Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 1014 Rocky Fork

Submitted by
MEC Water Resources

To
Missouri Department of Natural Resources
Water Protection Program

On
December 1, 2007

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): Rocky Fork Creek	
Missouri Water Body Identification (WBID) Number: 1014	
8-digit HUC: 10300102	County: Boone
Upstream Legal Description (from Table H): 36, 50N, 13W	
Downstream Legal Description(from Table H): Mouth	
Number of sites evaluated 5	
List all sites numbers, listed consecutively upstream to downstream: 1, 2, 3, 4, 5	

II. Discharger Facility Information (list all permitted dischargers on the stream)

Discharger Facility Name(s): Wagon Wheel Mobile Home Park	
Discharger Permit Number(s): M00120286	

III. UAA Surveyor (please print legibly)

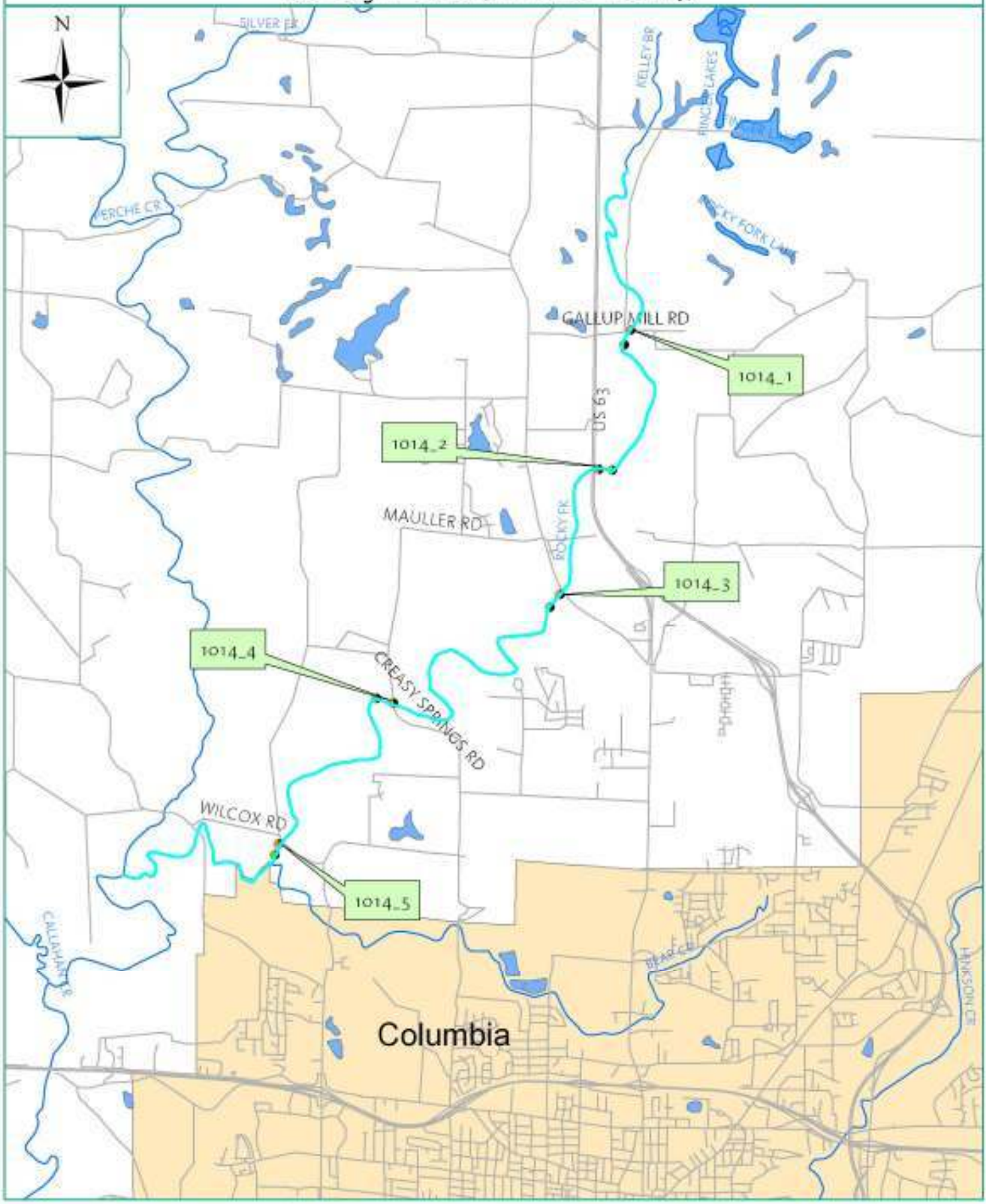
Name of Surveyor Shawn Coolsey, Tim Altatter, James Veverka	Telephone Number: (573) 443-4100
Organization/Employer: MEC Water Resources	
Position: Water Quality Scientist	

