



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 0597 East Yellow Creek

Submitted by

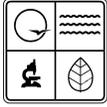
Pickett Ray and Silver

To

Missouri Department of Natural Resources

Water Protection Program

Date Received: October 31, 2007



Missouri
 Department of Natural Resources
 Permit 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): E. Yellow Creek	
Missouri Water Body Identification (WBID) Number: 597	
8-digit HUC: 20090415	County: Linn
Upstream Legal Description (from Table H): 7, 60N, 18W	
Downstream Legal Description (from Table H): 20, 56N, 19W	
Number of sites evaluated: 19	
List all sites numbers, listed consequently upstream to downstream: 0597_01, 0597_02, 0597_03, 0597_04, 0597_05, 0597_06, 0597_07, 0597_08, 0597_09, 0597_10, 0597_11, 0597_12, 0597_13, 0597_14, 0597_15, 0597_16, 0597_17, 0597_18, 0597_19	

Site Locations Map(s): Attach a map of the entire segment with assessment sites clearly labeled. Mark any other items that may be of interest.

II. Facility Information (list all permitted discharges to the water body segment)

Facility Name(s) and Permit Number(s): PSF Valley View Finishing – MO 0118478

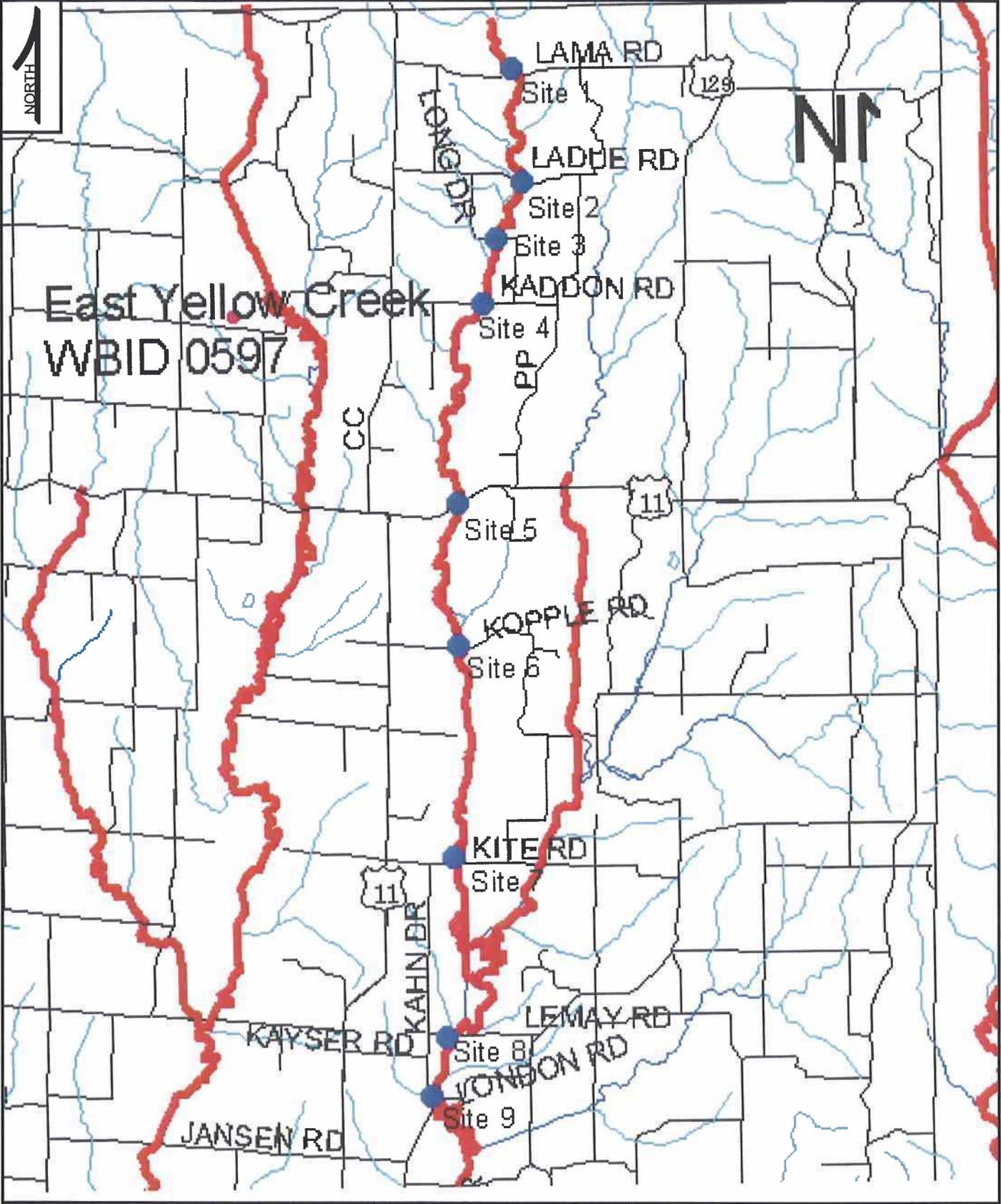
III. UAA Surveyor (please print legibly)

Name of Surveyor: Renee Martin	Telephone Number: 573-875-7844
Organization/Employer: Applied Environmental Solutions	

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

Signed: _____ **Date:** 10/1/07

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 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

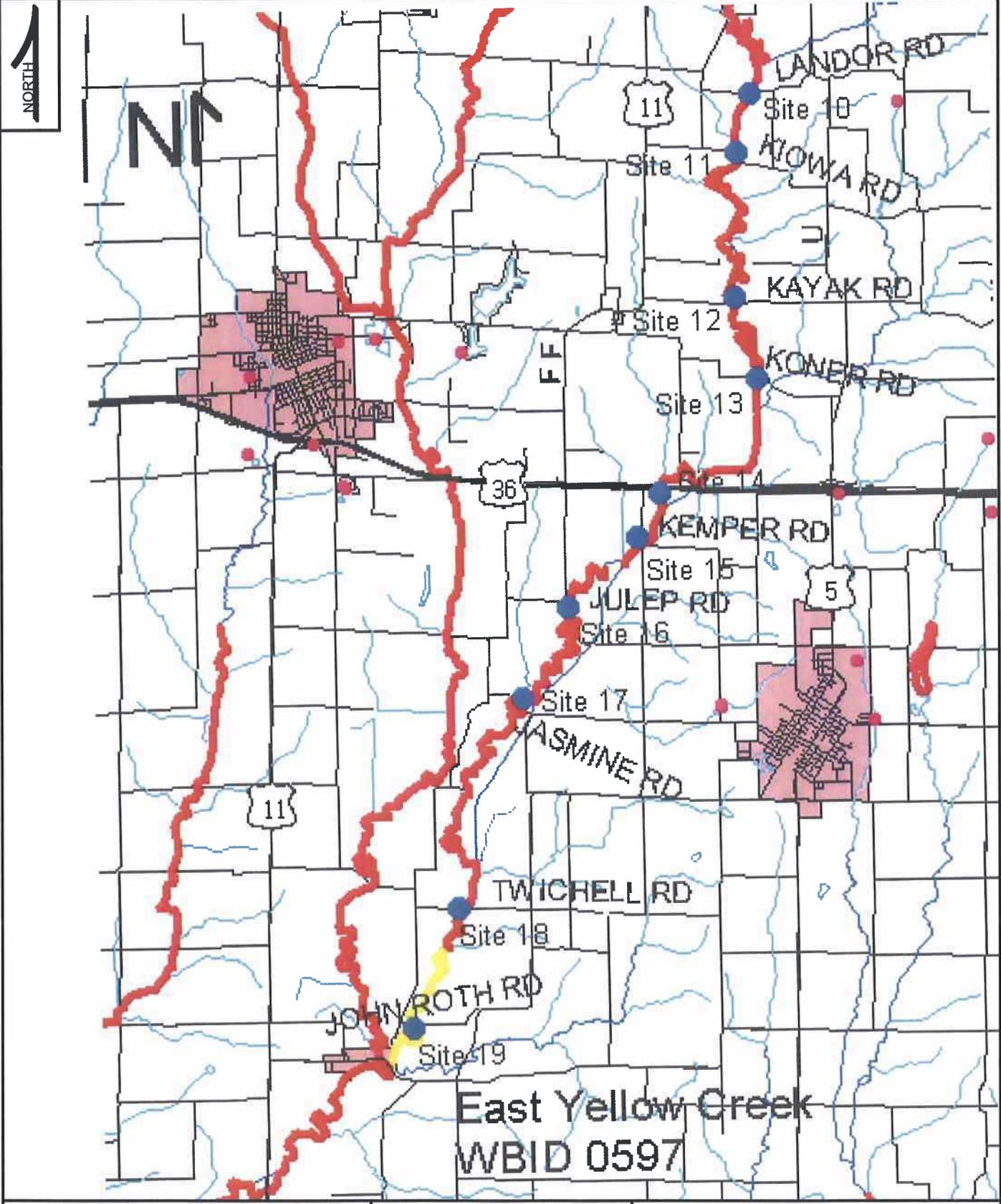
WBID #: 0597
 Name: East Yellow Creek
 County: Linn
 GIS Location Map

*Map provided by AES.
 Please refer to USGS for exact site location indicators.*

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PRS Job Number: 07031.MODN.01E
 Drawn By: BLS Date: 10-16-07
 Checked By: JCV Date: 10-16-07

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WBID #: 0597
 Name: East Yellow Creek
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 GIS Location Map

*Map provided by AES.
 Please refer to USGS for exact site location indicators.*

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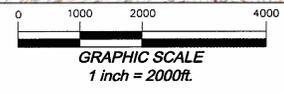
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WBID #: 0597
 Name: Yellow Creek
 County: Linn
 USGS Location Map

Sheet 1 of 6



PRS Job Number: 07031.MODN.01E
 Drawn By: BLS Date: 10-16-07
 Checked By: JCV Date: 10-16-07

Matchline see sheet 2



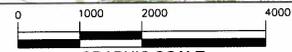
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WBID #: 0597
 Name: Yellow Creek
 County: Linn
 USGS Location Map

Sheet 2 of 6



GRAPHIC SCALE
 1 inch = 2000ft.

PRS Job Number: 07031.MODN.01E
 Drawn By: BLS Date: 10-16-07
 Checked By: JCV Date: 10-16-07



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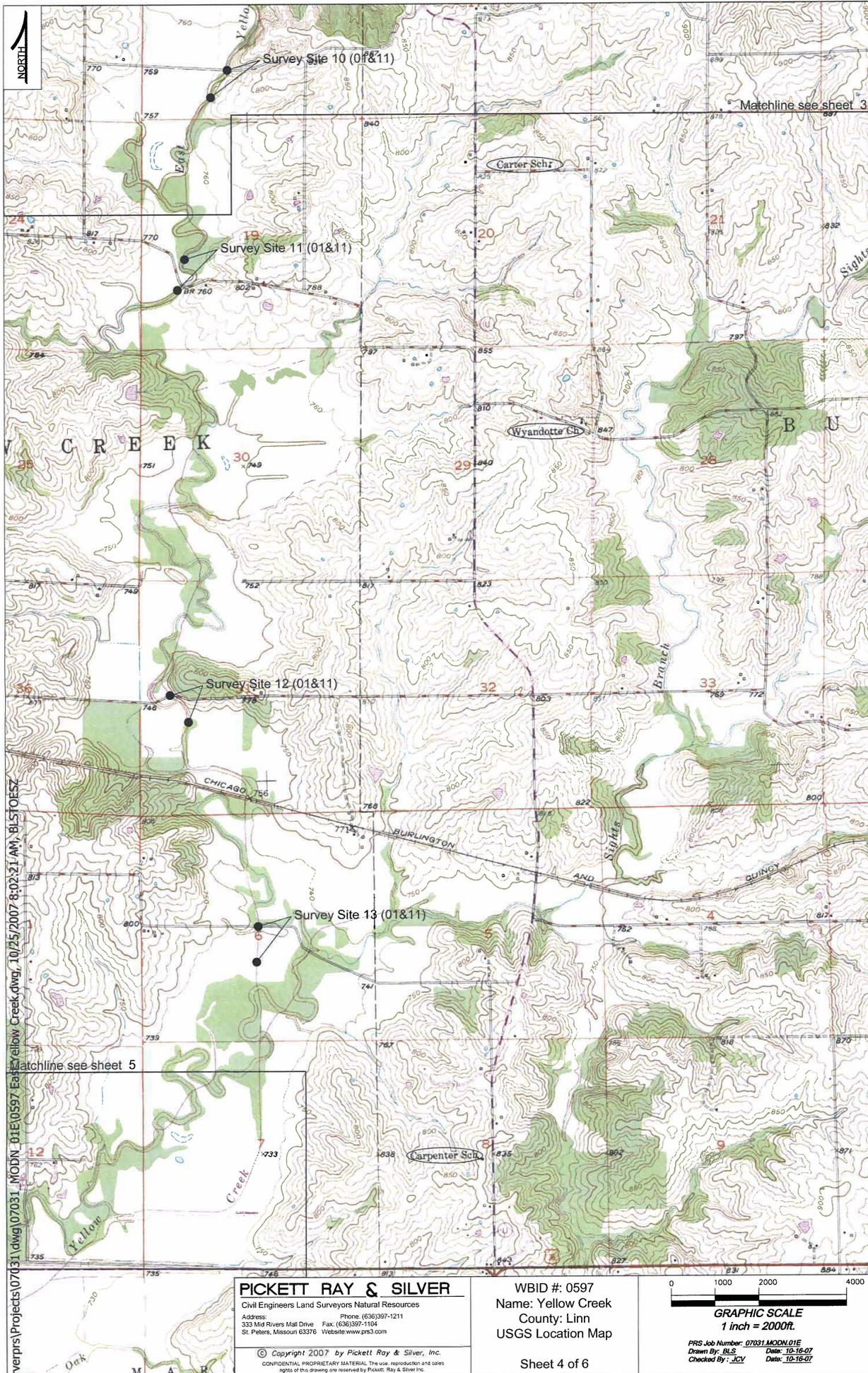
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WBID #: 0597
 Name: Yellow Creek
 County: Linn
 USGS Location Map

Sheet 3 of 6

0 1000 2000 4000
GRAPHIC SCALE
 1 inch = 2000ft.

