Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 0649 Old Channel Chariton 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):	Old Channel Chariton R.
Missouri Water Body Identification (WBID) Number:	0649
8-digit HUC:	10280201
County(ies), Listed Upstream to Downstream:	Schuyler, Putnam
Upstream Legal Description (from Table H):	34, 66N, 16W
Downstream Legal Description (from Table H):	24, 65N, 16W
Number of sites evaluated:	9
List all site numbers, consecutively upstream to downstream:	site 1: Hwy 136 Crossing - 150 m upstream site 2: 100m dnstream of site 01 site 3: 300m upstream of 198th St crossing site 4: 198th St crossing site 5: ~300 m. dnstream of site 4 site 6: unnamed road off Rt. W site 7: Rt W Crossing site 8: 225th St. site 9: 100 m dnstream of site 8, Transect 11
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):

Dowis Farm

MOG 010648

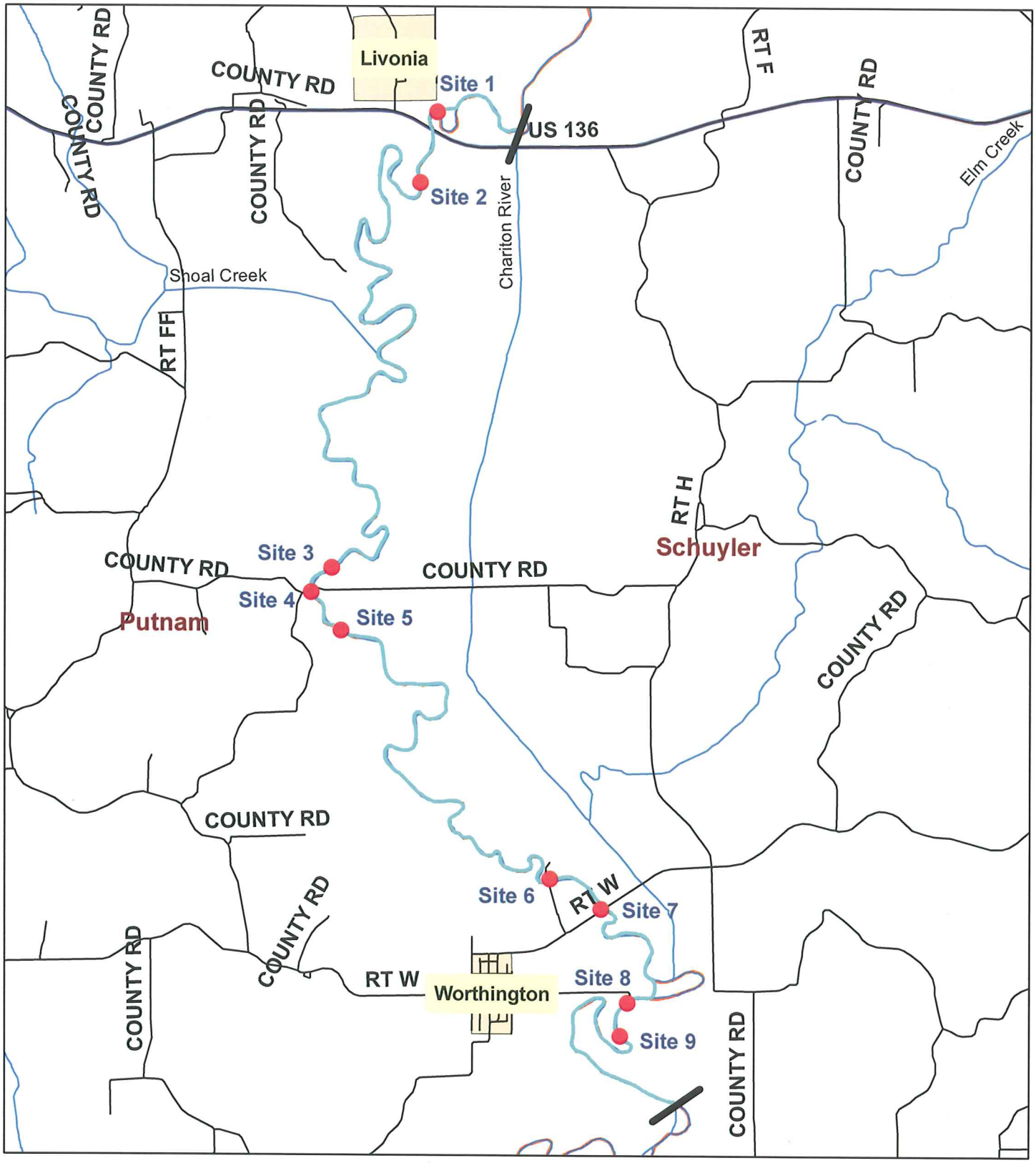
III. UAA Surveyor (please **PRINT** legibly)