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

Signed: [signature] **Date:** 9/26/07

AUC 10-3-07

Rocky Fork (WBID 1014)



Upstream Boundary

Downstream Boundary

0 0.375 0.75 1.5 2.25 3 Miles

WBID # 1014

Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/26/07 10:00	Site Location Description (e.g., road crossing): Calvert Hill Rd ~~@~~ SC at bridge
Personnel (Data Collectors): SC, TH	
Current Weather Conditions: Clear	Facility Name:
Weather Conditions for Past 10 days: Rain and clear	Permit Number:
Drought Conditions?: No drought ☒; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 4322994	Northing (UTM Y): 15 S 0550364	Horizontal Accuracy: (EPE / FOM / PDOP) 8.0 Meters
Site 11	Easting (UTM X): 4322406	Northing (UTM Y): 15 S 0556280	Horizontal Accuracy: (EPE / FOM / PDOP) 9.8 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1014_1_1113	US	1014-1-1114	DNS		
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.)

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☒ 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.) None Observed.

WBID # 1014

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.)

☐ 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	☒ Other:

Comments: Powerline Right-of-Way, field.

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

Comments / Other: None observed.

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

5 % Cobble	5 % Gravel	85 % Sand	5 % Silt	% Mud/Clay	% Bedrock

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

Grasses, smartweed, algae uncommon.

Water Characteristics*: (Mark all that apply.)

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

WBID # 1014

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.)

N/A

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

Surveyor's Signature: [signature] Date of Survey: 9/26/07

Organization: MEC Water Resources Position: Water Quality Scientist

DMC 10-3-07

Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 1014 Site #: 1014-1 (WBID_Site#)

Estimated Channel Incision: 0.25 (m) (height between low bank width and water)

GPS Location (taken at transect 1):
UTM X: 4322994 UTM Y: 15 S 0558364
Horizontal Accuracy Estimate (GPS Data Quality): +/- 8.0 m ~~(feet)~~ TA

GPS Location (taken at transect 11):
UTM X: 4322906 UTM Y: 15 S 0558280
Horizontal Accuracy Estimate (GPS Data Quality): +/- 9.8 m (feet) TA

Average Stream Width: 4 (meters) Length of Survey Segment: 150 (meters)
(To determne Length of Reach) (20x average stream width)

Field Staff: SC, TA

Dissolved Oxygen

Date: 9/26/07 Time: 10:00

Dissolved Oxygen: 1.88 (mg/L)

Dissolved Oxygen: 20.0 (% sat)

Specific Cond: 343.4 (µS/cm)

Water Temp.: 18.4 (°C)

