Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 1338 McCarty Creek

Submitted by
Olsson Associates

To
Missouri Department of Natural Resources
Water Protection Program

On
May 30, 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): McCarty Cr.
Missouri Water Body Identification (WBID) Number: 1338
8-digit HUC: 10290105
County(ies), Listed Upstream to Downstream: Vernon
Upstream Legal Description (from Table H): 31, 34N, 29W
Downstream Legal Description (from Table H): Mouth
Number of sites evaluated: 6
List all site numbers, consecutively upstream to downstream: 1,2,3,4,5,6
Include a Site Location Map(s). The map must include all requirements detailed in the *Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol* (Section IV.D.8.a).

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

Facility Name(s) and Permit Number(s): Murphy Family Ventures LLC MO-0131067

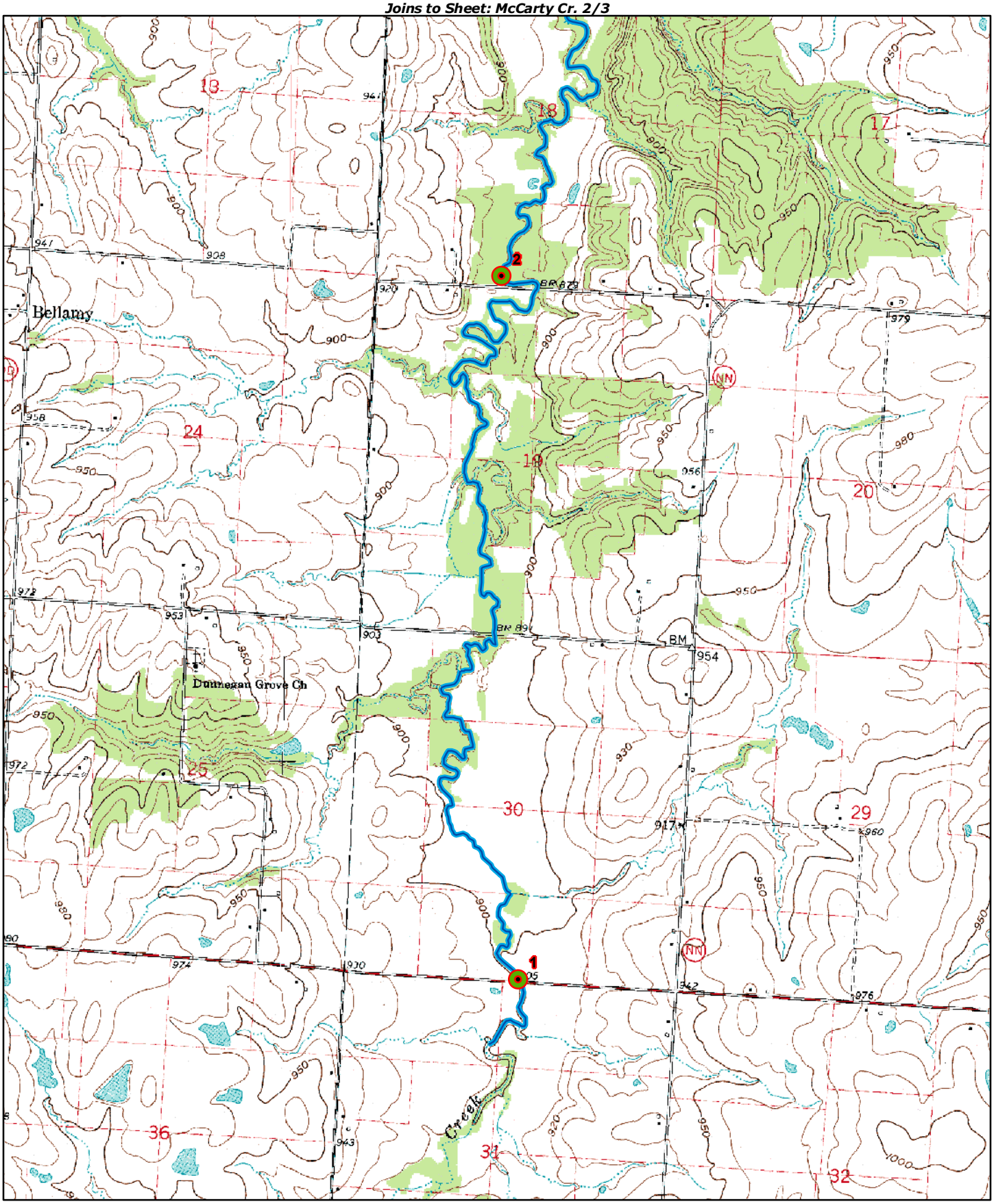
III. UAA Surveyor (please **PRINT** legibly)

Name of Surveyor: Rodney Holland	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 Analysies: Water Body Survey and Assessment Protocol*) and that this form is complete.

