



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 2017 Little Indian Creek

Submitted by
Olsson Associates

To
Missouri Department of Natural Resources
Water Protection Program

On
October 14, 2008

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet A – Water Body Identification

I. Water Body Information (for water body being surveyed)

Water Body Name (from USGS 7.5' quad): L. Indian Cr.
Missouri Water Body Identification (WBID) Number: 2017
8-digit HUC: 07140102
County(ies), Listed Upstream to Downstream: Washington
Upstream Legal Description (from Table H): 30, 40N, 2E
Downstream Legal Description (from Table H): 31, 40N, 2E
Number of sites evaluated: 3
List all site numbers, <u>consecutively upstream to downstream</u> : 2017-1, 2017-2, 2017-3
Include a Site Location Map(s). The map must include all requirements detailed in the <i>Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol</i> (Section IV.D.8.a).

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

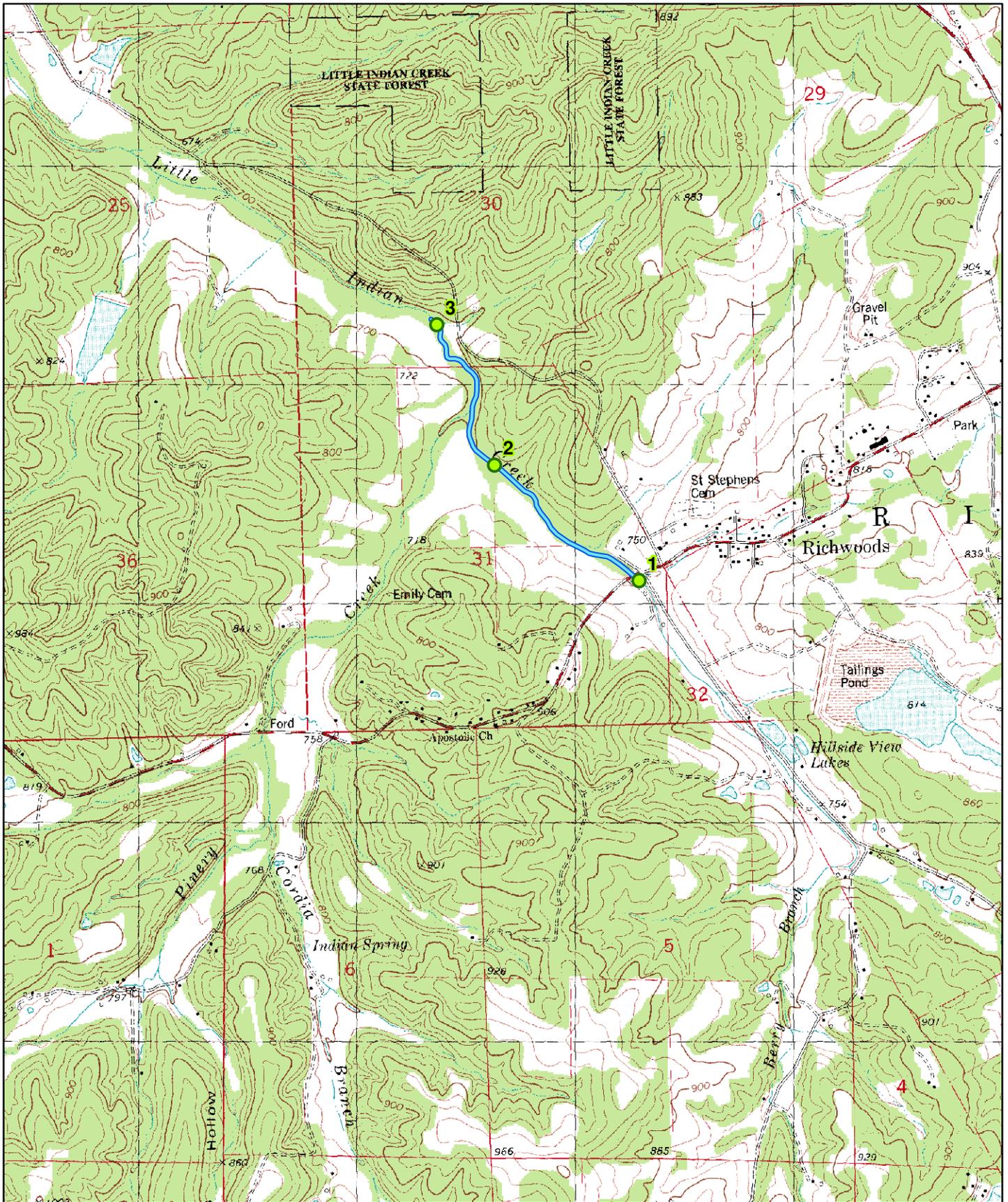
Facility Name(s) and Permit Number(s): Richwoods R-7 School MO:0088927

