



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

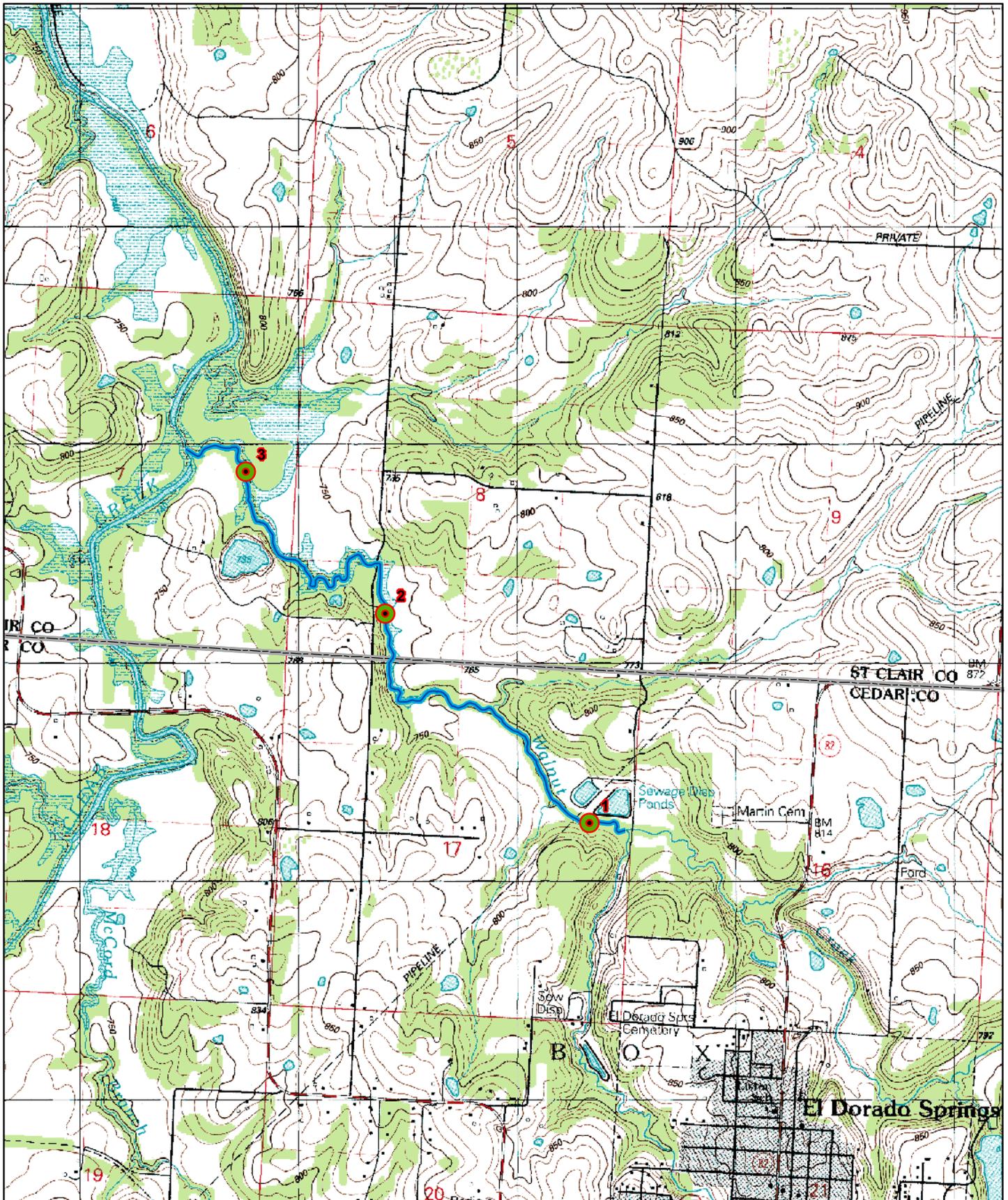
WBID 1339 Walnut Creek

Submitted by
Olsson Associates

To
Missouri Department of Natural Resources
Water Protection Program

On

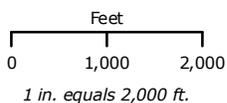
May 30, 2008



**MISSOURI RECREATIONAL
USE ATTAINABILITY ANALYSIS**

Stream: Walnut Cr.
WBID:1339

Map Sheet:1/1
County: St. Clair & Cedar



WBID # 1339

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: 5-5-08	12:15 p.m.	Location Description (e.g., road crossing):
Stream Name: Walnut Creek		50 meters downstream of low water bridge
Current Weather Conditions: Sunny		Facility Name(s): City of El Dorado Springs
Weather Conditions for Past 10 days: 0.44" rain @ Nevada		Permit Number(s): MO-0040002
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): 409479	Northing (UTM Y): 4194452	Horizontal Accuracy: (EPE / FOM / PDOP)	41 ft. Meters	
Site 11	Easting (UTM X): 409312	Northing (UTM Y): 4194487	Horizontal Accuracy: (EPE / FOM / PDOP)	92 ft. Meters	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1339-1-A	Upstream looking down				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1339-1-B	Bridge				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1339-1-C	Downstream looking up				

