



Use Attainability Analysis

for

WBID 0531 Brushy Creek

Submitted by
SES, Inc.

To
Missouri Department of Natural Resources
Water Protection Program

On

October 14, 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): Brushy Cr.
Missouri Water Body Identification (WBID) Number: 531
8-digit HUC: 10280101
County(ies), Listed Upstream to Downstream: Caldwell
Upstream Legal Description (from Table H): T57N R29W Sec 8
Downstream Legal Description (from Table H): T56N R29W Sec 3
Number of sites evaluated: 5
List all site numbers, <u>consecutively upstream to downstream</u> : 1, 2, 3, 4, 5
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): Cameron WWTF MO0104299
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III. UAA Surveyor (please **PRINT** legibly)

Name of Surveyor: Gilisa Gould	Telephone Number: 913-307-0046
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: _____ Gilisa Gould _____ **Date:** 10.06.08 _____

531 Brushy Cr.



Site 1

Site 2

Site 3

Site 4

Site 5

531 Brushy Cr.

Davie County

Caldwell County

DeKalb County

Clinton County

Caldwell County

Clinton County

COUNTY RD

SANTA ROSA RD

OREGON DR

SALE BARN RD

JOE MONTANA DR

HOGAN DR

OLD RD

STATE HWY 88

CUSTER DR

DAKOTA DR

TRICOUNTY LINE RD

BUCK RD

ROCKY MOUNTAIN DR

HICKORY DR

KERR RD

COLLEGE DR

SALE BARN RD

OREGON DR

OREGON DR

JOE MONTANA DR

HOGAN DR

OLD RD

STATE HWY 88

CUSTER DR

DAKOTA DR

TRICOUNTY LINE RD

BUCK RD

ROCKY MOUNTAIN DR

HICKORY DR

KERR RD

WINCHESTER RD

WINCHESTER RD

ROCKY MOUNTAIN DR

ROCKY MOUNTAIN DR

BURLINGTON DR

JOE MONTANA DR

HOGAN DR

JOE MONTANA DR

HOGAN DR

JOE MONTANA DR

JOE MONTANA DR

BRUSHY RD

WINCHESTER RD

WINCHESTER RD

WINCHESTER RD

WINCHESTER RD

WINCHESTER RD

WINCHESTER RD

CENTER DR

THEIL DR

SIGMAN DR

J6 PENNY DR

STATE HWY 88

MILL CREEK DR

JEWELL DR

JEWELL DR

JEWELL DR

JEWELL DR

JEWELL DR

WBID # 531

Site # 1

Field Data Sheets for Recreational Use Stream Surveys

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

(must be completed for each site)

Date & Time: 9/18/08 11:00	Location Description (e.g., road crossing): Sale Barn Rd.
Stream Name: Brushy Cr.	
Current Weather Conditions: clear	Facility Name(s): Cameron WWTF
Weather Conditions for Past 10 days: 6.35 cm	Permit Number(s): MO0104299
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): 0398758	Northing (UTM Y): 4401925	Horizontal Accuracy: (EPE / FOM / PDOP) 3 Meters
Site 11	Easting (UTM X): 0398940	Northing (UTM Y): 4401881	Horizontal Accuracy: (EPE / FOM / PDOP) 5 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
45	Downstream	46	Upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

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: Crop Fields				

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%.)

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

none

Water Characteristics*: (Mark all that apply.)

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

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)
Pool	402.0	5.0	7.0	1.0	1.0

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: Chris Schuler and Gilisa Gould

Surveyor’s Signature: Gilisa Gould Date of Survey: 9-18-08

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Bushy Cr.</u> Waterbody ID: <u>531</u> Site #: <u>1</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>0398758</u> UTM Y: <u>4401925</u> +/- <u>3</u> (meters) 11 UTM X: <u>0398940</u> UTM Y: <u>4401881</u> +/- <u>5</u> (meters) Average Stream Width: <u>4</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Gilisa Gould and Chris Schuler</u>	Dissolved Oxygen Date: <u>9/18/2008</u> Time: <u>11:00</u> Dissolved Oxygen: <u>8.3</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>16.9</u> (°C)
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Transect Cross-Section

