



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 1060 Dog Creek

Submitted by
SES, Inc.

To
Missouri Department of Natural Resources
Water Protection Program

On
May 28, 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): Dog Creek
Missouri Water Body Identification (WBID) Number: 1060
8-digit HUC: 1029011
County(ies), Listed Upstream to Downstream: Miller
Upstream Legal Description (from Table H): 40N 14W section34
Downstream Legal Description (from Table H): 40N 14W section12
Number of sites evaluated: 4
List all site numbers, <u>consecutively upstream to downstream</u> : 4, 3, 2, 1
Include a Site Location Map(s). The map must include all requirements detailed in the <i>Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol</i> (Section IV.D.8.a).

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

Facility Name(s) and Permit Number(s): Miller County Nursing Home MO0086631

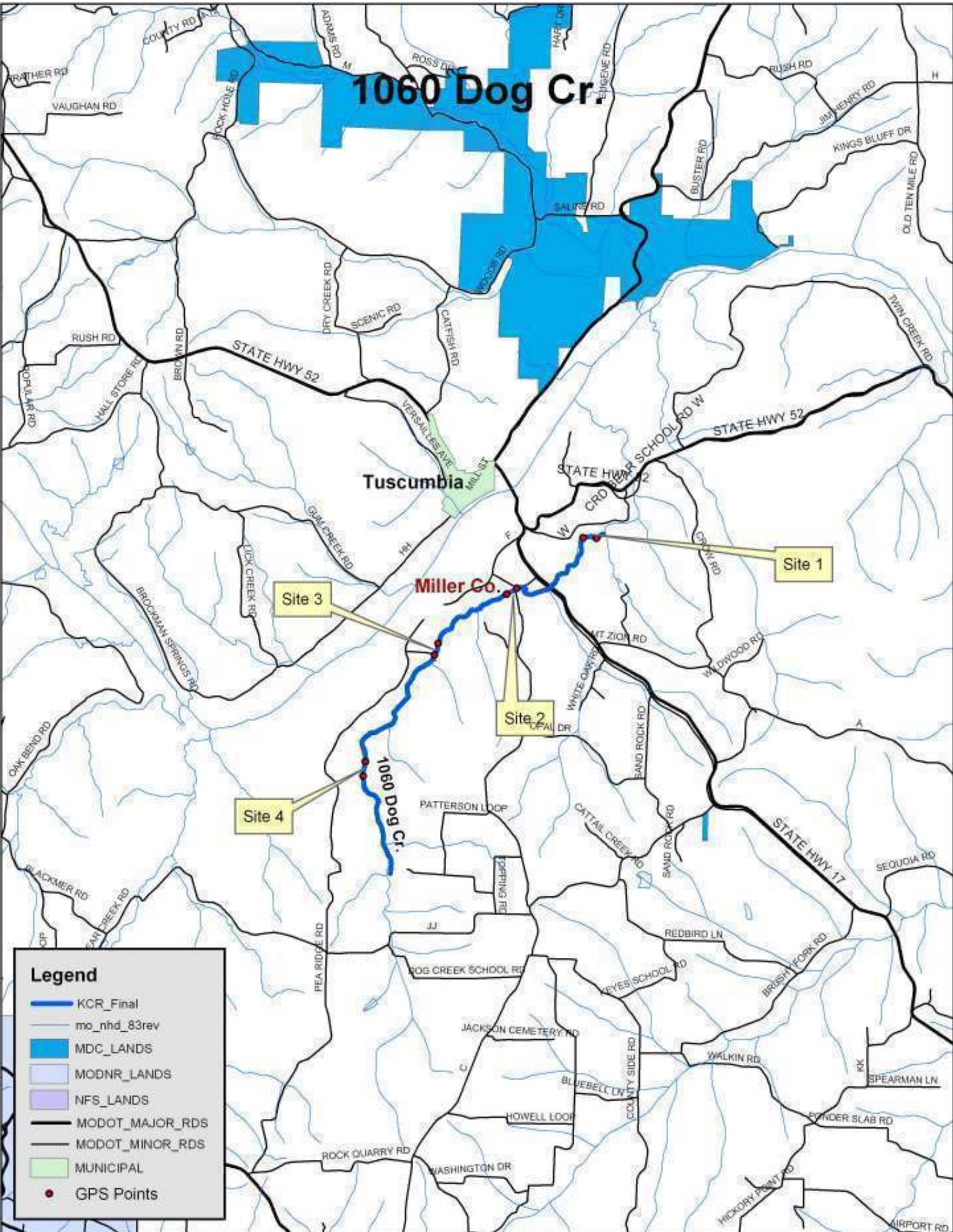
III. UAA Surveyor (please **PRINT** legibly)

Name of Surveyor: Aaron Ball	Telephone Number: 913.307.0046 Ext.14
Organization/Employer: SES, Inc.	