Signed:_____ **Date: 5-21-08**

Joins to Sheet: McCarty Cr. 2/3



MISSOURI RECREATIONAL USE ATTAINABILITY ANALYSIS

NORTH

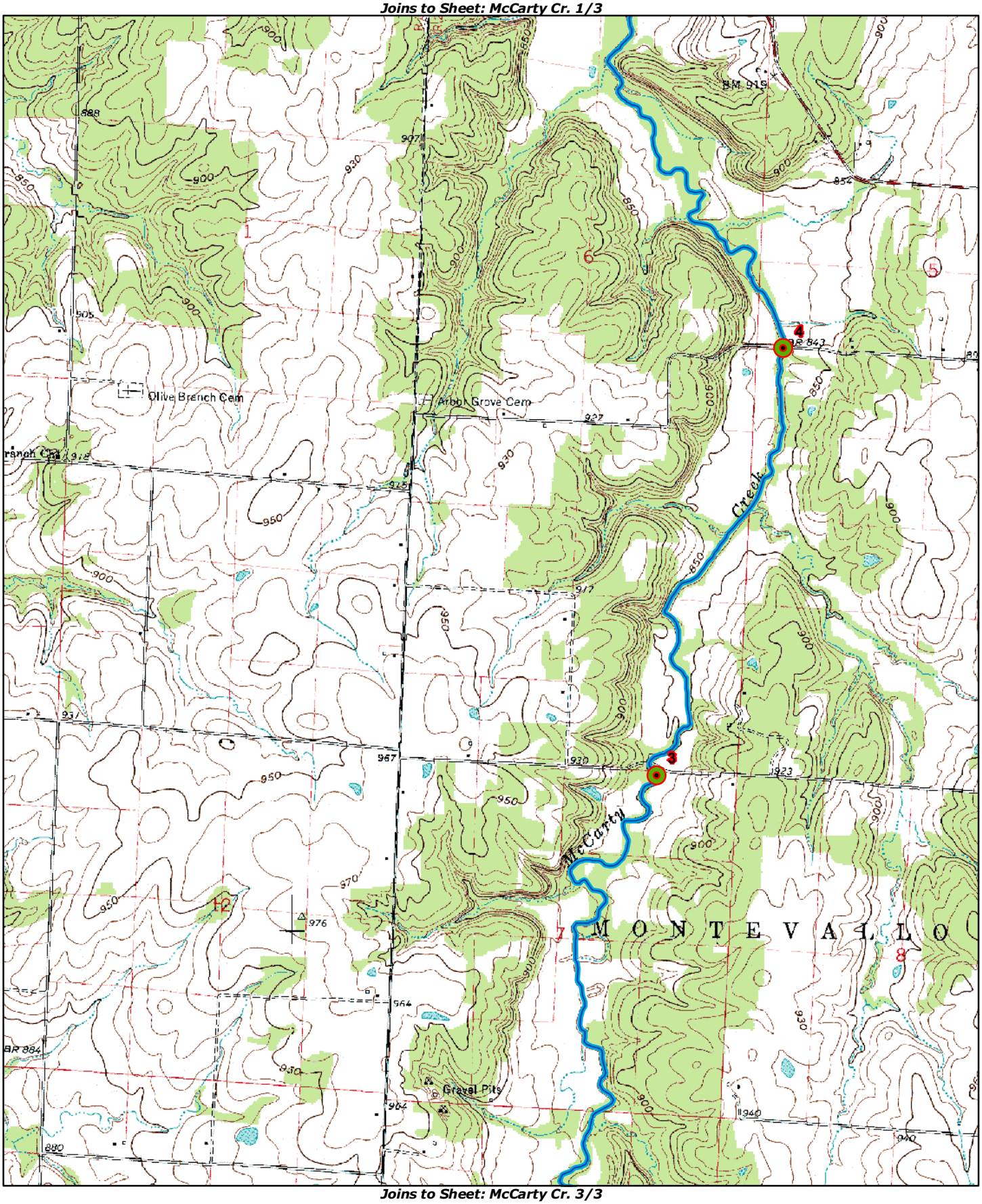
Feet
0 1,000 2,000
1 in. equals 2,000 ft.

Stream: McCarty Cr.
WBID: 1338

Map Sheet: 3/3
County: Vernon

OLSSON ASSOCIATES

Joins to Sheet: McCarty Cr. 1/3



Joins to Sheet: McCarty Cr. 3/3

MISSOURI RECREATIONAL USE ATTAINABILITY ANALYSIS

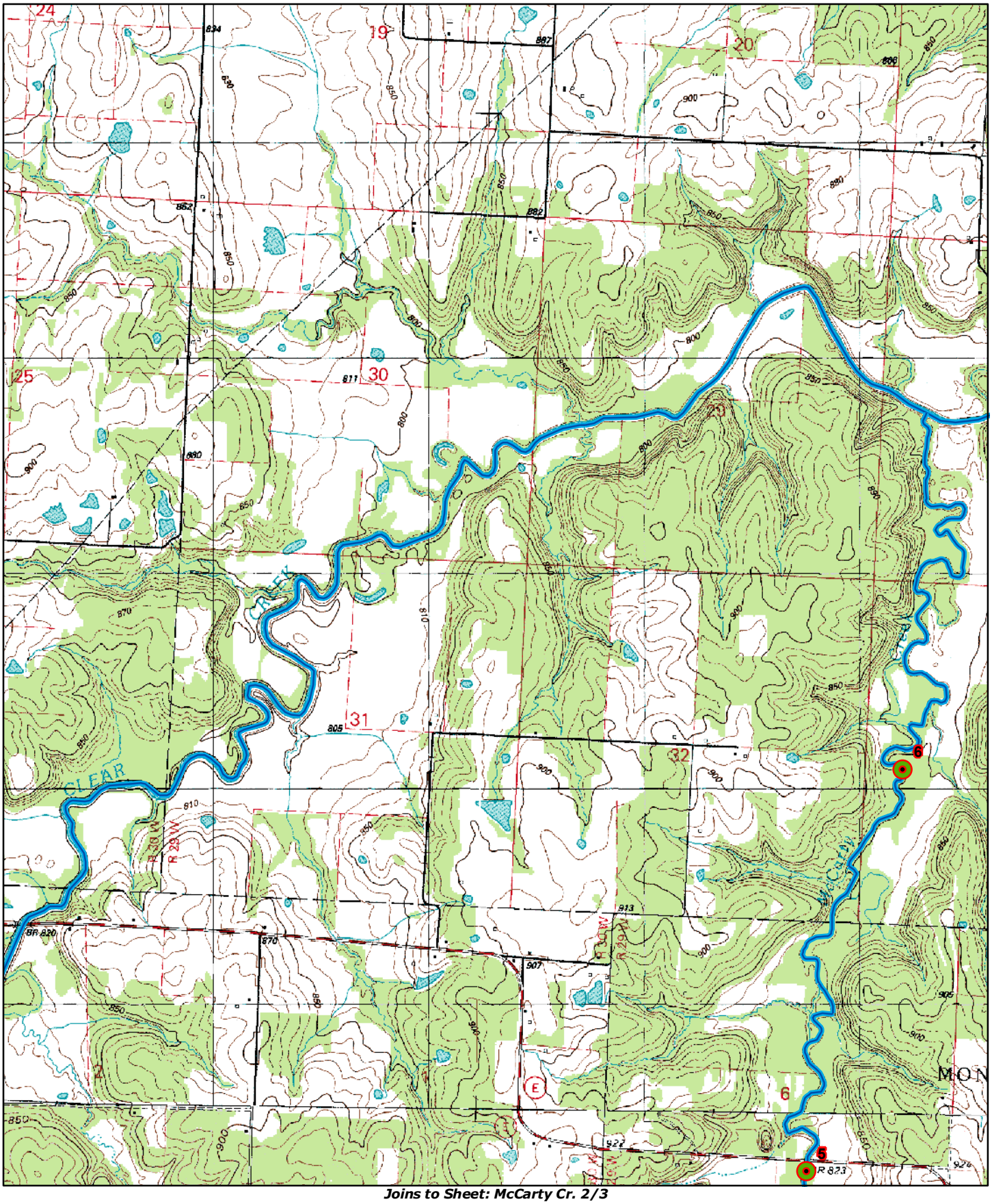
NORTH

Feet
0 1,000 2,000
1 in. equals 2,000 ft.

Stream: McCarty Cr.
WBID: 1338

Map Sheet: 2/3
County: Vernon

OLSSON ASSOCIATES



Joins to Sheet: McCarty Cr. 2/3

MISSOURI RECREATIONAL USE ATTAINABILITY ANALYSIS

NORTH

Feet
0 1,000 2,000
1 in. equals 2,000 ft.

