



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 0057 Bear Creek

Submitted by

MEC Water Resources

To

Missouri Department of Natural Resources

Water Protection Program

On

October 17, 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):	Bear Cr.
Missouri Water Body Identification (WBID) Number:	0057
8-digit HUC:	07110002
County(ies), Listed Upstream to Downstream:	Scotland, Clark
Upstream Legal Description (from Table H):	33, 65N, 10W
Downstream Legal Description (from Table H):	Mouth
Number of sites evaluated:	12
List all site numbers, <u>consecutively upstream to downstream</u> :	site 9: CRD 325 crossing site 10: CRD 326 crossing site 11: 50m downstream of site 10 site 12: CRD 328 crossing
Site 1: County Rd 1164 crossing	Site 5: CRD 112 crossing
Site 2: County Rd 156 crossing	Site 6: CRD 103 crossing
Site 3: R+L crossing	Site 7: CRD 106 crossing
Site 4: 50m downstream of site 3	Site 8: 50m downstream of site 7

Include a Site Location Map(s). The map must include all requirements detailed in the *Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol* (Section IV.D.8.a).

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

Facility Name(s) and Permit Number(s):
Gorin R-III School District
MO 0091677

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

Name of Surveyor: Renee Martin	Telephone Number: 573 - 443 - 4100
Organization/Employer: MEC Water Resources / AESolutions	

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: Renee Martin Date: 10/13/08
SKW 10-13-08

WBID # 0057

Site # 01

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>9/24/08 1225</u>	Location Description (e.g., road crossing):
Stream Name: <u>Bear Creek</u>	<u>County Rd 164 crossing</u>
Current Weather Conditions: <u>partly cloudy</u>	Facility Name(s): <u>Gorin R-III School District</u>
Weather Conditions for Past 10 days: <u>0.43" of rain</u>	Permit Number(s): <u>mo 0091677</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>0584606</u>	Northing (UTM Y): <u>4471379</u>	Horizontal Accuracy: <u>28</u> ^{ft} Meters <u>ft</u>		
Site 11	Easting (UTM X): <u>0584689</u>	Northing (UTM Y): <u>4471293</u>	Horizontal Accuracy: <u>17</u> ^{ft} Meters <u>ft</u>		

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>008</u>	<u>Upstream</u>	<u>009</u>	<u>downstream</u>		

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.) <p style="text-align: center;"><u>N/A</u> <u>SRW</u></p>				

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Stream Name & WBID # Bear Creek # 0057
 Site # 01

Date of Survey 9/24/08

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 checked="" type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: <i>private property - pasture Heavy erosion on both banks</i>				

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

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

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

<input type="checkbox"/> % Cobble	<input type="checkbox"/> % Gravel	<input type="checkbox"/> % Sand	<input type="checkbox"/> % Silt	<input checked="" type="checkbox"/> 100 % Mud/Clay	<input type="checkbox"/> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

none

Water Characteristics*: (Mark all that apply.)

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

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

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Stream Name & WBID # Bear Creek #0057

Date of Survey 9/24/08

Site # 01

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)
		N/A	SRW		

Comments: (Please record any additional comments here.)

N/A SRW

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik + Jonathon Witte

Surveyor's Signature: Jennifer Hrabik Date of Survey: 9/24/08

Organization: AE Solutions Position: Environmental Specialist

SRW 10-15-08

7/24

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Bear Creek</u> Waterbody ID: <u>0057</u> Site #: <u>0057_01</u> Estimated Channel Incision: <u>0.30</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>584606</u> UTM Y: <u>4471379</u> +/- <u>28</u> (feet) 11 UTM X: <u>584689</u> UTM Y: <u>4471293</u> +/- <u>17</u> (feet) Average Stream Width: <u>3.3</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>JRH + JW</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>9/24/2008</u> Time: <u>12:25</u> Dissolved Oxygen: <u>5.47</u> (mg/L) Dissolved Oxygen: <u>61.2</u> (% sat) Specific Cond: <u>138</u> (µS/cm) Water Temperature: <u>20.9</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	
	1	0.12	0.05	0.17	0.65	0.43	0.08	0.26	0.05	0.30	0.11	0.35	0.09	0.38	0.08	0.38	0.12	0.45	0.12	0.34	0.29	0.49	0.10
	2	0.24	0.10	0.34	0.72	0.86	0.12	0.52	0.10	0.60	0.17	0.70	0.22	0.76	0.16	0.76	0.16	0.90	0.18	0.68	0.33	0.98	0.17
	3	0.36	0.17	0.51	0.86	1.29	0.17	0.78	0.21	0.90	0.32	1.05	0.38	1.14	0.23	1.14	0.20	1.35	0.34	1.02	0.58	1.47	0.22
	4	0.48	0.22	0.68	0.91	1.72	0.19	1.04	0.27	1.20	0.35	1.40	0.43	1.52	0.33	1.52	0.25	1.80	0.37	1.36	0.60	1.96	0.23
	5	0.60	0.23	0.85	0.93	2.15	0.19	1.30	0.29	1.50	0.28	1.75	0.40	1.90	0.37	1.90	0.20	2.25	0.36	1.70	0.83	2.45	0.22
	6	0.72	0.28	1.02	0.82	2.58	0.23	1.56	0.29	1.80	0.28	2.10	0.25	2.28	0.38	2.28	0.18	2.70	0.30	2.04	0.64	2.94	0.24
	7	0.84	0.25	1.19	0.75	3.01	0.13	1.82	0.27	2.10	0.22	2.45	0.22	2.66	0.30	2.66	0.23	3.15	0.19	2.38	0.31	3.43	0.22
	8	0.96	0.17	1.36	0.71	3.44	0.13	2.08	0.22	2.40	0.14	2.80	0.19	3.04	0.23	3.04	0.22	3.60	0.07	2.72	0.20	3.92	0.15
9	1.08	0.15	1.53	0.61	3.87	0.09	2.34	0.18	2.70	0.05	3.15	0.11	3.42	0.17	3.42	0.12	4.05	0.03	3.06	0.12	4.41	0.17	
Right Bank		1.20	0.00	1.70	0.00	4.30	0.00	2.60	0.00	3.00	0.00	3.50	0.00	3.80	0.00	3.80	0.00	4.50	0.00	3.40	0.00	4.90	0.00
Feature Type <small>(riffle, run, or pool)</small>		Riffle		Pool		Run																	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.
 Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)
 Mark dry depth measurements as 0; record actual measurements to 0.1 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: _____ Date: 9/24/2008

WBID # 0057

Site # 02

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>9/24/08 1305</u>	Location Description (e.g., road crossing): <u>County Rd 156 crossing</u>
Stream Name: <u>Bear Creek</u>	
Current Weather Conditions: <u>mostly sunny</u>	Facility Name(s): <u>Garin RTH School District</u>
Weather Conditions for Past 10 days: <u>0.43" of rain</u>	Permit Number(s): <u>MO 0091677</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>0585522</u>	Northing (UTM Y): <u>4469743</u>	Horizontal Accuracy: (EPE / FOM / PDOP)	<u>21</u>	<u>Meters</u>
Site 11	Easting (UTM X): <u>0585416</u>	Northing (UTM Y): <u>4469686</u>	Horizontal Accuracy: (EPE / FOM / PDOP)	<u>30</u>	<u>Meters</u>

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>010</u>	<u>Upstream fence</u>	<u>011</u>	<u>downstream</u>		

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.)

