



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 2615 Harviell Ditch #3

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): Harviell Ditch (#3)
Missouri Water Body Identification (WBID) Number: 2615
8-digit HUC: 11010008
County(ies), Listed Upstream to Downstream: Ripley, Butler
Upstream Legal Description (from Table H): 14, 23N, 5E
Downstream Legal Description (from Table H): Stateline
Number of sites evaluated: 10
List all site numbers, <u>consecutively upstream to downstream</u> : 2615-1, 2615-2, 2615-3, 2615-4, 2615-5, 2615-6, 2615-7, 2615-8, 2615-9, 2615-10
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).

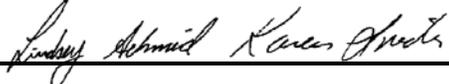
II. Facility Information (list all permitted discharges to this water body segment)

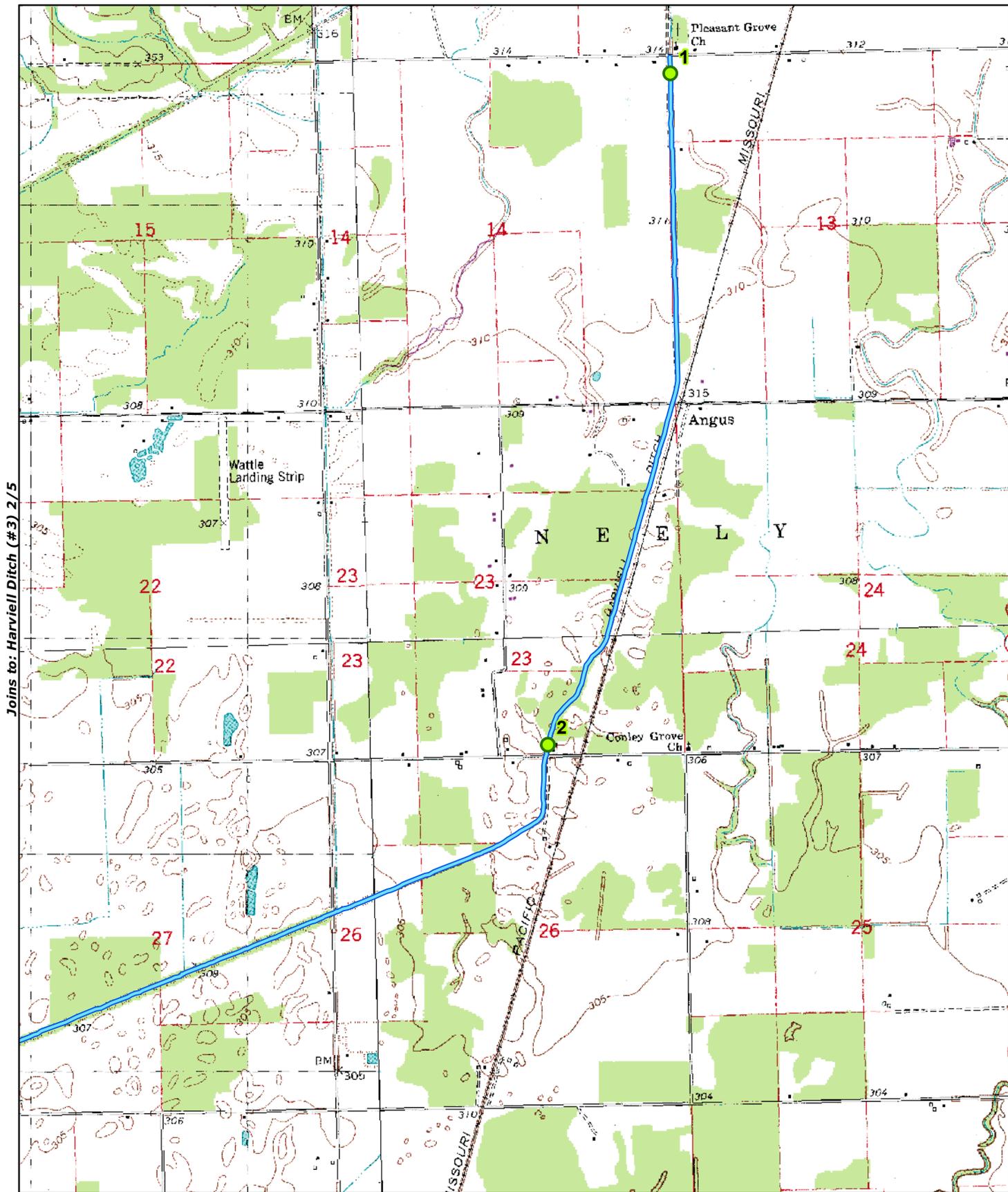
Facility Name(s) and Permit Number(s): Picture Palace MO 0053520

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

Name of Surveyor: Lindsey Schmid / Karen Snider	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:** 09-11-08