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: Aaron Ball Date: 5.09.08

1060 Dog Cr.



Legend

- KCR_Final
- mo_nhd_83rev
- MDC_LANDS
- MODNR_LANDS
- NFS_LANDS
- MODOT_MAJOR_RDS
- MODOT_MINOR_RDS
- MUNICIPAL
- GPS Points

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: 4.30.08 11:20	Location Description (e.g., road crossing):
Stream Name: Dog Creek	Bear School Road
Current Weather Conditions: clear	Facility Name(s): Miller CO Nursing Home
Weather Conditions for Past 10 days: 2.32 inches	Permit Number(s): MO0086631
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): 0549651	Northing (UTM Y): 4231082	Horizontal Accuracy: (EPE / FOM / PDOP)	3 Meters	
Site 11	Easting (UTM X): 0549913	Northing (UTM Y): 4231072	Horizontal Accuracy: (EPE / FOM / PDOP)	3 Meters	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
55	upstream, T11	56	downstream, T1		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

Site #1

Field Data Sheets for Recreational Use Stream Surveys

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

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

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

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

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

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

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

none in water; banks are cobble with some vegetation
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Water Characteristics*: (Mark all that apply.)

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

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

Site #1

Field Data Sheets for Recreational Use Stream Surveys

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

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

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

Comments: (Please record any additional comments here.)

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

Printed Names of Personnel Collecting Data: Gilisa Gould and Aaron Ball

Surveyor’s Signature: Aaron Ball Date of Survey: 4.30.08

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Dog Creek</u> Waterbody ID: <u>1060</u> Site #: <u>1</u> Estimated Channel Incision: <u>1</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>0549651</u> UTM Y: <u>4231082</u> +/- <u>3</u> (meters) 11 UTM X: <u>0549913</u> UTM Y: <u>4231072</u> +/- <u>3</u> (meters) Average Stream Width: <u>6</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Gilisa Gould and Aaron Ball</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>4.30.08</u> Time: <u>11:20</u> Dissolved Oxygen: <u>8.3</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>14.9</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	0.40	0.10	0.50	0.05	0.60	0.05	0.80	0.10	0.50	0.95	0.40	0.30	0.40	0.05	0.50	0.15	0.70	0.10	0.20	0.15	0.60	0.20
	2	0.80	0.10	1.00	0.20	1.20	0.05	1.60	0.05	1.00	0.95	0.80	0.75	0.80	0.10	1.00	0.30	1.40	0.30	0.40	0.25	1.20	0.20
	3	1.20	0.50	1.50	0.25	1.80	0.05	2.40	0.05	1.50	0.95	1.20	1.00	1.20	0.10	1.50	0.30	2.10	0.45	0.60	0.35	1.80	0.20
	4	1.60	0.90	2.00	0.35	2.40	0.10	3.20	0.05	2.00	0.90	1.60	1.00	1.60	0.10	2.00	0.30	2.80	0.45	0.80	0.40	2.40	0.40
	5	2.00	1.00	2.50	0.35	3.00	0.05	4.00	0.05	2.50	0.70	2.00	0.65	2.00	0.05	2.50	0.40	3.50	0.20	1.00	0.40	3.00	0.55
	6	2.40	1.00	3.00	0.50	3.60	0.15	4.80	0.10	3.00	0.55	2.40	0.35	2.40	0.10	3.00	0.50	4.20	0.05	1.20	0.35	3.60	0.60
	7	2.80	1.00	3.50	0.60	4.20	0.20	5.60	0.10	3.50	0.50	2.80	0.15	2.80	0.10	3.50	0.60	4.90	0.20	1.40	0.30	4.20	0.40
	8	3.20	0.75	4.00	0.50	4.80	0.20	6.40	0.15	4.00	0.40	3.20	0.15	3.20	0.10	4.00	0.60	5.60	0.05	1.60	0.20	4.80	0.30
	9	3.60	0.40	4.50	0.20	5.40	0.10	7.20	0.10	4.50	0.20	3.60	0.10	3.60	0.10	4.50	0.50	6.30	0.10	1.80	0.10	5.40	0.15
Right Bank		4.00	0.00	5.00	0.00	6.00	0.00	8.00	0.00	5.00	0.00	4.00	0.00	4.00	0.00	5.00	0.00	7.00	0.00	2.00	0.00	6.00	0.00
Feature Type <small>(riffle, run, or pool)</small>		pool		run		run		riffle		pool		pool		riffle		pool		run		run		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.
 Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)
 Mark dry depth measurements as 0; record actual measurements to 0.1 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: Aaron Ball Date: 5.09.08

