Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 0086 South Fork North River

Submitted by
MEC Water Resources

To
Missouri Department of Natural Resources
Water Protection Program

On
October 17, 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):	South Fk. North R.
Missouri Water Body Identification (WBID) Number:	86
8-digit HUC:	07110004
County(ies), Listed Upstream to Downstream:	Marion, Marion
Upstream Legal Description (from Table H):	21, 57N, 8W
Downstream Legal Description (from Table H):	13, 57N, 8W
Number of sites evaluated:	3
List all site numbers, consecutively upstream to downstream: Site 1: ~1.0 mile upstream of County Rd 231 crossing Site 2: ~0.5 miles upstream of County Rd 231 crossing Site 3: County Rd 231 crossing	
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):

Hunnewell WWTF

MO 0084972

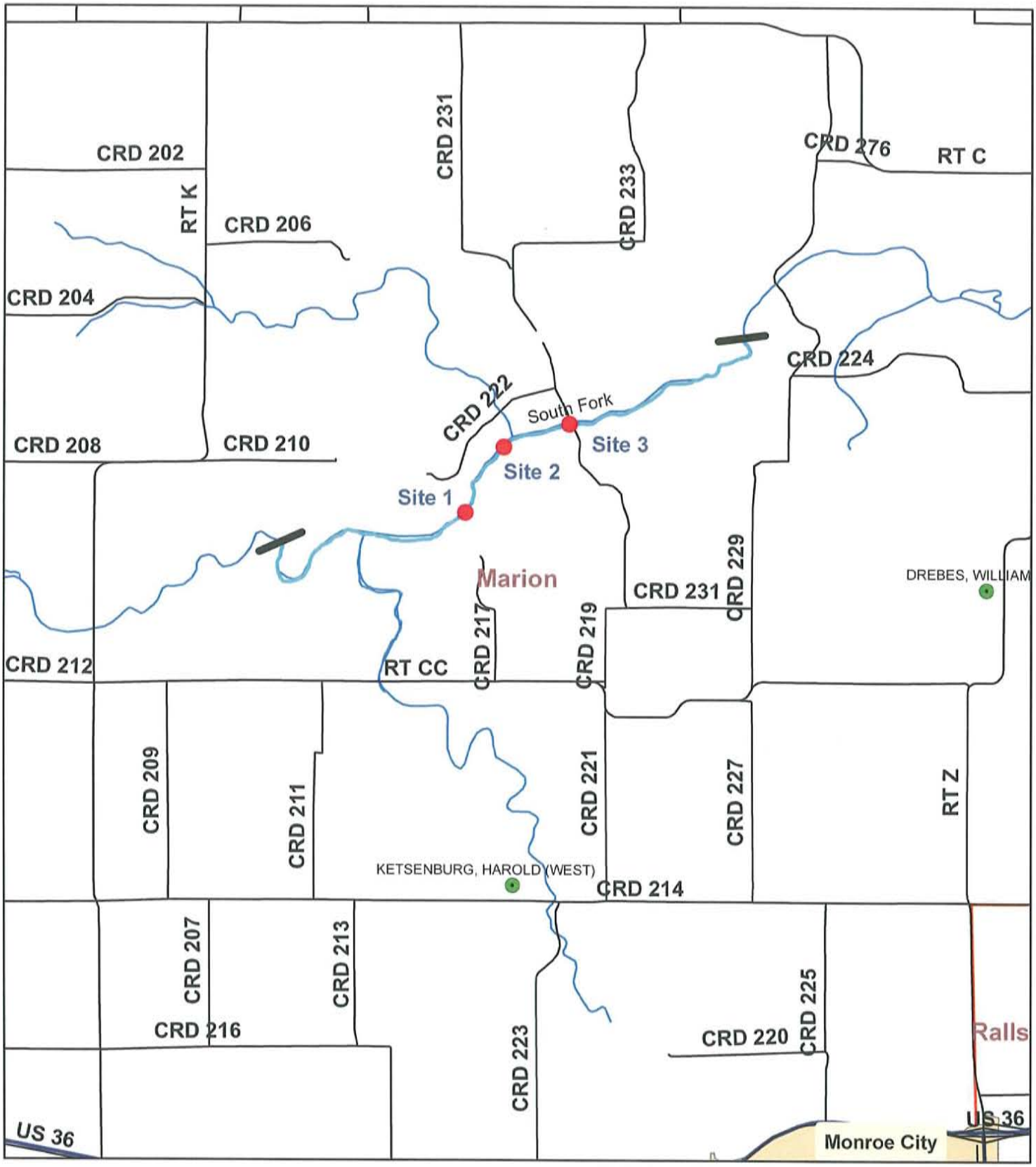
III. UAA Surveyor (please **PRINT** legibly)

Name of Surveyor: Renee Martin	Telephone Number: 573-443-4100
Organization/Employer: MEC Water Resources / AE Solutions	

Please verify that you have completed all sections of all data sheets, checked all applicable boxes, provided a map (that includes all requirments listed in the *Missouri Recreational Use Attainability Analysies: Water Body Survey and Assessment Protocol*) and that this form is complete.