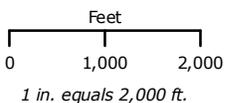
Joins to: Harviell Ditch (#3) 2/5

Joins to: Harviell Ditch (#3) 2/5

**MISSOURI RECREATIONAL
USE ATTAINABILITY ANALYSIS**

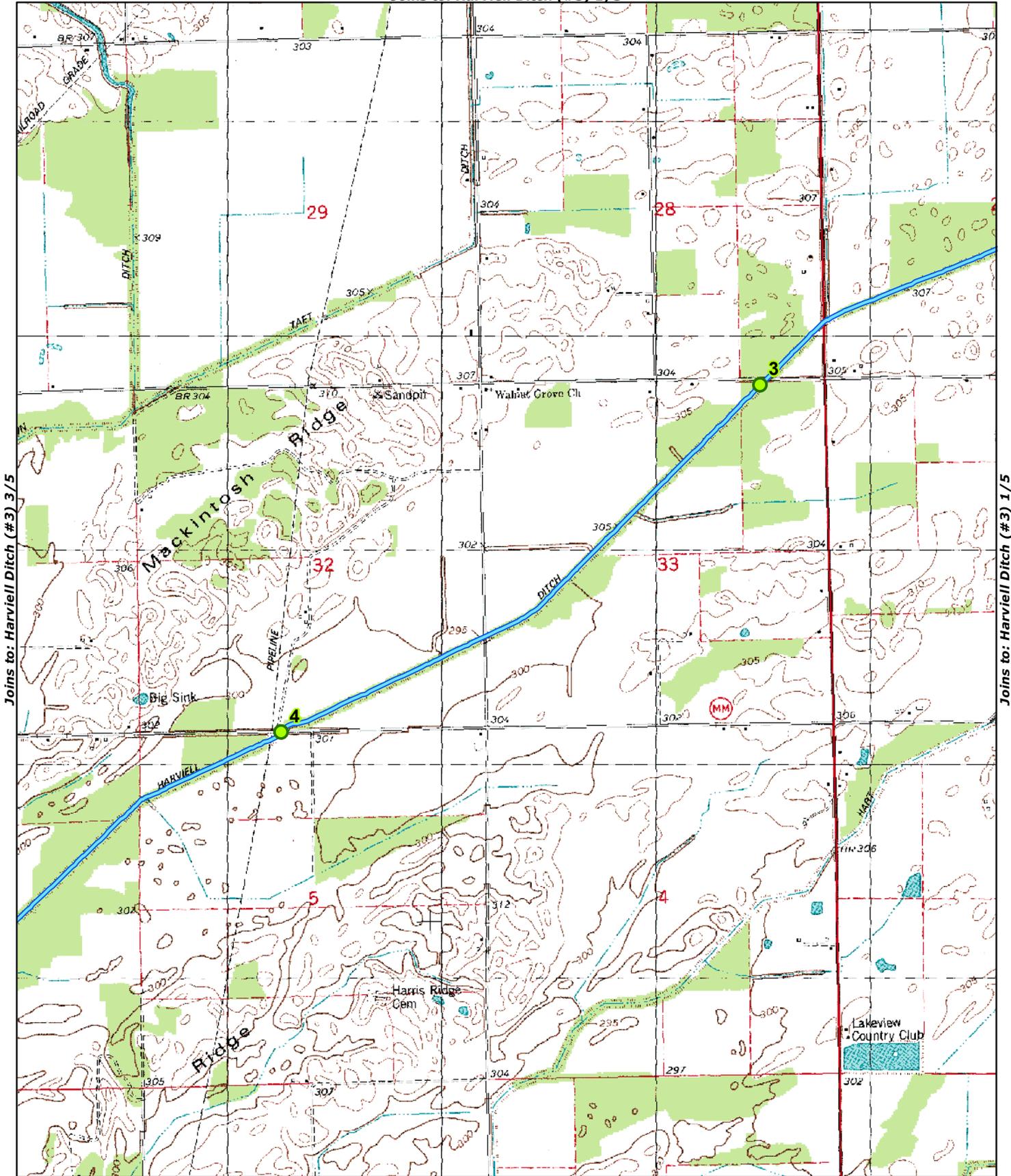
Stream: Harviell Ditch (#3)
WBID: 2615

Map Sheet: 1/5
County: Butler



Project No. 008-1298

Joins to: Harviell Ditch (#3) 1/5

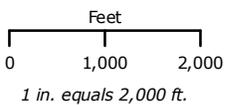


Joins to: Harviell Ditch (#3) 3/5

MISSOURI RECREATIONAL USE ATTAINABILITY ANALYSIS

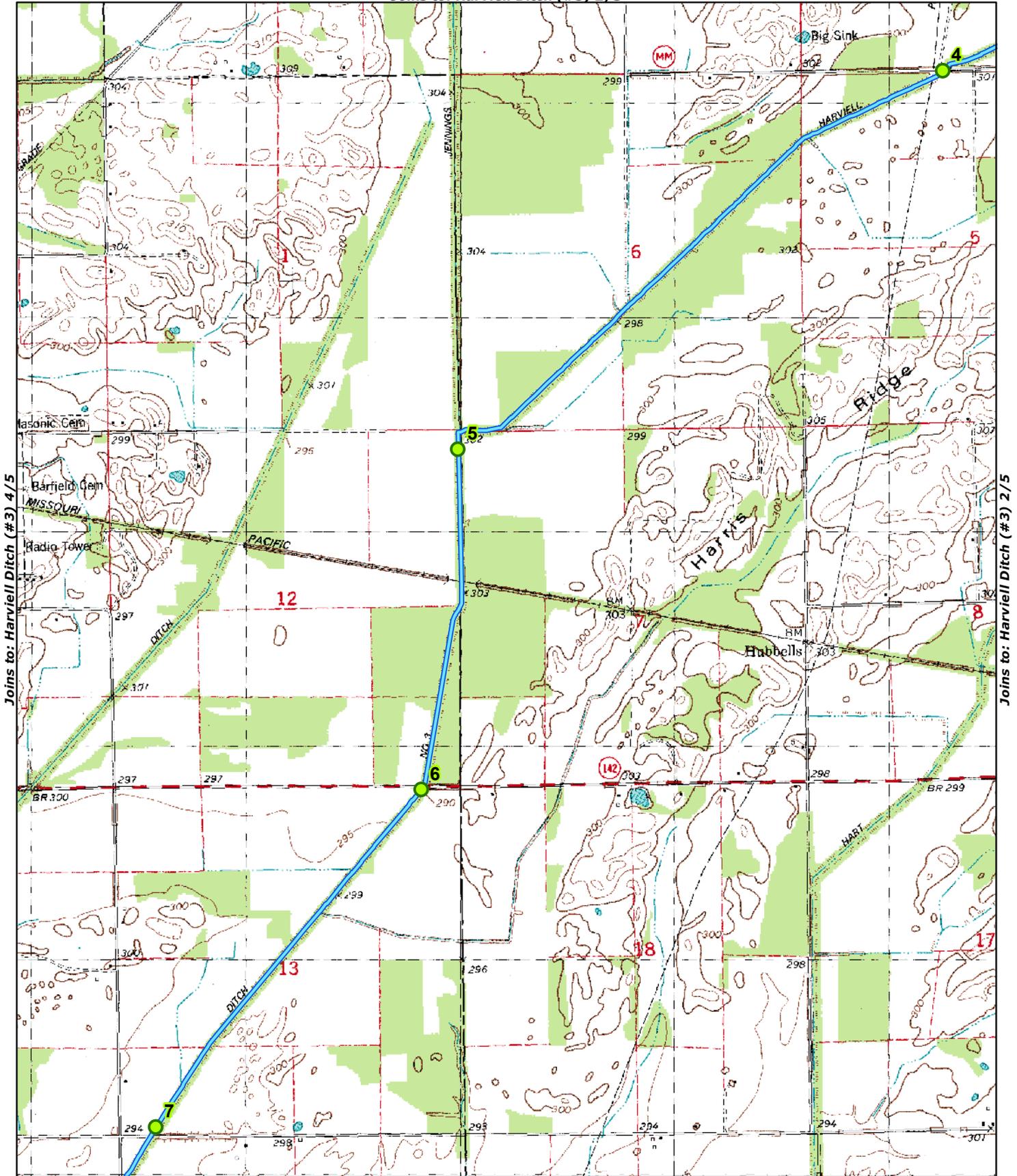
Stream: Harviell Ditch (#3)
WBID: 2615

Map Sheet: 2/5
County: Butler



Project No. 008-1298

Joins to: Harviell Ditch (#3) 2/5

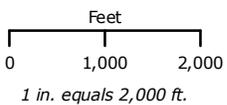


Joins to: Harviell Ditch (#3) 4/5

Joins to: Harviell Ditch (#3) 2/5

Joins to: Harviell Ditch (#3) 4/5

MISSOURI RECREATIONAL USE ATTAINABILITY ANALYSIS



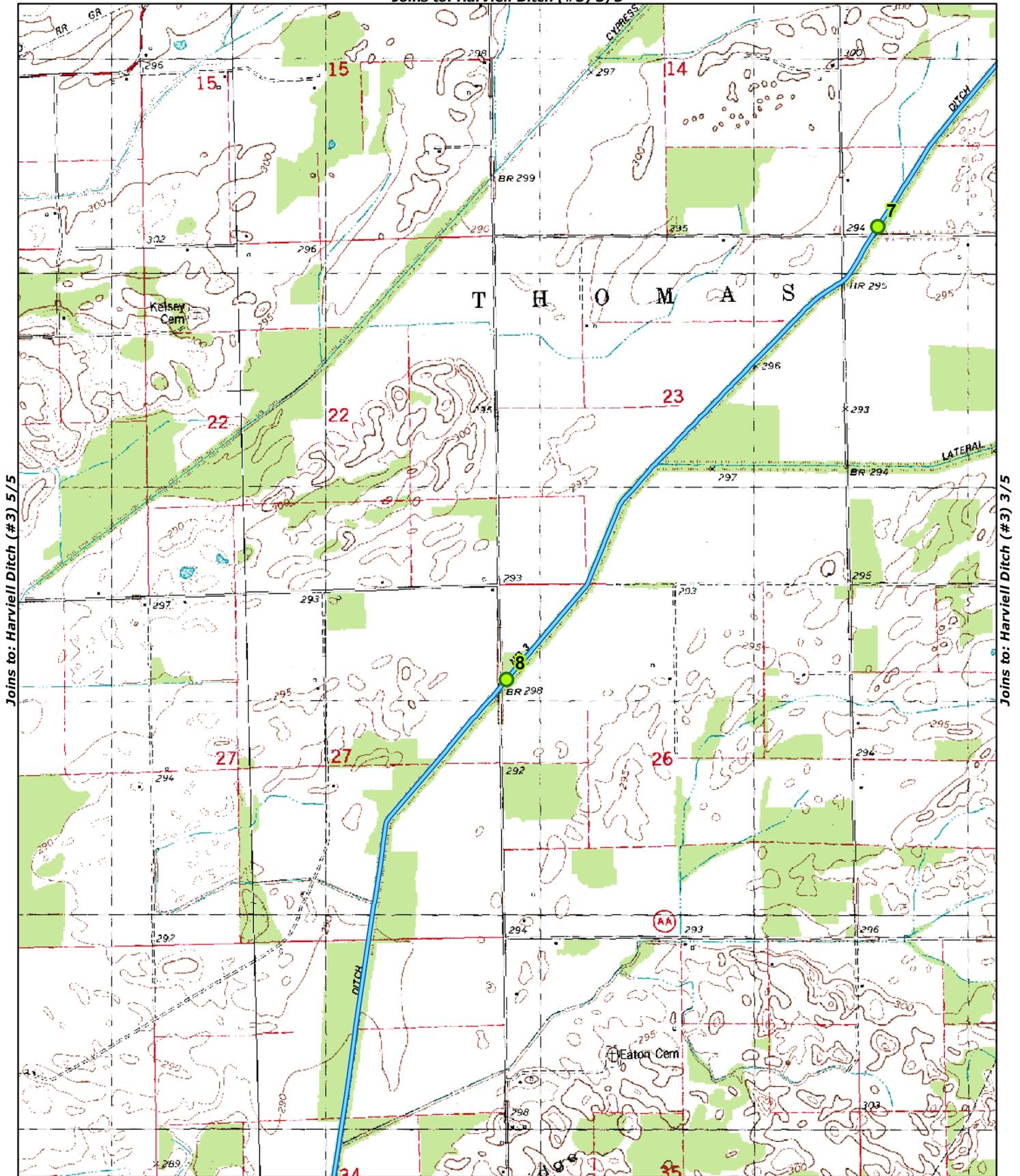
Stream: Harviell Ditch (#3)
WBID: 2615

Map Sheet: 3/5
County: Butler/Ripley



Project No. 008-1298

Joins to: Harviell Ditch (#3) 3/5



Joins to: Harviell Ditch (#3) 5/5

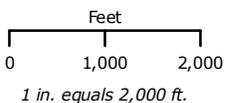
Joins to: Harviell Ditch (#3) 3/5

Joins to: Harviell Ditch (#3) 5/5

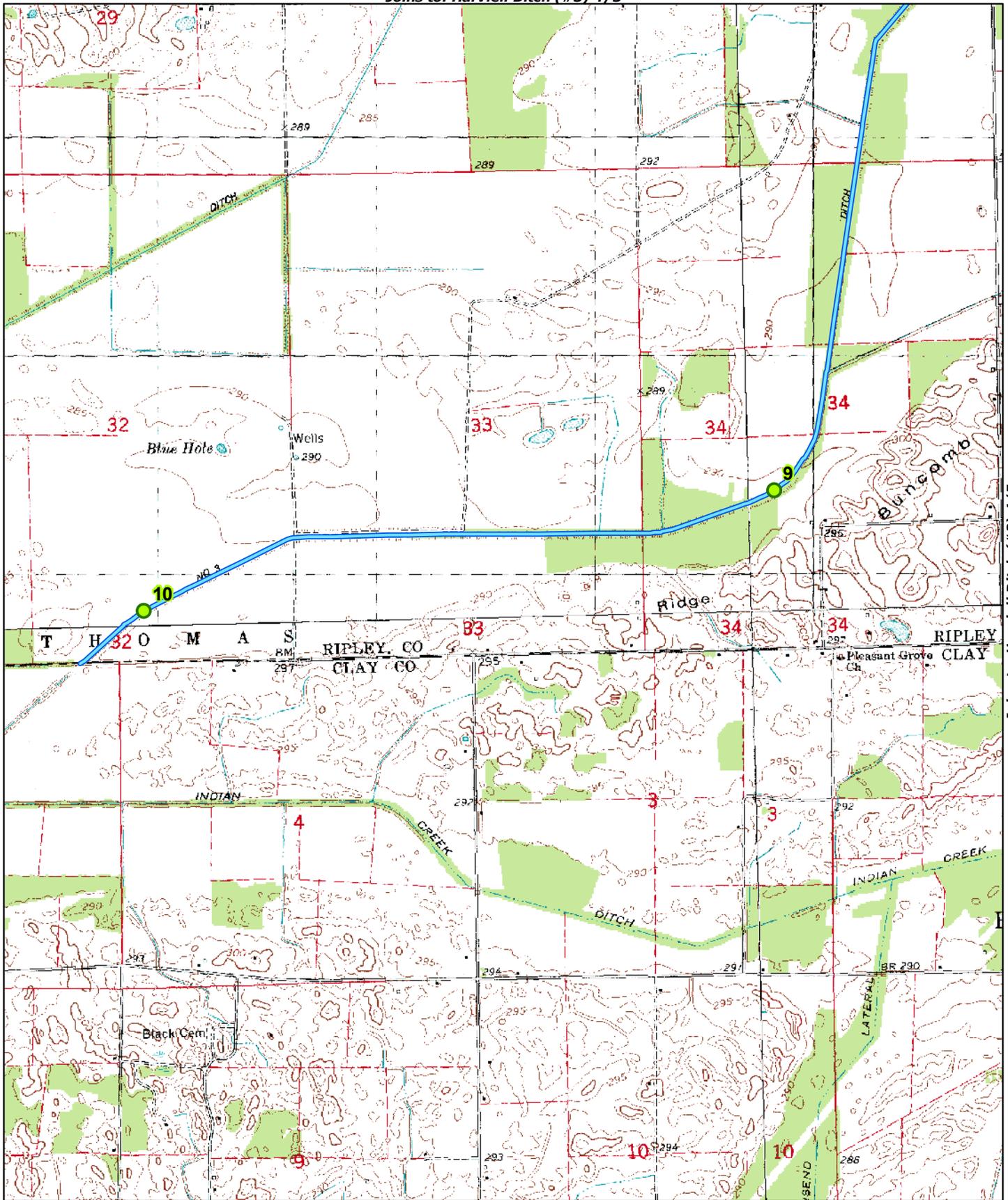
MISSOURI RECREATIONAL USE ATTAINABILITY ANALYSIS

Stream: Harviell Ditch (#3)
WBID: 2615

Map Sheet: 4/5
County: Ripley

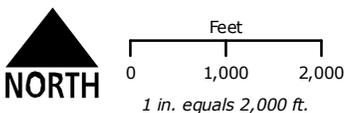


Project No. 008-1298



Joins to: Harviell Ditch (#3) 4/5

MISSOURI RECREATIONAL USE ATTAINABILITY ANALYSIS



Stream: Harviell Ditch (#3)
WBID: 2615

Map Sheet: 5/5
County: Ripley



Project No. 008-1298

WBID # 2615

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: 09-11-08 9:20 a.m.	Location Description (e.g., road crossing):
Stream Name: Harveill Ditch (#3)	Road crossing CR 336
Current Weather Conditions: Cloudy with drizzle	Facility Name(s): Picture Palace
Weather Conditions for Past 10 days : 0.94" @ Poplar Bluff	Permit Number(s): MO 0053520
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): 724919	Northing (UTM Y): 4058894	Horizontal Accuracy: (EPE / FOM / PDOP) 39 ft. Meters
Site 11	Easting (UTM X): 724930	Northing (UTM Y): 4058706	Horizontal Accuracy: (EPE / FOM / PDOP) 37 ft. Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2615-1-A	Upstream looking down	2615-1-B	Bridge	2615-1-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 # 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 checked="" type="checkbox"/> Other: Farm land
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	% Gravel	% Sand	20% Silt	80% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Grasses, dead plants on bottom 70% coverage of algae (brown) on bottom cattails

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 checked="" type="checkbox"/> Other: BROWN
Bottom Deposit:	<input checked="" 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 # 1

Field Data Sheets for Recreational Use Stream Surveys

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

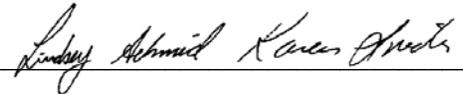
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

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 / Karen Snider

Surveyor's Signature:  Date of Survey: 09-11-08

Organization: Olsson Associates Position: Field Service

