



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 1303 Knob Creek

Submitted by
BWR

to

Missouri Department of Natural Resources
Water Protection Program

Date received: June 1, 2007

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):	Knob Creek
Missouri Water Body Identification (WBID) Number:	1303
8-digit HUC:	10290102
County:	Bates
Upstream Legal Description (from Table H):	MOUTH
Downstream Legal Description (from Table H):	8,41 N, 32 W
Number of sites evaluated	4
List all sites numbers, listed consequently upstream to downstream:	4, 3, 2, 1

Site Locations Map(s): Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest.

II. Subsegmentation (fill this section out only in cases where subsegmentation is being proposed)

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION IN METERS)			
Upstream Coordinates:		Downstream Coordinates:	
UTM X	Y	UTM X	Y
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other	
EPE	± _____ Feet or ± _____ Meters	_____	
PDOP		± _____ Feet or ± _____ Meters	

III. Discharger Facility Information (list all permitted dischargers on the stream)

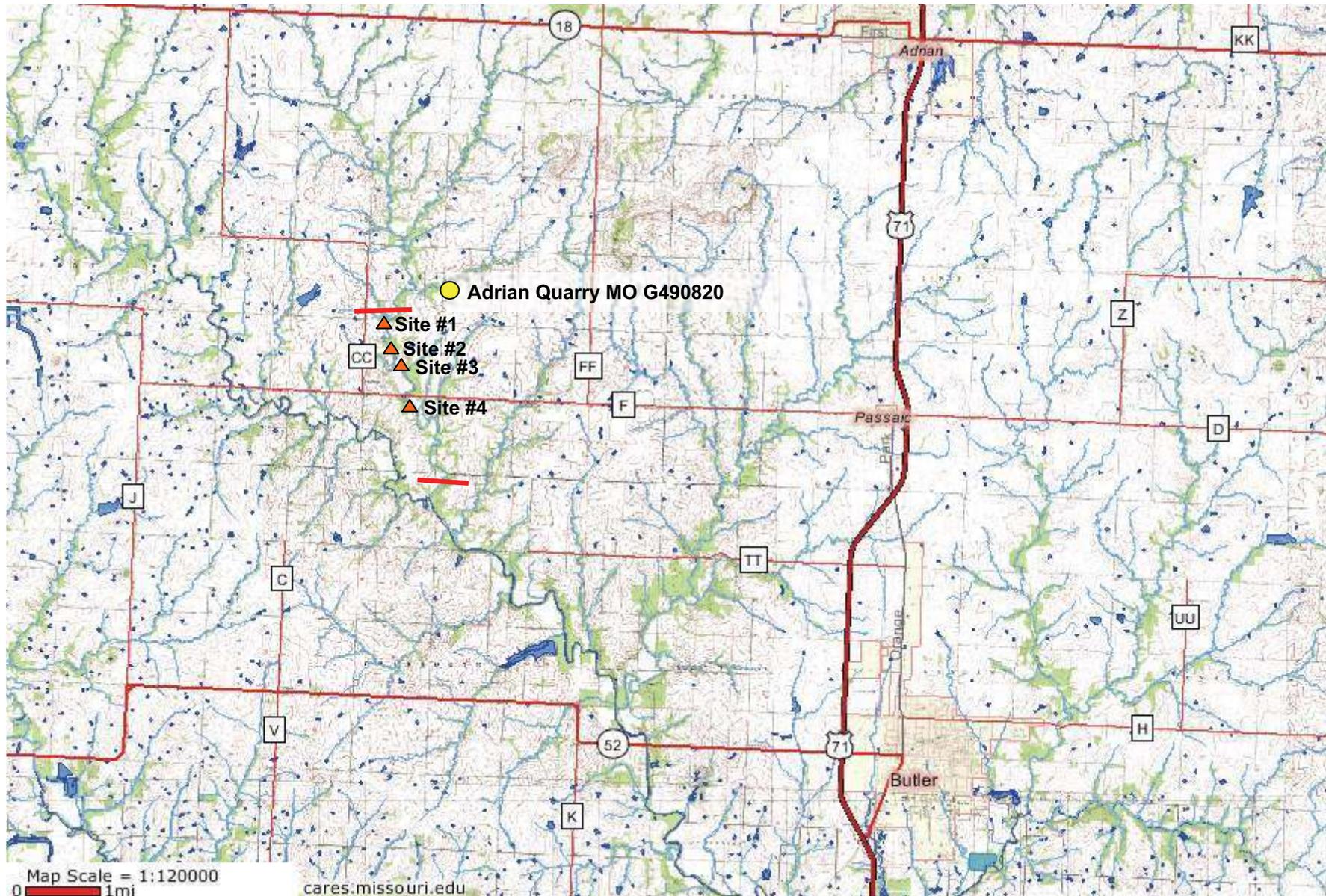
Discharger Facility Name(s):	Adrian Quarry
Discharger Permit Number(s):	MOG490820

IV. UAA Surveyor (please print legibly)

Name of Surveyor	Alan Mitchell	Telephone Number:	(816) 303-2140
Organization/Employer:	BAR ENE		(913) 620-4380
Position:	Env. Engineer		

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

Signed: _____ Date: _____



Knob Creek
WBID #1303



WBID# 1303
 Site# 1

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet B - Site Characterization
 (must be completed for each site)

Date & Time: <u>1:30 pm 5/24/2007</u>	Site Location Description (e.g., road crossing): <u>Upstream Road crossing at CC Hwy</u>
Personnel (Data Collectors): <u>Alan Mitchell Alex Bartlett</u>	Facility Name: <u>Adrian Quarry</u>
Current Weather Conditions: <u>RAINY</u>	Permit Number: <u>MDG49 0820</u>
Weather Conditions for Past 10 days: <u>DRY</u>	
Drought Conditions?: 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 Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION IN METERS)	
Site GPS Coordinates: UTM X: <u>94.87475°W</u>	Y: <u>38.36940°N</u>
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data)	
<input checked="" type="checkbox"/> Global Positioning System (GPS)	<input type="checkbox"/> Interpolation
<input type="checkbox"/> Static Mode	<input type="checkbox"/> Topographic Map or DRG
<input type="checkbox"/> Dynamic Mode (Kinematic)	<input type="checkbox"/> Aerial Photograph or DOQQ
<input type="checkbox"/> Precise Positioning Service	<input type="checkbox"/> Satellite Imagery
<input type="checkbox"/> Signal Averaging	<input type="checkbox"/> Interpolation Other
<input type="checkbox"/> Real Time Differential Processing	
HORIZONTAL ACCURACY ESTIMATE	
<input checked="" type="checkbox"/> GPS Data Quality	<input type="checkbox"/> Interpolation Data Quality
FOM ± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____ ± _____ Feet or ± _____ Meters
EPE ± _____ Feet or ± _____ Meters	
PDOP	

