



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 0728 Hillers 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):	Hillers Creek		
Missouri Water Body Identification (WBID) Number:	728		
8-digit HUC:	10300102	County:	Callaway
Upstream Legal Description (from Table H):	34, 46N, 10W		
Downstream Legal Description (from Table H):	32, 45N, 9W		
Number of sites evaluated	7		
List all sites numbers, listed consecutively upstream to downstream:			

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

Discharger Facility Name(s):	Hillers Creek Subdivision
Discharger Permit Number(s):	MO0119407

III. UAA Surveyor (please print legibly)

Name of Surveyor	James Uvorka, Tim Altrichter	Telephone Number:	573-443-4100
Organization/Employer:	MEC Water Resources		
Position:	Water Quality Scientist		

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

Signed: Sh. Polyz Date: 10/31/07

WBID # 728
 Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>10/18/07 14:00</u>	Site Location Description (e.g., road crossing): <u>Upstream 2 trils from Rogers lane</u>
Personnel (Data Collectors): <u>SU/TA</u>	
Current Weather Conditions: <u>Pl. Cl. Breezy, 75F</u>	Facility Name:
Weather Conditions for Past 10 days: <u>Spotty Shower/Cloud</u>	Permit Number:
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>4283612</u>	Northing (UTM Y): ^{15 S} <u>0584411</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>7.2</u> Meters
Site 11	Easting (UTM X): <u>4282861</u>	Northing (UTM Y): ^{15 S} <u>0584383</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>5.1</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>728-1-014</u>	<u>Up Stream</u>	<u>728-1-015</u>	<u>Down Stream</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 # 728
 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 checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: <u>Pasture & forest</u>
Comments:				

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

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
Comments / Other: <u>No observed</u>				

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

<u>15</u> % Cobble	<u>16</u> % Gravel	<u>60</u> % Sand	<u>5</u> % Silt	<u>10</u> % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

grasses, smartweed, algal growth common

Water Characteristics*: (Mark all that apply.)

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

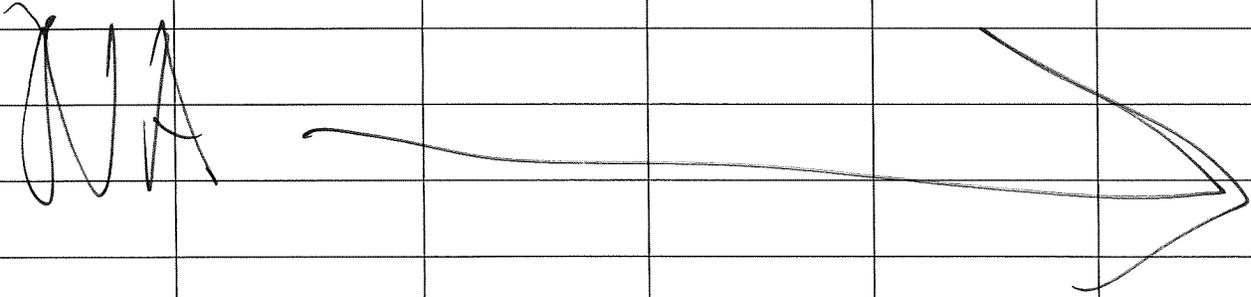
*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions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

WBID # 728
Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

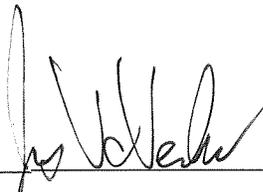
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

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

Comments: (Please record any additional comments here.)

N/A

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

Surveyor's Signature:  Date of Survey: 10/18/07
Organization: MEC Water Position: Water Quality Scientist
Phuc 10-30-07

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>728</u> Site #: <u>1</u> (wbid_site #) Estimated Channel Incision: <u>0.25</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>4283012</u> UTM Y: <u>1550584411</u> +/- <u>7.2</u> (meters) 11 UTM X: <u>4282861</u> UTM Y: <u>1550584383</u> +/- <u>5.1</u> (meters) Average Stream Width: <u>7</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>SV/TA</u>	Dissolved Oxygen Date: <u>10/18/07</u> Time: <u>14:00</u> Dissolved Oxygen: <u>53.4</u> (mg/L) ← <i>anc</i> Dissolved Oxygen: <u>4.75</u> (% sat) ← <i>anc</i> Specific Cond: <u>430.7</u> (µS/cm) Water Temperature: <u>20.8</u> (°C)
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Transect Cross-Section

