



Use Attainability Analysis

for

WBID 2191 Sugar Creek

(Originally presented as WBID 2189 Tributary to Saline Creek but
was not performed on the appropriate segment)

Submitted by
MEC Water Resources

To
Missouri Department of Natural Resources
Water Protection Program

On
December 1, 2007

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):	Trib. of Saline CR.		
Missouri Water Body Identification (WBID) Number:	2189		
8-digit HUC:	20090401	County:	Jefferson
Upstream Legal Description (from Table H):	Sur 3011, 43N, 5E		
Downstream Legal Description (from Table H):	Mouth		
Number of sites evaluated	3		
List all sites numbers, listed consecutively upstream to downstream: Site 1: 150 m upstream private access off old Hwy 141 Site 2: private access off old Hwy 141 Site 3: accessed from private rock quarry road off old Hwy 141			

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

Discharger Facility Name(s):	Koller Craft Plastic Prod.
Discharger Permit Number(s):	mo 0123358

III. UAA Surveyor (please print legibly)

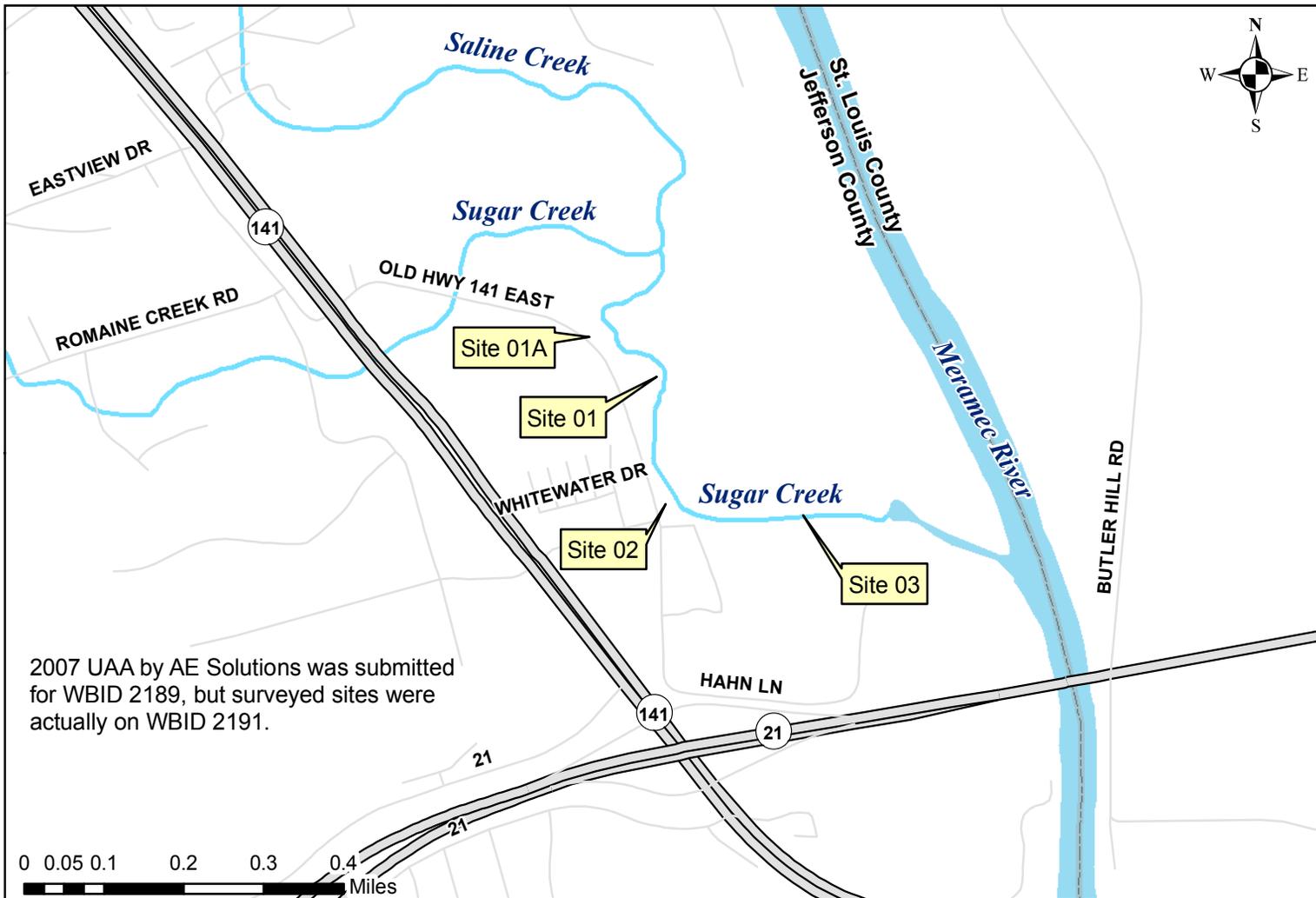
Name of Surveyor	Renee Martin	Telephone Number:	573-875-7844
Organization/Employer:	AE Solutions		
Position:	Env. Specialist		