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Harviell Ditch (#3)</u> Waterbody ID: <u>2615</u> Site #: <u>1</u> Estimated Channel Incision: <u>0</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>724919</u> UTM Y: <u>4058894</u> +/- <u>39</u> ft. (meters) 11 UTM X: <u>724930</u> UTM Y: <u>4058706</u> +/- <u>37</u> ft. (meters) Average Stream Width: <u>3.5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Lindsey Schmid / Karen Snider</u>	<p align="center">Dissolved Oxygen</p> Date: <u>09-11-08</u> Time: <u>9:20 a.m.</u> Dissolved Oxygen: <u>1.76</u> (mg/L) Dissolved Oxygen: <u>20</u> (% sat) Specific Cond: <u>291</u> (µS/cm) Water Temperature: <u>21.7</u> (°C)
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Transect Cross-Section

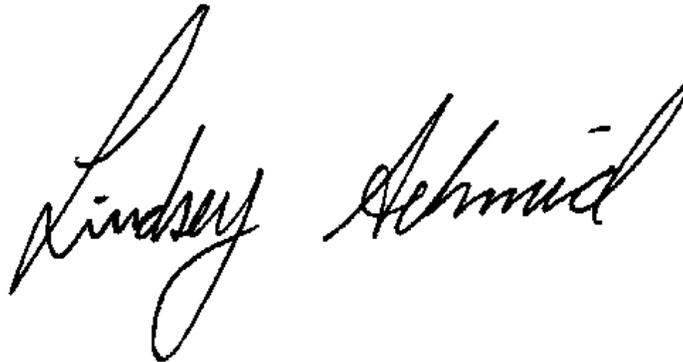
Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.38	0.27	0.41	0.19	0.54	0.05	0.38	0.06	0.22	0.05	0.51	0.05	0.24	0.06	0.17	0.12	0.34	0.05	0.22	0.12	0.11	0.08
2	0.76	0.28	0.82	0.20	1.08	0.05	0.76	0.09	0.44	0.05	1.02	0.05	0.48	0.09	0.34	0.14	0.68	0.05	0.44	0.13	0.22	0.12
3	1.14	0.26	1.23	0.24	1.62	0.08	1.14	0.07	0.66	0.06	1.53	0.05	0.72	0.12	0.51	0.13	1.02	0.05	0.66	0.13	0.33	0.14
4	1.52	0.25	1.64	0.31	2.16	0.13	1.52	0.12	0.88	0.07	2.04	0.05	0.96	0.12	0.68	0.13	1.36	0.05	0.88	0.14	0.44	0.14
5	1.90	0.27	2.05	0.34	2.70	0.12	1.90	0.14	1.10	0.07	2.55	0.05	1.20	0.11	0.85	0.14	1.70	0.05	1.10	0.17	0.55	0.13
6	2.28	0.27	2.46	0.33	3.24	0.10	2.28	0.16	1.32	0.11	3.06	0.05	1.44	0.10	1.02	0.15	2.04	0.05	1.32	0.14	0.66	0.12
7	2.66	0.25	2.87	0.36	3.78	0.09	2.66	0.13	1.54	0.09	3.57	0.05	1.68	0.11	1.19	0.12	2.38	0.05	1.54	0.11	0.77	0.12
8	3.04	0.21	3.28	0.33	4.32	0.05	3.04	0.08	1.76	0.07	4.08	0.05	1.92	0.08	1.36	0.11	2.72	0.05	1.76	0.10	0.88	0.10
9	3.42	0.20	3.69	0.28	4.86	0.05	3.42	0.05	1.98	0.05	4.59	0.05	2.16	0.07	1.53	0.07	3.06	0.05	1.98	0.10	0.99	0.09
Right Bank	3.80	0.00	4.10	0.00	5.40	0.00	3.80	0.00	2.20	0.00	5.10	0.00	2.40	0.00	1.70	0.00	3.40	0.00	2.20	0.00	1.10	0.00
Feature Type <small>(riffle, run, or pool)</small>	Run	Run																				

MAXIMUM 0.36

MEDIAN 0.10

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

Surveyor's Signature:



WBID # 2615

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: 09-11-08 10:20 a.m.	Location Description (e.g., road crossing): Road crossing CR 340
Stream Name: Harviell Ditch (#3)	
Current Weather Conditions: Overcast	Facility Name(s): Picture Palace
Weather Conditions for Past 10 days: 0.94" @ Poplar Bluff	Permit Number(s): MO 0053520
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): 724404	Northing (UTM Y): 4055843	Horizontal Accuracy: (EPE / FOM / PDOP) 38 ft. Meters
Site 11	Easting (UTM X): 724353	Northing (UTM Y): 4.55686	Horizontal Accuracy: (EPE / FOM / PDOP) 30 ft. Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2615-2-A	Upstream looking down	2615-2-B	Downstream looking up	2615-2-C	Bridge
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 # 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 checked="" type="checkbox"/> Other: Farm land
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	% Gravel	% Sand	% Silt	100% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