N/A SAW

JRW

Stream Name & WBID # Bear Creek #0057

Date of Survey 9/24/08

Site # 02

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:
private property
Heavy erosion on both banks

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

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

N/A saw

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

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

None

Water Characteristics*: (Mark all that apply.)

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

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

JRH

Stream Name & WBID # Bear Creek #0057
 Site # 02

Date of Survey 9/24/08

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)
		N/A	SRW		

Comments: (Please record any additional comments here.)

N/A SRW

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

Printed Names of Personnel Collecting Data: Jennifer Habick + Jonathon Witte

Surveyor's Signature: Jennifer Habick Date of Survey: 9/24/08

Organization: AE Solutions Position: Environmental Specialist

SRW 10-15-08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Bear Creek</u> Waterbody ID: <u>0057</u> Site #: <u>0057_02</u> Estimated Channel Incision: <u>0.20</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>585522</u> UTM Y: <u>4469743</u> +/- <u>21</u> (feet) 11 UTM X: <u>585416</u> UTM Y: <u>4469686</u> +/- <u>30</u> (feet) Average Stream Width: <u>3.4</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>JRH + JW</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>9/24/2008</u> Time: <u>13:05</u> Dissolved Oxygen: <u>5.16</u> (mg/L) Dissolved Oxygen: <u>58.1</u> (% sat) Specific Cond: <u>148</u> (µS/cm) Water Temperature: <u>21.0</u> (°C)
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Transect Cross-Section

Station		01		02		03		04		05		06		07		08		09		10		11	
		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1	0.36	0.05	0.23	0.09	0.29	0.36	0.41	0.15	0.43	0.06	0.30	0.08	0.24	0.11	0.23	0.10	0.43	0.12	0.38	0.12	0.47	0.38
	2	0.72	0.13	0.46	0.20	0.58	0.41	0.82	0.28	0.86	0.18	0.60	0.17	0.48	0.18	0.46	0.15	0.86	0.20	0.76	0.34	0.94	0.42
	3	1.08	0.20	0.69	0.27	0.87	0.43	1.23	0.44	1.29	0.24	0.90	0.23	0.72	0.18	0.69	0.21	1.29	0.28	1.14	0.44	1.41	0.48
	4	1.44	0.30	0.92	0.30	1.16	0.47	1.64	0.49	1.72	0.35	1.20	0.19	0.96	0.20	0.92	0.32	1.72	0.33	1.52	0.48	1.88	0.51
	5	1.80	0.30	1.15	0.31	1.45	0.40	2.05	0.38	2.15	0.33	1.50	0.16	1.20	0.19	1.15	0.32	2.15	0.36	1.90	0.44	2.35	0.50
	6	2.16	0.26	1.38	0.30	1.74	0.32	2.46	0.31	2.58	0.34	1.80	0.16	1.44	0.18	1.38	0.30	2.58	0.34	2.28	0.36	2.82	0.43
	7	2.52	0.23	1.61	0.26	2.03	0.26	2.87	0.30	3.01	0.29	2.10	0.16	1.68	0.18	1.61	0.31	3.01	0.35	2.66	0.26	3.29	0.33
	8	2.88	0.18	1.84	0.23	2.32	0.18	3.28	0.25	3.44	0.22	2.40	0.13	1.92	0.16	1.84	0.24	3.44	0.25	3.04	0.18	3.76	0.26
	9	3.24	0.19	2.07	0.17	2.61	0.09	3.69	0.22	3.87	0.11	2.70	0.06	2.16	0.12	2.07	0.07	3.87	0.18	3.42	0.07	4.23	0.10
Right Bank		3.60	0.00	2.30	0.00	2.90	0.00	4.10	0.00	4.30	0.00	3.00	0.00	2.40	0.00	2.35	0.00	4.30	0.00	3.80	0.00	4.70	0.00
Feature Type <small>(riffle, run, or pool)</small>		Run	Run	Pool	Pool	Pool	Pool																

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width.
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.
 Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)
 Mark dry depth measurements as 0; record actual measurements to 0.1 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: _____ Date: 9/24/2008

WBID # 0057

Site # 03

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>9/24/08 1345</u>	Location Description (e.g., road crossing):
Stream Name: <u>Bear Creek</u>	<u>Rt W Crossing</u>
Current Weather Conditions: <u>mostly sunny</u>	Facility Name(s): <u>Spring Hill School District</u>
Weather Conditions for Past 10 days: <u>0.43" of rain</u>	Permit Number(s): <u>MO 00911677</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>05859162</u>	Northing (UTM Y): <u>4468075</u>	Horizontal Accuracy: <u>20</u> Meters (EPE / FOM / PDOP) <u>424</u>
Site 11	Easting (UTM X): <u>05859977</u>	Northing (UTM Y): <u>4467905</u>	Horizontal Accuracy: <u>22</u> Meters (EPE / FOM / PDOP) <u>424</u>

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>012</u>	<u>upstream</u>	<u>013</u>	<u>downstream</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.) <u>N/A SRW</u>				

Stream Name & WBID # Bear Creek #0057

Date of Survey 9/24/08

Site # 03

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 type="checkbox"/> Fence	<input checked="" type="checkbox"/> No trespass sign ①	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:
*private property
 Heavily eroded banks*
Don't left descending bank - purple paint

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

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

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

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

None

Water Characteristics*: (Mark all that apply.)

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

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

gen

Stream Name & WBID # Bear Creek #0057
 Site # 03

Date of Survey 9/24/08

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)
		N/A	SRW		

Comments: (Please record any additional comments here.)

Petroleum Pipelines (3) at Transect 2
 Pools at Transects 1-5 caused by Beaver dam

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik + Jonathon Witte
 Surveyor's Signature: Jennifer Hrabik Date of Survey: 9/24/08
 Organization: AE Solutions Position: Environmental Specialist
 SRW 10-15-08

SRW

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Bear Creek</u> Waterbody ID: <u>0057</u> Site #: <u>0057_03</u> Estimated Channel Incision: <u>0.30</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>585962</u> UTM Y: <u>4468070</u> +/- <u>20</u> (feet) 11 UTM X: <u>585997</u> UTM Y: <u>4467905</u> +/- <u>22</u> (feet) Average Stream Width: <u>5.5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>JRH + JW</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>9/24/2008</u> Time: <u>13:45</u> Dissolved Oxygen: <u>4.58</u> (mg/L) Dissolved Oxygen: <u>51.9</u> (% sat) Specific Cond: <u>168</u> (µS/cm) Water Temperature: <u>20.7</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	0.55	0.20	0.60	0.23	0.75	0.18	0.72	0.43	0.56	0.20	0.49	0.17	0.50	0.10	0.38	0.15	0.49	0.10	0.55	0.17	0.46	0.39
	2	1.10	0.28	1.20	0.40	1.50	0.33	1.44	0.64	1.12	0.45	0.98	0.19	1.00	0.18	0.76	0.24	0.98	0.23	1.10	0.12	0.92	0.22
	3	1.65	0.36	1.80	0.77	2.25	0.62	2.16	0.92	1.68	0.54	1.47	0.18	1.50	0.13	1.14	0.30	1.47	0.40	1.65	0.16	1.38	0.20
	4	2.20	0.54	2.40	>1.00	3.00	0.74	2.88	0.82	2.24	0.79	1.96	0.12	2.00	0.18	1.52	0.27	1.96	0.50	2.20	0.20	1.84	0.17
	5	2.75	0.56	3.00	>1.00	3.75	>1.00	3.60	0.75	2.80	0.84	2.45	0.10	2.50	0.16	1.90	0.27	2.45	0.37	2.75	0.22	2.30	0.14
	6	3.30	0.44	3.60	>1.00	4.50	>1.00	4.32	0.50	3.36	0.63	2.94	0.17	3.00	0.16	2.28	0.21	2.94	0.32	3.30	0.23	2.76	0.10
	7	3.85	0.49	4.20	>1.00	5.25	0.91	5.04	0.48	3.92	0.46	3.43	0.24	3.50	0.24	2.66	0.22	3.43	0.31	3.85	0.16	3.22	0.08
	8	4.40	0.62	4.80	>1.00	6.00	0.76	5.76	0.30	4.48	0.26	3.92	0.22	4.00	0.18	3.04	0.08	3.92	0.20	4.40	0.15	3.68	0.09
	9	4.95	0.60	5.40	>1.00	6.75	0.77	6.48	0.14	5.04	0.12	4.41	0.13	4.50	0.13	3.42	0.02	4.41	0.13	4.95	0.06	4.14	0.06
Right Bank		5.50	0.00	6.00	0.00	7.50	0.00	7.20	0.00	5.60	0.00	4.90	0.00	5.00	0.00	3.80	0.00	4.90	0.00	5.50	0.00	4.60	0.00
Feature Type <small>(riffle, run, or pool)</small>		Pool		Pool		Pool		Pool		Pool		Run		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 0.1 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: _____ Date: 9/24/2008