Station	Transect Cross-Section																					
	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)	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	
1	0.22	0.00	Dry	Dry	0.61	0.18	Dry	Dry	1.39	0.20	0.75	0.18	0.41	0.02	0.21	0.00	0.50	0.00	0.51	0.65		
2	0.44	0.00			1.22	0.14			2.78	0.19	1.50	0.26	0.82	0.06	0.42	0.00	1.00	0.01	1.01	0.08		
3	0.66	0.00			1.83	0.21			4.17	0.06	2.25	0.33	1.23	0.14	0.63	0.00	1.50	0.08	1.52	0.07		
4	0.88	0.03			2.44	0.22			5.56	0.00	3.00	0.42	1.64	0.13	0.84	0.00	2.00	0.07	2.04	0.04		
5	1.16	0.01			3.05	0.31			6.95	0.32	3.75	0.35	2.05	0.16	1.05	0.00	2.50	0.08	2.58	0.03		
6	1.32	0.00			3.66	0.26			8.34	0.54	4.50	0.43	2.46	0.15	1.26	0.00	3.00	0.07	3.05	0.01		
7	1.54	0.02			4.27	0.00			9.73	0.23	5.25	0.49	2.87	0.10	1.47	0.00	3.50	0.07	3.56	0.00		
8	1.76	0.03			4.88	0.00			11.12	0.23	6.00	0.31	3.28	0.09	1.68	0.00	4.00	0.00	4.08	0.01		
9	1.98	0.02			5.49	0.11			12.51	0.01	6.75	0.14	3.69	0.06	1.89	0.00	4.50	0.01	4.59	0.01		
Right Bank	2.26	0			6.10	0			11.39	0	7.50	0	4.10	0	2.16	0	5.00	0	5.10	0		
Feature Type	Run		Dry		Dry		Run		Dry		Pool		Pool		Run		Riffle		Run		Run	

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

Signed: [Signature] Date: 10/18/07

WBID # 0728

Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>10/18/07 1:25</u>	Site Location Description (e.g., road crossing): <u>Hiked Upstream from Site 3</u>
Personnel (Data Collectors): <u>TA, JV</u>	
Current Weather Conditions: <u>Clear, Windy</u>	Facility Name:
Weather Conditions for Past 10 days: <u>Clear/Rain</u>	Permit Number:
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>4282366</u>	Northing (UTM Y): ¹⁵⁵ <u>0584989</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>5.5</u> Meters
Site 11	Easting (UTM X): <u>4282203</u>	Northing (UTM Y): ¹⁵⁵ <u>0584997</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>7.5</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>0728-2011</u>	<u>US</u>	<u>0728-2012</u>	<u>DNS</u>	<u>0728-2013</u>	<u>Rope Swing @ Trav 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 # 728
 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 checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: <u>Pasture</u>
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 checked="" 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: <u>Photo taken of rope swing</u>				

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

<u>5</u> % Cobble	<u>5</u> % Gravel	60 ³⁰ % Sand	<u>10</u> % Silt	<u>10</u> % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

grass, smartweed, algal growth common

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: <u>Brown</u>
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Other: <u>leaf wads</u>
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 # 728
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)
<i>NA</i>					

Comments: (Please record any additional comments here.)

NA

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: 10/18/07
Organization: 10/18/07 Position: Water Quality Scientist

awc 10-30-07

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>0728</u> Site #: <u>2</u> (wbid_site #) Estimated Channel Incision: <u>0.25</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>4282368</u> UTM Y: <u>1550584989</u> +/- <u>5.5</u> (meters) 11 UTM X: <u>4282203</u> UTM Y: <u>1550584957</u> +/- <u>7.3</u> (meters) Average Stream Width: <u>10</u> (meters) Length of Survey Segment: <u>200</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>TA, JV</u>	Dissolved Oxygen Date: <u>10/18/07</u> Time: <u>7:15-1:25</u> Dissolved Oxygen: <u>5.85</u> (mg/L) <i>ARC</i> Dissolved Oxygen: <u>61.5</u> (% sat) <i>ARC</i> Specific Cond: <u>377.2</u> (µS/cm) Water Temperature: <u>17.7</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	0		
1	0.64	0.12	0.55	0.64	1.03	0.11	1.03	0.17	1.26	0.15	1.7	0.03	0.76	0.02	Dry	Dry	0.47	0.0	0.55	0.03	0.94	0.01	1.10	0.05
2	1.28	0.22	1.10	0.13	1.42	0.21	2.06	0.23	2.52	0.25	2.16	0.11	1.52	0.06			1.41	0.0	1.45	0.10				
3	1.92	0.31	1.65	0.20	2.13	0.31	3.09	0.44	3.78	0.46	3.24	0.18	2.28	0.0			1.88	0.07	2.20	0.13				
4	2.56	0.36	2.20	0.26	2.84	0.34	4.12	0.58	5.04	0.65	4.32	0.15	3.04	0.04			2.35	0.03	2.75	0.13				
5	3.20	0.37	2.75	0.44	3.55	0.31	5.15	0.65	6.30	0.60	5.40	0.26	3.80	0.01			2.82	0.05	3.30	0.02				
6	3.84	0.33	3.30	0.44	4.26	0.29	6.18	0.74	7.56	0.60	6.48	0.25	4.56	0.03			3.29	0.09	3.85	0.15				
7	4.48	0.23	3.85	0.46	4.97	0.30	7.21	0.74	8.82	0.56	7.56	0.24	5.32	0.0			3.76	0.0	4.40	0.11				
8	5.12	0.00	4.40	0.31	5.68	0.29	8.24	0.54	10.08	0.46	8.64	0.18	6.08	0.0			4.23	0.05	4.95	0.09				
9	5.76	0.06	4.95	0.20	6.39	0.20	9.27	0.25	11.34	0.29	9.72	0.09	6.84	0.0			4.7	0	5.5	0				
Right Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feature Type	Run	Run	Dry	Dry	Dry	Dry	Run	Run	Run	Run	Run	Run	Run	Run										

