



Use Attainability Analysis

for

WBID 1144 Dry Auglaize Creek

Submitted by

MEC Water Resources

To

Missouri Department of Natural Resources

Water Protection Program

On

December 1, 2007

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet A – Water Body Identification

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

Water Body Name (from USGS 7.5' quad):	Dry Auglaize Creek	
Missouri Water Body Identification (WRID) Number:	11171	
8-digit HUC:	10290109	County: Camden, Laclede
Upstream Legal Description (from Table H):	8, 35N, 15W	
Downstream Legal Description (from Table H):	22, 38N, 15W	
Number of sites evaluated:	19	
List all sites numbers, listed consequently upstream to downstream:	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, + 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):
Camden-ton Business Park MO 0129607 The Lakes Subdivision MO 0129712

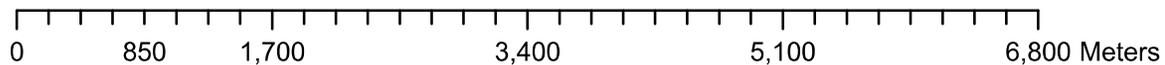
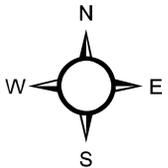
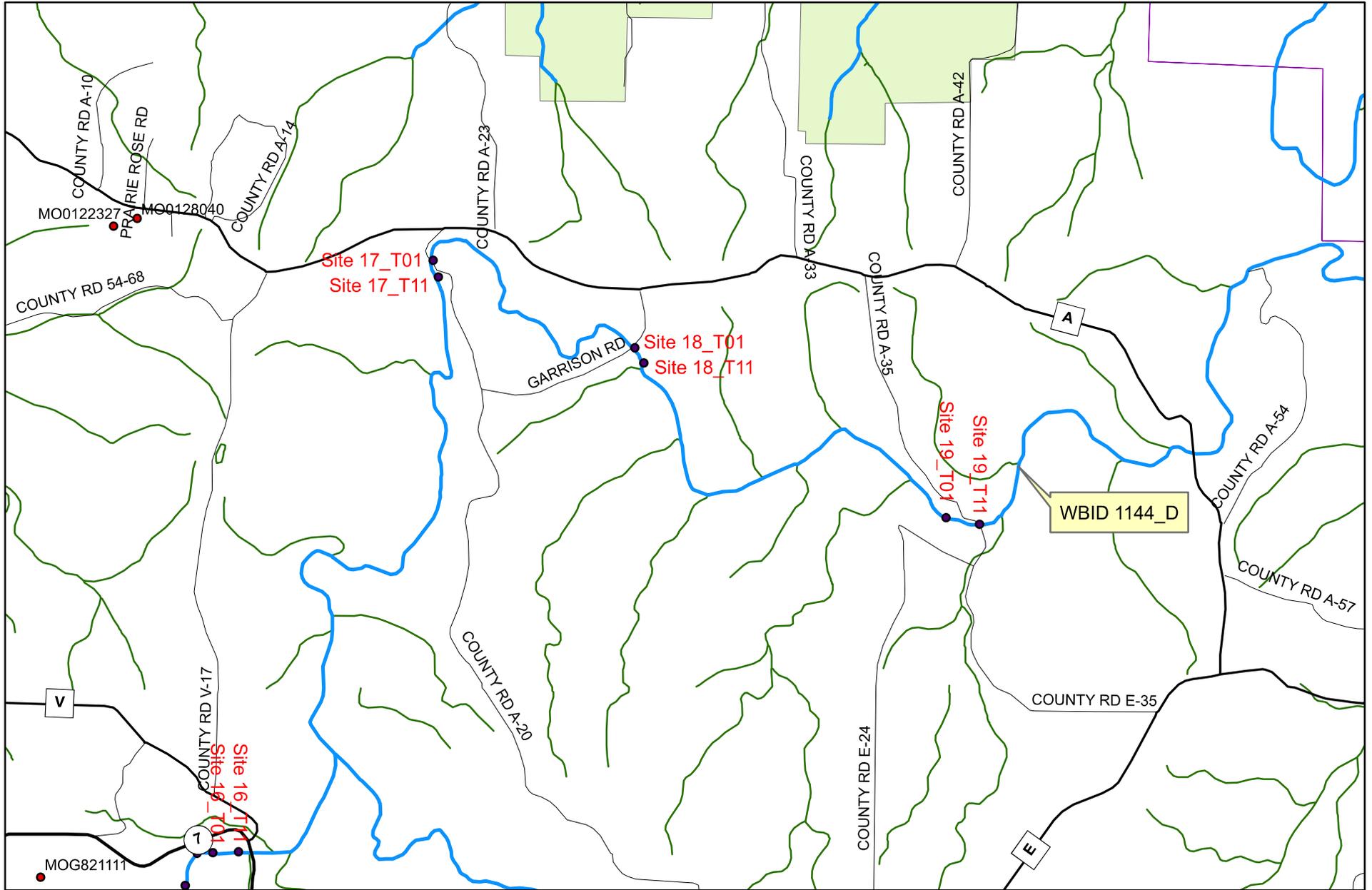
III. UAA Surveyor (please print legibly)

Name of Surveyor	Abigail Welschmeyer	Telephone Number:	(373) 634-7078
Organization/Employer:	ERL		

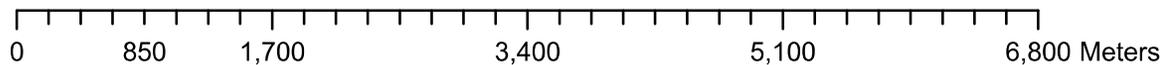
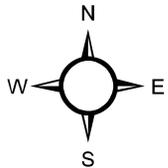
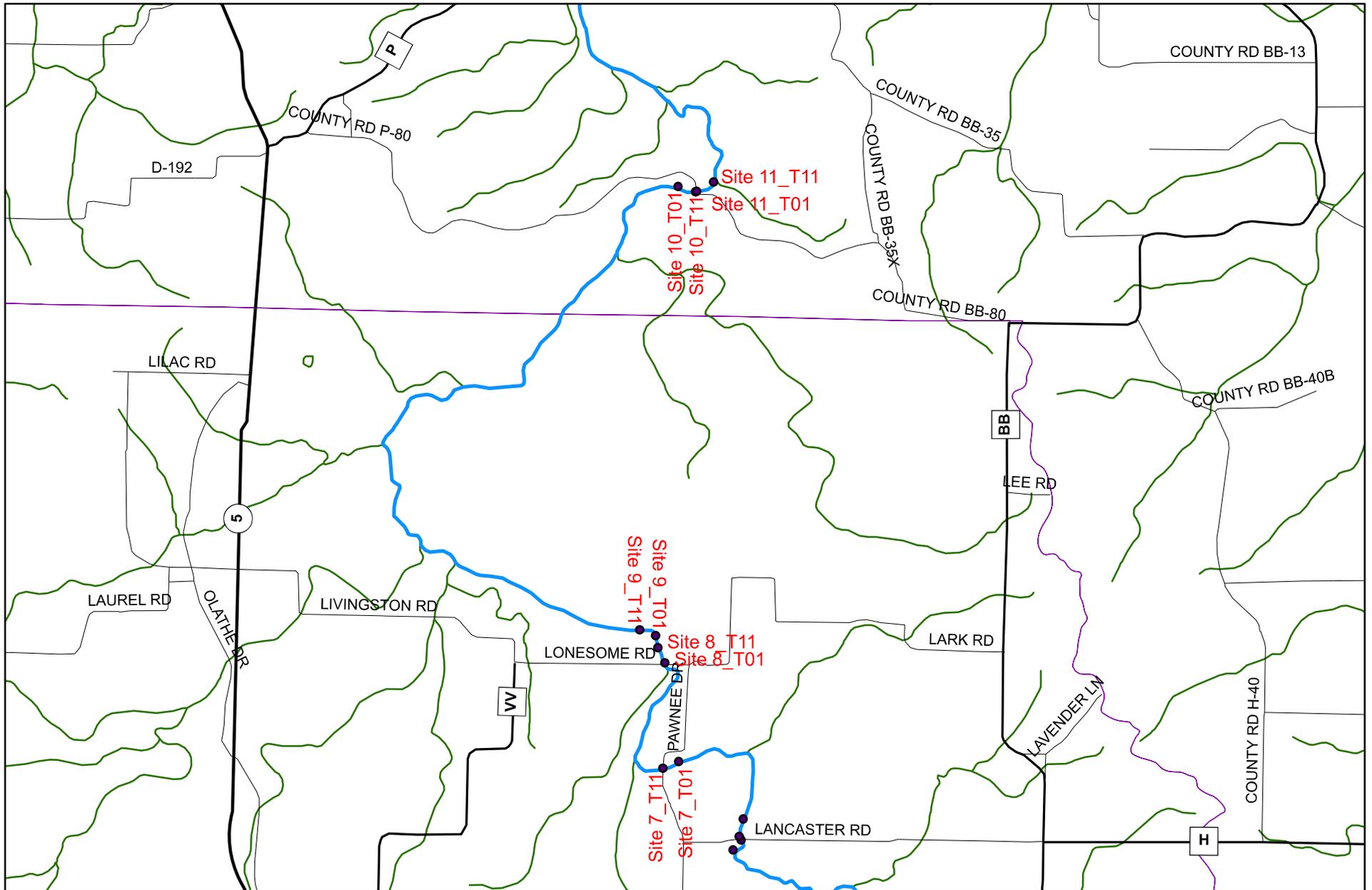
Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Signed: Abigail Welschmeyer Date: 10/25/07