PRS Job Number: 07031.MODN.01E
 Drawn By: BLS Date: 10-16-07
 Checked By: JCY Date: 10-16-07



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 Matchline see sheet 5

Matchline see sheet 3



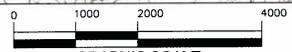
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WBID #: 0597
 Name: Yellow Creek
 County: Linn
 USGS Location Map

Sheet 4 of 6



GRAPHIC SCALE
 1 inch = 2000ft.

PRS Job Number: 07031.MODN.01E
 Drawn By: BLS Date: 10-16-07
 Checked By: JCV Date: 10-16-07



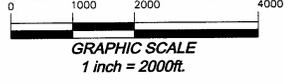
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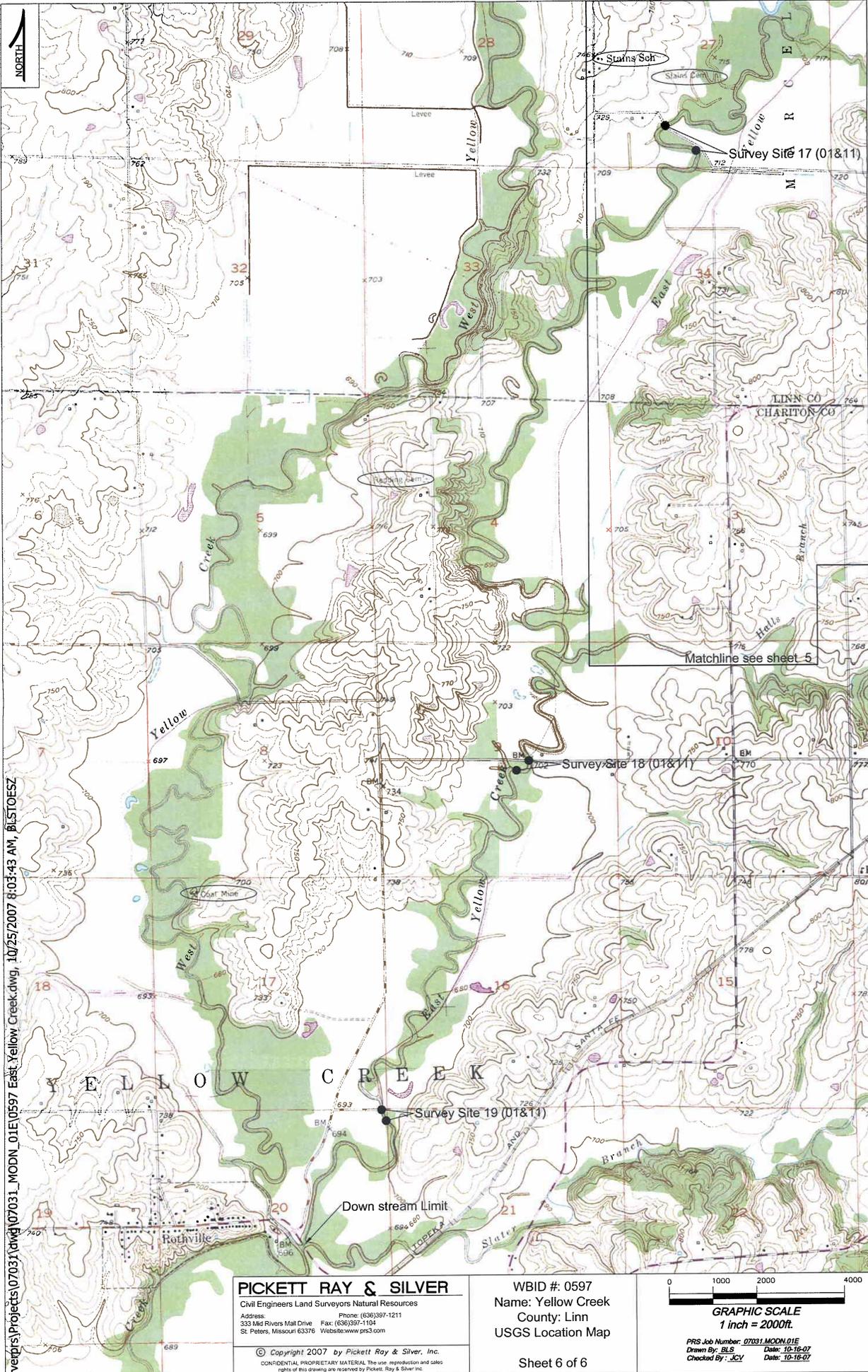
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WBID #: 0597
 Name: Yellow Creek
 County: Linn
 USGS Location Map

Sheet 5 of 6



PRS Job Number: 07031.MODN.01E
 Drawn By: BLS Date: 10-16-07
 Checked By: JCY Date: 10-16-07



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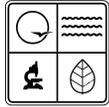
WBID #: 0597
 Name: Yellow Creek
 County: Linn
 USGS Location Map

Sheet 6 of 6



GRAPHIC SCALE
 1 inch = 2000ft.

PRS Job Number: 07031.MODN.01E
 Drawn By: BLS Date: 10-16-07
 Checked By: JCY Date: 10-16-07



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/20/07 14:00	Site Location Description (e.g., road crossing): Lama Road
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: rain/clear	Permit Number: MO 0118478
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:

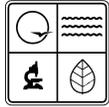
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 504839	Northing (UTM Y): 4430544	Horizontal Accuracy: (EPE / FOM / PDOP)	14 feet	
Site 11	Easting (UTM X): 504954	Northing (UTM Y): 4430442	Horizontal Accuracy: (EPE / FOM / PDOP)	22 feet	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_188	upstream	101_189	downstream	101_191	Dumped paint, chemicals
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_192	fence				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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 checked="" type="checkbox"/> Fence	<input 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: none				

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

% Cobble	% Gravel	90% Sand	% Silt	10% 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 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:
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.



Missouri Department of Natural Resources
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.)

Someone dumped a bunch of paint and other chemicals off bridge (see picture 101_191).

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

Surveyor's Signature: _____ Date of Survey: 9/20/07

Organization: Applied Environmental Solutions Position: Environmental Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

 <p>Missouri Department of Natural Resources</p> <p>Waterbody ID: <u>507</u> Site #: <u>0597_1</u></p> <p>Estimated Channel Incision: _____ (m) (height between low bank width and water)</p> <p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">01</td> <td style="width: 30%;">UTM X: <u>504839</u></td> <td style="width: 30%;">UTM Y: <u>4430544</u></td> <td style="width: 30%;">14 feet</td> </tr> <tr> <td>11</td> <td>UTM X: <u>504954</u></td> <td>UTM Y: <u>4430442</u></td> <td>22 feet</td> </tr> </table> <p>Average Stream Width: <u>2</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width)</p> <p>Field Staff: <u>JH/JF</u></p>	01	UTM X: <u>504839</u>	UTM Y: <u>4430544</u>	14 feet	11	UTM X: <u>504954</u>	UTM Y: <u>4430442</u>	22 feet	<p style="text-align: center;">Dissolved Oxygen</p> <p>Date: <u>9/20/2007</u> Time: <u>2:00 PM</u></p> <p>Dissolved Oxygen: _____ (mg/L)</p> <p>Dissolved Oxygen: _____ (% sat)</p> <p>Specific Cond: _____ (µS/cm)</p> <p>Water Temperature: _____ (°C)</p> <p style="color: red; text-align: center;">DRY</p>
01	UTM X: <u>504839</u>	UTM Y: <u>4430544</u>	14 feet						
11	UTM X: <u>504954</u>	UTM Y: <u>4430442</u>	22 feet						

Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	0.45	0	0.06	0.01	0.21	0	0.15	0	0.18	0	0.10	0	0.10	0.01	0.06	0.01	0.12	0.01	0.46	0.08	0.20	0.02
	2	0.90	0	0.12	0.01	0.42	0	0.30	0	0.36	0	0.20	0	0.20	0.02	0.12	0.01	0.24	0.01	0.92	0.21	0.40	0.08
	3	1.35	0	0.18	0.01	0.63	0	0.45	0	0.54	0	0.30	0	0.30	0.01	0.18	0.02	0.36	0.01	1.38	0.26	0.60	0.09
	4	1.80	0	0.24	0.01	0.84	0	0.60	0	0.72	0	0.40	0	0.40	0.01	0.24	0.01	0.48	0.02	1.84	0.32	0.80	0.12
	5	2.25	0	0.30	0.01	1.05	0	0.75	0	0.90	0	0.50	0	0.50	0.09	0.30	0.03	0.60	0.01	2.30	0.33	1.00	0.14
	6	2.70	0	0.36	0.01	1.26	0	0.90	0	1.08	0	0.60	0	0.60	0.06	0.36	0.04	0.72	0.01	2.76	0.28	1.20	0.15
	7	3.15	0	0.42	0.01	1.47	0	1.05	0	1.26	0	0.70	0	0.70	0.05	0.42	0.03	0.84	0.01	3.22	0.24	1.40	0.13
	8	3.60	0	0.48	0.01	1.68	0	1.20	0	1.44	0	0.80	0	0.80	0.02	0.48	0.02	0.96	0.01	3.68	0.21	1.60	0.11
	9	4.05	0	0.54	0.01	1.89	0	1.35	0	1.62	0	0.90	0	0.90	0.01	0.54	0.01	1.08	0.01	4.14	0.20	1.80	0.05
Right Bank		4.5	0	0.6	0.01	2.1	0	1.5	0	1.8	0	1.05	0	1	0	0.6	0	1.25	0	4.65	0	2	0
Feature Type <small>(riffle, run, or pool)</small>		dry		pool		dry		dry		dry		pool											

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

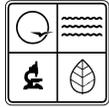
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/20/07 14:30	Site Location Description (e.g., road crossing): Ladue Road
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
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:

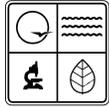
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0505003	Northing (UTM Y): 4428457	Horizontal Accuracy: (EPE / FOM / PDOP)		16 feet
Site 11	Easting (UTM X): 0504902	Northing (UTM Y): 4428334	Horizontal Accuracy: (EPE / FOM / PDOP)		18 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_194	upstream	101_193	downstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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:				

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: none				

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

% Cobble	5% Gravel	80% Sand	% Silt	15% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

Cattails
Duckweed
Algae

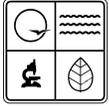
Water Characteristics*: (Mark all that apply.)

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 type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input 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 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 # 597

Site # 2



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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: 9/20/07

Organization: Applied Environmental Solutions Position: Environmental Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

 <p> Missouri Department of Natural Resources </p> <p> Site #: <u>0597_2</u> Estimated Channel Incision: <u>3</u> (m) (height between low bank width and water) </p> <p> GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) </p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;">01</td> <td style="width: 30%;">UTM X: <u>505003</u></td> <td style="width: 30%;">UTM Y: <u>4428457</u></td> <td style="width: 30%; text-align: right;">16 feet</td> </tr> <tr> <td>11</td> <td>UTM X: <u>504908</u></td> <td>UTM Y: <u>4428334</u></td> <td style="text-align: right;">18 feet</td> </tr> </table> <p> Average Stream Width: <u>4</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) </p> <p>Field Staff: <u>JH/JF</u></p>	01	UTM X: <u>505003</u>	UTM Y: <u>4428457</u>	16 feet	11	UTM X: <u>504908</u>	UTM Y: <u>4428334</u>	18 feet	<p style="text-align: center; margin: 0;">Dissolved Oxygen</p> <p>Date: <u>9/20/2007</u> Time: <u>2:30 PM</u></p> <p>Dissolved Oxygen: <u>3.03</u> (mg/L)</p> <p>Dissolved Oxygen: <u>35.3</u> (% sat)</p> <p>Specific Cond: <u>390.8</u> (µS/cm)</p> <p>Water Temperature: <u>25</u> (°C)</p>
01	UTM X: <u>505003</u>	UTM Y: <u>4428457</u>	16 feet						
11	UTM X: <u>504908</u>	UTM Y: <u>4428334</u>	18 feet						

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	0.15	0.04	0.57	0.10	0.16	<.01	0.56	0.20	0.50	0.20	0.44	0.11	0.12	0.03	0.31	0.06	0.44	0.15	0.43	0.10	0.55	0.14
	2	0.30	0.08	1.14	0.11	0.32	0.01	1.12	0.24	1.00	0.26	0.88	0.25	0.24	0.04	0.62	0.07	0.88	0.60	0.86	0.15	1.10	0.25
	3	0.45	0.18	1.71	0.10	0.48	0.01	1.68	0.34	1.50	0.30	1.32	0.45	0.36	0.05	0.93	0.10	1.32	0.60	1.29	0.22	1.65	0.35
	4	0.60	0.26	2.28	0.12	0.64	0.02	2.24	0.37	2.00	0.35	1.76	0.76	0.48	0.08	1.24	0.09	1.76	0.50	1.72	0.25	2.20	0.60
	5	0.75	0.30	2.85	0.20	0.80	0.03	2.80	0.35	2.50	0.40	2.20	0.72	0.60	0.08	1.55	0.05	2.20	0.54	2.15	0.21	2.75	0.73
	6	0.90	0.21	3.42	0.25	0.96	0.05	3.36	0.31	3.00	0.34	2.64	0.55	0.72	0.09	1.86	0.01	2.64	0.40	2.58	0.20	3.30	0.75
	7	1.05	0.10	3.99	0.34	1.12	0.06	3.92	0.24	3.50	0.21	3.08	0.53	0.84	0.08	2.17	0.02	3.08	0.45	3.01	0.15	3.85	0.74
	8	1.20	0.07	4.56	0.40	1.28	0.04	4.48	0.22	4.00	0.11	3.52	0.51	0.96	0.05	2.48	0.13	3.52	0.30	3.44	0.10	4.40	0.60
	9	1.35	0.01	5.13	0.40	1.44	0.01	5.04	0.14	4.50	0.06	3.96	0.49	1.08	0.01	2.79	0.25	3.96	0.15	3.87	0.05	4.95	0.55
Right Bank		1.5	0	5.75	0	1.5	0	5.6	0	5	0	4.4	0	1.25	0	3.1	0	4.45	0	4.35	0	5	0
Feature Type <small>(riffle, run, or pool)</small>		Pool		Pool		Pool		Pool		Pool		Pool		run		Pool		Pool		Pool		Pool	

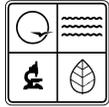
Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/20/07 15:15	Site Location Description (e.g., road crossing): Long Dr.- becomes a field road
Personnel (Data Collectors): Jennifer Hrabik, Justyn Foth	
Current Weather Conditions: clear/cloudy	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
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:

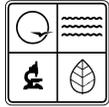
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0504551	Northing (UTM Y): 4427450	Horizontal Accuracy: (EPE / FOM / PDOP) 20 feet		
Site 11	Easting (UTM X): 0504466	Northing (UTM Y): 4427261	Horizontal Accuracy: (EPE / FOM / PDOP) 16 feet		

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_197	upstream	101_196	downstream	101_198	Dam at Transect 08
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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:				

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: none				

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

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

Duckweed
Algae
Water primrose
Arrowhead

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 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.