Signed: [signature] **Date:** 9/18/08

9/22/08



S. Fk. North R.
WBID 0086
Marion County

Meters
0 650 1,300 2,600 3,900

N
W E
S

WBID # 0086

Site # 01

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: 9/2/08 0825	Location Description (e.g., road crossing): ~1 mile upstream of County Rd 231
Stream Name: S. FK. North R.	
Current Weather Conditions: Sunny & clear	Facility Name(s): Hunnewell WWTF
Weather Conditions for Past 10 days: 0.97" of rain	Permit Number(s): MO 0084972
Official Drought Conditions at time of this survey (search DNR home page for "drought"): 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): 0604539	Northing (UTM Y): 4398046	Horizontal Accuracy: (EPE / FOM / PDOP) 21 ~~Meters~~ feet ft
Site 11	Easting (UTM X): 0604613	Northing (UTM Y): 4398176	Horizontal Accuracy: (EPE / FOM / PDOP) 33 ~~Meters~~ feet ft

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
199	upstream	200	dnstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

☐ 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.)

N/A

Stream Name & WBID # S. Fk. North River #0086 Date of Survey 9/2/08

Site # 01

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	☐ Other:

Comments:
Private property - fields

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
☒ None of the above	Comments / Other: N/A			

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

30 % Cobble	20 % Gravel	50 % Sand	— % Silt	— % Mud/Clay	— % Bedrock

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

Benthic Algae-abundant

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 affect another use.

Stream Name & WBID # S. FK. North River # 0086 Date of Survey 9/2/08

Site # 01

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)
		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.

Printed Names of Personnel Collecting Data: Jennifer Hrabik + Tiffanie Hamilton

Surveyor's Signature: Jennifer Hrabik Date of Survey: 9/2/08

Organization: AE Solutions Position: Environmental Specialist

9/22/08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: S. Fk. North R. Waterbody ID: 0086 Site #: 0086_01

Estimated Channel Incision: 0.30 (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: 604539 UTM Y: 4398046 +/- 21 (feet)

11 UTM X: 604613 UTM Y: 4398176 +/- 33 (feet)

Average Stream Width: 6.6 (meters) Length of Survey Segment: 150 (meters)

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

Field Staff: JRH, TAH

Dissolved Oxygen

Date: 9/2/2008 Time: 8:25

Dissolved Oxygen: 4.59 (mg/L)

Dissolved Oxygen: 52.5 (% sat)

Specific Cond: 442 (µS/cm)

Water Temperature: 21.4 (°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	0.71	0.04	1.02	0.10	1.10	0.30	0.98	0.49	0.96	0.29	0.67	0.01	0.23	0.01	0.56	0.23	0.25	0.10	0.24	0.10	0.52	0.09
2	1.42	0.15	2.04	0.11	2.20	0.31	1.96	0.68	1.92	0.47	1.34	0.06	0.46	0.09	1.12	0.28	0.50	0.19	0.48	0.11	1.04	0.19
3	2.13	0.28	3.06	0.22	3.30	0.31	2.94	0.72	2.88	0.81	2.01	0.08	0.69	0.11	1.68	0.25	0.75	0.31	0.72	0.17	1.56	0.35
4	2.84	0.32	4.08	0.26	4.40	0.37	3.92	0.73	3.84	0.97	2.68	0.05	0.92	0.13	2.24	0.22	1.00	0.40	0.96	0.15	2.08	0.53
5	3.55	0.44	5.10	0.40	5.50	0.40	4.90	0.55	4.80	0.86	3.35	0.10	1.15	0.11	2.80	0.20	1.25	0.49	1.20	0.14	2.60	0.64
6	4.26	0.46	6.12	0.42	6.60	0.36	5.88	0.39	5.76	0.66	4.02	0.01	1.38	0.10	3.36	0.12	1.50	0.45	1.44	0.11	3.12	0.76
7	4.97	0.48	7.14	0.47	7.70	0.38	6.86	0.29	6.72	0.36	4.69	0.05	1.61	0.09	3.92	0.08	1.75	0.33	1.68	0.10	3.64	0.71
8	5.68	0.37	8.16	0.30	8.80	0.39	7.84	0.30	7.68	0.29	5.36	0.10	1.84	0.01	4.48	0.05	2.00	0.24	1.92	0.10	4.16	0.42
9	6.39	0.29	9.18	0.04	9.90	0.34	8.82	0.18	8.64	0.13	6.03	0.02	2.07	0.03	5.04	0.02	2.25	0.10	2.16	0.09	4.68	0.26
Right Bank	7.10	0.00	10.20	0.00	11.00	0.00	9.80	0.00	9.65	0.00	6.70	0.00	2.30	0.00	5.60	0.00	2.50	0.00	2.45	0.00	5.20	0.00
Feature Type (riffle, run, or pool)	Pool		Pool		Pool		Pool		Pool		Riffle		Riffle		Run		Run		Riffle		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 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.