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

Signed: [Signature] Date: 10/18/07

ARC 10-30-07

WBID # 728
 Site # 3

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>10/16/07 10:35</u>	Site Location Description (e.g., road crossing): <u>Bridge @ CR 452</u>
Personnel (Data Collectors): <u>JU/TA</u>	
Current Weather Conditions: <u>Pt. Clg. Breezy, 65°F</u>	Facility Name:
Weather Conditions for Past 10 days: <u>Clear & Some Rain</u>	Permit Number:
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>4281649</u>	Northing (UTM Y): ¹⁵⁵ <u>0584351</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>39.4</u> Meters
Site 11	Easting (UTM X): <u>4281619</u>	Northing (UTM Y): ¹⁵⁵ <u>0584202</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>14.9</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>7-3-1</u>	<u>Up Stream</u>	<u>7-3-2</u>	<u>Down Stream</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 # 728
 Site # 3

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 type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: <u>Pasture</u>
Comments: <u>Small riparian</u>				

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: <u>Saw cattle tracks</u>				

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

% Cobble	<u>5</u>	% Gravel	<u>30</u>	% Sand	<u>70</u>	% Silt	<u>15</u>	% Mud/Clay	<u>10</u>	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

Small weed, grasses, algal growth common

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

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

WBID # 728
Site # 3

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)
N/A	A				

Comments: (Please record any additional comments here.)

N/A

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: 10/16/07
Organization: MEC Water Position: Water Quality Scientist

RWC 10-30-07

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>728</u> Site #: <u>3</u> (wbid_site #) Estimated Channel Incision: <u>0.25</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>4291649</u> UTM Y: <u>1550584351</u> +/- <u>39.4</u> (meters) 11 UTM X: <u>4291619</u> UTM Y: <u>1550584202</u> +/- <u>14.9</u> (meters) Average Stream Width: <u>10</u> (meters) Length of Survey Segment: <u>200</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>JV/TA</u>	<h3 style="text-align: center; margin: 0;">Dissolved Oxygen</h3> Date: <u>10/16/07</u> Time: <u>10:35</u> Dissolved Oxygen: <u>3.65</u> (mg/L) Dissolved Oxygen: <u>36.9</u> (% sat) Specific Cond: <u>351</u> (µS/cm) Water Temperature: <u>15.7</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	0	
	1	0.75	0.04	1.44	0.17	1.39	0.05	1.56	0.10	1.68	0.09	1.11	0.10	0.76	0.04	0.00	0.00	0.00	0.00	0.47	0.11	0.54	0.16
	2	1.50	0.05	2.88	0.42	2.78	0.09	3.12	0.22	3.36	0.19	2.22	0.17	1.52	0.10	0.17	0.01			0.94	0.24	1.08	0.27
	3	2.25	0.06	4.32	0.50	4.17	0.18	4.68	0.24	5.04	0.38	3.33	0.25	2.28	0.19	0.255	0.00			1.41	0.26	1.62	0.63
	4	3.00	0.06	5.76	0.45	5.56	0.24	6.24	0.42	6.72	0.60	4.44	0.41	3.04	0.23	0.34	0.00			1.88	0.27	2.16	0.84
	5	3.75	0.05	7.20	0.24	6.95	0.25	7.80	0.44	8.40	0.81	5.55	0.45	3.80	0.23	0.425	0.01			2.35	0.30	2.70	0.98
	6	4.50	0.07	8.64	0.25	8.34	0.28	9.36	0.39	10.08	0.86	6.66	0.49	4.56	0.17	0.51	0.01			2.82	0.60	3.24	1.00
	7	5.25	0.07	10.08	0.10	9.73	0.27	10.92	0.45	11.76	0.82	7.77	0.38	5.32	0.13	0.595	0.02			3.29	0.21	3.78	1.00
	8	6.00	0.06	11.52	0.07	11.12	0.22	12.48	0.34	13.44	0.68	8.88	0.29	6.08	0.16	0.68	0.03			3.76	0.17	4.32	1.00
	9	6.75	0.04	12.96	0.03	12.51	0.13	14.04	0.10	15.12	0.30	9.99	0.14	6.84	0.09	0.765	0.01			4.23	0.11	4.86	0.68
Right Bank	7.50	0	14.40	0	13.90	0	15.60	0	16.80	0	11.10	0	7.60	0	0.85	0			4.70	0	5.40	0	
Feature Type <small>(riffle, run, or pool)</small>		Run	Run	Run																			

