Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 0222 Dardenne Creek

Submitted by
MEC Water Resources

To
Missouri Department of Natural Resources
Water Protection Program

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):	Dardenne CR.
Missouri Water Body Identification (WBID) Number:	0222
8-digit HUC: 20081223	County: St. Charles
Upstream Legal Description (from Table H):	22, 46N, 1E
Downstream Legal Description(from Table H):	22, 46N, 2E
Number of sites evaluated	4
List all sites numbers, listed consecutively upstream to downstream: Site 1 = Hwy 7 Bridge Site 3 = Hopewell Rd. n 200 m dNstream site 2 Site 2 = Hopewell Rd Site 4 = Hwy DD Bridge Crossing	

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

Discharger Facility Name(s):	SCC PWSD #2, Sycamore WWTF
Discharger Permit Number(s):	mo 0128252

III. UAA Surveyor (please print legibly)

Name of Surveyor Renee Martin	Telephone Number: 573-875-7844
Organization/Employer: AE Solutions	
Position: Env. Specialist	

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

Signed: _____ **Date:** 10/16/07

RMC 10-16-07

WBID # 0222

Site # 01

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 10/01/07 10:45	Site Location Description (e.g., road crossing): Hwy Z Bridge
Personnel (Data Collectors): JH./JF	
Current Weather Conditions: partly cloudy	Facility Name: SCCPWSD #2, SYCAMORE NW JF
Weather Conditions for Past 10 days: RAINY / CLEAR	Permit Number: MO 0128252
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): 4289478	Northing (UTM Y): 0684302	Horizontal Accuracy: (EPE / FOM / PDOP) 21	~~Meters~~ JF ft
Site 11	Easting (UTM X): 4289390	Northing (UTM Y): 0684455	Horizontal Accuracy: (EPE / FOM / PDOP) 20	~~Meters~~ JF ft

0222-01-001 0222-01-002

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
102_001	upstream	102_002	downstream		
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.)

WBID # 0222

Site # 01

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: none				

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				

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

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

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

water primrose cattails
algae
nut sedge

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 # 0222
Site # 01

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: [signature] Date of Survey: 10/01/07

Organization: AE Solutions Position: Field Tech.

QAC 10-16-07

Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 0222 Site #: 0222_01 (WBID_Site#)

Estimated Channel Incision: 1 (m) (height between low bank width and water)

GPS Location (taken at transect 1):
UTM X: 4289478 UTM Y: 0684302 21
Horizontal Accuracy Estimate (GPS Data Quality): +/- (feet)

GPS Location (taken at transect 11):
UTM X: 4289390 UTM Y: 0684455 20
Horizontal Accuracy Estimate (GPS Data Quality): +/- (feet)

Average Stream Width: 4.5 (meters) Length of Survey Segment: 150 (meters)
(To determne Length of Reach) (20x average stream width)

Field Staff: JH/JF

Dissolved Oxygen

Date: 10/2/07 Time: 10:45

Dissolved Oxygen: 4.85 (mg/L)

Dissolved Oxygen: 52.7 (% sat)

Specific Cond: 446.5 (µS/cm)