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

Name of Surveyor: Lindsey Schmid/Micah Hamer	Telephone Number 417-890-8802
Organization/Employer: Olsson Associates	

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.

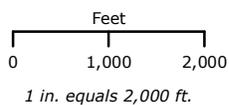
Signed: _____ **Date:** 08-12-08



**MISSOURI RECREATIONAL
USE ATTAINABILITY ANALYSIS**

Stream: L. Indian Cr.
WBID: 2017

Map Sheet: 1/1
County: Washington



WBID # 2017

Site # 1

Field Data Sheets for Recreational Use Stream Surveys

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

(must be completed for each site)

Date & Time: 08-12-08 8:30 a.m.	Location Description (e.g., road crossing): Highway A at Richwoods
Stream Name: L. Indian Cr.	
Current Weather Conditions: Clear	Facility Name(s): Richwoods R-7 School
Weather Conditions for Past 10 days: 0.49" @ Farmington	Permit Number(s): MO:0088927
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): 689284	Northing (UTM Y): 4225309	Horizontal Accuracy: (EPE / FOM / PDOP) 67 ft. Meters
Site 11	Easting (UTM X): 689160	Northing (UTM Y): 4225404	Horizontal Accuracy: (EPE / FOM / PDOP) 50 ft. Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2017-1-A	Upstream looking down	2017-1-B	Downstream looking up		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

Site # 1

Field Data Sheets for Recreational Use Stream Surveys

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

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

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

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

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

Small amounts of algae on rocks. Dense plants on shore

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.

Site # 1

Field Data Sheets for Recreational Use Stream Surveys

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

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

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

Comments: (Please record any additional comments here.)