	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	0.05	0.50	0.05	0.70	0.05	0.70	0.10	0.60	0.10	0.60	0.15	0.40	0.05	0.20	0.01	0.30	0.05	0.40	0.10	0.40	0.15
2	0.80	0.10	1.00	0.05	1.40	0.15	1.40	0.15	1.20	0.25	1.20	0.15	0.80	0.15	0.40	0.05	0.60	0.15	0.80	0.15	0.80	0.15
3	1.20	0.10	1.50	0.10	2.10	0.00	2.10	0.20	1.80	0.30	1.80	0.10	1.20	0.20	0.60	0.10	0.90	0.20	1.20	0.30	1.20	0.30
4	1.60	0.15	2.00	0.10	2.80	0.00	2.80	0.30	2.40	0.25	2.40	0.05	1.60	0.25	0.80	0.15	1.20	0.25	1.60	0.30	1.60	0.40
5	2.00	0.10	2.50	0.20	3.50	0.01	3.50	0.40	3.00	0.15	3.00	0.05	2.00	0.30	1.00	0.15	1.50	0.25	2.00	0.25	2.00	0.30
6	2.40	0.10	3.00	0.25	4.20	0.05	4.20	0.40	3.60	0.25	3.60	0.01	2.40	0.30	1.20	0.20	1.80	0.20	2.40	0.15	2.40	0.20
7	2.80	0.15	3.50	0.25	4.90	0.15	4.90	0.45	4.20	0.45	4.20	0.05	2.80	0.20	1.40	0.25	2.10	0.15	2.80	0.15	2.80	0.15
8	3.20	0.05	4.00	0.20	5.60	0.45	5.60	0.50	4.80	0.50	4.80	0.05	3.20	0.20	1.60	0.25	2.40	0.15	3.20	0.15	3.20	0.15
9	3.60	0.05	4.50	0.05	6.30	0.45	6.30	0.20	5.40	0.15	5.40	0.01	3.60	0.15	1.80	0.25	2.70	0.05	3.60	0.15	3.60	0.05
Right Bank	4.00	0.00	5.00	0.00	7.00	0.00	7.00	0.00	6.00	0.00	6.00	0.00	4.00	0.00	2.00	0.00	3.00	0.00	4.00	0.00	4.00	0.00
Feature Type <small>(riffle, run, or pool)</small>	riffle		run		run		pool		run		riffle		run									

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.
 Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)
 Mark dry depth measurements as 0; record actual measurements to 0.1 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: Gilisa Gould Date: 10.07.08



09/18/2008



09/18/2008

WBID # 531

Site # 2

Field Data Sheets for Recreational Use Stream Surveys

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

(must be completed for each site)

Date & Time: 9-18-08 12:15	Location Description (e.g., road crossing): Old Hwy 36
Stream Name: Brushy Cr.	
Current Weather Conditions: Clear	Facility Name(s): Cameron WWTF
Weather Conditions for Past 10 days: 6.35 cm	Permit Number(s): MO0104299
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): 0400019	Northing (UTM Y): 4400006	Horizontal Accuracy: (EPE / FOM / PDOP) 5 Meters
Site 11	Easting (UTM X): 0400253	Northing (UTM Y): 4399932	Horizontal Accuracy: (EPE / FOM / PDOP) 5 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
47	Downstream	48	Upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

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: Crop Fields				

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%.)

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

none

Water Characteristics*: (Mark all that apply.)

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

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: Chris Schuler and Gilisa Gould

Surveyor's Signature: Gilisa Gould Date of Survey: 9-18-08

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Bushy Cr.</u> Waterbody ID: <u>531</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>0400019</u> UTM Y: <u>4400006</u> +/- <u>5</u> (meters) 11 UTM X: <u>0400253</u> UTM Y: <u>4399932</u> +/- <u>5</u> (meters) Average Stream Width: <u>4</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Gilisa Gould and Chris Schuler</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>9/18/2008</u> Time: <u>12:15</u> Dissolved Oxygen: <u>8.1</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>17.6</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	0.30	0.05	0.30	0.05	0.70	0.10	0.50	0.01	0.50	0.05	0.40	0.05	0.40	0.10	0.50	0.05	0.60	0.10	1.20	0.10	0.60	0.05
	2	0.60	0.15	0.60	0.10	1.40	0.25	1.00	0.05	1.00	0.10	0.80	0.20	0.80	0.15	1.00	0.15	1.20	0.05	2.40	0.01	1.20	0.35
	3	0.90	0.20	0.90	0.15	2.10	0.30	1.50	0.10	1.50	0.15	1.20	0.15	1.20	0.15	1.50	0.15	1.80	0.10	3.60	0.05	1.80	0.40
	4	1.20	0.25	1.20	0.25	2.80	0.15	2.00	0.15	2.00	0.15	1.60	0.20	1.60	0.15	2.00	0.15	2.40	0.10	4.80	0.10	2.40	0.40
	5	1.50	0.30	1.50	0.35	3.50	0.01	2.50	0.15	2.50	0.15	2.00	0.25	2.00	0.20	2.50	0.05	3.00	0.10	6.00	0.15	3.00	0.40
	6	1.80	0.35	1.80	0.35	4.20	0.15	3.00	0.15	3.00	0.15	2.40	0.15	2.40	0.15	3.00	0.05	3.60	0.15	7.20	0.15	3.60	0.25
	7	2.10	0.25	2.10	0.30	4.90	0.15	3.50	0.15	3.50	0.15	2.80	0.10	2.80	0.15	3.50	0.05	4.20	0.15	8.40	0.10	4.20	0.15
	8	2.40	0.15	2.40	0.20	5.60	0.10	4.00	0.15	4.00	0.10	3.20	0.05	3.20	0.05	4.00	0.15	4.80	0.20	9.60	0.05	4.80	0.05
	9	2.70	0.05	2.70	0.10	6.30	0.01	4.50	0.05	4.50	0.05	3.60	0.10	3.60	0.01	4.50	0.20	5.40	0.10	10.80	0.10	5.40	0.01
Right Bank		3.00	0.00	3.00	0.00	7.00	0.00	5.00	0.00	5.00	0.00	4.00	0.00	4.00	0.00	5.00	0.00	6.00	0.00	12.00	0.00	6.00	0.00
Feature Type <small>(riffle, run, or pool)</small>		run		run		riffle		run															