90% coverage of underwater vegetation

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 type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other:
Bottom Deposit:	<input checked="" type="checkbox"/> Sludge	<input 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)

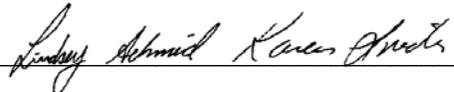
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

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

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 / Karen Snider

Surveyor's Signature:  Date of Survey: 09-11-08

Organization: Olsson Associates Position: Field Service

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Harviell Ditch (#3)</u> Waterbody ID: <u>2615</u> Site #: <u>2</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) 01 UTM X: <u>724404</u> UTM Y: <u>4055843</u> +/- <u>38</u> ft. (meters) 11 UTM X: <u>724353</u> UTM Y: <u>4055686</u> +/- <u>30</u> ft. (meters) Average Stream Width: <u>4</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Lindsey Schmid / Karen Snider</u>	<p align="center">Dissolved Oxygen</p> Date: <u>09-11-08</u> Time: <u>10:20 a.m.</u> Dissolved Oxygen: <u>3.98</u> (mg/L) Dissolved Oxygen: <u>45.9</u> (% sat) Specific Cond: <u>280</u> (µS/cm) Water Temperature: <u>24.5</u> (°C)
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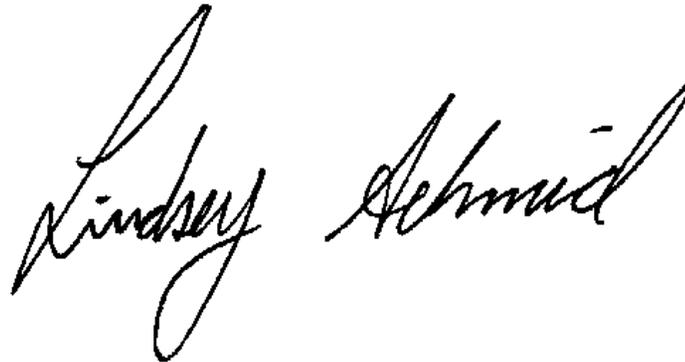
Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.53	0.23	0.39	0.18	0.26	0.24	0.22	0.39	0.38	0.49	0.52	0.13	0.56	0.09	0.57	0.22	0.45	0.15	0.47	0.10	0.54	0.19
2	1.06	0.25	0.78	0.23	0.52	0.27	0.44	0.56	0.76	0.52	1.04	0.18	1.12	0.12	1.14	0.26	0.90	0.16	0.94	0.13	1.08	0.23
3	1.59	0.27	1.17	0.32	0.78	0.33	0.66	0.64	1.14	0.55	1.56	0.24	1.68	0.11	1.71	0.29	1.35	0.22	1.41	0.12	1.62	0.22
4	2.12	0.27	1.56	0.42	1.04	0.34	0.88	0.59	1.52	0.54	2.08	0.42	2.24	0.18	2.28	0.31	1.80	0.27	1.88	0.18	2.16	0.24
5	2.65	0.38	1.95	0.43	1.30	0.46	1.10	0.59	1.90	0.61	2.60	0.48	2.80	0.23	2.85	0.64	2.25	0.23	2.35	0.22	2.70	0.27
6	3.18	0.36	2.34	0.37	1.56	0.47	1.32	0.47	2.28	0.58	3.12	0.39	3.36	0.26	3.42	0.66	2.70	0.31	2.82	0.26	3.24	0.24
7	3.71	0.30	2.73	0.29	1.82	0.43	1.54	0.42	2.66	0.43	3.64	0.40	3.92	0.30	3.99	0.63	3.15	0.29	3.29	0.24	3.78	0.25
8	4.24	0.24	3.12	0.24	2.08	0.39	1.76	0.40	3.04	0.44	4.16	0.33	4.48	0.29	4.56	0.59	3.60	0.32	3.76	0.21	4.32	0.31
9	4.77	0.19	3.51	0.20	2.34	0.33	1.98	0.38	3.42	0.40	4.68	0.28	5.04	0.14	5.13	0.54	4.05	0.24	4.23	0.17	4.86	0.18
Right Bank	5.30	0.00	3.90	0.00	2.60	0.00	2.20	0.00	3.80	0.00	5.20	0.00	5.60	0.00	5.70	0.00	4.50	0.00	4.70	0.00	5.40	0.00
Feature Type <small>(riffle, run, or pool)</small>	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 0.66
 MEDIAN 0.29

Surveyor's Signature:



WBID # 2615

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: 09-11-08 12:35 p.m.	Location Description (e.g., road crossing):
Stream Name: Harviell Ditch (#3)	County Rd. 352
Current Weather Conditions: Partly cloudy/warm	Facility Name(s):Picture Palace
Weather Conditions for Past 10 days).94” @ Poplar Bluff	Permit Number(s): MO 0053520
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): 721492	Northing (UTM Y): 4054002	Horizontal Accuracy: (EPE / FOM / PDOP) 62 ft. Meters
Site 11	Easting (UTM X): 721394	Northing (UTM Y): 4053896	Horizontal Accuracy: (EPE / FOM / PDOP) 85 ft. Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2615-3-A	Upstream looking down	2615-3-B	Downstream looking up	2615-3-C	Bridge
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	% Gravel	20% Sand	20% Silt	60% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Lots of underwater plants (30% coverage) Trace amounts of algae
--

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input checked="" type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: BROWN
Bottom Deposit:	<input checked="" 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 # 3

Field Data Sheets for Recreational Use Stream Surveys

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

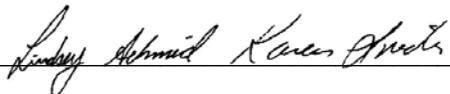
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

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 / Karen Snider

Surveyor's Signature:  Date of Survey: 09-12-08

Organization: Olsson Associates Position: Field Service

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Harviell Ditch (#3)</u> Waterbody ID: <u>2615</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>721492</u> UTM Y: <u>4054002</u> +/- <u>62</u> ft. (meters) 11 UTM X: <u>721394</u> UTM Y: <u>4053896</u> +/- <u>85</u> ft. (meters) Average Stream Width: <u>7.5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Lindsey Schmid / Karen Snider</u>	<p align="center">Dissolved Oxygen</p> Date: <u>9/12/2008</u> Time: <u>12:35 p.m.</u> Dissolved Oxygen: <u>6.44</u> (mg/L) Dissolved Oxygen: <u>78.9</u> (% sat) Specific Cond: <u>303</u> (µS/cm) Water Temperature: <u>27.7</u> (°C)
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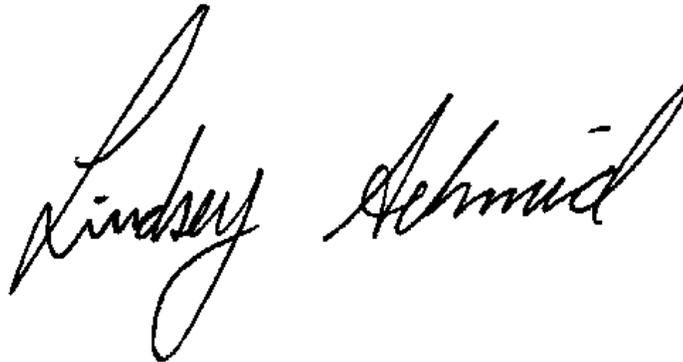
Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.69	1.00	0.93	1.00	0.65	0.12	0.96	0.31	0.85	0.26	0.84	0.17	0.77	0.15	0.76	0.18	0.77	0.20	0.73	0.16	0.69	0.20
2	1.38	1.00	1.86	1.00	1.30	0.25	1.92	0.24	1.70	0.33	1.68	0.29	1.54	0.19	1.52	0.24	1.54	0.31	1.46	0.25	1.38	0.32
3	2.07	1.00	2.79	1.00	1.95	0.20	2.88	0.18	2.55	0.40	2.52	0.39	2.31	0.26	2.28	0.35	2.31	0.30	2.19	0.35	2.07	0.40
4	2.76	1.00	3.72	1.00	2.60	0.27	3.84	0.24	3.40	0.57	3.36	0.46	3.08	0.38	3.04	0.44	3.08	0.36	2.92	0.46	2.76	0.48
5	3.45	1.00	4.65	1.00	3.25	0.25	4.80	0.38	4.25	0.68	4.20	0.50	3.85	0.41	3.80	0.51	3.85	0.46	3.65	0.54	3.45	0.52
6	4.14	1.00	5.58	1.00	3.90	0.23	5.76	0.31	5.10	0.63	5.04	0.53	4.62	0.49	4.56	0.56	4.62	0.48	4.38	0.54	4.14	0.52
7	4.83	1.00	6.51	1.00	4.55	0.16	6.72	0.37	5.95	0.38	5.88	0.48	5.39	0.54	5.32	0.64	5.39	0.47	5.11	0.56	4.83	0.50
8	5.52	1.00	7.44	1.00	5.20	0.15	7.68	0.24	6.80	0.29	6.72	0.34	6.16	0.52	6.08	0.55	6.16	0.42	5.84	0.51	5.52	0.45
9	6.21	1.00	8.37	1.00	5.85	0.12	8.64	0.18	7.65	0.23	7.56	0.21	6.93	0.44	6.84	0.44	6.93	0.23	6.57	0.40	6.21	0.34
Right Bank	6.90	0.00	9.30	0.00	6.50	0.00	9.60	0.00	8.50	0.00	8.40	0.00	7.70	0.00	7.60	0.00	7.70	0.00	7.30	0.00	6.90	0.00
Feature Type <small>(riffle, run, or pool)</small>	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 0.43