Water Temp.: 19.9 (°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	0.59	0.03	0.25	0.00	0.50	0.00	0.35	0.00	0.38	0.00	0.54	0.01	0.40	0.00	0.15	0.02	0.35	0.00	0.43	0.00	0.21	0.02
2	0.74	0.07	0.50	|	1.00	0.00	0.70	|	0.76	0.00	1.08	<0.01	0.80	|	0.30	0.02	0.70	|	0.80	|	0.42	0.01
3	1.11	0.14	0.75	|	1.50	0.01	1.05	|	1.14	0.01	1.62	0.00	1.20	|	0.45	0.12	1.05	|	1.29	|	0.63	0.03
4	1.48	0.22	1.00	|	2.00	0.01	1.40	|	1.52	0.01	2.16	0.00	1.60	|	0.60	0.14	1.40	<0.01	1.72	|	0.84	0.00
5	1.85	0.26	1.25	|	2.50	0.01	1.75	0.01	1.90	0.00	2.70	<0.01	2.00	|	0.75	0.12	1.75	0.00	2.15	|	1.05	0.00
6	2.22	0.28	1.50	|	3.00	0.00	2.1	0.01	2.20	0.03	3.24	0.01	2.40	|	0.90	0.12	2.10	<0.01	2.58	|	1.26	0.00
7	2.59	0.24	1.75	|	3.50	0.01	2.45	0.01	2.46	0.02	3.78	0.02	2.80	|	1.05	0.09	2.45	0.01	3.01	|	1.47	0.01
8	2.96	0.16	2.00	|	4.00	0.00	2.80	0.00	3.01	0.02	4.32	0.02	3.20	|	1.20	0.04	2.80	0.03	3.44	|	1.68	0.04
9	3.33	0.09	2.35	|	4.50	0.01	3.15	0.00	3.42	0.01	4.86	0.01	3.00	|	1.35	0.05	3.15	0.02	3.87	|	1.89	0.03
Right Bank	3.70	0	2.50	0	5.00	0	3.50	0	3.80	0	5.40	0	4.00	0	1.50	0	3.50	0	4.30	0	2.10	0
Feature Type (riffle, run, or pool)	pool		dry		pool		pool		pool		pool		dry		pool		pool		dry		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 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.

ANC 10-16-07

Signed: Date: 10/01/07

WBID # 0222
Site # 02

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization
(must be completed for each site)

Date & Time: 10/01/07 11:20	Site Location Description (e.g., road crossing): Hopewell Rd (200m upstream)
Personnel (Data Collectors): JH/JF	
Current Weather Conditions: Overcast	Facility Name: SCPWSD #2, Sycamore WWTF
Weather Conditions for Past 10 days: RAIN/CLEAN	Permit Number: MD 0128252
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): 429063	Northing (UTM Y): 0455187	Horizontal Accuracy: (EPE / FOM / PDOP) 20	Meters (JF) – FT
Site 11	Easting (UTM X): 429001	Northing (UTM Y): 0455411	Horizontal Accuracy: (EPE / FOM / PDOP) 18	Meters (JF) – FT

Photos:

0222-02-005 0222-02-006 0222-02-007

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
102.0015 (JF)	upstream	102.0016 (JF)	downstream	102.007	water pump downstream of T-02
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.)

WBID # 0222

Site # 02

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:				

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~~ JWH 10/02/07 water pump @ T-02				

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

5 % Cobble	10 % Gravel	~~40~~ % Sand	— % Silt	25 % Mud/Clay	20 % Bedrock

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

waterprimrose
algae

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 # 0222
Site # 02

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: [signature] Date of Survey: 10/01/07

Organization: AE Solutions Position: Field Tech

AWC 10-16-07

Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 0222 Site #: 0222-02 (WBID_Site#)

Estimated Channel Incision: 2.5 (m) (height between low bank width and water)

GPS Location (taken at transect 1):
UTM X: 429 0063 UTM Y: 0689482 Horizontal Accuracy Estimate (GPS Data Quality): +/- 20 (feet)

GPS Location (taken at transect 11):
UTM X: 429 0001 UTM Y: 0688646 Horizontal Accuracy Estimate (GPS Data Quality): +/- 18 (feet)

Average Stream Width: 9.0 (meters) Length of Survey Segment: 180 (meters)
(To determne Length of Reach) (20x average stream width)

Field Staff: JH/JF

Dissolved Oxygen

Date: 10/01/07 Time: 1120

Dissolved Oxygen: 10.50 (mg/L)

Dissolved Oxygen: 68.6 (% sat)

Specific Cond: 379.1 (µS/cm)