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

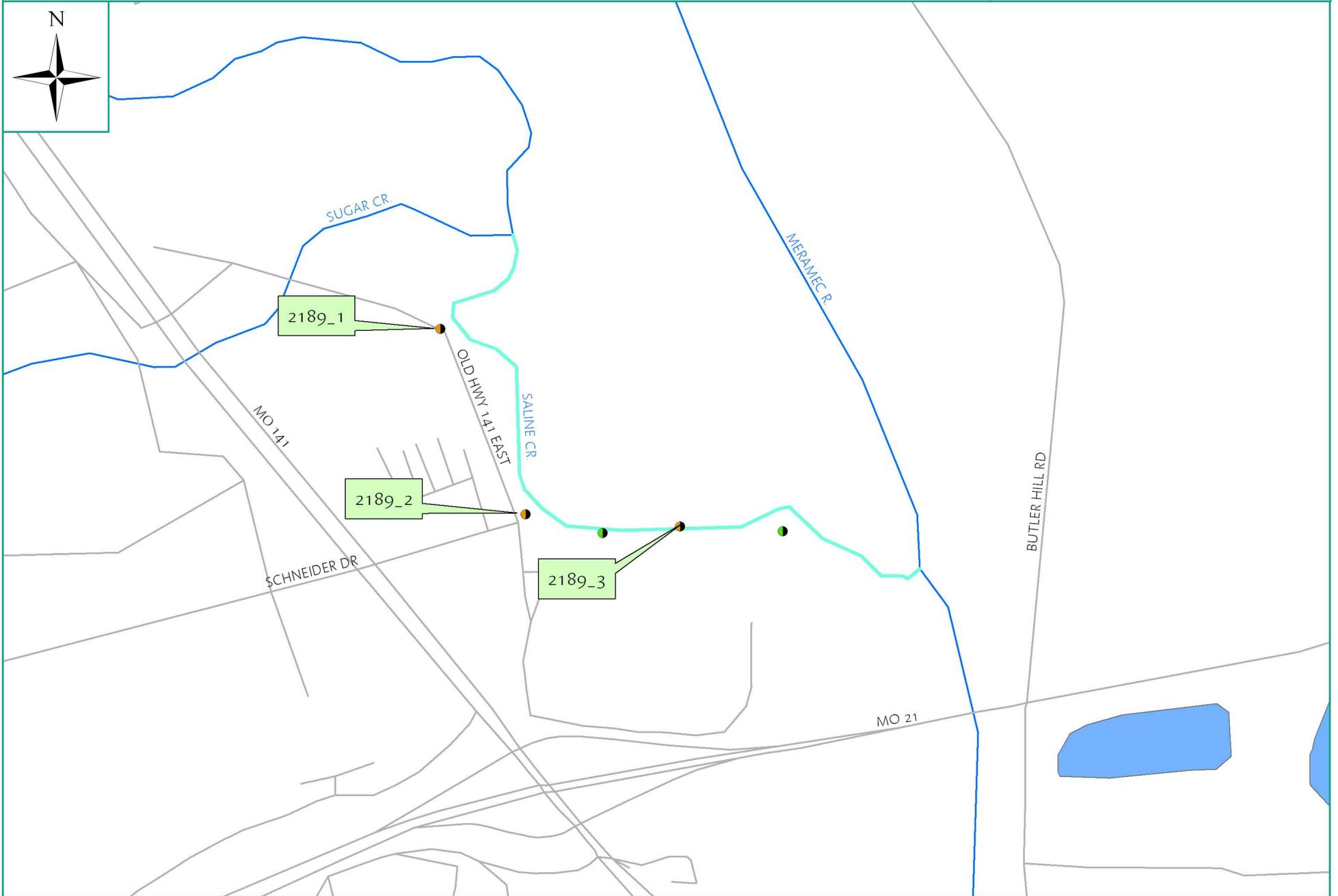
Signed: Renee Martin Date: 10/12/07

HUC 10-16-07

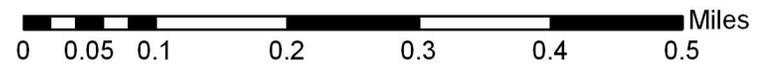
Sugar Creek, WBID 2191, in Jefferson County, Mo.



Trib. to Saline Creek (WBID 2189)



- Upstream Boundary
- Downstream Boundary



WBID # 2189
 Site # 01A

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>10/09/07 1012</u>	Site Location Description (e.g., road crossing): <u>Old Hwy 141</u>
Personnel (Data Collectors): <u>JH/JF</u>	
Current Weather Conditions: <u>Clear</u>	Facility Name: <u>Koller Craft Plastic Prod.</u>
Weather Conditions for Past 10 days: <u>rain/clear</u>	Permit Number: <u>MD 123358</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 Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): <u>426027</u>	Northing (UTM Y): <u>0724586</u>	Horizontal Accuracy: <u>30</u> Meters <u>ft</u>		
Site 11	Easting (UTM X): <u>①</u>	Northing (UTM Y): <u>①</u>	Horizontal Accuracy: <u>①</u> Meters		

① Did not survey here, so no trans || GPS

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>103.040</u>	<u>upstream</u>	<u>103.041</u>	<u>downstream</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 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.)

Did not survey here

WBID # 2189
 Site # 01A

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: <p align="center"><i>Did not survey here</i></p>				

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

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