Photos:

Upstream Photos		Downstream Photos		Other Photos	
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>85286</u>		<u>83284</u>			

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

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:

Indications of Human Use*: (attach photos)

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	

Comments:

Alan Mitchell 5/24/07
EAE, Inc.

951. Pool
5% Run

* Page Two – Data Sheet B for WBID # 1303 :
Stream Morphology: SITE 1

Upstream View's Physical Dimensions: Is there any water present at this view? Yes No
If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Downstream View's Physical Dimensions: Is there any water present at this view? Yes No
If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

<u>5</u> % Cobble	<u>75</u> % Gravel	<u>10</u> % Sand	% Silt	% Mud/Clay	<u>10</u> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

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:

Comments: Please attach any additional comments () to this form.

*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 effect another use.

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

Surveyor's Signature: John W. Mitchell Date of Survey: May 29, 2007
Organization: EAE, Inc. Position: Env. Engr

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

RYBID 1303 SITE 1

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
TRANS A	1 Wetted Width	<0.1		1 Channel	Feature
	2 6.0m	0.1		2 POOL	100%
	3	0.2		3	
	4	0.2		4	
	5	0.2		5 DO	
	6	0.3		6 6.85	PPM
	7	0.4		7 96.1	%
	8	0.4		8 20.3	°C
	9	0.3		9	
	10	0.1		10	
TRANS B	1 Wetted Width			11 Channel	Feature
	2 8.0m	<0.1		12 POOL	100%
	3	0.1		13	
	4	0.2		14	
	5	0.3		15 DO	
	6	0.3		16 6.63	PPM
	7	0.4		17 74.0	%
	8	0.4		18 20.2	°C
	9	0.2		19	
	10	0.3		20	
TRANS C	1 Wetted Width			22 Channel	Feature
	2 8.0m	0.3		23 POOL	100%
	3	0.3		24	
	4	0.3		25 DO	
	5	0.3		26 8.63	PPM
	6	0.3		75.3	%
	7	0.3		20.2	°C
	8	0.2		n	
	9	0.2			
	10	0.1			

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Alan Mitchell

Date: May 27, 2007

Organization: EAE, Inc

Position: Env. Engnr

Data Sheet C - Cross-Sectional Depth Measurements (for estimation of median depth)

WBID 1303 SITE 1

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
TRANS D	Wetted Width	0.1		1 Channel Feature	
	1 5.0	0.2		2 POOL	100%
	2	0.3		3	
	3	0.3		4	
	4	0.3		5 DO	
	5	0.2		6 7.11	PPM
	6	0.1		7 82.5	%
	7	0.1		8 20.2	°C
	8	0.1		9	
	9	0.1		10	
TRANS E	Wetted Width	<0.1		11	
	1 7.0	0.1		12 Channel Feature	
	2	0.2		13 RUN	50%
	3	0.2		14 POOL	50%
	4	0.2		15	
	5	0.2		16 DO	
	6	0.1		17 6.16	PPM
	7	<0.1		18 68.4	%
	8	<0.1		19 20.2	°C
	9	<0.1		20	
TRANS F	Wetted Width	<0.1		21	
	1 8.5	0.1		22	
	2 8.5	0.3		23 Channel Feature	
	3	0.3		24 POOL	100%
	4	0.3		25	
	5	0.2		26 DO	
	6	0.2		6.89	PPM
	7	0.2		76.1	%
	8	0.2		20.8	°C
	9	0.2		n	
10					

If there is an odd number of entries find middle rank [(n+1)/2]. The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Glenn Mitchell

Date: May 24, 2007

Organization: EAE, Inc.

Position: Env. Eng

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID 1303 SITE 1

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
TRANS G	Wetted Width	<0.1		1 Feature	
	6.0	0.1		2 POOL	100%
		0.1		3	
		0.2		4 6.47	PPM
		0.2		5 7.1	%
		0.4		6 20.1	°C
		0.5		7	
		0.6		8	
		0.5		9	
		0.3		10	
TRANS H	Wetted Width	<0.1		11 Feature	
	5.0	0.1		12 POOL	100%
		0.3		13	
		0.5		14	
		0.7		15 6.07	PPM
		0.9		16 17.9	%
		0.8		17 20.1	°C
		0.7		18	
		0.5		19	
		0.4		20	
TRANS I	Wetted Width	0.1		21	
		0.2		22 Feature	
		0.3		23 POOL	100%
		0.3		24 7.20	PPM
		0.3		25 7.5	%
		0.3		26 20.0	°C
		0.3		.	
		0.2		.	
		0.1		.	
		0.2		n	
	0.3				
	0.2				

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Alfred Mitchell Date: May 24, 2007

Organization: EAE, Inc. Position: Env. Eng.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID 1303 SITE 1

Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
1 Wetted Width	0.1		1 Feature	
2 8.0	0.3		2 FOOL	100%
3	0.4		3	
4	0.4		4 7.44	PPM
5	0.4		5 82.3	1%
6	0.4		6 20.3	°C
7	0.4		7	
8	0.3		8	
9	0.2		9	
10	0.1		10	
			11 Feature	
1	0.1		12 FOOL	100%
2	0.3		13	
3	0.4		14 7.30	PPM
4	0.5		15 81.3	1%
5	0.5		16 20.3	°C
6	0.5		17	
7	0.4		18	
8	0.2		19	
9	0.1		20	
10	<0.1		21	
			22	
			23	
			24	
			25	
			26	
			.	
			.	
			.	
			n	

TRANS
J

TRANS
K

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Alvin D. Atwell

Date: May 24, 2007

Organization: EAE, Inc.

