



Use Attainability Analysis

for

WBID 3663 Tributary to 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): Trib. To Indian Cr.
Missouri Water Body Identification (WBID) Number: 3663
8-digit HUC: 07140102
County(ies), Listed Upstream to Downstream: Washington
Upstream Legal Description (from Table H): Mouth
Downstream Legal Description (from Table H): 07, 35N, 01W
Number of sites evaluated: 3
List all site numbers, <u>consecutively upstream to downstream</u> :  3663-1, 3663-2, 3663-3
<b>Include a Site Location Map(s).</b> The map must include all requirements detailed in the <i>Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol</i> (Section IV.D.8.a).

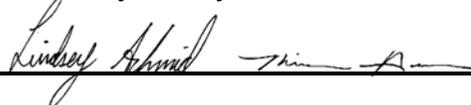
**II. Facility Information** (list all permitted discharges to this water body segment)

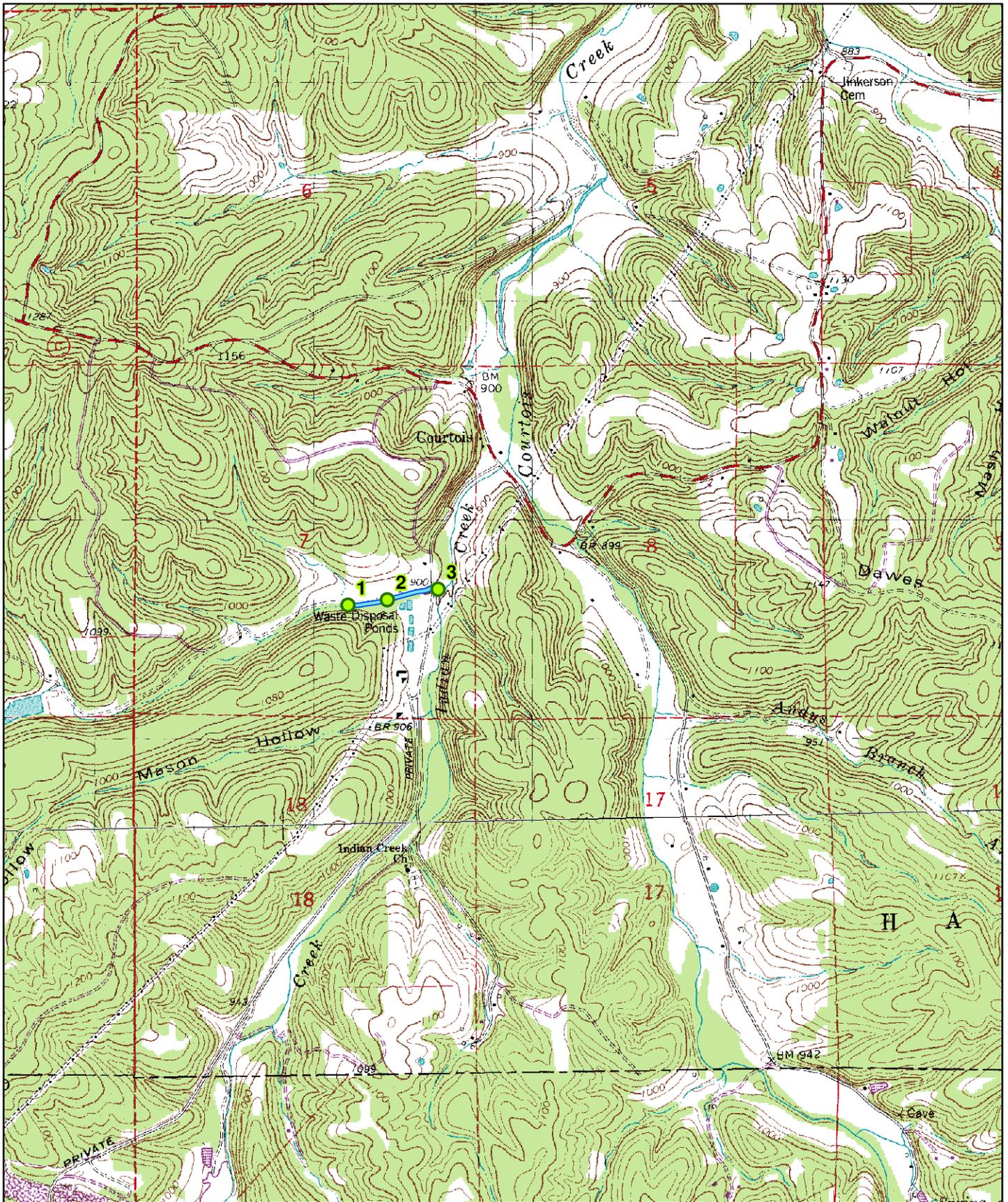
Facility Name(s) and Permit Number(s):  Doe Run, Viburnum MO:0000086
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**III. UAA Surveyor** (please **PRINT** legibly)