Comments / Other: <p align="center"><i>Did not survey here</i></p>				

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

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

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 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 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 type="checkbox"/> None	<input type="checkbox"/> Other:

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

WBID # 2189
Site # 01A

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

Comments: (Please record any additional comments here.)

Too Steep couldnot access

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

Surveyor's Signature: Jennifer Drabik Date of Survey: 10/09/07
Organization: AE Solutions Position: Env. Specialist

10-16-07
A4C

Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 2189 Site #: 2189_01A
(WBID_Site#)

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

GPS Location (taken at transect 1):
 UTM X: 4261027 UTM Y: 0724586 30
 Horizontal Accuracy Estimate (GPS Data Quality): +/- _____ (feet)

GPS Location (taken at transect 11):
 UTM X: _____ UTM Y: _____
 Horizontal Accuracy Estimate (GPS Data Quality): +/- _____ (feet)

Average Stream Width: _____ (meters) Length of Survey Segment: _____ (meters)
(To determine Length of Reach) (20x average stream width)

Field Staff: JH/JF

Dissolved Oxygen	
Date: <u>10/09/07</u>	Time: <u>1012</u>
Dissolved Oxygen: _____	(mg/L)
Dissolved Oxygen: _____	(% sat)
Specific Cond: _____	(µS/cm)
Water Temp.: _____	(°C)