WBID # 0057
 Site # 04

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>9/24/08 1415</u>	Location Description (e.g., road crossing):
Stream Name: <u>Bear Creek</u>	<u>50m downstream of site 3</u>
Current Weather Conditions: <u>mostly cloudy</u>	Facility Name(s): <u>Gorin RTII School District</u>
Weather Conditions for Past 10 days: <u>243" of rain</u>	Permit Number(s): <u>MO 0091677</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>0585933</u>	Northing (UTM Y): <u>4467874</u>	Horizontal Accuracy: (EPE / FOM / PDOP)	<u>29</u> Meters	<u>A</u>
Site 11	Easting (UTM X): <u>0585779</u>	Northing (UTM Y): <u>4467812</u>	Horizontal Accuracy: (EPE / FOM / PDOP)	<u>22</u> Meters	<u>A</u>

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>014</u>	<u>upstream</u>	<u>015</u>	<u>downstream</u>		

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.)				
<u>N/A SAW</u>				

Stream Name & WBID # Bear Creek # 0057

Date of Survey 9/24/08

Site # 04

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 type="checkbox"/> Fence	<input checked="" type="checkbox"/> No trespass sign [Ⓛ]	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:
private property heavily eroded banks *Ⓛ purple paint on both banks*

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: <i>N/A SRW</i>			

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

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

none

Water Characteristics*: (Mark all that apply.)

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

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

300

Stream Name & WBID # Bear Creek # 0057

Date of Survey 9/24/08

Site # 04

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)
			N/A	SRW	

Comments: (Please record any additional comments here.)

Pools at Transects 1-4 caused by beaver dam

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

Printed Names of Personnel Collecting Data: Jennifer Habick + Jonathon Witte

Surveyor's Signature: Jennifer Habick Date of Survey: 9/24/08

Organization: AE Solutions Position: Environmental Specialist

SRW 10-15-08

JHW

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Bear Creek</u> Waterbody ID: <u>0057</u> Site #: <u>0057_04</u> Estimated Channel Incision: <u>0.30</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>585933</u> UTM Y: <u>4467874</u> +/- <u>29</u> (feet) 11 UTM X: <u>585779</u> UTM Y: <u>4467812</u> +/- <u>22</u> (feet) Average Stream Width: <u>5.3</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>JRH + JW</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>9/24/2008</u> Time: <u>14:15</u> Dissolved Oxygen: <u>6.06</u> (mg/L) Dissolved Oxygen: <u>66.8</u> (% sat) Specific Cond: <u>161</u> (µS/cm) Water Temperature: <u>20.5</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	0.45	0.25	0.57	0.25	0.61	0.15	0.57	0.14	0.13	0.11	0.55	0.13	0.52	0.24	0.65	0.26	0.62	0.12	0.64	0.13	0.53	0.05
	2	0.90	0.34	1.14	0.27	1.22	0.19	1.14	0.12	0.26	0.22	1.10	0.18	1.04	0.41	1.30	0.38	1.24	0.33	1.28	0.17	1.06	0.18
	3	1.35	0.43	1.71	0.35	1.83	0.29	1.71	0.15	0.39	0.25	1.65	0.27	1.56	0.73	1.95	0.32	1.86	0.46	1.92	0.12	1.59	0.48
	4	1.80	0.46	2.28	0.34	2.44	0.39	2.28	0.25	0.52	0.22	2.20	0.33	2.08	0.86	2.60	0.34	2.48	0.38	2.56	0.08	2.12	0.41
	5	2.25	0.45	2.85	0.33	3.05	0.43	2.85	0.29	0.65	0.25	2.75	0.30	2.60	0.77	3.25	0.38	3.10	0.29	3.20	0.06	2.65	0.33
	6	2.70	0.38	3.42	0.23	3.66	0.40	3.42	0.39	0.78	0.17	3.30	0.25	3.12	0.57	3.90	0.44	3.72	0.22	3.84	0.03	3.18	0.23
	7	3.15	0.30	3.99	0.21	4.27	0.33	3.99	0.40	0.91	0.12	3.85	0.23	3.64	0.38	4.55	0.52	4.34	0.17	4.48	0.02	3.71	0.27
	8	3.60	0.20	4.56	0.35	4.88	0.20	4.56	0.30	1.04	0.09	4.40	0.19	4.16	0.17	5.20	0.50	4.96	0.13	5.12	0.20	4.24	0.15
	9	4.05	0.16	5.13	0.38	5.49	0.18	5.13	0.24	1.17	0.04	4.95	0.12	4.68	0.12	5.85	0.30	5.58	0.11	5.76	0.14	4.77	0.05
Right Bank		4.50	0.00	5.70	0.00	6.10	0.00	5.70	0.00	1.30	0.00	5.50	0.00	5.20	0.00	6.50	0.00	6.20	0.00	6.40	0.00	5.30	0.00
Feature Type		Pool	Pool	Pool	Pool	Pool	Pool	Run	Run	Run	Run	Run	Run	Pool	Pool	Run	Run	Run	Riffle	Riffle	Run	Run	Run

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width.
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.
 Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)
 Mark dry depth measurements as 0; record actual measurements to 0.1 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: _____ Date: 9/24/2008

WBID # 0057

Site # 05

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>9/24/08 1510</u>	Location Description (e.g., road crossing): <u>CRD 112 crossing</u>
Stream Name: <u>Bear Creek</u>	
Current Weather Conditions: <u>mostly sunny</u>	Facility Name(s): <u>Gorin RIT School District</u>
Weather Conditions for Past 10 days: <u>0.13" of rain</u>	Permit Number(s): <u>MD 0091677</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>0586765</u>	Northing (UTM Y): <u>4465712</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>15</u> Meters <u>ft</u>
Site 11	Easting (UTM X): <u>0586776</u>	Northing (UTM Y): <u>4465912</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>21</u> Meters <u>ft</u>

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>016</u>	<u>upstream</u>	<u>017</u>	<u>dnstream</u>	<u>018</u>	<u>low H2O crossing</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.) <p style="text-align: center;"><u>N/A</u> <u>SRW</u></p>				

Stream Name & WBID # Bear Cr. #0057

Date of Survey 9/24/08

Site # 05

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: Fence at Transect 1
private property heavily eroded banks

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

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

low H₂O crossing @ Transect 1

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

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

Sparse benthic algae at Transect 1

Water Characteristics*: (Mark all that apply.)