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.
 Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)
 Mark dry depth measurements as 0; record actual measurements to 0.1 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: Gilisa Gould Date: 10.07.08



WBID # 531

Site # 3

Field Data Sheets for Recreational Use Stream Surveys

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

(must be completed for each site)

Date & Time: 8-20-08 9:54	Location Description (e.g., road crossing): Louis Dr. / Mill Creek Dr.
Stream Name: Brushy Cr.	
Current Weather Conditions: Clear	Facility Name(s): Cameron WWTF
Weather Conditions for Past 10 days: 6.35 cm	Permit Number(s): MO0104299
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): 0400129	Northing (UTM Y): 4398430	Horizontal Accuracy: (EPE / FOM / PDOP) 3 Meters
Site 11	Easting (UTM X): 0400433	Northing (UTM Y): 4398341	Horizontal Accuracy: (EPE / FOM / PDOP) 6 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
49	Downstream	50	Log Jam	51	upstream
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

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

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%.)

10% Cobble	10% Gravel	80% Sand	10% Silt	10% Mud/Clay	10% 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 checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input checked="" 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.

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.)

Transect cross-section #8: Log jam upstream causing greater depths

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

Printed Names of Personnel Collecting Data: Chris Schuler and Gilisa Gould

Surveyor’s Signature: Gilisa Gould Date of Survey: 9-18-08

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Bushy Cr.</u> Waterbody ID: <u>531</u> Site #: <u>3</u> Estimated Channel Incision: <u>5</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>0400129</u> UTM Y: <u>4398430</u> +/- <u>3</u> (meters) 11 UTM X: <u>0400433</u> UTM Y: <u>4398341</u> +/- <u>6</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 Chris Schuler</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>9/18/2008</u> Time: <u>13:25</u> Dissolved Oxygen: <u>10.1</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>19</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		0.60	4.50	0.60	0.25	0.50	0.01	0.80	0.10	0.50	0.30	0.50	0.05	0.70	0.15	0.90	0.15	0.50	0.05	0.60	0.01	0.70	0.05
2		1.20	0.20	1.20	0.40	1.00	0.10	1.60	0.05	1.00	0.60	1.00	0.10	1.40	0.05	1.80	0.50	1.00	0.10	1.20	0.05	1.40	0.20
3		1.80	0.15	1.80	0.45	1.50	0.15	2.40	0.05	1.50	0.70	1.50	0.15	2.10	0.05	2.70	1.00	1.50	0.25	1.80	0.10	2.10	0.30
4		2.40	0.05	2.40	0.45	2.00	0.35	3.20	0.01	2.00	0.40	2.00	0.20	2.80	0.10	3.60	1.00	2.00	0.20	2.40	0.20	2.80	0.10
5		3.00	0.05	3.00	0.45	2.50	0.50	4.00	0.05	2.50	0.30	2.50	0.20	3.50	0.05	4.50	0.65	2.50	0.20	3.00	0.20	3.50	0.15
6		3.60	0.01	3.60	0.35	3.00	0.50	4.80	0.05	3.00	0.25	3.00	0.20	4.20	0.15	5.40	0.20	3.00	0.20	3.60	0.20	4.20	0.15
7		4.20	0.05	4.20	0.35	3.50	0.45	5.60	0.15	3.50	0.15	3.50	0.20	4.90	0.15	6.30	0.01	3.50	0.15	4.20	0.25	4.90	0.10
8		4.80	0.10	4.80	0.30	4.00	0.35	6.40	0.25	4.00	0.15	4.00	0.15	5.60	0.10	7.20	0.05	4.00	0.05	4.80	0.25	5.60	0.05
9		5.40	0.25	5.40	0.30	4.50	0.05	7.20	0.10	4.50	0.05	4.50	0.20	6.30	0.05	8.10	0.20	4.50	0.01	5.40	0.10	6.30	0.01
Right Bank		6.00	0.00	6.00	0.00	5.00	0.00	8.00	0.00	5.00	0.00	5.00	0.00	7.00	0.00	9.00	0.00	5.00	0.00	6.00	0.00	7.00	0.00
Feature Type <small>(riffle, run, or pool)</small>		run		run		run		riffle		pool		run		run		pool		run		run		run	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.
 Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)
 Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)
 All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: Gilisa Gould Date: 10.07.08