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: 4.30.08 11:50	Location Description (e.g., road crossing):
Stream Name: Dog Creek	Ulman Ridge Street
Current Weather Conditions: clear	Facility Name(s): Miller CO Nursing Home
Weather Conditions for Past 10 days: 2.32 inches	Permit Number(s): MO0086631
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): 0548364	Northing (UTM Y): 4230095	Horizontal Accuracy: (EPE / FOM / PDOP)	2 Meters	
Site 11	Easting (UTM X): 0548163	Northing (UTM Y): 4229983	Horizontal Accuracy: (EPE / FOM / PDOP)	2 Meters	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
57	downstream, T1	59	upstream, T11		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

Site #2

Field Data Sheets for Recreational Use Stream Surveys

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

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

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

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

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

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

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

willow and elm on edge of creek; none in water
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Water Characteristics*: (Mark all that apply.)

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

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

Site #2

Field Data Sheets for Recreational Use Stream Surveys

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

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

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

Comments: (Please record any additional comments here.)

Dry stretches followed by deep pools explains the zeros followed by deep measurements.

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

Printed Names of Personnel Collecting Data: Gilisa Gould and Aaron Ball

Surveyor’s Signature: Aaron Ball Date of Survey: 4.30.08

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Dog Creek</u> Waterbody ID: <u>1060</u> Site #: <u>2</u> Estimated Channel Incision: <u>4</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>0548364</u> UTM Y: <u>4230095</u> +/- <u>2</u> (meters) 11 UTM X: <u>0548163</u> UTM Y: <u>4229983</u> +/- <u>2</u> (meters) Average Stream Width: <u>6</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Gilisa Gould and Aaron Ball</u>	Dissolved Oxygen
	Date: <u>4.30.08</u> Time: <u>11:50</u>
	Dissolved Oxygen: <u>12.8</u> (mg/L)
	Dissolved Oxygen: _____ (% sat)
	Specific Cond: _____ (µS/cm)
	Water Temperature: <u>18.4</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		0.00		0.00	0.20	0.10	0.70	0.45	0.80	0.50	0.40	0.05	0.60	0.50		0.00	0.60	0.55		0.00	0.70	0.10
	2		0.00		0.00	0.40	0.10	1.40	0.55	1.60	0.70	0.80	0.05	1.20	0.70		0.00	1.20	0.70		0.00	1.40	0.20
	3		0.00		0.00	0.60	0.10	2.10	0.90	2.40	0.70	1.20	0.05	1.80	0.80		0.00	1.80	0.85		0.00	2.10	0.30
	4		0.00		0.00	0.80	0.10	2.80	0.90	3.20	0.70	1.60	0.00	2.40	0.80		0.00	2.40	0.90		0.00	2.80	0.35
	5		0.00		0.00	1.00	0.05	3.50	0.70	4.00	0.60	2.00	0.00	3.00	0.80		0.00	3.00	0.45		0.00	3.50	0.30
	6		0.00		0.00	1.20	0.05	4.20	0.45	4.80	0.55	2.40	0.00	3.60	0.85		0.00	3.60	0.40		0.00	4.20	0.20
	7		0.00		0.00	1.40	0.05	4.90	0.40	5.60	0.50	2.80	0.00	4.20	0.85		0.00	4.20	0.15		0.00	4.90	0.20
	8		0.00		0.00	1.60	0.05	5.60	0.30	6.40	0.45	3.20	0.00	4.80	0.85		0.00	4.80	0.20		0.00	5.60	0.20
	9		0.00		0.00	1.80	0.05	6.30	0.20	7.20	0.40	3.60	0.00	5.40	0.45		0.00	5.40	0.20		0.00	6.30	0.10
Right Bank		n/a	0.00	n/a	0.00	2.00	0.00	7.00	0.00	8.00	0.00	4.00	0.00	6.00	0.00	n/a	0.00	6.00	0.00	n/a	0.00	7.00	0.00
Feature Type <small>(riffle, run, or pool)</small>		N/A		N/A		pool		pool		pool		run		pool		N/A		run		N/A		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: Aaron Ball Date: 5.09.08

