



Missouri  
Department of  
Natural Resources

Use Attainability Analysis

for

WBID 1552 Cedar Creek

Submitted by  
SES, Inc.

To  
Missouri Department of Natural Resources  
Water Protection Program

On  
November 4, 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): Cedar Creek
Missouri Water Body Identification (WBID) Number: 1552
8-digit HUC: 10290203
County(ies), Listed Upstream to Downstream: Gasconade
Upstream Legal Description (from Table H): T42N R6W Sec. 15
Downstream Legal Description (from Table H): T42N R6W Sec. 4
Number of sites evaluated: 3
List all site numbers, <u>consecutively upstream to downstream</u> : 1, 2, 3
<b>Include a Site Location Map(s).</b> 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): Peaceful Valley Lake Estates MO0041467
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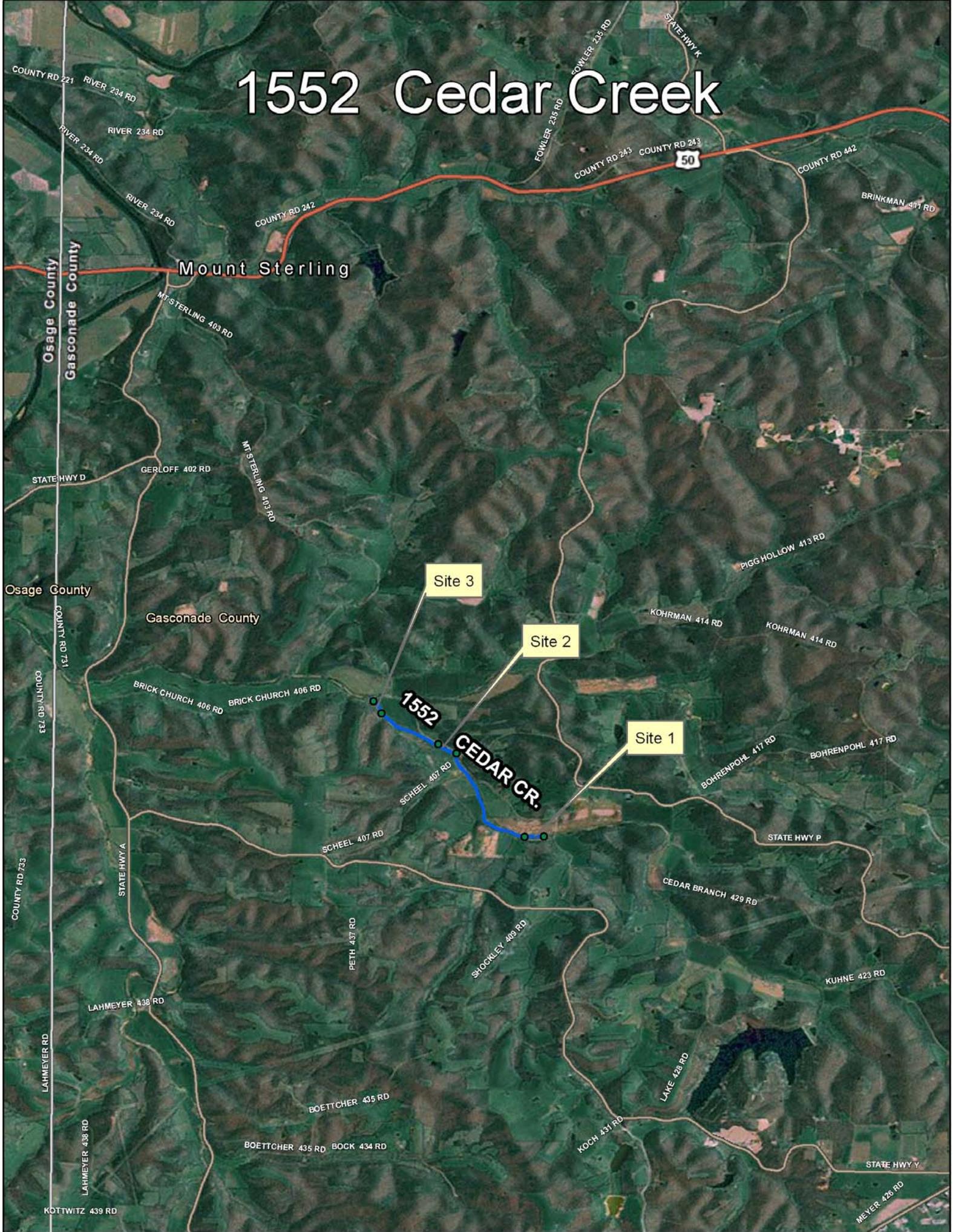
#### III. UAA Surveyor (please PRINT legibly)

