.05	0.1
9	2.4	0.2	2.0	0.1	2.1	0.1	0.56	<0.1	3.6	0.6	4.4	0.2	1.1	0.1	1.20	<0.1	2.4	<0.1	2.0	0.25	1.20	0.1
10	2.65	0.2	2.2	<0.1	2.3	0.1	0.63	<0.1	4.05	0.3	4.9	0.1	1.2	0.1	1.35	<0.1	2.7	<0.1	2.2	0.2	1.35	0.1
11	2.9	0.1	2.4	0.1	2.5	0.1	0.70	<0.1	4.5	0.1	5.4	0.1	1.3	0.1	1.5	<0.1	3.0	<0.1	2.4	0.1	1.50	0.0
12	3.2	0.0	3.0	0.0	3.0	0.0	0.7	0.0	4.7	0.0	6.2	0.0	3.0	0.0	1.5	0.0	3.0	0.0	2.8	0.0	1.50	0.0
Feature Type (riffle, run, or pool)	Run		Run		Run		Riffle		Pool		Pool		Run		Riffle		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: Renee Martin      Date: 5/14/07

WBID# 0176  
 Site# 2

**Field Data Sheets for Recreational Use Stream Surveys**  
**Data Sheet B - Site Characterization**  
 (must be completed for each site)

Date & Time: 5/14/07 1830	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): Renee Martin	<b>Paris Branch @ Hwy. BB</b>
Current Weather Conditions: Clear	Facility Name: Eolia WWTF/Non-Point Source
Weather Conditions for Past 10 days: Unknown	Permit Number: MO 0112470
Drought Conditions?: No drought <input type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input checked="" type="checkbox"/>	

**Site Locations:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: 0671298		Y: 4324853	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	x	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other Real Time Differential Correction with	
Real Time Differential Processing		Post Processing	
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± 18 Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

**Photos:**

Upstream Photos		Downstream Photos		Other Photos	
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<b>See Attached Photos</b>		0176-2-95 0176-2-96	Upstream @ Site #2, Transect #1 Downstream @ Site #2, Transect #1		

**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 checked="" type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input checked="" type="checkbox"/> Other:
Comments: <b>Hwy. BB Bridge</b>				

**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: <b>None</b>					

**Stream Morphology:**

Upstream View's Physical Dimensions: 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					

Downstream View's Physical Dimensions: 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%.)

-	% Cobble	50	% Gravel	-	% Sand	-	% Silt	50	% Mud/Clay	-	% Bedrock
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Aquatic Vegetation\*: (Note amount of vegetation or algal growth at the assessment site)

Algae/grass within stream

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:
Surface Deposit:	<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 effect another use.