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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.)

Long Rd. no longer exists, becomes a field road.

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

Surveyor's Signature: _____ Date of Survey: 9/20/07

Organization: Applied Environmental Solutions Position: Environmental Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

<p>Missouri Department of Natural Resources</p> <p>Waterbody ID: <u>507</u> Site #: <u>0597_03</u></p> <p>Estimated Channel Incision: <u>2</u> (m) (height between low bank width and water)</p> <p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <p>01 UTM X: <u>504551</u> UTM Y: <u>4427450</u> <u>20</u> feet</p> <p>11 UTM X: <u>504466</u> UTM Y: <u>4427261</u> <u>16</u> feet</p> <p>Average Stream Width: <u>6</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width)</p> <p>Field Staff: <u>JH/JF</u></p>	<p style="text-align: center;">Dissolved Oxygen</p> <p>Date: <u>9/20/2007</u> Time: <u>3:15 PM</u></p> <p>Dissolved Oxygen: <u>4.6</u> (mg/L)</p> <p>Dissolved Oxygen: <u>62.1</u> (% sat)</p> <p>Specific Cond: <u>339.8</u> (µS/cm)</p> <p>Water Temperature: <u>31.4</u> (°C)</p>
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Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1		0.08	0.01	0.51	0.13	0.77	0.06	0.78	0.42	0.60	0.46	1.00	0.15	1.10	0.35	0.30	0	0.59	0.14	0.46	0.17	0.26	0.05
2		0.16	0.01	1.02	0.35	1.54	0.10	1.56	>1	1.20	0.51	2.00	0.37	2.20	0.55	0.66	0	1.18	0.30	0.92	0.18	0.52	0.01
3		0.24	0.01	1.53	0.46	2.31	0.09	2.34	0.90	1.80	0.60	3.00	0.39	3.30	0.50	0.90	0	1.77	0.55	1.38	0.26	0.78	0.06
4		0.32	0.02	2.04	0.70	3.08	0.13	3.12	0.80	2.40	0.66	4.00	0.34	4.40	0.64	1.20	0	2.36	0.72	1.84	0.34	1.04	0.26
5		0.40	0.02	2.55	0.80	3.85	0.15	3.90	0.69	3.00	0.55	5.00	0.26	5.50	0.80	1.50	0	2.95	0.55	2.30	0.40	1.30	0.23
6		0.48	0.01	3.06	0.80	4.62	0.23	4.68	0.47	3.60	0.42	6.00	0.37	6.60	0.65	1.80	0	3.54	0.20	2.76	0.34	1.56	0.24
7		0.56	0.01	3.57	0.57	5.39	0.28	5.46	0.35	4.20	0.24	7.00	0.34	7.70	0.71	2.10	0	4.13	0.11	3.22	0.29	1.82	0.27
8		0.64	0.01	4.08	0.30	6.16	0.29	6.24	0.24	4.80	0.16	8.00	0.40	8.80	0.55	2.40	0	4.72	0.08	3.68	0.12	2.08	0.11
9		0.72	0.01	4.59	0.12	6.93	0.22	7.02	0.14	5.40	0.10	9.00	0.25	9.90	0.40	2.70	0	5.31	0.02	4.14	0.08	2.34	0.04
Right Bank		0.85	0	5.1	0	7.7	0	7.8	0	6	0	10	0	11	0	3	0	5.9	0	4.6	0	2.65	0
Feature Type <small>(riffle, run, or pool)</small>		run		pool		dry		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

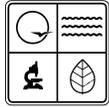
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 10:30	Site Location Description (e.g., road crossing): Kaddon Rd.
Personnel (Data Collectors): Jennifer Hrabik, Tiffanie Hamilton	
Current Weather Conditions: sun	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: clear and rain	Permit Number: MO 0118478
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:

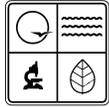
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0504242	Northing (UTM Y): 4426248	Horizontal Accuracy: (EPE / FOM / PDOP)		18 feet
Site 11	Easting (UTM X): 0504111	Northing (UTM Y): 4426099	Horizontal Accuracy: (EPE / FOM / PDOP)		19 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_201	downstream	101_202	upstream	101_203	Livestock watering
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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:				

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 checked="" type="checkbox"/> Livestock Watering
Comments / Other:				

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

% Cobble	% Gravel	70% Sand	% Silt	30% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

Water primrose Arrowhead Grasses Algae

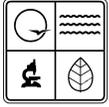
Water Characteristics*: (Mark all that apply.)

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 ¹	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input checked="" type="checkbox"/> Oil	<input checked="" type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Other: iron

*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 # 597

Site # 4



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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.)

1 sludge= thick mucky mud

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

Surveyor's Signature: _____ Date of Survey: 9/22/07
Organization: Applied Environmental Solutions Position: Environmental Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

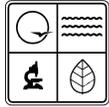
<div style="display: inline-block; vertical-align: middle;"> <p>Missouri Department of Natural Resources</p> </div> <p style="margin-left: 20px;">Site #: <u>0597_04</u></p> <p>Estimated Channel Incision: _____ (m) (height between low bank width and water)</p> <p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">01</td> <td style="width: 30%;">UTM X: <u>504242</u></td> <td style="width: 30%;">UTM Y: <u>4426248</u></td> <td style="width: 30%;">18 feet</td> </tr> <tr> <td>11</td> <td>UTM X: <u>504111</u></td> <td>UTM Y: <u>4426099</u></td> <td>19 feet</td> </tr> </table> <p>Average Stream Width: <u>3</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width)</p> <p>Field Staff: <u>JH/JF</u></p>	01	UTM X: <u>504242</u>	UTM Y: <u>4426248</u>	18 feet	11	UTM X: <u>504111</u>	UTM Y: <u>4426099</u>	19 feet	<p style="text-align: center; margin: 0;">Dissolved Oxygen</p> <p>Date: <u>9/22/2007</u> Time: <u>10:30 AM</u></p> <p>Dissolved Oxygen: <u>2.54</u> (mg/L)</p> <p>Dissolved Oxygen: <u>30.3</u> (% sat)</p> <p>Specific Cond: <u>330.4</u> (µS/cm)</p> <p>Water Temperature: <u>16.8</u> (°C)</p>
01	UTM X: <u>504242</u>	UTM Y: <u>4426248</u>	18 feet						
11	UTM X: <u>504111</u>	UTM Y: <u>4426099</u>	19 feet						

Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	0.14	0.01	0.12	0.05	0.54	0.20	0.38	0.07	0.20	0.02	0.33	0.07	0.56	0.41	0.19	0.02	0.28	0.00	0.44	0.02	0.09	0.02
	2	0.28	0.01	0.24	0.08	1.08	0.33	0.76	0.11	0.40	0.05	0.66	0.10	1.12	0.49	0.38	0.05	0.56	0.00	0.88	0.05	0.18	0.04
	3	0.42	0.01	0.36	0.10	1.62	0.45	1.14	0.18	0.60	0.05	0.99	0.20	1.68	0.62	0.57	0.08	0.84	0.00	1.32	0.06	0.27	0.05
	4	0.56	0.02	0.48	0.11	2.16	0.40	1.52	0.24	0.80	0.09	1.32	0.28	2.24	0.71	0.76	0.08	1.12	0.00	1.76	0.02	0.36	0.04
	5	0.70	0.01	0.60	0.09	2.70	0.40	1.90	0.29	1.00	0.09	1.65	0.36	2.80	0.70	0.95	0.05	1.40	0.00	2.20	0.07	0.45	0.05
	6	0.84	0.02	0.72	0.07	3.24	0.27	2.28	0.36	1.20	0.12	1.98	0.42	3.36	0.67	1.14	0.05	1.68	0.00	2.64	0.06	0.54	0.07
	7	0.98	0.01	0.84	0.05	3.78	0.10	2.66	0.40	1.40	0.13	2.31	0.49	3.92	0.54	1.33	0.04	1.96	0.00	3.08	0.09	0.63	0.05
	8	1.12	0.01	0.96	0.03	4.32	0.06	3.04	0.39	1.60	0.10	2.64	0.40	4.48	0.39	1.52	0.03	2.24	0.00	3.52	0.12	0.72	0.03
	9	1.26	0.01	1.08	0.01	4.86	0.54	3.42	0.21	1.80	0.07	2.97	0.19	5.04	0.21	1.71	0.01	2.52	0.00	3.93	0.08	0.81	0.01
Right Bank		1.43	0	1.21	0	5.47	0	3.8	0	2	0	3.39	0	5.68	0	1.97	0	2.84	0	4.47	0	0.99	0
Feature Type <small>(riffle, run, or pool)</small>		pool		pool		pool		pool		pool		pool		pool		dry		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 locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.
Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)
Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)
All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
Data Sheet B – Site Characterization
 (must be completed for each site)

Date & Time: 9/22/07 11:30 am	Site Location Description (e.g., road crossing): Hwy. 11 Bridge
Personnel (Data Collectors): Jennifer Hrabik, Tiffanie Hamilton	
Current Weather Conditions: sun	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: clear and rain	Permit Number: MO 0118478
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:

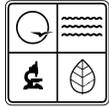
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0503613	Northing (UTM Y): 4422460	Horizontal Accuracy: (EPE / FOM / PDOP) 20 feet
Site 11	Easting (UTM X): 0503678	Northing (UTM Y): 4422237	Horizontal Accuracy: (EPE / FOM / PDOP) 19 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_204	upstream	101_205	Downstream- fence		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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 checked="" type="checkbox"/> Fence	<input 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: none				

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

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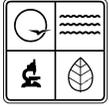
Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

Algae Arrowhead

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 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 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.



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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: 9/22/07

Organization: Applied Environmental Solutions Position: Environmental Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

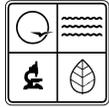
 <p> Missouri Department of Natural Resources </p> <p> Site #: <u>0597_06</u> Estimated Channel Incision: <u>2</u> (m) (height between low bank width and water) </p> <p> GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) </p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;">01</td> <td style="width: 30%;">UTM X: <u>503746</u></td> <td style="width: 30%;">UTM Y: <u>4419775</u></td> <td style="width: 30%; text-align: right;">21 feet</td> </tr> <tr> <td>11</td> <td>UTM X: <u>503719</u></td> <td>UTM Y: <u>4419573</u></td> <td style="text-align: right;">17 feet</td> </tr> </table> <p> Average Stream Width: <u>6</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) </p> <p>Field Staff: <u>JH/JF</u></p>	01	UTM X: <u>503746</u>	UTM Y: <u>4419775</u>	21 feet	11	UTM X: <u>503719</u>	UTM Y: <u>4419573</u>	17 feet	<p style="text-align: center;">Dissolved Oxygen</p> <p>Date: <u>9/22/2007</u> Time: <u>12:10 PM</u></p> <p>Dissolved Oxygen: <u>3.83</u> (mg/L)</p> <p>Dissolved Oxygen: <u>41.6</u> (% sat)</p> <p>Specific Cond: <u>404.7</u> (µS/cm)</p> <p>Water Temperature: <u>21</u> (°C)</p>
01	UTM X: <u>503746</u>	UTM Y: <u>4419775</u>	21 feet						
11	UTM X: <u>503719</u>	UTM Y: <u>4419573</u>	17 feet						

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	0.24	0.20	0.34	0.08	0.69	0.07	0.75	0.13	0.60	0.15	0.84	0.21	0.84	0.21	0.70	0.03	0.73	0.39	0.45	0.47	0.42	0.62
	2	0.48	0.29	0.68	0.11	1.38	0.08	1.50	0.22	1.20	0.27	1.68	0.19	1.68	0.20	1.40	0.11	1.46	0.25	0.90	0.71	0.84	0.64
	3	0.72	0.33	1.02	0.09	2.07	0.05	2.25	0.12	1.80	0.21	2.52	0.28	2.52	0.16	2.10	0.15	2.19	0.40	1.35	0.61	1.26	0.61
	4	0.96	0.25	1.36	0.10	2.76	0.00	3.00	0.18	2.40	0.26	3.36	0.26	0.36	0.21	2.80	0.17	2.92	0.25	1.80	0.42	1.68	0.65
	5	1.20	0.13	1.70	0.11	3.45	0.10	3.75	0.21	3.00	0.25	4.20	0.27	4.20	0.32	3.50	0.27	3.65	0.22	2.25	0.43	2.10	0.66
	6	1.44	0.12	2.04	0.10	4.14	0.05	4.50	0.19	3.60	0.20	5.04	0.25	5.04	0.25	4.20	0.40	4.38	0.28	2.70	0.49	2.52	0.56
	7	1.68	0.09	2.38	0.12	4.83	0.06	5.25	0.17	4.20	0.22	5.88	0.28	5.88	0.41	4.90	0.47	5.11	0.43	3.15	0.68	2.94	0.67
	8	1.92	0.06	2.72	0.07	5.52	0.06	6.00	0.11	4.80	0.17	6.72	0.20	6.72	0.26	5.60	0.43	5.84	0.44	3.60	0.50	3.36	0.72
	9	2.16	0.03	3.06	0.03	6.21	0.01	6.75	0.02	5.40	0.16	7.56	0.18	7.56	0.13	6.30	0.42	6.57	0.46	4.05	0.48	3.78	0.57
Right Bank		2.42	0	3.49	0	6.95	0	7.6	0	6.05	0	8.49	0	8.43	0	7	0	7.35	0	4.56	0	4.21	0
Feature Type <small>(riffle, run, or pool)</small>		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 locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.
 Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)
 Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)
 All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
Data Sheet B – Site Characterization
 (must be completed for each site)

Date & Time: 9/22/07 12:10 pm	Site Location Description (e.g., road crossing): Kopple Rd.
Personnel (Data Collectors): Jennifer Hrabik, Tiffanie Hamilton	
Current Weather Conditions: sun	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: clear and rain	Permit Number: MO 0118478
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:

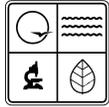
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0503746	Northing (UTM Y): 4419775	Horizontal Accuracy: (EPE / FOM / PDOP) 21 feet		
Site 11	Easting (UTM X): 0503719	Northing (UTM Y): 4419573	Horizontal Accuracy: (EPE / FOM / PDOP) 17 feet		

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_206	downstream	101_207	upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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:				

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: none				

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

1% Cobble	1% Gravel	90% Sand	% Silt	8% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

Algae
Grasses
Willows
duckweed

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input checked="" type="checkbox"/> Chemical	<input 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 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 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.