Name of Surveyor: David Bender	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: David Bender Date: 10-02-08**

# 1552 Cedar Creek



Site 3

Site 2

Site 1

1552  
CEDAR CR.

KÖTTWITZ 439 RD

MEYER 426 RD

WBID # 1552

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)

<b>Date &amp; Time:</b> 10/02/08      13:20	Location Description (e.g., road crossing): Shockley 409 Rd.
<b>Stream Name:</b> Cedar Cr.	
Current Weather Conditions: Clear	Facility Name(s): Peaceful Valley Lake Estates
Weather Conditions for Past 10 days: 0.62 in	Permit Number(s): MO 0041467
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): 0624432	Northing (UTM Y): 4249721	Horizontal Accuracy: (EPE / FOM / PDOP)    5 Meters
Site 11	Easting (UTM X): 0624202	Northing (UTM Y): 4249708	Horizontal Accuracy: (EPE / FOM / PDOP)    3 Meters

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
26	Downstream	27	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:				

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

Algae on 100% 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 checked="" type="checkbox"/> Solids	<input 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: David Bender, Chris Schuler

Surveyor’s Signature: David Bender

Date of Survey: 10/02/08

Organization: SES, Inc.

Position: Field Team Leader

## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet C - Field Survey Results

Stream Name: <u>Cedar Cr.</u> Waterbody ID: <u>1552</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) <b>01</b> UTM X: <u>0624432</u> UTM Y: <u>4249721</u> +/- <u>5</u> (meters) <b>11</b> UTM X: <u>0624202</u> UTM Y: <u>4249708</u> +/- <u>3</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>David Bender, Chris Schuler</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>10/2/2008</u> Time: <u>13:20</u>  Dissolved Oxygen: <u>10.0</u> (mg/L)  Dissolved Oxygen: _____ (% sat)  Specific Cond: _____ (µS/cm)  Water Temperature: <u>17.5</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)																				
<b>Left Bank</b>		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1	0.20	0.05	0.40	0.05	0.80	0.01	0.20	0.10	0.40	0.10	0.10	0.05	0.20	0.05	0.60	0.15	0.70	0.10	0.60	0.05	0.50	0.05
	2	0.40	0.05	0.80	0.10	1.60	0.05	0.40	0.15	0.80	0.15	0.20	0.10	0.40	0.05	1.20	0.35	1.40	0.30	1.20	0.20	1.00	0.10
	3	0.60	0.05	1.20	0.15	2.40	0.05	0.60	0.15	1.20	0.20	0.30	0.10	0.60	0.05	1.80	0.30	2.10	0.40	1.80	0.15	1.50	0.15
	4	0.80	0.05	1.60	0.20	3.20	0.05	0.80	0.20	1.60	0.25	0.40	0.10	0.80	0.05	2.40	0.25	2.80	0.40	2.40	0.05	2.00	0.20
	5	1.00	0.05	2.00	0.25	4.00	0.05	1.00	0.20	2.00	0.25	0.50	0.10	1.00	0.05	3.00	0.25	3.50	0.30	3.00	0.20	2.50	0.20
	6	1.20	0.05	2.40	0.30	4.80	0.05	1.20	0.15	2.40	0.20	0.60	0.05	1.20	0.05	3.60	0.20	4.20	0.30	3.60	0.15	3.00	0.15
	7	1.40	0.05	2.80	0.25	5.60	0.05	1.40	0.10	2.80	0.15	0.70	0.05	1.40	0.05	4.20	0.20	4.90	0.25	4.20	0.15	3.50	0.10
	8	1.60	0.05	3.20	0.15	6.40	0.05	1.60	0.05	3.20	0.15	0.80	0.05	1.60	0.05	4.80	0.15	5.60	0.10	4.80	0.05	4.00	0.05
	9	1.80	0.05	3.60	0.05	7.20	0.01	1.80	0.05	3.60	0.10	0.90	0.01	1.80	0.05	5.40	0.05	6.30	0.05	5.40	0.05	4.50	0.05
<b>Right Bank</b>		2.00	0.00	4.00	0.00	8.00	0.00	2.00	0.00	4.00	0.00	1.00	0.00	2.00	0.00	6.00	0.00	7.00	0.00	6.00	0.00	5.00	0.00
<b>Feature Type</b>		riffle		pool		riffle		pool		pool		riffle		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.