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

Surveyor's Signature: Renee Martin Date of Survey: 5/14/07

Organization: AE Solutions Position: Environmental Specialist

### Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>0176</u> Site #: <u>0176-2</u> Estimated Channel Incision: <u>&lt;1.0</u> (m) (height between low bank width and water) GPS Location: <u>0671298</u> UTM Y: <u>4324853</u> UTM X:      Horizontal Accuracy Estimate (GPS Data Quality): +/- <u>18</u> (feet)      PDOP: _____ Average Stream Width: <u>6</u> (meters)      Length of Survey Segment: <u>150</u> (meters) (20x average stream width) Field Staff: <u>Renee Martin &amp; Jenny Hrabik</u>	<b>Dissolved Oxygen</b> Dissolved Oxygen: <u>7.46</u> (mg/L) Dissolved Oxygen: <u>90.2</u> (% sat) Specific Cond: <u>536</u> (µS/cm) Water Temperature: <u>25.4</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	1.0	0.1	0.6	0.1	0.0	0.0	0.0	0.0	0.8	0.1	0.4	0.1	0.8	0.1	0.6	0.1	0.2	0.1	1.0	0.1	1.0	0.1
2	1.15	0.1	0.9	0.1	0.6	0.0	0.6	0.0	1.1	0.1	0.8	0.7	1.1	0.1	0.9	0.1	0.35	0.2	1.2	0.1	1.25	<0.1
3	1.30	0.2	1.2	0.1	1.2	0.0	1.2	0.0	1.4	0.1	1.2	0.9	1.4	0.2	1.2	0.2	0.50	0.2	1.4	0.1	1.50	0.1
4	1.45	0.2	1.5	0.1	1.8	0.0	1.8	0.0	1.7	0.2	1.6	0.8	1.7	0.3	1.5	0.3	0.65	0.3	1.6	0.1	1.75	0.1
5	1.60	0.1	1.8	0.1	2.4	0.0	2.4	0.0	2.0	0.2	2.0	0.9	2.0	0.2	1.8	0.3	0.80	0.3	1.8	0.1	2.0	<0.1
6	1.75	0.2	2.1	0.1	3.0	0.0	3.0	0.0	2.3	0.1	2.4	0.9	2.3	0.2	2.1	0.3	0.95	0.3	2.0	0.1	2.25	<0.1
7	1.90	0.2	2.4	0.1	3.6	0.0	3.6	0.0	2.6	0.1	2.8	0.9	2.6	0.3	2.4	0.3	1.10	0.4	2.2	0.1	2.5	0.1
8	2.05	0.2	2.7	0.1	4.2	0.0	4.2	0.0	2.9	0.2	3.2	0.9	2.9	0.4	2.7	0.4	1.25	0.4	2.4	0.2	2.75	<0.1
9	2.20	0.2	3.0	0.1	4.8	0.0	4.8	0.0	3.2	0.2	3.6	0.7	3.2	0.5	3.0	0.5	1.40	0.3	2.6	0.2	3.0	0.1
10	2.35	0.1	3.3	0.1	5.4	0.0	5.4	0.0	3.5	0.1	4.0	0.6	3.5	0.5	3.3	0.4	1.55	0.2	2.8	0.1	3.25	0.1
11	2.50	0.1	3.6	0.1	6.0	0.0	6.0	0.0	3.8	0.1	4.4	0.3	3.8	0.3	3.6	0.3	1.70	0.1	3.0	0.1	3.50	0.1
12	4.3	0.0	5.0	0.0	6.0	0.0	6.0	0.0	4.5	0.0	5.4	0.0	4.0	0.0	4.2	0.0	2.0	0.0	3.4	0.0	4.4	0.0
Feature Type (riffle, run, or pool)	Run		Run		Gravel Bar *		Gravel Bar *		Pool		Pool		Pool		Pool		Run		Run		Run	

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.

\* Gravel Bar -- Run

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: Renee Martin

Date: 5/14/07

WBID# 0176  
 Site# 3

**Field Data Sheets for Recreational Use Stream Surveys**  
**Data Sheet B - Site Characterization**  
 (must be completed for each site)

Date & Time: 5/14/07 1900	Site Location Description (e.g., road crossing): <b>Shortline Drive</b>
Personnel (Data Collectors): Renee Martin	
Current Weather Conditions: Clear	Facility Name: Eolia WWTF/Non-Point Source
Weather Conditions for Past 10 days: Unknown	Permit Number: MO 0112470
Drought Conditions?: No drought <input type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input checked="" type="checkbox"/>	

**Site Locations:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: 0671334		Y: 4324685	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	x	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other Real Time Differential Correction with	
Real Time Differential Processing		Post Processing	
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± 26 Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

**Photos:**

Upstream Photos		Downstream Photos		Other Photos	
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<b>See Attached Photos</b>		0176-3-96 0176-3-97	Upstream @ Site #3, Transect #1 Downstream @ Site #3, Transect #1		

**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 checked="" type="checkbox"/> Other:

Comments: **Concrete bridge with gravel road over it**

**Indications of Human Use\*:** (attach photos)

<input checked="" 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: **None**

**Stream Morphology:**

Upstream View's Physical Dimensions: 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					

Downstream View's Physical Dimensions: 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%.)

- % Cobble	50 % Gravel	- % Sand	- % Silt	50 % Mud/Clay	- % Bedrock
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Aquatic Vegetation\*: (Note amount of vegetation or algal growth at the assessment site)

Algae & musk grass on substrate and stream bottom

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:
Surface Deposit:	<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 effect another use.