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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: 9/22/07

Organization: Applied Environmental Solutions Position: Environmental Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

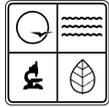
 <p> Missouri Department of Natural Resources </p> <p> Site #: <u>0597_06</u> Estimated Channel Incision: <u>2</u> (m) (height between low bank width and water) </p> <p> GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) </p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">01</td> <td style="width: 30%;">UTM X: <u>503746</u></td> <td style="width: 30%;">UTM Y: <u>4419775</u></td> <td style="width: 30%;">21 feet</td> </tr> <tr> <td>11</td> <td>UTM X: <u>503719</u></td> <td>UTM Y: <u>4419573</u></td> <td>17 feet</td> </tr> </table> <p> Average Stream Width: <u>6</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) </p> <p>Field Staff: <u>JH/JF</u></p>	01	UTM X: <u>503746</u>	UTM Y: <u>4419775</u>	21 feet	11	UTM X: <u>503719</u>	UTM Y: <u>4419573</u>	17 feet	<p style="text-align: center;">Dissolved Oxygen</p> <p>Date: <u>9/22/2007</u> Time: <u>12:10 PM</u></p> <p>Dissolved Oxygen: <u>3.83</u> (mg/L)</p> <p>Dissolved Oxygen: <u>41.6</u> (% sat)</p> <p>Specific Cond: <u>404.7</u> (µS/cm)</p> <p>Water Temperature: <u>21</u> (°C)</p>
01	UTM X: <u>503746</u>	UTM Y: <u>4419775</u>	21 feet						
11	UTM X: <u>503719</u>	UTM Y: <u>4419573</u>	17 feet						

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	0.24	0.20	0.34	0.08	0.69	0.07	0.75	0.13	0.60	0.15	0.84	0.21	0.84	0.21	0.70	0.03	0.73	0.39	0.45	0.47	0.42	0.62
	2	0.48	0.29	0.68	0.11	1.38	0.08	1.50	0.22	1.20	0.27	1.68	0.19	1.68	0.20	1.40	0.11	1.46	0.25	0.90	0.71	0.84	0.64
	3	0.72	0.33	1.02	0.09	2.07	0.05	2.25	0.12	1.80	0.21	2.52	0.28	2.52	0.16	2.10	0.15	2.19	0.40	1.35	0.61	1.26	0.61
	4	0.96	0.25	1.36	0.10	2.76	0.00	3.00	0.18	2.40	0.26	3.36	0.26	0.36	0.21	2.80	0.17	2.92	0.25	1.80	0.42	1.68	0.65
	5	1.20	0.13	1.70	0.11	3.45	0.10	3.75	0.21	3.00	0.25	4.20	0.27	4.20	0.32	3.50	0.27	3.65	0.22	2.25	0.43	2.10	0.66
	6	1.44	0.12	2.04	0.10	4.14	0.05	4.50	0.19	3.60	0.20	5.04	0.25	5.04	0.25	4.20	0.40	4.38	0.28	2.70	0.49	2.52	0.56
	7	1.68	0.09	2.38	0.12	4.83	0.06	5.25	0.17	4.20	0.22	5.88	0.28	5.88	0.41	4.90	0.47	5.11	0.43	3.15	0.68	2.94	0.67
	8	1.92	0.06	2.72	0.07	5.52	0.06	6.00	0.11	4.80	0.17	6.72	0.20	6.72	0.26	5.60	0.43	5.84	0.44	3.60	0.50	3.36	0.72
	9	2.16	0.03	3.06	0.03	6.21	0.01	6.75	0.02	5.40	0.16	7.56	0.18	7.56	0.13	6.30	0.42	6.57	0.46	4.05	0.48	3.78	0.57
Right Bank		2.42	0	3.49	0	6.95	0	7.6	0	6.05	0	8.49	0	8.43	0	7	0	7.35	0	4.56	0	4.21	0
Feature Type <small>(riffle, run, or pool)</small>		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 locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.
 Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)
 Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)
 All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 13:00	Site Location Description (e.g., road crossing): Kite Rd.
Personnel (Data Collectors): Jennifer Hrabik, Tiffanie Hamilton	
Current Weather Conditions: sun	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: clear and rain	Permit Number: MO 0118478
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:

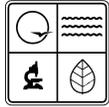
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0503563	Northing (UTM Y): 4415746	Horizontal Accuracy: (EPE / FOM / PDOP) 17 feet		
Site 11	Easting (UTM X): 0503520	Northing (UTM Y): 4415541	Horizontal Accuracy: (EPE / FOM / PDOP) 26 feet		

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_208	downstream	101_209	upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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:				

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: none				

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

% Cobble	1% Gravel	50% Sand	% Silt	49% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

Algae

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 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 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.



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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: 9/22/07

Organization: Applied Environmental Solutions Position: Environmental Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

 <p>Missouri Department of Natural Resources</p> <p>Waterbody ID: <u>507</u> Site #: <u>0597_07</u></p> <p>Estimated Channel Incision: <u>2</u> (m) (height between low bank width and water)</p> <p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <p>01 UTM X: <u>503563</u> UTM Y: <u>4415746</u> <u>17</u> feet</p> <p>11 UTM X: <u>503520</u> UTM Y: <u>4415541</u> <u>26</u> feet</p> <p>Average Stream Width: <u>5.6</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width)</p> <p>Field Staff: <u>JH/JF</u></p>	<p style="text-align: center;">Dissolved Oxygen</p> <p>Date: <u>9/22/2007</u> Time: <u>1:00 PM</u></p> <p>Dissolved Oxygen: <u>2.5</u> (mg/L)</p> <p>Dissolved Oxygen: <u>28.1</u> (% sat)</p> <p>Specific Cond: <u>327.9</u> (µS/cm)</p> <p>Water Temperature: <u>22.5</u> (°C)</p>
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Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1		0.80	0.13	0.83	0.06	0.85	0.42	0.75	0.38	0.88	0.19	0.69	0.04	0.20	0.01	0.22	0.08	0.15	0	0.40	0.02	0.42	0.12
2		1.60	0.19	1.66	0.07	1.70	0.46	1.50	0.36	1.76	0.21	1.38	0.08	0.40	0.04	0.44	0.13	0.30	0	0.80	0.07	0.84	0.28
3		2.40	0.14	2.49	0.14	2.55	0.34	2.25	0.22	2.64	0.21	2.07	0.08	0.60	0.05	0.66	0.15	0.45	0	1.20	0.12	1.26	0.34
4		3.20	0.10	3.32	0.28	3.40	0.26	3.00	0.18	3.52	0.18	2.76	0.13	0.80	0.08	0.88	0.19	0.60	0	1.60	0.17	1.68	0.30
5		4.00	0.08	4.15	0.42	4.25	0.21	3.75	0.13	4.40	0.19	3.45	0.21	1.00	0.10	1.10	0.19	0.75	0	2.00	0.21	2.10	0.29
6		4.80	0.12	4.98	0.45	5.10	0.16	4.50	0.11	5.28	0.17	4.14	0.25	1.20	0.12	1.32	0.21	0.90	0	2.40	0.22	2.52	0.31
7		5.60	0.20	5.81	0.46	5.95	0.17	5.25	0.04	6.16	0.21	4.83	0.27	1.40	0.11	1.54	0.21	1.05	0	8.80	0.23	2.94	0.26
8		6.40	0.30	6.64	0.41	6.80	0.20	6.00	0.01	7.04	0.22	5.52	0.29	1.60	0.05	1.76	0.13	1.20	0	3.20	0.14	3.36	0.22
9		7.20	0.44	7.47	0.26	7.65	0.11	6.75	0.01	7.92	0.21	6.21	0.22	1.80	0.02	1.98	0.08	1.35	0	3.60	0.09	3.78	0.07
Right Bank		8.05	0	8.37	0	8.5	0	7.6	0	8.83	0	6.9	0	2.07	0	2.23	0	1.5	0	4.02	0	4.27	0
Feature Type <small>(riffle, run, or pool)</small>		Pool		pool		pool		pool		pool		pool		run		pool		dry		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

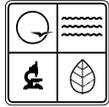
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
Data Sheet B – Site Characterization
 (must be completed for each site)

Date & Time: 9/22/07 13:40	Site Location Description (e.g., road crossing): Lemay Rd.
Personnel (Data Collectors): Jennifer Hrabik, Tiffanie Hamilton	
Current Weather Conditions: sun	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: clear and rain	Permit Number: MO 0118478
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:

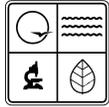
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0503431	Northing (UTM Y): 4412471	Horizontal Accuracy: (EPE / FOM / PDOP) 19 feet		
Site 11	Easting (UTM X): 0503357	Northing (UTM Y): 4412353	Horizontal Accuracy: (EPE / FOM / PDOP) 15 feet		

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_211	downstream	101_212	upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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:				

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: none				

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

% Cobble	% Gravel	60% Sand	% Silt	40% Mud/Clay	% Bedrock
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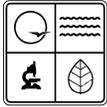
Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

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 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:
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.



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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.)

Transects 3-11 were too deep to get in and banks were too steep to get to water. It is our opinion that the water depth at each of these transects was > 1 meter.

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

Surveyor's Signature: _____ Date of Survey: 9/22/07

Organization: Applied Environmental Solutions Position: Environmental Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

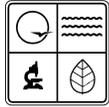
 <p> Missouri Department of Natural Resources </p> <p> Wabody ID: <u>597</u> Site #: <u>0597_08</u> Estimated Channel Width: _____ (To estimate length between low bank width and water) </p> <p> GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0503431</u> UTM Y: <u>4412471</u> 19 (meters) 11 UTM X: <u>0503357</u> UTM Y: <u>4412353</u> 15 (meters) </p> <p> Average Stream Width: <u>9.5</u> (meters) Length of Survey Segment: <u>190</u> (meters) (To determine Length of Reach) (20x average stream width) </p> <p>Field Staff: <u>JH/JF</u></p>	<p style="text-align: center;">Dissolved Oxygen</p> <p>Date: <u>9/22/2007</u> Time: <u>1:40 PM</u></p> <p>Dissolved Oxygen: <u>2.16</u> (mg/L)</p> <p>Dissolved Oxygen: <u>24.8</u> (% sat)</p> <p>Specific Cond: <u>201.2</u> (µS/cm)</p> <p>Water Temperature: <u>23.6</u> (°C)</p> <p>* Transects 3-11, slopes were too steep to approach water and/or water too deep to enter. Our opinion is that depths are >1 m.</p>
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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	0.89	0.27	0.84	0.26	0.90		0.95		0.85		1.00		0.95		1.20		1.10		0.95		0.80	
	2	1.78	0.31	1.68	0.59	1.80		1.90		1.70		2.00		1.90		2.40		2.20		1.90		1.60	
	3	2.68	0.28	2.52	1.00	2.70		2.85		2.55		3.00		2.85		3.60		3.30		2.85		2.40	
	4	3.56	0.33	3.36	>1	3.60		3.80		3.40		4.00		3.80		4.80		4.40		3.80		3.20	
	5	4.45	0.40	4.20	>1	4.50		4.75		4.25		5.00		4.75		6.00		5.50		4.75		4.00	
	6	5.34	0.54	5.04	>1	5.40		5.70		5.10		6.00		5.70		7.20		6.60		5.70		4.80	
	7	6.23	0.87	5.88	0.92	6.30		6.65		5.95		7.00		6.65		8.40		7.70		6.50		5.60	
	8	7.12	0.96	6.72	0.75	7.20		7.60		6.80		8.00		7.00		9.60		8.80		7.60		6.40	
	9	8.01	0.51	7.56	0.21	8.10		8.55		7.65		9.00		8.55		10.80		9.90		8.55		7.20	
Right Bank		8.9	0	8.43	0	9	0	9.5	0	8.5	0	10	0	9.5	0	12	0	11	0	9.5	0	8	0
Feature Type		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 locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.
 Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)
 Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)
 All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 14:15	Site Location Description (e.g., road crossing): London Rd.
Personnel (Data Collectors): Jennifer Hrabik, Tiffanie Hamilton	
Current Weather Conditions: sun	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: clear and rain	Permit Number: MO 0118478
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:

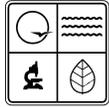
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0503087	Northing (UTM Y): 4411282	Horizontal Accuracy: (EPE / FOM / PDOP) 20 feet
Site 11	Easting (UTM X): 0503229	Northing (UTM Y): 4411064	Horizontal Accuracy: (EPE / FOM / PDOP) 29 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_213	downstream	101_214	upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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:				

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: none				

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

20% Cobble	5% Gravel	30% Sand	% Silt	25% Mud/Clay	20% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

Duckweed Algae

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 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 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 # 597

Site # 9



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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: 9/22/07

Organization: Applied Environmental Solutions Position: Environmental Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

 <p> Missouri Department of Natural Resources </p> <p> Site #: <u>0597_9</u> Estimated Channel Incision: <u>3.5</u> (m) (height between low bank width and water) </p> <p> GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) </p> <table style="width: 100%; border: none;"> <tr> <td style="width: 5%;">01</td> <td style="width: 25%;">UTM X: <u>0503087</u></td> <td style="width: 25%;">UTM Y: <u>4411282</u></td> <td style="width: 45%; text-align: right;">20 feet</td> </tr> <tr> <td>11</td> <td>UTM X: <u>0503229</u></td> <td>UTM Y: <u>4411064</u></td> <td style="text-align: right;">29 feet</td> </tr> </table> <p> Average Stream Width: <u>6.5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) </p> <p>Field Staff: <u>JH/JF</u></p>	01	UTM X: <u>0503087</u>	UTM Y: <u>4411282</u>	20 feet	11	UTM X: <u>0503229</u>	UTM Y: <u>4411064</u>	29 feet	<p style="text-align: center;">Dissolved Oxygen</p> <p>Date: <u>9/22/2007</u> Time: <u>2:15 PM</u></p> <p>Dissolved Oxygen: <u>2.42</u> (mg/L)</p> <p>Dissolved Oxygen: <u>28.8</u> (% sat)</p> <p>Specific Cond: <u>398.3</u> (µS/cm)</p> <p>Water Temperature: <u>24.1</u> (°C)</p>
01	UTM X: <u>0503087</u>	UTM Y: <u>4411282</u>	20 feet						
11	UTM X: <u>0503229</u>	UTM Y: <u>4411064</u>	29 feet						

Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	0.59	0.07	0.78	0.21	0.70	0.01	0.56	0.01	0.42	0.14	0.70	0.21	0.81	0.03	0.94	0.12	0.55	0.04	0.60	0.01	0.61	0.01
	2	1.18	0.19	1.56	0.20	1.40	0.01	1.12	0.01	0.84	0.20	1.40	0.61	1.62	0.11	1.88	0.31	1.10	0.09	1.20	0.01	1.22	0.04
	3	1.77	0.25	2.34	0.26	2.10	0.13	1.68	0.07	1.26	0.19	2.10	>1	2.43	0.17	2.82	0.44	1.65	0.12	1.80	0.10	1.83	0.06
	4	2.36	0.41	3.12	0.24	2.80	0.00	2.24	0.05	1.68	0.05	2.80	>1	3.24	0.22	3.76	0.46	2.20	0.25	2.40	0.07	2.44	0.09
	5	2.95	0.34	3.90	0.20	3.50	0.18	2.80	0.00	2.10	0.10	3.50	>1	4.05	0.22	4.70	0.43	2.75	0.28	3.00	0.11	3.05	0.07
	6	3.54	0.24	4.68	0.13	4.20	0.04	3.36	0.00	2.52	0.06	4.20	0.91	4.86	0.19	5.54	0.46	3.30	0.25	3.60	0.18	3.66	0.05
	7	4.13	0.13	5.46	0.13	4.90	0.00	3.92	0.01	2.94	0.13	4.90	0.40	5.67	0.14	6.58	0.58	3.85	0.28	4.20	0.34	4.27	0.05
	8	4.72	0.01	6.24	0.12	5.60	0.05	4.48	0.01	3.36	0.10	5.60	0.16	6.48	0.07	7.52	0.61	4.40	0.20	4.80	0.39	4.88	0.04
	9	5.31	0.12	7.02	0.29	6.30	0.01	5.04	0.04	3.78	0.10	6.30	0.04	7.29	0.01	8.46	0.51	4.95	0.11	5.40	0.25	5.49	0.06
Right Bank		5.9	0	7.8	0	7	0	5.6	0	4.22	0	7	0	8.1	0	9.4	0	5.51	0	6	0	6.15	0
Feature Type <small>(riffle, run, or pool)</small>		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

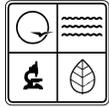
Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
Data Sheet B – Site Characterization
 (must be completed for each site)

Date & Time: 9/22/07 15:15	Site Location Description (e.g., road crossing): Landor Rd.- road ends 100 feet before stream, bridge out
Personnel (Data Collectors): Jennifer Hrabik, Tiffanie Hamilton	
Current Weather Conditions: sun	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: clear/rain	Permit Number: MO 0118478
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:

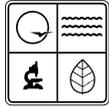
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0503372	Northing (UTM Y): 4409644	Horizontal Accuracy: (EPE / FOM / PDOP) 17 feet
Site 11	Easting (UTM X): 0503249	Northing (UTM Y): 4409436	Horizontal Accuracy: (EPE / FOM / PDOP) 16 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_215	upstream	101_216	downstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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:				

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: none				

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

5% Cobble	% Gravel	30% Sand	% Silt	65% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

Algae Water primrose

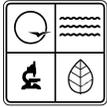
Water Characteristics*: (Mark all that apply.)

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 type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input 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 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 # 597

Site # 10



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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: 9/22/07
Organization: Applied Environmental Solutions Position: Environmental Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

 <p> Missouri Department of Natural Resources </p> <p> Site #: <u>0597_10</u> </p> <p> Estimated Channel Incision: <u>2</u> (m) (height between low bank width and water) </p> <p> GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) </p> <p> 01 UTM X: <u>0503372</u> UTM Y: <u>4409644</u> <u>17</u> feet 11 UTM X: <u>0503249</u> UTM Y: <u>4409436</u> <u>16</u> feet </p> <p> Average Stream Width: <u>13</u> (meters) Length of Survey Segment: <u>260</u> (meters) (To determine Length of Reach) (20x average stream width) </p> <p> Field Staff: <u>JH/JF</u> </p>	<p style="text-align: center;">Dissolved Oxygen</p> <p> Date: <u>9/22/2007</u> Time: <u>3:15 PM</u> </p> <p> Dissolved Oxygen: <u>2.33</u> (mg/L) </p> <p> Dissolved Oxygen: <u>31.2</u> (% sat) </p> <p> Specific Cond: <u>377.9</u> (µS/cm) </p> <p> Water Temperature: <u>28.4</u> (°C) </p>
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Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1		1.40	0.25	1.60	0.30	1.50	0.17	1.50	0.09	1.60	0.26	1.50	0.25	0.90	0.05	1.00	0.33	1.10	0.21	0.91	0.10	0.70	0.07
2		2.80	0.22	3.20	0.32	3.00	0.15	3.00	0.15	3.20	0.23	3.00	0.50	1.80	0.15	2.00	0.51	2.20	0.39	1.82	0.24	1.40	0.16
3		4.20	0.29	4.80	0.47	4.50	0.27	4.50	0.24	4.80	0.29	4.50	0.22	2.70	0.14	3.00	0.75	3.30	0.50	2.73	0.36	2.10	0.50
4		5.60	0.37	6.40	0.40	6.00	0.38	6.00	0.25	6.40	0.29	6.00	0.33	3.60	0.15	4.00	0.81	4.40	0.63	3.64	0.39	2.80	0.60
5		7.00	0.32	8.00	0.38	7.50	0.49	7.50	0.40	8.00	0.36	7.50	0.58	4.50	0.60	5.00	0.90	5.50	0.64	4.55	0.37	3.50	0.61
6		8.40	0.45	9.60	0.34	9.00	0.75	9.00	0.47	9.60	0.45	9.00	0.70	5.40	0.63	6.00	0.71	6.60	0.80	5.46	0.34	4.20	0.51
7		9.80	0.41	11.20	0.44	10.50	0.88	10.50	0.39	11.20	0.55	10.50	0.87	6.30	0.72	7.00	0.52	7.70	0.93	6.37	0.23	4.90	0.57
8		11.20	0.35	12.80	0.61	12.00	>1	12.00	0.45	12.80	0.65	12.00	0.76	7.20	0.76	8.00	0.31	8.80	0.85	7.28	0.12	5.60	0.44
9		12.60	0.19	14.40	>1	13.50	0.62	13.50	0.81	14.40	0.79	13.50	0.34	8.10	0.74	9.00	0.12	9.90	0.40	8.19	0.08	6.30	0.25
Right Bank		14.3	0	16	0	15.3	0	15.0	0	16	0	15	0	90	0	10	0	11	0	9.6	0	7	0.2
Feature Type <small>(riffle, run, or pool)</small>		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

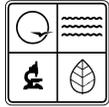
Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 16:30	Site Location Description (e.g., road crossing): Kiowa Rd.
Personnel (Data Collectors): Jennifer Hrabik, Tiffanie Hamilton	
Current Weather Conditions: sun	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: clear/rain	Permit Number: MO 0118478
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:

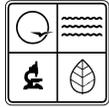
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0503042	Northing (UTM Y): 4408313	Horizontal Accuracy: (EPE / FOM / PDOP) 16 feet		
Site 11	Easting (UTM X): 0503026	Northing (UTM Y): 4408096	Horizontal Accuracy: (EPE / FOM / PDOP) 19 feet		

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
101_217	downstream	101_218	upstream	101_219	No trespass sign
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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: none				

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

1% Cobble	1% Gravel	75% Sand	% Silt	23% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

Algae Water primrose Duckweed Willows
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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 checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input 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 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.



Missouri **Field Data Sheets for Recreational Use Stream Surveys**
Department of
Natural Resources
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: 9/22/07

Organization: Applied Environmental Solutions Position: Environmental Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

 <p>Missouri Department of Natural Resources</p> <p>Waterbody ID: <u>507</u> Site #: <u>0597_11</u></p> <p>Estimated Channel Incision: <u>2</u> (m) (height between low bank width and water)</p> <p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <p>01 UTM X: <u>0503042</u> UTM Y: <u>4408313</u> <u>16</u> feet</p> <p>11 UTM X: <u>0503026</u> UTM Y: <u>4408096</u> <u>19</u> feet</p> <p>Average Stream Width: <u>7.5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width)</p> <p>Field Staff: <u>JH/TH</u></p>	<p style="text-align: center;">Dissolved Oxygen</p> <p>Date: <u>9/22/2007</u> Time: <u>4:30 PM</u></p> <p>Dissolved Oxygen: <u>2.4</u> (mg/L)</p> <p>Dissolved Oxygen: <u>29.6</u> (% sat)</p> <p>Specific Cond: <u>454.8</u> (µS/cm)</p> <p>Water Temperature: <u>27.2</u> (°C)</p>
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Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1		1.22	0.14	1.68	0.30	0.98	0.14	0.65	0.18	0.70	0.05	1.50	0.33	0.98	0.19	0.84	0.39	0.51	0.06	0.65	0.02	0.17	0.02
2		2.44	0.23	3.36	0.32	1.96	0.31	1.30	0.25	1.40	0.16	3.00	0.26	1.96	0.21	1.68	0.59	1.02	0.05	1.30	0.07	0.34	0.00
3		3.66	0.28	5.04	0.37	2.94	0.22	1.95	0.26	2.10	0.25	4.50	0.32	2.94	0.28	2.52	0.60	1.53	0.11	1.95	0.01	0.51	0.00
4		4.88	0.38	6.72	0.47	3.92	0.42	2.60	0.39	2.80	0.25	6.00	0.26	3.92	0.28	3.36	0.49	2.04	0.08	2.60	0.00	0.68	0.01
5		6.10	0.35	8.40	0.60	4.90	0.66	3.25	0.25	3.50	0.30	7.50	0.26	4.90	0.30	4.20	0.44	2.55	0.04	3.25	0.09	0.85	0.03
6		7.32	0.45	10.08	0.81	5.88	0.91	3.90	0.45	4.20	0.49	9.00	0.28	5.88	0.32	5.04	0.35	3.06	0.02	3.90	0.25	1.02	0.03
7		8.54	0.60	11.76	0.82	6.86	>1	4.55	0.57	4.90	0.71	10.50	0.33	6.86	0.30	5.88	0.30	3.57	0.10	4.55	0.38	1.19	0.01
8		9.76	0.81	13.44	>1	7.84	>1	5.20	0.48	5.60	0.84	12.00	0.40	7.84	0.27	6.72	0.26	4.08	0.11	5.20	0.37	1.36	0.01
9		10.98	>1	15.12	>1	8.82	>1	5.85	0.31	6.30	0.80	13.50	0.35	8.82	0.13	7.56	0.09	4.59	0.03	5.85	0.12	1.53	0.01
Right Bank		12.2	0	16.8	0	9.84	0	0.65	0	7	0	15	0	9.84	0	8.42	0	5.15	0	6.5	0	1.7	0
Feature Type (riffle, run, or pool)		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		run	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

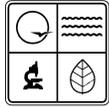
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 07:00	Site Location Description (e.g., road crossing): Kayak Rd.
Personnel (Data Collectors): Renee Martin, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
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:

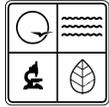
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0502909	Northing (UTM Y): 4405238	Horizontal Accuracy: (EPE / FOM / PDOP)		17 feet
Site 11	Easting (UTM X): 0503080	Northing (UTM Y): 4405046	Horizontal Accuracy: (EPE / FOM / PDOP)		14 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
634	Site 12 upstream	635	Downstream site 12		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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 checked="" type="checkbox"/> Other:
Comments: Farmland, gravel roads				

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

<input checked="" 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:				

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

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

Small amounts of algae. Aquatic vegetation on sand bars.

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:

*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 # 597

Site # 12



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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: 9/22/07

Organization: Applied Environmental Solutions Position: Environmental Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Missouri Department of Natural Resources	Site #: <u>0597_12</u> Estimated Channel Incision: <u>3</u> (m) (height between low bank width and water)
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0502909</u> UTM Y: <u>4405238</u> <u>17</u> feet 11 UTM X: <u>0503080</u> UTM Y: <u>4405046</u> <u>14</u> feet	
Average Stream Width: <u>10</u> (meters) Length of Survey Segment: <u>200</u> (meters) (To determine Length of Reach) (20x average stream width)	
Field Staff: <u>RM/JF</u>	

Dissolved Oxygen	
Date: <u>9/22/2007</u>	Time: <u>7:30 AM</u>
Dissolved Oxygen: <u>5.58</u> (mg/L)	
Dissolved Oxygen: <u>63.2</u> (% sat)	
Specific Cond: <u>383</u> (µS/cm)	
Water Temperature: <u>21</u> (°C)	

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		1.30	0.26	1.50	0.15	1.50	0.12	1.50	0.16	0.40	0.01	0.40	0.08	0.55	0.03	0.25	<.01	0.35	0.06	0.40	0.02	0.32	0.16
2		2.60	0.17	3.00	0.09	3.00	0.05	3.00	0.10	0.80	0.01	8.00	0.04	1.10	0.00	0.50	0.01	0.70	0.07	0.80	0.01	0.64	0.20
3		3.90	0.21	4.50	0.16	4.50	0.19	4.50	0.14	1.20	0.03	1.20	0.04	1.65	0.04	0.75	0.02	1.05	0.07	1.20	0.03	0.96	0.24
4		5.20	0.38	6.00	0.14	6.00	0.12	6.00	0.19	1.60	0.05	1.60	0.01	2.20	0.02	1.00	0.04	1.40	0.08	1.60	0.02	1.28	0.24
5		6.50	0.26	7.50	0.15	7.50	0.13	7.50	0.20	2.00	0.06	2.00	0.00	2.75	0.08	1.25	0.01	1.75	0.10	2.00	0.01	1.60	0.20
6		7.80	0.20	9.00	0.14	9.00	0.20	9.00	0.22	2.40	0.01	2.40	0.00	3.30	0.00	1.50	0.01	2.10	0.11	2.40	0.03	1.92	0.14
7		7.10	0.15	10.50	0.14	10.50	0.24	0.05	0.23	2.80	0.02	2.80	0.00	3.85	0.01	1.75	0.02	2.45	0.09	2.80	0.04	2.24	0.10
8		10.40	0.14	12.00	0.14	12.00	0.18	12.00	0.21	3.20	0.01	3.20	0.02	4.40	0.04	2.00	0.04	2.80	0.06	3.20	0.04	2.56	0.07
9		11.70	0.16	13.50	0.14	13.50	0.21	13.50	0.20	3.60	0.01	3.60	0.01	4.95	0.01	2.25	0.04	3.15	0.04	3.60	0.05	2.88	0.05
Right Bank		13.4	0	15	0	15.3	0	15.2	0	4.1	0	4.05	0	5.71	0	2.71	0	3.61	0	4.25	0	3.25	0
Feature Type <small>(riffle, run, or pool)</small>		pool		pool		pool		pool		riffle		riffle		riffle		riffle		run		run		run	

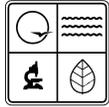
Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 08:20	Site Location Description (e.g., road crossing): Konner Rd.- now ends @ soybean field
Personnel (Data Collectors): Renee Martin, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
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:

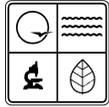
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0503457	Northing (UTM Y): 4403653	Horizontal Accuracy: (EPE / FOM / PDOP) 25 feet		
Site 11	Easting (UTM X): 0503440	Northing (UTM Y): 4403416	Horizontal Accuracy: (EPE / FOM / PDOP) 39 feet		

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
636	Site 13 upstream	637	Downstream site 13		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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 checked="" type="checkbox"/> Other:
Comments: Farm fields- corn/soybeans				

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: none				

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

% Cobble	% Gravel	100% Sand	% Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

20% algae in stream grasses on sandbars, smartweed, willow, barnyard grass

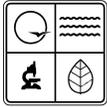
Water Characteristics*: (Mark all that apply.)