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.**

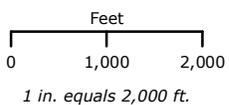
**Signed:**  **Date:** 08-14-08



**MISSOURI RECREATIONAL  
USE ATTAINABILITY ANALYSIS**

**Stream:** Trib. to Indian Cr.  
**WBID:** 3663

**Map Sheet:** 1/1  
**County:** Washington



Project No. 008-1298

WBID # 3663

Site # 1

**Field Data Sheets for Recreational Use Stream Surveys**

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

(must be completed for each site)

<b>Date &amp; Time:</b> 08-14-08 10:00 a.m.	Location Description (e.g., road crossing):
<b>Stream Name:</b> Trib. To Indian Cr.	Parallel to road
Current Weather Conditions: Sunny/Partly cloudy	Facility Name(s): Doe Run, Viburnum
Weather Conditions for Past 10 days: 0.49" @ Farmington	Permit Number(s):MO:0000086
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): 669135	Northing (UTM Y): 4180828	Horizontal Accuracy: (EPE / FOM / PDOP) 423 ft. <del>Meters</del>
Site 11	Easting (UTM X): 669319	Northing (UTM Y): 4180831	Horizontal Accuracy: (EPE / FOM / PDOP) 122 ft. <del>Meters</del>

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3663-1-A	Upstream looking down	3663-2-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 type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

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

% Cobble	80% Gravel	20% Sand	% Silt	% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site.)

20% brown algae
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**Water Characteristics\*:** (Mark all that apply.)

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

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

Site # 1

**Field Data Sheets for Recreational Use Stream Surveys**

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

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

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

**Comments:** (Please record any additional comments here.)

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

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

Surveyor's Signature:  Date of Survey: 08-14-08

Organization: Olsson Associates Position: Field Service

## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet C - Field Survey Results