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

Signed: [Signature] Date: 10/16/07

Run C 10-30-07

WBID # 725
 Site # 4

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>10/16/07 11:30</u>	Site Location Description (e.g., road crossing): <u>Bridge @ CRD 484</u>
Personnel (Data Collectors): <u>SU/TA</u>	
Current Weather Conditions: <u>P. Cl. Breezy, 65°F</u>	Facility Name:
Weather Conditions for Past 10 days: <u>Clear, Some Rain</u>	Permit Number:
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>427 9466</u>	Northing (UTM Y): <u>0584278</u> ¹⁵³	Horizontal Accuracy: (EPE / FOM / PDOP) <u>7.2</u> Meters
Site 11	Easting (UTM X): <u>427 9336</u>	Northing (UTM Y): <u>0584226</u> ¹⁵³	Horizontal Accuracy: (EPE / FOM / PDOP) <u>7.4</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>74-3</u>	<u>Up Stream</u>	<u>74-4</u>	<u>Dwn. Stream</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 # 728
 Site # 4

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 checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: <u>Pasture</u>
Comments:				

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

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

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

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

Grasses, smartweed, algal growth common

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

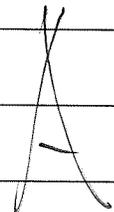
*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions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

WBID # 728
Site # 4

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

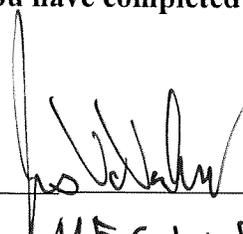
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

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

Comments: (Please record any additional comments here.)

W/A

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

Surveyor's Signature:  Date of Survey: 10/16/07

Organization: MEC Water Position: Water Quality Scientist

Rule 10-30-07

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>728</u> Site #: <u>4</u> (wbid_site #) Estimated Channel Incision: <u>0.25</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>4279466</u> UTM Y: <u>155 6584278</u> +/- <u>7.2</u> (meters) 11 UTM X: <u>4279336</u> UTM Y: <u>155 6584226</u> +/- <u>7.4</u> (meters) Average Stream Width: <u>10</u> (meters) Length of Survey Segment: <u>200</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>SU / JA</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>10/16/07</u> Time: <u>11:36</u> Dissolved Oxygen: <u>54.2</u> (mg/L) ← <i>unc</i> Dissolved Oxygen: <u>5.25</u> (% sat) ← <i>unc</i> Specific Cond: <u>552</u> (µS/cm) Water Temperature: <u>16.9</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	0	
	1	0.62	0.03	1.60	0.26	1.24	0.43	1.25	0.31	1.07	0.23	0.42	0.20	0.43	0.16	1.17	0.20	1.13	0.24	1.24	0.61	1.09	0.46
	2	1.24	0.10	3.20	0.53	2.48	0.49	2.50	0.44	2.14	0.26	0.84	0.32	0.86	0.31	2.34	0.02	2.26	0.59	2.48	0.80	2.18	0.02
	3	1.86	0.01	4.80	0.49	3.72	0.44	3.75	0.44	3.21	0.23	1.26	0.25	1.29	0.51	3.51	0.00	3.39	0.20	3.72	0.91	3.27	0.40
	4	2.48	0.06	6.46	0.38	4.96	0.29	5.00	0.45	4.28	0.20	1.68	0.20	1.72	0.56	4.68	0.00	4.52	0.19	4.96	0.67	4.36	0.38
	5	3.10	0.00	8.00	0.40	6.20	0.14	6.25	0.49	5.35	0.20	2.10	0.18	2.15	0.56	5.85	0.00	5.65	0.11	6.20	0.24	5.45	0.25
	6	3.72	0.06	9.60	0.41	7.44	0.02	7.50	0.50	6.42	0.20	2.52	0.16	2.58	0.51	7.02	0.16	6.78	0.07	7.44	0.26	6.54	0.31
	7	4.34	0.10	11.20	0.46	8.68	0.00	8.75	0.46	7.49	0.23	2.94	0.14	3.01	0.42	8.19	0.22	7.91	0.08	8.68	0.31	7.63	0.28
	8	4.96	0.13	12.80	0.42	9.92	0.11	10.00	0.26	8.56	0.20	3.36	0.10	3.44	0.25	9.36	0.24	9.04	0.05	9.92	0.31	8.72	0.23
9	5.58	0.12	14.40	0.17	11.16	0.11	11.25	0.20	9.63	0.16	3.78	0.03	3.87	0.07	10.53	0.15	10.17	0.05	11.16	0.23	9.81	0.14	
Right Bank	0	0	16.00	0	12.40	0	12.50	0	10.70	0	4.20	0	4.30	0	11.70	0	11.30	0	12.40	0	10.90	0	
Feature Type	Run		Run		Run		Run		Run		Run		Run		Run		Run		Pool Run		Run		