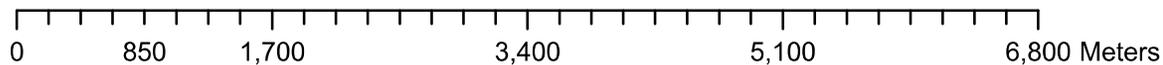
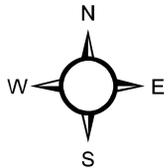
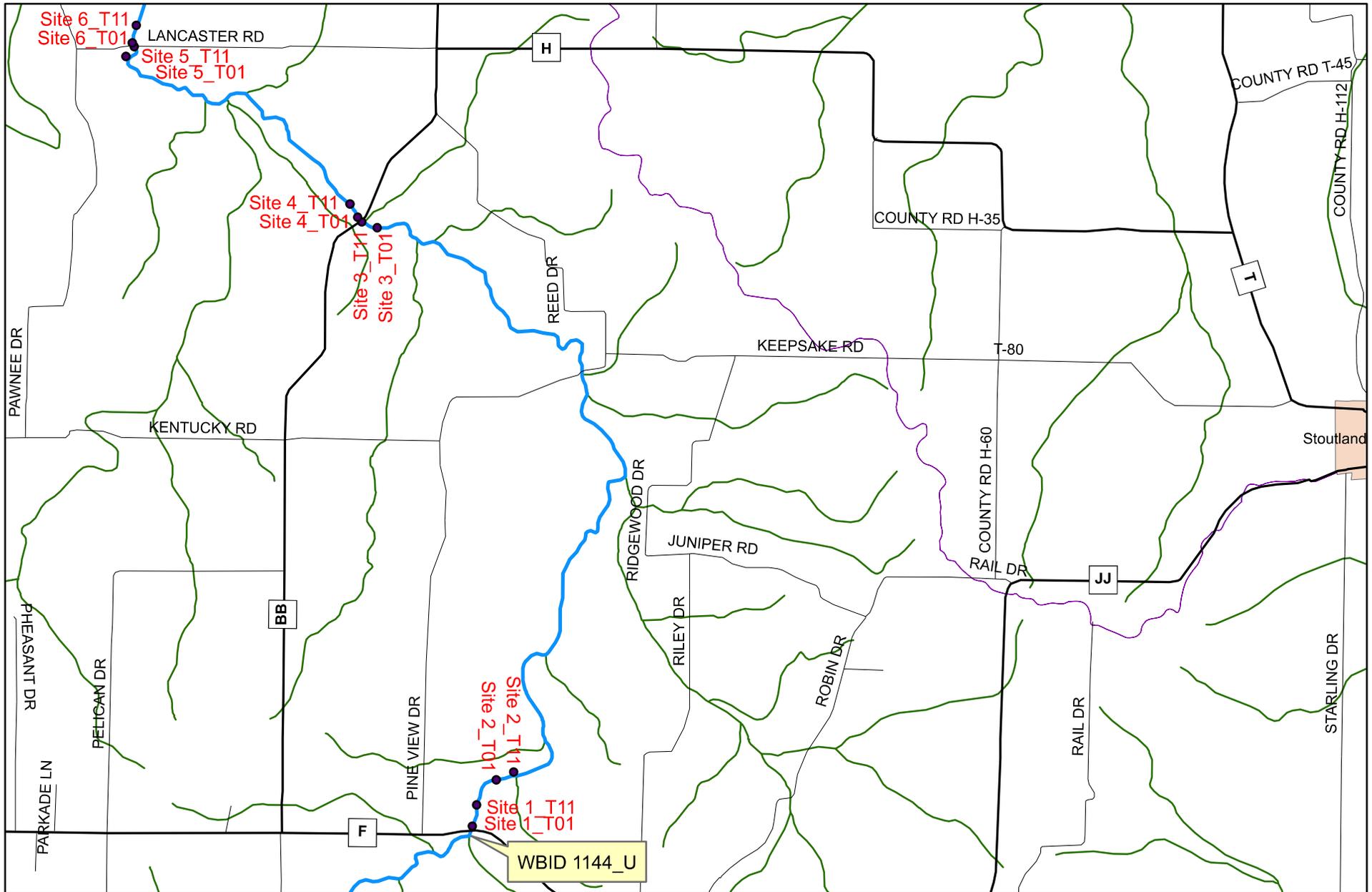
WBID 1144 Dry Auglaise Creek - Camden and Laclede Counties



WBID 1144 Dry Auglaise Creek - Camden and Laclede Counties



WBID 1144 Dry Auglaise Creek - Camden and Laclede Counties



Weather Conditions

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

Data from Weather Underground.com

Lebanon, MO

Date	Precipitation (Inches)	Min. Temp (°F)	Max. Temp (°F)	Avg. Temp (°F)
10/15/2007	0.39	58	68	62
10/16/2007	0.00	53	71	61
10/17/2007	0.00	57	74	65
10/18/2007	0.01	56	77	66
10/19/2007	0.00	49	67	57
10/20/2007	0.00	51	81	67
10/21/2007	0.00	66	84	72
10/22/2007	0.22	47	66	52
10/23/2007	0.01	40	60	49
10/24/2007	0.00	44	59	52
10/25/2007	0.01	38	54	46

Camdenton, MO

Date	Precipitation (Inches)	Min. Temp (°F)	Max. Temp (°F)	Avg. Temp (°F)
10/15/2007	0.00	57	71	62
10/16/2007	0.00	50	69	59
10/17/2007	0.02	52	75	65
10/18/2007	0.00	55	75	64
10/19/2007	0.00	46	66	56
10/20/2007	0.00	46	78	62
10/21/2007	0.00	63	81	70
10/22/2007	0.25	46	65	51
10/23/2007	0.00	44	58	50
10/24/2007	0.00	44	57	52
10/25/2007	0.00	38	57	47

WBID # 1144

Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>10-25-2007</u> <u>10:04</u>	Site Location Description (e.g., road crossing): <u>downstream of Hwy F</u>
Personnel (Data Collectors): <u>Bob B. & Matt N</u>	
Current Weather Conditions: <u>overcast, windy, ~45°F</u>	Facility Name: <u>Camdenston Business Park The Lakes Subdivision</u>
Weather Conditions for Past 10 days: <u>see table</u>	Permit Number: <u>MO 0129607 MO 0129712</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): <u>15 S 0533933</u>	Northing (UTM Y): <u>4181870</u>	Horizontal Accuracy: (EPE) FOM / PDOP <u>7</u> Meters
Site 11	Easting (UTM X): <u>15 S 0533973</u>	Northing (UTM Y): <u>4182067</u>	Horizontal Accuracy: (EPE) FOM / PDOP <u>7</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>I92</u>	<u>downstream view @ T01</u>	<u>I93</u>	<u>upstream view @ T11</u>		

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

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

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview when conducting interviews.) None

WBID # 1144

Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

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

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

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

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

<i>fairly thick periphyton growth on rocks</i>
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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 type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input 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 # 1144

Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

Comments: (Please record any additional comments here.)

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

Surveyor's Signature: Paul R. Ben Date of Survey: 10-25-2007

Organization: ERC Position: Field Manager

ARC 11-12-07

I92 T01 downstream
I93 T11 upstream

Field Data Sheets for Recreational Use Stream Surveys Data Sheet C - Field Survey Results

Waterbody ID: <u>1144</u> Site #: <u>1</u> Estimated Channel Incision: <u>.15</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>1520533933</u> UTM Y: <u>4181870</u> +/- <u>7</u> (meters) 0.53 11 UTM X: <u>1520533973</u> UTM Y: <u>4182067</u> +/- <u>7</u> (meters) 0.54 Average Stream Width: <u>9.0</u> (meters) Length of Survey Segment: <u>180</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Bob Bacon and Matt Nelson</u>	<div style="text-align: center; background-color: black; color: white; padding: 2px;">Dissolved Oxygen</div> Date: <u>10-25-07</u> Time: <u>10:04</u> Dissolved Oxygen: <u>8.43</u> (mg/L) Dissolved Oxygen: <u>76.0</u> (% sat) Specific Cond: <u>637</u> (µS/cm) Water Temperature: <u>10.76</u> (°C)
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Transsect Cross Sections

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	0
1	.77	.34	.88	.54	1.18	.43	1.11	.57	.84	.03	.86	.18	.78	.07	.84	.13	.75	.32	.85	.16	.15	.02
2	1.54	.46	1.76	.58	2.36	.61	2.22	.59	1.68	.15	1.72	.06	1.56	.09	1.68	.18	1.50	.41	1.70	.23	.30	.05
3	2.31	.45	2.64	.48	3.54	.42	3.33	.68	2.52	.18	2.58	.04	2.34	.12	2.52	.26	2.25	.44	2.55	.26	.45	.10
4	3.08	.51	3.52	.43	4.72	.25	4.44	.62	3.36	.17	3.44	.02	3.12	.06	3.36	.21	3.00	.47	3.40	.29	.60	.13
5	3.85	.47	4.40	.46	5.90	.21	5.55	.36	4.20	.25	4.30	.03	3.90	.08	4.20	.30	3.75	.52	4.25	.36	.75	.14
6	4.62	.42	5.28	.44	7.08	.13	6.66	.21	5.04	.22	5.16	.04	4.68	.06	5.04	.24	4.50	.56	5.10	.38	.90	.15
7	5.39	.45	6.16	.43	8.26	.11	7.77	.33	5.88	.29	6.02	.01	5.46	.02	5.88	.19	5.25	.53	5.95	.43	1.05	.13
8	6.16	.37	7.04	.14	9.44	.12	8.88	.27	6.72	.27	6.88	0	6.24	.10	6.72	.29	6.00	.45	6.80	.48	1.20	.12
9	6.93	.28	7.52	.24	10.52	.08	9.99	.20	7.56	.21	7.74	.03	7.02	.09	7.56	.31	6.75	.40	7.65	.39	1.35	.10
Right Bank	7.70	0	8.80	0	11.80	0	11.10	0	8.40	0	8.60	0	7.80	0	8.40	0	7.50	0	8.50	0	1.50	0
Feature Type (riffle, run, or pool)	run		riffle		riffle		run		run		run		riffle									

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.