Did not survey here - no access

		Transect Cross Section																					
		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1																						
	2																						
	3																						
	4																						
	5																						
	6																						
	7																						
	8																						
	9																						
Right Bank			0		0		0		0		0		0		0		0		0		0		0
Feature Type (riffle, run, or pool)																							

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

AUC 10-16-07

Signed: Jennifer Drake Date: 10/12/07

WBID # 2189
 Site # 01

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>10/09/07 1040</u>	Site Location Description (e.g., road crossing): <u>old Hwy 141 - accessed from private road and began 150 m. upstream</u>
Personnel (Data Collectors): <u>JH/JF</u>	Facility Name: <u>Koller Craft Plastic Prod.</u>
Current Weather Conditions: <u>clear</u>	Permit Number: <u>MO 0123358</u>
Weather Conditions for Past 10 days: <u>rain/clear</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 Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): <u>JH 4260948</u>	Northing (UTM Y): <u>0721721</u>	Horizontal Accuracy: <u>20</u> Meters <u>JF A</u> (EPE / FOM / PDOP)
Site 11	Easting (UTM X): <u>4260738</u>	Northing (UTM Y): <u>0724736</u>	Horizontal Accuracy: <u>39</u> Meters <u>JH ft</u> (EPE / FOM / PDOP)

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>103_42</u>	<u>upstream</u>	<u>103_43</u>	<u>dnstream</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.)				

WBID # 2189

Site # 01

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

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

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

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

% Cobble	<u>1</u> % Gravel	<u>19</u> % Sand	% Silt	<u>80</u> % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

<i>Duckweed algae</i>

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input 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:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

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

WBID # 2189
Site # 01

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

Comments: (Please record any additional comments here.)

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

Surveyor's Signature:  Date of Survey: 10/09/07
Organization: AE Solutions Position: Field Tech.

RWC 10-16-07

Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>2189</u> Site #: <u>2189-01</u> (WBID_Site#) Estimated Channel Incision: <u>5.0</u> (m) (height between low bank width and water) GPS Location (taken at transect 1): UTM X: <u>4260948</u> UTM Y: <u>724721</u> Horizontal Accuracy Estimate (GPS Data Quality): +/- <u>20</u> (feet) GPS Location (taken at transect 11): UTM X: <u>4260738</u> UTM Y: <u>0724736</u> Horizontal Accuracy Estimate (GPS Data Quality): +/- <u>39</u> (feet) Average Stream Width: <u>10.0</u> (meters) Length of Survey Segment: <u>200</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>JH/JF</u>	<h3 style="text-align: center; margin: 0;">Dissolved Oxygen</h3> Date: <u>10/09/07</u> Time: <u>1040</u> Dissolved Oxygen: <u>4.82</u> (mg/L) Dissolved Oxygen: <u>53.4</u> (% sat) Specific Cond: <u>698.0</u> (µS/cm) Water Temp.: <u>20.0</u> (°C)
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Transect Cross Section																							
		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1		0.89	0.17	0.91	0.23	0.90	0.62	0.82	0.13	0.80	0.21	1.05	0.45	1.10	0.52	1.20	0.50	0.92	0.61	1.00	0.42	1.00	0.19
2		1.78	0.30	1.82	0.46	1.80	0.93	1.64	0.29	1.60	0.33	2.10	0.69	2.20	0.86	2.40	0.79	1.84	0.92	2.00	0.63	2.00	0.38
3		2.67	0.69	2.73	0.79	2.70	0.95	2.46	0.63	2.40	0.59	3.15	0.89	3.30	0.98	3.60	0.91	2.76	>1	3.00	0.70	3.00	0.60
4		3.56	0.89	3.64	0.97	3.60	>1	3.28	0.89	3.20	0.82	4.20	>1	4.40	>1	4.80	>1	3.68	>1	4.00	0.92	4.00	0.82
5		4.45	0.63	4.55	>1	4.50	>1	4.10	0.84	4.00	0.93	5.25	>1	5.50	>1	6.00	>1	4.60	>1	5.00	>1	5.00	0.74
6		5.34	0.60	5.46	0.62	5.40	0.83	4.92	0.61	4.80	0.90	6.30	>1	6.60	>1	7.20	>1	5.52	0.96	6.00	>1	6.00	0.66
7		6.23	0.42	6.37	0.40	6.30	0.78	5.74	0.49	5.60	0.61	7.35	0.92	7.70	>1	8.40	0.82	6.44	0.85	7.00	0.85	7.00	0.50
8		7.12	0.30	7.28	0.29	7.20	0.61	6.56	0.30	6.40	0.40	8.40	0.59	8.80	0.73	9.60	0.60	7.36	0.71	8.00	0.65	8.00	0.39
9		8.01	0.15	8.19	0.21	8.10	0.43	7.38	0.16	7.20	0.17	9.45	0.48	9.90	0.60	10.80	0.39	8.28	0.43	9.00	0.45	9.00	0.30
Right Bank		8.90	0	9.15	0	9.00	0	8.25	0	8.05	0	10.50	0	11.00	0	12.00	0	9.25	0	10.05	0	10.00	0
Feature Type (riffle, run, or pool)		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