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

@ transects 3-4 due to log jams

*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 # Bear Creek #0057

Date of Survey 9/24/08

Site # 05

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)
			N/A SRW		

Comments: (Please record any additional comments here.)

abundant woody debris in stream

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik + Jonathon Witte

Surveyor's Signature: Jennifer Hrabik Date of Survey: 9/24/08

Organization: AE Solutions Position: Environmental Specialist

SRW 10-15-08

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WBID # 0057
 Site # 06

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>9/24/08 1555</u>	Location Description (e.g., road crossing): <u>CRD ¹⁰³ _{30M} crossing</u>
Stream Name: <u>Bear Creek</u>	
Current Weather Conditions: <u>mostly sunny</u>	Facility Name(s): <u>Griffin RIII School District</u>
Weather Conditions for Past 10 days: <u>0.43" of rain</u>	Permit Number(s): <u>MO 0091677</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>0587723</u>	Northing (UTM Y): <u>4461029</u>	Horizontal Accuracy: <u>28</u> Meters <u>ft</u> (EPE / FOM / PDOP)
Site 11	Easting (UTM X): <u>0587881</u>	Northing (UTM Y): <u>4463906</u>	Horizontal Accuracy: <u>30</u> Meters <u>ft</u> (EPE / FOM / PDOP)

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>019</u>	<u>upstream</u>	<u>020</u>	<u>downstream</u>	<u>021</u>	<u>low H₂O crossing</u>

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.) <u>N/A SRW</u>				

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Stream Name & WBID # Bear Creek #0057

Date of Survey 9/24/08

Site # 06

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 type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:

*private property
heavily eroded banks*

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

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

low H₂O crossing at Transect 1

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

<u>20</u> % Cobble	<u>20</u> % Gravel	<u>10</u> % Sand	<u>—</u> % Silt	<u>50</u> % Mud/Clay	<u>—</u> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

none

Water Characteristics*: (Mark all that apply.)

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

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

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Stream Name & WBID # Bear Creek #0052

Date of Survey 9/24/08

Site # 06

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)
			N/A SRW		

Comments: (Please record any additional comments here.)

~~lot of~~ woody debris in water abundant

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

Printed Names of Personnel Collecting Data: Jennifer Habik + Jonathon Witte

Surveyor's Signature: Jennifer Habik Date of Survey: 9/24/08

Organization: AE Solutions Position: Environmental Specialist

SRW 10-15-08

2008

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Bear Creek</u> Waterbody ID: <u>0057</u> Site #: <u>0057_06</u> Estimated Channel Incision: <u>0.20</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>587723</u> UTM Y: <u>4464029</u> +/- <u>28</u> (feet) 11 UTM X: <u>587881</u> UTM Y: <u>4463906</u> +/- <u>30</u> (feet) Average Stream Width: <u>6.2</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>JRH + JW</u>	Dissolved Oxygen
	Date: <u>9/24/2008</u> Time: <u>15:55</u>
	Dissolved Oxygen: <u>5.60</u> (mg/L)
	Dissolved Oxygen: <u>63.3</u> (% sat)
	Specific Cond: <u>122</u> (µS/cm)
	Water Temperature: <u>20.8</u> (°C)

Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1		0.90	0.02	0.76	0.36	0.56	0.12	0.65	0.19	0.64	0.22	0.53	0.25	0.56	0.23	0.55	0.07	0.58	0.12	0.42	0.11	0.71	0.26
2		1.80	0.12	1.52	0.37	1.12	0.30	1.30	0.30	1.28	0.25	1.06	0.34	1.12	0.38	1.10	0.28	1.16	0.00	0.84	0.28	1.42	0.40
3		2.70	0.13	2.28	0.49	1.68	0.37	1.95	0.26	1.92	0.39	1.59	0.35	1.68	0.43	1.65	0.33	1.74	0.14	1.26	0.32	2.13	0.59
4		3.60	0.14	3.04	0.45	2.24	0.39	2.60	0.23	2.56	0.51	2.12	0.38	2.24	0.44	2.20	0.36	2.32	0.24	1.68	0.34	2.84	0.46
5		4.50	0.14	3.80	0.37	2.80	0.37	3.25	0.20	3.20	0.42	2.65	0.33	2.80	0.45	2.75	0.41	2.90	0.24	2.10	0.25	3.55	0.55
6		5.40	0.14	4.56	0.25	3.36	0.34	3.90	0.25	3.84	0.40	3.18	0.36	3.36	0.40	3.30	0.36	3.48	0.23	2.52	0.21	4.26	0.66
7		6.30	0.10	5.32	0.21	3.92	0.30	4.55	0.25	4.48	0.32	3.71	0.28	3.92	0.33	3.85	0.30	4.06	0.18	2.94	0.10	4.97	0.58
8		7.20	0.10	6.08	0.19	4.48	0.17	5.20	0.20	5.12	0.26	4.24	0.21	4.48	0.26	4.40	0.28	4.64	0.16	3.36	0.06	5.68	0.54
9		8.10	0.06	6.84	0.18	5.04	0.10	5.85	0.13	5.76	0.12	4.77	0.06	5.04	0.17	4.95	0.14	5.22	0.08	3.78	0.03	6.39	0.37
Right Bank		9.00	0.00	7.60	0.00	5.60	0.00	6.50	0.00	6.40	0.00	5.30	0.00	5.60	0.00	5.50	0.00	5.80	0.00	4.20	0.00	7.10	0.00
Feature Type		Riffle		Run																			

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.
 Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)
 Mark dry depth measurements as 0; record actual measurements to 0.1 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: _____ Date: 9/24/2008

WBID # 0057

Site # 02

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>9/24/08 11:45</u>	Location Description (e.g., road crossing): <u>CRD 106 crossing</u>
Stream Name: <u>Bear Creek</u>	
Current Weather Conditions: <u>mostly sunny</u>	Facility Name(s): <u>Gorin RIII School District</u>
Weather Conditions for Past 10 days: <u>0.43" of rain</u>	Permit Number(s): <u>MO 0091677</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>0588532</u>	Northing (UTM Y): <u>4462824</u>	Horizontal Accuracy: (EPE / FOM / PDOP)	<u>26</u> Meters	<u>ft</u>
Site 11	Easting (UTM X): <u>0588664</u>	Northing (UTM Y): <u>4462750</u>	Horizontal Accuracy: (EPE / FOM / PDOP)	<u>17</u> Meters	<u>ft</u>

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>022</u>	<u>upstream</u>	<u>023</u>	<u>downstream</u>	<u>024</u>	<u>low H₂O crossing</u>

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.)

N/A SAW

Stream Name & WBID # Bear Creek #0057

Date of Survey 9/24/08

Site # 07

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 type="checkbox"/> Fence	<input checked="" type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:

*private property
Heavy erosion on both banks*

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

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

low H₂O crossing at Transect 1

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

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

none

Water Characteristics*: (Mark all that apply.)