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: 4.30.08 12:30	Location Description (e.g., road crossing):
Stream Name: Dog Creek	Auburn Road
Current Weather Conditions: clear	Facility Name(s): Miller CO Nursing Home
Weather Conditions for Past 10 days: 2.32 inches	Permit Number(s): MO0086631
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): 0546762	Northing (UTM Y): 4228800	Horizontal Accuracy: 3 Meters (EPE / FOM / PDOP)		
Site 11	Easting (UTM X): 0546837	Northing (UTM Y): 4229022	Horizontal Accuracy: 5 Meters (EPE / FOM / PDOP)		

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
60	downstream, T1	61	open entrance to creek where hauling of gravel has occurred	62	fence crosses the creek
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
63	upstream, T11				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

Site # 3

Field Data Sheets for Recreational Use Stream Surveys

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

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

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input 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 type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: fence crosses creek				

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: one side of bank is open near residence driveway where obvious gravel hauling has occurred			

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

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

none in water; banks are vegetated

Water Characteristics*: (Mark all that apply.)

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

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

Site # 3

Field Data Sheets for Recreational Use Stream Surveys

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

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

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

Comments: (Please record any additional comments here.)

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

Printed Names of Personnel Collecting Data: Gilisa Gould and Aaron Ball

Surveyor’s Signature: Aaron Ball Date of Survey: 4.30.08

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Dog Creek</u> Waterbody ID: <u>1060</u> Site #: <u>3</u> Estimated Channel Incision: <u>2</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>0546762</u> UTM Y: <u>4228800</u> +/- <u>3</u> (meters) 11 UTM X: <u>0546837</u> UTM Y: <u>4229022</u> +/- <u>5</u> (meters) Average Stream Width: <u>3</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Gilisa Gould and Aaron Ball</u>	Dissolved Oxygen
	Date: <u>4.30.08</u> Time: <u>12:45</u>
	Dissolved Oxygen: <u>7.7</u> (mg/L)
	Dissolved Oxygen: _____ (% sat)
	Specific Cond: _____ (µS/cm)
	Water Temperature: <u>17.2</u> (°C)

Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.40	0.30	0.30	0.05	0.20	0.05		0.00	0.30	0.10	0.10	0.05	0.20	0.00	0.10	0.01		0.00	0.20	0.10	0.30	0.20
2	0.80	0.30	0.60	0.10	0.40	0.00		0.00	0.60	0.20	0.20	0.05	0.40	0.00	0.20	0.00		0.00	0.40	0.10	0.60	0.50
3	1.20	0.30	0.90	0.10	0.60	0.01		0.00	0.90	0.30	0.30	0.05	0.60	0.01	0.30	0.00		0.00	0.60	0.10	0.90	0.50
4	1.60	0.30	1.20	0.10	0.80	0.01		0.00	1.20	0.30	0.40	0.05	0.80	0.00	0.40	0.01		0.00	0.80	0.20	1.20	0.45
5	2.00	0.40	1.50	0.10	1.00	0.00		0.00	1.50	0.30	0.50	0.05	1.00	0.00	0.50	0.00		0.00	1.00	0.15	1.50	0.35
6	2.40	0.20	1.80	0.20	1.20	0.05		0.00	1.80	0.15	0.60	0.05	1.20	0.01	0.60	0.00		0.00	1.20	0.10	1.80	0.30
7	2.80	0.10	2.10	0.20	1.40	0.05		0.00	2.10	0.10	0.70	0.05	1.40	0.01	0.70	0.00		0.00	1.40	0.10	2.10	0.20
8	3.20	0.20	2.40	0.20	1.60	1.00		0.00	2.40	0.10	0.80	0.05	1.60	0.00	0.80	0.01		0.00	1.60	0.05	2.40	0.10
9	3.60	0.10	2.70	0.10	1.80	0.01		0.00	2.70	0.05	0.90	0.05	1.80	0.00	0.90	0.01		0.00	1.80	0.05	2.70	0.05
Right Bank	4.00	0.00	3.00	0.00	2.00	0.00	n/a	0.00	3.00	0.00	1.00	0.00	2.00	0.00	1.00	0.00	n/a	0.00	2.00	0.00	3.00	0.00
Feature Type <small>(riffle, run, or pool)</small>	pool		pool		riffle		N/A		run		run		run		run		N/A		run		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.
 Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)
 Mark dry depth measurements as 0; record actual measurements to 0.1 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: Aaron Ball Date: 5.09.08

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: 4.30.08 15:00	Location Description (e.g., road crossing):
Stream Name: Dog Creek	hiked in east from Pea Ridge Road
Current Weather Conditions: clear	Facility Name(s): Miller CO Nursing Home
Weather Conditions for Past 10 days: 2.32 inches	Permit Number(s): MO0086631
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): 0545372	Northing (UTM Y): 4226440	Horizontal Accuracy: (EPE / FOM / PDOP)	5 Meters	
Site 11	Easting (UTM X): 0545433	Northing (UTM Y): 4226738	Horizontal Accuracy: (EPE / FOM / PDOP)	5 Meters	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
64	upstream, T11	65	fence crossing creek	66	downstream, T1
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

Site #4

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 type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other:
Comments: turkey farm				

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

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

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

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

algae covers 30% of substrate

Water Characteristics*: (Mark all that apply.)

