



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 3627 Burkhart Branch

Submitted by
MEC/ERC

To
Missouri Department of Natural Resources
Water Protection Program

On

October 24, 2008

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):	Burkhardt Branch
Missouri Water Body Identification (WBID) Number:	3627
8-digit HUC:	11010008 Current
County(ies), Listed Upstream to Downstream:	Texas
Upstream Legal Description (from Table H):	12, 31W, 12W
Downstream Legal Description (from Table H):	Mouth
Number of sites evaluated:	3
List all site numbers, <u>consecutively upstream to downstream</u> :	Downstream 1 off Burkhardt Dr. 2 off Burkhardt Dr. 3 Downstream of site #1 Downstream of site #1 + 2 off Burkhardt Dr.
Include a Site Location Map(s). The map must include all requirements detailed in the <i>Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol</i> (Section IV.D.8.a).	

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

Facility Name(s) and Permit Number(s):
None listed

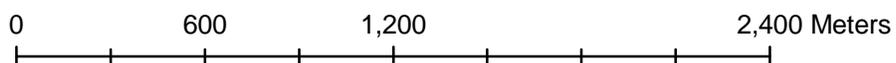
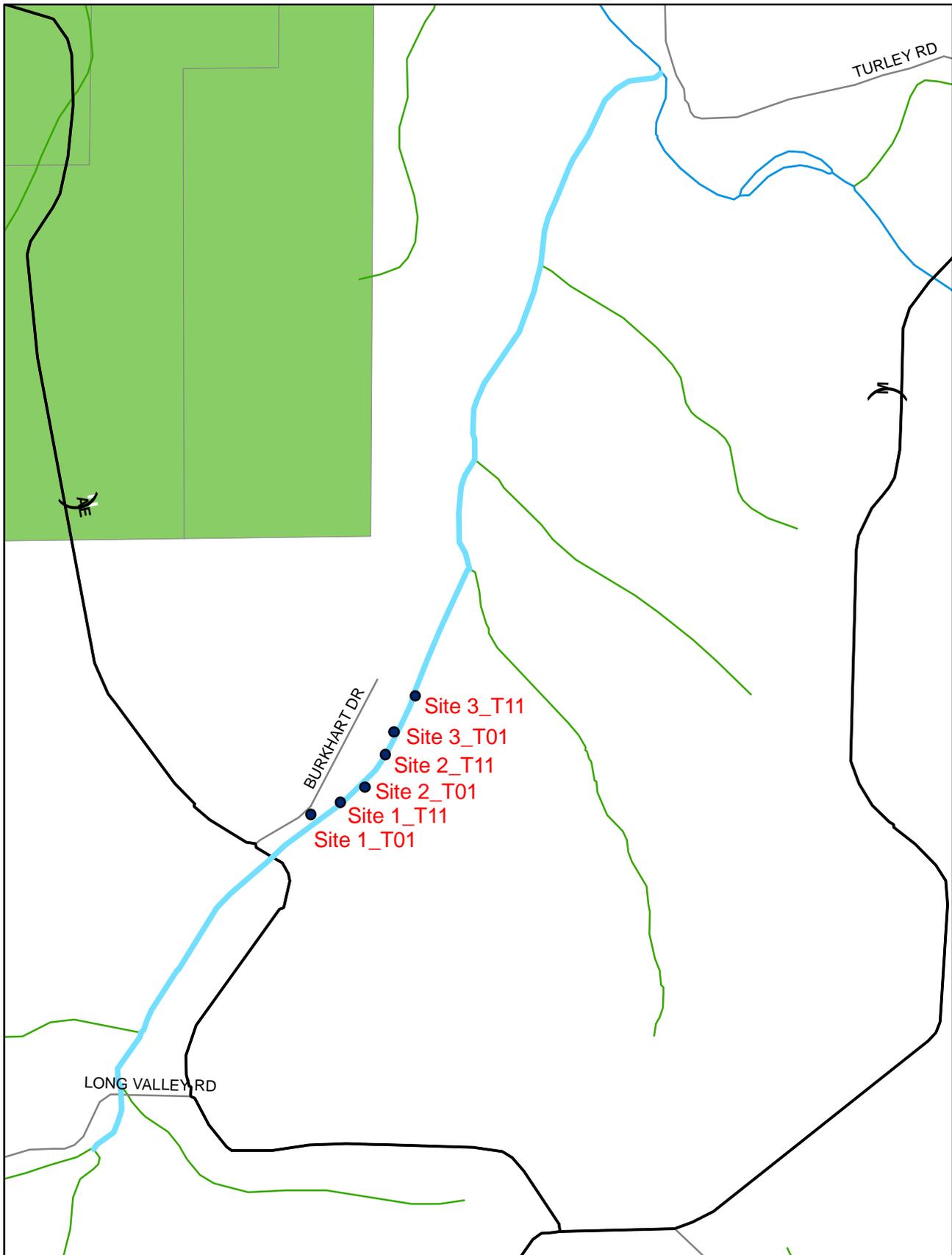
III. UAA Surveyor (please **PRINT** legibly)