Surveyor's Signature:



WBID # 2615

Site # 4

Field Data Sheets for Recreational Use Stream Surveys

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

(must be completed for each site)

Date & Time: 09-11-08 11:50 a.m.	Location Description (e.g., road crossing):
Stream Name: Harviell Ditch (#3)	Hwy MM
Current Weather Conditions: partly cloudy	Facility Name(s): Picture Palace
Weather Conditions for Past 10 days: 0.94" @ Poplar Bluff	Permit Number(s): MO 0053520
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): 719231	Northing (UTM Y): 4052361	Horizontal Accuracy: (EPE / FOM / PDOP)	55 ft. Meters
Site 11	Easting (UTM X): 719139	Northing (UTM Y): 4052308	Horizontal Accuracy: (EPE / FOM / PDOP)	101 ft. Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2615-4-A	Upstream looking down	2615-4-B	Downstream looking up	2615-4-C	Bridge
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 # 4

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 checked="" type="checkbox"/> Other: Farm land
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	% Gravel	% Sand	80% Silt	20% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Under water 20-80% depending on location. Small amount of brown algae
--

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input checked="" type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input 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 checked="" type="checkbox"/> Other: BROWN
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 # 4

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.)

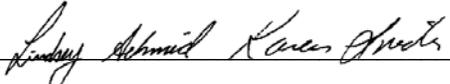
Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

Moved upstream due to access location.

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 / Karen Snider

Surveyor's Signature:  Date of Survey: 09-11-08

Organization: Olsson Associates Position: Field Service

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Harviell Ditch (#3)</u> Waterbody ID: <u>2615</u> Site #: <u>4</u> Estimated Channel Incision: <u>0</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>719231</u> UTM Y: <u>4052361</u> +/- <u>55</u> ft. (meters) 11 UTM X: <u>719139</u> UTM Y: <u>4052308</u> +/- <u>101</u> ft. (meters) Average Stream Width: <u>4</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Lindsey Schmid / Karen Snider</u>	<p align="center">Dissolved Oxygen</p> Date: <u>09-11-08</u> Time: <u>11:50 a.m.</u> Dissolved Oxygen: <u>8.43</u> (mg/L) Dissolved Oxygen: <u>102.5</u> (% sat) Specific Cond: <u>278</u> (µS/cm) Water Temperature: <u>24.7</u> (°C)
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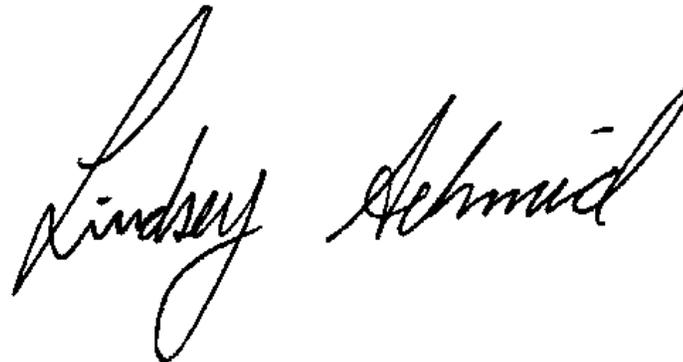
Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.58	0.07	0.17	0.11	0.44	0.31	0.48	0.40	0.52	0.33	0.43	0.48	0.34	0.42	0.58	0.57	0.49	0.40	0.46	0.22	0.29	0.24
2	1.16	0.08	0.34	0.14	0.88	0.39	0.96	0.49	1.04	0.38	0.86	0.58	0.68	0.49	1.16	0.59	0.98	0.55	0.92	0.23	0.58	0.27
3	1.74	0.08	0.51	0.12	1.32	0.54	1.44	0.46	1.56	0.49	1.29	0.56	1.02	0.57	1.74	0.62	1.47	0.59	1.38	0.24	0.87	0.23
4	2.32	0.11	0.68	0.14	1.76	0.51	1.92	0.45	2.08	0.55	1.72	0.58	1.36	0.57	2.32	0.64	1.96	0.62	1.84	0.28	1.16	0.21
5	2.90	0.18	0.85	0.18	2.20	0.42	2.40	0.39	2.60	0.59	2.15	0.58	1.70	0.56	2.90	0.68	2.45	0.68	2.30	0.31	1.45	0.18
6	3.48	0.20	1.02	0.18	2.64	0.40	2.88	0.40	3.12	0.58	2.58	0.57	2.04	0.58	3.48	0.72	2.94	0.78	2.76	0.34	1.74	0.16
7	4.06	0.15	1.19	0.19	3.08	0.28	3.36	0.43	3.64	0.52	3.01	0.52	2.38	0.61	4.06	0.68	3.43	0.77	3.22	0.36	2.03	0.13
8	4.64	0.16	1.36	0.18	3.52	0.26	3.84	0.41	4.16	0.43	3.44	0.54	2.72	0.60	4.64	0.69	3.92	0.74	3.68	0.43	2.32	0.15
9	5.22	0.13	1.53	0.16	3.96	0.31	4.32	0.39	4.68	0.38	3.87	0.59	3.06	0.58	5.22	0.53	4.41	0.71	4.14	0.43	2.61	0.10
Right Bank	5.80	0.00	1.70	0.00	4.40	0.00	4.80	0.00	5.20	0.00	4.30	0.00	3.40	0.00	5.80	0.00	4.90	0.00	4.60	0.00	2.90	0.00
Feature Type <small>(riffle, run, or pool)</small>	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 0.78
 MEDIAN 0.40

Surveyor's Signature:



WBID # 2615

Site # 5

Field Data Sheets for Recreational Use Stream Surveys

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

(must be completed for each site)

Date & Time: 09-12-08 11:30 a.m.	Location Description (e.g., road crossing):
Stream Name: Harviell Ditch (#3)	.55 miles from Ripley County B-3A
Current Weather Conditions: Sunny, warm	Facility Name(s): Picture Palace
Weather Conditions for Past 10 days: 0.94" @ Poplar Bluff	Permit Number(s): MO 0053520
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): 716974	Northing (UTM Y): 4050649	Horizontal Accuracy: (EPE / FOM / PDOP)	128 ft. Meters
Site 11	Easting (UTM X): 716970	Northing (UTM Y): 4050466	Horizontal Accuracy: (EPE / FOM / PDOP)	73 ft. Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2615-5-A	Upstream looking down	2615-5-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.)				

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 checked="" type="checkbox"/> Other: Farm land
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 type="checkbox"/> None of the above	Comments / Other: Approximately 15meters thru brush from Farm Rd.			

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

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

Trace amounts of algae

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 checked="" type="checkbox"/> Other: BROWN
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

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

Field Data Sheets for Recreational Use Stream Surveys

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

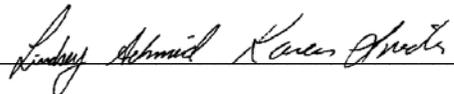
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

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

Comments: (Please record any additional comments here.)

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

Printed Names of Personnel Collecting Data: Lindsey Schmid / Karen Snider

Surveyor's Signature:  Date of Survey: 09-12-08

Organization: Olsson Associates Position: Field Service

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Harviell Ditch (#3)</u> Waterbody ID: <u>2615</u> Site #: <u>5</u> Estimated Channel Incision: <u>0.4</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>716974</u> UTM Y: <u>4050649</u> +/- <u>128</u> ft. (meters) 11 UTM X: <u>716970</u> UTM Y: <u>4050466</u> +/- <u>73</u> ft. (meters) Average Stream Width: <u>9</u> <u>9</u> (meters) Length of Survey Segment: <u>180</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Lindsey Schmid / Karen Snider</u>	<p align="center">Dissolved Oxygen</p> Date: <u>9/12/2008</u> Time: <u>11:30 a.m.</u> Dissolved Oxygen: <u>5.72</u> (mg/L) Dissolved Oxygen: <u>74.1</u> (% sat) Specific Cond: <u>332</u> (µS/cm) Water Temperature: <u>28.5</u> (°C)
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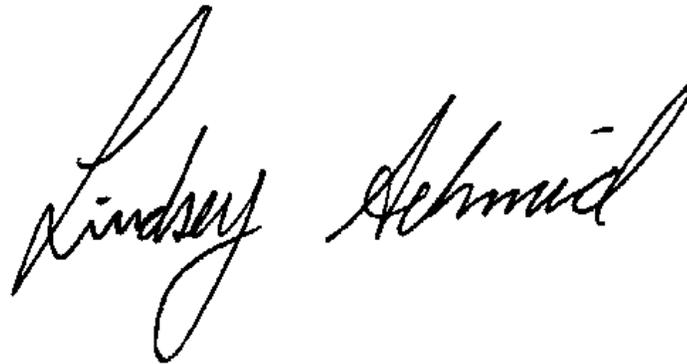
Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.57	0.30	0.40	0.31	1.19	0.05	0.92	0.28	1.08	0.61	1.08	1.00	1.13	1.00	1.09	1.00	0.98	1.00	1.04	1.00	0.81	1.00
2	1.14	0.31	0.80	0.33	2.38	0.52	1.84	0.51	2.16	0.65	2.16	1.00	2.26	1.00	2.18	1.00	1.96	1.00	2.08	1.00	1.62	1.00
3	1.71	0.32	1.20	0.18	3.57	0.61	2.76	0.63	3.24	0.66	3.24	1.00	3.39	1.00	3.27	1.00	2.94	1.00	3.12	1.00	2.43	1.00
4	2.28	0.37	1.60	0.10	4.76	0.60	3.68	0.63	4.32	0.66	4.32	1.00	4.52	1.00	4.36	1.00	3.92	1.00	4.16	1.00	3.24	1.00
5	2.85	0.41	2.00	0.09	5.95	0.57	4.60	0.64	5.40	0.67	5.40	1.00	5.65	1.00	5.45	1.00	4.90	1.00	5.20	1.00	4.05	1.00
6	3.42	0.42	2.40	0.08	7.14	0.57	5.52	0.64	6.48	0.72	6.48	1.00	6.78	1.00	6.54	1.00	5.88	1.00	6.24	1.00	4.86	1.00
7	3.99	0.35	2.80	0.07	8.33	0.50	6.44	0.64	7.56	0.78	7.56	1.00	7.91	1.00	7.63	1.00	6.86	1.00	7.28	1.00	5.67	1.00
8	4.56	0.27	3.20	0.06	9.52	0.40	7.36	0.65	8.64	0.77	8.64	1.00	9.04	1.00	8.72	1.00	7.84	1.00	8.32	1.00	6.48	1.00
9	5.13	0.23	3.60	0.05	10.71	0.24	8.28	0.64	9.72	0.61	9.72	1.00	10.17	1.00	9.81	1.00	8.82	1.00	9.36	1.00	7.29	1.00
Right Bank	5.70	0.00	4.00	0.00	11.90	0.00	9.20	0.00	10.80	0.00	10.80	0.00	11.30	0.00	10.90	0.00	9.80	0.00	10.40	0.00	8.10	0.00
Feature Type <small>(riffle, run, or pool)</small>	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 0.75