Transect Cross-Section

Station	01 Distance (m)	01 Depth (m)	02 Distance (m)	02 Depth (m)	03 Distance (m)	03 Depth (m)	04 Distance (m)	04 Depth (m)	05 Distance (m)	05 Depth (m)	06 Distance (m)	06 Depth (m)	07 Distance (m)	07 Depth (m)	08 Distance (m)	08 Depth (m)	09 Distance (m)	09 Depth (m)	10 Distance (m)	10 Depth (m)	11 Distance (m)	11 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	.49	0																			.35	.03
2	0.98	0																			0.70	.05
3	1.47	.02																			1.05	.06
4	1.96	.08																			1.40	.05
5	2.45	.10																			1.75	.03
6	2.94	.07																			2.10	.04
7	3.43	.04																			2.45	.02
8	3.92	.03																			2.80	.02
9	4.41	.02																			3.15	.01
Right Bank	4.90	0		0		0		0		0		0		0		0		0		0	3.50	0
SV	4.90																				~~3.50~~	
Feature Type (riffle, run, or pool)	Run		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Dry		Run	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0depth). The width is the wetted width
GPS location corresponds to Transect 01 and Transect 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: [signature] Date: 9/26/07

WBID # 1014

Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/21/07 10:15	Site Location Description (e.g., road crossing): US Hwy 63 Bridge
Personnel (Data Collectors): TA, JV	
Current Weather Conditions: Clear, Dry, Warm	Facility Name:
Weather Conditions for Past 10 days: Clear, Dry	Permit Number:
Drought Conditions?: No drought ☑; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site TA 11 N	Easting (UTM X): 432253	Northing (UTM Y): 15S 0557961	Horizontal Accuracy: (EPE / FOM / PDOP) 69.6 Meters
Site TA 01 N	Easting (UTM X): 432238	Northing (UTM Y): 15S 0558131	Horizontal Accuracy: (EPE / FOM / PDOP) 8.8 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1014-2-1091	TA ~~US~~ DNS	1014-2-1092	TA ~~DNS~~ US		
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.)

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☑ 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.)

None Observed

WBID # 1014

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.)

☐ 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	☑ Other: Riparian, Field

Comments:

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

Comments / Other: None Observed

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

15 % Cobble	15 % Gravel	60 % Sand	5 % Silt	5 % Mud/Clay	% Bedrock

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

Smart weed, Algae Uncommon, Grasses

Water Characteristics*: (Mark all that apply.)

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

WBID # 1014

Site # 2

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)
NA					

Comments: (Please record any additional comments here.)

NA

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

AHC 10-3-07

Surveyor's Signature: [signature] Date of Survey: 9/21/07

Organization: MEC Water Resources Position: Water Quality Scientist

Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 1014 Site #: ~~2~~ 1014-2 (WBID_Site#)

Estimated Channel Incision: 0.25 (m) (height between low bank width and water)

GPS Location (taken at transect 1):
UTM X: 4321238 UTM Y: 15 S 0558131
Horizontal Accuracy Estimate (GPS Data Quality): +/- 8.8 (feet)

GPS Location (taken at transect 11):
UTM X: 4321253 UTM Y: 15 S 0557961
Horizontal Accuracy Estimate (GPS Data Quality): +/- 69.6 (feet)

Average Stream Width: 5 (meters) Length of Survey Segment: 150 (meters)
(To determne Length of Reach) (20x average stream width)

Field Staff: TA, JV

Dissolved Oxygen

Date: 9/21/07 Time: 10:15

Dissolved Oxygen: 3.83 (mg/L)

Dissolved Oxygen: 43.1 (% sat)

Specific Cond: 838.0 (µS/cm)

Water Temp.: 21.0 (°C)