Water Temp.: 18.0 (°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	0.80	0.06	1.15	0.25	6.90	0.36	1.22	0.04	0.98	0.19	0.89	0.15	0.89	0.20	0.86	0.18	0.81	0.08	0.89	0.18	0.86	0.46
2	1.60	0.30	2.3	0.14	1.81	0.44	2.45	0.00	1.69	0.19	1.79	0.35	1.79	0.24	1.72	0.35	1.69	0.00	1.78	0.30	1.72	0.55
3	2.40	0.31	3.45	0.00	2.71	0.37	3.67	0.24	2.94	0.24	2.68	0.40	2.68	0.26	2.58	0.47	2.53	0.23	2.67	0.26	2.58	0.34
4	3.20	0.38	4.6	1	3.62	0.30	4.9	0.30	3.92	0.26	3.58	0.42	3.58	0.40	3.41	0.52	3.38	0.29	3.56	0.11	3.72	0.26
5	4.00	0.41	5.75	1	4.52	0.32	6.12	0.24	4.90	0.22	4.47	0.36	4.47	0.36	4.3	0.45	4.22	0.27	4.45	0.07	4.3	0.25
6	4.80	0.44	6.9	0.05	5.43	0.36	7.35	0.16	5.88	0.13	5.37	0.30	5.37	0.29	5.16	0.31	5.07	0.29	5.31	0.09	5.16	0.14
7	5.60	0.52	8.05	0.07	6.33	0.20	8.57	0.11	6.86	0.08	6.26	0.24	6.26	0.18	6.02	0.24	5.91	0.30	6.23	0.13	6.02	0.11
8	6.40	0.47	9.20	0.10	7.21	0.14	9.80	0.10	7.84	0.08	7.16	0.13	7.16	0.14	6.88	0.14	6.74	0.24	7.12	0.12	6.88	0.08
9	7.20	0.30	10.35	0.09	8.14	0.11	11.02	0.18	8.82	0.04	8.05	0.08	8.05	0.09	7.71	0.04	7.60	0.13	8.01	0.05	7.71	0.05
Right Bank	8.00	0	11.50	0	9.05	0	12.25	0	9.80	0	8.90	0	8.95	0	8.60	0	8.45	0	8.90	0	8.60	0
Feature Type (riffle, run, or pool)	pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

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 0.01 meter.

arc 10-16-07

Signed: [signature] Date: 10/01/07

WBID # 0222
Site # 03

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization

(must be completed for each site)

Date & Time: 10/01/07 12:00	Site Location Description (e.g., road crossing): ~~Hwy~~ Hopewell Rd (downstream)
Personnel (Data Collectors): JH / JF	
Current Weather Conditions: overcast	Facility Name: SCLPWSD#2 SYCAMORE WWTF
Weather Conditions for Past 10 days: RAINY/CLEAR	Permit Number: MO 0128252
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): 4289966	Northing (UTM Y): 0688697	Horizontal Accuracy: (EPE / FOM / PDOP) 18 Meters JF ft
Site 11	Easting (UTM X): 4289902	Northing (UTM Y): 0688843	Horizontal Accuracy: (EPE / FOM / PDOP) 21 Meters JF ft

Photos:

0222-03-003 0222-03-004

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
102.003	upstream	102.004	downstream		
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.)

WBID # 0222
Site # 03

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:				

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				

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

15 % Cobble	10 % Gravel	50 % Sand	% Silt	25 % Mud/Clay	% Bedrock

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

algae
water primrose

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: iron/rust
Surface Deposit:	☒ Oil	☐ Scum	☐ Foam	☒ None	☐ Other:

SRH 10/02/07

*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 # 0222

Site # 03

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: Jonathan R Fath Date of Survey: 10/01/07

Organization: AE Solutions Position: Field Technician

RHC 10-16-07

Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 0222 Site #: 0222-03 (WBID_Site#)

Estimated Channel Incision: 2 (m) (height between low bank width and water)

GPS Location (taken at transect 1):
UTM X: 428996 UTM Y: 0688692
Horizontal Accuracy Estimate (GPS Data Quality): +/- 18 (feet)

GPS Location (taken at transect 11):
UTM X: 428992 UTM Y: 0688843
Horizontal Accuracy Estimate (GPS Data Quality): +/- 21 (feet)