Stream: McCarty Cr.
WBID: 1338

Map Sheet: 1/3
County: Vernon

OLSSON ASSOCIATES

WBID # 1338

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: 5-21-08 8:55 a.m.	Location Description (e.g., road crossing):
Stream Name: McCarty Creek	10 meters downstream of Hwy. B Bridge
Current Weather Conditions: Overcast	Facility Name(s): Murphy Family Ventures, LLC
Weather Conditions for Past 10 days: 0.13" @ Nevada	Permit Number(s): MO-0131067
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought X; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)				
Site 01	Easting (UTM X): 398171	Northing (UTM Y): 4168461	Horizontal Accuracy: (EPE / FOM / PDOP)	45 ft. ~~Meters~~
Site 11	Easting (UTM X): 398118	Northing (UTM Y): 4168641	Horizontal Accuracy: (EPE / FOM / PDOP)	63 ft. ~~Meters~~

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1338-1-A	Upstream looking down				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1338-1-B	Bridge				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1338-1-C	Downstream looking up				

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

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	X None of the above	☐ Other:

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

Stream Name & WBID # McCarty Creek #1338 Date of Survey 5-21-08

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.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Rural Residential
☐ Campgrounds	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ Boating accesses	☐ Fence	☐ No trespass sign	☐ Steep slopes	X Other:
Comments: Private Property				

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

☐ Roads	☐ Foot paths/prints	☐ Dock/platform	☐ Camping Sites	☐ Rope swings
☐ RV / ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Livestock Watering
X None of the above	Comments / Other:			

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

% Cobble	40% Gravel	20% Sand	% Silt	40% Mud/Clay	% Bedrock

Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Algae on rocks

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	X Musky	☐ Chemical	☐ None	☐ Other:
Color:	☐ Clear	☐ Green	☐ Gray	☐ Milky	X Other: Brownish
Bottom Deposit:	☐ Sludge	☐ Solids	☐ Fine sediments	X None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	X None	☐ 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.

Stream Name & WBID #McCarty Creek #1338 Date of Survey 5-21-08

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: Rodney Holland, Christopher Park

Surveyor's Signature: Date of Survey: 5-21-08

Organization: Olsson Associates Position: Field Team Leader & Field Team Member

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: McCarty Creek Waterbody ID: 1338 Site #: 1

Estimated Channel Incision: 0.4 (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: 398171 UTM Y: 4168461 +/- 45 ft. ~~(meters)~~

11 UTM X: 398118 UTM Y: 4168641 +/- 63 ft. ~~(meters)~~

Average Stream Width: 4 (meters) Length of Survey Segment: 150 (meters)

(To determne Length of Reach) (20x average stream width)

Field Staff: Rodney Holland and Christopher Parks

Dissolved Oxygen

Date: 5/21/2008 Time: 9:05 a.m.

Dissolved Oxygen: 7.15 (mg/L)

Dissolved Oxygen: 75.1 (% sat)

Specific Cond: 274 (µS/cm)

Water Temperature: 16.3 (°C)

Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.23	0.22	0.26	0.25	0.34	0.31	0.29	0.20	0.41	0.26	0.44	0.28	0.51	0.20	0.46	0.23	0.43	0.38	0.40	0.41	0.38	0.41
2	0.46	0.28	0.52	0.20	0.68	0.38	0.58	0.26	0.82	0.24	0.88	0.38	1.02	0.31	0.92	0.46	0.86	0.54	0.80	0.48	0.76	0.53
3	0.69	0.31	0.78	0.35	1.02	0.36	0.87	0.24	1.23	0.38	1.32	0.43	1.53	0.40	1.38	0.51	1.29	0.58	1.20	0.57	1.14	0.57
4	0.92	0.30	1.04	0.28	1.36	0.31	1.16	0.31	1.64	0.26	1.76	0.40	2.04	0.48	1.84	0.55	1.72	0.46	1.60	0.54	1.52	0.51
5	1.15	0.30	1.30	0.29	1.70	0.28	1.45	0.30	2.05	0.40	2.20	0.41	2.55	0.47	2.30	0.48	2.15	0.43	2.00	0.50	1.90	0.50
6	1.38	0.29	1.56	0.22	2.04	0.25	1.74	0.29	2.46	0.38	2.64	0.38	3.06	0.43	2.76	0.41	2.58	0.26	2.40	0.46	2.28	0.42
7	1.61	0.19	1.82	0.21	2.38	0.20	2.03	0.24	2.87	0.31	3.08	0.28	3.57	0.35	3.22	0.30	3.01	0.24	2.80	0.41	2.66	0.38
8	1.84	0.15	2.08	0.18	2.72	0.19	2.32	0.16	3.28	0.21	3.52	0.21	4.08	0.32	3.68	0.27	3.44	0.18	3.20	0.31	3.04	0.22
9	2.07	0.08	2.34	0.12	3.06	0.13	2.61	0.14	3.69	0.19	3.96	0.20	4.59	<.05	4.14	0.21	3.87	0.12	3.60	0.22	3.42	0.14
Right Bank	2.30	0.00	2.60	0.00	3.40	0.00	2.90	0.00	4.10	0.00	4.40	0.00	5.10	0.00	4.60	0.00	4.30	0.00	4.00	0.00	3.80	0.00
Feature Type (riffle, run, or pool)	run		run		run		riffle		run		run		run		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 bv 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 0.58

MEDIAN 0.30

Surveyor's Signature: R. Holland Date: 5/21/2008

WBID # 1338

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: 5-21-08 9:30 a.m.	Location Description (e.g., road crossing):
Stream Name: McCarty Creek	10 meters downstream of Weltmer Road Bridge
Current Weather Conditions: Sunny	Facility Name(s): Murphy Family Ventures, LLC
Weather Conditions for Past 10 days: 0.13" @ Nevada	Permit Number(s): MO-0131067
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought X; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)				
Site 01	Easting (UTM X): 398270	Northing (UTM Y): 4171670	Horizontal Accuracy: (EPE / FOM / PDOP)	136 ft. ~~Meters~~
Site 11	Easting (UTM X): 398101	Northing (UTM Y): 4171720	Horizontal Accuracy: (EPE / FOM / PDOP)	111 ft. ~~Meters~~

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1338-2-A	Upstream looking down				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1338-2-B	Bridge				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1338-2-C	Downstream looking up				

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

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	X None of the above	☐ Other:

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

Stream Name & WBID # McCarty Creek #1338 Date of Survey 5-21-08

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.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Rural Residential
☐ Campgrounds	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ Boating accesses	☐ Fence	☐ No trespass sign	☐ Steep slopes	X Other:
Comments: Private Property				

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

☐ Roads	☐ Foot paths/prints	☐ Dock/platform	☐ Camping Sites	☐ Rope swings
☐ RV / ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Livestock Watering
X None of the above	Comments / Other:			

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

% Cobble	60% Gravel	20% Sand	% Silt	20% Mud/Clay	% Bedrock

Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Algae on rocks

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	X Musky	☐ Chemical	☐ None	☐ Other:
Color:	☐ Clear	☐ Green	☐ Gray	☐ Milky	X Other: Brownish
Bottom Deposit:	☐ Sludge	☐ Solids	☐ Fine sediments	X None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	X None	☐ 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.