Name of Surveyor:	Abigail E. Lynn	Telephone Number:	(573) 634-7078
Organization/Employer:	ERC		

Please verify that you have completed all sections of all data sheets, checked all applicable boxes, provided a map (that includes all requirements listed in the *Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol*) and that this form is complete.

Signed: Abigail E. Lynn Date: 9/23/08

WBID # 3627 - Burkhart Branch Texas County



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 the WeatherUnderground.com
Salem, MO

Date	Precipitation (Inches)	Min. Temp (°F)	Max. Temp (°F)	Avg. Temp (°F)
9/13/2008	0.04	73.0	62.0	76.0
9/14/2008	4.06	57.0	76.0	66.0
9/15/2008	0.00	48.0	63.0	55.0
9/16/2008	0.00	45.0	73.0	57.0
9/17/2008	0.00	47.0	78.0	61.0
9/18/2008	0.00	50.0	79.0	64.0
9/19/2008	0.00	56.0	82.0	67.0
9/20/2008	0.00	59.0	76.0	65.0
9/21/2008	0.00	60.0	77.0	66.0
9/22/2008	0.00	57.0	80.0	67.0
9/23/2008	0.00	57.0	82.0	68.0

WBID # 3627

Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 1 of 3)

(must be completed for each site)

Date & Time: 9-23-08 17:13	Location Description (e.g., road crossing): Downstream off Barkhardt Cr.
Stream Name: Barkhart Branch	
Current Weather Conditions: 80° clear	Facility Name(s): None listed
Weather Conditions for Past 10 days: attached	Permit Number(s): None listed
Official Drought Conditions at time of this survey (search DNR home page for “drought”): 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): 1550570747	Northing (UTM Y): 4141657	Horizontal Accuracy: (EPE / FOM / PDOP) 7 Meters		
Site 11	Easting (UTM X): 1550570274	Northing (UTM Y): 4141711	Horizontal Accuracy: (EPE / FOM / PDOP) 9 Meters		

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
134	transect 1 Downstream	139	transect 1 Upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at the 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.)				

Stream Name & WBID # Burkhart Branch 3627

Date of Survey _____

Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 2 of 3)

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:
Pastures & Fences

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
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

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

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

less than 10% algae cover

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 affect another use.

Stream Name & WBID # Burkhart Branch 3627

Date of Survey 9-23-08

Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 3 of 3)

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.)

- Stream access was limited - Long Valley Rd + Hwy 4E (both were fenced for the purpose of pastures + cattle)