Average Stream Width: 6.0 (meters) Length of Survey Segment: 150 (meters)
(To determne Length of Reach) (20x average stream width)

Field Staff: JH/JP

Dissolved Oxygen

Date: 10/21/07 Time: 1200

Dissolved Oxygen: 9.65 (mg/L)

Dissolved Oxygen: 122.5 (% sat)

Specific Cond: 3606.5 (µS/cm)

Water Temp.: 20.5 (°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	0.58	0.02	0.56	0.03	0.69	0.08	0.45	0.00	0.27	0.00	0.16	0.00	0.79	0.12	0.78	0.10	0.81	0.10	0.39	0.01	0.76	0.10
2	1.16	0.05	1.13	0.07	1.19	0.11	0.90	|	0.55	|	0.32	0.01	1.59	0.18	1.56	0.14	1.62	0.14	0.75	0.00	1.53	0.20
3	1.74	0.09	1.69	0.08	1.78	0.18	1.35	|	0.82	|	0.43	0.01	2.30	0.23	2.34	0.15	2.43	0.09	1.17	0.01	2.29	0.33
4	2.32	0.09	2.26	0.14	2.38	0.20	1.80	|	1.1	|	0.64	0.01	3.18	0.20	3.12	0.19	3.21	0.10	1.56	0.01	3.06	0.24
5	2.9	0.10	2.82	0.15	2.97	0.16	2.25	|	1.37	|	0.8	0.01	3.97	0.17	3.90	0.24	4.05	0.17	1.95	0.01	3.52	0.20
6	3.48	0.09	3.39	0.13	3.57	0.10	2.70	|	1.65	|	0.90	0.01	4.77	0.16	4.68	0.26	4.86	0.24	2.34	0.01	4.59	0.16
7	4.06	0.09	3.95	0.12	4.16	0.01	3.15	|	1.975	|	1.12	0.02	5.56	0.15	5.46	0.26	5.67	0.29	2.73	0.00	5.35	0.14
8	4.64	0.08	4.52	0.06	4.76	0.15	3.60	|	2.2	|	1.28	0.01	6.36	0.17	6.24	0.22	6.48	0.34	3.12	0.01	6.12	0.08
9	5.22	0.06	5.08	0.03	5.35	0.16	4.05	|	2.47	|	1.44	0.01	7.15	0.14	7.02	0.16	7.29	0.37	3.51	0.01	6.80	0.07
Right Bank	5.80	0	5.65	0	5.95	0	4.50	0	2.75	0	1.60	0	7.95	0	7.80	0	8.10	0	3.90	0	7.65	0
Feature Type (riffle, run, or pool)	pool		pool		pool		dry		dry		run		pool		pool		pool		riffle		pool	

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 0.01 meter.

Rec 10-16-07

Signed: Jimmy Crawford for Jimmy H. Date: 10-16-07

WBID # 0222
Site # 04

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B – Site Characterization
(must be completed for each site)

Date & Time: 10 / 01 / 07 12:30	Site Location Description (e.g., road crossing): Hwy DD Bridge
Personnel (Data Collectors): JH / JF	
Current Weather Conditions: Overcast	Facility Name: SCCPWSD#2 SYCAMORE WWTF
Weather Conditions for Past 10 days: CLEAR / RAIN	Permit Number: MO 0123252
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): 428963	Northing (UTM Y): 0490925	Horizontal Accuracy: (EPE / FOM / PDOP) 33 JF Meters FA
Site 11	Easting (UTM X): 428907	Northing (UTM Y): 0490708	Horizontal Accuracy: (EPE / FOM / PDOP) 25 JF Meters FA

0222_04_008 0222_04_009

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
102_008	upstream	102_009	downstream		
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.)