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

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

Stream Name & WBID # Bear Creek #0057
 Site # 07

Date of Survey 9/24/08

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)
		N/A	SRW		

Comments: (Please record any additional comments here.)

N/A SRW

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik + Jonathon Witte
 Surveyor's Signature: Jennifer Hrabik Date of Survey: 9/24/08
 Organization: AE Solutions Position: Environmental Specialist
 10-15-08

2/24

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Bear Creek</u> Waterbody ID: <u>0057</u> Site #: <u>0057_07</u> Estimated Channel Incision: <u>0.20</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>588532</u> UTM Y: <u>4462824</u> +/- <u>26</u> (feet) 11 UTM X: <u>588664</u> UTM Y: <u>4462750</u> +/- <u>17</u> (feet) Average Stream Width: <u>6.6</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>JRH + JW</u>	Dissolved Oxygen
	Date: <u>9/24/2008</u> Time: <u>16:45</u>
	Dissolved Oxygen: <u>6.45</u> (mg/L)
	Dissolved Oxygen: <u>71.8</u> (% sat)
	Specific Cond: <u>124</u> (µS/cm)
	Water Temperature: <u>20.4</u> (°C)

Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
	Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1		0.57	0.06	0.71	0.19	0.74	0.54	0.75	0.45	0.64	0.31	0.44	0.17	0.72	0.03	0.75	0.19	0.58	0.07	0.63	0.18	0.72	0.24
2		1.14	0.09	1.42	0.44	1.48	0.76	1.50	0.90	1.28	0.46	0.88	0.23	1.44	0.47	1.50	0.34	1.16	0.18	1.26	0.57	1.44	>1.00
3		1.71	0.14	2.13	0.55	2.22	0.64	2.25	>1.00	1.92	0.51	1.32	0.26	2.16	0.61	2.25	0.38	1.74	0.17	1.89	0.79	2.16	>1.00
4		2.28	0.13	2.84	0.35	2.96	0.61	3.00	>1.00	2.56	0.67	1.76	0.26	2.88	0.75	3.00	0.42	2.32	0.24	2.52	0.97	2.88	0.93
5		2.85	0.15	3.55	0.53	3.70	0.54	3.75	>1.00	3.20	0.69	2.20	0.21	3.60	0.82	3.75	0.45	2.90	0.21	3.15	>1.00	3.60	0.44
6		3.42	0.13	4.26	0.56	4.44	0.38	4.50	>1.00	3.84	0.59	2.64	0.20	4.32	0.86	4.50	0.32	3.48	0.18	3.78	>1.00	4.32	0.37
7		3.99	0.13	4.97	0.49	5.18	0.43	5.25	>1.00	4.48	0.43	3.08	0.19	5.04	0.81	5.25	0.28	4.06	0.17	4.41	>1.00	5.04	0.55
8		4.56	0.12	5.68	0.40	5.92	0.34	6.00	>1.00	5.12	0.34	3.52	0.16	5.76	0.76	6.00	0.24	4.64	0.16	5.04	>1.00	5.76	0.68
9		5.13	0.11	6.39	0.31	6.66	0.24	6.75	>1.00	5.76	0.19	3.96	0.04	6.48	0.59	6.75	0.16	5.22	0.13	5.67	>1.00	6.48	0.60
	Right Bank	5.70	0.00	7.10	0.00	7.40	0.00	7.50	0.00	6.40	0.00	4.40	0.00	7.20	0.00	7.50	0.00	5.80	0.00	6.30	0.00	7.20	0.00
	Feature Type	Riffle		Run		Run		Pool		Pool		Run											

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.
 Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)
 Mark dry depth measurements as 0; record actual measurements to 0.1 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: _____ Date: 9/24/2008

WBID # 0057

Site # 08

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>Bear Cr 9/24/08 1710</u>	Location Description (e.g., road crossing): <u>50m downstream of site 7</u>
Stream Name: <u>Bear Creek</u>	
Current Weather Conditions: <u>mostly sunny</u>	Facility Name(s): <u>Gorin RTII School District</u>
Weather Conditions for Past 10 days: <u>0.43" of rain</u>	Permit Number(s): <u>M00091677</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>0588724</u>	Northing (UTM Y): <u>4462897</u>	Horizontal Accuracy: <u>26</u> ^{Meters} <u>±</u>
Site 11	Easting (UTM X): <u>0588825</u>	Northing (UTM Y): <u>4462746</u>	Horizontal Accuracy: <u>17</u> ^{Meters} <u>±</u>

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>025</u>	<u>upstream</u>	<u>026</u>	<u>downstream</u>		

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.) <p style="text-align: center;"><u>N/A</u> <u>SKW</u></p>				

Stream Name & WBID # Bear Creek #0057
 Site # 08

Date of Survey 9/24/08

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 type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:
private property
Heavy erosion on both banks

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: <u>N/A SRW</u>			

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

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

none

Water Characteristics*: (Mark all that apply.)

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

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

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Stream Name & WBID # Bear Creek #0057

Date of Survey 9/24/08

Site # 08

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)
			N/A	SRW	

Comments: (Please record any additional comments here.)

N/A SRW

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

Printed Names of Personnel Collecting Data: Jennifer Hrabik & Jonathon Witte

Surveyor's Signature: Jennifer Hrabik Date of Survey: 9/24/08

Organization: AE Solutions Position: Environmental Specialist

SRW 10-15-08

2008

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Bear Creek</u> Waterbody ID: <u>0057</u> Site #: <u>0057_08</u> Estimated Channel Incision: <u>0.20</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>588724</u> UTM Y: <u>4462697</u> +/- <u>26</u> (feet) 11 UTM X: <u>588825</u> UTM Y: <u>4462746</u> +/- <u>17</u> (feet) Average Stream Width: <u>7.1</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>JRH + JW</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>9/24/2008</u> Time: <u>17:10</u> Dissolved Oxygen: <u>4.35</u> (mg/L) Dissolved Oxygen: <u>48.2</u> (% sat) Specific Cond: <u>135</u> (µS/cm) Water Temperature: <u>20.5</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	0.72	0.08	0.52	0.69	0.78	0.16	0.75	0.29	0.73	0.25	0.84	0.39	0.73	0.39	0.65	0.28	0.73	0.20	0.72	>1.00	0.68	0.15
	2	1.44	0.24	1.04	>1.00	1.56	0.43	1.50	0.52	1.46	0.41	1.68	0.24	1.46	0.65	1.30	0.44	1.46	0.32	1.44	>1.00	1.36	0.33
	3	2.16	0.34	1.56	>1.00	2.34	0.55	2.25	0.63	2.19	0.29	2.52	0.08	2.19	0.66	1.95	0.78	2.19	0.43	2.16	0.69	2.04	0.28
	4	2.88	0.40	2.08	>1.00	3.12	0.59	3.00	0.69	2.92	0.26	3.36	0.36	2.92	0.68	2.60	0.88	2.92	0.46	2.88	0.50	2.72	0.29
	5	3.60	0.50	2.60	>1.00	3.90	0.44	3.75	0.71	3.65	0.21	4.20	0.61	3.65	0.64	3.25	0.80	3.65	0.50	3.60	0.46	3.40	0.23
	6	4.32	0.64	3.12	>1.00	4.68	0.40	4.50	0.59	4.38	0.47	5.04	0.76	4.38	0.53	3.90	0.80	4.38	0.48	4.32	0.21	4.08	0.22
	7	5.04	0.55	3.64	>1.00	5.46	0.50	5.25	0.43	5.11	0.41	5.88	0.78	5.11	0.43	4.55	0.87	5.11	0.45	5.04	0.14	4.76	0.18
	8	5.76	0.49	4.16	0.73	6.24	0.37	6.00	0.33	5.84	0.28	6.72	0.55	5.84	0.36	5.20	0.91	5.84	0.29	5.76	0.12	5.44	0.06
9	6.48	0.41	4.68	0.28	7.02	0.18	6.75	0.19	6.57	0.07	7.56	0.37	6.57	0.28	5.85	0.75	6.57	0.16	6.48	0.11	6.12	0.01	
Right Bank		7.20	0.00	5.20	0.00	7.80	0.00	7.50	0.00	7.30	0.00	8.40	0.00	7.30	0.00	6.50	0.00	7.30	0.00	7.20	0.00	6.80	0.00
	Feature Type <small>(riffle, run, or pool)</small>	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Pool	Run	Run	Pool	Pool										