Taken at Tran. #11

Transect Cross-Section

Station	01 Distance (m)	01 Depth (m)	02 Distance (m)	02 Depth (m)	03 Distance (m)	03 Depth (m)	04 Distance (m)	04 Depth (m)	05 Distance (m)	05 Depth (m)	06 Distance (m)	06 Depth (m)	07 Distance (m)	07 Depth (m)	08 Distance (m)	08 Depth (m)	09 Distance (m)	09 Depth (m)	10 Distance (m)	10 Depth (m)	11 Distance (m)	11 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	0.62	0.12	0.24	0.05			0.68	0.10	0.90	0.18	0.16	0.02	0.75	0.13					0.78	0.21	0.74	0.08
2	1.24	0.30	0.48	0.07			1.36	0.20	1.80	0.13	0.32	0.02	1.50	0.26					1.56	0.42	1.48	0.16
3	1.86	0.34	0.72	0.13			2.04	0.23	2.70	0.18	0.48	0.03	2.25	0.29					2.34	0.40	2.22	0.23
4	2.48	0.35	0.96	0.14			2.72	0.41	3.60	0.31	0.64	0.04	3.00	0.39					3.12	0.25	2.96	0.22
5	3.10	0.25	1.20	0.12			3.40	0.39	4.50	0.37	0.80	0.04	3.75	0.39					3.90	0.22	3.70	0.20
6	3.72	0.22	1.44	0.15			4.08	0.36	5.40	0.30	0.96	0.03	4.50	0.43					4.68	0.15	4.44	0.13
7	4.34	0.17	1.68	0.12			4.76	0.25	6.30	0.21	1.12	0.03	5.25	0.42					5.46	0.11	5.18	0.11
8	4.96	0.16	1.92	0.07			5.44	0.33	7.20	0.25	1.28	0.02	6.00	0.30					6.24	0.05	5.92	0.08
9	5.58	0.12	2.16	0.05			6.12	0.26	8.10	0.21	1.44	0.01	6.75	0.13					7.02	0.04	6.66	0.03
Right Bank	6.20	0	2.40	0		0	6.80	0	9.00	0	1.60	0	7.50	0		0		0	7.80	0	7.40	0
3V	~~6.2~~		~~2.4~~	~~2.4~~			~~6.8~~		~~9.0~~		~~1.6~~		~~7.5~~						~~7.8~~		~~7.4~~	
Feature Type (riffle, run, or pool)	Run		Run		Dry		Run		Run		Run		Run		Dry		Dry		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 location corresponds to Transect 01 and Transect 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: [signature] Date: 9/21/07

ANC 10-3-07

WBID # 1014

Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 7/21/07 10:50	Site Location Description (e.g., road crossing): TA Wh VV Bridge
Personnel (Data Collectors): TA, JV	
Current Weather Conditions: Clear, TA Dry, Warm	Facility Name:
Weather Conditions for Past 10 days: Clear, Dry	Permit Number:
Drought Conditions?: No drought ☑; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 4319689	Northing (UTM 15 S Y): 0557482	Horizontal Accuracy: (EPE / FOM / PDOP) 10.7 Meters
Site 11	Easting (UTM X): 4319532	Northing (UTM 15 S Y): 0557355	Horizontal Accuracy: (EPE / FOM / PDOP) 6.9 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1014-3-1093	DNS	1014-3-1094	US		
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.)

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☑ 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.)

None Observed

WBID # 1014

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.)

☐ 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	☑ Other: Pasture/Riparian

Comments:

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

Comments / Other: None Observed

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

5 % Cobble	5 % Gravel	85 % Sand	5 % Silt	% Mud/Clay	% Bedrock

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

Algae Uncommon, Smartweed, grasses

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☑ None	☐ Other:
Color:	☑ Clear	☐ Green	☐ Gray	☐ Milky	☐ Other:
Bottom Deposit:	☐ Sludge	☐ Solids	☑ Fine sediments	☐ None	☑ Other: Woody Debris
Surface Deposit:	☐ Oil	☐ Scum	☐ Foam	☑ 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 effect another use.

WBID # 1014

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)
NA					

Comments: (Please record any additional comments here.)