AUC 11-12-07

Signed: Bob R Bacon Date: 10-25-2007

WBID # 1144

Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>10-25-07 11:20</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>Bob Bacon & Matt Nelson</u>	<u>200 meters downstream of site 19</u>
Current Weather Conditions: <u>Overcast & windy 50°F</u>	Facility Name: <u>Camden-ton Business Park The Lakes Subdivision</u>
Weather Conditions for Past 10 days: <u>See Table</u>	Permit Number: <u>M001291007 M00129712</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): <u>1500534155</u>	Northing (UTM Y): <u>4182300</u>	Horizontal Accuracy: <u>(EPE) FOM / PDOP 8</u> Meters
Site 11	Easting (UTM X): <u>1500534317</u>	Northing (UTM Y): <u>4182373</u>	Horizontal Accuracy: <u>(EPE) FOM / PDOP 8</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>I94-T01</u>	<u>Downstream View</u>	<u>I95-T11</u>	<u>Upstream View</u>		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

WBID # 1344

Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

Comments:

Cow pastures surround stream

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%.)

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

Periphyton growth on bottom

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input 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 # 1144

Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

Comments: (Please record any additional comments here.)

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

Surveyor's Signature: Mat Nuber Date of Survey: 10-25-07

Organization: Environmental Resources Coalition Position: Field

ERC 11-12-07

I 94 T01 downstream
I 95 T11 upstream

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet C - Field Survey Results

Waterbody ID: <u>1144</u>	Site #: <u>2</u>	Dissolved Oxygen	
Estimated Channel Incision: <u>.15</u> (m) (height between low bank width and water)	Date: <u>10-25-07</u>		Time: <u>11:20</u>
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE) / PDOP / FOM		Dissolved Oxygen: <u>8.51</u> (mg/L)	
01 UTM X: <u>15S 0534155</u>	UTM Y: <u>4182300</u>	Dissolved Oxygen: <u>76.9</u> (% sat)	
11 UTM X: <u>15S 0534317</u>	UTM Y: <u>4182373</u>	Specific Cond: <u>614</u> (µS/cm)	
Average Stream Width: <u>7.0</u> (meters)	Length of Survey Segment: <u>150</u> (meters)	Water Temperature: <u>10.76</u> (°C)	
(To determine Length of Reach)		(20x average stream width)	
Field Staff: <u>Bob Bacon and Matt Nelson</u>			

		Transsect (Cross-Section)																					
		01		02		03		04		05		06		07		08		09		10		11	
Station	Feature Type	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
	Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1		.77	.24	.62	.04	.71	.05	.70	.06	.78	.04	.87	.15	.75	.21	.66	.32	.83	.38	.67	.38	.49	.13
2		1.54	.42	1.24	.18	1.42	.07	1.40	.11	1.56	.16	1.74	.26	1.50	.28	1.32	.25	1.66	.30	1.34	.40	.98	.32
3		2.31	.58	1.86	.17	2.13	.13	2.10	.12	2.34	.18	2.61	.35	2.25	.30	1.98	.24	2.49	.14	2.01	.36	1.47	.32
4		3.08	.77	2.48	.18	2.84	.07	2.80	.19	3.12	.24	3.48	.39	3.00	.34	2.64	.23	3.32	.17	2.68	.30	1.96	.72
5		3.85	.91	3.10	.06	3.55	.12	3.50	.28	3.90	.34	4.35	.41	3.75	.41	3.30	.24	4.15	.19	3.35	.19	2.45	.28
6		4.62	.93	3.72	.01	4.26	.16	4.20	.37	4.68	.37	5.22	.46	4.50	.46	3.96	.20	4.98	.18	4.02	.11	2.94	.23
7		5.39	.99	4.34	0	4.97	.14	4.90	.47	5.46	.40	6.09	.39	5.25	.57	4.62	.24	5.81	.16	4.69	.08	3.43	.15
8		6.16	.79	4.96	.02	5.68	.15	5.60	.48	6.24	.40	6.96	.39	6.00	.46	5.28	.12	6.64	.21	5.36	.05	3.92	.13
9		6.93	.63	5.58	.08	6.39	.06	6.30	.36	7.02	.17	7.83	.20	6.75	.48	5.94	.06	7.47	.12	6.03	.03	4.41	.08
	Right Bank	7.70	0	6.20	0	7.10	0	7.00	0	7.80	0	8.70	0	7.50	0	6.60	0	8.70	0	6.70	0	4.90	0
	Feature Type	pool		riffle		riffle		run		riffle		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.

AWC 11-12-07

Signed: Bob R Bacon Date: 10-25-2007

WBD # 1144
 Site # 03

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>10-25-07</u> <u>13:48</u>	Site Location Description (e.g., road crossing): <u>upstream (south) of Hwy 88</u>
Personnel (Data Collectors): <u>Bob I and Matt N</u>	
Current Weather Conditions: <u>overcast, windy, ~50°F</u>	Facility Name: <u>Camdanton Business Park The Lakes Subdivision</u>
Weather Conditions for Past 10 days: <u>see table</u>	Permit Number: <u>MD01291207 MD0129712</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): <u>15S 0533047</u>	Northing (UTM Y): <u>4187434</u>	Horizontal Accuracy: (<u>GPS</u>) / FOM / PDOP <u>7</u> Meters
Site 11	Easting (UTM X): <u>15S 0532902</u>	Northing (UTM Y): <u>4187488</u>	Horizontal Accuracy: (<u>GPS</u>) / FOM / PDOP <u>6</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>I96</u>	<u>upstream view @ T11</u>	<u>I97</u>	<u>downstream view @ T01</u>		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

WBID # 1144

Site # 03

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B -- Site Characterization (continued)

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

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

Comments:

Pasture, farm field

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%.)

<i>50</i> % Cobble	<i>50</i> % Gravel	% Sand	% Silt	% 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 type="checkbox"/> Other: <i>none</i>
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other: <i>none</i>
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other: <i>none</i>
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other: <i>none</i>

*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 # 1144

Site # 03

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

Comments: (Please record any additional comments here.)

- banks stable in this section of river

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

Surveyor's Signature: *Robert M. Bacon* Date of Survey: *10-25-2007*

Organization: *ERC* Position: *Field Manager*

ERC 11-12-07

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet C - Field Survey Results

I96 T11 upstem
 I97 T01 downstem

Waterbody ID: <u>1144</u> Site #: <u>3</u> Estimated Channel Incision: <u>—</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>15 S 0533047</u> UTM Y: <u>4187434</u> +/- <u>7</u> (meters) 11 UTM X: <u>15 S 0532902</u> UTM Y: <u>4187488</u> +/- <u>6</u> (meters) Average Stream Width: <u>—</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Bob Bacon and Matt Nelson</u>	<p align="center">Dissolved Oxygen</p> Date: <u>10-25-2007</u> Time: <u>13:48</u> Dissolved Oxygen: <u>—</u> (mg/L) Dissolved Oxygen: <u>—</u> (% sat) Specific Cond: <u>—</u> (µS/cm) Water Temperature: <u>—</u> (°C)
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Transect Cross Section

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

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

AUC 11-12-07

Signed: Bob A Bacon Date: 10-25-2007

WBID # 1144

Site # 04

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>10-25-2007</u> <u>14:19</u>	Site Location Description (e.g., road crossing): <u>downstream of Hwy 38</u>
Personnel (Data Collectors): <u>Bob B. and Matt N.</u>	
Current Weather Conditions: <u>overcast, windy ~54°F</u>	Facility Name: <u>Camdenon Business Park The Lakes Section</u>
Weather Conditions for Past 10 days: <u>see table</u>	Permit Number: <u>MD0129607 MD0129712</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): <u>155 0532815</u>	Northing (UTM Y): <u>4187531</u>	Horizontal Accuracy: (EPE) / FOM / PDOP <u>6</u> Meters
Site 11	Easting (UTM X): <u>155 0532792</u>	Northing (UTM Y): <u>4187654</u>	Horizontal Accuracy: (EPE) / FOM / PDOP <u>5</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>I98</u>	<u>downstream view T01</u>	<u>I99</u>	<u>upstream view T11</u>		

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

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

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

WBID # 1144

Site # 04

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

Comments:
woods, farm pasture

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%.)

<i>25</i> % Cobble	<i>75</i> % Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

none
Some willow growth in channel

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: <i>Turbid</i>
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 # 1144

Site # 04

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

Comments: (Please record any additional comments here.)

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

Surveyor's Signature: Robert A. Bann Date of Survey: 10-25-2007

Organization: ERC Position: Field Manager

RUC 11-12-07

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet C - Field Survey Results

#98 T01 downstream
 I99 T11 upstream

Waterbody ID: <u>1144</u> Site #: <u>04</u> Estimated Channel Incision: <u>—</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>15 S 0532865</u> UTM Y: <u>4187531</u> +/- <u>6</u> (meters) <u>059</u> 11 UTM X: <u>15 S 0532797</u> UTM Y: <u>4187654</u> +/- <u>5</u> (meters) <u>060</u> Average Stream Width: <u>—</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Bob Bacon and Matt Nelson</u>	Dissolved Oxygen Date: <u>10-25-07</u> Time: <u>14:19</u> Dissolved Oxygen: <u>8.90</u> (mg/L) Dissolved Oxygen: <u>84.7</u> (% sat) Specific Cond: <u>418</u> (µS/cm) Water Temperature: <u>13.10</u> (°C) @ T11
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		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																						.50	.08
2																						1.00	.22
3																						1.50	.25
4																						2.00	.25
5																						2.50	.27
6																						3.00	.22
7																						3.50	.11
8																						4.00	.13
9																						4.50	.07
Right Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.00	0
Feature Type		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.

auc 11-12-07

Signed: Paul R. Bacon Date: 10-25-07

WBID # 1144

Site # 05

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>10-25-2007</u> <u>14:48</u>	Site Location Description (e.g., road crossing): <u>upstream of Lincolnton road (south crossing)</u>
Personnel (Data Collectors): <u>Rob B and Matt N.</u>	
Current Weather Conditions: <u>windy, overcast ~ 55°F</u>	Facility Name: <u>Camden Business Park The Lakes Subdivision</u>
Weather Conditions for Past 10 days: <u>see table</u>	Permit Number: <u>M00129607 M00129712</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): <u>152 0530784</u>	Northing (UTM Y): <u>4189118</u>	Horizontal Accuracy: <u>(EPE) FOM / PDOP</u> <u>9</u> Meters		
Site 11	Easting (UTM X): <u>152 0530707</u>	Northing (UTM Y): <u>4189026</u>	Horizontal Accuracy: <u>(EPE) FOM / PDOP</u> <u>8</u> Meters		

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>I100</u>	<u>upstream view @ T11</u>	<u>I101</u>	<u>Pool - upstream view @ T06</u>	<u>I102</u>	<u>downstream view @ T01</u>
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

WBID # 1144

Site # 05

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

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

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

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

<i>5</i> % Cobble	<i>90</i> % Gravel	% Sand	<i>5</i> % Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

<i>< 5% some emergent vegetation above water of pool in silt</i>

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: <i>Turbid</i>
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other: <i>due to erosion</i>
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 # 1144
Site # 05

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.)