WBID # 1022

Site # 04

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:				

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				

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

10 % Cobble	10 % Gravel	60 % Sand	% Silt	20 % Mud/Clay	% Bedrock

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

algae

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 # 0222
Site # 04

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: 10/01/07

Organization: AE Solutions Position: Field Technician

RHC 10-16-07

Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 0222 Site #: 022704 (WBID_Site#)

Estimated Channel Incision: 2 (m) (height between low bank width and water)

GPS Location (taken at transect 1):
UTM X: 4289613 UTM Y: 0690925
Horizontal Accuracy Estimate (GPS Data Quality): +/- 33 (feet)

GPS Location (taken at transect 11):
UTM X: 4289707 UTM Y: 0690768
Horizontal Accuracy Estimate (GPS Data Quality): +/- 25 (feet)

Average Stream Width: 7.4 (meters) Length of Survey Segment: 160 (meters)
(To determne Length of Reach) (20x average stream width)

Field Staff: JH/JF

Dissolved Oxygen

Date: 10/01/07 Time: 1230

Dissolved Oxygen: 4.71 (mg/L)

Dissolved Oxygen: 51.0 (% sat)

Specific Cond: 400.5 (µS/cm)

Water Temp.: 18.8 (°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	0.56	0.03	0.51	0.03	0.81	0.21	0.24	<0.01	0.39	0.10	0.74	0.02	0.73	0.11	0.99	0.02	1.08	0.10	0.75	0.12	0.8	0.40
2	1.12	0.07	1.08	0.06	1.62	0.25	0.52	<0.01	0.78	0.10	1.53	0.08	0.56	0.18	1.98	0.05	2.16	0.14	1.5	0.17	1.6	0.46
3	1.68	0.16	1.54	0.09	2.43	0.26	0.78	0.01	1.17	0.14	2.29	0.06	0.84	0.30	2.97	0.05	3.24	0.00	2.25	0.23	2.4	0.52
4	2.24	0.28	2.06	0.12	3.24	0.27	1.04	0.01	1.56	0.10	3.06	0.09	1.12	0.35	3.96	0.01	4.32	1	3.00	0.20	3.2	0.55
5	2.8	0.30	2.57	0.18	4.05	0.25	1.3	0.01	1.95	0.04	3.82	0.10	1.4	0.32	4.95	0.05	5.4	1	3.75	0.24	4.0	0.45
6	3.36	0.25	3.09	0.20	4.86	0.18	1.56	1	2.34	0.08	4.59	0.07	1.68	0.19	5.94	0.06	6.48	1	4.50	0.35	4.8	0.42
7	3.92	0.26	3.60	0.20	5.67	0.15	1.82	1	2.73	0.10	5.35	0.06	1.96	0.07	6.93	0.01	7.56	0.04	5.25	0.33	5.6	0.34
8	4.48	0.33	4.12	0.16	6.48	0.16	2.08	1	3.12	0.04	6.12	0.05	2.24	0.11	7.92	0.00	8.64	0.07	6.00	0.26	6.4	0.30
9	5.04	0.09	4.63	0.14	7.29	0.17	2.34	1	3.51	0.02	6.88	0.05	2.52	0.02	8.91	0.04	9.72	0.03	6.75	0.11	7.2	0.33
Right Bank	5.60	0	5.15	0	8.10	0	2.60	0	3.90	0	7.65	0	2.80	0	9.90	0	10.80	0	7.50	0	8.00	0
Feature Type (riffle, run, or pool)	pool		pool		pool		riffle		pool		pool		pool		pool		pool		pool		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0depth). Wet 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.

RHC 10-18-07

Signed: [signature] Date: 10/01/07

Dardenne Creek (WBID 222)

- Upstream Boundary
- Downstream Boundary

0 0.25 0.5 1 1.5 2 Miles

WBID 0222
Site 01
Trans 01
upstream

WBID 0222
Site 02
Trans 01
upstream

WBID 0222
Site 04
Trans 01
dnstream

WBID 0222
Site 01
Trans 01
dnstream

WBID 0222
Site 02
Trans 02
dnstream—
water pump

WBID 0222
Site 03
Trans 01
dnstream

WBID 0222
Site 02
Trans 01
dnstream

WBID 0222
Site 03
Trans 01
Upstream

WBID 0222
site 04
Trans 01
upstream