Stream Name & WBID #_____McCarty Creek_____#1338_____ Date of Survey _____5-21-08__

Site # _____2_____

Field Data Sheets for Recreational Use Stream Surveys

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

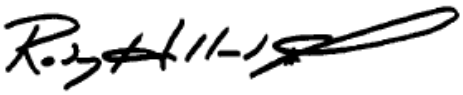
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

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: _____Rodney Holland, Christopher Park_____

Surveyor's Signature:  Date of Survey: _____5-21-08_____

Organization: _____Olsson Associates_____ Position: Field Team Leader & Field Team Member

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: McCarty Creek Waterbody ID: 1338 Site #: 2

Estimated Channel Incision: 0.4 (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: 398270 UTM Y: 4171670 +/- 136 ft. ~~(meters)~~

11 UTM X: 398101 UTM Y: 4171720 +/- 111 ft. ~~(meters)~~

Average Stream Width: 4.5 (meters)
(To determne Length of Reach)

Length of Survey Segment: 150 (meters)
(20x average stream width)

Field Staff: Rodney Holland and Christopher Parks

Dissolved Oxygen

Date: 5/21/2008 Time: 9:35 a.m.

Dissolved Oxygen: 5.28 (mg/L)

Dissolved Oxygen: 56.2 (% sat)

Specific Cond: 192 (µS/cm)

Water Temperature: 17.7 (°C)

Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.38	0.09	0.42	0.22	0.41	0.16	0.46	0.26	0.46	0.28	0.45	0.31	0.49	0.39	0.51	0.35	0.53	0.55	0.48	0.21	0.50	0.15
2	0.76	0.08	0.84	0.29	0.82	0.23	0.92	0.23	0.92	0.32	0.90	0.42	0.98	0.55	1.02	0.39	1.06	0.51	0.96	0.20	1.00	0.19
3	1.14	0.05	1.26	0.31	1.23	0.28	1.38	0.25	1.38	0.33	1.35	0.52	1.47	0.62	1.53	0.51	1.59	0.52	1.44	0.21	1.50	0.20
4	1.52	0.05	1.68	0.30	1.64	0.27	1.84	0.28	1.84	0.39	1.80	0.61	1.96	0.63	2.04	0.58	2.12	0.51	1.92	0.31	2.00	0.29
5	1.90	0.05	2.10	0.22	2.05	0.29	2.30	0.30	2.30	0.35	2.25	0.63	2.45	0.61	2.55	0.62	2.65	0.48	2.40	0.28	2.50	0.15
6	2.28	0.05	2.52	0.31	2.46	0.28	2.76	0.23	2.76	0.30	2.70	0.59	2.94	0.52	3.06	0.63	3.18	0.51	2.88	0.21	3.00	0.21
7	2.66	0.06	2.94	0.28	2.87	0.24	3.22	0.21	3.22	0.25	3.15	0.52	3.43	0.49	3.57	0.65	3.71	0.52	3.36	0.24	3.50	0.22
8	3.04	0.08	3.36	0.25	3.28	0.22	3.68	0.18	3.68	0.22	3.60	0.50	3.92	0.28	4.08	0.71	4.24	0.40	3.84	0.19	4.00	0.28
9	3.42	0.09	3.78	0.15	3.69	0.18	4.14	0.13	4.14	0.19	4.05	0.45	4.41	0.21	4.59	0.49	4.77	0.38	4.32	0.08	4.50	0.31
Right Bank	3.80	0.00	4.20	0.00	4.10	0.00	4.60	0.00	4.60	0.00	4.50	0.00	4.90	0.00	5.10	0.00	5.30	0.00	4.80	0.00	5.00	0.00
Feature Type (riffle, run, or pool)	riffle		run		run		run		run		run		run		run		run		run		run	

Typos corrected by OA, 11/10/

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 bv 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 0.71

MEDIAN 0.28

Surveyor's Signature: R.J. Holland Date: 5/21/2008

WBID # 1338

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: 5-21-08 10:20 a.m.	Location Description (e.g., road crossing):
Stream Name: McCarty Creek	10 meters downstream of Veteran Road Bridge
Current Weather Conditions: Sunny	Facility Name(s): Murphy Family Ventures, LLC
Weather Conditions for Past 10 days: 0.13" @ Nevada	Permit Number(s): MO-0131067
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought X; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)				
Site 01	Easting (UTM X): 398834	Northing (UTM Y): 4174891	Horizontal Accuracy: (EPE / FOM / PDOP)	38 ft. ~~Meters~~
Site 11	Easting (UTM X): 398941	Northing (UTM Y): 4175003	Horizontal Accuracy: (EPE / FOM / PDOP)	61 ft. ~~Meters~~

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1338-3-A	Upstream looking down & Bridge				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1338-3-B	Downstream looking up				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	X None of the above	☐ Other:

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

Stream Name & WBID # McCarty Creek #1338 Date of Survey 5-21-08

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.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Rural Residential
☐ Campgrounds	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ Boating accesses	☐ Fence	☐ No trespass sign	☐ Steep slopes	X Other:
Comments: Private Property				

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

☐ Roads	☐ Foot paths/prints	☐ Dock/platform	☐ Camping Sites	☐ Rope swings
☐ RV / ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Livestock Watering
X None of the above	Comments / Other:			

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

% Cobble	60% Gravel	30% Sand	% Silt	10% Mud/Clay	% Bedrock

Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Algae on rocks

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	X None	☐ Other:
Color:	☐ Clear	☐ Green	☐ Gray	☐ Milky	X Other: Brownish
Bottom Deposit:	☐ Sludge	☐ Solids	☐ Fine sediments	X None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	X None	☐ 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.

Stream Name & WBID #McCarty Creek #1338 Date of Survey 5-21-08

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: Rodney Holland, Christopher Park

Surveyor's Signature: Date of Survey: 5-21-08

Organization: Olsson Associates Position: Field Team Leader & Field Team Member

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: McCarty Creek Waterbody ID: 1338 Site #: 3

Estimated Channel Incision: 0.4 (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: 398834 UTM Y: 4174891 +/- 38 ft. ~~(meters)~~

11 UTM X: 398941 UTM Y: 4175003 +/- 61 ft. ~~(meters)~~

Average Stream Width: 6 (meters)
(To determne Length of Reach)

Length of Survey Segment: 150 (meters)
(20x average stream width)

Field Staff: Rodney Holland and Christopher Parks

Dissolved Oxygen

Date: 5/21/2008 Time: 10:25 a.m.