NA

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

Rec 10-3-07

Surveyor's Signature: [signature] Date of Survey: 9/21/07

Organization: MEC Water Resources Position: Water Quality Scientist

Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 1014 Site #: 3 AHC 1014 – 3
(WBID_Site#)

Estimated Channel Incision: 0.25 (m) (height between low bank width and water)

GPS Location (taken at transect 1):
UTM X: 43196689 UTM Y: 0557982 155
Horizontal Accuracy Estimate (GPS Data Quality): +/- 10.7 ~~(feet)~~ TA meters

GPS Location (taken at transect 11):
UTM X: 4319532 UTM Y: 1550557355
Horizontal Accuracy Estimate (GPS Data Quality): +/- 6.9 ~~(feet)~~ TA meters

Average Stream Width: 5 (meters) Length of Survey Segment: 150 (meters)
(To determne Length of Reach) (20x average stream width)

Field Staff: TA, JV

Dissolved Oxygen

Date: 9/21/07 Time: 18:50

Dissolved Oxygen: 2.53 (mg/L)

Dissolved Oxygen: 28.6 (% sat)

Specific Cond: 831.0 (µS/cm)

Water Temp.: 21.3 (°C)

Transect Cross-Section

Station	01 Distance (m)	01 Depth (m)	02 Distance (m)	02 Depth (m)	03 Distance (m)	03 Depth (m)	04 Distance (m)	04 Depth (m)	05 Distance (m)	05 Depth (m)	06 Distance (m)	06 Depth (m)	07 Distance (m)	07 Depth (m)	08 Distance (m)	08 Depth (m)	09 Distance (m)	09 Depth (m)	10 Distance (m)	10 Depth (m)	11 Distance (m)	11 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	0.62	0.14	0.55	0.04	0.70	0.05	0.83	0.17	0.78	0.15	0.63	0.16	0.65	0.29	0.34	0.05	0.92	0.09	0.50	0.06	0.48	0.04
2	1.24	0.19	1.10	0.08	1.40	0.08	1.66	0.18	1.56	0.20	1.26	0.24	1.30	0.46	0.68	0.06	1.84	0.15	1.00	0.10	0.96	0.09
3	1.86	0.21	1.65	0.14	2.10	0.15	2.49	0.13	2.34	0.28	1.89	0.26	1.95	0.45	1.02	0.08	2.76	0.11	1.50	0.13	1.44	0.10
4	2.48	0.29	2.20	0.15	2.80	0.20	3.32	0.08	3.12	0.33	2.52	0.28	2.60	0.38	1.36	0.08	3.68	0.0	2.00	0.15	1.92	0.15
5	3.10	0.30	2.75	0.13	3.50	0.19	4.15	0.08	3.90	0.28	3.15	0.30	3.25	0.30	1.70	0.10	4.60	0.0	2.50	0.17	2.40	0.16
6	3.72	0.33	3.30	0.14	4.20	0.22	4.98	0.09	4.68	0.23	3.78	0.25	3.90	0.24	2.04	0.13	5.52	0.0	3.00	0.24	2.88	0.18
7	4.34	0.33	3.85	0.14	4.90	0.20	5.81	0.08	5.46	0.13	4.41	0.18	4.55	0.16	2.38	0.15	6.44	0.0	3.50	0.25	3.36	0.25
8	4.96	0.24	4.40	0.13	5.60	0.13	6.64	0.11	6.24	0.05	5.04	0.13	5.20	0.10	2.72	0.15	7.36	0.0	4.00	0.21	3.84	0.21
9	5.58	0.29	4.95	0.11	6.30	0.10	7.47	0.08	7.02	0.02	5.67	0.08	5.85	0.05	3.06	0.09	8.28	0.06	4.50	0.16	4.32	0.14
Right Bank		0		0		0		0		0		0		0		0		0		0		0
	6.2		5.5		7.0		8.3		7.8		6.3		6.5		3.4		9.2		5.0		4.8	
Feature Type (riffle, run, or pool)	Run		Run		Run		Run		Run		Run		TA Run Pool		Run		Run		Run		Run	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0depth). This width is the wetted width
GPS location corresponds to Transect 01 and Transect 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 001 meter.