Surveyor's Signature:



WBID # 2615

Site # 6

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: 09-12-08 10:30 a.m.	Location Description (e.g., road crossing):
Stream Name: Harviell Ditch (#3)	Road crossing HWY 142
Current Weather Conditions: Partly cloudy, warm	Facility Name(s): Picture Palace
Weather Conditions for Past 10 days: 0.94" @ Poplar Bluff	Permit Number(s): MO 0053520
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): 716818	Northing (UTM Y): 4049017	Horizontal Accuracy: (EPE / FOM / PDOP) 37 ft. Meters
Site 11	Easting (UTM X): 716687	Northing (UTM Y): 4048856	Horizontal Accuracy: (EPE / FOM / PDOP) 56 ft. Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2615-6-A	Upstream looking down	2615-6-B	Path	2615-6-C	Downstream looking up Bridge
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 # 6

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 checked="" type="checkbox"/> Other: Farm land
Comments:				

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

<input checked="" type="checkbox"/> Roads	<input checked="" type="checkbox"/> Footpaths/ 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	% Gravel	80% Sand	20% Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Patches of moss- like algae

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 checked="" type="checkbox"/> Other: BROWN
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 # 6

Field Data Sheets for Recreational Use Stream Surveys

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

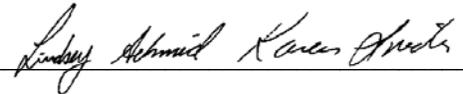
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

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 / Karen Snider

Surveyor's Signature:  Date of Survey: 09-12-08

Organization: Olsson Associates Position: Field Service

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Harviell Ditch (#3)</u> Waterbody ID: <u>2615</u> Site #: <u>6</u> Estimated Channel Incision: <u>0.15</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>716818</u> UTM Y: <u>4049017</u> +/- <u>37</u> ft. (meters) 11 UTM X: <u>716687</u> UTM Y: <u>4048856</u> +/- <u>56</u> ft. (meters) Average Stream Width: <u>9</u> (meters) Length of Survey Segment: <u>180</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Lindsey Schmid / Karen Snider</u>	<p align="center">Dissolved Oxygen</p> Date: <u>9/12/2008</u> Time: <u>10:30 a.m.</u> Dissolved Oxygen: <u>6.85</u> (mg/L) Dissolved Oxygen: <u>83.9</u> (% sat) Specific Cond: <u>309</u> (µS/cm) Water Temperature: <u>25.9</u> (°C)
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Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1.63	0.54	1.06	0.25	0.77	0.29	0.85	0.48	1.07	0.24	1.29	0.13	0.99	0.09	0.82	0.09	0.93	0.06	0.67	0.05	0.72	0.05
2	3.26	1.00	2.12	0.24	1.54	0.41	1.70	0.57	2.14	0.16	2.58	0.12	1.98	0.08	1.64	0.09	1.86	0.05	1.34	0.08	1.44	0.08
3	4.89	1.00	3.18	0.23	2.31	0.43	2.55	0.40	3.21	0.20	3.87	0.11	2.97	0.06	2.46	0.09	2.79	0.06	2.01	0.11	2.16	0.10
4	6.52	0.87	4.24	0.22	3.08	0.39	3.40	0.32	4.28	0.24	5.16	0.12	3.96	0.05	3.28	0.10	3.72	0.05	2.68	0.14	2.88	0.12
5	8.15	1.00	5.30	0.17	3.85	0.38	4.25	0.24	5.35	0.23	6.45	0.09	4.95	0.05	4.10	0.12	4.65	0.05	3.35	0.16	3.60	0.11
6	9.78	1.00	6.36	0.16	4.62	0.35	5.10	0.18	6.42	0.24	7.74	0.08	5.94	0.05	4.92	0.13	5.58	0.13	4.02	0.17	4.32	0.12
7	11.41	1.00	7.42	0.11	5.39	0.29	5.95	0.15	7.49	0.21	9.03	0.08	6.93	0.05	5.74	0.08	6.51	0.80	4.69	0.14	5.04	0.11
8	13.04	0.59	8.48	0.07	6.16	0.24	6.80	0.13	8.56	0.17	10.32	0.09	7.92	0.05	6.56	0.05	7.44	0.11	5.36	0.15	5.76	0.14
9	14.67	0.42	9.54	0.05	6.93	0.19	7.65	0.13	9.63	0.12	11.61	0.09	8.91	0.05	7.38	0.05	8.37	0.07	6.03	0.17	6.48	0.13
Right Bank	16.30	0.00	10.60	0.00	7.70	0.00	8.50	0.00	10.70	0.00	12.90	0.00	9.90	0.00	8.20	0.00	9.30	0.00	6.70	0.00	7.20	0.00
Feature Type <small>(riffle, run, or pool)</small>	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 1.00
 MEDIAN 0.12

Surveyor's Signature:



WBID # 2615

Site # 7

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: 09-12-08 9:30 a.m.	Location Description (e.g., road crossing): W-1 Road Crossing
Stream Name: Harviell Ditch (#3)	
Current Weather Conditions: Sunny and warm	Facility Name(s): Picture Palace
Weather Conditions for Past 10 days: 0.94" @ Poplar Bluff	Permit Number(s): MO 0053520
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): 715555	Northing (UTM Y): 4047390	Horizontal Accuracy: (EPE / FOM / PDOP) 30 ft. Meters
Site 11	Easting (UTM X): 715432	Northing (UTM Y): 4047207	Horizontal Accuracy: (EPE / FOM / PDOP) 44 ft. Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2615-7-A	Upstream looking down	2615-7-B	Bridge	2615-7-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 # 7

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 checked="" type="checkbox"/> Other: Farm land
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	% Gravel	80% Sand	20% Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Small amount of weed growth Trace amounts of brown algae

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 checked="" type="checkbox"/> Other: BROWN
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 # 7

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.)

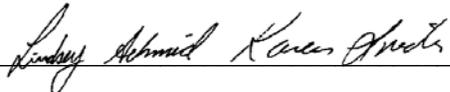
Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

Moving short distance upstream to road access.