Position: Env. Eng

WBID# 1303
 Site# 2

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet B - Site Characterization
 (must be completed for each site)

Date & Time: <u>12:30 PM 5/24/2007</u>	Site Location Description (e.g., road crossing): <u>road crossing east REC</u>
Personnel (Data Collectors): <u>Alan Mitchell Alex Bartlett</u>	Facility Name: <u>Adrian Quarry</u>
Current Weather Conditions: <u>Rainy</u>	Permit Number: <u>MOB490820</u>
Weather Conditions for Past 10 days: <u>Dry</u>	
Drought Conditions?: 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 Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION IN METERS)	
Site GPS Coordinates: UTM X: <u>97-466240W</u>	Y: <u>38-353890N</u>
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)	
<input checked="" type="checkbox"/> Global Positioning System (GPS)	<input type="checkbox"/> Interpolation
<input type="checkbox"/> Static Mode	<input type="checkbox"/> Topographic Map or DRG
<input type="checkbox"/> Dynamic Mode (Kinematic)	<input type="checkbox"/> Aerial Photograph or DOQQ
<input type="checkbox"/> Precise Positioning Service	<input type="checkbox"/> Satellite Imagery
<input type="checkbox"/> Signal Averaging	<input type="checkbox"/> Interpolation Other
<input type="checkbox"/> Real Time Differential Processing	
HORIZONTAL ACCURACY ESTIMATE	
<input checked="" type="checkbox"/> GPS Data Quality	<input type="checkbox"/> Interpolation Data Quality
FOM ± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____ ± _____ Feet or ± _____ Meters
EPE ± _____ Feet or ± _____ Meters	
PDOP	

Photos:

Upstream Photos		Downstream Photos		Other Photos	
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>87 & 88</u>		<u>89 & 90</u>			

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

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:

Indications of Human Use*: (attach photos)

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	

Comments: Human habitation 1/2 mile West

70% POOL
30% RUN

* Page Two – Data Sheet B for WBID # 1303 :
Stream Morphology: SITE 2

Upstream View's Physical Dimensions: Is there any water present at this view? Yes No
If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Downstream View's Physical Dimensions: Is there any water present at this view? Yes No
If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

<u>70</u> % Cobble	<u>60</u> % Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

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:

Comments: Please attach any additional comments () to this form.

*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 effect another use.

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

Surveyor's Signature: *Candice Mitchell* Date of Survey: *May 24, 2007*
Organization: *EAC, Inc.* Position: *Env. Eng.*

38.37597°N
94.46624°W

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBI D 1303 SITE 2

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth	FEATURE
TRANS A	Wetted Width	<0.1		1	POOL	100%
	2 10 m	0.1		2		
	3	0.1		3		
	4	0.1		4		
	5	0.2		5	DO	
	6	0.1		6	10.60	TDW
	7	<0.1		7	75.0	%
	8	<0.1		8	20.3	%
	9	0.2		9		
	10	0.3		10		
TRANS B	1 Wetted Width	<0.1		12	Channel	Feature
	2 1.5 m	<0.1		13	RUN	100%
	3	<0.1		14	P	
	4	<0.1		15		
	5	<0.1		16	DO	
	6	<0.1		17	6.55	TDW
	7	<0.1		18	72.9	%
	8	<0.1		19	20.1	%
	9	<0.1		20		
	10	<0.1		21		
TRANS C	1 Wetted Width	<0.1		22	Channel	Feature
	2 8.0 m	<0.1		23	POOL	100%
	3	0.1		24		
	4	0.2		25		
	5	0.2		26	DO	
	6	0.3		.	5.99	TDW
	7	0.4		.	16.0	%
	8	0.2		.	20.1	%
	9	0.2		n		
	10	0.1				

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Andrew Stetler Date: May 24, 2007

Organization: EAE, Inc. Position: Env. Eng.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID 1303 SITE 2

TRANS
B

Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
1 Wetted Width	0.1		1 Channel Feature	
2 8.0m	0.4		2 POOL	100
3	0.6		3	
4	0.7		4	
5	0.7		5 DO	
6	0.7		6 6.06	DPW
7	0.7		7 6.75	%
8	0.4		8 20.0	°C
9	0.2		9	
10	<0.1		10	

TRANS
E

			11	
1 Wetted Width	<0.1		12 Channel Feature	
2 8.0m	0.2		13 POOL	70%
3	0.3		14 RUN	60%
4	0.5		15	
5	0.6		16 DO	
6	0.6		17 5.55	DPW
7	0.3		18 62.8	%
8	0.2		19 20.0	°C
9	0.2		20	
10	<0.1		21	

TRANS
F

			22	
1 Wetted	<0.1		23 Channel Feature	
2 Width	<0.1		24 RUN	100%
3 1.0m	<0.1		25	
4	<0.1		26	
5	<0.1		DO	
6	<0.1		6.26	DPW
7	<0.1		69.5	%
8	<0.1		n 20.0	°C
9	<0.1			
10	<0.1			

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Albert Mitchell

Date: May 24, 2007

Organization: EAE, Inc

Position: Env. Engn

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID 1303 SITE 2

TRANS
G

Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
1 Wetted Width	<0.1		1 Channel Feature	
2 7.0m	0.1		2 POOL	100%
3	0.1		3	
4	0.2		4	
5	0.2		5 DO	
6	0.2		6 6.10	ppm
7	0.2		7 67.1	%
8	0.3		8 20.0	OC
9	0.2		9	
10	<0.1		10	

TRANS
H

11			11	
12	1 Wetted Width	0.2	12 Channel Feature	
13	2 7.0m	0.4	13 POOL	100
14	3	0.6	14	
15	4	0.8	15	
16	5	0.7	16 DO	
17	6	0.8	17 6.27	ppm
18	7	0.4	18 69.0	%
19	8	0.3	19 20.0	OC
20	9	0.2	20	
21	10	<0.1	21	