MAXIMUM      0.40

MEDIAN      0.10

Surveyor's Signature: David Bender      Date: 10/2/2008

WBID # 1552

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)

<b>Date &amp; Time:</b> 10/02/08      14:00	Location Description (e.g., road crossing): Brick Church 406 Rd.
<b>Stream Name:</b> Cedar Cr.	
Current Weather Conditions: Clear	Facility Name(s): Peaceful Valley Lake Estates
Weather Conditions for Past 10 days: 0.62 in	Permit Number(s): MO 0041467
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): 0623341	Northing (UTM Y): 4250997	Horizontal Accuracy: (EPE / FOM / PDOP)      3 Meters
Site 11	Easting (UTM X): 0623114	Northing (UTM Y): 4251130	Horizontal Accuracy: (EPE / FOM / PDOP)      3 Meters

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
28	Downstream	29	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:				

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

algae on 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 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: David Bender, Chris Schuler

Surveyor's Signature: David Bender

Date of Survey: 10/02/08

Organization: SES, Inc.

Position: Field Team Leader

## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet C - Field Survey Results

Stream Name: <u>Cedar Cr.</u> Waterbody ID: <u>1552</u> Site #: <u>2</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) <b>01</b> UTM X: <u>0623341</u> UTM Y: <u>4250997</u> +/- <u>3</u> (meters) <b>11</b> UTM X: <u>0623114</u> UTM Y: <u>4251130</u> +/- <u>3</u> (meters)  Average Stream Width: <u>8</u> (meters)      Length of Survey Segment: <u>160</u> (meters) (To determine Length of Reach)      (20x average stream width)  Field Staff: <u>David Bender, Chris Schuler</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>10/2/2008</u> Time: <u>14:00</u>  Dissolved Oxygen: <u>10.1</u> (mg/L)  Dissolved Oxygen: _____ (% sat)  Specific Cond: _____ (µS/cm)  Water Temperature: <u>19.4</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)																				
<b>Left Bank</b>		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	1.10	0.05	0.80	0.05	0.90	0.05	0.50	0.05	0.40	0.01	0.60	0.10	0.40	0.10	0.70	0.05	0.60	0.05	0.80	0.01	1.00	0.15
	2	2.20	0.25	1.60	0.30	1.80	0.15	1.00	0.10	0.80	0.10	1.20	0.15	0.80	0.15	1.40	0.10	1.20	0.05	1.60	0.10	2.00	0.15
	3	3.30	0.30	2.40	0.55	2.70	0.20	1.50	0.10	1.20	0.25	1.80	0.25	1.20	0.25	2.10	0.15	1.80	0.15	2.40	0.15	3.00	0.15
	4	4.40	0.40	3.20	0.75	3.60	0.30	2.00	0.10	1.60	0.15	2.40	0.30	1.60	0.25	2.80	0.20	2.40	0.25	3.20	0.25	4.00	0.15
	5	5.50	0.50	4.00	1.00	4.50	0.45	2.50	0.05	2.00	0.01	3.00	0.30	2.00	0.25	3.50	0.20	3.00	0.40	4.00	0.30	5.00	0.20
	6	6.60	0.65	4.80	1.00	5.40	0.65	3.00	0.05	2.40	0.01	3.60	0.25	2.40	0.20	4.20	0.15	3.60	0.35	4.80	0.35	6.00	0.30
	7	7.70	0.60	5.60	1.00	6.30	0.75	3.50	0.05	2.80	0.05	4.20	0.30	2.80	0.15	4.90	0.10	4.20	0.35	5.60	0.25	7.00	0.30
	8	8.80	0.65	6.40	0.70	7.20	0.55	4.00	0.05	3.20	0.01	4.80	0.20	3.20	0.10	5.60	0.15	4.80	0.25	6.40	0.25	8.00	0.30
	9	9.90	0.20	7.20	0.20	8.10	0.35	4.50	0.05	3.60	0.01	5.40	0.05	3.60	0.05	6.30	0.05	5.40	0.10	7.20	0.25	9.00	0.15
<b>Right Bank</b>		11.00	0.00	8.00	0.00	9.00	0.00	5.00	0.00	4.00	0.00	6.00	0.00	4.00	0.00	7.00	0.00	6.00	0.00	8.00	0.00	10.00	0.00
<b>Feature Type</b>		pool		pool		pool		pool		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.