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

Signed: [Signature] Date: 10/16/07

unc 10-30-07

WBID # 728
 Site # 5

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>10/16/07 12:20</u>	Site Location Description (e.g., road crossing): <u>Bridge @ Rt. BB</u>
Personnel (Data Collectors): <u>JV/TA</u>	
Current Weather Conditions: <u>Partly Breezy, 68°F</u>	Facility Name:
Weather Conditions for Past 10 days: <u>Clear, some rain</u>	Permit Number:
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>4277263</u>	Northing (UTM Y): ¹⁵⁵ <u>6586257</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>16.0</u> Meters
Site 11	Easting (UTM X): <u>4277343</u>	Northing (UTM Y): ¹⁵⁵ <u>0586593</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>22.8</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>7-5-5</u>	<u>Up Stream</u>	<u>7-5-6</u>	<u>Dwn. Stream</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 # 728
 Site # 5

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 checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: <u>Pasture</u>
Comments: <u>small riparian</u>				

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

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

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

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

Smartweed, grasses, algal growth common
Duckweed

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<u>SV</u> <input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Other: <u>Hydrogen Sulfide</u>
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: <u>Brown</u>
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Other: <u>leaf mats</u>
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 # 728

Site # 5

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)
N/A					

Comments: (Please record any additional comments here.)

N/A

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: 10/16/07

Organization: MEC Water Position: Water Quality Scientist

amc 10-30-07

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: 728 Site #: 5
(wbid_site #)

Estimated Channel Incision: 0.25 (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>4277203</u>	UTM Y: <u>1550586257</u>	+/- <u>10.0</u> (meters)
11 UTM X: <u>4277343</u>	UTM Y: <u>1550586393</u>	+/- <u>32.8</u> (meters)

Average Stream Width: 10 (meters) Length of Survey Segment: 200 (meters)
(To determine Length of Reach) (20x average stream width)

Field Staff: SU/TA

Dissolved Oxygen	
Date: <u>10/16/07</u>	Time: <u>12:20</u>
Dissolved Oxygen: <u>14.9</u> (mg/L)	← <i>mc</i>
Dissolved Oxygen: <u>1.48</u> (% sat)	←
Specific Cond: <u>545</u> (µS/cm)	
Water Temperature: <u>15.3</u> (°C)	

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)	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	
1	0.58 0.77	0.77	1.27	0.15	0.99	1.00	0.92	0.34	6.90	0.01	1.26	0.23	1.12	0.16	0.51	0.12	6.32	0.03	0.18	0.02	0.14	0.03
2	1.56	1.00	2.54	0.44	1.98	1.00	1.84	0.48	1.80	0.02	2.52	0.32	2.24	0.17	1.02	0.10	0.64	0.00	0.36	0.02	0.28	0.04
3	2.34	1.60	3.81	0.54	2.97	1.00	2.76	0.65	2.70	0.05	3.78	0.53	3.36	0.22	1.53	0.05	0.96	0.03	0.54	0.05	0.42	0.08
4	3.12	1.60	5.08	0.61	3.96	1.00	3.68	0.62	3.60	0.09	5.04	0.79	4.48	0.25	2.04	0.02	1.28	0.06	0.72	0.07	0.56	0.09
5	3.90	1.00	6.35	0.27	4.95	1.00	4.60	0.61	4.50	0.15	6.30	0.65	5.60	0.26	2.55	0.03	1.60	0.12	0.90	0.09	0.70	0.09
6	4.68	0.92	7.62	0.24	5.94	1.60	5.52	0.51	5.40	0.12	7.56	0.50	6.72	0.26	3.06	0.04	1.92	0.20	1.08	0.11	0.84	0.09
7	5.46	0.63	8.89	0.09	6.93	2.00 1.00	6.44	0.13	6.30	0.15	8.82	0.48	7.84	0.30	3.57	0.13	2.24	0.21	1.26	0.07	0.98	0.09
8	6.24	0.37	10.16	0.15	7.92	0.84	7.36	0.14	7.20	0.11	10.08	0.51	8.96	0.22	4.08	0.02	2.56	0.15	1.44	0.12	1.12	0.06
9	7.02	0.11	11.45	0.14	8.91	0.64	8.28	0.09	8.10	0.06	11.34	0.23	10.68	0.19	4.59	0.18	2.88	0.05	1.62	0.07	1.26	0.01
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	Run	Run	Pool	Run	Run	Run	Pool	Run	Run	Run	Run											