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:

*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 # 597

Site # 13



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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: 9/22/07

Organization: Applied Environmental Solutions Position: Environmental Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

 <p> Missouri Department of Natural Resources </p> <p> Site #: <u>0597_13</u> Estimated Channel Incision: <u>4</u> (m) (height between low bank width and water) </p> <p> GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) </p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">01</td> <td style="width: 20%;">UTM X: <u>0503457</u></td> <td style="width: 20%;">UTM Y: <u>4403653</u></td> <td style="width: 10%;"></td> <td style="width: 10%; text-align: right;">25</td> <td style="width: 15%;">feet</td> </tr> <tr> <td>11</td> <td>UTM X: <u>0503440</u></td> <td>UTM Y: <u>4403416</u></td> <td></td> <td style="text-align: right;">39</td> <td>feet</td> </tr> </table> <p> Average Stream Width: <u>12</u> (meters) Length of Survey Segment: <u>240</u> (meters) (To determine Length of Reach) (20x average stream width) </p> <p>Field Staff: <u>RM/JF</u></p>	01	UTM X: <u>0503457</u>	UTM Y: <u>4403653</u>		25	feet	11	UTM X: <u>0503440</u>	UTM Y: <u>4403416</u>		39	feet	<p style="text-align: center;">Dissolved Oxygen</p> <p>Date: <u>9/22/2007</u> Time: <u>8:20 AM</u></p> <p>Dissolved Oxygen: <u>7.08</u> (mg/L)</p> <p>Dissolved Oxygen: <u>77.1</u> (% sat)</p> <p>Specific Cond: <u>412.5</u> (µS/cm)</p> <p>Water Temperature: <u>18.6</u> (°C)</p>
01	UTM X: <u>0503457</u>	UTM Y: <u>4403653</u>		25	feet								
11	UTM X: <u>0503440</u>	UTM Y: <u>4403416</u>		39	feet								

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	0.75	0.14	1.40	0.00	0.80	0.13	0.85	0.13	1.20	0.25	1.15	0.11	1.05	0.09	1.45	0.21	1.05	0.02	0.95	0.09	1.60	0.28
	2	1.50	0.16	2.80	<.01	1.60	0.12	1.70	0.14	2.40	0.20	2.30	0.14	2.10	0.25	2.90	0.10	2.10	0.11	1.90	0.20	3.20	0.31
	3	2.75	0.14	4.20	0.14	2.40	0.10	2.55	0.12	3.60	0.17	3.45	0.14	3.15	0.22	4.35	0.14	3.15	0.17	2.85	0.24	4.80	0.24
	4	3.00	0.14	5.60	0.11	3.20	0.10	3.40	0.14	4.80	0.10	4.60	0.16	4.20	0.18	5.80	0.16	4.20	0.22	3.80	0.30	6.40	0.57
	5	3.75	0.09	7.00	0.09	4.00	0.10	4.25	0.15	6.00	0.06	5.75	0.11	5.25	0.16	7.25	0.16	5.25	0.23	4.75	0.35	8.00	0.25
	6	4.50	0.02	8.40	0.02	4.80	0.10	5.10	0.13	7.20	0.04	6.90	0.15	6.30	0.17	8.70	0.20	6.30	0.23	5.70	0.41	9.60	0.23
	7	5.25	0.00	9.80	0.01	5.60	0.10	5.95	0.10	8.40	0.04	8.50	0.17	7.35	0.21	10.15	0.25	7.35	0.34	6.65	0.52	11.20	0.19
	8	6.00	0.00	11.20	0.00	6.40	0.11	6.80	0.09	9.60	0.03	9.20	0.10	8.40	0.41	11.60	0.10	8.40	0.18	7.60	0.70	12.80	0.09
	9	6.75	0.06	12.60	0.00	7.20	0.08	7.65	0.04	10.80	0.04	10.35	0.04	9.45	0.11	13.05	0.09	9.45	0.21	8.55	0.45	14.40	0.03
Right Bank		7.9	0	14.31	0	8.1	0	8.7	0	12.1	0	11.8	0	10.5	0	14.6	0	10.5	0	9.65	0	16.4	0
Feature Type <small>(riffle, run, or pool)</small>		pool		run		pool		pool		pool		pool		run									

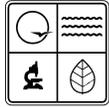
Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 09:30	Site Location Description (e.g., road crossing): Hwy. 36
Personnel (Data Collectors): Renee Martin, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
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:

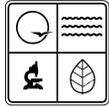
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0501447	Northing (UTM Y): 4401263	Horizontal Accuracy: (EPE / FOM / PDOP) 20 feet		
Site 11	Easting (UTM X): 0501435	Northing (UTM Y): 4401078	Horizontal Accuracy: (EPE / FOM / PDOP) 28 feet		

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
638	Downstream site 14	639	upstream site 14	640	Agri-drain T-7
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
641	Agri-drain T-10				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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 checked="" type="checkbox"/> Other:
Comments: Farm fields, Hwy				

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: Agri-drains into streams				

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

% Cobble	5% Gravel	65% Sand	% Silt	30% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

Aquatic plants in sandbars (willow, smartweed, cardinal flower)

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

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

WBID # 597

Site # 14



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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: 9/22/07

Organization: Applied Environmental Solutions Position: Field Tech

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

 <p>Missouri Department of Natural Resources</p> <p>Waterbody ID: <u>507</u> Site #: <u>0597_14</u></p> <p>Estimated Channel Incision: <u>2.5</u> (m) (height between low bank width and water)</p> <p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <p>01 UTM X: <u>0501447</u> UTM Y: <u>4401263</u> <u>20</u> feet</p> <p>11 UTM X: <u>0501435</u> UTM Y: <u>4401078</u> <u>28</u> feet</p> <p>Average Stream Width: <u>2</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width)</p> <p>Field Staff: <u>RM/JF</u></p>	<p style="text-align: center;">Dissolved Oxygen</p> <p>Date: <u>9/22/2007</u> Time: <u>9:30 AM</u></p> <p>Dissolved Oxygen: <u>2.74</u> (mg/L)</p> <p>Dissolved Oxygen: <u>20.9</u> (% sat)</p> <p>Specific Cond: <u>236.9</u> (µS/cm)</p> <p>Water Temperature: <u>18.4</u> (°C)</p>
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Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	0.20	0.06	0.26	0	0.12	0	0.25	0	0.28	0	0.26	0	0.21	0	0.21	0	0.29	0	0.24	0	0.28	0
	2	0.40	0.07	0.52	0	0.23	0	0.50	0	0.55	0	0.52	0	0.42	0	0.41	0	0.58	0	0.48	0	0.56	0
	3	0.60	0.14	0.78	0	0.34	0	0.75	0	0.83	0	0.78	0	0.63	0	0.62	0	0.87	0	0.72	0	0.84	0
	4	0.80	0.14	1.04	0	0.46	0	1.00	0	1.10	0	1.04	0	0.84	0	0.82	0	1.16	0	0.96	0	1.12	0
	5	1.00	0.13	1.30	0	0.57	0	1.25	0	1.38	0	1.30	0	1.05	0	1.03	0	1.45	0	1.20	0	1.40	0
	6	1.20	0.12	1.56	0	0.68	0	1.50	0	1.65	0	1.56	0	1.26	0	1.23	0	1.74	0	1.44	0	1.68	0
	7	1.40	0.08	1.82	0	0.80	0	1.75	0	1.93	0	1.82	0	1.47	0	1.44	0	2.03	0	1.68	0	1.96	0
	8	1.60	0.06	2.08	0	0.91	0	2.00	0	2.20	0	2.08	0	1.68	0	1.64	0	2.32	0	1.92	0	2.24	0
	9	1.80	0.04	2.34	0	1.02	0	2.25	0	2.48	0	2.34	0	1.89	0	1.85	0	2.61	0	2.16	0	2.52	0
Right Bank		2	0	2.6	0	1.15	0	2.5	0	2.75	0	2.6	0	2.1	0	2.05	0	2.9	0	2.4	0	2.8	0
Feature Type (riffle, run, or pool)		pool		dry																			

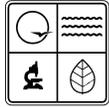
Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 10:05	Site Location Description (e.g., road crossing): Kemper Rd.
Personnel (Data Collectors): Renee Martin, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
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:

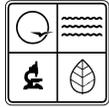
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 0500959	Northing (UTM Y): 4400152	Horizontal Accuracy: (EPE / FOM / PDOP) 27 feet
Site 11	Easting (UTM X): 0500788	Northing (UTM Y): 4400022	Horizontal Accuracy: (EPE / FOM / PDOP) 21 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
642	upstream site 15	643	downstream site 15	644	ATV tracks T-6
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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 checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: Farm fields				

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	% Gravel	90% Sand	% Silt	10% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

Some algae-benthic, aquatic plants on sandbars.

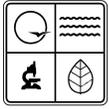
Water Characteristics*: (Mark all that apply.)

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:

*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 # 597

Site # 15



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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: 9/22/07

Organization: Applied Environmental Solutions Position: Field Technician

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

<p>Missouri Department of Natural Resources</p> <p>Waterbody ID: <u>507</u> Site #: <u>0597_15</u></p> <p>Estimated Channel Incision: <u>3</u> (m) (height between low bank width and water)</p> <p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">01</td> <td style="width: 20%;">UTM X: <u>0500959</u></td> <td style="width: 20%;">UTM Y: <u>4400152</u></td> <td style="width: 10%; text-align: right;"><u>27</u></td> <td style="width: 45%;">feet</td> </tr> <tr> <td>11</td> <td>UTM X: <u>0500788</u></td> <td>UTM Y: <u>4400022</u></td> <td style="text-align: right;"><u>21</u></td> <td>feet</td> </tr> </table> <p>Average Stream Width: <u>9</u> (meters) Length of Survey Segment: <u>180</u> (meters) (To determine Length of Reach) (20x average stream width)</p> <p>Field Staff: <u>RM/JF</u></p>	01	UTM X: <u>0500959</u>	UTM Y: <u>4400152</u>	<u>27</u>	feet	11	UTM X: <u>0500788</u>	UTM Y: <u>4400022</u>	<u>21</u>	feet	<p style="text-align: center;">Dissolved Oxygen</p> <p>Date: <u>9/22/2007</u> Time: <u>10:05</u></p> <p>Dissolved Oxygen: <u>6.82</u> (mg/L)</p> <p>Dissolved Oxygen: <u>74.2</u> (% sat)</p> <p>Specific Cond: <u>416.4</u> (µS/cm)</p> <p>Water Temperature: <u>20.8</u> (°C)</p>
01	UTM X: <u>0500959</u>	UTM Y: <u>4400152</u>	<u>27</u>	feet							
11	UTM X: <u>0500788</u>	UTM Y: <u>4400022</u>	<u>21</u>	feet							

Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	1.16	0.33	1.40	0.10	0.52	0.05	0.48	0.06	0.40	0.02	0.82	0.08	0.15	0.02	0.40	0.10	0.75	0.32	1.36	0.04	0.79	0.11
	2	2.32	0.54	2.80	0.16	1.04	0.04	0.98	0.10	0.80	0.10	1.64	0.12	0.30	0.03	0.80	0.15	1.50	0.60	2.72	0.05	1.58	0.10
	3	3.48	0.32	4.20	0.21	1.56	0.09	1.47	0.15	1.20	0.24	2.46	0.13	0.45	0.02	1.20	0.13	2.25	0.68	4.08	0.05	2.37	0.09
	4	4.64	0.34	5.60	0.17	2.08	0.14	1.96	0.22	1.60	0.33	3.28	0.11	0.60	0.05	1.60	0.10	3.00	0.61	5.44	0.10	3.16	0.10
	5	5.80	0.55	7.00	0.14	2.60	0.14	2.45	0.26	2.00	0.41	4.10	0.07	0.75	0.06	2.00	0.09	3.75	0.52	6.80	0.21	3.95	0.09
	6	6.90	0.58	8.40	0.06	3.12	0.17	2.94	0.31	2.40	0.68	4.92	0.00	0.90	0.07	2.40	0.07	4.50	0.42	8.16	0.18	4.74	0.08
	7	8.12	0.55	9.80	0.17	3.64	0.16	3.43	0.38	2.80	0.64	5.74	0.16	1.05	0.07	2.80	0.04	5.25	0.36	9.52	0.24	5.53	0.08
	8	9.28	0.46	11.20	0.06	4.16	0.13	3.92	0.46	3.20	0.52	6.56	0.35	1.20	0.06	3.20	0.04	6.00	0.28	10.88	0.27	6.32	0.09
	9	10.44	0.40	12.60	0.06	4.68	0.07	4.41	0.55	3.60	0.25	7.38	0.34	1.35	0.05	3.60	0.02	6.75	0.19	12.24	0.26	7.11	0.06
Right Bank		11.61	0	14.05	0	5.25	0	4.9	0.4	4	0.15	8.2	0.05	1.51	0	4.05	0	7.9	0	13.61	0	7.9	0
Feature Type (riffle, run, or pool)		pool		pool		run		run		run/pool		pool		run		run		run		run/pool		pool	

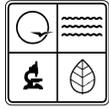
Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 11:30	Site Location Description (e.g., road crossing): Julep Rd.
Personnel (Data Collectors): Renee Martin, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
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:

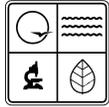
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0499456	Northing (UTM Y): 4398847	Horizontal Accuracy: (EPE / FOM / PDOP)	15 feet	
Site 11	Easting (UTM X): 0499497	Northing (UTM Y): 4398634	Horizontal Accuracy: (EPE / FOM / PDOP)	14 feet	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
647	downstream site 16	648	upstream site 16		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
Data Sheet B – Site Characterization (continued)

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

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

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

<input checked="" 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:				

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

% Cobble	% Gravel	% Sand	% Silt	100% Mud/Clay	% Bedrock
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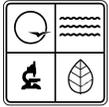
Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

Coontail/algae-benthic/100% duckweed

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:

*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.