Dissolved Oxygen: 8.29 (mg/L)

Dissolved Oxygen: 85.9 (% sat)

Specific Cond: 189 (µS/cm)

Water Temperature: 20 (°C)

Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.53	0.15	0.54	0.05	0.59	0.21	0.61	0.12	0.63	0.32	0.60	0.40	0.65	0.13	0.63	0.05	0.66	0.18	0.67	0.13	0.63	0.19
2	1.06	0.11	1.08	0.13	1.18	0.15	1.22	0.22	1.26	0.41	1.20	0.28	1.30	0.29	1.26	0.15	1.32	0.28	1.34	0.19	1.26	0.28
3	1.59	0.18	1.62	0.06	1.77	0.31	1.83	0.38	1.89	0.33	1.80	0.32	1.95	0.38	1.89	0.19	1.98	0.38	2.01	0.30	1.89	0.32
4	2.12	0.20	2.16	0.11	2.36	0.28	2.44	0.41	2.52	0.35	2.40	0.31	2.60	0.40	2.52	0.28	2.64	0.39	2.68	0.29	2.52	0.41
5	2.65	0.18	2.70	0.09	2.95	0.32	3.05	0.50	3.15	0.41	3.00	0.40	3.25	0.41	3.15	0.41	3.30	0.47	3.35	0.35	3.15	0.45
6	3.18	0.12	3.24	0.07	3.54	0.35	3.66	0.45	3.78	0.38	3.60	0.39	3.90	0.42	3.78	0.48	3.96	0.40	4.02	0.40	3.78	0.42
7	3.71	0.11	3.78	0.09	4.13	0.36	4.27	0.43	4.41	0.39	4.20	0.43	4.55	0.40	4.41	0.48	4.62	0.42	4.69	0.48	4.41	0.43
8	4.24	0.05	4.32	0.08	4.72	0.31	4.88	0.42	5.04	0.51	4.80	0.42	5.20	0.41	5.04	0.49	5.28	0.38	5.36	0.41	5.04	0.51
9	4.77	0.06	4.86	0.06	5.31	0.28	5.49	0.25	5.67	0.53	5.40	0.56	5.85	0.48	5.67	0.32	5.94	0.22	6.03	0.47	5.67	0.55
Right Bank	5.30	0.00	5.40	0.00	5.90	0.00	6.10	0.00	6.30	0.00	6.00	0.00	6.50	0.00	6.30	0.00	6.60	0.00	6.70	0.00	6.30	0.00
Feature Type (riffle, run, or pool)	riffle		riffle		run		run		run		run		run		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 bv 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 0.56

MEDIAN 0.33

Surveyor's Signature: R. Holland Date: 5/21/2008

WBID # 1338

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: 5-21-08 11:08 a.m.	Location Description (e.g., road crossing):
Stream Name: McCarty Creek	10 meters downstream of Tyree Road Bridge
Current Weather Conditions: Sunny	Facility Name(s): Murphy Family Ventures, LLC
Weather Conditions for Past 10 days: 0.13" @ Nevada	Permit Number(s): MO-0131067
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought X; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)				
Site 01	Easting (UTM X): 399436	Northing (UTM Y): 4176839	Horizontal Accuracy: (EPE / FOM / PDOP)	101 ft. ~~Meters~~
Site 11	Easting (UTM X): 399388	Northing (UTM Y): 4176987	Horizontal Accuracy: (EPE / FOM / PDOP)	96 ft. ~~Meters~~

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1338-4-A	Upstream looking down & Bridge				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1338-4-B	Downstream looking up				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	X None of the above	☐ Other:

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

Stream Name & WBID # McCarty Creek #1338 Date of Survey 5-21-08

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.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Rural Residential
☐ Campgrounds	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ Boating accesses	☐ Fence	☐ No trespass sign	☐ Steep slopes	X Other:

Comments:

Private Property

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

☐ Roads	☐ Foot paths/prints	☐ Dock/platform	☐ Camping Sites	☐ Rope swings
☐ RV / ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Livestock Watering
X None of the above	Comments / Other:			

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

% Cobble	60% Gravel	5% Sand	% Silt	5% Mud/Clay	30% Bedrock

Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Algae on rocks

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	X None	☐ Other:
Color:	☐ Clear	☐ Green	☐ Gray	☐ Milky	X Other: Brownish
Bottom Deposit:	☐ Sludge	☐ Solids	☐ Fine sediments	X None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	X None	☐ 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.

Stream Name & WBID #McCarty Creek #1338 Date of Survey 5-21-08

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.)

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

Printed Names of Personnel Collecting Data: Rodney Holland, Christopher Park

Surveyor's Signature: Date of Survey: 5-21-08

Organization: Olsson Associates Position: Field Team Leader & Field Team Member

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: McCarty Creek Waterbody ID: 1338 Site #: 4

Estimated Channel Incision: 0.4 (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: 399436 UTM Y: 4176839 +/- 101 ft. ~~(meters)~~

11 UTM X: 399388 UTM Y: 4176987 +/- 96 ft. ~~(meters)~~

Average Stream Width: 5 (meters)
(To determne Length of Reach)

Length of Survey Segment: 150 (meters)
(20x average stream width)

Field Staff: Rodney Holland and Christopher Parks

Dissolved Oxygen

Date: 5/21/2008 Time: 11:10 a.m.

Dissolved Oxygen: 8.86 (mg/L)

Dissolved Oxygen: 93.2 (% sat)

Specific Cond: 196 (µS/cm)

Water Temperature: 19.3 (°C)

Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.51	0.10	0.47	0.19	0.53	0.21	0.55	0.14	0.54	0.30	0.59	0.24	0.52	0.69	0.44	0.05	0.40	0.21	0.34	0.24	0.66	0.31
2	1.02	0.26	0.94	0.11	1.06	0.36	1.10	0.23	1.08	0.50	1.18	0.39	1.04	0.78	0.88	0.07	0.80	0.32	0.68	0.35	1.32	0.41
3	1.53	0.42	1.41	0.38	1.59	0.50	1.65	0.39	1.62	0.49	1.77	0.67	1.56	0.58	1.32	0.08	1.20	0.39	1.02	0.38	1.98	0.42
4	2.04	0.48	1.88	0.51	2.12	0.49	2.20	0.48	2.16	0.36	2.36	0.68	2.08	0.52	1.76	0.11	1.60	0.61	1.36	0.40	2.64	0.45
5	2.55	0.41	2.35	0.49	2.65	0.48	2.75	0.51	2.70	0.31	2.95	0.49	2.60	0.57	2.20	0.26	2.00	0.69	1.70	0.33	3.30	0.22
6	3.06	0.32	2.82	0.42	3.18	0.47	3.30	0.58	3.24	0.32	3.54	0.42	3.12	0.43	2.64	0.34	2.40	0.89	2.04	0.38	3.96	0.25
7	3.57	0.32	3.29	0.32	3.71	0.38	3.85	0.38	3.78	0.27	4.13	0.27	3.64	0.38	3.08	0.41	2.80	0.85	2.38	0.34	4.62	0.31
8	4.08	0.25	3.76	0.28	4.24	0.26	4.40	0.31	4.32	0.26	4.72	0.25	4.16	0.32	3.52	0.20	3.20	0.83	2.72	0.27	5.28	0.28
9	4.59	0.15	4.23	0.18	4.77	0.21	4.95	0.28	4.86	0.18	5.31	0.22	4.68	0.31	3.96	0.27	3.60	0.76	3.06	0.19	5.94	0.26
Right Bank	5.10	0.00	4.70	0.00	5.30	0.00	5.50	0.00	5.40	0.00	5.90	0.00	5.20	0.00	4.40	0.00	4.00	0.00	3.40	0.00	6.60	0.00
Feature Type (riffle, run, or pool)	run		run		run		run		run		run		run		riffle		run		run		run	

Typo corrected from 26.00 m. by OA 1

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 bv 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 0.89
MEDIAN 0.34

Surveyor's Signature: R. Holland Date: 5/21/2008

WBID # 1338

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: 5-21-08 12:10 p.m.	Location Description (e.g., road crossing):
Stream Name: McCarty Creek	10 meters downstream of Hwy. E Bridge
Current Weather Conditions: Sunny	Facility Name(s): Murphy Family Ventures, LLC
Weather Conditions for Past 10 days: 0.13" @ Nevada	Permit Number(s): MO-0131067
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought X; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)				
Site 01	Easting (UTM X): 398738	Northing (UTM Y): 4178486	Horizontal Accuracy: (EPE / FOM / PDOP)	91 ft. ~~Meters~~
Site 11	Easting (UTM X): 398750	Northing (UTM Y): 4178603	Horizontal Accuracy: (EPE / FOM / PDOP)	121 ft. ~~Meters~~

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1338-5-A	Upstream looking down & Bridge				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1338-5-B	Downstream looking up				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	X None of the above	☐ Other:

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

Stream Name & WBID # McCarty Creek #1338 Date of Survey 5-21-08

Site # 5

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.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Rural Residential
☐ Campgrounds	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ Boating accesses	☐ Fence	☐ No trespass sign	☐ Steep slopes	X Other:

Comments:

Private Property

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

☐ Roads	☐ Foot paths/prints	☐ Dock/platform	☐ Camping Sites	☐ Rope swings
☐ RV / ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Livestock Watering
X None of the above	Comments / Other:			

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

% Cobble	70% Gravel	20% Sand	% Silt	10% Mud/Clay	% Bedrock

Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Algae on rocks

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	X None	☐ Other:
Color:	☐ Clear	☐ Green	☐ Gray	☐ Milky	X Other: Brownish
Bottom Deposit:	☐ Sludge	☐ Solids	☐ Fine sediments	X None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	X None	☐ 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.

Stream Name & WBID #_____McCarty Creek_____#1338_____ Date of Survey _____5-21-08__

Site # _____5_____

Field Data Sheets for Recreational Use Stream Surveys

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

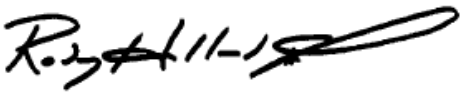
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

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: _____Rodney Holland, Christopher Park_____

Surveyor's Signature:  Date of Survey: __5-21-08_____

Organization: _____Olsson Associates_____ Position: Field Team Leader & Field Team Member

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: McCarty Creek Waterbody ID: 1338 Site #: 5

Estimated Channel Incision: 0.4 (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: 398738 UTM Y: 4178486 +/- 91 ft. ~~(meters)~~

11 UTM X: 398750 UTM Y: 4178603 +/- 121 ft. ~~(meters)~~

Average Stream Width: 7 (meters)
(To determne Length of Reach)

Length of Survey Segment: 150 (meters)
(20x average stream width)

Field Staff: Rodney Holland and Christopher Parks

Dissolved Oxygen

Date: 5/21/2008 Time: 12:15 p.m.

Dissolved Oxygen: 9.42 (mg/L)

Dissolved Oxygen: 103 (% sat)

Specific Cond: 215 (µS/cm)

Water Temperature: 21 (°C)

Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.81	0.15	0.76	0.77	0.77	0.69	0.73	0.65	0.69	0.15	0.71	0.09	0.64	0.25	0.65	0.26	0.66	0.42	0.62	0.12	0.59	0.18
2	1.62	0.29	1.52	1.00	1.54	1.00	1.46	1.00	1.38	0.31	1.42	0.20	1.28	0.42	1.30	0.37	1.32	0.76	1.24	0.22	1.18	0.51
3	2.43	0.48	2.28	1.00	2.31	1.00	2.19	1.00	2.07	0.50	2.13	0.31	1.91	0.51	1.95	0.48	1.98	0.32	1.86	0.45	1.77	0.52
4	3.24	0.52	3.04	1.00	3.08	1.00	2.92	1.00	2.76	0.53	2.84	0.42	2.55	0.43	2.60	0.53	2.64	0.39	2.48	0.64	2.36	0.61
5	4.05	0.53	3.80	0.88	3.85	0.82	3.65	0.73	3.45	0.68	3.55	0.57	3.19	0.38	3.25	0.41	3.30	0.32	3.10	0.71	2.95	0.60
6	4.86	0.48	4.56	0.72	4.62	0.68	4.38	0.41	4.14	0.82	4.26	0.53	3.83	0.39	3.90	0.33	3.96	0.30	3.72	>1.00	3.54	0.65
7	5.67	0.31	5.32	0.52	5.39	0.47	5.11	0.38	4.83	0.91	4.97	0.58	4.47	0.52	4.55	0.30	4.62	0.21	4.34	>1.00	4.13	0.58
8	6.48	0.22	6.08	0.33	6.16	0.31	5.84	0.22	5.52	0.54	5.68	0.75	5.10	0.41	5.20	0.27	5.28	0.18	4.96	>1.00	4.72	0.59
9	7.29	0.12	6.84	0.18	6.93	0.21	6.57	0.16	6.21	0.48	6.39	0.45	5.74	0.37	5.85	0.28	5.94	0.09	5.58	>1.00	5.31	0.44
Right Bank	8.10	0.00	7.60	0.00	7.70	0.00	7.30	0.00	6.90	0.00	7.10	0.00	6.38	0.00	6.50	0.00	6.60	0.00	6.20	0.00	5.90	0.00
Feature Type (riffle, run, or pool)	run		run		run		run		run		run		run		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 bv 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 0.47