- sites downstream are all accessed through site #1

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

Printed Names of Personnel Collecting Data: Abby Lynn, Travis R. Howell

Surveyor's Signature: Travis R. Howell Date of Survey: 9-23-08

Organization: ERC Position: Field Crew

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Burkhart Branch</u> Waterbody ID: <u>3627</u> Site #: <u>1</u> Estimated Channel Incision: <u>0.3</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (<u>EPE</u> / PDOP / FOM) 01 UTM X <u>15S0570747</u> UTM Y: <u>4141657</u> +/- <u>7</u> (meters) 11 UTM X <u>15S0570874</u> UTM Y: <u>4141711</u> +/- <u>9</u> (meters) Average Stream Width: <u>6.5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Abby Lynn and Travis Howell (AL & TH)</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>9/23/2008</u> Time: <u>17:13</u> Dissolved Oxygen: <u>8.59</u> (mg/L) Dissolved Oxygen: <u>93.5</u> (% sat) Specific Cond: <u>406</u> (µS/cm) Water Temperature: <u>20.3</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	0.43	0.31	0.72	0.25	0.97	0.05	0.51	0.07	0.39	0.24	0.44	0.16	0.33	0.15	0.97	0.6	0.36	0.1	0.28	0.16	0.48	0.06
2	0.86	0.39	1.44	0.62	1.94	0.07	1.02	0.06	0.78	0.42	0.88	0.19	0.66	0.36	1.94	0.5	0.72	0.15	0.56	0.24	0.96	0.17
3	1.29	0.39	2.16	0.88	2.91	0.11	1.53	0.03	1.17	0.58	1.32	0.22	0.99	0.25	2.91	0.4	1.08	0.17	0.84	0.24	1.44	0.37
4	1.72	0.41	2.88	1	3.88	0.2	2.04	0.02	1.56	0.54	1.76	0.34	1.32	0.19	3.88	0.45	1.44	0.28	1.12	0.33	1.92	0.4
5	2.15	0.47	3.6	1	4.85	0.23	2.55	0.09	1.95	0.57	2.2	0.32	1.65	0.13	4.85	0.42	1.8	0.36	1.4	0.41	2.4	0.51
6	2.58	0.53	4.32	1	5.82	0.18	3.06	0.06	2.34	0.5	2.64	0.29	1.98	0.09	5.82	0.5	2.16	0.37	1.68	0.38	2.88	0.47
7	3.01	0.59	5.04	1	6.79	0.07	3.57	0.06	2.73	0.37	3.08	0.24	2.31	0.09	6.79	0.54	2.52	0.42	1.96	0.38	3.36	0.46
8	3.44	0.5	5.76	1	7.76	0.06	4.08	0.01	3.12	0.21	3.52	0.13	2.64	0.02	7.76	0.39	2.88	0.36	2.24	0.4	3.84	0.51
9	3.87	0.32	6.48	1	8.73	0.02	4.59	0.03	3.51	0.1	3.96	0.09	2.97	0.09	8.73	0.19	3.24	0.18	2.52	0.34	4.32	0.5
Right Bank	4.3	0	7.2	0	9.7	0	5.1	0	3.9	0	4.4	0	3.3	0	9.7	0	3.6	0	2.8	0	4.8	0
Feature Type <small>(riffle, run, or pool)</small>	Run		Pool		Run		Riffle		Pool		Run		Riffle		Pool		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 0.1 meter unless depth is too deep to measure (then record as > 1)
 All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Travis R. Howell Date: 9/23/2008

WBID # 3627

Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 1 of 3)
(must be completed for each site)

Date & Time: <u>9-23-08 17:46</u>	Location Description (e.g., road crossing): <u>off Burkhardt Dr. Downstream of site #1</u>
Stream Name: <u>Burkhardt Branch</u>	
Current Weather Conditions: <u>80° clear</u>	Facility Name(s): <u>None listed</u>
Weather Conditions for Past 10 days: <u>attached</u>	Permit Number(s): <u>None listed</u>
Official Drought Conditions at time of this survey (search DNR home page for "drought"): 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>1550570981</u>	Northing (UTM Y): <u>4141775</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>6</u>	Meters	
Site 11	Easting (UTM X): <u>15505071070</u>	Northing (UTM Y): <u>4141918</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>6</u>	Meters	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>136</u>	<u>transect 1 downstream</u>	<u>137</u>	<u>transect 11 upstream</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 the 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.)				

Stream Name & WBID # Barkhart Branch 3627

Date of Survey 9-23-08

Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 2 of 3)

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: <u>Wooded + Pasture</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
<input type="checkbox"/> None of the above	Comments / Other:			

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

<u>40</u> % Cobble	<u>30</u> % Gravel	<u>10</u> % Sand	% Silt	% Mud/Clay	<u>20</u> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

<u>20-30% algae cover on rocks</u>

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input 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 affect another use.

Stream Name & WBID # Burkhart Branch 3027

Date of Survey 9/23/08

Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 3 of 3)

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.