- channel very deeply incised
- one side of stream has no riparian zone
- stream must receive very strong flow - gravel bars ~ 4.5-5.0 high
- cut banks ~ 15-20 feet deep

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

Surveyor's Signature: Paul R. Bunn Date of Survey: 10-25-2007

Organization: ERC Position: Field Manager

AUC 11-12-07

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet C - Field Survey Results

I100 T11 upstem
 I101 T06 pool
 I102 T01 downstem

Waterbody ID: 1144 Site #: 05

Estimated Channel Incision: — (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: 15 S 0520784 UTM Y: 4189118 +/- 9 (meters) 061
 11 UTM X: 15 S 0520707 UTM Y: 4189026 +/- 8 (meters) 062

Average Stream Width: — (meters) Length of Survey Segment: 150 (meters)
 (To determine Length of Reach) (20x average stream width)

Field Staff: Bob Bacon and Matt Nelson

Dissolved Oxygen

Date: 10-25-07 Time: 14:48

Dissolved Oxygen: 8.20 (mg/L)
 Dissolved Oxygen: 77.9 (% sat)
 Specific Cond: 220 (µS/cm)
 Water Temperature: 13.09 (°C)

@T06

		Transect Cross Section																					
		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1												.8	.73										
2												1.6	.71										
3												2.4	.67										
4												3.2	.55										
5												4.0	.44										
6												4.8	.34										
7												5.6	.25										
8												6.4	.17										
9												7.2	.07										
Right Bank		0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0
Feature Type												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.

↑ measured a deepest point at 11-12-07

Signed: Bob R Bacon Date: 10-25-07

WBID # 1144

Site # 06

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>10-25-2007</u> <u>15:00</u>	Site Location Description (e.g., road crossing): <u>downstream of Lancaster road (North)</u>
Personnel (Data Collectors): <u>Rob B and Matt N</u>	
Current Weather Conditions: <u>overcast, windy ~ 58°F</u>	Facility Name: <u>Camdenston Business Park The Lakes Subdivision</u>
Weather Conditions for Past 10 days: <u>see table</u>	Permit Number: <u>MD0129607 MD0129712</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): <u>15 S 0530765</u>	Northing (UTM Y): <u>4189152</u>	Horizontal Accuracy: (<u>KPE</u>) FOM / PDOP	<u>7</u>	Meters
Site 11	Easting (UTM X): <u>15 S 0530803</u>	Northing (UTM Y): <u>4189315</u>	Horizontal Accuracy: (<u>EPE</u>) FOM / PDOP	<u>11</u>	Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>I 103</u>	<u>downstream view @ T01</u>	<u>I 104</u>	<u>upstream view @ T11</u>		

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

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

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

WBID # 1144

Site # 6

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

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

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input 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%.)

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

<i>- willow in channel</i>

Water Characteristics*: (Mark all that apply.)

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

*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 # 1144
Site # 06

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.)

channel deeply incised
low water bridge w/ unique structure - no culverts and on the
down stream side ~ 5 ft. vertical drop

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

Surveyor's Signature: Ralph R. Bacon Date of Survey: 10-25-2007

Organization: ERC Position: Field Manager

ARC 11-12-07

I 103 T01 downriver

I 104 T11 upriver

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: 1144 Site #: 06

Estimated Channel Incision: — (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: 15 5 0530765 UTM Y: 4189152 +/- 7 (meters) 063

11 UTM X: 15 5 0530803 UTM Y: 4189315 +/- 11 (meters) 064

Average Stream Width: — (meters) Length of Survey Segment: 150 (meters)
(To determine Length of Reach) (20x average stream width)

Field Staff: Bob DeCor + Matt Nelson

Dissolved Oxygen

Date: 10-25-2007 Time: 15:00

Dissolved Oxygen: — (mg/L)

Dissolved Oxygen: — (% sat)

Specific Cond: — (µS/cm)

Water Temperature: — (°C)

@ T01

80% Cobble
20 sand

Transsect 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	0
1																						
2																						
3																						
4		>		>		>		>		>		>		>		>		>		>		>
5		<		<		<		<		<		<		<		<		<		<		<
6		>		>		>		>		>		>		>		>		>		>		>
7																						
8																						
9																						
Right Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feature Type	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.

RUC 11-12-07

Signed: [Signature] Date: 10-25-07

WBID # 1144

Site # 07

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>10-25-07 15:22</u>	Site Location Description (e.g., road crossing): <u>upstream of Runee Drive road crossing</u>
Personnel (Data Collectors): <u>Bob B and Matt A</u>	
Current Weather Conditions: <u>overcast, windy ~ 58°F</u>	Facility Name: <u>Camden Town Business Park The Lakes Subdivision</u>
Weather Conditions for Past 10 days: <u>see table</u>	Permit Number: <u>M00129607 M00129712</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): <u>1550530201</u>	Northing (UTM Y): <u>4189850</u>	Horizontal Accuracy: (EPE) / FOM / PDOP <u>9</u> Meters
Site 11	Easting (UTM X): <u>1550530053</u>	Northing (UTM Y): <u>4189788</u>	Horizontal Accuracy: (EPE) / FOM / PDOP <u>6</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>I 105</u>	<u>upstream view @ T11</u>	<u>I 106</u>	<u>downstream view @ T01</u>		

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

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

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

WBID # 1144

Site # 07

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

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: Gravel removal in bed of stream				

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

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

- none - some terrestrial veg in channel

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 type="checkbox"/> Other: <u>None</u>
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 # 1144
Site # 07

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

Comments: (Please record any additional comments here.)

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

Surveyor's Signature: *Robert R. Bann* Date of Survey: 10-25-2007

Organization: ERC Position: Field Manager

RUC 11-12-07

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet C - Field Survey Results

I 105 T11 updown
 I 106 T01 down

Waterbody ID: <u>1144</u> Site #: <u>07</u> Estimated Channel Incision: <u>—</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPS / PDOP / FOM) 01 UTM X: <u>152 0530201</u> UTM Y: <u>4189850</u> +/- <u>9</u> (meters) <u>066</u> 11 UTM X: <u>152 0520053</u> UTM Y: <u>4189788</u> +/- <u>6</u> (meters) <u>065</u> Average Stream Width: <u>—</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Bob Bacon and Matt Nelson</u>	<p align="center">Dissolved Oxygen</p> Date: <u>10-25-07</u> Time: <u>15:22</u> Dissolved Oxygen: <u>—</u> (mg/L) Dissolved Oxygen: <u>—</u> (% sat) Specific Cond: <u>—</u> (µS/cm) Water Temperature: <u>—</u> (°C)
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30% Cobble
 70% fines

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	0
1																						
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
Right Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feature Type	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.

BNC 11-12-07
 Signed: Bob Bacon Date: 10-25-2007

WBID # 1144
 Site # 8

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>10-25-07 15105</u>	Site Location Description (e.g., road crossing): <u>Downstream City Rd Lanesome Rd</u>
Personnel (Data Collectors): <u>AW4TH</u>	
Current Weather Conditions: <u>50° cld, dn</u>	Facility Name: <u>Camden ton Business Park The Lukes Subdivision</u>
Weather Conditions for Past 10 days: <u>1</u>	Permit Number: <u>M00129607 M00129712</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION; IN METERS)			
Site 01	Easting (UTM X): <u>1550530071</u>	Northing (UTM Y): <u>4190970</u>	Horizontal Accuracy: <u>8</u> Meters (EPE) FOM / PDOP
Site 11	Easting (UTM X): <u>1550530007</u>	Northing (UTM Y): <u>4190911</u>	Horizontal Accuracy: <u>7</u> Meters (EPE) FOM / PDOP

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>L-45</u>	<u>Downstream T-1</u>				
<u>L-46</u>	<u>upstream T-11</u>				

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

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

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

WBID # 1441
 Site # 8

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B -- Site Characterization (continued)

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

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

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

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

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

% Cobble	<i>50</i>	% Gravel	<i>40</i>	% Sand	% Silt	<i>10</i>	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

<i>None</i>

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input 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 # 1144

Site # 9

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.)

None

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

Surveyor's Signature: *[Signature]* Date of Survey: 10-25-07

Organization: ERC Position: Field Manager

RUC 11-12-07

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet C - Field Survey Results

T1 L45 Downstream
T11 L46 upstream

Waterbody ID: <u>1144</u> Site #: <u>8</u> Estimated Channel Incision: <u>dry</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>1530536671</u> UTM Y: <u>4190770</u> +/- <u>8</u> (meters) / 39 11 UTM X: <u>1550530007</u> UTM Y: <u>4190911</u> +/- <u>8</u> (meters) / 46 Average Stream Width: <u>0</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>AW & TH</u>	Dissolved Oxygen Date: <u>10-25-07</u> Time: <u>15:05</u> Dissolved Oxygen: <u>dry</u> (mg/L) Dissolved Oxygen: <u>dry</u> (% sat) Specific Cond: <u>dry</u> (µS/cm) Water Temperature: <u>dry</u> (°C)
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Transect Cross Section

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

Notes: Transects will be measured beginning on left ascending 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.

