



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 0820 Rock Creek

Submitted by

Pickett, Ray & Silver, Inc.

to

Missouri Department of Natural Resources
Water Protection Program

Date received: October 31, 2007

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PICKETT RAY & SILVER

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WBID #: 0820
 Name: Rock Creek
 County: Cole
 USGS Location Map

SHEET 1 OF 1



GRAPHIC SCALE
 1 inch = 2000ft.

PRS Job Number: 07031.MODN.01E
 Drawn By: BLS Date: 10-11-07
 Checked By: JCV Date: 10-11-07

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):	Rock Creek		
Missouri Water Body Identification (WBID) Number:	820		
8-digit HUC:	10300102	County:	Cole
Upstream Legal Description (from Table H):	18, 45N, 13W		
Downstream Legal Description (from Table H):	9, 45N, 13W		
Number of sites evaluated:	3		
List all sites numbers, listed consequently upstream to downstream:	820-1, 820-2, 820-3		

Site Locations Map(s): Attach a map of the entire segment with assessment sites clearly labeled. Mark any other items that may be of interest.

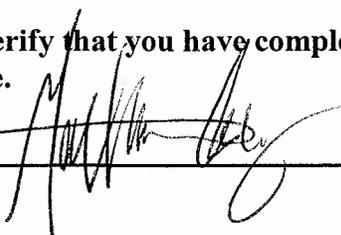
II. Facility Information (list all permitted discharges to the water body segment)

Facility Name(s) and Permit Number(s): MO NAT GUARD, CENTERTOWN, MO 0121291
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III. UAA Surveyor (please print legibly)

Name of Surveyor	Mark Cosby	Telephone Number:	636 397 1211
Organization/Employer:	PRS		

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

Signed:  Date: 10/10/07

WBID # 820

Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>10/10/07 11 AM</u>	Site Location Description (e.g., road crossing): <u>Down stream of access off Bryant Rd</u>
Personnel (Data Collectors): <u>MC LS</u>	Facility Name: <u>MO National Guard, Centertown</u>
Current Weather Conditions: <u>Sunny 60°</u>	Permit Number: <u>MO021292</u>
Weather Conditions for Past 10 days: <u>1.41" of rain</u>	
Drought Conditions?: No drought <input type="checkbox"/> ; Phase I <input checked="" 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): <u>552249m</u>	Northing (UTM Y): <u>4277387m</u>	Horizontal Accuracy: (EPE / FOM) <u>(PDOP) 3.9</u> Meters
Site X	Easting (UTM X): <u>552275m</u>	Northing (UTM Y): <u>4277483m</u>	Horizontal Accuracy: (EPE / FOM) <u>(PDOP) 3.0</u> Meters

07

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>See attached photos</u>					

Uses Observed*: (Uses actually observed at 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 Data Sheet D- Recreational Use Interview when conducting interviews.)
None

WBID # 820
 Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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 checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments:				

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

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input checked="" type="checkbox"/> Livestock Watering
Comments / Other:				

However stream is dry.

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

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

<u>None</u>

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 type="checkbox"/> Other:
Bottom Deposit:	<input 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 type="checkbox"/> None	<input type="checkbox"/> Other:

Stream Losing

*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 effect another use.

WBID # 820
Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

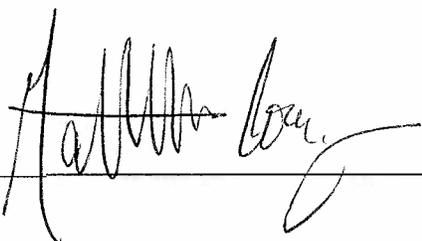
Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

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

Comments: (Please record any additional comments here.)

Entire reach surveyed (transect 1-7) was losing/dry. Cows and calves were kept ~~along~~ in the fields above, and in creek. Cows became very defensive of new calves. Therefore survey was terminated at transect 7.

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

Surveyor's Signature:  Date of Survey: 10/10/07
Organization: PRS Position: Field Team Leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>820</u> Site #: <u>1</u> Estimated Channel Incision: <u> </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>55 2249m</u> UTM Y: <u>4277389m</u> PDOP <u>3.9</u> (meters) * UTM X: <u>55 2275m</u> UTM Y: <u>4277483m</u> PDOP <u>3.0</u> (meters) 07 Average Stream Width: <u> </u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>MC & LS</u>	<h3 style="text-align: center; margin: 0;">Dissolved Oxygen</h3> Date: <u>10/10/07</u> Time: <u>11 AM</u> Dissolved Oxygen: <u> </u> (mg/L) Dissolved Oxygen: <u> </u> (% sat) Specific Cond: <u> </u> (µS/cm) Water Temperature: <u> </u> (°C) <p style="text-align: right; font-style: italic;">No water in stream</p>
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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)										
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
Right Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	*	0	*	0	*	0	*	0	*	0
Feature Type <small>(riffle, run, or pool)</small>	losing	losing	losing	losing	losing	losing	losing	losing	losing	losing	losing	losing	losing	*Not surveyed									

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 0.01 meter unless depth is too deep to measure (then record as > 1)
 All measurements to be taken to the nearest 0.01 meter.

* Note: See Data Sheet B Notes and Additional Comments
 Cows with calves not backing down...
 Signed: MC Date: 10/10/07

WBID # 820
 Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: <u>10/10/07</u> <u>12:00 P.M.</u>	Site Location Description (e.g., road crossing):
Personnel (Data Collectors): <u>MC LS</u>	<u>Dropped off North Rock Creek Rd through pasture</u>
Current Weather Conditions: <u>Sunny 65</u>	Facility Name: <u>MO National Guard, Centertown</u>
Weather Conditions for Past 10 days: <u>1.41" of Rain</u>	Permit Number: <u>MO 001 0121291</u>
Drought Conditions?: No drought <input type="checkbox"/> ; Phase I <input checked="" 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): <u>553270m</u>	Northing (UTM Y): <u>4278572m</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>7.5</u> Meters
Site 11	Easting (UTM X): <u>553430m</u>	Northing (UTM Y): <u>4278540m</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>6.6</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>See attached photos and descriptions</u>					
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 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 Data Sheet D- Recreational Use Interview when conducting interviews.)				