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: Renee Martin **Date:** 10/13/08

SRW 10-15-08



Old Chan. Chariton R.
WBID 0649
Schuyler County

Meters
0 600 1,200 2,400 3,600

N
W E
S

WBID # 0649

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: 10/9/08 0819	Location Description (e.g., road crossing): Hwy 136 crossing - 150 m upstream
Stream Name: Old Channel Charitan	
Current Weather Conditions: sunny, clear	Facility Name(s): Davis Farm
Weather Conditions for Past 10 days: 0.85" of rain	Permit Number(s): MOG 010648
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): 0525734	Northing (UTM Y): 4481749	Horizontal Accuracy: (EPE / FOM / PDOP)	17 Meters	
Site 11	Easting (UTM X): 0525757	Northing (UTM Y): 4481914	Horizontal Accuracy: (EPE / FOM / PDOP)	16 Meters	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
85	Upstream	84	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 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 # Old Channel Chariton na 0649 Date of Survey 10/9/08

Site # 09 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, Agricultural

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 SRW			

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

— % Cobble	5 % Gravel	50 % Sand	35 % Silt	10 % Mud/Clay	— % Bedrock

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

Duckweed - moderate

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 # Old Channel Charlton 0649 Date of Survey 10/9/08

Site # ~~04~~ 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)
			SRW		
		N/A			

Comments: (Please record any additional comments here.)

Log Jam at Transect ~~4~~ 3

Southward flow north of the bridge is non existent due to construction at Hwy 136. A trib north of the bridge parallels Hwy 136 and flows into Old Channel Charlton, however it flows northward – not southward.

Flow direction isn't apparent on the Old Channel Charlton until sites 3, 4 + 5; flow is southward.

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

Printed Names of Personnel Collecting Data: Tiffanie Hamilton + Jonathon Witte

Surveyor's Signature: T Hamilt Date of Survey: 10/9/08

Organization: AE Solutions Position: Field Technician

SRW 10-15-08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: Old Chan. Chariton R. Waterbody ID: 0649 Site #: 0649_01

Estimated Channel Incision: 0.10 (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: 525757 UTM Y: 4481914 +/- 17 (feet)

11 UTM X: 525734 UTM Y: 4481749 +/- 16 (feet)

Average Stream Width: 1.3 (meters) Length of Survey Segment: 150 (meters)

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

Field Staff: TAH, JW

Dissolved Oxygen

Date: 10/9/2008 Time: 8:19

Dissolved Oxygen: 4.48 (mg/L)

Dissolved Oxygen: 43.9 (% sat)

Specific Cond: 645 (µS/cm)

Water Temperature: 13.9 (°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	0.18	0.03	0.20	0.06	0.08	0.01	0.08	0.01	0.13	0.04	0.14	0.12	0.15	0.07	0.11	0.06	0.12	0.02	0.22	0.15	0.05	0.01
2	0.36	0.06	0.40	0.14	0.16	0.01	0.16	0.01	0.26	0.07	0.28	0.18	0.30	0.12	0.22	0.08	0.24	0.02	0.44	0.17	0.10	0.01
3	0.54	0.15	0.60	0.17	0.24	0.02	0.24	0.01	0.39	0.07	0.42	0.27	0.45	0.15	0.33	0.07	0.36	0.03	0.66	0.21	0.15	0.01
4	0.72	0.20	0.80	0.15	0.32	0.02	0.32	0.02	0.52	0.11	0.56	0.32	0.60	0.24	0.44	0.05	0.48	0.04	0.88	0.28	0.20	0.02
5	0.90	0.24	1.00	0.15	0.40	0.03	0.40	0.02	0.65	0.14	0.70	0.32	0.75	0.30	0.55	0.06	0.60	0.04	1.10	0.36	0.25	0.02
6	1.08	0.24	1.20	0.18	0.48	0.04	0.48	0.03	0.78	0.22	0.84	0.35	0.90	0.30	0.66	0.06	0.72	0.08	1.32	0.39	0.30	0.03
7	1.26	0.24	1.40	0.22	0.56	0.04	0.56	0.04	0.91	0.26	0.98	0.37	1.05	0.32	0.77	0.04	0.84	0.06	1.54	0.37	0.35	0.03
8	1.44	0.22	1.60	0.18	0.64	0.02	0.64	0.02	1.04	0.32	1.12	0.36	1.20	0.24	0.88	0.04	0.96	0.05	1.76	0.27	0.40	0.03
9	1.62	0.14	1.80	0.03	0.72	0.02	0.72	0.01	1.17	0.19	1.26	0.13	1.35	0.15	0.99	0.02	1.08	0.04	1.98	0.23	0.45	0.02
Right Bank	1.80	0.00	2.00	0.00	0.80	0.00	0.80	0.00	1.30	0.00	1.40	0.00	1.50	0.00	1.10	0.00	1.20	0.00	2.20	0.00	0.50	0.00
Feature Type (riffle, run, or pool)	Run		Run		Riffle		Riffle		Run		Pool		Pool		Run		Run		Pool		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 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: 10/9/2008