TRANS
I

22			22	
23	1 Wetted Width	0.2	23 Channel Feature	
24	2 12.0m	0.3	24 POOL	
25	3	0.4	25	
26	4	0.2	26	
.	5	<0.1	. DO 6.20	ppm
.	6	<0.1	. 71.4	%
.	7	0.2	. 20.0	OC
n	8	0.3	n	
	9	<0.1		
	10	<0.1		

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Alfred J. Hutchell

Date: May 27, 2007

Organization: EAE, Inc

Position: Env. Engr

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID 1303 SITE 2

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
TRANS I	1 Wetted Width	<0.1		1 Channel Feature	
	2 1.0	<0.1		2 PUN	100%
	3	0.1		3	
	4	0.1		4	
	5	0.2		5 DO	
	6	0.2		6 5.30	PPM
	7	0.2		7 58.0	%
	8	0.3		8 19.4	OC
	9	0.3		9	
	10	0.1		10	
TRANS IK	1 Wetted Width	<0.1		11	
	2 5.5m	0.1		12	
	3	0.2		13 POOL	100
	4	0.5		14	
	5	0.5		15 DO	
	6	0.5		16 6.34	PPM
	7	0.5		17 68.9	%
	8	0.4		18 19.3	OC
	9	0.3		19	
	10	0.1		20	
			21		
			22		
			23		
			24		
			25		
			26		
			.		
			.		
			.		
			n		

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Archie Mitchell

Date: May 24, 2007

Organization: EAE, Inc.

Position: Env. Eng

Knob Cr.

WBID# 1303
Site# 03

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet B - Site Characterization
(must be completed for each site)

Date & Time: <u>3:30pm 5/24/2007</u>	Site Location Description (e.g., road crossing): <u>BRIDGE @ CR 6001 (ROADS NOT NUMBERED ON CAZATEER - REFER TO CIRCLES ON MAP)</u>
Personnel (Data Collectors): <u>Alan Mitchell Alex Bartlett</u>	Facility Name: <u>Adrian Quarry</u>
Current Weather Conditions: <u>cloudy, Rainy</u>	Permit Number: <u>MO6490820</u>
Weather Conditions for Past 10 days: <u>No Rain</u>	
Drought Conditions?: 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 Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION IN METERS)	
Site GPS Coordinates: UTM X: <u>94.46316° W</u>	Y: <u>38.34469° N</u>
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data)	
Global Positioning System (GPS)	Interpolation
Static Mode	Topographic Map or DRG
Dynamic Mode (Kinematic)	Aerial Photograph or DOQQ
Precise Positioning Service	Satellite Imagery
Signal Averaging	Interpolation Other
Real Time Differential Processing	
HORIZONTAL ACCURACY ESTIMATE	
GPS Data Quality	Interpolation Data Quality
FOM ± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____
EPE ± _____ Feet or ± _____ Meters	± _____ Feet or ± _____ Meters
PDOP	

Photos:

Upstream Photos		Downstream Photos		Other Photos	
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>91695</u>		<u>93694</u>			

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

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:

Indications of Human Use*: (attach photos)

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	

Comments: No evidence of human use

* Page Two – Data Sheet B for WBID # 1303 :
Stream Morphology: SITE 3

807. POOL
207. RUN

Upstream View's Physical Dimensions: Is there any water present at this view? Yes No
If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Downstream View's Physical Dimensions: Is there any water present at this view? Yes No
If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

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

Periphyton on rocks

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:

Comments: Please attach any additional comments () to this form.

*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 effect another use.

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

Surveyor's Signature: *Maureen Mitchell* Date of Survey: *May 24, 2007*

Organization: *EAE, Inc.* Position: *Environmental Engineer*

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID 1303 SITE 3

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
TRANS A	1 Wetted Width	<0.1		1	
	2 1.5	<0.1		2 RUN	50%
	3	<0.1		3 POOL	95%
	4	<0.1		4 DO	
	5	<0.1		5 6.90	PPM
	6	<0.1		6 75.5	%
	7	<0.1		7 18.5	°C
	8	<0.1		8	
	9	<0.1		9	
	10	<0.1		10	
TRANS B	Wetted Width			11	
	1 1.0	<0.1		12 RUN	10%
	2	<0.1		13 POOL	90%
	3	<0.1		14 DO	
	4	<0.1		15 5.55	PPM
	5	<0.1		16 57.9	%
	6	<0.1		17 18.5	°C
	7	<0.1		18	
	8	<0.1		19	
	9	<0.1		20	
TRANS C	Wetted Width			21	
	1 2.5	<0.1		22	
	2	<0.1		23 POOL	100%
	3	0.1		24	
	4	0.2		25 5.15	PPM
	5	0.2		26 55.1	%
	6	0.2		18.7	°C
	7	0.2		.	
	8	0.2		n	
	9	0.1			
10	0.1				

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Alan H. Mitchell

Date: May 24, 2007

Organization: EAE, Inc.

Position: Environmental Engineer

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID 21303 SITE 3

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
TRANS D	1	Wetted Width	0.1	1	
	2	3.0	0.2	2	POOL 100%
	3		0.2	3	DO
	4		0.1	4	4.26 PPM
	5		0.2	5	44.4 %
	6		0.2	6	18.9 °C
	7		0.1	7	
	8		0.1	8	
	9		<0.1	9	
	10		<0.1	10	
TRANS E	1	Wetted Width		11	FEATURE
	2	3.0	<0.1	12	POOL 50%
	3		0.2	13	DO RUN 50%
	4		0.2	14	4.76 PPM
	5		0.2	15	50.4 %
	6		0.2	16	18.8 °C
	7		0.1	17	
	8		0.1	18	
	9		0.1	19	
	10		<0.1	20	
TRANS F	1	Wetted		21	
	2	2.0	<0.1	22	
	3		0.1	23	
	4		0.2	24	
	5		0.2	25	
	6		0.2	26	DO
	7		0.2		5.05 PPM
	8		0.2		54.7 %
	9		0.2		18.9 °C
	10		0.1	n	
		<0.1			
		<0.1			

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Alexis Mitchell

Date: May 24, 2007

Organization: EAE, Inc.