Missouri **Field Data Sheets for Recreational Use Stream Surveys**
Department of
Natural Resources
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: 9/22/07

Organization: Applied Environmental Solutions Position: Environmental Specialist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

 <p>Missouri Department of Natural Resources</p> <p>Waterbody ID: <u>507</u> Site #: <u>0597_16</u></p> <p>Estimated Channel Incision: <u><1.0</u> (m) (height between low bank width and water)</p> <p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <p>01 UTM X: <u>499456</u> UTM Y: <u>4398847</u> <u>15</u> feet</p> <p>11 UTM X: <u>499497</u> UTM Y: <u>4398634</u> <u>14</u> feet</p> <p>Average Stream Width: <u>6</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width)</p> <p>Field Staff: <u>RM/JF</u></p>	<p style="text-align: center;">Dissolved Oxygen</p> <p>Date: <u>9/22/2007</u> Time: <u>11:30 AM</u></p> <p>Dissolved Oxygen: <u>2.09</u> (mg/L)</p> <p>Dissolved Oxygen: <u>21.8</u> (% sat)</p> <p>Specific Cond: <u>297.6</u> (µS/cm)</p> <p>Water Temperature: <u>20.1</u> (°C)</p>
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Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1		0.61	0.20	0.60	0.10	0.60	0.15	0.65	0.13	0.60	0.10	0.61	0.24	0.61	0.15	0.60	0.18	0.60	0.20	0.62	0.14	0.61	0.13
2		1.22	0.55	1.20	0.23	1.20	0.28	1.30	0.28	1.20	0.25	1.22	0.45	1.22	0.22	1.20	0.22	1.20	0.43	1.24	0.24	1.22	0.30
3		1.83	0.63	1.80	0.30	1.80	0.31	1.95	0.43	1.80	0.33	1.83	0.63	1.83	0.29	1.80	0.43	1.80	0.50	1.86	0.30	1.83	0.36
4		2.44	0.85	2.40	0.38	2.40	0.35	2.60	0.62	2.40	0.47	2.44	0.84	2.44	0.44	2.40	0.60	2.40	0.55	2.48	0.55	2.44	0.43
5		3.05	0.60	3.00	0.40	3.00	0.43	3.25	0.71	3.00	0.68	3.05	0.74	3.05	0.50	3.00	0.75	3.00	0.64	3.10	0.45	3.00	0.62
6		3.66	0.51	0.60	0.60	3.60	0.62	3.90	0.75	3.60	0.55	3.66	0.66	3.66	0.71	3.60	0.62	3.60	0.79	3.72	0.30	3.66	0.55
7		4.27	0.38	4.20	0.43	4.20	0.70	4.55	0.64	4.20	0.44	4.27	0.49	4.27	0.66	4.20	0.48	4.20	0.60	4.34	0.22	4.27	0.41
8		4.88	0.20	4.80	0.29	4.80	0.53	5.20	0.52	4.80	0.37	4.88	0.31	4.88	0.50	4.80	0.31	4.80	0.50	4.96	0.15	4.88	0.24
9		5.49	0.15	5.40	0.10	5.40	0.21	5.85	0.30	5.40	0.20	5.49	0.18	5.49	0.37	5.40	0.14	5.40	0.31	5.58	0.10	5.49	0.10
Right Bank		6.1	0	6	0	6	0	6.5	0	6	0	6.1	0	6.1	0	6	0	6	0	6.25	0	6.15	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

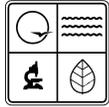
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 11:00	Site Location Description (e.g., road crossing): Jasmine Rd.
Personnel (Data Collectors): Renee Martin, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
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:

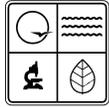
LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): 0498132	Northing (UTM Y): 4396898	Horizontal Accuracy: (EPE / FOM / PDOP)		16 feet
Site 11	Easting (UTM X): 0498350	Northing (UTM Y): 4396729	Horizontal Accuracy: (EPE / FOM / PDOP)		20 feet

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
645	upstream site 17	646	downstream site 17		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
Data Sheet B – Site Characterization (continued)

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

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

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: none				

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

% Cobble	5% Gravel	80% Sand	% Silt	15% 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 type="checkbox"/> None	<input checked="" type="checkbox"/> Other: dry
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: dry
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 type="checkbox"/> None	<input checked="" type="checkbox"/> Other: dry

*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 # 597

Site # 17



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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: 9/22/07

Organization: Applied Environmental Solutions Position: Field Technician

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

<p>Missouri Department of Natural Resources</p> <p>Waterbody ID: <u>507</u> Site #: <u>0597_17</u></p> <p>Estimated Channel Incision: <u>1.5</u> (m) (height between low bank width and water)</p> <p>GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">01</td> <td style="width: 25%;">UTM X: <u>498132</u></td> <td style="width: 25%;">UTM Y: <u>4396898</u></td> <td style="width: 45%; text-align: right;">16 feet</td> </tr> <tr> <td>11</td> <td>UTM X: <u>498350</u></td> <td>UTM Y: <u>4396729</u></td> <td style="text-align: right;">20 feet</td> </tr> </table> <p>Average Stream Width: <u>4</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width)</p> <p>Field Staff: <u>RM/JF</u></p>	01	UTM X: <u>498132</u>	UTM Y: <u>4396898</u>	16 feet	11	UTM X: <u>498350</u>	UTM Y: <u>4396729</u>	20 feet	<p style="text-align: center;">Dissolved Oxygen</p> <p>Date: <u>9/22/2007</u> Time: <u>11:00 AM</u></p> <p>Dissolved Oxygen: _____ (mg/L)</p> <p>Dissolved Oxygen: _____ (% sat)</p> <p>Specific Cond: _____ (µS/cm)</p> <p>Water Temperature: _____ (°C)</p> <p style="text-align: center;">* No water - dry conditions</p>
01	UTM X: <u>498132</u>	UTM Y: <u>4396898</u>	16 feet						
11	UTM X: <u>498350</u>	UTM Y: <u>4396729</u>	20 feet						

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	0.40	0	0.41	0	0.38	0	0.41	0	0.39	0	0.40	0	0.39	0	0.45	0	0.37	0	0.39	0	0.40	0
	2	0.80	0	0.82	0	0.76	0	0.82	0	0.78	0	0.80	0	0.78	0	0.90	0	0.74	0	0.78	0	0.80	0
	3	1.20	0	1.23	0	1.14	0	1.23	0	1.17	0	1.20	0	1.17	0	1.35	0	1.10	0	1.17	0	1.20	0
	4	1.60	0	1.64	0	1.52	0	1.64	0	1.56	0	1.60	0	1.56	0	1.80	0	1.48	0	1.56	0	1.60	0
	5	2.00	0	2.05	0	1.90	0	2.05	0	1.95	0	2.00	0	1.95	0	2.25	0	1.85	0	1.95	0	2.00	0
	6	2.40	0	2.46	0	2.28	0	2.46	0	2.34	0	2.40	0	2.34	0	2.70	0	2.22	0	2.34	0	2.40	0
	7	2.80	0	2.87	0	2.66	0	2.87	0	2.73	0	2.80	0	2.73	0	3.15	0	2.59	0	2.73	0	2.80	0
	8	3.20	0	3.28	0	3.04	0	3.28	0	3.12	0	3.20	0	3.12	0	3.60	0	2.96	0	3.12	0	3.20	0
	9	3.60	0	3.69	0	3.42	0	3.69	0	3.51	0	3.60	0	3.51	0	4.05	0	3.33	0	3.51	0	3.60	0
Right Bank		4.00	0	4.10	0	3.80	0	4.15	0	3.95	0	4.00	0	3.90	0	4.50	0	3.75	0	3.95	0	4.05	0
Feature Type <small>(riffle, run, or pool)</small>		dry		dry		dry		dry		dry		dry		dry		dry		dry		dry		dry	

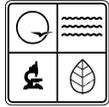
Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 12:00	Site Location Description (e.g., road crossing): Twichell Rd.
Personnel (Data Collectors): Renee Martin, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
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): 0497060	Northing (UTM Y): 4392484	Horizontal Accuracy: (EPE / FOM / PDOP) 17 feet		
Site 11	Easting (UTM X): 0496945	Northing (UTM Y): 4392408	Horizontal Accuracy: (EPE / FOM / PDOP) 21 feet		

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
649	upstream site 18	650	downstream site 18	651	T-4 site #18 tire tracks
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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 type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: Wildlife refuge, gravel road				

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: none				

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

% Cobble	10% Gravel	80% Sand	% Silt	10% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

Smartweed on gravel bars Small amounts of algae
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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:

*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 # 597

Site # 18



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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: 9/22/07

Organization: Applied Environmental Solutions Position: Field Technician

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

<p> Missouri Department of Natural Resources </p> <p> Site #: <u>0597_18</u> Estimated Channel Incision: <u>4</u> (m) (height between low bank width and water) </p> <p> GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) </p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">01</td> <td style="width: 25%;">UTM X: <u>497060</u></td> <td style="width: 25%;">UTM Y: <u>4392484</u></td> <td style="width: 45%; text-align: right;">17 feet</td> </tr> <tr> <td>11</td> <td>UTM X: <u>496945</u></td> <td>UTM Y: <u>4392408</u></td> <td style="text-align: right;">21 feet</td> </tr> </table> <p> Average Stream Width: <u>7</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) </p> <p>Field Staff: <u>RM/JF</u></p>	01	UTM X: <u>497060</u>	UTM Y: <u>4392484</u>	17 feet	11	UTM X: <u>496945</u>	UTM Y: <u>4392408</u>	21 feet	<p style="text-align: center; margin: 0;">Dissolved Oxygen</p> <p>Date: <u>9/22/2007</u> Time: <u>12:00 PM</u></p> <p>Dissolved Oxygen: <u>12.3</u> (mg/L)</p> <p>Dissolved Oxygen: <u>141.1</u> (% sat)</p> <p>Specific Cond: <u>431.9</u> (µS/cm)</p> <p>Water Temperature: <u>22.2</u> (°C)</p>
01	UTM X: <u>497060</u>	UTM Y: <u>4392484</u>	17 feet						
11	UTM X: <u>496945</u>	UTM Y: <u>4392408</u>	21 feet						

Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	0.46	0	0.29	0.05	0.63	0.04	1.27	0.20	0.32	0.04	0.48	0.01	0.18	0.01	0.25	0.08	0.30	0.02	0.80	0.06	0.49	0.08
	2	0.92	<.01	0.58	0.04	1.26	0.02	2.54	0.51	0.64	0.07	0.96	0.07	0.36	0.05	0.50	0.09	0.60	0.05	1.60	0.12	0.98	0.06
	3	1.38	<.01	0.87	0.07	1.89	0.02	3.81	0.90	0.96	0.10	1.44	0.19	0.54	0.06	0.75	0.08	0.90	0.04	2.40	0.27	1.47	0.11
	4	1.84	0.01	1.16	0.03	2.52	0.01	5.08	0.72	1.28	0.09	1.92	0.25	0.72	0.05	1.00	0.07	1.20	0.03	3.20	0.37	1.96	0.10
	5	2.30	0.02	1.45	0.02	3.15	0.06	6.35	0.60	1.60	0.10	2.40	0.20	0.90	0.07	1.25	0.04	1.50	0.02	4.00	0.51	2.45	0.09
	6	2.76	0.01	1.74	0.04	3.78	0	7.62	0.55	1.92	0.11	2.88	0.13	1.08	0.10	1.50	0.01	1.80	0.04	4.80	0.62	2.94	0.07
	7	3.22	0.03	2.03	0.04	4.41	0.05	8.89	0.55	2.24	0.11	3.36	0.10	1.26	0.11	1.75	0.03	2.10	0.03	5.60	0.66	3.43	0.05
	8	3.68	0.02	2.32	0.04	5.04	0.01	10.16	0.54	2.56	0.10	3.84	0.06	1.44	0.12	2.00	0.04	2.40	0.02	6.40	0.55	3.92	0.04
	9	4.14	0.04	2.61	0.04	5.67	0.04	11.43	0.46	2.88	0.07	4.32	0.04	1.62	0.04	2.25	0.05	2.70	0.01	7.20	0.25	4.41	0.02
Right Bank		4.6	0	2.9	0	6.3	0	12.7	0	3.25	0	4.8	0	1.8	0	2.5	0	3.05	0	8.05	0	4.9	0.01
Feature Type		run		run		run		pool		run		pool		run									

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

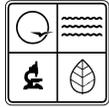
GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/22/07 12:45	Site Location Description (e.g., road crossing): John Roth Rd.
Personnel (Data Collectors): Renee Martin, Justyn Foth	
Current Weather Conditions: clear	Facility Name: PSF Valley View finishing
Weather Conditions for Past 10 days: rainy/clear	Permit Number: MO 0118478
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): 0495960	Northing (UTM Y): 4390056	Horizontal Accuracy: (EPE / FOM / PDOP) 19 feet		
Site 11	Easting (UTM X): 0496005	Northing (UTM Y): 4389845	Horizontal Accuracy: (EPE / FOM / PDOP) 20 feet		

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
652	upstream site 19	653	downstream site 19	654	T-1 site #19 ATV tracks
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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: gravel roads				

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

Aquatic grasses on sand bars No algae
--

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:

*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 # 597

Site # 19



Missouri Field Data Sheets for Recreational Use Stream Surveys
Department of Natural Resources
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.)