AWC 11-12-07

Signed: Allyssa Williams Date: 10/25/07

WBID # 11421

Site # 9

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>10/25/07 15:32</u>	Site Location Description (e.g., road crossing): <u>of site 8</u>
Personnel (Data Collectors): <u>ALW+TH</u>	<u>CR Longsone RD downstream</u>
Current Weather Conditions: <u>50° cloudy</u>	Facility Name: <u>Camdenston Business Park</u> <u>The Lakes Subd</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MO0129607</u> <u>MO0129712</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): <u>155052982</u>	Northing (UTM Y): <u>4191023</u>	Horizontal Accuracy: <u>(EPE) FOM / PDOP</u>	<u>9</u>	Meters
Site 11	Easting (UTM X): <u>1550529831</u>	Northing (UTM Y): <u>4191077</u>	Horizontal Accuracy: <u>(EPE) FOM / PDOP</u>	<u>8</u>	Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>L-047</u>	<u>pool</u>	<u>T-7-79L-048</u>	<u>upstream T-11</u>	<u>L-049</u>	<u>downstream T-11</u>

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

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

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

WBID # 1144
 Site # 9

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B -- Site Characterization (continued)

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

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

Comments:
Pasture + woods

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%.)

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

<30% filamentous algae growth in pools

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 checked="" type="checkbox"/> Other: <i>turbid</i>
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 # 7144

Site # 9

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)
pool	90+	6-9m	30m+	.80	1.4+

Comments: (Please record any additional comments here.)

dry except for 1 pool

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

Surveyor's Signature: [Signature] Date of Survey: 10/25/07

Organization: ERC Position: Field Manager

074211-12-07

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet C - Field Survey Results

L-49 downstream T-1
 L-47 pool T7-T9
 L-48 upstream T11

Waterbody ID: 1144 Site #: 9

Estimated Channel Incision: (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: 1550529986 UTM Y: 4191023 +/- 9 (meters) 191

11 UTM X: 1550529857 UTM Y: 4191077 +/- 8 (meters) 142

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

Field Staff: AW + TH

Dissolved Oxygen

Date: 10/25/07 Time: 15:32

Dissolved Oxygen: 10.48 (mg/L)

Dissolved Oxygen: 103.5 (% sat)

Specific Cond: 145 (µS/cm)

Water Temperature: 14.74 (°C)

Transect (Cross Sections)

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	0
1												.98	.28	.67	.15	.62	.09					
2												1.96	.40	1.34	.33	1.24	.19					
3												2.94	.57	2.01	.49	1.86	.20					
4												3.92	.85	2.68	.61	2.48	.27					
5												4.9	.95	3.35	.56	3.1	.18					
6												5.88	1.2	4.02	.49	3.72	.14					
7												6.86	too deep	4.69	.38	4.34	.15					
8												7.84	too deep	5.36	.21	4.96	.07					
9												8.82	0.05	6.03	.06	5.58	.04					
Right Bank	0	0	0	0	0	0	0	0	0	0	0	9.8	0	7.7	0	6.2	0	0	0	0	0	0
Feature Type (riffle, run, or pool)	Dry		Pool		Pool		Pool		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.

AWC 11-12-07

Signed: Allyson L. Williams Date: 10-25-07

WBID # 1144
 Site # 10

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>10-25-07</u>	Site Location Description (e.g., road crossing): <u>Upstream City rd P80</u>
Personnel (Data Collectors): <u>AV+TH</u>	
Current Weather Conditions: <u>50°</u>	Facility Name: <u>Camdenon Business Park The Lakes School</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MO 0129607 MO 0129712</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): <u>1550530195</u>	Northing (UTM Y): <u>4195209</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>9</u> Meters
Site 11	Easting (UTM X): <u>1550530352</u>	Northing (UTM Y): <u>4195159</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>6</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>L-41</u>	<u>Upstream T-11</u>				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>L-42</u>	<u>Downstream T-1</u>				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

WBID # 1144

Site # 10

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

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

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

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

% Cobble	<i>50</i>	% Gravel	<i>40</i>	% Sand	% Silt	<i>10</i>	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

<i>None</i>	
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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 type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input 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 # 1144
Site # 10

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.)

All Dry except for 1 pool

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

Surveyor's Signature: *Steve Miller* Date of Survey: 10-25-07
Organization: ERC Position: Field Manager
Date: 11-12-07

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet C - Field Survey Results

L-41 up 1-11
L-42 dn F-1

Waterbody ID: 1144 Site #: 10

Estimated Channel Incision: _____ (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: 1550530195 UTM Y: 4195209 +/- 9 (meters)

11 UTM X: 1550530358 UTM Y: 4195159 +/- 6 (meters) / 135

Average Stream Width: _____ (meters) Length of Survey Segment: 150 (meters)
 (To determine Length of Reach) (20x average stream width)

Field Staff: AW & TH

Dissolved Oxygen

Date: 10/25/07 Time: 14:09

Dissolved Oxygen: 8.32 (mg/L)

Dissolved Oxygen: 81.1 (% sat)

Specific Cond: 151 (µS/cm)

Water Temperature: 14.17 (°C)

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	0
1											0.75	0.12										
2											1.5	0.26										
3											2.25	0.29										
4											3	0.28										
5											3.75	0.34										
6											4.5	0.26										
7											5.25	0.17										
8		Dry	6	0.10		Dry																
9											6.75	0.10		Dry								
Right Bank	0	0	0	0	0	0	0	0	0	0	7.5	0	0	0	0	0	0	0	0	0	0	0
Feature Type		Dry	Pool		Dry																	
(riffle, run, or pool)		Dry	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.

run 11-12-07

Signed: Allyson Z. Wehner Date: 10/25/07

WBD # 1144
 Site # 11

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>10/25/07 14:24</u>	Site Location Description (e.g., road crossing): <u>CR P-80 downstream of bridge</u>
Personnel (Data Collectors): <u>AWJ + TH</u>	Facility Name: <u>Camdenon Business Park</u> <u>The Lakes Subd</u>
Current Weather Conditions: <u>50° cloudy</u>	Permit Number: <u>MO 0129607</u> <u>MO 0129712</u>
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): <u>1550530368</u>	Northing (UTM Y): <u>4195163</u>	Horizontal Accuracy: <u>8</u> Meters (EPE) FOM / PDOP
Site 11	Easting (UTM X): <u>1550530526</u>	Northing (UTM Y): <u>4195250</u>	Horizontal Accuracy: <u>9</u> Meters (EPE) FOM / PDOP

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>L-043</u>	<u>downstream T-1</u>	<u>L-044</u>	<u>upstream T-1</u>		

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

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

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

WBID # 1144

Site # 11

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

Comments:

wooded

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%.)

<i>30</i> % Cobble	<i>50</i> % Gravel	<i>20</i> % Sand	% Silt	% 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: <i>turbid</i>
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 # 1144

Site # 11

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.)

Dry with pools in spots

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

Surveyor's Signature: Stephanie L. Wenger Date of Survey: 10/25/07

Organization: ERC Position: Field Manager

ERC 11-12-07

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet C - Field Survey Results

T-1 43 down
T-11 44 upstream

Waterbody ID: <u>1144</u> Site #: <u>11</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>155 653 0368</u> UTM Y: <u>4195163</u> +/- <u>8</u> (meters) / <u>138</u> 11 UTM X: <u>155 053 0526</u> UTM Y: <u>4195250</u> +/- <u>9</u> (meters) / <u>137</u> Average Stream Width: <u>3.5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>AW & TH</u>	Dissolved Oxygen Date: <u>10-25-07</u> Time: <u>14:24</u> Dissolved Oxygen: <u>7.26</u> (mg/L) Dissolved Oxygen: <u>80</u> (% sat) Specific Cond: <u>190</u> (µS/cm) Water Temperature: <u>13.90</u> (°C)
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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	2.02	.38			.18	.01					.36	.06	.26	.03	.43	.02	.55	.10	.34	.07		
2	4.04	.40			.36	.01					.72	.06	.52	.06	.86	.07	1.1	.16	.68	.05		
3	6.06	.65			.54	.03					1.08	.06	.78	.05	1.29	.07	1.65	.17	1.02	.11		
4	8.08	.75			.72	.04					1.44	.06	1.04	.09	1.72	.14	2.2	.19	1.36	.14		
5	10.1	.63			.9	.03					1.8	.09	1.3	.06	2.15	.15	2.75	.22	1.7	.12		
6	12.12	.40			1.08	.00					2.16	.07	1.56	.05	2.58	.19	3.3	.21	2.04	.07		
7	14.14	.42			1.26	.00					2.52	.02	1.82	.02	3.01	.18	3.85	.18	2.38	.06		
8	16.16	.40			1.44	.01					2.88	.05	2.08	.01	3.44	.10	4.4	.12	2.72	.03		
9	18.18	.13			1.62	.01					3.24	.06	2.34	.01	3.87	.05	4.95	.10	3.06	.02		
Right Bank	20.2	0	0	0	1.8	0	0	0	0	0	3.6	0	2.6	0	4.3	0	5.5	0	3.4	0	0	0
Feature Type (riffle, run, or pool)	pool		dry		edge of pool		dry		dry		pool		Dry									

Notes: Transsects 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 Transsect 01 and 11. Transsects 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.

AWC 11-12-07

Signed: Attyya Z. Chalenge Date: 10/25/07

WBID # 1644

Site # 12

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>10-25-07</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>AW+TH</u>	<u>CR 7-35 upstream @ bridge</u>
Current Weather Conditions: <u>50° PC + Brey</u>	Facility Name: <u>Camdenon Business Park</u> <u>The Lakes School</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MO 0129407</u> <u>MO 0129712</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): <u>1550529178</u>	Northing (UTM Y): <u>4197929</u>	Horizontal Accuracy: (EPE) / FOM / PDOP <u>5</u> Meters
Site 11	Easting (UTM X): <u>1550529231</u>	Northing (UTM Y): <u>4198077</u>	Horizontal Accuracy: (EPE) / FOM / PDOP <u>5</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>L-039</u>	<u>upstream T-11</u>				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>L-40</u>	<u>Downstream T-1</u>				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

WBID # 1144

Site # 12

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

Comments:
Pasture

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:
evidence of cattle

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

% Cobble	<i>50</i>	% Gravel	<i>40</i>	% Sand	% Silt	<i>10</i>	% 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:	<i>0</i>
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:	<i>2</i>
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:	<i>2</i>
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 # 1144
Site # 12

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.)