Printed Names of Personnel Collecting Data: Abby Lynn & Travis Howell

Surveyor's Signature: *Abby Lynn* Date of Survey: 9/23/08

Organization: ERC Position: Field Manager

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Burkhart Branch</u> Waterbody ID: <u>3627</u> Site #: <u>2</u> Estimated Channel Incision: <u>0.1</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (<u>EPE</u> / PDOP / FOM) 01 UTM X <u>15S0570981</u> UTM Y: <u>4141775</u> +/- <u>6</u> (meters) 11 UTM X <u>15S0571070</u> UTM Y: <u>4141918</u> +/- <u>6</u> (meters) Average Stream Width: <u>4</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Abby Lynn and Travis Howell (AL & TH)</u>	Dissolved Oxygen Date: <u>9/23/2008</u> Time: <u>17:46</u> Dissolved Oxygen: <u>6.92</u> (mg/L) Dissolved Oxygen: <u>75.2</u> (% sat) Specific Cond: <u>403.9</u> (µS/cm) Water Temperature: <u>19.5</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		0.29	0.05	0.4	0.06	0.46	0.02	0.65	0.18	0.24	0.01	0.29	0.02	0.32	0.03	0.18	0.01	0.25	0.01	0.43	0.03	0.31	0.01
2		0.58	0.04	0.8	0.15	0.92	0.07	1.3	0.14	0.48	0.02	0.58	0.12	0.64	0.08	0.36	0.02	0.5	0.02	0.86	0.09	0.62	0.01
3		0.87	0.04	1.2	0.06	1.38	0.06	1.95	0.04	0.72	0.03	0.87	0.11	0.96	0.11	0.54	0.06	0.75	0.1	1.29	0.15	0.93	0.04
4		1.16	0.08	1.6	0.04	1.84	0.08	2.6	0.03	0.96	0.05	1.16	0.13	1.28	0.08	0.72	0.09	1	0.1	1.72	0.21	1.24	0.03
5		1.45	0.1	2	0.08	2.3	0.11	3.25	0.06	1.2	0.05	1.45	0.1	1.6	0.09	0.9	0.1	1.25	0.09	2.15	0.22	1.55	0.05
6		1.74	0.07	2.4	0.07	2.76	0.11	3.9	0.04	1.44	0.11	1.74	0.1	1.92	0.05	1.08	0.06	1.5	0.07	2.58	0.21	1.86	0.17
7		2.03	0.04	2.8	0.08	3.22	0.09	4.55	0.14	1.68	0.06	2.03	0.13	2.24	0.06	1.26	0.07	1.75	0.02	3.01	0.17	2.17	0.19
8		2.32	0.02	3.2	0.06	3.68	0.04	5.2	0.18	1.92	0.04	2.32	0.04	2.56	0.1	1.44	0.08	2	0.02	3.44	0.15	2.48	0.17
9		2.61	0.02	3.6	0.05	4.14	0.05	5.85	0.19	2.16	0.06	2.61	0.02	2.88	0.04	1.62	0.04	2.25	0.02	3.87	0.1	2.79	0.09
Right Bank		2.9	0	4	0	4.6	0	6.5	0	2.4	0	2.9	0	3.2	0	1.8	0	2.5	0	4.3	0	3.1	0
Feature Type <small>(riffle, run, or pool)</small>		Riffle		Riffle		Run		Riffle		Riffle		Riffle		Riffle		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 0.1 meter unless depth is too deep to measure (then record as > 1)
 All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Travis R. Howell Date: 9/23/2008

WBID # 3627

Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 1 of 3)
(must be completed for each site)

Date & Time: 9-23-08 18:20	Location Description (e.g., road crossing): Downstream of side #1 + #2 off Burkhardt Dr.
Stream Name: Burkhardt Branch	
Current Weather Conditions: 79° clear	Facility Name(s): None listed
Weather Conditions for Past 10 days: attached	Permit Number(s): None listed
Official Drought Conditions at time of this survey (search DNR home page for “drought”): 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): 1950571107	Northing (UTM Y): 4142015	Horizontal Accuracy: (EPE) FOM / PDOP 6 Meters		
Site 11	Easting (UTM X): 1950571200	Northing (UTM Y): 4142172	Horizontal Accuracy: (EPE) FOM / PDOP 8 Meters		

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
138	transect 1 Downstream	139	transect 11 Upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed*: (Uses actually observed at the 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.)				