MAXIMUM      1.00

MEDIAN          0.20

Surveyor's Signature: David Bender      Date: 10/2/2008

WBID # 1552

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)

<b>Date &amp; Time:</b> 10/02/08      14:40	Location Description (e.g., road crossing): Brick Church 406 Rd.
<b>Stream Name:</b> Cedar Cr.	
Current Weather Conditions: Clear	Facility Name(s): Peaceful Valley Lake Estates
Weather Conditions for Past 10 days: 0.62 in	Permit Number(s): MO 0041467
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): 0622411	Northing (UTM Y): 4251611	Horizontal Accuracy: (EPE / FOM / PDOP)      6 Meters
Site 11	Easting (UTM X): 0622312	Northing (UTM Y): 4251801	Horizontal Accuracy: (EPE / FOM / PDOP)      7 Meters

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
30	Downstream	31	Vehicle tracks	32	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 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 type="checkbox"/> Other:
Comments:				

**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:			

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

% Cobble	60% Gravel	40% Sand	% Silt	% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site.)

Algae on 50% of substrate.
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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 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 C - Field Survey Results

Stream Name: <u>Cedar Cr.</u> Waterbody ID: <u>1552</u> Site #: <u>3</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) <b>01</b> UTM X: <u>0622411</u> UTM Y: <u>4251611</u> +/- <u>6</u> (meters) <b>11</b> UTM X: <u>0622312</u> UTM Y: <u>4251801</u> +/- <u>7</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>David Bender, Chris Schuler</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>10/2/2008</u> Time: <u>14:40</u>  Dissolved Oxygen: <u>10.6</u> (mg/L)  Dissolved Oxygen: _____ (% sat)  Specific Cond: _____ (µS/cm)  Water Temperature: <u>20.4</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)																				
<b>Left Bank</b>		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	1	0.60	0.05	0.60	0.10	1.00	0.05	1.00	0.05	1.00	0.05	0.30	0.05	0.40	0.01	0.10	0.05	0.40	0.01	0.50	0.05	0.40	0.01
	2	1.20	0.55	1.20	0.65	2.00	0.60	2.00	0.50	2.00	0.10	0.60	0.05	0.80	0.05	0.20	0.05	0.80	0.05	1.00	0.10	0.80	0.05
	3	1.80	0.30	1.80	0.75	3.00	0.55	3.00	0.50	3.00	0.15	0.90	0.15	1.20	0.05	0.30	0.10	1.20	0.10	1.50	0.10	1.20	0.05
	4	2.40	0.20	2.40	0.65	4.00	0.60	4.00	0.50	4.00	0.10	1.20	0.20	1.60	0.10	0.40	0.10	1.60	0.15	2.00	0.10	1.60	0.10
	5	3.00	0.20	3.00	0.40	5.00	0.50	5.00	0.50	5.00	0.20	1.50	0.20	2.00	0.15	0.50	0.10	2.00	0.20	2.50	0.05	2.00	0.10
	6	3.60	0.15	3.60	0.20	6.00	0.65	6.00	0.30	6.00	0.40	1.80	0.20	2.40	0.15	0.60	0.10	2.40	0.15	3.00	0.05	2.40	0.10
	7	4.20	0.10	4.20	0.05	7.00	0.50	7.00	0.20	7.00	0.40	2.10	0.15	2.80	0.10	0.70	0.05	2.80	0.20	3.50	0.05	2.80	0.10
	8	4.80	0.05	4.80	0.05	8.00	0.40	8.00	0.15	8.00	0.30	2.40	0.15	3.20	0.05	0.80	0.05	3.20	0.20	4.00	0.05	3.20	0.05
	9	5.40	0.01	5.40	0.01	9.00	0.10	9.00	0.05	9.00	0.30	2.70	0.10	3.60	0.05	0.90	0.01	3.60	0.10	4.50	0.05	3.60	0.05
<b>Right Bank</b>		6.00	0.00	6.00	0.00	10.00	0.00	10.00	0.00	10.00	0.00	3.00	0.00	4.00	0.00	1.00	0.00	4.00	0.00	5.00	0.00	4.00	0.00
<b>Feature Type</b> <small>(riffle, run, or pool)</small>		pool		pool		pool		pool		pool		pool		riffle		run		run		riffle			

**Notes:** Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.1 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

MAXIMUM      0.75

MEDIAN          0.10

Surveyor's Signature: David Bender      Date: 10/2/2008

**WBID# 1552 Cedar Creek**



**Site# 1 Photo ID# 26, Downstream**



**Site# 1 Photo ID# 27, Upstream**



**Site# 2 Photo ID# 28, Downstream**



**Site# 2 Photo ID# 29, Upstream**

**WBID# 1552 Cedar Creek**



**Site# 3 Photo ID# 30, Upstream**



**Site# 3 Photo ID# 31, "Vehicle Tracks"**



**Site# 3 Photo ID# 32, Downstream**