Position: Environmental Engineer

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID 1303 SITE 3

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
TRANS A	Wetted Width	0.1		1 POOL	50%
	2 4.8 m	0.2		2 RUN	50%
	3	0.3		3 7.30	PPM
	4	0.4		4 18.0	%
	5	0.4		5 19.8	°C
	6	0.3		6	
	7	0.5		7	
	8	0.2		8	
	9	0.1		9	
	10	<0.1		10	
TRANS H	Wetted Width	<0.1		11	
	1 2.0 m	<0.1		12 POOL	50%
	2	0.1		13 RUN	50%
	3	0.1		14 DO	
	4	0.2		15 3.20	PPM
	5	0.1		16 35.5	%
	6	0.1		17 19.1	°C
	7	0.1		18	
	8	<0.1		19	
	9	<0.1		20	
TRANS I	Wetted Width	<0.1		21	
	1 6.0	0.4		22 POOL	100%
	2	0.5		23 DO	
	3	0.5		24 3.11	PPM
	4	0.5		25 32.9	%
	5	0.5		26 19.1	°C
	6	0.5		.	
	7	0.4		.	
	8	0.4		n	
	9	0.3			
10	0.1				

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Steve W. Mitchell

Date: May 24, 2007

Organization: EAE Inc.

Position: Environmental Engineer

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID 1303 SITE 3

Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
TRANS + Wetted Width			1 POOL	100%
1 3.0m	<0.1		2	
2	0.2		3 DO	
3	0.3		4 5.52	FPM
4	0.3		5 60.0	%
5	0.3		6 19.3	°C
6	0.2		7	
7	0.2		8	
8	0.2		9	
9	0.1		10	
10	<0.1		11	
TRANS + Wetted Width			12 RUN	100%
1 2.0m	<0.1		13 DO	
2	<0.1		14 6.02	FPM
3	<0.1		15 66.3	%
4	0.1		16 19.2	°C
5	0.1		17	
6	0.1		18	
7	0.1		19	
8	0.1		20	
9	0.1		21	
10	<0.1		22	
			23	
			24	
			25	
			26	
			.	
			.	
			.	
			n	

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Keith M. Mitchell

Date: May 24, 2007

Organization: EAE, Inc.

Position: Environmental Engineer

WBID# 1303
 Site# 4

Field Data Sheets for Recreational Use Stream Surveys
Data Sheet B - Site Characterization
 (must be completed for each site)

Date & Time: <u>4:50 pm 5/24/2007</u>	Site Location Description (e.g., road crossing): <u>BRIDGE CROSSING @ HWY F</u>
Personnel (Data Collectors): <u>Alan Mitchell, Ale. Bartlett</u>	
Current Weather Conditions: <u>Cloudy, Rainy</u>	Facility Name: <u>Adrian Quarry</u>
Weather Conditions for Past 10 days: <u>No Rain</u>	Permit Number: <u>MO6490820</u>
Drought Conditions?: 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 Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)	
Site GPS Coordinates: UTM X: <u>94.96620°W</u>	Y: <u>38.32391°N</u>
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)	
Global Positioning System (GPS)	Interpolation
Static Mode	Topographic Map or DRG
Dynamic Mode (Kinematic)	Aerial Photograph or DOQQ
Precise Positioning Service	Satellite Imagery
Signal Averaging	Interpolation Other
Real Time Differential Processing	
HORIZONTAL ACCURACY ESTIMATE	
GPS Data Quality	Interpolation Data Quality
FOM ± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____ ± _____ Feet or ± _____ Meters
EPE ± _____ Feet or ± _____ Meters	
PDOP	

Photos:

Upstream Photos		Downstream Photos		Other Photos	
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>98299</u>		<u>96297</u>			

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

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

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"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:

Indications of Human Use*: (attach photos)

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input checked="" type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	

Comments: Foot prints found along bank.

80% Pool
20% Run

* Page Two – Data Sheet B for WBID # 1303 : SITE 4
Stream Morphology:

Upstream View's Physical Dimensions: Is there any water present at this view? Yes No
If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFL					
RUN					
POOL					

Downstream View's Physical Dimensions: Is there any water present at this view? Yes No
If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFL					
RUN					
POOL					

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

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

Periphyton on large rocks

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:

Comments: Please attach any additional comments () to this form.

*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 effect another use.

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

Surveyor's Signature: Clare W. M. [Signature] Date of Survey: May 24, 2007
Organization: F&E, Inc. Position: Environmental Engineer

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID 1303 SITE 4

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
TRANS A	1 Wetted Width	0.1		1 POOL	100%
	2 12.0	0.4		2	
	3	0.4		3	
	4	0.5		4 7.24	PPM
	5	0.5		5 84.4	%
	6	0.4		6 20.0	°C
	7	0.3		7	
	8	0.3		8	
	9	0.2		9	
	10	<0.1		10	
TRANS B	Wetted Width			11	
	1 10.0m	<0.1		12 POOL	100%
	2	0.1		13	
	3	0.1		14	
	4	0.1		15	
	5	0.2		16 8.32	PPM
	6	0.2		17 91.4	%
	7	0.2		18 20.0	°C
	8	0.3		19	
	9	0.4		20	
TRANS C	Wetted Width			21	
	1 5.0m	<0.1		22 POOL	100%
	2	0.1		23	
	3	0.2		24	
	4	0.3		25	
	5	0.3		26 8.30	PPM
	6	0.4		27 91.4	%
	7	0.4		28 20.0	°C
	8	0.4		29	
	9	0.3		30	
10	0.1		31		

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Alfred V. MitchellDate: May 24, 2007Organization: EAE, Inc.Position: Environmental Engineer

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID 1303 SITE 4

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
TRANS D	1 Wetted Width	0.1		1	
	2 6.0m	0.1		2	RUN
	3	0.3		3	
	4	0.4		4	
	5	0.3		5	
	6	0.3		6	8.32 PPM
	7	0.2		7	90.1 %
	8	0.2		8	20.0 °C
	9	0.1		9	
	10	<0.1		10	
TRANS E	1 Wetted Width			11	
	2 5.0	<0.1		12	POOL 95
	3	<0.1		13	RIFLE 5%
	4	<0.1		14	
	5	0.1		15	
	6	<0.1		16	8.34 PPM
	7	<0.1		17	92.1 %
	8	<0.1		18	20.0 °C
	9	<0.1		19	
	10	<0.1		20	
TRANS F	1 Wetted	<0.1		22	
	2 10.0m	0.1		23	POOL 100%
	3	0.1		24	
	4	0.2		25	
	5	0.2		26	
	6	0.2		.	DO
	7	0.2		.	8.12 PPM
	8	0.2		.	90.2 %
	9	0.2		n	20.2 °C
	10	0.1		.	