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

Printed Names of Personnel Collecting Data: Lindsey Schmid / Micah Hamer

Surveyor's Signature: _____ Date of Survey: 08-12-08

Organization: Olsson Associates Position: Field Service

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u> L. Indian Cr. </u> Waterbody ID: <u> 2017 </u> Site #: <u> 1 </u> Estimated Channel Incision: <u> 0.05 </u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u> 689284 </u> UTM Y: <u> 4225309 </u> +/- <u> 67 ft. </u> (meters) 11 UTM X: <u> 689160 </u> UTM Y: <u> 4225404 </u> +/- <u> 50 ft. </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> Lindsey Schmid / Micah Hamer </u>	Dissolved Oxygen Date: <u> 8/12/2008 </u> Time: <u> 8:30 a.m. </u> Dissolved Oxygen: <u> 10.11 </u> (mg/L) Dissolved Oxygen: <u> 106.4 </u> (% sat) Specific Cond: <u> 430 </u> (μS/cm) Water Temperature: <u> 17.6 </u> (°C)
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Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)						
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	0.39	0.11	0.53	0.08	0.63	0.13	0.41	0.09	0.46	0.18	0.37	0.08	0.21	0.05	0.30	0.05	0.52	0.14	0.61	0.05	0.52	0.17
	2	0.78	0.05	1.06	0.05	1.26	0.15	0.82	0.10	0.92	0.15	0.74	0.05	0.42	0.05	0.60	0.05	1.04	0.15	1.22	0.08	1.04	0.19
	3	1.17	0.05	1.59	0.14	1.89	0.13	1.23	0.12	1.38	0.19	1.11	0.12	0.63	0.05	0.90	0.07	1.56	0.19	1.83	0.09	1.56	0.19
	4	1.56	0.05	2.12	0.12	2.52	0.16	1.64	0.15	1.84	0.23	1.48	0.18	0.84	0.15	1.20	0.07	2.08	0.16	2.44	0.10	2.08	0.17
	5	1.95	0.05	2.65	0.13	3.15	0.19	2.05	0.15	2.30	0.34	1.85	0.22	1.05	0.13	1.50	0.08	2.60	0.16	3.05	0.10	2.60	0.22
	6	2.34	0.08	3.18	0.08	3.78	0.24	2.46	0.18	2.76	0.38	2.22	0.19	1.26	0.07	1.80	0.10	3.12	0.16	3.66	0.09	3.12	0.20
	7	2.73	0.15	3.71	0.13	4.41	0.23	2.87	0.21	3.22	0.38	2.59	0.14	1.47	0.07	2.10	0.09	3.64	0.21	4.27	0.10	3.64	0.19
	8	3.12	0.12	4.24	0.07	5.04	0.24	3.28	0.07	3.68	0.30	2.96	0.15	1.68	0.07	2.40	0.08	4.16	0.13	4.88	0.09	4.16	0.19
9	3.51	0.15	4.77	0.08	5.67	0.18	3.69	0.05	4.14	0.23	3.33	0.16	1.89	0.08	2.70	0.05	4.68	0.06	5.49	0.05	4.68	0.05	
Right Bank		3.90	0.00	5.30	0.00	6.30	0.00	4.10	0.00	4.60	0.00	3.70	0.00	2.10	0.00	3.00	0.00	5.20	0.00	6.10	0.00	5.20	0.00
Feature Type <small>(riffle, run, or pool)</small>		Riffle		Run		Run		Run		run/under bridge		Run		Rifflee		Riffle		Run		Run		Run	

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

MAXIMUM 0.38

MEDIAN 0.12

Surveyor's Signature: _____ Date: 08-12-08

WBID # 2017

Site # 2

Field Data Sheets for Recreational Use Stream Surveys

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

(must be completed for each site)

Date & Time: 08-12-08 9:30 a.m.	Location Description (e.g., road crossing): Access by walking downstream from segment 1.
Stream Name: L. Indian Cr.	
Current Weather Conditions: Clear	Facility Name(s): Richwoods R-7 Schools
Weather Conditions for Past 10 days: 0.49" @ Farmington	Permit Number(s): MO:0088927
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): 688625	Northing (UTM Y): 4225846	Horizontal Accuracy: (EPE / FOM / PDOP)	375 ft. Meters
Site 11	Easting (UTM X): 688512	Northing (UTM Y): 4226008	Horizontal Accuracy: (EPE / FOM / PDOP)	141 ft. Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2017-2-A	Pool	2017-2-B	Upstream looking down	2017-2-C	Horse (?) trail
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2017-2-D	Trail	2017-2-E	Pool	2017-2-F	Downstream looking up
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

Site # 2

Field Data Sheets for Recreational Use Stream Surveys

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

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

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

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

<input type="checkbox"/> Roads	<input checked="" 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: Horse trail			

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

% Cobble	75% Gravel	20% Sand	% Silt	% Mud/Clay	5% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Some small patches of brown algae on bedrock.

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.

Site # 2

Field Data Sheets for Recreational Use Stream Surveys

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

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

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
Pool	20m from trail, 0.5 miles	6	10	.80	>1

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: Lindsey Schmid / Micah Hamer