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

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

Site #4

Field Data Sheets for Recreational Use Stream Surveys

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

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

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

Comments: (Please record any additional comments here.)

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

Printed Names of Personnel Collecting Data: Gilisa Gould and Aaron Ball

Surveyor’s Signature: Aaron Ball Date of Survey: 4.30.08

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Dog Creek</u> Waterbody ID: <u>1060</u> Site #: <u>4</u> Estimated Channel Incision: <u>2</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>0545372</u> UTM Y: <u>4226440</u> +/- <u>5</u> (meters) 11 UTM X: <u>0545433</u> UTM Y: <u>4226738</u> +/- <u>5</u> (meters) Average Stream Width: <u>5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Gilisa Gould and Aaron Ball</u>	Dissolved Oxygen
	Date: <u>4.30.08</u> Time: <u>15:00</u>
	Dissolved Oxygen: <u>13.3</u> (mg/L)
	Dissolved Oxygen: _____ (% sat)
	Specific Cond: _____ (µS/cm)
	Water Temperature: <u>19.7</u> (°C)

Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.60	0.25	0.70	0.20	0.50	0.20	0.60	0.30	0.60	0.20	0.40	0.05	0.30	0.10	0.40	0.15	0.70	0.20	0.70	0.05	0.50	0.05
2	1.20	0.30	1.40	0.10	1.00	0.20	1.20	0.30	1.20	0.20	0.80	0.10	0.60	0.10	0.80	0.20	1.40	0.10	1.40	0.20	1.00	0.20
3	1.80	0.30	2.10	0.15	1.50	0.15	1.80	0.30	1.80	0.15	1.20	0.05	0.90	0.10	1.20	0.30	2.10	0.01	2.10	0.10	1.50	0.25
4	2.40	0.20	2.80	0.10	2.00	0.10	2.40	0.25	2.40	0.10	1.60	0.10	1.20	0.10	1.60	0.25	2.80	0.01	2.80	0.10	2.00	0.10
5	3.00	0.20	3.50	0.05	2.50	0.10	3.00	0.15	3.00	0.10	2.00	0.10	1.50	0.15	2.00	0.20	3.50	0.05	3.50	0.10	2.50	0.15
6	3.60	0.25	4.20	0.05	3.00	0.10	3.60	0.10	3.60	0.10	2.40	0.10	1.80	0.20	2.40	0.30	4.20	0.01	4.20	0.05	3.00	0.05
7	4.20	0.30	4.90	0.05	3.50	0.05	4.20	0.05	4.20	0.10	2.80	0.10	2.10	0.20	2.80	0.30	4.90	0.10	4.90	0.05	3.50	0.01
8	4.80	0.20	5.60	0.05	4.00	0.05	4.80	0.05	4.80	0.05	3.20	0.15	2.40	0.05	3.20	0.20	5.60	0.05	5.60	0.05	4.00	0.01
9	5.40	0.25	6.30	0.01	4.50	0.01	5.40	0.01	5.40	0.05	3.60	0.10	2.70	0.01	3.60	0.10	6.30	0.10	6.30	0.10	4.50	0.05
Right Bank	6.00	0.00	7.00	0.00	5.00	0.00	6.00	0.00	6.00	0.00	4.00	0.00	3.00	0.00	4.00	0.00	7.00	0.00	7.00	0.00	5.00	0.00
Feature Type <small>(riffle, run, or pool)</small>	run		riffle		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: Aaron Ball Date: 5.09.08

WBID# 1060 Dog Creek



Site# 1 Photo ID# 56, Downstream, T1



Site# 1 Photo ID# 55, Upstream, T11



Site# 2 Photo ID# 57, Downstream, T1



Site# 2 Photo ID# 59, Upstream, T11

WBID# 1060 Dog Creek



Site# 3 Photo ID# 60, Downstream, T1



Site# 3 Photo ID# 63, Upstream, T11



Site# 3 Photo ID# 61, Open entrance of bank to cr



Site# 3 Photo ID# 62, Fence crosses

WBID# 1060 Dog Creek



Site# 4 Photo ID# 66, Downstream, T1



Site# 4 Photo ID# 64, Upstream, T11



Site# 4 Photo ID# 65, Fence crosses