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 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:
Comments: Private Property – Wastewater Plant				

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

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other: Bridge			

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

% Cobble	30% Gravel	20% Sand	% Silt	50% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Algae

Water Characteristics*: (Mark all that apply.)

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

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

Site # 1

Field Data Sheets for Recreational Use Stream Surveys

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

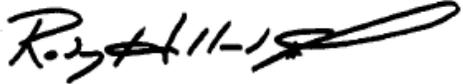
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

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

Comments: (Please record any additional comments here.)

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

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

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

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: <u>Walnut Crekk</u> Waterbody ID: <u>1339</u> Site #: <u>1</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>409479</u> UTM Y: <u>4194452</u> +/- <u>41</u> ft. (meters) 11 UTM X: <u>409312</u> UTM Y: <u>4174489</u> +/- <u>92</u> ft. (meters) Average Stream Width: <u>5.5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Rodney Holland and Christopher Parks</u>	Dissolved Oxygen Date: <u>5/5/2008</u> Time: <u>12:20 p.m.</u> Dissolved Oxygen: <u>9.84</u> (mg/L) Dissolved Oxygen: <u>98.6</u> (% sat) Specific Cond: <u>136</u> (µS/cm) Water Temperature: <u>19.2</u> (°C)
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Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station	Distance (m)	Depth (m)																					
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	0.70	0.17	0.29	<0.05	0.74	0.08	0.24	<0.05	0.55	0.12	0.67	0.18	0.58	0.06	1.07	0.32	0.53	0.09	0.43	0.11	0.44	<0.05	
2	1.40	0.30	0.58	0.15	1.48	0.22	0.48	<0.05	1.10	0.18	1.34	0.15	1.16	0.10	2.14	0.15	1.06	0.06	0.86	0.09	0.88	<0.05	
3	2.10	0.49	0.87	0.42	2.22	0.28	0.72	0.05	1.65	0.22	2.01	0.22	1.74	0.12	3.21	0.12	1.59	0.08	1.29	0.11	1.32	0.06	
4	2.80	0.51	1.16	0.32	2.96	0.33	0.96	0.11	2.20	0.31	2.68	0.42	2.32	0.19	4.28	0.09	2.12	0.07	1.72	0.10	1.76	0.07	
5	3.50	0.62	1.45	0.40	3.70	0.38	1.20	0.12	2.75	0.29	3.35	0.72	2.90	0.29	5.35	0.08	2.65	<0.05	2.15	0.13	2.20	0.09	
6	4.20	0.68	1.74	0.39	4.44	0.29	1.44	0.13	3.30	0.25	4.02	0.69	3.48	0.36	6.42	0.06	3.18	<0.05	2.58	0.12	2.64	0.11	
7	4.90	0.70	2.03	0.36	5.18	0.23	1.68	0.15	3.85	0.26	4.69	0.41	4.06	0.35	7.49	0.11	3.71	0.05	3.01	<0.05	3.08	0.12	
8	5.60	0.38	2.32	0.41	5.92	0.25	1.92	0.12	4.40	0.40	5.36	0.25	4.69	0.29	8.56	0.12	4.24	0.08	3.44	0.08	3.52	0.19	
9	6.30	0.32	2.61	0.32	6.66	0.19	2.16	0.06	4.95	0.44	6.03	0.13	5.22	0.20	9.63	0.11	4.77	0.05	3.87	<0.05	3.96	0.15	
Right Bank	7.00	0.00	2.90	0.00	7.40	0.00	2.40	0.00	5.50	0.00	6.70	0.00	5.80	0.00	10.70	0.00	5.30	0.00	4.30	0.00	4.40	0.00	
Feature Type <small>(riffle, run, or pool)</small>	pool		run		run		riffle		run		run		run		run		riffle		riffle		riffle		