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

Signed: [Signature] Date: 10/16/07

mc 10-30-07

WBID # 728
 Site # 6

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>10/16/07</u> / <u>4:02</u>	Site Location Description (e.g., road crossing): <u>Bridge @</u> <u>CRD 486</u>
Personnel (Data Collectors): <u>SV/TA</u>	
Current Weather Conditions: <u>Clear, breezy, 76°F</u>	Facility Name:
Weather Conditions for Past 10 days: <u>Clear, some rain</u>	Permit Number:
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>4276864</u>	Northing (UTM Y): ¹⁵⁵ <u>0587376</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>5.4</u> Meters
Site 11	Easting (UTM X): <u>4277604</u>	Northing (UTM Y): ¹⁵⁵ <u>0587321</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>5.6</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>728-6-7</u>	<u>Up stream</u>	<u>728-6-8</u>	<u>Down Stream</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 # 728
 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 checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: <u>Pasture</u>
Comments:				

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

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

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

<u>5</u> % Cobble	<u>5</u> % Gravel	<u>70</u> % Sand	<u>10</u> % Silt	<u>10</u> % Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

Smartweed, grasses, algal growth common

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: <u>Hydrogen Sulfide</u>
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: <u>Brown</u>
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Other: <u>Leaf matts</u>
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.

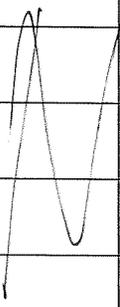
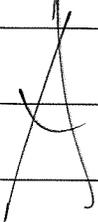
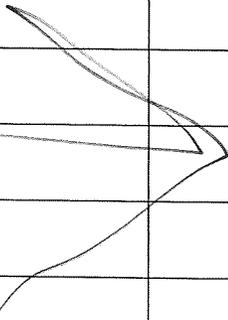
WBID # 728

Site # 6

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

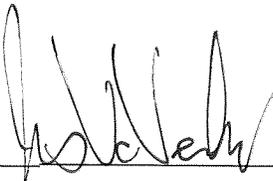
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

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

Comments: (Please record any additional comments here.)

N/A

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

Surveyor's Signature:  Date of Survey: 10/16/07

Organization: MEC Water Position: Water Quality Scientist

QWC 10-30-07

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>728</u> Site #: <u>6</u> (wbid_site #) Estimated Channel Incision: <u>0.25</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>4276864</u> UTM Y: <u>155 0587376</u> +/- <u>5.4</u> (meters) 11 UTM X: <u>4277004</u> UTM Y: <u>155 0587321</u> +/- <u>5.6</u> (meters) Average Stream Width: <u>10</u> (meters) Length of Survey Segment: <u>200</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>JV/TA</u>	Dissolved Oxygen Date: <u>10/16/07</u> Time: <u>14:02</u> Dissolved Oxygen: <u>32.6</u> (mg/L) ← <i>RUC</i> Dissolved Oxygen: <u>2.98</u> (% sat) ← <i>RUC</i> Specific Cond: <u>444.8</u> (µS/cm) Water Temperature: <u>19.4</u> (°C)
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Transect Cross-Section																						
01		02		03		04		05		06		07		08		09		10		11		
Station	Distance (m)	Depth (m)																				
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	0.53	0.05	0.61	0.05	0.88	0.27	1.00	0.22	1.14	0.49	1.24	0.36	0.66	0.06	Dry	Dry	0.20	0.66	1.63	0.45		
2	1.06	0.06	1.22	0.10	1.76	0.30	2.00	0.70	2.28	0.67	2.48	0.51	1.32	0.15			0.40	0.00	3.26	0.22		
3	1.59	0.15	1.83	0.14	2.64	0.35	3.00	0.85	3.42	0.71	3.72	0.48	1.98	0.18			0.60	0.09	4.87	0.43		
4	2.12	0.19	2.44	0.17	3.52	0.41	4.00	1.00	4.56	0.72	4.96	0.40	2.64	0.24			0.80	0.07	6.52	0.05		
5	2.65	0.21	3.05	0.17	4.40	0.41	5.00	1.00	5.70	0.81	6.20	0.31	3.30	0.27			1.00	0.11	8.15	0.00		
6	3.18	0.20	3.66	0.15	5.28	0.42	6.00	1.00	6.84	0.84	7.44	0.26	3.96	0.29			1.20	0.12	9.78	0.00		
7	3.71	0.14	4.27	0.17	6.16	0.37	7.00	0.95	7.98	0.77	8.68	0.24	4.62	0.28			1.40	0.08	11.41	0.25		
8	4.24	0.17	4.88	0.09	7.04	0.26	8.00	0.83	9.12	0.58	9.92	0.20	5.28	0.25			1.60	0.06	13.04	0.35		
9	4.77	0.09	5.49	0.07	7.92	0.11	9.00	0.54	10.26	0.26	11.16	0.19	5.94	0.16			1.80	0.03	14.67	0.18		
Right Bank	5.30	0	6.10	0	8.80	0	10.00	0	11.40	0	12.40	0	6.60	0			2.00	0	16.30	0		
Feature Type (riffle, run, or pool)	Run		Run		Run		Pool		Run		Run		Run		Dry		Dry		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: 10/16/07
RUC 10-30-07