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 / Karen Snider

Surveyor's Signature:  Date of Survey: 09-12-08

Organization: Olsson Associates Position: Field Service

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Harviell Ditch (#3)</u> Waterbody ID: <u>2615</u> Site #: <u>7</u> Estimated Channel Incision: <u>0.25</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>715555</u> UTM Y: <u>4047390</u> +/- <u>30</u> ft. (meters) 11 UTM X: <u>715432</u> UTM Y: <u>4047207</u> +/- <u>44</u> ft. (meters) Average Stream Width: <u>10</u> (meters) Length of Survey Segment: <u>200</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Lindsey Schmid / Karen Snider</u>	<p align="center">Dissolved Oxygen</p> Date: <u>9/12/2008</u> Time: <u>9:30 a.m.</u> Dissolved Oxygen: <u>6.47</u> (mg/L) Dissolved Oxygen: <u>78.5</u> (% sat) Specific Cond: <u>303</u> (µS/cm) Water Temperature: <u>25.5</u> (°C)
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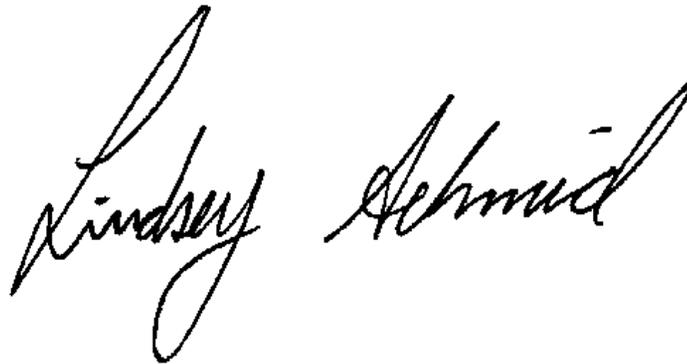
Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1.71	0.09	1.67	0.44	1.42	0.14	1.03	0.17	0.95	0.13	0.76	0.05	0.89	0.05	0.98	0.10	0.78	0.16	1.25	0.10	0.74	0.05
2	3.42	0.73	3.34	0.53	2.84	0.14	2.06	0.17	1.90	0.14	1.52	0.10	1.78	0.05	1.96	0.15	1.56	0.10	2.50	0.09	1.48	0.05
3	5.13	0.98	5.01	0.52	4.26	0.11	3.09	0.20	2.85	0.10	2.28	0.11	2.67	0.05	2.94	0.12	2.34	0.14	3.75	0.12	2.22	0.05
4	6.84	0.84	6.68	0.44	5.68	0.12	4.12	0.22	3.80	0.10	3.04	0.10	3.56	0.05	3.92	0.11	3.12	0.12	5.00	0.10	2.96	0.07
5	8.55	1.00	8.35	0.37	7.10	0.07	5.15	0.18	4.75	0.11	3.80	0.11	4.45	0.11	4.90	0.12	3.90	0.14	6.25	0.08	3.70	0.13
6	10.26	1.00	10.02	0.39	8.52	0.09	6.18	0.16	5.70	0.12	4.56	0.12	5.34	0.13	5.88	0.14	4.68	0.10	7.50	0.05	4.44	0.22
7	11.97	0.72	11.69	0.45	9.94	0.11	7.21	0.14	6.65	0.09	5.32	0.11	6.23	0.14	6.86	0.10	5.46	0.08	8.75	0.05	5.18	0.26
8	13.68	0.11	13.36	0.39	11.36	0.12	8.24	0.11	7.60	0.08	6.08	0.09	7.12	0.13	7.84	0.09	6.24	0.07	10.00	0.05	5.92	0.29
9	15.39	0.45	15.03	0.25	12.78	0.14	9.27	0.07	8.55	0.05	6.84	0.05	8.01	0.09	8.82	0.08	7.02	0.05	11.25	0.05	6.66	0.24
Right Bank	17.10	0.00	16.70	0.00	14.20	0.00	10.30	0.00	9.50	0.00	7.60	0.00	8.90	0.00	9.80	0.00	7.80	0.00	12.50	0.00	7.40	0.00
Feature Type <small>(riffle, run, or pool)</small>	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 0.11

Surveyor's Signature:



WBID # 2615

Site # 8

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: 09-11-08 4:05 p.m.	Location Description (e.g., road crossing): Hwy W
Stream Name: Harviell Ditch (#3)	
Current Weather Conditions: Partly cloudy	Facility Name(s): Picture Palace
Weather Conditions for Past 10 days: 0.94" @ Poplar Bluff	Permit Number(s): MO 0053520
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): 713794	Northing (UTM Y): 4045253	Horizontal Accuracy: (EPE / FOM / PDOP) 52 ft. Meters
Site 11	Easting (UTM X): 713609	Northing (UTM Y): 4045041	Horizontal Accuracy: (EPE / FOM / PDOP) 36 ft. Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2615-8-A	Upstream looking down	2615-8-B	Downstream looking up	2615-8-C	Bridge
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 # 8

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 checked="" type="checkbox"/> Other: Farm land
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	% Gravel	80% Sand	20% Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Patchy underwater plants

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 checked="" type="checkbox"/> Other: BROWN
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 # 8

Field Data Sheets for Recreational Use Stream Surveys

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

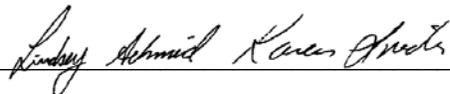
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

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 / Karen Snider

Surveyor's Signature:  Date of Survey: 09-11-08

Organization: Olsson Associates Position: Field Service

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Harviell Ditch (#3)</u> Waterbody ID: <u>2615</u> Site #: <u>8</u> Estimated Channel Incision: <u>0</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>713794</u> UTM Y: <u>4045253</u> +/- <u>52</u> ft. (<u>meters</u>) 11 UTM X: <u>713609</u> UTM Y: <u>4045041</u> +/- <u>36</u> ft. (<u>meters</u>) Average Stream Width: <u>12</u> (meters) Length of Survey Segment: <u>240</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Lindsey Schmid / Karen Snider</u>	<p align="center">Dissolved Oxygen</p> Date: <u>9/11/2008</u> Time: <u>4:05 p.m.</u> Dissolved Oxygen: <u>8.42</u> (mg/L) Dissolved Oxygen: <u>106.4</u> (% sat) Specific Cond: <u>279</u> (µS/cm) Water Temperature: <u>28.5</u> (°C)
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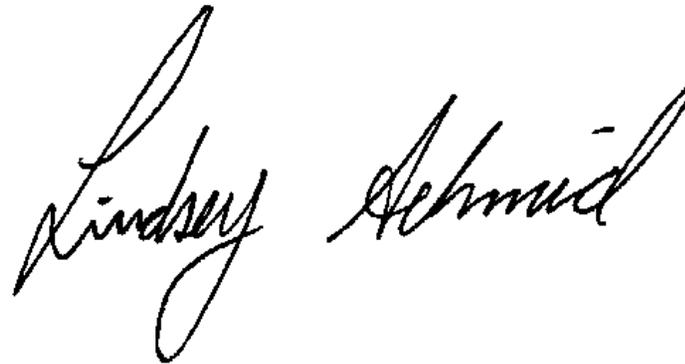
Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	1.92	1.00	1.84	0.84	1.91	0.74	2.08	0.34	0.77	0.39	0.69	0.31	0.62	0.05	0.65	0.07	0.59	0.05	0.76	0.05	1.11	0.09
2	3.84	1.00	3.68	1.00	3.82	0.89	4.16	0.36	1.54	0.62	1.38	0.29	1.24	0.07	1.30	0.10	1.18	0.05	1.52	0.05	2.22	0.12
3	5.76	1.00	5.52	1.00	5.73	0.93	6.24	0.47	2.31	0.62	2.07	0.15	1.86	0.07	1.95	0.15	1.77	0.07	2.28	0.05	3.33	0.05
4	7.68	1.00	7.36	1.00	7.64	0.98	8.32	0.49	3.08	0.65	2.76	0.36	2.48	0.10	2.60	0.14	2.36	0.09	3.04	0.09	4.44	0.05
5	9.60	1.00	9.20	1.00	9.55	1.10	10.40	0.49	3.85	0.67	3.45	0.41	3.10	0.18	3.25	0.16	2.95	0.14	3.80	0.11	5.55	0.05
6	11.52	1.00	11.04	1.00	11.46	0.99	12.48	0.56	4.62	0.61	4.14	0.39	3.72	0.23	3.90	0.22	3.54	0.22	4.56	0.11	6.66	0.05
7	13.44	1.00	12.88	1.00	13.37	1.00	14.56	0.55	5.39	0.51	4.83	0.23	4.34	0.20	4.55	0.20	4.13	0.21	5.32	0.13	7.77	0.10
8	15.36	1.00	14.72	1.00	15.28	0.80	16.64	0.46	6.16	0.50	5.52	0.05	4.96	0.19	5.20	0.19	4.72	0.25	6.08	0.09	8.88	0.13
9	17.28	1.00	16.56	0.95	17.19	0.73	18.72	0.30	6.93	0.28	6.21	0.05	5.58	0.11	5.85	0.17	5.31	0.19	6.84	0.09	9.99	0.09
Right Bank	19.20	0.00	18.40	0.00	19.10	0.00	20.80	0.00	7.70	0.00	6.90	0.00	6.20	0.00	6.50	0.00	5.90	0.00	7.60	0.00	11.10	0.00
Feature Type <small>(riffle, run, or pool)</small>	Run	Run	Run	Run																		

MAXIMUM 1.10

MEDIAN 0.21

Surveyor's Signature:



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.

WBID # 2615

Site # 9

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: 09-11-08 5:25 p.m.	Location Description (e.g., road crossing):
Stream Name: Harviell Ditch (#3)	100 meters from W-2
Current Weather Conditions: Partly cloudy	Facility Name(s): Picture Palace
Weather Conditions for Past 10 days: 0.94" @ Poplar Bluff	Permit Number(s): MO 0053520
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): 712820	Northing (UTM Y): 4042590	Horizontal Accuracy: (EPE / FOM / PDOP)	58 ft. Meters
Site 11	Easting (UTM X): 712690	Northing (UTM Y): 4042525	Horizontal Accuracy: (EPE / FOM / PDOP)	44 ft. Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2615-9-A	Upstream looking down	2615-9-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.)				

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 checked="" type="checkbox"/> Other: Farm land
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:			
Approximately 100 meters from closest road.				

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

% Cobble	% Gravel	20% Sand	20% Silt	60% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Patchy underwater weeds Trace amounts of brown algae

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

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

Field Data Sheets for Recreational Use Stream Surveys

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

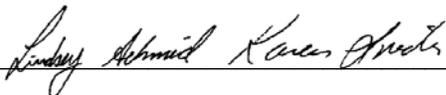
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

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

Comments: (Please record any additional comments here.)