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

Surveyor's Signature: Renee Martin Date of Survey: 5/14/07

Organization: AE Solutions Position: Environmental Specialist

### Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>0176</u> Site #: <u>0176-3</u> Estimated Channel Incision: <u>&lt;1.0</u> (m) (height between low bank width and water) GPS Location: <u>0671334</u> UTM Y: <u>4324685</u> UTM X: <u>0671334</u> UTM Y: <u>4324685</u> Horizontal Accuracy Estimate (GPS Data Quality): <u>+/- 26</u> (feet)      PDOP: _____ Average Stream Width: <u>4</u> (meters)      Length of Survey Segment: <u>100</u> (meters) (20x average stream width) Field Staff: <u>Renee Martin</u>	<b>Dissolved Oxygen</b> Dissolved Oxygen: <u>5.58</u> (mg/L) Dissolved Oxygen: <u>54.8</u> (% sat) Specific Cond: <u>375</u> (µS/cm) Water Temperature: <u>14.1</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	0.3	0.1	0.6	0.1	0.2	0.1	0.0	<0.1	0.2	0.1	0.2	0.1	0.5	0.3								
2	0.9	0.1	0.95	0.1	0.5	0.3	0.25	<0.1	0.6	0.2	0.65	0.2	0.9	0.5								
3	1.5	0.0	1.3	<0.1	0.8	0.4	0.50	<0.1	1.0	0.3	1.1	0.2	1.3	0.6								
4	2.1	0.0	1.65	0.0	1.1	0.4	0.75	<0.1	1.4	0.4	1.55	0.2	1.7	0.5								
5	2.7	0.0	2.00	<0.1	1.4	0.3	1.0	<0.1	1.8	0.3	2.0	0.1	2.1	0.4								
6	3.3	0.0	2.35	0.1	1.7	0.2	1.25	<0.1	2.4	0.4	2.45	0.1	2.5	0.3								
7	3.9	0.0	2.7	0.1	2.0	0.1	1.50	<0.1	2.8	0.3	2.90	0.2	2.9	0.3								
8	4.5	0.0	3.05	<0.1	2.3	0.1	1.75	<0.1	3.2	0.2	3.35	0.2	3.3	0.2								
9	5.1	0.0	3.4	<0.1	2.6	0.1	2.0	<0.1	3.6	0.2	3.8	0.3	3.7	0.2								
10	5.6	0.0	3.75	0.1	2.9	0.1	2.25	<0.1	4.0	0.2	4.25	0.3	4.1	0.1								
11	6.2	0.1	4.10	0.2	3.2	0.1	2.50	<0.1	4.4	0.1	4.7	0.1	4.5	0.1								
12	6.7	0.0	4.6	0.0	3.3	0.0	2.5	0.0	4.6	0.0	5.0	0.0	4.6	0.0								
Feature Type (riffle, run, or pool)	Run		Riffle		Pool		Run		Pool		Pool		Pool									
depths less than 0.1m?																						