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: _____

Date: 5/5/2008

WBID # 1339

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: 5-5-08	1:05 p.m.	Location Description (e.g., road crossing):
Stream Name: Walnut Creek		200 meters upstream of CR1371 bridge
Current Weather Conditions: Sunny		Facility Name(s): City of El Dorado Springs
Weather Conditions for Past 10 days: 0.44" rain @ Nevada		Permit Number(s): MO-0040002
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): 408368	Northing (UTM Y): 4195497	Horizontal Accuracy: (EPE / FOM / PDOP)	50 ft.	Meters
Site 11	Easting (UTM X): 408360	Northing (UTM Y): 4195658	Horizontal Accuracy: (EPE / FOM / PDOP)	86 ft.	Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1339-2-A	Upstream looking down				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1339-2-B	Downstream looking up				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1339-2-C	Bridge				

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 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:
Comments: Private Property				

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

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

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

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

Algae

Water Characteristics*: (Mark all that apply.)

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

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

Site # 2

Field Data Sheets for Recreational Use Stream Surveys

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

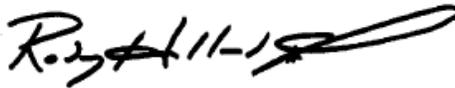
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

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: 5-5-08

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: <u>Walnut Crekk</u> Waterbody ID: <u>1339</u> Site #: <u>2</u> Estimated Channel Incision: <u>0.5</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>408368</u> UTM Y: <u>4195497</u> +/- <u>50</u> ft. (meters) 11 UTM X: <u>408360</u> UTM Y: <u>4195658</u> +/- <u>86</u> ft. (meters) Average Stream Width: <u>5.5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Rodney Holland and Christopher Parks</u>	Dissolved Oxygen Date: <u>5/5/2008</u> Time: <u>1:10 p.m.</u> Dissolved Oxygen: <u>12.24</u> (mg/L) Dissolved Oxygen: <u>125.6</u> (% sat) Specific Cond: <u>177</u> (µS/cm) Water Temperature: <u>22</u> (°C)
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Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	0.48	0.12	0.52	0.25	0.62	0.18	0.28	0.29	0.64	0.08	0.66	0.12	0.57	0.05	0.57	0.05	0.52	0.11	0.70	0.39	0.64	<0.05
	2	0.96	0.26	1.04	0.48	1.24	0.20	0.56	0.29	1.28	0.26	1.32	0.18	1.18	0.06	1.14	0.11	1.04	0.12	1.40	0.49	1.28	0.09
	3	1.44	0.39	1.56	1.00	1.86	0.29	0.89	0.30	1.92	0.48	1.98	0.21	1.77	0.11	1.71	0.13	1.56	0.15	2.10	0.60	1.92	0.16
	4	1.92	0.45	2.08	1.00	2.48	0.35	1.12	0.22	2.56	0.52	2.64	0.20	2.36	0.15	2.28	0.19	2.08	0.16	2.80	0.29	2.56	0.25
	5	2.40	0.48	2.60	1.00	3.10	0.34	1.40	0.19	3.20	0.51	3.30	0.29	2.95	0.21	2.85	0.22	2.60	0.21	3.50	0.19	3.70	0.40
	6	2.88	0.38	3.12	0.85	3.72	0.32	1.68	0.13	3.84	0.48	3.96	0.31	2.54	0.20	3.42	0.23	3.12	0.29	4.20	0.15	3.84	0.51
	7	3.36	0.29	3.64	0.77	4.34	0.22	1.96	0.11	4.48	0.31	4.62	0.30	4.13	0.38	3.99	0.39	3.64	0.31	4.90	0.18	4.48	0.53
	8	3.84	0.30	7.16	0.50	4.96	0.18	2.27	0.05	5.12	0.33	5.28	0.25	4.72	0.61	4.56	0.38	4.16	0.32	5.60	0.15	5.17	0.51
9	4.32	0.21	4.68	0.22	5.58	0.15	2.52	0.06	5.76	0.21	5.94	0.22	5.31	0.49	5.13	0.29	4.68	0.41	6.30	0.11	5.76	0.21	
Right Bank		4.80	0.00	5.20	0.00	6.20	0.00	2.80	0.00	6.40	0.00	6.60	0.00	5.90	0.00	5.70	0.00	5.20	0.00	7.00	0.00	6.40	0.00
	Feature Type	run		run		run		riffle		run													

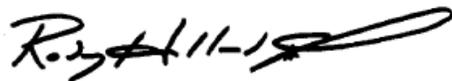
Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