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

Signed: [Signature] Date: 10/09/07

Rk 10-16-07

WBID # 2189

Site # 02

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>10/09/07 1120</u>	Site Location Description (e.g., road crossing): <u>old Hwy 141 - accessed from private road</u>
Personnel (Data Collectors): <u>JH/JF</u>	
Current Weather Conditions: <u>clear</u>	Facility Name: <u>Koller Craft Plastic Prod.</u>
Weather Conditions for Past 10 days: <u>rain/clear</u>	Permit Number: <u>mo 0123358</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 Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): <u>4260696</u>	Northing (UTM Y): <u>0724737</u>	Horizontal Accuracy: (EPE / FOM / PDOP)	<u>36</u>	<u>JRH Meters ft</u>
Site 11	Easting (UTM X): <u>4260663</u>	Northing (UTM Y): <u>0724876</u>	Horizontal Accuracy: (EPE / FOM / PDOP)	<u>31</u>	<u>JRH Meters ft</u>

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>103_044</u>	<u>upstream</u>	<u>103_045</u>	<u>dnstream</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.)				

WBID # 2189

Site # 02

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

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

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

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

% Cobble	% Gravel	<u>20</u> % Sand	% Silt	<u>80</u> % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

<u>algae</u> <u>duckweed</u>

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 type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input checked="" type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input 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:

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

WBID # 2189
Site # 02

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

Comments: (Please record any additional comments here.)