Surveyor's Signature: _____ Date: 9/2/2008

WBID # 0086

Site # 02

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: 9/2/08 0850	Location Description (e.g., road crossing): ~0.5 miles upstream of county Rd 231 crossing
Stream Name: S. FK. North R.	
Current Weather Conditions: Sunny + clear	Facility Name(s): Hunnewell WWTF
Weather Conditions for Past 10 days: 0.97" of rain	Permit Number(s): MO 0084972
Official Drought Conditions at time of this survey (search DNR home page for "drought"): 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): 0604946	Northing (UTM Y): 4398750	Horizontal Accuracy: (EPE / FOM / PDOP) 22 ~~Meters~~ ft
Site 11	Easting (UTM X): 0605076	Northing (UTM Y): 4398842	Horizontal Accuracy: (EPE / FOM / PDOP) 21 ~~Meters~~ ft

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2650	upstream	2651	dn stream + powerline* fence		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

☐ 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.)

Stream Name & WBID # S. Fk North River #0086 Date of Survey 9/2/08

Site # ~~008~~ 002

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 ①	☐ No trespass sign	☐ Steep slopes	☒ Other:

Comments:
① on left descending bank
private property - fields
low power line across transect 1

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
☐ None of the above	Comments / Other:			

Farm road at Transect 1

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

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

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

Benthic Algae - abundant

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 ①	☐ None	☐ Other:

① at Transect 9 only

*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 # S. FK North River # 0086 Date of Survey 9/2/08

Site # 02

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)
		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.

Printed Names of Personnel Collecting Data: Jennifer Hrabik + Tiffanie Hamilton

Surveyor's Signature: Jennifer Hrabik Date of Survey: 9/2/08

Organization: AE Solutions Position: Environmental Specialist

9/22/08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: S. Fk. North R. Waterbody ID: 0086 Site #: 0086_02

Estimated Channel Incision: 0.20 (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: 604946 UTM Y: 4398750 +/- 22 (feet)

11 UTM X: 605076 UTM Y: 4398842 +/- 21 (feet)

Average Stream Width: 5.5 (meters) Length of Survey Segment: 150 (meters)

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

Field Staff: JRH, TAH

Dissolved Oxygen

Date: 9/2/2008 Time: 8:50

Dissolved Oxygen: 7.04 (mg/L)

Dissolved Oxygen: 80.0 (% sat)

Specific Cond: 442 (µS/cm)