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Richard M. WilfordDate: May 24, 2007Organization: EAE, Inc.Position: Environmental Engineer

Data Sheet C - Cross-Sectional Depth Measurements (for estimation of median depth)

WBID 1303 SITE 4

TRANS G

Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
1 Wetted Width	<0.1		1 RUN	100
2 11.0	0.2		2	
3	0.1		3	
4	<0.1		4 DO	
5	<0.1		5 8.17	PPM
6	<0.1		6 89.9	%
7	<0.1		7 20.1	°C
8	<0.1		8	
9	<0.1		9	
10	<0.1		10	

TRANS H

Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
1 Wetted Width			11	
2 2.5	<0.1		12 RUN	100%
3	<0.1		13	
4	<0.1		14 DO	
5	<0.1		15 8.71	PPM
6	<0.1		16 96.1	%
7	0.1		17 20.1	°C
8	0.1		18	
9	0.1		19	
10	0.1		20	

TRANS I

Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
1 Wetted Width			22	
2 11.0m	0.2		23 POOL	100%
3	0.3		24 8.05	PPM
4	0.3		25 88.9	%
5	0.4		26 20.3	°C
6	0.4		.	
7	0.4		.	
8	0.4		n	
9	0.4		.	
10	0.1		.	

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Alan W. Mitchell Date: May 24, 2007

Organization: EAE, Inc Position: Environment Engineer

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID 1303 SITE 4

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
TRANS K	1 Wetted Width	0.2		1	
	2 10.0m	0.5		2 POOL	100%
	3	0.6		3	
	4	0.7		4 DO	
	5	0.9		5 8.31	PPM
	6	0.7		6 93.2	%
	7	0.7		7 20.2	°C
	8	0.6		8	
	9	0.4		9	
	10	0.3		10	
TRANS J	1 Wetted Width	0.2		11	
	2 12.0m	0.3		12 POOL	100%
	3	0.5		13	
	4	0.9		14	
	5	0.9		15 DO	
	6	0.9		16	
	7	0.6		17 8.41	PPM
	8	0.5		18 92.8	%
	9	0.3		19 20.2	°C
	10	<0.1		20	
			21		
			22		
			23		
			24		
			25		
			26		
			.		
			.		
			.		
			n		
			.		
			.		

If there is an odd number of entries find middle rank $[(n+1)/2]$. The corresponding sorted value depth to the middle rank is the median depth.
 If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Alan W. Mitchell Date: May 24, 2007

Organization: EAE, Inc. Position: Environmental Engineer



Upstream (Site 1) of Knob Creek



Downstream (Site 1) of Knob Creek



Upstream (Site 2) of Knob Creek



Downstream (Site 2) of Knob Creek



Upstream (Site 3) of Knob Creek



Downstream (Site 3) of Knob Creek



Upstream (Site 4) of Knob Creek



Downstream (Site 4) of Knob Creek

Field Data Sheet for Recreational Use Stream Survey

Data Sheet D—Recreational Use Interview

Stream Name _____ (WBID # _____)

I. Introduction

Date & Time (include AM or PM): 2:00pm 5/24/2007

Interviewed: [X] In person [] By phone [] By mail

(NOTE: If you are an Interviewee filling out this form to mail back to DNR, proceed to Question #1.)

Interviewee selected because (e.g., house next to stream; standing by stream, etc.) LIVES NEAR stream. Came by during sampling

Interviewer introduction to Interviewee: "My name is _____, I work for _____ (name of your employer), and I am collecting information on how people use _____ (name of the stream)."

ASK:

1.) Are you willing to respond to a survey about this stream? (It will just take a few minutes.) [X] Yes [] No If yes, list contact information for the interviewee below:

Legal name: Ron Callahan
Current mailing address: Rt 2, Box 349 Adrian MO
Daytime phone number: () No Phone
E-mail address (optional): None

2.a.) Do you live in this area? [X] Yes [] No
If yes, how many years? 10 years

2.b.) If you don't live nearby, are you still familiar with this stream? [] Yes [] No
If yes, how many years?

If no, thank the individual for taking the time to talk to you and conclude the interview.

3.) Are you familiar with this particular stretch of the stream? (show them the map, pointing out local landmarks such as roads, bridges, property lines) [X] Yes [] No
If yes, proceed to "II. Personal Use?".
If no, proceed to Section V.

II. Personal Use?

1.) Have you or your family personally used the stream for recreation since November 28, 1975? [] Yes [X] No

If yes, proceed to #3.
If no, proceed to #2.

2.a.) List reasons stream not used.
Too shallow

2.b.) Proceed to "III. Witnessed Use?".

3.) How do you use the stream?

<i>Whole Body Contact Recreation</i>			
Swimming <input type="checkbox"/>	Tubing <input type="checkbox"/>	Snorkeling/Skin Diving <input type="checkbox"/>	Water Skiing <input type="checkbox"/>

If Interviewee (or family) used the stream for WBCR since Nov. 28, 1975, ask:

4.a.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

4.b.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol). _____

<i>Secondary Contact Recreation</i>				
Fishing <input type="checkbox"/>	Wading <input type="checkbox"/>	Boating <input type="checkbox"/>	Trapping <input type="checkbox"/>	Other: <input type="checkbox"/> List: _____

If Interviewee (or family) used the stream for SCR since Nov. 28, 1975, ask:

4.c.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

4.d.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol). _____

III. Witnessed Use?

1.) Have you observed others using this stream for recreation since Nov. 28, 1975? Yes No

If yes, proceed to #2.
If no, proceed to, "IV. Anecdotal Use?"