Surveyor's Signature: R. Holland Date: 5/21/2008

WBID # 1338

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: 5-21-08 1:20 p.m.	Location Description (e.g., road crossing):
Stream Name: McCarty Creek	Private property
Current Weather Conditions: Sunny	Facility Name(s): Murphy Family Ventures, LLC
Weather Conditions for Past 10 days: 0.13" @ Nevada	Permit Number(s): MO-0131067
Official Drought Conditions at time of this survey (search DNR home page for "drought"): No drought X; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)				
Site 01	Easting (UTM X): 399176	Northing (UTM Y): 4180286	Horizontal Accuracy: (EPE / FOM / PDOP)	59 ft. ~~Meters~~
Site 11	Easting (UTM X): 399183	Northing (UTM Y): 4180388	Horizontal Accuracy: (EPE / FOM / PDOP)	62 ft. ~~Meters~~

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1338-6-A	Upstream looking down				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1338-6-B	Downstream looking up				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	X None of the above	☐ Other:

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

Stream Name & WBID # McCarty Creek #1338 Date of Survey 5-21-08

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.)

☐ City/county parks	☐ Playgrounds	☐ MDC conservation lands	☐ Urban areas	☐ Rural Residential
☐ Campgrounds	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ Boating accesses	☐ Fence	☐ No trespass sign	☐ Steep slopes	X Other:

Comments:

Private Property

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

☐ Roads	☐ Foot paths/prints	☐ Dock/platform	☐ Camping Sites	☐ Rope swings
☐ RV / ATV Tracks	☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Livestock Watering
X None of the above	Comments / Other:			

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

% Cobble	60% Gravel	20% Sand	% Silt	20% Mud/Clay	% Bedrock

Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Algae on rocks

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	X None	☐ Other:
Color:	☐ Clear	☐ Green	☐ Gray	☐ Milky	X Other: Brownish
Bottom Deposit:	☐ Sludge	☐ Solids	☐ Fine sediments	X None	☐ Other:
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	X None	☐ 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.

Stream Name & WBID #_____McCarty Creek_____#1338_____ Date of Survey _____5-21-08__

Site # _____6_____

Field Data Sheets for Recreational Use Stream Surveys

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

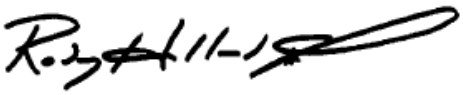
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

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: _____Rodney Holland, Christopher Park_____

Surveyor's Signature:  Date of Survey: __5-21-08_____

Organization: _____Olsson Associates_____ Position: Field Team Leader & Field Team Member

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: McCarty Creek Waterbody ID: 1338 Site #: 6

Estimated Channel Incision: 0.4 (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: 399176 UTM Y: 4180286 +/- 59 ft. ~~(meters)~~

11 UTM X: 399183 UTM Y: 4180388 +/- 67 ft. ~~(meters)~~

Average Stream Width: 5 (meters)
(To determne Length of Reach)

Length of Survey Segment: 150 (meters)
(20x average stream width)

Field Staff: Rodney Holland and Christopher Parks

Dissolved Oxygen

Date: 5/21/2008 Time: 1:25 p.m.

Dissolved Oxygen: 9.55 (mg/L)

Dissolved Oxygen: 104.1 (% sat)

Specific Cond: 219 (µS/cm)

Water Temperature: 21.1 (°C)

Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.48	0.23	0.53	0.19	0.60	0.18	0.63	0.14	0.58	0.21	0.47	0.08	0.43	0.05	0.50	0.31	0.54	0.26	0.59	0.29	0.58	0.24
2	0.96	0.34	1.06	0.38	1.20	0.21	1.26	0.27	1.16	0.34	0.94	0.13	0.86	0.09	1.00	0.32	1.08	0.35	1.18	0.48	1.16	0.33
3	1.44	0.43	1.59	0.53	1.80	0.36	1.89	0.38	1.74	0.42	1.41	<.05	1.29	0.11	1.50	0.44	1.62	0.41	1.77	0.50	1.74	0.37
4	1.92	0.51	2.12	0.52	2.40	0.46	2.52	0.40	2.32	0.36	1.88	0.05	1.72	0.07	2.00	0.46	2.16	0.56	2.36	0.41	2.32	0.48
5	2.40	0.50	2.65	0.58	3.00	0.48	3.15	0.45	2.90	0.45	2.35	0.08	2.15	0.09	2.50	0.38	2.70	0.47	2.95	0.48	2.90	0.53
6	2.88	0.48	3.18	0.51	3.60	0.49	3.78	0.58	3.48	0.42	2.82	0.17	2.58	0.15	3.00	0.25	3.24	0.41	3.54	0.58	3.48	0.52
7	3.36	0.35	3.71	0.56	4.20	0.59	4.41	0.59	4.06	0.55	3.29	0.21	3.01	0.23	3.50	0.31	3.78	0.36	4.13	0.59	4.06	0.46
8	3.84	0.32	4.24	0.59	4.80	0.54	5.04	0.60	4.64	0.52	3.76	0.24	3.44	0.28	4.00	0.22	4.32	0.27	4.72	0.53	4.64	0.31
9	4.32	0.25	4.77	0.59	5.40	0.54	5.67	0.42	5.22	0.39	4.23	0.20	3.87	0.31	4.50	0.18	4.86	0.21	5.31	0.32	5.22	0.32
Right Bank	4.80	0.00	5.30	0.00	6.00	0.00	6.30	0.00	5.80	0.00	4.70	0.00	4.30	0.00	5.00	0.00	5.40	0.00	5.90	0.00	5.80	0.00
Feature Type (riffle, run, or pool)	run		run		run		run		run		riffle		riffle		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 bv 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 0.60