AHC 10-3-07

Signed: [signature] Date: 9/21/07

WBID # 1014

Site # 4

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/21/07 ~~TA~~: 11:40	Site Location Description (e.g., road crossing): Greasy Springs Bridge
Personnel (Data Collectors): TA, JV	
Current Weather Conditions: Clear, Dry, Warm	Facility Name:
Weather Conditions for Past 10 days: Clear, Dry	Permit Number:
Drought Conditions?: No drought □; Phase I □; Phase II □; Phase III □; Phase IV □; Unknown □	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 4318314	Northing (UTM Y): 0555392 (15S)	Horizontal Accuracy: (EPE / FOM / PDOP) 6.0 Meters
Site 11	Easting (UTM X): 4318376	Northing (UTM Y): 0555178 (15S)	Horizontal Accuracy: (EPE / FOM / PDOP) 7.9 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1014-4-1095	US	1014-4-1096	DNS		
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.)

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☑ 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.)

None Observed

WBID # 614
Site # 4

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.)

☐ 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	☑ Other: Field/Pasture

Comments:

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

Comments / Other:
None Observed

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

% Cobble	5 % Gravel	85 % Sand	5 % Silt	5 % Mud/Clay	% Bedrock

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

Algae Common, Smart Weed, Grasses

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☑ None	☐ Other:
Color:	☑ Clear	☐ Green	☐ Gray	☐ Milky	☐ Other:
Bottom Deposit:	☐ Sludge	☐ Solids	☑ Fine sediments	☐ None	☐ Other: Woody Debris/leaf Litter
Surface Deposit:	☐ Oil	☑ Scum	☐ Foam	☐ 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 effect another use.

WBID # 1014
Site # 4

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.)

cattle path / tracks

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

RHC 10-3-07

Surveyor's Signature: [signature] Date of Survey: 9/21/07

Organization: MEC Water Resources Position: Water Quality Scientist

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: 1014 Site #: 4 ASC 1014_4

Estimated Channel Incision: 0.25 (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: 4318314 UTM Y: 155 0555392 +/- 6.0 (meters)

11 UTM X: 4318376 UTM Y: 155 0555178 +/- 7.9 (meters)

Average Stream Width: 10 (meters) (To determine Length of Reach)

Length of Survey Segment: 200 (meters) (20x average stream width)

Field Staff: TA, JV

Dissolved Oxygen

Date: 9/21/07 Time: 11:40

Dissolved Oxygen: 3.72 (mg/L)

Dissolved Oxygen: 42.6 (% sat)

Specific Cond: 779.0 (µS/ cm)

Water Temperature: 21.6 (°C)

Transect Cross-Section

Station	01 Distance (m)	01 Depth (m)	02 Distance (m)	02 Depth (m)	03 Distance (m)	03 Depth (m)	04 Distance (m)	04 Depth (m)	05 Distance (m)	05 Depth (m)	06 Distance (m)	06 Depth (m)	07 Distance (m)	07 Depth (m)	08 Distance (m)	08 Depth (m)	09 Distance (m)	09 Depth (m)	10 Distance (m)	10 Depth (m)	11 Distance (m)	11 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	0.97	0.05	0.44	0.08	1.23	0.46	1.20	0.40	1.03	0.64	1.18	0.30	1.0	0.21	1.01	0.19	1.14	0.30	1.20	0.10	1.17	0.10
2	1.94	0.08	0.88	0.14	2.46	0.42	2.4	0.44	2.06	>1.0	2.36	0.14	2.0	0.32	2.02	0.23	2.28	0.24	2.4	0.07	2.34	0.10
3	2.91	0.12	1.32	0.22	3.69	0.40	3.6	0.40	3.09	0.81	3.54	0.10	3.0	0.38	3.03	0.55	3.42	0.14	3.6	0.07	3.51	0.05
4	3.88	0.21	1.76	0.22	4.92	0.21	4.8	0.32	4.12	0.65	4.72	0.24	4.0	0.38	4.04	0.54	4.56	0.21	4.8	0.06	4.68	0.02
5	4.85	0.25	2.2	0.45	6.15	0.28	6.0	0.32	5.15	0.50	5.9	0.36	5.0	0.31	5.05	0.51	5.7	0.29	6.0	0.16	5.85	0.13
6	5.82	0.28	2.64	0.62	7.38	0.27	7.2	0.30	6.18	0.31	7.08	0.46	6.0	0.28	6.06	0.51	6.84	0.26	7.2	0.0	7.02	0.25
7	6.79	0.29	3.08	0.82	8.61	0.22	8.4	0.30	7.21	0.19	8.26	0.72	7.0	0.26	7.07	0.56	7.98	0.43	8.4	0.18	8.19	0.26
8	7.76	0.36	3.52	0.82	9.84	0.22	9.6	0.25	8.24	0.13	9.44	0.78	8.0	0.30	8.08	0.54	9.12	0.52	9.6	0.40	9.36	0.40
9	8.73	0.31	3.96	0.50	11.07	0.18	10.8	0.23	9.27	0.21	10.62	0.61	9.0	0.26	9.09	0.44	10.26	0.45	10.8	0.53	10.53	0.30
Right Bank	9.7	0	4.4	0	12.3	0	12.0	0	10.3	0	11.8	0	10.0	0	10.1	0	11.4	0	12.0	0	11.7	0
Feature Type (riffle, run, or pool)	Run		Pool		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 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.