Dry

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

Surveyor's Signature: Alex Wilger Date of Survey: 10-25-07

Organization: ERC Position: Field Manager

ERC 11-12-07

T-1139-up
T1 40 down

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>1144</u>	Site #: <u>12</u>	Dissolved Oxygen
Estimated Channel Incision: <u>254</u> (m) (height between low bank width and water)		Date: <u>10/25/07</u> Time: <u>12:43</u>
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE/PDOP/FOM)		
01 UTM X: <u>1550529178</u>	UTM Y: <u>4197929</u>	+/- <u>5</u> (meters) <u>134</u>
11 UTM X: <u>1550529231</u>	UTM Y: <u>4198077</u>	+/- <u>5</u> (meters) <u>133</u>
Average Stream Width: _____ (meters)	Length of Survey Segment: <u>150</u> (meters)	
(To determine Length of Reach)	(20x average stream width)	
Field Staff: <u>AW & TH</u>		

Dissolved Oxygen: <u>dry</u> (mg/L)
Dissolved Oxygen: <u>dry</u> (% sat)
Specific Cond: <u>dry</u> (µS/cm)
Water Temperature: <u>dry</u> (°C)

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																						
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
Right Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Feature Type	dry																					
(riffle, run, or 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.

Buc 11-12-07

Signed: Alyssa Z. Johnson Date: 10/25/07

WBID # 1144
 Site # 13

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>10/25/07 12:06</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>AW+TH</u>	<u>CR 7-35 downstream @ bridge</u>
Current Weather Conditions: <u>50° part cloudy</u>	Facility Name: <u>Camdenon Business Park The Lakes Subd</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MO 0129607 MO 0129712</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): <u>1550629250</u>	Northing (UTM Y): <u>4198111</u>	Horizontal Accuracy: (EPE/FOM/PDOP)	<u>6</u>	Meters
Site 11	Easting (UTM X): <u>1550629305</u>	Northing (UTM Y): <u>4198263</u>	Horizontal Accuracy: (EPE/FOM/PDOP)	<u>7</u>	Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>L-034</u>	<u>downstream T-1</u>	<u>L-035</u>	<u>pool @ T-6 - T-9</u>	<u>L-036</u>	<u>upstream T-11</u>

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

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

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

WBID # 1144

Site # 13

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

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

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

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

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

<i>None</i>

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other: <i>Mostly</i>
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other: <i>dry</i>
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 # 1144

Site # 13

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)
pool	80m-90m	6-10m	23-30	1m	>1.4m

Comments: (Please record any additional comments here.)

staff was unable to cross pool so the depth is an estimate

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

Surveyor's Signature: [Signature] Date of Survey: 10/25/07

Organization: ERC Position: Field Manager

ERC 11-12-07

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet C - Field Survey Results

Downstream 34
 35 pool uncrossable
 between 6 & 8
 Upstream 36

Waterbody ID: <u>11421</u> Site #: <u>63</u> Estimated Channel Incision: <u>0</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>1530529250</u> UTM Y: <u>4198111</u> +/- <u>6</u> (meters) / <u>129</u> 11 UTM X: <u>1530529305</u> UTM Y: <u>4198262</u> +/- <u>7</u> (meters) / <u>130</u> Average Stream Width: <u>5.0</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>AWATH</u>	Dissolved Oxygen Date: <u>10-25-07</u> Time: <u>12:06</u> Dissolved Oxygen: <u>9.08</u> (mg/L) Dissolved Oxygen: <u>96.0</u> (% sat) Specific Cond: <u>229</u> (µS/cm) Water Temperature: <u>12.87</u> (°C)
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Transect Cross Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)												
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.34	0.07									1.62	0.10	9.5		7.2	0.10						
2	1.08	0.12									1.24	0.19	1.9	Too Deep to Cross	1.44	0.25						
3	1.02	0.18									1.86	0.31	2.85	Too Deep to Cross	2.16	0.39						
4	1.36	0.16									2.48	0.40	3.8	Too Deep to Cross	2.88	0.46						
5	1.7	0.21									3.1	0.40	4.75	Too Deep to Cross	3.6	0.45						
6	2.04	0.15									3.72	0.28	5.7	Too Deep to Cross	4.32	0.41						
7	2.38	0.12									4.34	0.22	6.65	Too Deep to Cross	5.04	0.37						
8	2.72	0.13									4.96	0.18	7.6		5.76	0.29						
9	3.06	0.25									5.58	0.10	8.55		6.48	0.13						
Right Bank	3.4	0	0	0	0	0	0	0	0	0	6.2	0	9.5	0	7.2	0	0	0	0	0	0	0
Feature Type (riffle, run, or pool)	pool		dry		dry		dry		dry		pool		Pool		Pool		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.

auc 11-12-07

Signed: [Signature] Date: 10/25/07

WBID # 1144

Site # 14

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>10-25-07</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>AW & TH</u>	<u>city Rd #7-35 in stream of bridge & site 13</u>
Current Weather Conditions: <u>50° & PC & Breez</u>	Facility Name: <u>Camdenon Business Park</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MD 0129607</u> <u>MD 0129712</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION; IN METERS)					
Site 01	Easting (UTM X): <u>155 0529368</u>	Northing (UTM Y): <u>4197342</u>	Horizontal Accuracy: (EPE) FOM / PDOP	<u>6</u>	Meters
Site 11	Easting (UTM X): <u>155 0529529</u>	Northing (UTM Y): <u>4198257</u>	Horizontal Accuracy: (EPE) FOM / PDOP	<u>6</u>	Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>L-37</u>	<u>downstream T-1</u>				
<u>L-38</u>	<u>upstream T-11</u>				

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

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

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

WBID # 1144
 Site # 14

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

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

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

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

% Cobble	<i>50</i>	% Gravel	<i>40</i>	% Sand		% Silt	<i>10</i>	% Mud/Clay		% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

<i>NONE</i>

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other: <i>DN</i>
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other: <i>DN</i>
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 # 1144
Site # 14

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.)

Dry

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

Surveyor's Signature: Allyson Chelamyan Date of Survey: 10-25-07
Organization: ERC Position: Field Manager
RUC 11-12-07

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet C - Field Survey Results

L-37 down T-1
 L-38 up T-11

Waterbody ID: <u>1144</u> Site #: <u>14</u> Estimated Channel Incision: <u>dry</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>1550929368</u> UTM Y: <u>4198342</u> +/- <u>6</u> (meters) <u>131</u> 11 UTM X: <u>1550929309</u> UTM Y: <u>4198257</u> +/- <u>6</u> (meters) <u>132</u> Average Stream Width: _____ (meters) Length of Survey Segment: <u>190</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>AWRTH</u>	Dissolved Oxygen Date: <u>10/25/07</u> Time: <u>12:25</u> Dissolved Oxygen: <u>dry</u> (mg/L) Dissolved Oxygen: <u>dry</u> (% sat) Specific Cond: <u>dry</u> (µS/cm) Water Temperature: <u>dry</u> (°C)
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Transect Cross Section

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

RWC 11-12-07

Signed: Alyssa Wilger Date: 10-25-07

WBID # 1144
 Site # 15

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>10-25-07</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>A W & T H</u>	<u>Hwy 7 downstream @ bridge</u>
Current Weather Conditions: <u>45° sunny clear</u>	Facility Name: <u>Camdenston Business Park The Lakes Subd</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MO 0129 607 MO 0129 712</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): <u>1550530289</u>	Northing (UTM Y): <u>4204042</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>5</u> Meters		
Site 11	Easting (UTM X): <u>1550530400</u>	Northing (UTM Y): <u>4204342</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>6</u> Meters		

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>L-028</u>	<u>downstream</u>				
<u>L-029</u>	<u>pool T-3</u>				
<u>L-030</u>	<u>upstream</u>				

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

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

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

WBID # 1144
 Site # 15

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

Comments:
Pasture

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%.)

<i>10</i> % Cobble	<i>50</i> % Gravel	<i>40</i> % Sand	% Silt	<i>10</i> % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

< 10% cover - filamentous algae present

Water Characteristics*: (Mark all that apply.)

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

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

WBID # 114#
Site # 15

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.)