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

Surveyor's Signature: Jennifer Thabek Date of Survey: 10/09/07

Organization: AE Solutions Position: Env: Specialist

RUC 10-16-07

Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>2189</u> Site #: <u>2189_02</u> (WBID_Site#) Estimated Channel Incision: <u>6</u> (m) (height between low bank width and water) GPS Location (taken at transect 1): UTM X: <u>4260696</u> UTM Y: <u>0724739</u> Horizontal Accuracy Estimate (GPS Data Quality): +/- <u>36</u> (feet) GPS Location (taken at transect 11): UTM X: <u>4260663</u> UTM Y: <u>0724876</u> Horizontal Accuracy Estimate (GPS Data Quality): +/- <u>31</u> (feet) Average Stream Width: <u>10.0</u> (meters) Length of Survey Segment: <u>200</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>JH/JF</u>	<h3 style="text-align: center; margin: 0;">Dissolved Oxygen</h3> Date: <u>10/09/07</u> Time: <u>1020</u> Dissolved Oxygen: <u>4.36</u> (mg/L) Dissolved Oxygen: <u>49.0</u> (% sat) Specific Cond: <u>711.0</u> (µS/cm) Water Temp.: <u>21.0</u> (°C)
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Transect Cross Section																							
		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1		0.84	0.31	0.80	0.42	1.05	0.59	1.12	0.63	1.20	0.62	0.95	0.49	0.89	0.36	0.91	0.51	1.10	0.60	1.20	0.70	0.95	0.62
2		1.68	0.44	1.60	0.48	2.10	0.82	2.24	0.98	2.40	0.83	1.90	0.62	1.78	0.49	1.82	0.69	2.20	0.93	2.40	0.81	1.90	0.69
3		2.52	0.65	2.40	0.61	3.15	0.97	3.36	>1	3.60	0.96	2.85	0.89	2.67	0.66	2.73	0.92	3.30	0.99	3.60	0.92	2.85	0.80
4		3.36	0.90	3.20	0.97	4.20	>1	4.48	>1	4.80	>1	3.80	0.93	3.56	0.92	3.64	>1	4.40	>1	4.80	0.98	3.80	0.92
5		4.20	>1	4.00	>1	5.25	>1	5.60	>1	6.00	>1	4.75	0.98	4.45	>1	4.55	>1	5.50	>1	6.00	>1	4.75	0.98
6		5.04	>1	4.80	>1	6.30	>1	6.72	>1	7.20	>1	5.70	>1	5.34	>1	5.46	>1	6.60	0.91	7.20	>1	5.70	>1
7		5.88	0.82	5.60	>1	7.35	>1	7.84	0.92	8.40	>1	6.65	0.86	6.23	0.67	6.37	0.90	7.70	0.87	8.40	0.86	6.65	0.73
8		6.72	0.51	6.40	0.85	8.40	0.80	8.96	0.83	9.60	0.72	7.60	0.59	7.12	0.53	7.28	0.51	8.80	0.53	9.60	0.79	7.60	0.61
9		7.56	0.29	7.20	0.50	9.45	0.62	10.08	0.52	10.80	0.51	8.55	0.33	8.01	0.34	8.19	0.48	9.90	0.49	10.80	0.71	8.55	0.39
Right Bank		8.45	0	8.00	0	10.50	0	11.25	0	12.00	0	9.50	0	8.95	0	9.15	0	11.05	0	12.05	0	9.55	0
Feature Type (riffle, run, or pool)		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

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

ANC 10-16-07

Signed: Jennifer Braddock Date: 10/12/07

WBID # 2189

Site # 03

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>10/09/07 1145</u>	Site Location Description (e.g., road crossing): <u>old Hwy 141 - walked in from private back quarry road</u>
Personnel (Data Collectors): <u>JH/JF</u>	
Current Weather Conditions: <u>clear</u>	Facility Name: <u>Koller Craft Plastic Prod.</u>
Weather Conditions for Past 10 days: <u>rain/clear</u>	Permit Number: <u>MO 0123358</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 Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): <u>4260674</u>	Northing (UTM Y): <u>0725015</u>	Horizontal Accuracy: (EPE / FOM / PDOP)	<u>31</u>	<u>JRH</u> Meters <u>ft</u>
Site 11	Easting (UTM X): <u>4260666</u>	Northing (UTM Y): <u>0725198</u>	Horizontal Accuracy: (EPE / FOM / PDOP)	<u>26</u>	<u>JRH</u> Meters <u>ft</u>

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>103_046</u>	<u>upstream</u>	<u>103_047</u>	<u>dnstream</u>	<u>103_048</u>	<u>ATU tracks</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.)				

WBID # 2109

Site # 03

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

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

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input checked="" type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
Comments / Other:				

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

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

<u>algae</u> <u>duckweed</u>

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 checked="" type="checkbox"/> Sludge	<input checked="" type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input checked="" type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

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

WBID # 2189

Site # 03

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

Comments: (Please record any additional comments here.)

Spoke to rock quarry employee & gave us permission to access through their property.