Stream Name: <u>Trib. To Indian Run</u> Waterbody ID: <u>3663</u> Site #: <u>1</u> Estimated Channel Incision: <u>.1-1</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) <b>01</b> UTM X: <u>669135</u> UTM Y: <u>4180828</u> +/- <u>423 ft. (meters)</u> <b>11</b> UTM X: <u>669319</u> UTM Y: <u>4180831</u> +/- <u>122 ft. (meters)</u> Average Stream Width: <u>3</u> (meters)      Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach)      (20x average stream width) Field Staff: <u>Lindsey Schmid / Micah Hamer</u>	<b>Dissolved Oxygen</b> Date: <u>8/14/2008</u> Time: <u>10:00 a.m.</u> Dissolved Oxygen: <u>8.98</u> (mg/L) Dissolved Oxygen: <u>97</u> (% sat) Specific Cond: <u>377</u> (µS/cm) Water Temperature: <u>19.2</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)																				
<b>Left Bank</b>		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	0.26	0.05	0.33	0.05	0.32	0.09	0.46	0.05	0.32	0.05	0.43	0.26	0.31	0.36	0.24	0.05	0.47	0.17	0.18	0.05	0.24	0.17
	2	0.52	0.06	0.66	0.08	0.64	0.14	0.92	0.07	0.64	0.05	0.86	0.21	0.62	0.44	0.48	0.07	0.94	0.21	0.36	0.06	0.48	0.20
	3	0.78	0.05	0.99	0.08	0.96	0.18	1.38	0.06	0.96	0.05	1.29	0.10	0.93	0.41	0.72	0.09	1.41	0.25	0.54	0.07	0.72	0.19
	4	1.04	0.05	1.32	0.07	1.28	0.24	1.84	0.10	1.28	0.05	1.72	0.05	1.24	0.36	0.96	0.13	1.88	0.33	0.72	0.06	0.96	0.16
	5	1.30	0.05	1.65	0.09	1.60	0.25	2.30	0.12	1.60	0.06	2.15	0.07	1.55	0.26	1.20	0.14	2.35	0.41	0.90	0.12	1.20	0.13
	6	1.56	0.05	1.98	0.06	1.92	0.19	2.76	0.10	1.92	0.07	2.58	0.05	1.86	0.21	1.44	0.13	2.82	0.42	1.08	0.08	1.44	0.13
	7	1.82	0.06	2.31	0.07	2.24	0.09	3.22	0.14	2.24	0.07	3.01	0.05	2.17	0.15	1.68	0.12	3.29	0.54	1.26	0.08	1.68	0.05
	8	2.08	0.07	2.64	0.05	2.56	0.07	3.68	0.15	2.56	0.07	3.44	0.12	2.48	0.13	1.92	0.08	3.76	0.60	1.44	0.07	1.92	0.05
9	2.34	0.11	2.97	0.05	2.88	0.05	4.14	0.16	2.88	0.06	3.87	0.17	2.79	0.05	2.16	0.05	4.23	0.62	1.62	0.08	2.16	0.05	
<b>Right Bank</b>		2.60	0.00	3.30	0.00	3.20	0.00	4.60	0.00	3.20	0.00	4.30	0.00	3.10	0.00	2.40	0.00	4.70	0.00	1.80	0.00	2.40	0.00
	Feature Type <small>(riffle, run, or pool)</small>	Riffle		Riffle		Run		Run		Riffle		Run		Run		Run		Run		Riffle		Run	

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

MAXIMUM      0.62  
 MEDIAN      0.08

Surveyor's Signature:

Date: 08-14-08

WBID # 3663

Site # 2

**Field Data Sheets for Recreational Use Stream Surveys**

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

(must be completed for each site)

<b>Date &amp; Time:</b> 08-14-08 10:50 a.m.	Location Description (e.g., road crossing):
<b>Stream Name :</b> Trib. To Indian Cr.	Parallel to road
Current Weather Conditions: Partly cloudy	Facility Name(s): Doe Run Viburnum
Weather Conditions for Past 10 days: 0.49" @ Farmington	Permit Number(s): MO 0000086
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): 669324	Northing (UTM Y): 4180837	Horizontal Accuracy: (EPE / FOM / PDOP)	54 ft. <del>Meters</del>	
Site 11	Easting (UTM X): 669513	Northing (UTM Y): 4180878	Horizontal Accuracy: (EPE / FOM / PDOP)	257 ft. <del>Meters</del>	

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3223-2-A	Upstream looking down	3223-2-B	Flow from waste disp. ponds	3223-2-C	Road
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3223-2-D	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 type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other: Run off of sediment and possibly concrete			

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

% Cobble	80% Gravel	20% Sand	% Silt	% Mud/Clay	% Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site.)

10% brown algae, with small amounts of bright green algae
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**Water Characteristics\*:** (Mark all that apply.)

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

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

Site # 2

**Field Data Sheets for Recreational Use Stream Surveys**

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

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

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

**Comments:** (Please record any additional comments here.)

Gray/milky water and stained gray rocks

**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: 08-14-08

Organization: Olsson Associates Position: Field Service

## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet C - Field Survey Results