MEDIAN 0.38

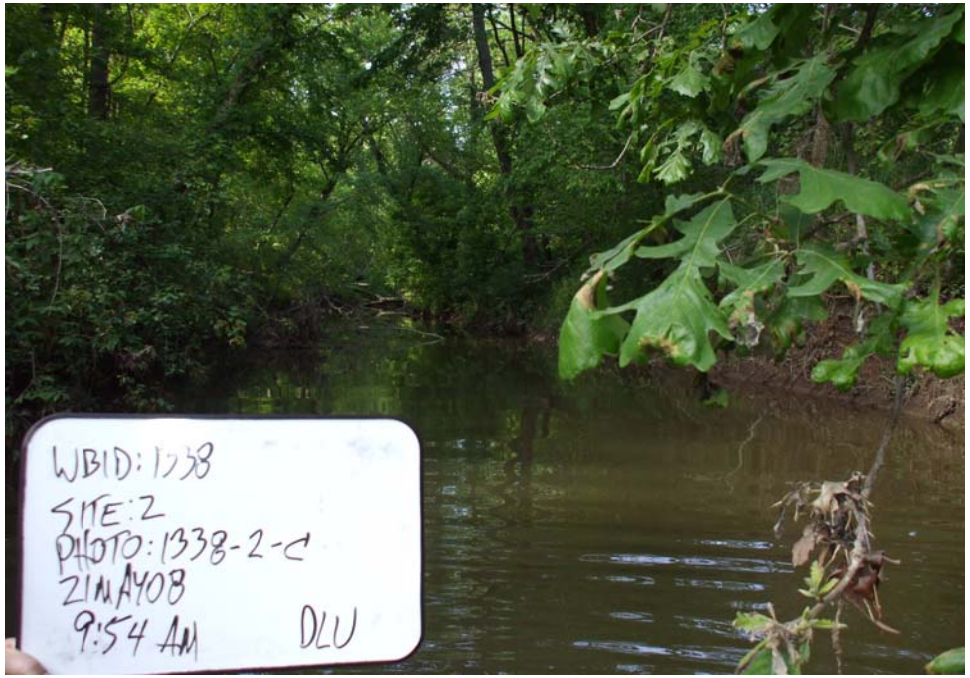
Surveyor's Signature: R. Holland Date: 5/21/2008

WBID:1338
SITE:1
PHOTO:1338-1-B
21MAY08
8:59AM
BRIDGE

WBID:1338
SITE:2
PHOTO:1338-2-A
21MAY08
9:32 AM
ULD

WBID:1338
SITE:1
PHOTO:1338-1-A
21MAY08
8:59AM
ULD

WBID:1338
SITE:1
PHOTO:1338-1-C
20MAY08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21MAY08
9:54 AM
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10:47AM

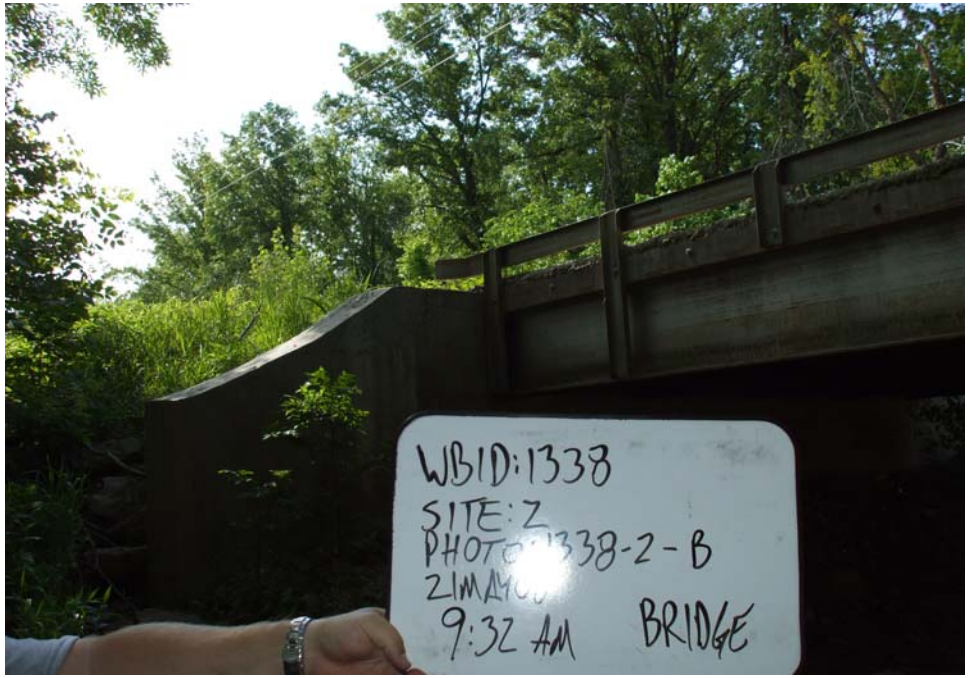
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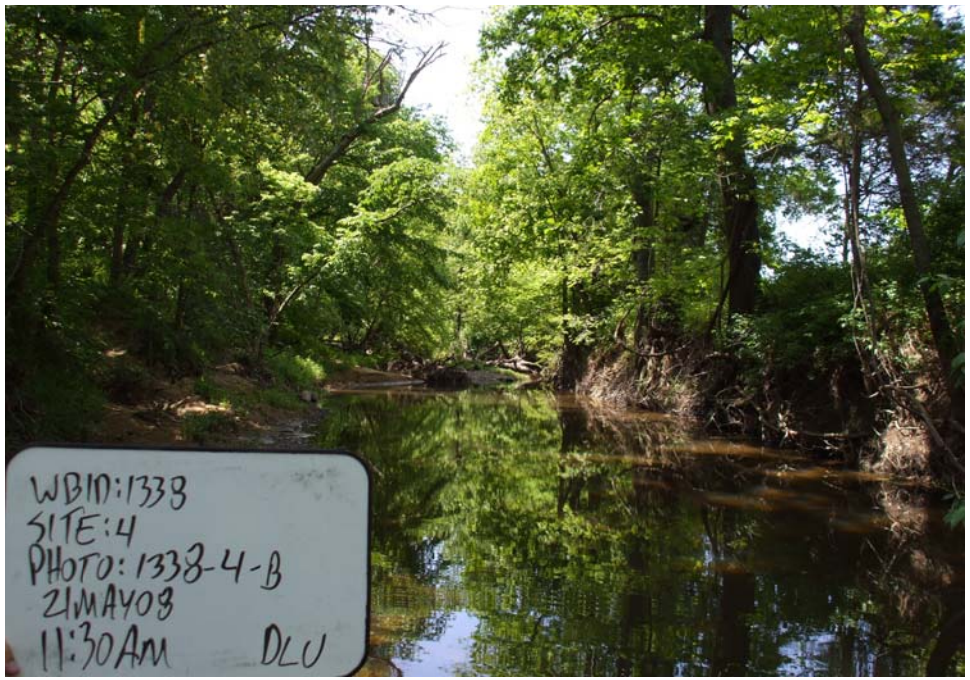
PHOTO: 1338-3-A
21MAY08
ULD &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11:30AM DLU

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SITE:5
PHOTO:1338-5-B
21MAY08
2:36 PM DLU

WBID:1338
SITE:4
PHOTO:1338-4-A
21MAY08 BRIDGE
11:08AM &ULD

WBID:1338
SITE:5
PHOTO:1338-5-A
21MAY08 BRIDGE&
12:10PM ULD

WBID: 1338
SITE: 6
PHOTO: 1338-6-B
21MAY08
1:50PM
DLU

WBID: 1338
SITE: 6
PHOTO: 1338-6-A
21MAY08
1:25PM
ULD