WBID # 0649

Site # ~~01~~ 02 JH

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: 10/9/08 0840	Location Description (e.g., road crossing): 100m ~~up~~ dn stream of Site 01
Stream Name: Old Channel Charito	
Current Weather Conditions: sunny clear	Facility Name(s): Davis Farm
Weather Conditions for Past 10 days: 0.85" of rain	Permit Number(s): MOG 010048
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): 0525746	Northing (UTM Y): 4481~~555~~ 510	Horizontal Accuracy: (EPE / FOM / PDOP)	17 ~~Meters~~ ft	
Site 11	Easting (UTM X) 0525636	Northing (UTM Y): 4481~~510~~ 158	Horizontal Accuracy: (EPE / FOM / PDOP)	15 ~~Meters~~ ft	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
847	upstream	876	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 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 # Old Channel Chariton R. 0649 Date of Survey 10/9/08

Site # AP 02 SW

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, Agricultural

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 SRW			

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

— % Cobble	— % Gravel	— % Sand	20 % Silt	80 % Mud/Clay	— % Bedrock

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

Duckweed - abundant Cattails - sparse
Arrowhead - 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 # Old Chan. Charlton R. # 0649 Date of Survey 10/9/08

Site # ~~001~~ 02 ~~NA~~

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	SRW		

Comments: (Please record any additional comments here.)

Woody debris throughout site

Construction at Hwy 136 bridge has caused water to pool up at bridge.

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

Printed Names of Personnel Collecting Data: Tiffanie Hamilton + Jonathon Witte

Surveyor's Signature: T. Hamilton Date of Survey: 10/9/08

Organization: AE Solutions Position: Field Technician

SRW 10-15-08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: Old Chan. Chariton R. Waterbody ID: 0649 Site #: 0649_02

Estimated Channel Incision: 0.10 (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: 525746 UTM Y: 4481510 +/- 17 (feet)

11 UTM X: 525636 UTM Y: 4481158 +/- 15 (feet)

Average Stream Width: 17.5 (meters) Length of Survey Segment: 300 (meters)
(To determne Length of Reach) (20x average stream width)

Field Staff: TAH, JW

Dissolved Oxygen

Date: 10/9/2008 Time: 8:40

Dissolved Oxygen: 0.38 (mg/L)

Dissolved Oxygen: 3.9 (% sat)

Specific Cond: 280.3 (µS/cm)