WBID # 531

Site # 4

Field Data Sheets for Recreational Use Stream Surveys

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

(must be completed for each site)

Date & Time: 9-18-08 15:10	Location Description (e.g., road crossing): Barwick Dr.
Stream Name: Brushy Cr.	
Current Weather Conditions: Clear	Facility Name(s): Cameron WWTF
Weather Conditions for Past 10 days: 6.35 cm	Permit Number(s): MO0104299
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): 0400885	Northing (UTM Y): 4396745	Horizontal Accuracy: (EPE / FOM / PDOP) 3 Meters
Site 11	Easting (UTM X): 0401093	Northing (UTM Y): 4396667	Horizontal Accuracy: (EPE / FOM / PDOP) 5 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
52	Downstream	53	Upstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

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 type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: farmland
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%.)

5% Cobble	10% Gravel	85% Sand	% Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

none

Water Characteristics*: (Mark all that apply.)

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

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: Chris Schuler and Gilisa Gould

Surveyor’s Signature: Gilisa Gould Date of Survey: 9-18-08

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Bushy Cr.</u> Waterbody ID: <u>531</u> Site #: <u>4</u> Estimated Channel Incision: <u>6</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>0400885</u> UTM Y: <u>4396745</u> +/- <u>3</u> (meters) 11 UTM X: <u>0401093</u> UTM Y: <u>4396667</u> +/- <u>5</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 Chris Schuler</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>9/18/2008</u> Time: <u>15:10</u> Dissolved Oxygen: <u>7.8</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>19.5</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	0.40	0.10	1.20	0.10	0.80	0.05	0.70	0.15	0.80	0.15	0.40	0.01	0.50	0.01	0.60	0.15	0.60	0.15	0.50	0.10	0.70	0.10
2	0.80	0.25	2.40	0.15	1.60	0.15	1.40	0.10	1.60	0.20	0.80	0.10	1.00	0.20	1.20	0.30	1.20	0.30	1.00	0.25	1.40	0.20
3	1.20	0.40	3.60	0.20	2.40	0.15	2.10	0.10	2.40	0.30	1.20	0.15	1.50	0.30	1.80	0.30	1.80	0.20	1.50	0.30	2.10	0.25
4	1.60	0.45	4.80	0.15	3.20	0.15	2.80	0.15	3.20	0.40	1.60	0.25	2.00	0.20	2.40	0.30	2.40	0.20	2.00	0.30	2.80	0.25
5	2.00	0.45	6.00	0.05	4.00	0.10	3.50	0.15	4.00	0.45	2.00	0.25	2.50	0.20	3.00	0.30	3.00	0.15	2.50	0.50	3.50	0.20
6	2.40	0.45	7.20	0.00	4.80	0.00	4.20	0.15	4.80	0.45	2.40	0.25	3.00	0.15	3.60	0.30	3.60	0.10	3.00	0.20	4.20	0.10
7	2.80	0.40	8.40	0.05	5.60	0.05	4.90	0.15	5.60	0.35	2.80	0.20	3.50	0.10	4.20	0.30	4.20	0.10	3.50	0.20	4.90	0.05
8	3.20	0.20	9.60	0.15	6.40	0.10	5.60	0.10	6.40	0.20	3.20	0.15	4.00	0.10	4.80	0.20	4.80	0.05	4.00	0.10	5.60	0.10
9	3.60	0.05	10.80	0.10	7.20	0.15	6.30	0.15	7.20	0.10	3.60	0.01	4.50	0.05	5.40	0.10	5.40	0.01	4.50	0.05	6.30	0.10
Right Bank	4.00	0.00	12.00	0.00	8.00	0.00	7.00	0.00	8.00	0.00	4.00	0.00	5.00	0.00	6.00	0.00	6.00	0.00	5.00	0.00	7.00	0.00
Feature Type <small>(riffle, run, or pool)</small>	run		run		run		run		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: Gilisa Gould Date: 10.07.08