WBID # 820

Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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 type="checkbox"/> Other:
Comments: <i>none</i>				

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
Comments / Other: <i>Low water crossing</i>				

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

<i>90</i> % Cobble	<i>10</i> % Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site)

<i>none</i>

Water Characteristics*: (Mark all that apply.)

Odor:	<input 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 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 type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

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Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>820</u>	Site #: <u>2</u>	Dissolved Oxygen	
Estimated Channel Incision: <u>0</u> (m) (height between low bank width and water)		Date: <u>10/10/07</u>	Time: <u>12:00 AM</u>
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / <u>PDOP</u> FOM)		Dissolved Oxygen: _____ (mg/L)	
01 UTM X: <u>553270 m</u>	UTM Y: <u>4278572</u>	Dissolved Oxygen: _____ (% sat)	
		Specific Cond: _____ (µS/cm)	
11 UTM X: <u>553430 m</u>	UTM Y: <u>4278540 m</u>	Water Temperature: _____ (°C)	
Average Stream Width: <u>Bank to Bank → 60</u> (meters)	Length of Survey Segment: <u>150</u> (meters)	No Water along Transect	
(To determine Length of Reach)	(20x average stream width)		
Field Staff: <u>MC & LS</u>			

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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
Right Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feature Type <small>(riffle, run, or pool)</small>		losing		losing		losing		losing		losing		losing		losing		losing		losing		losing		losing	

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 0.01 meter unless depth is too deep to measure (then record as > 1)
 All measurements to be taken to the nearest 0.01 meter.

Signed: MC Date: 10/10/07

WBID # 820
 Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization (continued)

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 type="checkbox"/> Other:
Comments: <i>none</i>				

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

<input checked="" type="checkbox"/> Roads <i>HWY 179</i>	<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
Comments / Other:				

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

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

<i>some Duckweed in pools</i>

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 type="checkbox"/> Green	<input checked="" type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input 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 checked="" type="checkbox"/> Oil	<input checked="" type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

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WBID # 820
Site # 3

Field Data Sheets for Recreational Use Stream Surveys

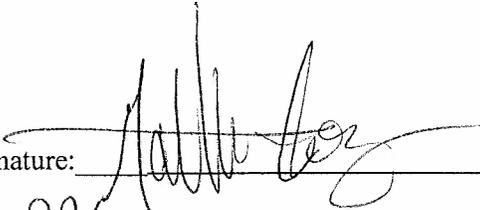
Data Sheet B – Site Characterization (continued)

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.

Surveyor's Signature:  Date of Survey: 10/10/07
Organization: PRS Position: Field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>820</u> Site #: <u>3</u> Estimated Channel Incision: <u>0.7</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>555557m</u> UTM Y: <u>4280589m</u> PDOP: <u>3.5</u> (meters) 11 UTM X: <u>555653m</u> UTM Y: <u>4280643m</u> PDOP: <u>2.9</u> (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>MCALS</u>	<h3 style="text-align: center; margin: 0;">Dissolved Oxygen</h3> Date: <u>10/10/07</u> Time: <u>10AM</u> Dissolved Oxygen: <u>5.83</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>16.6</u> (°C)
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Transect Cross-Section

Station		01		02		03		04		05		06		07		08		09		10		11	
		Distance (m)	Depth (m)																				
Left Bank		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1		0	0	0	0	.04	0.1	0	0	0	0	0	0	0	.44	.08	0	0	.52	.20	.46	.10	
2						.08	0.1								.88	.23			1.0	.31	.92	.19	
3						.12	0.1								1.3	.42			1.6	.30	1.4	.20	
4						.16	0.1								1.8	.46			2.1	.36	1.8	.20	
5						.20	0.1								2.2	.48			2.6	.54	2.3	.16	
6						.24	0.1								2.6	.41			3.1	.70	2.8	.18	
7						.28	0.1								3.1	.37			3.6	.61	3.2	.21	
8						.32	0.1								3.5	.22			4.2	.37	3.7	.21	
9						.36	0.1								4.0	.14			4.7	.14	4.1	.11	
Right Bank		0	0	0	0	0.4	0			0		0	0	0	0	4.4	0	0	0	5.2	0	4.6	0
Feature Type <small>(riffle, run, or pool)</small>		losing		losing		pool		losing		losing		losing		losing		pool		losing		pool		pool	

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 0.01 meter unless depth is too deep to measure (then record as > 1)
 All measurements to be taken to the nearest 0.01 meter.

Signed: _____

MC

Date: _____

10/10/07

WBID# 0820 Rock Creek



Site# 1 Transect 1, Downstream



Site# 1 Transect 1, Upstream



Site#1 Transect 7, Downstream



Site# 1 Transect 7, Upstream

WBID# 0820 Rock Creek



Site# 2 Transect 1, Downstream



Site# 2 Transect 1, Upstream



Site# 2 Transect 10, Low water crossing



Site# 2 Transect 11, Upstream

WBID# 0820 Rock Creek



Site# 2 Transect 11, Downstream



Site# 3 Transect 1, Upstream



Site# 3 Transect 1, Downstream



Site# 3 Transect 11, Upstream

WBID# 0820 Rock Creek



Site# 3 Transect 11, Downstream