WBID # 728
 Site # 7

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>10/16/07 15:15</u>	Site Location Description (e.g., road crossing): <u>Bridge @ CRD 485</u>
Personnel (Data Collectors): <u>SN/TA</u>	
Current Weather Conditions: <u>Clear, breezy, 72°F</u>	Facility Name:
Weather Conditions for Past 10 days: <u>Clear, some rain</u>	Permit Number:
Drought Conditions?: No drought <input type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): <u>4276823</u>	Northing (UTM Y): ^{15 S} <u>0590163</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>9.4</u> Meters
Site 11	Easting (UTM X): <u>4276666</u>	Northing (UTM Y): ^{15 S} <u>0590256</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>8.0</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>728-7-9</u>	<u>Up stream</u>	<u>728-7-10</u>	<u>Down Stream</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 # 728
 Site # 7

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 checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: <u>Pasture/Row Crop</u>
Comments:				

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

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

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

30 <u>5</u> % Cobble	40 <u>30</u> % Gravel	60 <u>70</u> % Sand	<u>5</u> % Silt	<u>10</u> % Mud/Clay	<u>5</u> % Bedrock
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Aquatic Vegetation:** (Note amount of vegetation or algal growth at the assessment site)

Grasses, duckweed, smartweed, algal growth common

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: <u>Hydrogen Sulfide</u>
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: <u>Brown</u>
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Other: <u>Leaf Mats</u>
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

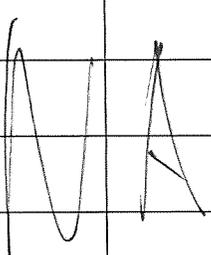
*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions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

WBID # 728
Site # 7

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

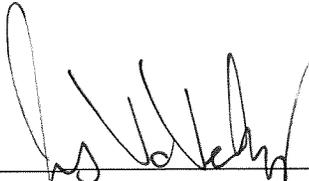
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

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

Comments: (Please record any additional comments here.)

N/A

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

Surveyor's Signature:  Date of Survey: 10/16/07
Organization: MEC Water Position: Water Quality Scientist

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

Waterbody ID: 728 Site #: 7
 (wbid_site #)

Estimated Channel Incision: 0.25 (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: 4276823 UTM Y: 1550590163 +/- 9.4 (meters)
 11 UTM X: 4276666 UTM Y: 1556590256 +/- 8.0 (meters)

Average Stream Width: 10 (meters) Length of Survey Segment: 200 (meters)
 (To determine Length of Reach) (20x average stream width)

Field Staff: JV/TA

Dissolved Oxygen

Date: 10/14/07 Time: 15:15

Dissolved Oxygen: 14.9 (mg/L) ← *94c*

Dissolved Oxygen: 1.46 (% sat) ← *94c*

Specific Cond: 471.4 (µS/cm)

Water Temperature: 16.3 (°C)