Water Temperature: 21.6 (°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	0.10	0	0	0	0	0	0	0	0	0	0	0	0
1	0.26	0.02	0.51	0.08	0.70	0.14	0.77	0.03	0.49	0.21	0.41	0.10	0.54	0.30	0.57	0.20	0.72	0.16	0.55	0.13	0.57	0.10
2	0.52	0.07	1.02	0.05	1.40	0.11	1.54	0.01	0.98	0.25	0.82	0.14	1.08	0.39	1.14	0.33	1.44	0.16	1.10	0.24	1.14	0.16
3	0.78	0.10	1.53	0.13	2.10	0.10	2.31	0.01	1.47	0.23	1.23	0.04	1.62	0.36	1.71	0.39	2.16	0.09	1.65	0.32	1.71	0.17
4	1.04	0.11	2.04	0.16	2.80	0.02	3.08	0.00	1.96	0.14	1.64	0.01	2.16	0.31	2.28	0.41	2.88	0.10	2.20	0.23	2.28	0.29
5	1.30	0.10	2.55	0.14	3.50	0.05	3.85	0.01	2.45	0.11	2.05	0.10	2.70	0.25	2.85	0.35	3.60	0.12	2.75	0.10	2.85	0.31
6	1.56	0.11	3.06	0.10	4.20	0.06	4.62	0.03	2.94	0.10	2.46	0.08	3.24	0.25	3.42	0.26	4.32	0.07	3.30	0.11	3.42	0.54
7	1.82	0.04	3.57	0.14	4.90	0.07	5.39	0.01	3.43	0.07	2.87	0.05	3.78	0.18	3.99	0.21	5.04	0.09	3.85	0.05	3.99	0.45
8	2.08	0.04	4.08	0.12	5.60	0.02	6.16	0.11	3.92	0.05	3.28	0.01	4.32	0.15	4.56	0.19	5.76	0.15	4.40	0.02	4.56	0.28
9	2.34	0.03	4.59	0.03	6.30	0.01	6.93	0.15	4.41	0.02	3.69	0.01	4.86	0.10	5.13	0.12	6.48	0.20	4.95	0.01	5.13	0.08
Right Bank	2.60	0.00	5.10	0.00	7.00	0.00	7.70	0.00	4.90	0.00	4.10	0.00	5.40	0.00	5.70	0.00	7.20	0.00	5.50	0.00	5.70	0.00
Feature Type (riffle, run, or pool)	Run		Run		Riffle		Riffle		Run		Riffle		Run		Run		Run		Run		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 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.

Surveyor's Signature: _____ Date: 9/2/2008

WBID # 0086

Site # 03

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: 9/2/08 0940	Location Description (e.g., road crossing): County Rd 231 crossing
Stream Name: S. Fk. North R.	
Current Weather Conditions: Sunny + clear	Facility Name(s): Hunnewell WWTF
Weather Conditions for Past 10 days: 0.97" of rain	Permit Number(s): MO 0084972
Official Drought Conditions at time of this survey (search DNR home page for "drought"): 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): 0605727	Northing (UTM Y): 4399000	Horizontal Accuracy: (EPE / FOM / PDOP) 20 ~~Meters~~ ft
Site 11	Easting (UTM X): 0605971	Northing (UTM Y): 4399026	Horizontal Accuracy: (EPE / FOM / PDOP) 23 ~~Meters~~ ft

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
2648	upstream	2649	dnstream		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

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

☐ 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.)

N/A

Stream Name & WBID # S. Fk. North R. # 0086 Date of Survey 9/2/08

Site # 03

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 ①
☐ Campgrounds	☐ State parks	☐ National forests	☐ Nature trails	☐ Stairs/walkway
☐ Boating accesses	☐ Fence	☐ No trespass sign	☐ Steep slopes	☒ Other:

Comments:
private property
① at Bridge

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
☐ None of the above	Comments / Other: N/A			

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

50 % Cobble	30 % Gravel	10 % Sand	— % Silt	10 % Mud/Clay	— % Bedrock

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

Benthic Algae, grasses abundant; Filamentous algae ⇒ Sparse

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 affect another use.

Stream Name & WBID # S. FK. North R. # 0086 Date of Survey 9/2/08

Site # 03

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)
		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.

Printed Names of Personnel Collecting Data: Jennifer Hrabik + Tiffanie Hamilton

Surveyor's Signature: Jennifer Hrabik Date of Survey: 9/2/08

Organization: AESolutions Position: Environmental Specialist

9/22/08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: S. Fk. North R. Waterbody ID: 0086 Site #: 0086_03

Estimated Channel Incision: 0.20 (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: 605727 UTM Y: 4399000 +/- 20 (feet)

11 UTM X: 605971 UTM Y: 4399026 +/- 23 (feet)

Average Stream Width: 10.8 (meters) Length of Survey Segment: 220 (meters)

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

Field Staff: JRH, TAH

Dissolved Oxygen

Date: 9/2/2008 Time: 9:40

Dissolved Oxygen: 6.27 (mg/L)

Dissolved Oxygen: 74.0 (% sat)

Specific Cond: 326 (µS/cm)