ANC 10-3-07

Signed: [signature] Date: 9/21/07

WBID # 1014

Site # 5

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 9/21/07 12:37	Site Location Description (e.g., road crossing): Oneal Rd Bridge
Personnel (Data Collectors): TA, JV	
Current Weather Conditions: Clear, Dry, Warm	Facility Name:
Weather Conditions for Past 10 days: Clear, Dry	Permit Number:
Drought Conditions?: No drought □; Phase I □; Phase II □; Phase III □; Phase IV □; Unknown □	

Site Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): 431 6558	Northing (UTM Y): 155 0553956	Horizontal Accuracy: (EPE / FOM / PDOP) 6.5 Meters
Site 11	Easting (UTM X): 431 6422	Northing (UTM Y): 155 0553904	Horizontal Accuracy: (EPE / FOM / PDOP) 9.8 Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1014-5-1096, 1098	US	1014-5-1097	DNS		
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.)

☐ Swimming	☐ Skin diving	☐ SCUBA diving	☐ Tubing	☐ Water skiing
☐ Wind surfing	☐ Kayaking	☐ Boating	☐ Wading	☐ Rafting
☐ Hunting	☐ Trapping	☐ Fishing	☑ 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.)

None Observed

WBID # 1014
Site # 5

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.)

☐ 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	☐ Other: Riparian / Pasture

Comments:

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

Comments / Other: None Observed

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

% Cobble	5 % Gravel	85 % Sand	5 % Silt	5 % Mud/Clay	% Bedrock

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

Algae common, grasses, smart weed

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☑ None	☐ Other:
Color:	☑ Clear	☐ Green	☐ Gray	☐ Milky	☐ Other: Turbid / Brown
Bottom Deposit:	☐ Sludge	☐ Solids	☑ Fine sediments	☐ None	☑ Other: woody debris
Surface Deposit:	☐ Oil	☑ Scum	☐ Foam	☐ 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 effect another use.

WBID # 1014
Site # 5

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)
		N/A			

Comments: (Please record any additional comments here.)

N/A

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

AUC 10-307

Surveyor's Signature: [signature] Date of Survey: 9/21/07

Organization: MEC Water Resources Position: Water Quality Scientist

Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 1014 Site #: ~~5~~ 9AC 1014-5
(WBID_Site#)

Estimated Channel Incision: 0-25 (m) (height between low bank width and water)

GPS Location (taken at transect 1):
UTM X: 4316558 UTM Y: 15 S 0553950
Horizontal Accuracy Estimate (GPS Data Quality): +/- 6.5 (feet)

GPS Location (taken at transect 11):
UTM X: 4316422 UTM Y: 15 S 0553904
Horizontal Accuracy Estimate (GPS Data Quality): +/- 9.8 (feet)