Transect Cross-Section

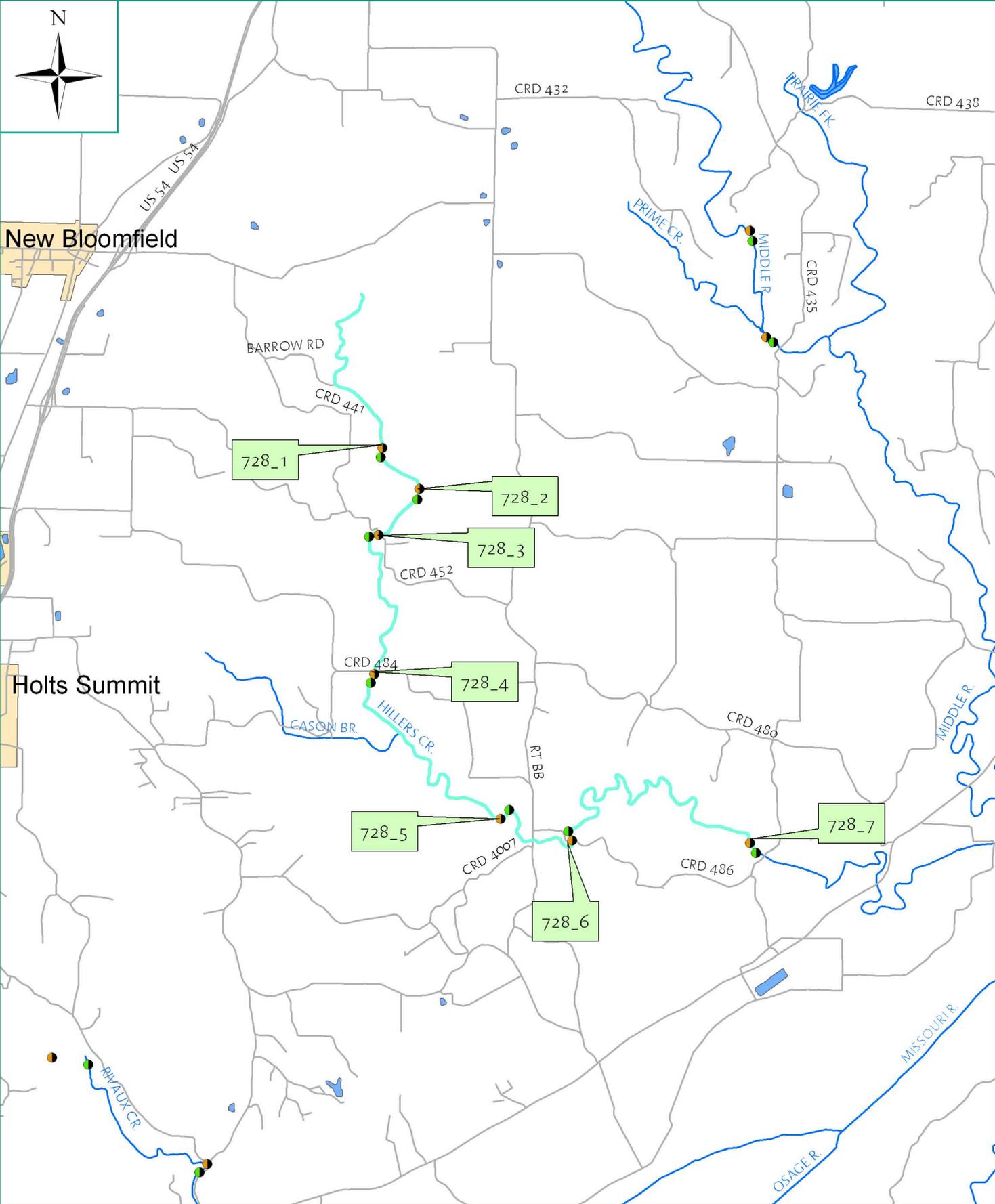
Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Left Bank	0	0	0	0	0	0	1.07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.99	0.26	0.91	0.58	0.94	0.60	1.07	0.12	1.61	0.34	0.94	0.14	1.00	0.30	0.76	0.16	0.74	0.14	1.15	0.18	0.94	0.18
2	1.98	0.00	1.85	0.89	1.88	0.00	2.14	0.46	2.02	0.38	1.88	0.28	2.00	0.39	1.52	0.14	1.48	0.28	2.30	0.26	1.88	0.24
3	2.97	0.67	2.73	1.00	2.82	0.00	3.21	0.43	3.03	0.33	2.82	0.42	3.00	0.44	2.28	0.08	2.22	0.36	5.45	0.31	2.82	0.31
4	3.96	0.90	3.64	0.90	3.76	0.00	4.28	0.29	4.04	0.32	3.76	0.50	4.00	0.29	3.04	0.22	2.96	0.38	4.60	0.35	3.76	0.30
5	4.95	0.72	4.55	0.98	4.70	0.00	5.35	0.21	5.05	0.24	4.70	0.62	5.00	0.54	3.80	0.19	3.70	0.36	5.75	0.38	4.70	0.31
6	5.94	0.66	5.46	0.91	5.64	0.00	6.42	0.12	6.06	0.14	5.64	0.65	6.00	0.67	4.56	0.32	4.44	0.45	6.90	0.39	5.64	0.30
7	6.93	0.39	6.37	0.55	6.58	0.00	7.49	0.06	7.07	0.09	6.58	0.66	7.00	0.70	5.32	0.53	5.18	0.51	8.05	0.36	6.58	0.25
8	7.92	0.24	7.28	0.24	7.52	0.00	8.56	0.11	8.08	0.07	7.52	0.59	8.00	0.51	6.08	0.31	5.92	0.55	9.20	0.30	7.52	0.24
9	8.91	0.09	8.19	0.10	8.46	0.00	9.63	0.12	9.09	0.07	8.46	0.31	9.00	0.19	6.84	0.23	6.66	0.32	10.35	0.19	8.46	0.13
Right Bank	9.90	0	9.10	0	9.40	0	10.40	0	10.10	0	9.40	0	10.00	0	7.60	0	7.40	0	11.50	0	9.40	0
Feature Type (riffle, run, or pool)	Run	Pool		Run	Riffle	Run	Run	Run														

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

Signed: [Signature] Date: 10/16/07

94c 10-30-07

Hillers Creek (WBID 728)



- Upstream Boundary
- Downstream Boundary