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.
 Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)
 Mark dry depth measurements as 0; record actual measurements to 0.1 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: _____ Date: 9/24/2008

WBID # 0057

Site # 09

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>9.25.08</u> <u>0800</u>	Location Description (e.g., road crossing):
Stream Name: <u>Bear Creek</u>	<u>CRD 325 Crossing</u>
Current Weather Conditions: <u>60°F, Clear</u>	Facility Name(s): <u>Gorin RTTE School District</u>
Weather Conditions for Past 10 days: <u>0.43" of rain</u>	Permit Number(s): <u>MO 0091677</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>0590908</u>	Northing (UTM Y): <u>4460948</u>	Horizontal Accuracy: <u>21</u> ^{JCH} Meters <u>fd</u> (EPE / FOM / PDOP)
Site 11	Easting (UTM X): <u>0591019</u>	Northing (UTM Y): <u>4460852</u>	Horizontal Accuracy: <u>18</u> ^{JCH} Meters <u>fd</u> (EPE / FOM / PDOP)

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>027</u>	<u>Up Stream</u>	<u>028</u>	<u>Down Stream</u>		

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.)

N/A

Stream Name & WBID # Bear Creek # 0057

Date of Survey 9/25/08

Site # 09

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 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 checked="" type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: <u>row crop</u>
Comments: <u>private property</u> <u>Riparian ~ 30m on north bank, > 50m on south bank</u>				

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

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

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

<u>0</u> % Cobble	<u>5</u> % Gravel	<u>15</u> % Sand	<u>15</u> % Silt	<u>65</u> % Mud/Clay	<u>0</u> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

No plants / grasses
Algal growth uncommon

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 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 # Bear Creek #0057

Date of Survey 9/25/08

Site # 09

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)
		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.

Printed Names of Personnel Collecting Data: Jennifer Arabick + Jonathon Witte

Surveyor's Signature: Jennifer Arabick Date of Survey: 9/25/08

Organization: AE Solutions Position: Environmental Specialist

SRW 10-15-08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Bear Creek</u> Waterbody ID: <u>0057</u> Site #: <u>0057_09</u> Estimated Channel Incision: <u>0.10</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>590908</u> UTM Y: <u>4460948</u> +/- <u>21</u> (feet) 11 UTM X: <u>591019</u> UTM Y: <u>4460852</u> +/- <u>18</u> (feet) Average Stream Width: <u>6.0</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>JRH + JW</u>	Dissolved Oxygen Date: <u>9/25/2008</u> Time: <u>8:00</u> Dissolved Oxygen: <u>6.45</u> (mg/L) Dissolved Oxygen: <u>68.6</u> (% sat) Specific Cond: <u>135.6</u> (µS/cm) Water Temperature: <u>18.5</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	0
	1	0.43	0.28	0.59	0.23	0.51	0.45	0.57	0.15	0.61	0.50	0.62	0.24	0.72	0.23	0.73	0.34	0.55	0.34	0.61	0.21	0.64	0.40
	2	0.86	0.41	1.18	0.21	1.02	0.36	1.14	0.12	1.22	0.63	1.24	0.43	1.44	0.19	1.46	0.26	1.10	0.28	1.22	0.19	1.28	0.42
	3	1.29	0.39	1.77	0.18	1.53	0.47	1.71	0.14	1.83	0.66	1.86	0.50	2.16	0.16	2.19	0.24	1.65	0.34	1.83	0.17	1.92	0.28
	4	1.72	0.32	2.36	0.22	2.04	0.45	2.28	0.31	2.44	0.63	2.48	0.50	2.88	0.14	2.92	0.18	2.20	0.30	2.44	0.18	2.56	0.16
	5	2.15	0.34	2.95	0.22	2.55	0.49	2.85	0.25	3.05	0.63	3.10	0.47	3.60	0.13	3.65	0.10	2.75	0.23	3.05	0.19	3.20	0.09
	6	2.58	0.30	3.54	0.20	3.06	0.52	3.42	0.25	3.66	0.68	3.72	0.40	4.32	0.17	4.38	0.14	3.30	0.26	3.66	0.18	3.84	0.10
	7	3.01	0.21	4.13	0.17	3.57	0.44	3.99	0.31	4.27	0.66	4.34	0.36	5.04	0.19	5.11	0.10	3.85	0.24	4.27	0.20	4.48	0.12
	8	3.44	0.17	4.72	0.14	4.08	0.12	4.56	0.40	4.88	0.35	4.96	0.35	5.76	0.20	5.84	0.18	4.40	0.24	4.88	0.20	5.12	0.13
	9	3.87	0.08	5.31	0.08	4.59	0.05	5.13	0.44	5.49	0.13	5.58	0.11	6.48	0.16	6.57	0.16	4.95	0.13	5.49	0.20	5.76	0.13
Right Bank		4.30	0.00	5.90	0.00	5.10	0.00	5.70	0.00	6.10	0.00	6.20	0.00	7.20	0.00	7.30	0.00	5.50	0.00	6.10	0.00	6.40	0.00
Feature Type		Run		Run		Run		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 0.1 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: _____ Date: 9/25/2008

WBID # 0057

Site # 10

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>9.25.08</u> <u>0840</u>	Location Description (e.g., road crossing): <u>CRD 326 Crossing</u>
Stream Name: <u>Bear Creek</u>	Facility Name(s): <u>Gorin RTIL School District</u>
Current Weather Conditions: <u>60°F, Clear</u>	Permit Number(s): <u>MO 0091677</u>
Weather Conditions for Past 10 days: <u>0.43" of rain</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>0592449</u>	Northing (UTM Y): <u>4460145</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>95</u> Meters <u>fs</u>
Site 11	Easting (UTM X): <u>0592545</u>	Northing (UTM Y): <u>4460025</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>19</u> Meters <u>fs</u>

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>029</u>	<u>Up Stream</u>	<u>030</u>	<u>On Stream</u>		

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.)
N/A

4/24

Stream Name & WBID # Bear Creek #0057

Date of Survey 9/25/08

Site # 10

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 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 checked="" type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: <u>row coop</u>
Comments: <u>private property</u> <u>Riparian > 50m</u>				

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

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

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

<u>0</u> % Cobble	<u>5</u> % Gravel	<u>45</u> % Sand	<u>10</u> % Silt	<u>40</u> % Mud/Clay	<u>0</u> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

<u>Few aq. plants + stems</u>	<u>lots of woody debris</u>
<u>Algal growth uncommon</u>	

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input 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 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.