WBID # 531

Site # 5

Field Data Sheets for Recreational Use Stream Surveys

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

(must be completed for each site)

Date & Time: 9-18-08 16:15	Location Description (e.g., road crossing): Winchester Rd.
Stream Name: Brushy Cr.	
Current Weather Conditions: Clear	Facility Name(s): Cameron WWTF
Weather Conditions for Past 10 days: 6.35 cm	Permit Number(s): MO0104299
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): 0401529	Northing (UTM Y): 4394898	Horizontal Accuracy: (EPE / FOM / PDOP) 6 Meters
Site 11	Easting (UTM X): 0401599	Northing (UTM Y): 4394707	Horizontal Accuracy: (EPE / FOM / PDOP) 6 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
54	upstream	55	downstream		
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.)				

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 type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: farmland
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%.)

% Cobble	5% Gravel	85% Sand	5% Silt	5% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

none

Water Characteristics*: (Mark all that apply.)

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

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: Chris Schuler and Gilisa Gould

Surveyor’s Signature: Gilisa Gould Date of Survey: 9-18-08

Organization: SES, Inc. Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Bushy Cr.</u> Waterbody ID: <u>531</u> Site #: <u>5</u> Estimated Channel Incision: <u>7</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>0401529</u> UTM Y: <u>4394898</u> +/- <u>6</u> (meters) 11 UTM X: <u>0401599</u> UTM Y: <u>4394707</u> +/- <u>6</u> (meters) Average Stream Width: <u>4</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Gilisa Gould and Chris Schuler</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>9/18/2008</u> Time: <u>16:15</u> Dissolved Oxygen: <u>7.3</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>19.4</u> (°C)
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Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	0.50	0.15	0.50	0.05	0.50	0.25	0.30	0.10	0.30	0.15	0.40	0.30	0.80	0.35	0.60	0.10	0.50	0.15	0.60	0.20	0.50	0.10
	2	1.00	0.20	1.00	0.20	1.00	0.25	0.60	0.35	0.60	0.30	0.80	0.55	1.60	0.50	1.20	0.45	1.00	0.25	1.20	0.25	1.00	0.20
	3	1.50	0.20	1.50	0.20	1.50	0.15	0.90	0.45	0.90	0.45	1.20	0.55	2.40	0.55	1.80	0.50	1.50	0.40	1.80	0.35	1.50	0.25
	4	2.00	0.15	2.00	0.20	2.00	0.15	1.20	0.50	1.20	0.45	1.60	0.50	3.20	0.50	2.40	0.45	2.00	0.50	2.40	0.35	2.00	0.25
	5	2.50	0.15	2.50	0.20	2.50	0.15	1.50	0.40	1.50	0.40	2.00	0.40	4.00	0.40	3.00	0.45	2.50	0.50	3.00	0.40	2.50	0.25
	6	3.00	0.15	3.00	0.20	3.00	0.15	1.80	0.30	1.80	0.30	2.40	0.35	4.80	0.30	3.60	0.45	3.00	0.45	3.60	0.55	3.00	0.25
	7	3.50	0.15	3.50	0.20	3.50	0.15	2.10	0.25	2.10	0.25	2.80	0.25	5.60	0.20	4.20	0.35	3.50	0.45	4.20	0.50	3.50	0.40
	8	4.00	0.15	4.00	0.10	4.00	0.10	2.40	0.15	2.40	0.10	3.20	0.20	6.40	0.20	4.80	0.30	4.00	0.30	4.80	0.45	4.00	0.20
	9	4.50	0.10	4.50	0.10	4.50	0.05	2.70	0.05	2.70	0.01	3.60	0.05	7.20	0.15	5.40	0.15	4.50	0.10	5.40	0.15	4.50	0.15
Right Bank		5.00	0.00	5.00	0.00	5.00	0.00	3.00	0.00	3.00	0.00	4.00	0.00	8.00	0.00	6.00	0.00	5.00	0.00	6.00	0.00	5.00	0.00
Feature Type <small>(riffle, run, or pool)</small>		run		run		run		run		run		run		pool		run		run		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: Gilisa Gould Date: 10.07.08