**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: Renee Martin      Date: 5/14/07

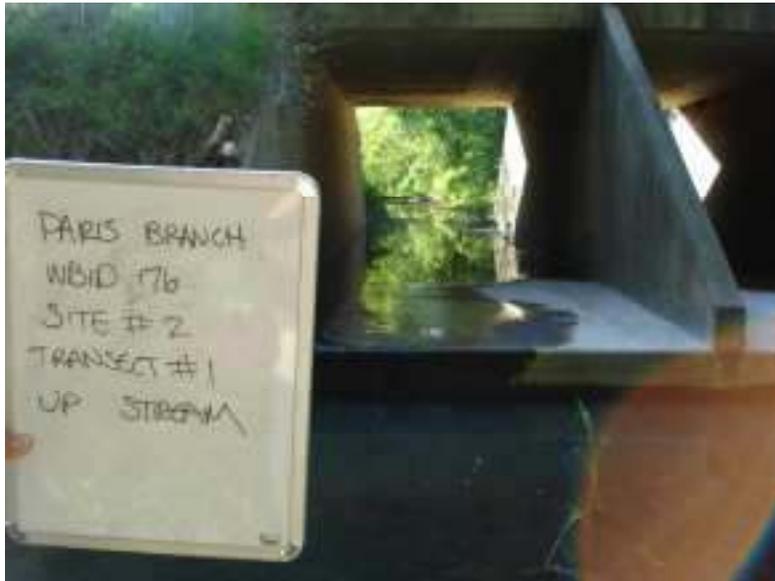
**WBID# 0176**



**Site# 1 Photo ID# 0176-1-93, Upstream**



**Site# 1 Photo ID# 0176-1-94, Downstream**



**Site# 2 Photo ID# 0176-2-95, Upstream**



**Site# 2 Photo ID# 0176-2-96, Downstream**

**WBID# 0176**



**Site# 3 Photo ID# 0176-3-96, Upstream**



**Site#3 Photo ID# 0176-3-97, Downstream**



"Cindy DiStefano "  
<Cindy.DiStefano@mdc.mo.gov>

03/26/2008 11:34 AM

To "Michael Kruse" <michael.kruse@dnr.mo.gov>  
cc  
bcc  
Subject Fwd: DNR Request - Sarah, Marv, Jen, Kenda

>>> Lynn Schrader 03/18/08 10:10 AM >>>  
Gang,

With this note, I'll confirm that the latter observations were after 1975....especially since a couple of you reporting may not of even been born yet.

Would you guys confirm to Cindy the request for Stater, Brushy, and Bigelow creeks, please.

I know, I know.....the Clean Water Act says streams are suppose to be swimmable whether we actually saw someone or not. Cindy is doing her best for these.

Thanks,

Lynn

>>> Cindy DiStefano 3/14/2008 1:43 PM >>>  
Lynn,

The following is a request received from DNR that I have edited to pertain to your region. I have included only the streams in your region and added page numbers that correspond to the page numbers on the map file. Hopefully, this information will be easy to obtain. If possible, I would like the information by March 26th, so I can meet DNR's deadline.

Email from Mike Kruse, DNR:

I am following up on conversations you previously had with Donna Menown regarding the letter of comments provided to us from John Hoskins and the MDC on 8/24/2005. The letter pertains to observations of whole-body contact recreation in streams we completed Use Attainability Analyses for in 2005. After reviewing the 2005 UAAs additional questions arose that we hope you may be able to answer. We greatly appreciate all your help on this matter.

After reviewing the UAAs available on-line, it became apparent that some of the surveys were completed in locations other than the streams in question. Since the comments in the letter from the MDC did not provide WBID numbers and the maps provided in the 2005 UAAs may not be entirely accurate, we cannot be certain those observations came from the correct streams. Would you be able to tell us if the following observations were indeed made on the correct stream segments and equally important if the observations occurred after 11/28/1975? I have attached maps and locations of the streams in question.

Stater Cr. (WBID 1850): public swimming observed - Crawford Co. - Page 6

Brushy Fk. (WBID 33): children playing and splashing observed - Lincoln Co. - Page 8

Bigelow's Cr. (WBID 1608): children playing and splashing observed -  
St. Charles Co - Page 10

Additionally, the following list of streams is of those the MDC  
observed WBCR, however we need confirmation the actions occurred after  
11/28/1975.

Whittenburg Cr. (WBID 1899): public swimming observed - Crawford Co.  
Birkhead Br. (WBID 34): children playing and splashing observed -  
Lincoln Co.  
Paris Br. (WBID 176): children playing and splashing observed -  
Lincoln Co.  
Turkey Cr. (WBID 199): public swimming observed - Lincoln Co.  
Mill Cr. (WBID 2124): public swimming observed - Washington Co.  
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I will be at a meeting next week, so if you have questions please  
contact Mike at:

Mike Kruse  
Div. of Env. Quality/Water Protection Program  
MO Dept. of Natural Resources, Jeff. City  
(573) 522-4901; FAX [522-9920]  
e-mail: michael.kruse@dnr.mo.gov

Thanks!  
Cindy



Maps\_UAA Kruse.doc