JEW

Stream Name & WBID # Bear Creek #0057

Date of Survey 9/25/08

Site # 10

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)
		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.

Printed Names of Personnel Collecting Data: Jennifer Hrabik + Jonathon Witte

Surveyor's Signature: Jennifer Hrabik Date of Survey: 9/25/08

Organization: AE Solutions Position: Environmental Specialist

SKW 10-15-08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Bear Creek</u> Waterbody ID: <u>0057</u> Site #: <u>0057_10</u> Estimated Channel Incision: <u>0.10</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>592449</u> UTM Y: <u>4460145</u> +/- <u>95</u> (feet) 11 UTM X: <u>592545</u> UTM Y: <u>4460025</u> +/- <u>19</u> (feet) Average Stream Width: <u>6.4</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>JRH + JW</u>	Dissolved Oxygen
	Date: <u>9/25/2008</u> Time: <u>8:40</u>
	Dissolved Oxygen: <u>4.33</u> (mg/L)
	Dissolved Oxygen: <u>45.5</u> (% sat)
	Specific Cond: <u>143</u> (µS/cm)
	Water Temperature: <u>18.6</u> (°C)

Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1		0.77	0.34	0.76	0.38	0.76	0.07	0.52	0.55	0.58	0.29	0.56	0.43	0.53	0.30	0.54	0.59	0.63	0.44	0.79	0.26	0.63	0.10
2		1.54	0.63	1.52	0.40	1.52	0.10	1.04	0.30	1.16	0.81	1.12	0.49	1.06	0.41	1.08	0.65	1.26	0.50	1.58	0.30	1.26	0.00
3		2.31	0.86	2.28	0.43	2.28	0.18	1.56	0.27	1.74	>1.00	1.68	0.64	1.59	0.38	1.62	0.54	1.89	0.58	2.37	0.37	1.89	0.40
4		3.08	>1.00	3.04	0.45	3.04	0.23	2.08	0.13	2.32	>1.00	2.24	0.62	2.12	0.28	2.16	0.26	2.52	0.87	3.16	0.48	2.52	0.28
5		3.85	>1.00	3.80	0.60	3.80	0.38	2.60	0.17	2.90	>1.00	2.80	0.62	2.65	0.21	2.70	0.24	3.15	>1.00	3.95	0.22	3.15	0.16
6		4.62	>1.00	4.56	0.64	4.56	0.48	3.12	0.16	3.48	0.94	3.36	0.39	3.18	0.17	3.24	0.21	3.78	>1.00	4.74	0.00	3.78	0.29
7		5.39	0.92	5.32	0.69	5.32	0.59	3.64	0.18	4.06	0.67	3.92	0.30	3.71	0.20	3.78	0.22	4.41	>1.00	5.53	0.00	4.41	0.42
8		6.16	0.63	6.08	0.52	6.08	0.64	4.16	0.11	4.64	0.28	4.48	0.21	4.24	0.16	4.32	0.18	5.04	0.82	6.32	0.02	5.04	0.38
9		6.93	0.28	6.84	0.18	6.84	0.50	4.68	0.06	5.22	0.23	5.04	0.16	4.77	0.10	4.86	0.12	5.67	0.54	7.11	0.04	5.67	0.30
Right Bank		7.70	0.00	7.60	0.00	7.60	0.00	5.20	0.00	5.80	0.00	5.60	0.00	5.30	0.00	5.40	0.00	6.30	0.00	7.90	0.00	6.30	0.00
Feature Type		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 0.1 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: _____ Date: 9/25/2008

WBID # 0057
 Site # 11

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>9.25.08</u> <u>0900</u>	Location Description (e.g., road crossing):
Stream Name: <u>Bear Creek</u>	<u>50m downstream of site 10</u>
Current Weather Conditions: <u>65°F, Sunny</u>	Facility Name(s): <u>Gorin RTD School District</u>
Weather Conditions for Past 10 days: <u>0.43" of rain</u>	Permit Number(s): <u>MO 0091677</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>0592544</u>	Northing (UTM Y): <u>4459961</u>	Horizontal Accuracy: (EPE / FOM / PDOP)	<u>18</u>	<u>20M</u> Meters <u>±</u>
Site 11	Easting (UTM X): <u>0592670</u>	Northing (UTM Y): <u>4459873</u>	Horizontal Accuracy: (EPE / FOM / PDOP)	<u>21</u>	<u>20M</u> Meters <u>±</u>

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>032</u>	<u>UPstream</u>	<u>0323</u>	<u>downstream</u>		

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.)

N/A

JRH

Stream Name & WBID # Bear Creek #0057

Date of Survey 9/25/08

Site # 11

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 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 checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: <u>row crop</u>

Comments:
private property Riparian >50m

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: <u>N/A</u>			

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

<u>0</u> % Cobble	<u>5</u> % Gravel	<u>50</u> % Sand	<u>15</u> % Silt	<u>30</u> % Mud/Clay	<u>0</u> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Few aq. grasses + plants Log jams + woody debris present

Algal growth uncommon

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 type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input checked="" 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 affect another use.

Stream Name & WBID # Bear Creek #0052

Date of Survey 9/25/08

Site # 11

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)
		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.

Printed Names of Personnel Collecting Data: Jennifer Hrabik + Jonathon Witte

Surveyor's Signature: Jennifer Hrabik Date of Survey: 9/25/08

Organization: AE Solutions Position: Environmental Specialist

SRW 10-15-08

SRW

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Bear Creek</u> Waterbody ID: <u>0057</u> Site #: <u>0057 11</u> Estimated Channel Incision: <u>0.10</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>592544</u> UTM Y: <u>4459961</u> +/- <u>18</u> (feet) 11 UTM X: <u>592670</u> UTM Y: <u>4459873</u> +/- <u>21</u> (feet) Average Stream Width: <u>7.1</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>JRH + JW</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>9/25/2008</u> Time: <u>9:00</u> Dissolved Oxygen: <u>6.73</u> (mg/L) Dissolved Oxygen: <u>71.7</u> (% sat) Specific Cond: <u>144</u> (µS/cm) Water Temperature: <u>18.6</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	0
	1	0.49	0.73	0.68	0.21	0.67	0.05	0.38	0.10	0.57	0.45	0.71	0.68	0.55	0.33	0.54	0.35	1.13	0.09	0.98	0.59	1.11	0.35
	2	0.98	0.54	1.36	0.95	1.34	0.07	0.76	0.26	1.14	0.83	1.42	0.78	1.10	0.34	1.08	0.77	2.26	0.11	1.96	>1.00	2.22	>1.00
	3	1.47	0.44	2.04	>1.00	2.01	0.24	1.14	0.33	1.71	0.83	2.13	0.77	1.65	0.59	1.62	0.63	3.39	0.13	2.94	>1.00	3.33	0.56
	4	1.96	0.40	2.72	>1.00	2.68	0.43	1.52	0.42	2.28	0.80	2.84	0.83	2.20	0.72	2.16	0.59	4.52	0.78	3.92	>1.00	4.44	0.12
	5	2.45	0.36	3.40	>1.00	3.35	0.56	1.90	0.42	2.85	0.56	3.55	0.63	2.75	0.80	2.70	0.42	5.65	>1.00	4.90	>1.00	5.55	0.59
	6	2.94	0.23	4.08	>1.00	4.02	0.82	2.28	0.42	3.42	0.58	4.26	0.62	3.30	0.62	3.24	0.54	6.78	>1.00	5.88	>1.00	6.66	>1.00
	7	3.43	0.15	4.76	0.92	4.69	0.66	2.66	0.38	3.99	0.54	4.97	0.46	3.85	0.34	3.78	0.33	7.91	>1.00	6.86	>1.00	7.77	>1.00
	8	3.92	0.14	5.44	0.65	5.36	0.38	3.04	0.31	4.56	0.24	5.68	0.26	4.40	0.18	4.32	0.23	9.04	>1.00	7.84	>1.00	8.88	>1.00
	9	4.41	0.06	6.12	0.39	6.03	0.42	3.42	0.22	5.13	0.17	6.39	0.10	4.95	0.06	4.86	0.18	10.17	0.63	8.82	>1.00	9.99	0.82
Right Bank		4.90	0.00	6.80	0.00	6.70	0.00	3.80	0.00	5.70	0.00	7.10	0.00	5.50	0.00	5.40	0.00	11.30	0.00	9.80	0.00	11.10	0.00
Feature Type		Run		Pool		Run		Pool		Pool		Pool		Pool									