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

Surveyor's Signature: Jennifer Drake Date of Survey: 10/09/07

Organization: AE Solutions Position: Env. Specialist

RUC 10-16-07

Recreational Use Attainability Analysis Field Survey Sheet

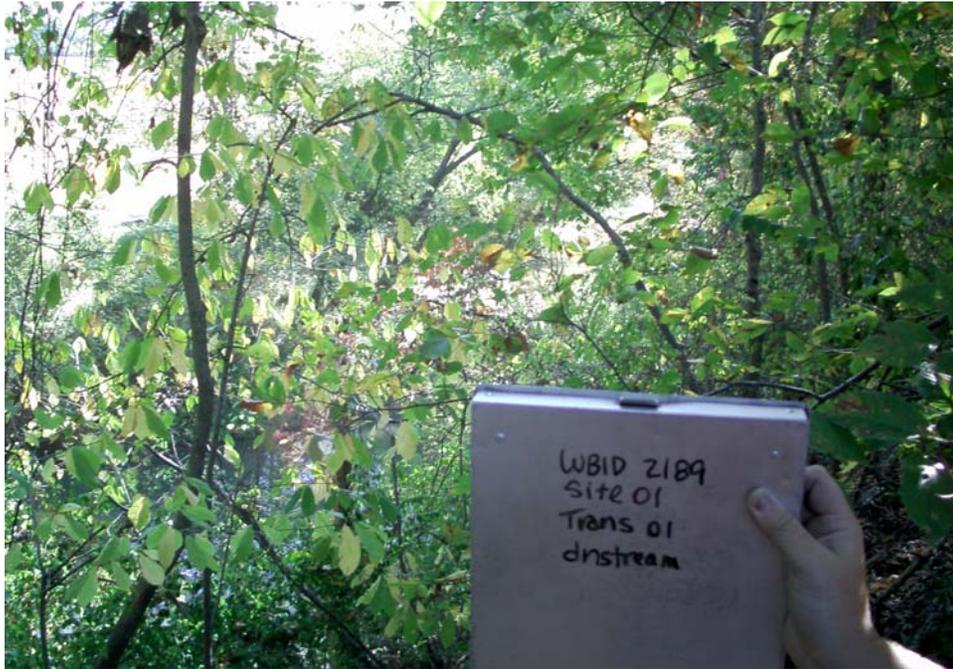
Waterbody ID: <u>2189</u> Site #: <u>2189-03</u> (WBID_Site#) Estimated Channel Incision: <u>4</u> (m) (height between low bank width and water) GPS Location (taken at transect 1): UTM X: <u>4260674</u> UTM Y: <u>0725015</u> Horizontal Accuracy Estimate (GPS Data Quality): +/- <u>31</u> (feet) GPS Location (taken at transect 11): UTM X: <u>4260666</u> UTM Y: <u>0725198</u> Horizontal Accuracy Estimate (GPS Data Quality): +/- <u>26</u> (feet) Average Stream Width: <u>4.0</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>JH/JF</u>	<h3 style="text-align: center; margin: 0;">Dissolved Oxygen</h3> Date: <u>10/09/07</u> Time: <u>1145</u> Dissolved Oxygen: <u>8.59</u> (mg/L) Dissolved Oxygen: <u>97.4</u> (% sat) Specific Cond: <u>508.0</u> (µS/cm) Water Temp.: <u>20.8</u> (°C)
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Transect/Cross-Section																						
Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0.40	0.06	0.60	0.08	0.20	0.16	0.55	0.16	0.20	0.02	0.26	0.01	0.16	0.05	0.26	0.10	0.28	0.02	0.60	0.11	0.62	0.11
2	0.80	0.06	1.20	0.10	0.40	0.18	1.10	0.12	0.40	0.03	0.52	0.02	0.32	0.07	0.52	0.12	0.56	0.09	1.20	0.23	1.24	0.16
3	1.20	0.14	1.80	0.25	0.60	0.18	1.65	0.11	0.60	0.06	0.78	0.01	0.48	0.10	0.78	0.13	0.84	0.19	1.80	0.31	1.86	0.18
4	1.60	0.13	2.40	0.21	0.80	0.19	2.20	0.13	0.80	0.08	1.04	0.01	0.64	0.13	1.04	0.10	1.12	0.25	2.40	0.35	2.48	0.31
5	2.00	0.10	3.00	0.16	1.00	0.04	2.75	0.12	1.00	0.05	1.30	0.06	0.80	0.15	1.30	0.08	1.40	0.11	3.00	0.48	3.10	0.34
6	2.40	0.12	3.60	0.13	1.20	0.21	3.30	0.12	1.20	0.08	1.56	0.09	0.96	0.14	1.56	0.06	1.68	0.04	3.60	0.59	3.72	0.30
7	2.80	0.12	4.20	0.12	1.40	0.22	3.85	0.09	1.40	0.07	1.82	0.10	1.12	0.09	1.82	0.04	1.96	0.13	4.20	0.46	4.34	0.24
8	3.20	0.20	4.80	0.12	1.60	0.19	4.40	0.09	1.60	0.05	2.08	0.11	1.28	0.04	2.08	0.01	2.24	0.01	4.80	0.27	4.96	0.24
9	3.60	0.18	5.40	0.15	1.80	0.14	4.95	0.04	1.80	0.04	2.34	0.08	1.44	0.01	2.34	0.01	2.52	0.01	5.40	0.09	5.58	0.20
Right Bank	4.00	0	6.05	0	2.00	0	5.50	0	2.00	0	2.60	0	1.65	0	2.60	0	2.80	0	6.00	0	6.25	0
Feature Type (riffle, run, or pool)	pool		pool		run		run		riffle		run	pool										