Average Stream Width: 4 (meters) Length of Survey Segment: 150 (meters)
(To determne Length of Reach) (20x average stream width)

Field Staff: TA, JV

Dissolved Oxygen

Date: 9/21/07 Time: 12:37

Dissolved Oxygen: 2.87 (mg/L)

Dissolved Oxygen: 34.3 (% sat)

Specific Cond: 377.0 (µS/cm)

Water Temp.: 24.3 (°C)

Transect Cross-Section

Station	01 Distance (m)	01 Depth (m)	02 Distance (m)	02 Depth (m)	03 Distance (m)	03 Depth (m)	04 Distance (m)	04 Depth (m)	05 Distance (m)	05 Depth (m)	06 Distance (m)	06 Depth (m)	07 Distance (m)	07 Depth (m)	08 Distance (m)	08 Depth (m)	09 Distance (m)	09 Depth (m)	10 Distance (m)	10 Depth (m)	11 Distance (m)	11 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	0.21	0.04	0.63	0.01	0.38	0.13	0.33	0.02	0.48	0.03	0.50	0.05	0.45	0.03			0.75	0.80	0.29	0.05	0.41	0.22
2	0.42	0.08	1.26	0.0	0.76	0.17	0.66	0.02	0.96	0.05	1.0	0.12	0.9	0.07			1.5	>1.0	0.58	0.05	0.82	0.45
3	0.63	0.11	1.89	0.0	1.14	0.23	0.99	0.04	1.44	0.10	1.5	0.17	1.35	0.10			2.25	>1.0	0.87	0.05	1.23	0.90
4	0.84	0.14	2.52	0.0	1.52	0.17	1.32	0.06	1.92	0.14	2.0	0.22	1.8	0.12			3.0	>1.0	1.16	0.10	1.64	0.88
5	1.05	0.15	3.15	0.09	1.9	0.23	1.65	0.05	2.4	0.13	2.5	0.20	2.25	0.16			3.75	>1.0	1.45	0.13	2.05	0.59
6	1.26	0.20	~~3.78~~ 0.26	~~0.07~~	2.28	0.26	1.98	0.05	2.88	0.20	3.0	0.20	2.7	0.19			4.5	0.96	1.74	0.08	2.46	0.0
7	1.47	0.24	4.41	0.36	2.66	0.21	2.31	0.06	3.36	0.20	3.5	0.17	3.15	0.23			5.25	0.73	2.03	0.10	2.87	0.0
8	1.68	0.25	5.04	0.36	3.04	0.20	2.64	0.05	3.84	0.17	4.0	0.19	3.6	0.19			6.0	0.52	2.32	0.08	3.28	0.0
9	1.89	0.13	5.67	0.41	3.42	0.13	2.97	0.05	4.32	0.14	4.5	0.16	4.05	0.12			6.75	0.29	2.61	0.13	3.69	0.0
Right Bank	2.1	0	6.3	0	3.8	0	3.3	0	4.8	0	5.0	0	4.5	0		0	7.5	0	2.9	0	4.1	0
	~~2.1~~		~~6.3~~		~~3.8~~		~~3.3~~		~~4.8~~		~~5.0~~		~~4.5~~				~~7.5~~		~~2.9~~		~~4.1~~	
Feature Type (riffle, run, or pool)	Run		Run		Run		Run		Run		Run		Run		Dry		Pool		Run		Pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0depth). The width is the wetted width
GPS location corresponds to Transect 01 and Transect 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.

ace 10-3-07

Signed: [signature] Date: 9/21/07

WBID #1014
Site #4
US

WBID #1014
Site #5
DN.S

WBID #1014
Site #3
US

WBID #1014
Site #4
DN.S.

WBID 1014
Site 1
US

WBID #1014
Site #2
DN. S.

WBID #1014
Site #5
U. S.

WBID 1014
Site 1
DNS

WBID #1014
Site #3
DNS

WBID #1014
Site #2
U.S.