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.
 Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)
 Mark dry depth measurements as 0; record actual measurements to 0.1 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: _____ Date: 9/25/2008

WBID # 0057

Site # 12

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>9.25.08</u> <u>0955</u>	Location Description (e.g., road crossing):
Stream Name: <u>Bear Creek</u>	<u>CRD 328 crossing</u>
Current Weather Conditions: <u>70°F, Sunny</u>	Facility Name(s): <u>Gorin RIII School District</u>
Weather Conditions for Past 10 days: <u>0.43" of rain</u>	Permit Number(s): <u>MO 0091677</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>0594822</u>	Northing (UTM Y): <u>4457941</u>	Horizontal Accuracy: (EPE / FOM / PDOP)	<u>19</u> Meters	<u>JEN</u>
Site 11	Easting (UTM X): <u>0594856</u>	Northing (UTM Y): <u>4457827</u>	Horizontal Accuracy: (EPE / FOM / PDOP)	<u>18</u> Meters	<u>JEN</u>

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>034</u>	<u>upstream</u>	<u>035</u>	<u>downstream</u>		

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.)

N/A

Stream Name & WBID # Bear Creek # 0057

Date of Survey 9/25/08

Site # 12

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 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 checked="" type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: <u>pasture</u>

Comments:
Riparian ~ 25m

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

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

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

<u>0</u> % Cobble	<u>0</u> % Gravel	<u>70</u> % Sand	<u>10</u> % Silt	<u>20</u> % Mud/Clay	<u>0</u> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Few aq. plants + grasses
Algal growth uncommon

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 type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input checked="" type="checkbox"/> Foam	<input type="checkbox"/> None	<input checked="" type="checkbox"/> Other: <u>leaves</u>

*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 # Bear Creek # 0057

Date of Survey 9/25/08

Site # 12

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)
		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.

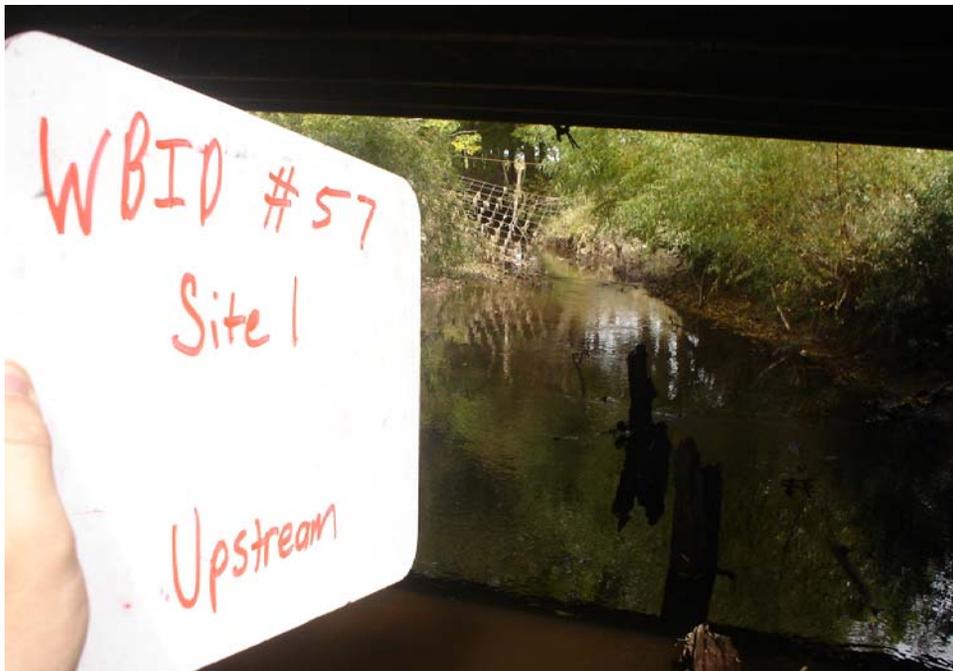
Printed Names of Personnel Collecting Data: Jennifer Habik + Jonathan Witte

Surveyor's Signature: Jennifer Habik Date of Survey: 9/25/08

Organization: AE Solutions Position: Environmental Specialist

SRW 10-15-08

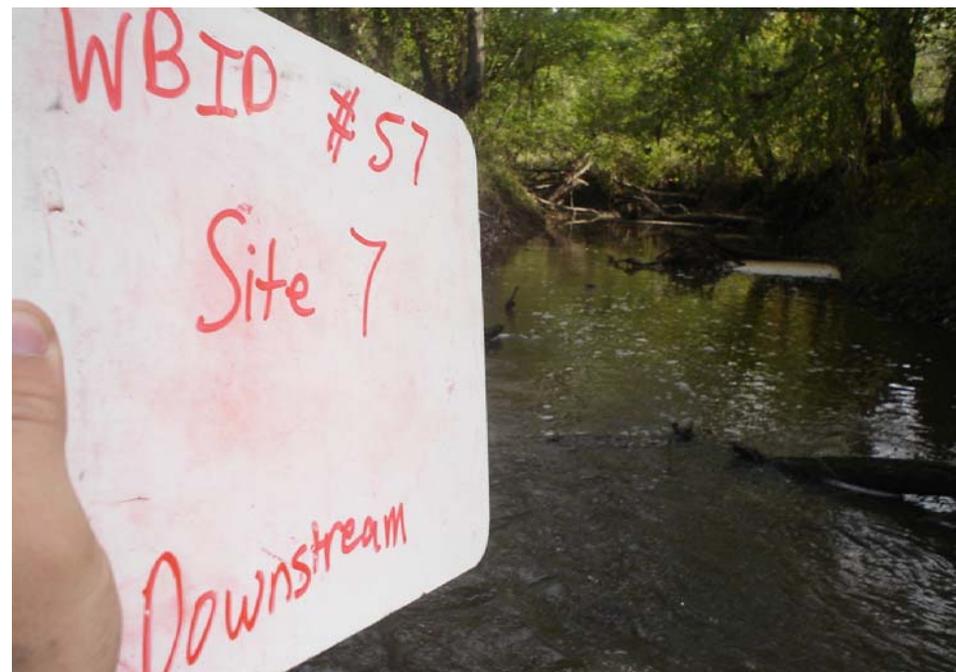
2008







WBID #0007
Site #6
Transect #1
Low Water
Crossing





WBID #0057
Site #7
Transect #1
Low Water
Crossing