Stream Name: <u>Trib. To Indian Cr.</u> Waterbody ID: <u>3663</u> Site #: <u>2</u> Estimated Channel Incision: <u>.3-1</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) <b>01</b> UTM X: <u>669324</u> UTM Y: <u>4180837</u> +/- <u>54 ft.</u> (meters) <b>11</b> UTM X: <u>669513</u> UTM Y: <u>4180878</u> +/- <u>257 ft.</u> (meters) Average Stream Width: <u>3</u> (meters)      Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach)      (20x average stream width) Field Staff: <u>Lindsey Schmid / Micah Hamer</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>8/14/2008</u> Time: <u>10:50 a.m.</u> Dissolved Oxygen: <u>8.97</u> (mg/L) Dissolved Oxygen: <u>97.4</u> (% sat) Specific Cond: <u>374</u> (µS/cm) Water Temperature: <u>19.6</u> (°C)
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#### Transect Cross-Section

Station		01		02		03		04		05		06		07		08		09		10		11	
		Distance (m)	Depth (m)																				
<b>Left Bank</b>		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	0.31	0.05	0.53	0.39	0.22	0.05	0.25	0.01	0.39	0.82	0.28	0.08	0.24	0.24	0.42	0.37	0.29	0.05	0.20	0.17	0.25	0.05
	2	0.62	0.09	1.06	0.49	0.44	0.12	0.50	0.15	0.78	0.59	0.56	0.11	0.48	0.26	0.84	0.41	0.58	0.09	0.40	0.16	0.50	0.05
	3	0.93	0.09	1.59	0.61	0.66	0.20	0.75	0.19	1.17	0.46	0.84	0.16	0.72	0.29	1.26	0.38	0.87	0.12	0.60	0.17	0.75	0.07
	4	1.24	0.07	2.12	0.64	0.88	0.28	1.00	0.16	1.56	0.42	1.12	0.16	0.96	0.29	1.68	0.31	1.16	0.16	0.80	0.16	1.00	0.06
	5	1.55	0.12	2.65	0.64	1.10	0.35	1.25	0.11	1.95	0.36	1.40	0.11	1.20	0.19	2.10	0.25	1.45	0.20	1.00	0.12	1.25	0.07
	6	1.86	0.15	3.18	0.57	1.32	0.35	1.50	0.08	2.34	0.32	1.68	0.15	1.44	0.22	2.52	0.24	1.74	0.21	1.20	0.12	1.50	0.11
	7	2.17	0.25	3.71	0.38	1.54	0.35	1.75	0.05	2.73	0.31	1.96	0.13	1.68	0.18	2.94	0.31	2.03	0.19	1.40	0.11	1.75	0.15
	8	2.48	0.33	4.24	0.29	1.76	0.37	2.00	0.05	3.12	0.21	2.24	0.11	1.92	0.13	3.36	0.47	2.32	0.01	1.60	0.07	2.00	0.18
9	2.79	0.35	4.77	0.24	1.98	0.39	2.25	0.05	3.51	0.09	2.52	0.09	2.16	0.10	3.78	0.45	2.61	0.23	1.80	0.05	2.25	0.17	
<b>Right Bank</b>		3.10	0.00	5.30	0.00	2.20	0.00	2.50	0.00	3.90	0.00	2.80	0.00	2.40	0.00	4.20	0.00	2.90	0.00	2.00	0.00	2.50	0.00
<b>Feature Type</b>		Run		Pool		Run																	

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

MAXIMUM      0.82

MEDIAN      0.16

Surveyor's Signature:

Date: 8/14/2008

WBID # 3663

Site # 3

**Field Data Sheets for Recreational Use Stream Surveys**

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

(must be completed for each site)

<b>Date &amp; Time:</b> 08-14-08 11:30 a.m.	Location Description (e.g., road crossing):
<b>Stream Name:</b> Trib. To Indian Cr.	Road crossing, parallel to road
Current Weather Conditions: Cloudy	Facility Name(s): Doe Run, Viburnum
Weather Conditions for Past 10 days: 0.49" @ Farmington	Permit Number(s): MO:0000086
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): 669547	Northing (UTM Y): 4180925	Horizontal Accuracy: (EPE / FOM / PDOP)	167 ft.	<del>Meters</del>
Site 11	Easting (UTM X): 669605	Northing (UTM Y): 4181036	Horizontal Accuracy: (EPE / FOM / PDOP)	71 ft.	<del>Meters</del>

**Photos:**

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
3663-3-A	Bridge 15m from segment	3663-3-B	Upstream looking down	3663-3-C	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 # 3

**Field Data Sheets for Recreational Use Stream Surveys**

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

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

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input 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	10% Gravel	10% Sand	% Silt	% Mud/Clay	80% Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site.)