Bill Stuart-landowner
Straightened stream out 1976.

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

Surveyor's Signature: _____ Date of Survey: 9/22/07

Organization: Applied Environmental Solutions Position: Field Technician

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

 <p> Missouri Department of Natural Resources </p> <p> Site #: <u>0597_19</u> Estimated Channel Incision: <u>2</u> (m) (height between low bank width and water) </p> <p> GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) </p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">01</td> <td style="width: 25%;">UTM X: <u>495960</u></td> <td style="width: 25%;">UTM Y: <u>4390056</u></td> <td style="width: 45%; text-align: right;">19 feet</td> </tr> <tr> <td>11</td> <td>UTM X: <u>496005</u></td> <td>UTM Y: <u>4389845</u></td> <td style="text-align: right;">20 feet</td> </tr> </table> <p> Average Stream Width: <u>5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) </p> <p>Field Staff: <u>RM/JF</u></p>	01	UTM X: <u>495960</u>	UTM Y: <u>4390056</u>	19 feet	11	UTM X: <u>496005</u>	UTM Y: <u>4389845</u>	20 feet	<p style="text-align: center; margin: 0;">Dissolved Oxygen</p> <p>Date: <u>9/22/2007</u> Time: <u>12:45 PM</u></p> <p>Dissolved Oxygen: <u>8.45</u> (mg/L)</p> <p>Dissolved Oxygen: <u>99.4</u> (% sat)</p> <p>Specific Cond: <u>395.4</u> (µS/cm)</p> <p>Water Temperature: <u>22.2</u> (°C)</p>
01	UTM X: <u>495960</u>	UTM Y: <u>4390056</u>	19 feet						
11	UTM X: <u>496005</u>	UTM Y: <u>4389845</u>	20 feet						

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	0.50	0.20	0.41	0.07	0.34	0.08	0.44	0.04	0.74	0.02	0.32	0.03	0.36	0.02	0.37	0.02	0.39	0.10	0.26	0.05	0.45	0.05
	2	1.00	0.24	0.82	0.10	0.68	0.08	0.88	<.01	1.48	0.01	0.64	0.04	0.72	0.00	0.74	0.01	0.78	0.11	0.52	0.06	0.90	0.07
	3	1.50	0.10	1.23	0.09	1.02	0.06	1.32	0.01	2.22	<.01	0.96	0.02	1.08	0.01	1.11	0.01	1.17	0.13	0.78	0.09	1.35	0.04
	4	2.00	0.10	1.64	0.10	1.36	0.07	1.76	0.04	2.96	0.00	1.28	0.07	1.44	0.02	1.48	0.02	1.56	0.12	1.04	0.07	1.80	0.02
	5	2.50	0.06	2.05	0.06	1.70	0.07	2.20	0.05	3.70	0.00	1.60	0.10	1.80	0.02	1.85	0.05	1.95	0.15	1.30	0.07	2.25	0.02
	6	3.00	0.00	2.46	0.04	2.04	0.06	2.64	0.03	4.44	0.05	1.92	0.09	2.16	0.05	2.22	0.10	2.34	0.18	1.56	0.10	2.70	0.04
	7	3.50	0.01	2.87	0.05	2.38	0.07	3.08	0.07	5.18	0.01	2.24	0.08	2.52	0.10	2.59	0.14	2.73	0.15	1.82	0.07	3.15	0.00
	8	4.00	0.20	3.28	0.04	2.72	0.03	3.52	0.09	5.92	0.01	2.56	0.06	2.88	0.16	2.96	0.10	3.12	0.10	2.08	0.04	3.60	0.00
	9	4.50	0.20	3.69	0.04	3.06	0.04	3.96	0.06	6.66	0.03	2.88	0.05	3.24	0.11	3.33	0.04	3.51	0.06	2.34	0.01	4.05	0.01
Right Bank		5.00	0	4.10	0	3.40	0	4.40	0	7.45	0	3.20	0	3.65	0	3.70	0	3.90	0	2.65	0	4.50	0
Feature Type <small>(riffle, run, or pool)</small>		pool		run																			

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: _____ Date: _____

WBID# 0597



Site# 1 Photo ID# 101-188, Upstream



Site# 1 Photo ID# 101-189, Downstream



Site# 1 Photo ID# 101-192, Fence



Site# 2 Photo ID# 101-194, Upstream

WBID# 0597



Site# 2 Photo ID# 101-193, Downstream



Site# 3 Photo ID# 101-197, Upstream



Site# 3 Photo ID# 101-196, Downstream



Site# 3 Photo ID# 101-198, Dam at transect 08

WBID# 0597



Site# 4 Photo ID# 101-201, Downstream



Site# 4 Photo ID# 101-202, Upstream



Site# 4 Photo ID# 101-203, Livestock watering



Site# 5 Photo ID# 101-204, Upstream

WBID# 0597



Site# 5 Photo ID# 101-205, Downstream-fence



Site# 6 Photo ID# 101-206, Downstream



Site# 6 Photo ID# 101-207, Upstream



Site# 7 Photo ID# 101-208, Downstream

WBID# 0597



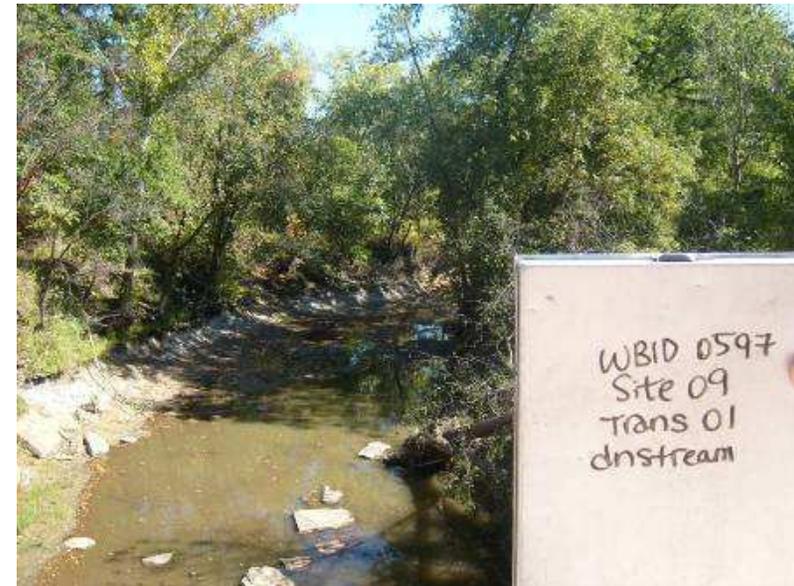
Site# 7 Photo ID# 101-209, Upstream



Site# 8 Photo ID# 101-211, Downstream



Site# 8 Photo ID# 101-212, Upstream



Site# 9 Photo ID# 101-213, Downstream

WBID# 0597



Site# 9 Photo ID# 101-214, Upstream



Site# 10 Photo ID# 101-215, Upstream



Site# 10 Photo ID# 101-216, Downstream

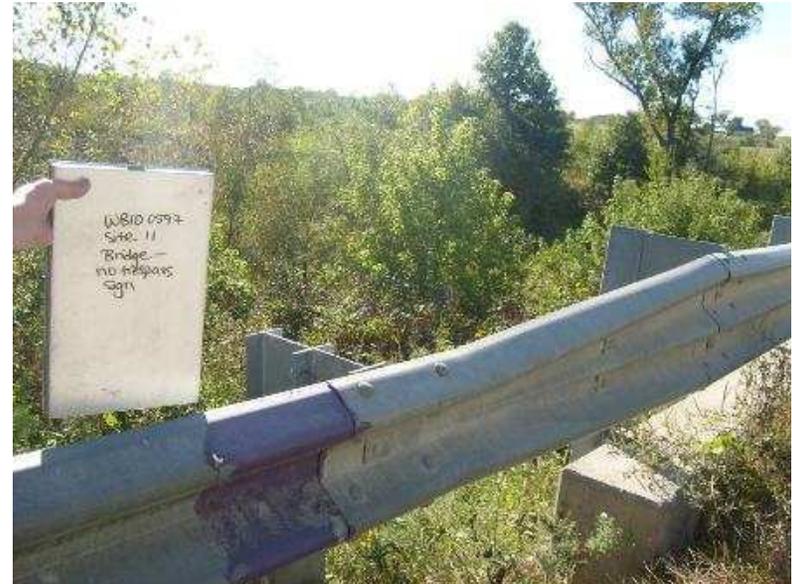


Site# 11 Photo ID# 101-217, Downstream

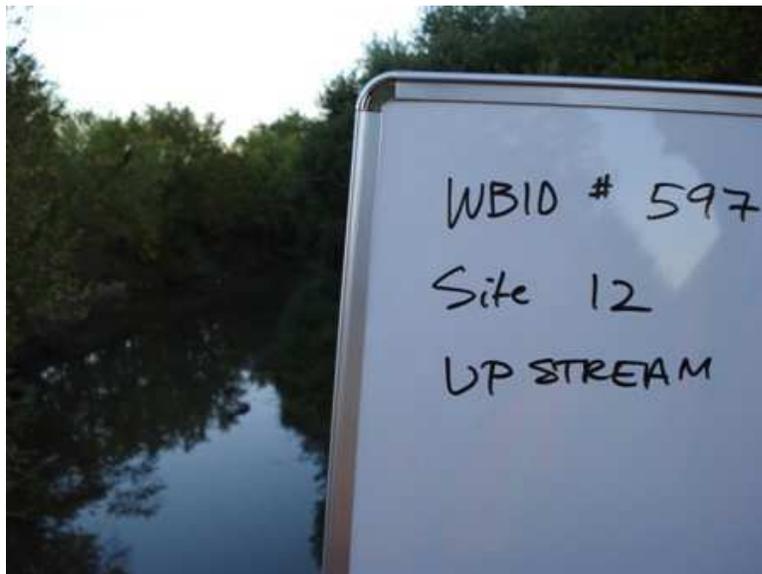
WBID# 0597



Site# 11 Photo ID# 101-218, Upstream



Site# 11 Photo ID# 101-219, No trespass sign

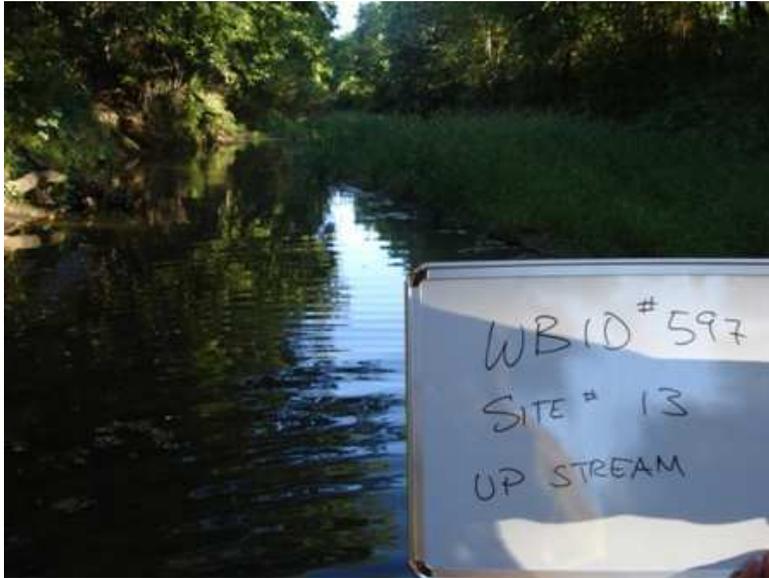


Site# 12 Photo ID# 634, Upstream



Site# 12 Photo ID# 635, Downstream

WBID# 0597



Site# 13 Photo ID# 636, Upstream



Site# 13 Photo ID# 637, Downstream



Site# 14 Photo ID# 638, Downstream



Site# 14 Photo ID# 639, Upstream

WBID# 0597



Site# 14 Photo ID# 640, Agi-drain T-7



Site# 14 Photo ID# 641, Agi-drain T-10



Site# 15 Photo ID# 642, Upstream



Site# 15 Photo ID# 643, Downstream

WBID# 0597



Site# 15 Photo ID# 644, ATV tracks T-6



Site# 16 Photo ID# 647, Downstream



Site# 16 Photo ID# 648, Upstream



Site# 17 Photo ID# 645, Upstream

WBID# 0597



Site# 17 Photo ID# 646, Downstream



Site# 18 Photo ID# 649, Upstream



Site# 18 Photo ID# 650, Downstream



Site# 18 Photo ID# 651, Tire tracks

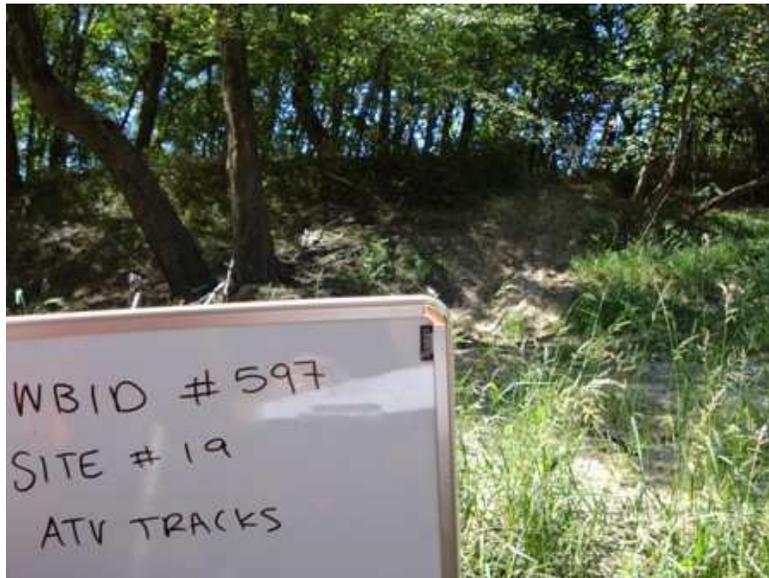
WBID# 0597



Site# 19 Photo ID# 652, Upstream



Site# 19 Photo ID# 653, Downstream



Site# 19 Photo ID# 654, ATV tracks