2.) What kinds of uses have you witnessed?

<i>Whole Body Contact Recreation</i>			
Swimming <input type="checkbox"/>	Tubing <input type="checkbox"/>	Snorkeling/Skin Diving <input type="checkbox"/>	Water Skiing <input type="checkbox"/>

If Interviewee witnessed WBCR use since Nov. 28, 1975, ask the following questions:

2.a.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.b.) Where, exactly? Describe specific location *and mark on the map* (Seemap requirements in the protocol). _____

Secondary Contact Recreation

Fishing Wading Boating Trapping Other: List:

If Interviewee witnessed SCR use since Nov. 28, 1975, ask the following questions:

2.c.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.d.) Where, exactly? Describe specific location *and mark on the map* (Seemap requirements in the protocol). _____

IV. Anecdotal Use?

1.) Have you heard about anyone using this stream since Nov. 28, 1975 for recreation – not seen or done yourself, but just heard about it? Yes No

If yes, proceed to #2.

If no, thank the individual for taking the time to talk to you and conclude the interview.

2.) What kind of uses have you heard about?

Whole Body Contact Recreation

Swimming Tubing Snorkeling/Skin Diving Water Skiing

If Interviewee heard of WBCR use since Nov. 28, 1975, ask the following questions:

2.a.) When did these uses take place (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.b.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol). _____

Secondary Contact Recreation

Fishing Wading Boating Trapping Other: List:

If Interviewee heard of SCR use since Nov. 28, 1975, ask the following questions:

2.c.) When did these uses take place (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.d.) Where, exactly? Describe specific location *and mark on the* (See map requirements in the protocol). _____

V. Others to Contact?

Can you recommend someone else we could contact that knows the stream? Yes No

If yes, that person's contact info (name, address, phone, directions?) Steve Mooney

From SITE 1

Mile to cross roads - 1 mile on E side of Rd

If no, thank the individual for taking the time to talk to you and conclude the interview.

VI. Additional Comments

1.) From the Interviewee: _____

2.) From the Interviewer: _____

VII. Information on Interviewer

Has interviewer been trained by Missouri DNR to conduct UAA Interviews?

Yes No If yes, how (check all that apply):

Workshop? (if so, enter date): _____

On-line training seminar? _____

Followed Interview Instruction Sheets? _____

Other _____

Interviewer Information:

Signature: _____

Printed Name: _____

Employer (where applicable): _____

Interviewer's phone #: _____ E-mail: _____

Field Data Sheet for Recreational Use Stream Survey

Data Sheet D—Recreational Use Interview

Stream Name KNOB CREEK (WBID # 1303)

I. Introduction

Date & Time (include AM or PM): 1:30pm 5-16-07

Interviewed: In person By phone By mail

(NOTE: If you are an Interviewee filling out this form to mail back to DNR, proceed to Question #1.)

Interviewee selected because (e.g., house next to stream; standing by stream, etc.) Property owner

Interviewer introduction to Interviewee: "My name is _____, I work for __ (name of your employer) __, and I am collecting information on how people use __ (name of the stream) __."

ASK:

1.) Are you willing to respond to a survey about this stream? (It will just take a few minutes.)

Yes No If yes, list contact information for the interviewee below:

Legal name: Bulford Hockett

Current mailing address: RR2, ADRIAN Box 342

Daytime phone number: (660) 267-3471

E-mail address (optional):

2.a.) Do you live in this area? Yes No

If yes, how many years? 50 yrs

2.b.) If you don't live nearby, are you still familiar with this stream? Yes No

If yes, how many years?

If no, thank the individual for taking the time to talk to you and conclude the interview.

3.) Are you familiar with this particular stretch of the stream? (show them the map, pointing out local landmarks such as roads, bridges, property lines) Yes No

If yes, proceed to "II. Personal Use?".

If no, proceed to Section V.

II. Personal Use?

1.) Have you or your family personally used the stream for recreation since November 28, 1975?

Yes No

If yes, proceed to #3.

If no, proceed to #2.

2.a.) List reasons stream not used.

2.b.) Proceed to "III. Witnessed Use?".

3.) How do you use the stream?

Whole Body Contact Recreation

Swimming Tubing Snorkeling/Skin Diving Water Skiing

If Interviewee (or family) used the stream for WBCR since Nov. 28, 1975, ask:

4.a.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

4.b.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol). _____

Secondary Contact Recreation

Fishing Wading Boating Trapping Other: List: _____

If Interviewee (or family) used the stream for SCR since Nov. 28, 1975, ask:

4.c.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

4.d.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol). _____

III. Witnessed Use?

1.) Have you observed others using this stream for recreation since Nov. 28, 1975? Yes No

If yes, proceed to #2.

If no, proceed to, "IV. Anecdotal Use?".

2.) What kinds of uses have you witnessed?

Whole Body Contact Recreation

Swimming Tubing Snorkeling/Skin Diving Water Skiing

If Interviewee witnessed WBCR use since Nov. 28, 1975, ask the following questions:

2.a.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.b.) Where, exactly? Describe specific location *and mark on the map* (Seemap requirements in the protocol). _____

Secondary Contact Recreation				
Fishing <input type="checkbox"/>	Wading <input type="checkbox"/>	Boating <input type="checkbox"/>	Trapping <input type="checkbox"/>	Other: <input type="checkbox"/> List:

If Interviewee witnessed SCR use since Nov. 28, 1975, ask the following questions:

2.c.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.d.) Where, exactly? Describe specific location *and mark on the map* (Seemap requirements in the protocol). _____

IV. Anecdotal Use?

1.) Have you heard about anyone using this stream since Nov. 28, 1975 for recreation – not seen or done yourself, but just heard about it? Yes No

If yes, proceed to #2.

If no, thank the individual for taking the time to talk to you and conclude the interview.

2.) What kind of uses have you heard about?