Small amount of brown and green algae on bedrock
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**Water Characteristics\*:** (Mark all that apply.)

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

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

Site # 3

**Field Data Sheets for Recreational Use Stream Surveys**

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

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

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

**Comments:** (Please record any additional comments here.)

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

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

Surveyor's Signature:  Date of Survey: 08-14-08

Organization: Olsson Associates Position: Field Service

## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet C - Field Survey Results

Stream Name: <u>Trib. To Indian Run</u> Waterbody ID: <u>3663</u> Site #: <u>3</u> Estimated Channel Incision: <u>0.1</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) <b>01</b> UTM X: <u>669547</u> UTM Y: <u>4180925</u> +/- <u>167</u> ft (meters) <b>11</b> UTM X: <u>669605</u> UTM Y: <u>4181036</u> +/- <u>71</u> ft (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>	<b>Dissolved Oxygen</b> Date: <u>8/14/2008</u> Time: <u>11:30 a.m.</u> Dissolved Oxygen: <u>9.16</u> (mg/L) Dissolved Oxygen: <u>101.8</u> (% sat) Specific Cond: <u>589</u> (µS/cm) Water Temperature: <u>20.4</u> (°C)
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#### Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
<b>Left Bank</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.36	0.09	0.24	0.19	0.29	0.11	0.50	0.05	0.41	0.05	0.61	0.18	0.64	0.15	0.98	0.12	0.49	0.19	0.61	0.17	0.53	0.21
2	0.72	0.09	0.48	0.11	0.58	0.16	1.00	0.05	0.82	0.09	1.22	0.32	1.28	0.26	1.96	0.14	0.98	0.21	1.22	0.18	1.06	0.28
3	1.08	0.09	0.72	0.05	0.87	0.33	1.50	0.05	1.23	0.19	1.83	0.42	1.92	0.42	2.94	0.13	1.47	0.18	1.83	0.30	1.59	0.34
4	1.44	0.12	0.96	0.05	1.16	0.32	2.00	0.05	1.64	0.23	2.44	0.57	2.56	0.59	3.92	0.20	1.96	0.22	2.44	0.29	2.12	0.39
5	1.80	0.13	1.20	0.06	1.45	0.24	2.50	0.20	2.05	0.31	3.05	0.69	3.20	0.69	4.90	0.22	2.45	0.19	3.05	0.25	2.65	0.36
6	2.16	0.10	1.44	0.05	1.74	0.13	3.00	0.17	2.46	0.29	3.66	0.60	3.84	0.65	5.88	0.37	2.94	0.14	3.66	0.19	3.18	0.30
7	2.52	0.06	1.68	0.05	2.03	0.05	3.50	0.07	2.87	0.25	4.27	0.36	4.48	0.53	6.86	0.61	3.43	0.15	4.27	0.15	3.71	0.29
8	2.88	0.07	1.92	0.05	2.32	0.05	4.00	0.09	3.28	0.22	4.88	0.22	5.12	0.41	7.84	0.59	3.92	0.13	4.88	0.16	4.24	0.15
9	3.24	0.07	2.16	0.05	2.61	0.06	4.50	0.06	3.69	0.18	5.49	0.32	5.76	0.23	8.82	0.40	4.41	0.05	5.49	0.12	4.77	0.17
<b>Right Bank</b>	3.60	0.00	2.40	0.00	2.90	0.00	5.00	0.00	4.10	0.00	6.10	0.00	6.40	0.00	9.80	0.00	4.90	0.00	6.10	0.00	5.30	0.00
<b>Feature Type</b> <small>(riffle, run, or pool)</small>	Run		Run		Run		Riffle		Run		Pool		Run/Pool		Run		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      0.69      <-- taken on wrong segment.  
 MEDIAN      0.17

Surveyor's Signature:

Date: 8/14/2008







WBID: 3663-3C  
DLU  
8/14/08 12:00pm