Pool @ T-3 stuff could not cross

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

Surveyor's Signature:  Date of Survey: 10-25-07

Organization: ERC Position: Field Manager

ERC 11-12-07

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

12-13 m w
w/13 box
14+

Down Stream T1 28
+run pool 29

30 up T-11

Waterbody ID: 1144 Site #: 15

Estimated Channel Incision: 0 (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: 155 053 02 89 UTM Y: 420 404 2 +/- 5 (meters) 125

11 UTM X: 155 053 0 400 UTM Y: 420 434 2 +/- 6 (meters) 120

Average Stream Width: 15 (meters) Length of Survey Segment: 300 (meters)
(To determine Length of Reach) (20x average stream width)

Field Staff: AW & TH

Dissolved Oxygen

Date: 10/25/07 Time: 10:08

Dissolved Oxygen: 7.64 (mg/L)

Dissolved Oxygen: 68.7 (% sat)

Specific Cond: 3.35 (µS/cm)

Water Temperature: 10.57 (°C)

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	0
1	2.31	.41	1.58	.24	1.25	.20	1.57	.40	2.33	.17	1.42	.17	.55	.03	.84	.23	1.42	.09	1.77	.10	1.18	.03
2	4.62	0	3.16	.29	2.5	.20	3.14	.52	4.66	.08	2.84	-.12	1.1	.09	1.68	.29	2.84	.07	3.54	.01	3.6	-.04
3	6.93	0	4.74	.19	3.75	.10	4.71	.48	6.99	.21	4.26	.06	1.65	.09	2.52	.28	4.26	0	5.31	0	5.4	0
4	9.24	0	6.32	.17	5	.14	6.28	.33	9.32	.12	5.68	.06	2.2	.07	3.36	.30	5.68	0	7.08	0	7.2	0
5	11.55	.40	7.9	.21	6.25	1.10	7.85	.29	11.65	0	7.1	.13	2.75	.09	4.2	.26	7.1	0	8.85	0	9	0
6	13.86	.54	9.48	.35	7.5	.85	9.42	.34	13.93	0	8.52	.14	3.3	.09	5.04	.24	8.52	0	10.62	0	10.8	0
7	16.17	.75	11.06	.32	8.75	.65	10.99	.34	16.31	.22	9.94	.12	3.85	.12	5.88	.24	9.94	0	12.39	0	12.6	0
8	18.48	.72	12.64	.38	10	.66	12.56	.35	18.64	.54	11.36	.16	4.4	.07	6.72	.21	11.36	0	14.16	.26	14.4	.03
9	20.79	.57	14.22	.34	11.25	.56	14.13	.19	20.97	.30	12.78	.10	4.95	.06	7.56	.10	12.78	.09	15.93	.15	16.2	.01
Right Bank	23.1	0	15.8	0	12.5	0	15.7	0	23.3	0	14.2	0	5.5	0	8.4	0	14.2	0	17.7	0	18	0
Feature Type	run		run		pool		run		run		riffle		riffle		run		riffle		riffle		riffle	

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.

ARC 11-12-07

Signed: Allyson Lehman Date: 10/25/07

WBID # 1144

Site # 16

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>10/25/07 10:43</u>	Site Location Description (e.g., road crossing): <u>also 1424 7 downstream @ bridge of site 15</u>
Personnel (Data Collectors): <u>AW+TH</u>	
Current Weather Conditions: <u>45° sunny & clear</u>	Facility Name: <u>Camdenon Business Park The Lukes Subd</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MD 0129607 MD D129712</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): <u>1550530948</u>	Northing (UTM Y): <u>4204340</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>6</u> Meters		
Site 11	Easting (UTM X): <u>155053086</u>	Northing (UTM Y): <u>4204356</u>	Horizontal Accuracy: (EPE) FOM / PDOP <u>5</u> Meters		

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>L-031</u>	<u>downstream T-1</u>	<u>L-032</u>	<u>road to stream @ T-1</u>	<u>L-033</u>	<u>upstream T-11</u>

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

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

WBID # 11441

Site # 16

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

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 checked="" type="checkbox"/> Livestock Watering
Comments / Other: <i>road to stream cattle had been in stream</i>				

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

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

<i>30% growth some large mats of algae present</i>
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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 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 # 1144

Site # 16

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.)

- T-4 road coming down to stream

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

Surveyor's Signature: *[Signature]* Date of Survey: 10/25/07

Organization: ERC Position: Field Manager

AUC 11-12-07

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet C - Field Survey Results

31 T1
 32 road to stream
 @ T4.
 33 upstream
 7-11

Waterbody ID: 1144 Site #: 16

Estimated Channel Incision: 0 (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: 1550530548 UTM Y: 4204340 +/- 6 (meters) 127

11 UTM X: 1550530786 UTM Y: 4204336 +/- 5 (meters) 128

Average Stream Width: 10.0 (meters) Length of Survey Segment: 200 (meters)
 (To determine Length of Reach) (20x average stream width)

Field Staff: DW & TH

Dissolved Oxygen

Date: 10-26-07 Time: 10:43

Dissolved Oxygen: 7.78 (mg/L)

Dissolved Oxygen: 73.3 (% sat)

Specific Cond: 345 (µS/cm)

Water Temperature: 12.60 (°C)

Transsect 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	0
1	1.54	.13	1.23	.04	.74	.08	.73	.10	.76	.09	.9	.08	.54	.09	.81	.21	.88	.37	.61	.22	.47	.09
2	3.08	.09	2.46	0	1.48	.14	1.46	.15	1.52	.07	1.8	.17	1.08	.04	1.62	.22	1.76	.50	1.22	.31	.94	.10
3	4.62	.06	3.69	0	2.22	.17	2.19	.23	2.28	.15	2.7	.11	1.62	.09	2.43	.20	2.64	.45	1.83	.42	1.41	.07
4	6.16	.03	4.92	0	2.96	.18	2.92	.21	3.04	.18	3.6	.10	2.16	.08	3.24	.19	3.52	.32	2.44	.43	1.88	.06
5	7.7	.09	6.19	0	3.7	.20	3.65	.25	3.8	.15	4.5	.19	2.7	.07	4.05	.26	4.4	.28	3.05	.41	2.35	.07
6	9.24	.17	7.38	.06	4.44	.20	4.38	.30	4.56	.19	5.4	.19	3.24	.04	4.86	.16	5.28	.25	3.66	.37	2.82	.19
7	10.78	.16	8.61	.07	5.18	.23	5.11	.29	5.32	.22	6.3	.19	3.78	.08	5.67	.07	6.16	.17	4.27	.32	3.29	.13
8	12.32	.02	9.84	.06	5.92	.20	5.84	.19	6.08	.36	7.2	.16	4.32	.09	6.48	.04	7.04	.17	4.88	.20	3.76	.02
9	13.86	.08	11.07	.04	6.66	.15	6.57	.10	6.84	.29	8.1	.15	4.86	.06	7.29	.03	7.92	.19	5.49	.12	4.23	.04
Right Bank	15.4	0	12.3	0	7.4	0	7.3	0	7.6	0	9.0	0	5.4	0	8.1	0	8.8	0	6.1	0	4.7	0
Feature Type (riffle, run, or pool)	riffle		riffle		run																	

Notes: Transsects 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 Transsect 01 and 11. Transsects 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.

RUC 11-12-07

Signed: [Signature] Date: 10/25/07

WBID # 144

Site # 17

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>10/25/07</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>A.W. & T.H.</u>	<u>CRA-20 upstream bridge</u>
Current Weather Conditions: <u>37° sunny</u>	Facility Name: <u>Camdenpton Business Park V The Lakes School</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MD 0129 607 MD 0129 712</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION; IN METERS)			
Site 01	Easting (UTM X): <u>1550532651</u>	Northing (UTM Y): <u>4207713</u>	Horizontal Accuracy: <u>6</u> Meters (EPE/FOM/PDOP)
Site 11	Easting (UTM X): <u>1550532603</u>	Northing (UTM Y): <u>4209869</u>	Horizontal Accuracy: <u>12</u> Meters (EPE/FOM/PDOP)

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>L-026</u>	<u>upstream T-11</u>	<u>L-027</u>	<u>Downstream T-1</u>		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

WBID # 1144
 Site # 17

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

Comments:
Wooded + low water crossing

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:
can tell where a vehicle has been driven in stream bed

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

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

NONE-DRY

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: <i>[Signature]</i>
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: <i>[Signature]</i>
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Other: <i>[Signature]</i>
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Other: <i>[Signature]</i>

*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 # 1144

Site # 17

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.)

- can tell a vehicle has been driven upstream
- DO taken @ T-6 because T-11 or T-1 didn't have pools

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

Surveyor's Signature: *[Signature]* Date of Survey: 10/25/07

Organization: ERC Position: Field Survey

ORU E 11-12-07

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet C - Field Survey Results

L-26 Upstream T-11
 L-27 Downstream T-1

Waterbody ID: <u>1144</u> Site #: <u>17</u> Estimated Channel Incision: <u>Dry</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>1530538251</u> UTM Y: <u>4209713</u> +/- <u>6</u> (meters) <u>124</u> 11 UTM X: <u>1550532603</u> UTM Y: <u>42098109</u> +/- <u>12</u> (meters) <u>123</u> Average Stream Width: _____ (meters) Length of Survey Segment: <u>156</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>AW & TH</u>	Dissolved Oxygen Date: <u>10/25/07</u> Time: <u>9:27</u> Dissolved Oxygen: <u>4.27</u> (mg/L) Dissolved Oxygen: <u>36.6</u> (% sat) Specific Cond: <u>279</u> (µS/cm) Water Temperature: <u>9.60</u> (°C) TG
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Transsect Cross Sections

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			.32	.02							.18	.03										
2		Dry	.64	.03							.36	.08					Dry		Dry			
3		Dry	.96	.06		Dry		Dry		Dry	.94	.12		Dry		Dry	Dry		Dry		Dry	
4		Dry	1.28	.09		Dry		Dry		Dry	.72	.14		Dry		Dry	Dry		Dry		Dry	
5			1.6	.10		Dry		Dry		Dry	.9	.15		Dry		Dry	Dry		Dry		Dry	
6			1.92	.10		Dry		Dry		Dry	1.08	.10		Dry		Dry	Dry		Dry		Dry	
7			2.24	.08		Dry		Dry		Dry	1.26	.10		Dry		Dry	Dry		Dry		Dry	
8			2.56	.07		Dry		Dry		Dry	1.44	.04		Dry		Dry	Dry		Dry		Dry	
9			2.88	.04		Dry		Dry		Dry	1.62	.02		Dry		Dry	Dry		Dry		Dry	
Right Bank	0	0	3.2	0	0	0	0	0	0	0	1.8	0	0	0	0	0	0	0	0	0	0	
Feature Type <small>(riffle, run, or pool)</small>	Dry		Pool		Dry		Dry		Dry		Pool		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: T. R. Howell Date: 10-25-07
 auc 11-12-07

WBID # 1144

Site # 18

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>10/25/07 8:55</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>AWJ + TH</u>	<u>CR A-28 downstream low water bridge</u>
Current Weather Conditions: <u>39° sunny</u>	Facility Name: <u>Camdenon Business Park The Lakes School</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MD 0129607</u> <u>MD 0129512</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)					
Site 01	Easting (UTM X): <u>1550534484</u>	Northing (UTM Y): <u>4209053</u>	Horizontal Accuracy: <u>7</u> Meters (EPE / FOM / PDOP)		
Site 11	Easting (UTM X): <u>1550534967</u>	Northing (UTM Y): <u>4208912</u>	Horizontal Accuracy: <u>5</u> Meters (EPE / FOM / PDOP)		

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>L-023</u>	<u>T-7 tracks to stream</u>	<u>L-024</u>	<u>upstream T-11</u>	<u>L-025</u>	<u>downstream T-11</u>

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

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

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

WBID # 1144
 Site # 18

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

Comments:
Wooded

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:
Tracks lead to stream

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

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

NONE - DRY

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

*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 # 1144
Site # 18

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.)