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

Printed Names of Personnel Collecting Data: Lindsey Schmid / Karen Snider

Surveyor's Signature:  Date of Survey: 09-11-08

Organization: Olsson Associates Position: Field Service

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Harviell Ditch (#3)</u> Waterbody ID: <u>2615</u> Site #: <u>9</u> Estimated Channel Incision: <u>0</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>712820</u> UTM Y: <u>4042590</u> +/- <u>58</u> ft. (<u>meters</u>) 11 UTM X: <u>712690</u> UTM Y: <u>4042525</u> +/- <u>44</u> ft. (<u>meters</u>) Average Stream Width: <u>10</u> (meters) Length of Survey Segment: <u>200</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Lindsey Schmid / Karen Snider</u>	<p align="center">Dissolved Oxygen</p> Date: <u>9/11/2008</u> Time: <u>5:25 p.m.</u> Dissolved Oxygen: <u>7.93</u> (mg/L) Dissolved Oxygen: <u>102.8</u> (% sat) Specific Cond: <u>274</u> (µS/cm) Water Temperature: <u>29.2</u> (°C)
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Transect Cross-Section

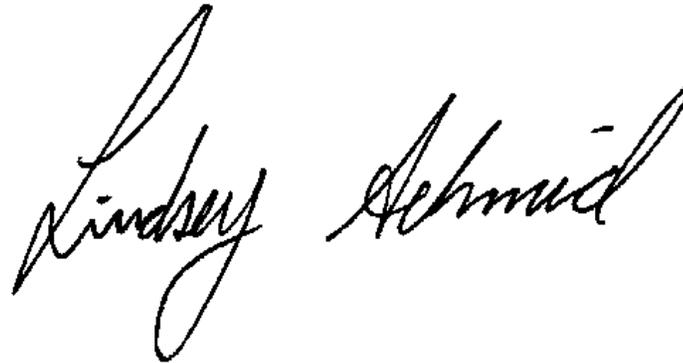
Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1.18	0.26	1.32	0.62	1.15	0.23	0.98	0.32	0.91	1.00	0.98	1.00	1.08	0.43	0.99	0.81	0.89	0.81	0.87	1.00	0.91	1.00
2	2.36	0.35	2.64	0.54	2.30	0.28	1.96	0.49	1.82	0.79	1.96	0.66	2.16	0.79	1.98	0.81	1.78	0.76	1.74	1.00	1.82	1.00
3	3.54	0.48	3.96	0.55	3.45	0.32	2.94	0.55	2.73	0.66	2.94	0.56	3.24	0.63	2.97	0.74	2.67	0.75	2.61	1.00	2.73	1.00
4	4.72	0.51	5.28	0.60	4.60	0.35	3.92	0.36	3.64	0.57	3.92	0.52	4.32	0.59	3.96	0.65	3.56	0.75	3.48	1.00	3.64	1.00
5	5.90	0.49	6.60	0.56	5.75	0.33	4.90	0.36	4.55	0.51	4.90	0.51	5.40	0.59	4.95	0.54	4.45	0.68	4.35	1.00	4.55	1.00
6	7.08	0.52	7.92	0.45	6.90	0.32	5.88	0.28	5.46	0.45	5.88	0.40	6.48	0.44	5.94	0.48	5.34	0.67	5.22	1.00	5.46	1.00
7	8.26	0.43	9.24	0.46	8.05	0.34	6.86	0.23	6.37	0.38	6.86	0.34	7.56	0.38	6.93	0.46	6.23	0.69	6.09	1.00	6.37	1.00
8	9.44	0.40	10.56	0.41	9.20	0.40	7.84	0.19	7.28	0.32	7.84	0.33	8.64	0.29	7.92	0.42	7.12	0.67	6.96	1.00	7.28	1.00
9	10.62	0.27	11.88	0.38	10.35	0.38	8.82	0.15	8.19	0.23	8.82	0.28	9.72	0.25	8.91	0.36	8.01	0.37	7.83	1.00	8.19	1.00
Right Bank	11.80	0.00	13.20	0.00	11.50	0.00	9.80	0.00	9.10	0.00	9.80	0.00	10.80	0.00	9.90	0.00	8.90	0.00	8.70	0.00	9.10	0.00
Feature Type <small>(riffle, run, or pool)</small>	Run																					

MAXIMUM 1.00

MEDIAN 0.45

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

Surveyor's Signature:



WBID # 2615

Site # 10

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: 09-11-08 2:40 p.m.	Location Description (e.g., road crossing): Farm Road (not named)
Stream Name: Harviell Ditch (#3)	
Current Weather Conditions: Partly cloudy	Facility Name(s): Picture Palace
Weather Conditions for Past 10 days: 0.94" @ Poplar Bluff	Permit Number(s): MO 0053520
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): 710604	Northing (UTM Y): 4042378	Horizontal Accuracy: (EPE / FOM / PDOP) 36 ft. Meters
Site 11	Easting (UTM X): 710414	Northing (UTM Y): 4042270	Horizontal Accuracy: (EPE / FOM / PDOP) 53 ft. Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2615-10-A	Upstream looking down	2615-10-B	Example 1	2615-10-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 # 10

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 checked="" type="checkbox"/> Other: Farm land
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: Bridge out, see example 1			

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

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

Patches of underwater vegetation, otherwise not visible

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 type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: BROWN
Bottom Deposit:	<input checked="" 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 # 10

Field Data Sheets for Recreational Use Stream Surveys

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

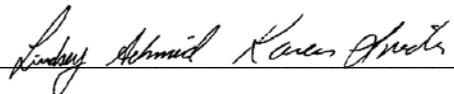
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)
Run	5	30	40	>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 / Karen Snider

Surveyor's Signature:  Date of Survey: 09-11-08

Organization: Olsson Associates Position: Field Service

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Harviell Ditch (#3)</u> Waterbody ID: <u>2615</u> Site #: <u>10</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) 01 UTM X: <u>710604</u> UTM Y: <u>4042378</u> +/- <u>36</u> ft. (meters) 11 UTM X: <u>710414</u> UTM Y: <u>4042270</u> +/- <u>53</u> ft. (meters) Average Stream Width: <u>12</u> (meters) Length of Survey Segment: <u>240</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Lindsey Schmid / Karen Snider</u>	<p align="center">Dissolved Oxygen</p> Date: <u>9/11/2008</u> Time: <u>2:40 p.m.</u> Dissolved Oxygen: <u>6.37</u> (mg/L) Dissolved Oxygen: <u>82.3</u> (% sat) Specific Cond: <u>283</u> (µS/cm) Water Temperature: <u>28.3</u> (°C)
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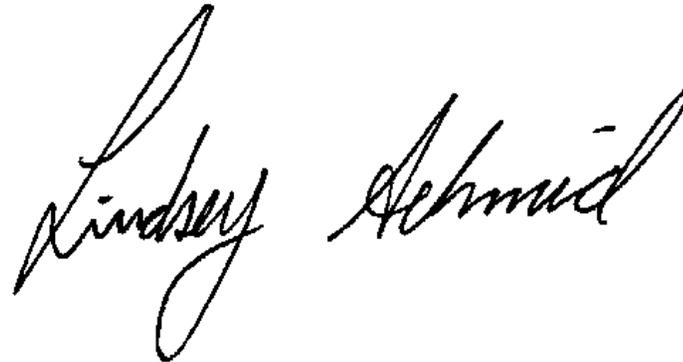
Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	2.74	1.00	2.24	1.00	1.62	1.00	0.79	0.43	0.98	0.23	0.87	0.29	1.09	0.34	1.14	0.26	1.28	0.37	1.34	0.15	1.36	0.23
2	5.48	1.00	4.48	1.00	3.24	1.00	1.58	0.63	1.96	0.09	1.74	0.15	2.18	0.36	2.28	0.21	2.56	0.39	2.68	0.05	2.72	0.21
3	8.22	1.00	6.72	1.00	4.86	1.00	2.37	0.69	2.94	0.14	2.61	0.10	3.27	0.35	3.42	0.20	3.84	0.33	4.02	0.09	4.08	0.23
4	10.96	1.00	8.96	1.00	6.48	1.00	3.16	0.78	3.92	0.24	3.48	0.09	4.36	0.33	4.56	0.23	5.12	0.38	5.36	0.16	5.44	0.25
5	13.70	1.00	11.20	1.00	8.10	1.00	3.95	1.00	4.90	0.26	4.35	0.05	5.45	0.32	5.70	0.31	6.40	0.40	6.70	0.16	6.80	0.22
6	16.44	1.00	13.44	1.00	9.72	1.00	4.74	1.00	5.88	0.26	5.22	0.05	6.54	0.29	6.84	0.28	7.68	0.43	8.04	0.15	8.16	0.12
7	19.18	1.00	15.68	1.00	11.34	1.00	5.53	0.93	6.86	0.29	6.09	0.05	7.63	0.37	7.98	0.25	8.96	0.44	9.38	0.19	9.52	0.13
8	21.92	1.00	17.92	1.00	12.96	1.00	6.32	0.81	7.84	0.30	6.96	0.06	8.72	0.36	9.12	0.29	10.24	0.46	10.72	0.23	10.88	0.21
9	24.66	1.00	20.16	1.00	14.58	1.00	7.11	0.54	8.82	0.29	7.83	0.06	9.81	0.29	10.26	0.36	11.52	0.43	12.06	0.22	12.24	0.23
Right Bank	27.40	0.00	22.40	0.00	16.20	0.00	7.90	0.00	9.80	0.00	8.70	0.00	10.90	0.00	11.40	0.00	12.80	0.00	13.40	0.00	13.60	0.00
Feature Type <small>(riffle, run, or pool)</small>	Run																					

MAXIMUM 1.00

MEDIAN 0.29

Surveyor's Signature:



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.