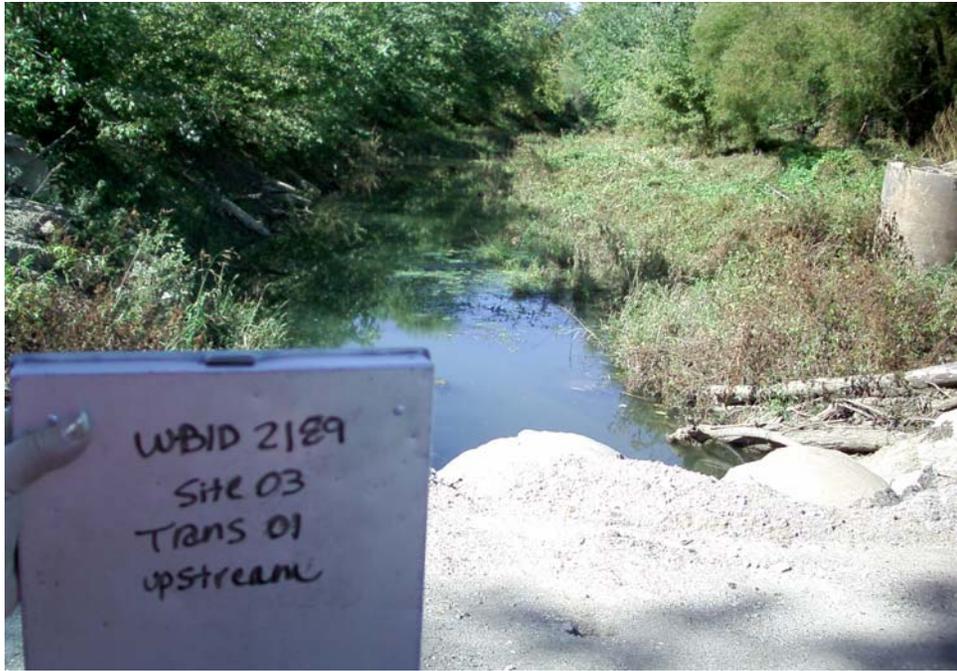
Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS location corresponds to Transect 01 and Transect 11. Transects ordered in upstream to downstream order.
 Depth measurements taken at 10 equally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

ANC 10-16-07

Signed: Jennifer Strabur Date: 10/12/07







WBID 2189
SITE 03
TRANS 01
upstream