F-1 picture is of pool + rock banks - rest of view is dry

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

Surveyor's Signature: *Alvin C. Weller* Date of Survey: *10/25/07*
Organization: *ERC* Position: *Field Manager*

ARC 11-12-07

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet C - Field Survey Results

23 7-7 tracks
 2-024 up
 2-025 down

Waterbody ID: 1144 Site #: 18

Estimated Channel Incision: dry (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: 1530534484 UTM Y: 4209053 +/- 7 (meters) 121

11 UTM X: 1556534567 UTM Y: 4208912 +/- 5 (meters) 122

Average Stream Width: _____ (meters) Length of Survey Segment: 150 (meters)
 (To determine Length of Reach) (20x average stream width)

Field Staff: AJ & TH

Dissolved Oxygen

Date: 10-25-07 Time: 8:55

Dissolved Oxygen: 4.01 (mg/L)

Dissolved Oxygen: 35.9 (% sat)

Specific Cond: 766 (µS/cm)

Water Temperature: 10.44 (°C)

		Transect @ Cross Section																					
		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1		1.87	.17																				
2		3.74	.17																				
3		5.61	.45																				
4		7.48	.56																				
5		9.35	.80																				
6		11.22	1.0																				
7		13.09	.58																				
8		14.96	.31																				
9		16.83	.37																				
Right Bank		18.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feature Type		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.

RUC 11-12-07

Signed: [Signature] Date: 10/25/07

WBID # 1144
 Site # 19

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>7/25/07 8:18</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>AW & TH</u>	<u>CR A-39 upstream bridge</u>
Current Weather Conditions: <u>38° sunny</u>	Facility Name: <u>Camdenon Business Park</u> <u>The Lakes School</u>
Weather Conditions for Past 10 days:	Permit Number: <u>MO 0129607</u> <u>MO 0129712</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): <u>1350537386</u>	Northing (UTM Y): <u>4207470</u>	Horizontal Accuracy: <u>(EPE)</u> FOM / PDOP <u>7</u> Meters
Site 11	Easting (UTM X): <u>1350537698</u>	Northing (UTM Y): <u>4207407</u>	Horizontal Accuracy: <u>(EPE)</u> FOM / PDOP <u>7</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>L-019</u>	<u>Pool T-11</u> <u>Tennis court</u>	<u>L-020</u>	<u>Pool pic</u> <u>T-11</u>	<u>L-021</u>	<u>upstream T-11</u>
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>L-022</u>	<u>downstream T-1</u>				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

WBID # 1144

Site # 19

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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

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

Comments:
Wooded

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%.)

<i>5</i> % Cobble	<i>60</i> % Gravel	<i>20</i> % Sand	% Silt	<i>15</i> % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

< 10% cover of algae mats

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: <i>lightly turbid</i>
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 checked="" type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

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

WBID # 1144
Site # 19

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)
pool	5-10m	11m	19m	.9	>1.4m

Comments: (Please record any additional comments here.)

Fall was too deep to cross

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

Surveyor's Signature: Alyssa [Signature] Date of Survey: 10/29/07
Organization: ERC Position: Field Manager
ERC 11-12-07

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet C - Field Survey Results

1.4 + Med. 90
 11m wide
 15 lony
 6 Trub pool 19
 pool 20
 dug up 21
 22 down 7"

Waterbody ID: 1144 Site #: 19

Estimated Channel Incision: 1 (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: 1550537396 UTM Y: 4207470 +/- 7 (meters)

11 UTM X: 1550537698 UTM Y: 4207409 +/- 7 (meters) 1/9

Average Stream Width: 15 (meters) Length of Survey Segment: 300 (meters)
 (To determine Length of Reach) (20x average stream width)

Field Staff: AN + TH

Dissolved Oxygen

Date: 10/29/07 Time: 8:19

Dissolved Oxygen: 8.73 (mg/L)

Dissolved Oxygen: 25.3 (% sat)

Specific Cond: 271 (µS/cm)

Water Temperature: 8.70 (°C)

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	0
1	1.40	.05	1.28	.17	.52	.04	1.00	.05	1.02	.11	1.63	.55	1.42	.65	1.26	.11	1.13	.10	1.79	.89	1.17	
2	2.92	.01	2.56	.15	1.04	.08	2	.14	2.04	.26	3.26	.60	2.84	.73	2.52	.30	2.26	.24	3.58	.91	2.26	deep
3	4.38	.02	3.84	.03	1.56	.13	3	.29	3.06	.35	4.89	.44	4.26	.64	3.78	.49	3.39	.37	6.37	.56	3.39	top case
4	5.84	0	5.12	0	2.08	.18	4	.16	4.08	.37	6.52	.36	5.68	.44	5.04	.60	4.52	.47	7.16	.55	4.52	1.4
5	7.3	.08	6.4	.10	2.6	.24	5	.12	5.1	.27	8.15	.32	7.1	.43	6.3	.77	5.65	.63	8.95	.61	5.65	.86
6	8.76	.14	7.68	.17	3.12	.26	6	.20	6.12	.45	9.78	.35	8.52	.41	7.56	.91	6.78	.70	10.74	.57	6.78	.92
7	10.22	.13	8.96	.14	3.64	.29	7	.37	7.14	.57	11.41	.32	9.94	.29	8.92	1.10	7.91	.78	12.53	.64	7.91	.34
8	11.68	0	10.24	.16	4.16	.25	8	.45	8.16	.54	13.04	.30	11.36	.16	10.08	1.26	9.04	.93	14.32	.63	9.01	.24
9	13.14	.17	11.52	.13	4.68	.25	9	.28	9.18	.23	14.67	.25	12.78	.11	11.34	1.3	10.17	1.25	16.11	.35	10.17	.14
Right Bank	14.6	0	12.8	0	5.2	0	10.0	0	10.2	0	16.3	0	19.2	0	12.6	0	11.3	0	17.9	0	11.3	0
Feature Type (riffle, run, or pool)	riffle		riffle		run		pool															

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS 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: [Signature] Date: 10/29/07

WBID# 1144 Dry Auglaize Creek



Site# 1 Photo ID# T01-I-92 Downstream



Site# 1 Photo ID# T11-I-93 Upstream



Site# 2 Photo ID# T-01-I-94 Downstream



Site# 2 Photo ID# T11-I-95 Upstream

WBID# 1144 Dry Auglaize Creek



Site# 3 Photo ID# T01-I-96 Downstream



Site# 3 Photo ID# T11-I-97 Upstream



Site# 4 Photo ID# T01-I-98 Downstream



Site# 4 Photo ID# T01-I-99 Downstream

WBID# 1144 Dry Auglaize Creek



Site# 5 Photo ID# T01-I-100 Upstream



Site# 5 Photo ID# T11-I-101 "Pool"



Site# 5 Photo ID# T01-I-102 Downstream



Site# 6 Photo ID# T01-I-103 Downstream

WBID# 1144 Dry Auglaize Creek



Site# 6 Photo ID# T01-I-104 Upstream



Site# 7 Photo ID# T11-I-105 Upstream



Site# 7 Photo ID# T01-I-106 Downstream



Site# 8 Photo ID# T01-L-045 Downstream

WBID# 1144 Dry Auglaize Creek



Site# 8 Photo ID# T01-L-046 Upstream



Site# 9 Photo ID# L-047 "Pool"



Site# 9 Photo ID# T11L-048 Upstream



Site# 9 Photo ID# T01-L-049 Downstream

WBID# 1144 Dry Auglaize Creek



Site# 10 Photo ID# T11-L-041 Upstream



Site# 10 Photo ID# T-1-L-042 Downstream



Site# 11 Photo ID# T01L-043 Downstream



Site# 11 Photo ID# T11-L-044 Upstream

WBID# 1144 Dry Auglaize Creek



Site# 12 Photo ID# T11-L-039 Upstream



Site# 9 Photo ID# T01-L040 Downstream



Site# 13 Photo ID# T01-L-034 Downstream



Site# 13 Photo ID# T06-08-L-035 "Pool"

WBID# 1144 Dry Auglaize Creek



Site# 13 Photo ID# T11-L-036 Upstream



Site# 14 Photo ID# T01-L-037 Downstream



Site# 14 Photo ID# T11L-038 Upstream



Site# 15 Photo ID# T01-L-028 Downstream

WBID# 1144 Dry Auglaize Creek



Site# 15 Photo ID# T01-L-030 Upstream



Site# 9 Photo ID# T-03-L-029 "Pool"



Site# 16 Photo ID# T01_L-031 Downstream



Site# 16 Photo ID# T04-L-032 "Road to Stream"

WBID# 1144 Dry Auglaize Creek



Site# 16 Photo ID# T11-L-033 Upstream



Site# 17 Photo ID# T11_L-026 Upstream



Site# 17 Photo ID# T01-L-027 Downstream



Site# 18 Photo ID# T07-L-023 "Tracks to Stream"

WBID# 1144 Dry Auglaize Creek



Site# 18 Photo ID# T11-L-024 Upstream



Site# 18 Photo ID# T01_L-025 Downstream



Site# 19 Photo ID# T11-L-019 "Pool"



Site# 19 Photo ID# T11-L-020 "Pool"

WBID# 1144 Dry Auglaize Creek



Site# 19 Photo ID# T11-L-021 Upstream



Site# 19 Photo ID# T01_L-022 Downstream