Whole Body Contact Recreation			
Swimming <input type="checkbox"/>	Tubing <input type="checkbox"/>	Snorkeling/Skin Diving <input type="checkbox"/>	Water Skiing <input type="checkbox"/>

If Interviewee heard of WBCR use since Nov. 28, 1975, ask the following questions:

2.a.) When did these uses take place (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.b.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol). _____

Secondary Contact Recreation

Fishing Wading Boating Trapping Other: List:

If Interviewee heard of SCR use since Nov. 28, 1975, ask the following questions:

2.c.) When did these uses take place (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.d.) Where, exactly? Describe specific location *and mark on the* (See map requirements in the protocol). _____

V. Others to Contact?

Can you recommend someone else we could contact that knows the stream? Yes No
If yes, that person's contact info (name, address, phone, directions?) _____

If no, thank the individual for taking the time to talk to you and conclude the interview.

VI. Additional Comments

1.) From the Interviewee: _____

2.) From the Interviewer: _____

VII. Information on Interviewer

Has interviewer been trained by Missouri DNR to conduct UAA Interviews?

Yes No If yes, how (check all that apply):

Workshop? (if so, enter date): _____

On-line training seminar? _____

Followed Interview Instruction Sheets? _____

Other _____

Interviewer Information:

Signature: _____

Printed Name: _____

Employer (where applicable): _____

Interviewer's phone #: _____ E-mail: _____

Field Data Sheet for Recreational Use Stream Survey

Data Sheet D—Recreational Use Interview

Stream Name KNOB CREEK (WBID # 1303)

I. Introduction

Date & Time (include AM or PM): 12:50 pm 16, MAR-07

Interviewed: In person By phone By mail

(NOTE: If you are an Interviewee filling out this form to mail back to DNR, proceed to Question #1.)

Interviewee selected because (e.g., house next to stream; standing by stream, etc.) LIVES & FARMS
LAND ON STREAM SEGMENT

Interviewer introduction to Interviewee: "My name is _____, I work for _____ (name of your employer), and I am collecting information on how people use _____ (name of the stream)."

ASK:

1.) Are you willing to respond to a survey about this stream? (It will just take a few minutes.)

Yes No If yes, list contact information for the interviewee below:

Legal name: LEWIS SNEDEGER

Current mailing address: RR2, BOX 354 ADRIAN MO.

Daytime phone number: (660) 267-3083

E-mail address (optional):

2.a.) Do you live in this area? Yes No

If yes, how many years? 9 yrs

2.b.) If you don't live nearby, are you still familiar with this stream? Yes No

If yes, how many years?

If no, thank the individual for taking the time to talk to you and conclude the interview.

3.) Are you familiar with this particular stretch of the stream? (show them the map, pointing out local landmarks such as roads, bridges, property lines) Yes No

If yes, proceed to "II. Personal Use?".

If no, proceed to Section V.

II. Personal Use?

1.) Have you or your family personally used the stream for recreation since November 28, 1975?

Yes No

If yes, proceed to #3.

If no, proceed to #2.

2.a.) List reasons stream not used.

2.b.) Proceed to "III. Witnessed Use?".

3.) How do you use the stream?

WATER CATTLE

Whole Body Contact Recreation

Swimming Tubing Snorkeling/Skin Diving Water Skiing

If Interviewee (or family) used the stream for WBCR since Nov. 28, 1975, ask:

4.a.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

4.b.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol). _____

Secondary Contact Recreation

Fishing Wading Boating Trapping Other: List: _____

If Interviewee (or family) used the stream for SCR since Nov. 28, 1975, ask:

4.c.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

4.d.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol). _____

III. Witnessed Use?

1.) Have you observed others using this stream for recreation since Nov. 28, 1975? Yes No

If yes, proceed to #2.

If no, proceed to, "IV. Anecdotal Use?"

2.) What kinds of uses have you witnessed?

Whole Body Contact Recreation

Swimming Tubing Snorkeling/Skin Diving Water Skiing

If Interviewee witnessed WBCR use since Nov. 28, 1975, ask the following questions:

2.a.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.b.) Where, exactly? Describe specific location *and mark on the map* (Seemap requirements in the protocol). _____

Secondary Contact Recreation

Fishing Wading Boating Trapping Other: List:

If Interviewee witnessed SCR use since Nov. 28, 1975, ask the following questions:

2.c.) When (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.d.) Where, exactly? Describe specific location *and mark on the map* (Seemap requirements in the protocol). _____

IV. Anecdotal Use?

1.) Have you heard about anyone using this stream since Nov. 28, 1975 for recreation – not seen or done yourself, but just heard about it? Yes No

If yes, proceed to #2.

If no, thank the individual for taking the time to talk to you and conclude the interview.

2.) What kind of uses have you heard about?

Whole Body Contact Recreation

Swimming Tubing Snorkeling/Skin Diving Water Skiing

If Interviewee heard of WBCR use since Nov. 28, 1975, ask the following questions:

2.a.) When did these uses take place (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.b.) Where, exactly? Describe specific location *and mark on the map* (See map requirements in the protocol). _____

Secondary Contact Recreation

Fishing | Wading | Boating | Trapping | Other: List: _____

If Interviewee heard of SCR use since Nov. 28, 1975, ask the following questions:

2.c.) When did these uses take place (e.g., year(s)?; season?; only after a rain?) and how often (times/year)? _____

2.d.) Where, exactly? Describe specific location *and mark on the* (See map requirements in the protocol). _____

V. Others to Contact?

Can you recommend someone else we could contact that knows the stream? Yes No
If yes, that person's contact info (name, address, phone, directions?) _____

If no, thank the individual for taking the time to talk to you and conclude the interview.

VI. Additional Comments

1.) From the Interviewee: _____

2.) From the Interviewer: _____

VII. Information on Interviewer

Has interviewer been trained by Missouri DNR to conduct UAA Interviews?

Yes No If yes, how (check all that apply):

Workshop? (if so, enter date): _____

On-line training seminar? _____

Followed Interview Instruction Sheets? _____

Other _____

Interviewer Information:

Signature: _____

Printed Name: _____

Employer (where applicable): _____

Interviewer's phone #: _____ E-mail: _____