Surveyor's Signature: _____ Date of Survey: 08-12-08

Organization: Olsson Associates Position: Field Service

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u> L. Indian Cr. </u> Waterbody ID: <u> 2017 </u> Site #: <u> 2 </u> Estimated Channel Incision: <u> 0.5 </u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u> 688625 </u> UTM Y: <u> 4225846 </u> +/- <u> 375 ft. </u> (meters) 11 UTM X: <u> 688512 </u> UTM Y: <u> 4226008 </u> +/- <u> 141 ft. </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> Lindsey Schmid / Micah Hamer </u>	Dissolved Oxygen Date: <u> 08-12-08 </u> Time: <u> 9:30 a.m. </u> Dissolved Oxygen: <u> 8.45 </u> (mg/L) Dissolved Oxygen: <u> 88.7 </u> (% sat) Specific Cond: <u> 456 </u> (µS/cm) Water Temperature: <u> 20.1 </u> (°C)
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Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	0.61	0.13	0.38	0.08	0.44	0.05	0.43	0.37	0.83	0.14	0.65	0.08	0.38	0.05	0.46	0.09	0.52	0.14	0.50	0.11	0.54	1.00
	2	1.22	0.12	0.76	0.07	0.88	0.08	0.86	0.38	1.66	0.28	1.30	0.13	0.76	0.06	0.92	0.09	1.04	0.20	1.00	0.20	1.08	1.00
	3	1.83	0.26	1.14	0.08	1.32	0.07	1.29	0.38	2.49	0.29	1.95	0.22	1.14	0.09	1.38	0.08	1.56	0.26	1.50	0.29	1.62	1.00
	4	2.44	0.40	1.52	0.08	1.76	0.09	1.72	0.39	3.32	0.29	2.60	0.20	1.52	0.09	1.84	0.08	2.08	0.41	2.00	0.20	2.16	0.96
	5	3.05	0.51	1.90	0.09	2.20	0.10	2.15	0.28	4.15	0.28	3.25	0.24	1.90	0.13	2.30	0.05	2.60	0.45	2.50	0.22	2.70	0.86
	6	3.66	0.74	2.28	0.14	2.64	0.13	2.58	0.26	4.98	0.32	3.90	0.14	2.28	0.10	2.76	0.10	3.12	0.42	3.00	0.25	3.24	0.67
	7	4.27	0.84	2.66	0.13	3.08	0.14	3.01	0.19	5.81	0.37	4.55	0.19	2.66	0.09	3.22	0.09	3.64	0.39	3.50	0.18	3.78	0.47
	8	4.88	1.00	3.04	0.12	3.52	0.13	3.44	0.14	6.64	0.39	5.20	0.16	3.04	0.05	3.68	0.05	4.16	0.35	4.00	0.11	4.32	0.30
9	5.49	1.00	3.42	0.05	3.96	0.10	3.87	0.14	7.47	0.29	5.85	0.06	3.42	0.05	4.14	0.05	4.68	0.19	4.50	0.06	4.86	0.11	
Right Bank		6.10	0.00	3.80	0.00	4.40	0.00	4.30	0.00	8.30	0.00	6.50	0.00	3.80	0.00	4.60	0.00	5.20	0.00	5.00	0.00	5.40	0.00
Feature Type <small>(riffle, run, or pool)</small>		Pool		Riffle		Riffle		Run		Run		Run		Riffle		Riffle		Run		Run		Run	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

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

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

All measurements to be taken to the nearest 0.01 meter.

MAXIMUM 1.00

MEDIAN 0.14

Surveyor's Signature: _____ Date: 08-12-08

WBID # 2017

Site # 3

Field Data Sheets for Recreational Use Stream Surveys

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

(must be completed for each site)

Date & Time: 08-12-08. 10:30 a.m.	Location Description (e.g., road crossing):
Stream Name: L. Indian Cr.	Low water bridge near end of segment
Current Weather Conditions: Clear	Facility Name(s): Richwoods R-7 School
Weather Conditions for Past 10 days: 0.49" @ Farmington	Permit Number(s): MO:0088927
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): 688366	Northing (UTM Y): 4226448	Horizontal Accuracy: (EPE / FOM / PDOP) 63 ft. Meters
Site 11	Easting (UTM X): 688209	Northing (UTM Y): 4226555	Horizontal Accuracy: (EPE / FOM / PDOP) 42 ft. Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2017-3-A	Upstream looking down/pool	2017-3-B	Bridge	2017-3-C	Chairs
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2017-3-D	Pool	2017-3-E	Downstream looking up		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

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

Field Data Sheets for Recreational Use Stream Surveys

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

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

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

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: Chairs set up at pool near road			

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

% Cobble	40% Gravel	10% Sand	% Silt	% Mud/Clay	50% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Small amounts of brown algae on bedrock. Thick, green algae on shore line.