Water Temperature: 23.6 (°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	1.18	0.28	0.59	0.14	1.20	0.70	1.50	0.29	1.14	0.40	1.56	0.48	1.02	0.34	1.05	0.18	0.70	0.01	0.98	0.14	0.96	0.34
2	2.36	0.42	1.18	0.14	2.40	0.65	3.00	0.30	2.28	0.51	3.12	0.48	2.04	0.38	2.10	0.22	1.40	0.02	1.96	0.16	1.92	0.46
3	3.54	0.15	1.77	0.17	3.60	0.54	4.50	0.45	3.42	0.54	4.68	0.35	3.06	0.35	3.15	0.35	2.10	0.08	2.94	0.11	2.88	0.47
4	4.72	0.03	2.36	0.12	4.80	0.38	6.00	0.54	4.56	0.43	6.24	0.52	4.08	0.39	4.20	0.38	2.80	0.16	3.92	0.11	3.84	0.56
5	5.90	0.19	2.95	0.11	6.00	0.28	7.50	0.64	5.70	0.34	7.80	0.42	5.10	0.39	5.25	0.38	3.50	0.25	4.90	0.12	4.80	0.56
6	7.08	0.23	3.54	0.11	7.20	0.27	9.00	0.59	6.84	0.24	9.36	0.33	6.12	0.40	6.30	0.23	4.20	0.26	5.88	0.02	5.76	0.40
7	8.26	0.21	4.13	0.05	8.40	0.11	10.50	0.50	7.98	0.16	10.92	0.40	7.14	0.37	7.35	0.16	4.90	0.29	6.86	0.15	6.72	0.39
8	9.44	0.16	4.72	0.08	9.60	0.04	12.00	0.27	9.12	0.14	12.48	0.41	8.16	0.31	8.40	0.14	5.60	0.18	7.84	0.17	7.68	0.27
9	10.62	0.05	5.31	0.05	10.80	0.04	13.50	0.15	10.26	0.02	14.04	0.35	9.18	0.29	9.45	0.05	6.30	0.11	8.82	0.04	8.64	0.21
Right Bank	11.80	0.00	5.95	0.00	12.00	0.00	15.00	0.00	11.40	0.00	15.60	0.00	10.20	0.00	10.50	0.00	7.00	0.00	9.80	0.00	9.60	0.00
Feature Type (riffle, run, or pool)	Run		Riffle		Run		Pool		Pool		Pool		Run		Run		Run		Riffle		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 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)

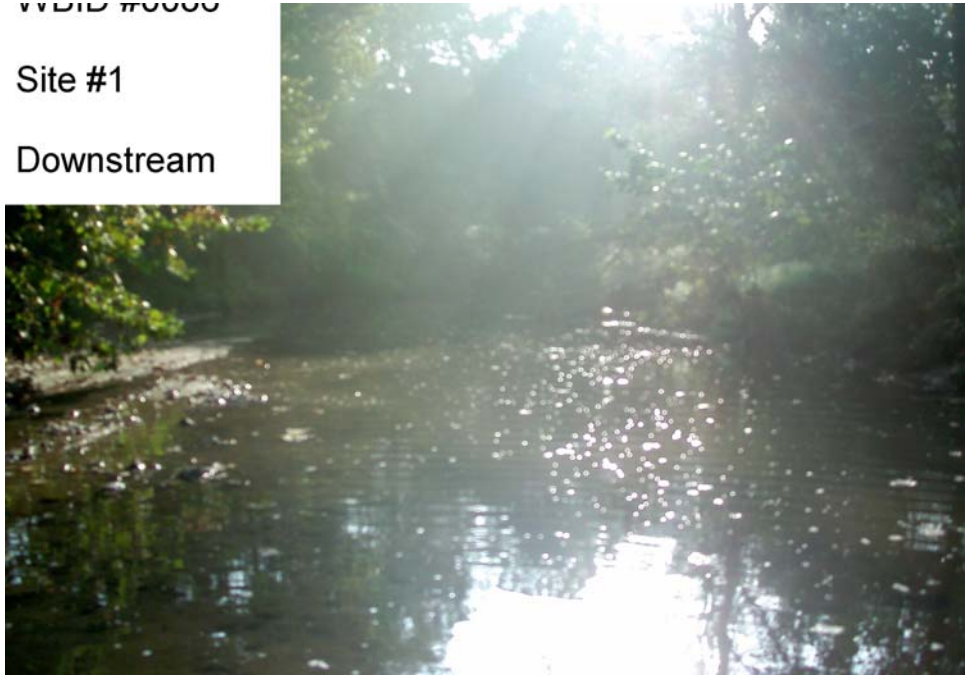
All measurements to be taken to the nearest 0.01 meter.

Surveyor's Signature: _____ Date: 9/2/2008

WBID #0000

Site #1

Downstream



WBID #0000

Site #2

Downstream,
Fence, & Powerline

WBID #0000

Site #1

Upstream

WBID #0000

Site #2

Upstream

WBID #0000

Site #3

Downstream

WBID #0000

Site #3

Upstream