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

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

All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: _____



Date: 5/5/2008

WBID # 1339

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: 5-5-08	1:55 p.m.	Location Description (e.g., road crossing):
Stream Name: Walnut Creek		Private property (farm)
Current Weather Conditions: Sunny		Facility Name(s): City of El Dorado Springs
Weather Conditions for Past 10 days: 0.44" rain @ Nevada		Permit Number(s): MO-0040002
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): 407765	Northing (UTM Y): 4195912	Horizontal Accuracy: (EPE / FOM / PDOP)	108 ft.	Meters
Site 11	Easting (UTM X): 407742	Northing (UTM Y): 4196033	Horizontal Accuracy: (EPE / FOM / PDOP)	224 ft.	Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1339-3-A	Upstream looking down				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1339-3-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.)

<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 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:
Comments: Private Property				

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

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other:			

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

% Cobble	20% Gravel	20% Sand	20% Silt	30% Mud/Clay	10% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

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

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

Site # 3

Field Data Sheets for Recreational Use Stream Surveys

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

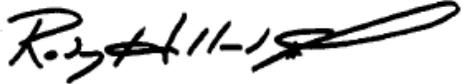
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses.)

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 Parks

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

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: <u>Walnut Crekk</u> Waterbody ID: <u>1339</u> Site #: <u>3</u> Estimated Channel Incision: <u>0.5</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>407765</u> UTM Y: <u>4195912</u> +/- <u>108</u> ft. (meters) 11 UTM X: <u>407742</u> UTM Y: <u>4196033</u> +/- <u>224</u> ft. (meters) Average Stream Width: <u>5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Rodney Holland and Christopher Parks</u>	Dissolved Oxygen Date: <u>5/5/2008</u> Time: <u>2:00 p.m.</u> Dissolved Oxygen: <u>11.81</u> (mg/L) Dissolved Oxygen: <u>121</u> (% sat) Specific Cond: <u>204</u> (µS/cm) Water Temperature: <u>21</u> (°C)
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Transect Cross-Section

		01		02		03		04		05		06		07		08		09		10		11	
Station		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1	0.50	<0.05	0.64	0.32	0.68	0.15	0.68	0.14	0.50	<0.05	0.32	0.12	0.42	0.17	0.49	<0.05	0.45	0.21	0.47	0.08	0.31	<0.05
	2	1.00	0.08	1.28	0.41	1.36	0.13	1.36	0.15	1.00	0.05	0.64	0.15	0.84	0.27	0.98	0.06	0.90	0.32	0.94	0.10	0.62	<0.05
	3	1.50	0.33	1.92	0.45	2.04	0.15	2.04	0.18	1.50	0.05	0.96	0.21	1.26	0.25	1.47	0.10	1.35	0.39	1.41	0.19	0.93	0.06
	4	2.00	0.21	2.56	0.49	2.72	0.18	2.72	0.13	2.00	0.06	1.28	0.22	1.68	0.29	1.96	0.11	1.80	0.22	1.88	0.21	1.24	0.10
	5	2.50	0.22	3.20	0.50	3.40	0.21	3.40	0.14	2.50	<0.05	1.60	0.29	2.10	0.25	2.45	0.13	2.25	0.21	2.35	0.23	1.55	0.15
	6	3.00	0.21	3.84	0.52	4.08	0.17	4.08	0.12	3.00	<0.05	1.92	0.26	2.52	0.20	2.94	0.18	2.70	0.20	2.82	0.18	1.86	0.21
	7	3.50	0.23	4.48	0.65	4.76	0.15	4.76	0.13	3.50	0.07	2.24	0.19	2.94	0.18	3.43	0.13	3.15	0.15	3.29	0.13	2.17	0.25
	8	4.00	0.23	5.12	0.61	5.44	0.18	5.44	0.15	4.00	0.13	2.56	0.12	3.36	0.13	3.92	0.18	3.60	0.10	3.76	0.12	2.48	0.29
	9	4.50	0.29	5.76	0.50	6.12	0.13	6.12	0.15	4.50	0.19	2.88	0.08	3.78	<0.05	4.41	0.22	4.05	0.08	4.23	0.09	2.79	0.13
Right Bank		5.00	0.00	6.40	0.00	6.80	0.00	6.80	0.00	5.00	0.00	3.20	0.00	4.20	0.00	4.90	0.00	4.50	0.00	4.70	0.00	3.10	0.00
Feature Type		run		run		run		run		riffle		riffle		run		run		run		run		riffle	

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: _____

Date: 5/5/2008