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)
Pool	45	5	15	1	>1

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: Lindsey Schmid/Micah Hamer

Surveyor's Signature: _____ Date of Survey: 08-12-08

Organization: Olsson Associates Position: Field Service

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u> L. Indian Cr. </u> Waterbody ID: <u> 2017 </u> Site #: <u> 3 </u> Estimated Channel Incision: <u> 0.3 </u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u> 688366 </u> UTM Y: <u> 4226448 </u> +/- <u> 63 ft. </u> (meters) 11 UTM X: <u> 688209 </u> UTM Y: <u> 4226555 </u> +/- <u> 42 ft. </u> (meters) Average Stream Width: <u> 7 </u> (meters) Length of Survey Segment: <u> 150 </u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u> Lindsey Schmid / Micah Hamer </u>	Dissolved Oxygen
	Date: <u> 08-12-08 </u> Time: <u> 10:30 a.m. </u>
	Dissolved Oxygen: <u> 7.28 </u> (mg/L)
	Dissolved Oxygen: <u> 83.9 </u> (% sat)
	Specific Cond: <u> 392 </u> (µS/cm)
	Water Temperature: <u> 21.3 </u> (°C)

Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	1.13	0.45	0.85	0.07	0.54	0.05	0.94	0.05	0.53	0.06	0.67	0.05	0.75	0.08	0.53	0.09	0.56	0.14	0.58	0.31	0.88	0.38
	2	2.26	0.64	1.70	0.11	1.08	0.09	1.88	0.05	1.06	0.09	1.34	0.11	1.50	0.09	1.06	0.22	1.12	0.29	1.16	0.42	1.76	0.39
	3	3.39	1.00	2.55	0.20	1.62	0.12	2.82	0.07	1.59	0.12	2.01	0.12	2.25	0.18	1.59	0.33	1.68	0.48	1.74	0.25	2.64	0.39
	4	4.52	1.00	3.40	0.32	2.16	0.15	3.76	0.00	2.12	0.13	2.68	0.13	3.00	0.18	2.12	0.46	2.24	0.56	2.32	0.28	3.52	0.23
	5	5.65	1.00	4.25	0.28	2.70	0.25	4.70	0.00	2.65	0.18	3.35	0.12	3.75	0.21	2.65	0.58	2.80	0.57	2.90	0.21	4.40	0.22
	6	6.78	1.00	5.10	0.23	3.24	0.29	5.64	0.00	3.18	0.21	4.02	0.09	4.50	0.31	3.18	0.68	3.36	0.45	3.48	0.19	5.28	0.23
	7	7.91	1.00	5.95	0.23	3.78	0.31	6.58	0.05	3.71	0.26	4.69	0.11	5.25	0.45	3.71	0.87	3.92	0.26	4.06	0.15	6.16	0.21
	8	9.04	0.74	6.80	0.34	4.32	0.33	7.52	0.08	4.24	0.31	5.36	0.10	6.00	0.39	4.24	1.00	4.48	0.22	4.64	0.11	7.04	0.19
9	10.17	0.29	7.65	0.37	4.86	0.37	8.46	0.12	4.77	0.22	6.03	0.11	6.75	0.41	4.77	1.00	5.04	0.15	5.22	0.09	7.92	0.18	
Right Bank		11.30	0.00	8.50	0.00	5.40	0.00	9.40	0.00	5.30	0.00	6.70	0.00	7.50	0.00	5.30	0.00	5.60	0.00	5.80	0.00	8.80	0.00
	Feature Type <small>(riffle, run, or pool)</small>	Pool		Run		Run		Riffle		Run		Riffle		Run		Pool		Run		Run		Run	

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

MAXIMUM 1.00

MEDIAN 0.22

Surveyor's Signature: _____ Date: 8/12/2008