Stream Name & WBID # Barkhart Branch 3627

Date of Survey 9-23-08

Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 2 of 3)

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

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
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

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

<u>40</u> % Cobble	<u>10</u> % Gravel	<u>20</u> % Sand	% Silt	% Mud/Clay	<u>30</u> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

20-30% algae cover on bedrock + cobble

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 affect another use.

Stream Name & WBID # Burkhart Branch 3627

Date of Survey 9-23-08

Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (Page 3 of 3)

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.

Printed Names of Personnel Collecting Data: Abby Lynn + Travis Howell

Surveyor's Signature: *Abby Lynn* Date of Survey: 9-23-08

Organization: ERC Position: Field Manager

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Burkhart Branch</u> Waterbody ID: <u>3627</u> Site #: <u>3</u> Estimated Channel Incision: <u>0.15</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (<u>EPE</u> / PDOP / FOM) 01 UTM X <u>15S0571107</u> UTM Y: <u>4142015</u> +/- <u>6</u> (meters) 11 UTM X <u>15S0571200</u> UTM Y: <u>4142172</u> +/- <u>8</u> (meters) Average Stream Width: <u>6.5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Abby Lynn and Travis Howell (AL & TH)</u>	Dissolved Oxygen
	Date: <u>9/23/2008</u> Time: <u>18:20</u>
	Dissolved Oxygen: <u>5.58</u> (mg/L)
	Dissolved Oxygen: <u>61.1</u> (% sat)
	Specific Cond: <u>404.6</u> (µS/cm)
	Water Temperature: <u>19.5</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	0
1	0.58	0.19	0.73	0.09	0.69	0.05	0.46	0.05	0.41	0.27	0.61	0.09	0.44	0.02	0.63	0.06	0.73	0.07	0.73	0.32	0.62	0.2
2	1.16	0.43	1.46	0.1	1.38	0.05	0.92	0.06	0.82	0.24	1.22	0.11	0.88	0.04	1.26	0.26	1.46	0.1	1.46	0.33	1.24	0.15
3	1.74	0.66	2.19	0.16	2.07	0.12	1.38	0.1	1.23	0.29	1.83	0.18	1.32	0.09	1.89	0.24	2.19	0.04	2.19	0.31	1.86	0.05
4	2.32	0.7	2.92	0.02	2.76	0.14	1.84	0.15	1.64	0.28	2.44	0.17	1.76	0.1	2.52	0.22	2.92	0.11	2.92	0.41	2.48	0.16
5	2.9	0.68	3.65	0.09	3.45	0.02	2.3	0.12	2.05	0.3	3.05	0.14	2.2	0.07	3.15	0.18	3.65	0.14	3.65	0.5	3.1	0.21
6	3.48	0.65	4.38	0.03	4.14	0.06	2.76	0.06	2.46	0.34	3.66	0.1	2.64	0.04	3.78	0.18	4.38	0.09	4.38	0.5	3.72	0.02
7	4.06	0.67	5.11	0.05	4.83	0.06	3.22	0.11	2.87	0.33	4.27	0.09	3.08	0	4.41	0.13	5.11	0.07	5.11	0.47	4.34	0
8	4.64	0.48	5.84	0.07	5.52	0.09	3.68	0.09	3.28	0.25	4.88	0.05	3.52	0.05	5.04	0.07	5.84	0.1	5.84	0.29	4.96	0.03
9	5.22	0.52	6.57	0.14	6.21	0.07	4.14	0.03	3.69	0.17	5.49	0.1	3.96	0.04	5.67	0.07	6.57	0.02	6.57	0.2	5.58	0.07
Right Bank	5.8	0	7.3	0	6.9	0	4.6	0	4.1	0	6.1	0	4.4	0	6.3	0	7.3	0	7.3	0	6.2	0
Feature Type <small>(riffle, run, or pool)</small>	Pool		Riffle		Riffle		Riffle		Run		Riffle		Riffle		Run		Riffle		Pool		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 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Travis R. Howell

Date: 9/23/2008