Water Temperature: 14.6 (°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	1.44	0.14	1.28	0.27	1.85	0.15	1.99	0.13	1.59	0.09	1.81	0.25	2.06	0.34	1.82	0.18	1.85	0.34	1.56	0.35	1.95	0.35
2	2.88	0.28	2.56	0.38	3.70	0.42	3.98	0.33	3.18	0.22	3.62	0.41	4.12	0.60	3.64	0.37	3.70	0.49	3.12	0.51	3.90	0.62
3	4.32	0.34	3.84	0.44	5.55	0.51	5.97	0.41	4.77	0.32	5.43	0.53	6.18	0.70	5.46	0.44	5.55	0.60	4.68	0.59	5.85	0.69
4	5.76	0.45	5.12	0.52	7.40	0.53	7.96	0.48	6.36	0.31	7.24	0.55	8.24	0.71	7.28	0.58	7.40	0.66	6.24	0.69	7.80	0.72
5	7.20	0.54	6.40	0.58	9.25	0.58	9.95	0.53	7.95	0.37	9.05	0.59	10.30	0.66	9.10	0.58	9.25	0.72	7.80	0.66	9.75	0.73
6	8.64	0.72	7.68	0.61	11.10	0.50	11.94	0.57	9.54	0.45	10.86	0.58	12.36	0.74	10.92	0.73	11.10	0.73	9.36	0.75	11.70	0.66
7	10.08	0.58	8.96	0.56	12.95	0.46	13.93	0.55	11.13	0.56	12.67	0.54	14.42	0.67	12.74	0.67	12.95	0.65	10.92	0.67	13.65	0.55
8	11.52	0.41	10.24	0.36	14.80	0.37	15.92	0.45	12.72	0.37	14.48	0.40	16.48	0.58	14.56	0.65	14.80	0.49	12.48	0.57	15.60	0.45
9	12.96	0.14	11.52	0.13	16.65	0.18	17.91	0.29	14.31	0.16	16.29	0.25	18.54	0.28	16.38	0.34	16.65	0.29	14.04	0.27	17.55	0.26
Right Bank	14.40	0.00	12.80	0.00	18.50	0.00	19.90	0.00	15.90	0.00	18.10	0.00	20.60	0.00	18.20	0.00	18.50	0.00	15.60	0.00	19.50	0.00
Feature Type (riffle, run, or pool)	Run		Run		Pool		Pool		Pool		Pool		Pool		Run		Pool		Pool		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 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: 10/9/2008

WBID # 0649

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: 10/9/08 10:13	Location Description (e.g., road crossing): 300 m upstream of 198th St. crossing
Stream Name: Old Channel Chanitan	
Current Weather Conditions: sunny, clear	Facility Name(s): Davis Farm
Weather Conditions for Past 10 days: 0.85" of rain	Permit Number(s): MOG 010648
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): 0524748	Northing (UTM Y): 4477348	Horizontal Accuracy: (EPE / FOM / PDOP) 13 ~~Meters~~ Ft
Site 11	Easting (UTM X): 0524556	Northing (UTM Y): 4477148	Horizontal Accuracy: (EPE / FOM / PDOP) 19 ~~Meters~~ Ft

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
88	upstream	89	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 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 SRW

Stream Name & WBID # Old Chan. Chariton R. # 0649 Date of Survey 10/9/08

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

Comments:

Private Property, Agricultural

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 SRW			

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

— % Cobble	— % Gravel	— % Sand	20 % Silt	80 % Mud/Clay	— % Bedrock

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

Willow
Duckweed } 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 # Old Chan. Charitonl. # 0649 Date of Survey 10/9/08

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 SRW		

Comments: (Please record any additional comments here.)

Beaver dam at Transect 11

Woody debris throughout site

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

Printed Names of Personnel Collecting Data: Tiffanie Hamilton + Jonathon Witte

Surveyor's Signature: TA Hamilton Date of Survey: 10/9/08

Organization: AE Solutions Position: Field Technician

SRW

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: Old Chan. Chariton R. Waterbody ID: 0649 Site #: 0649_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: 524748 UTM Y: 4477348 +/- 13 (feet)

11 UTM X: 524556 UTM Y: 4477148 +/- 19 (feet)

Average Stream Width: 11.5 (meters) Length of Survey Segment: 230 (meters)

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

Field Staff: TAH, JW

Dissolved Oxygen

Date: 10/9/2008 Time: 10:13

Dissolved Oxygen: 1.69 (mg/L)

Dissolved Oxygen: 17.3 (% sat)

Specific Cond: 281 (µS/cm)

Water Temperature: 15.2 (°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	1.14	0.63	1.08	0.44	1.27	0.39	1.30	0.26	1.26	0.25	1.21	0.51	1.03	0.40	1.16	0.44	1.16	0.49	1.01	0.54	1.03	0.42
2	2.28	0.79	2.16	0.58	2.54	0.54	2.60	0.48	2.52	0.35	2.42	0.62	2.06	0.71	2.32	0.78	2.32	0.84	2.02	0.90	2.06	0.54
3	3.42	0.91	3.24	0.74	3.81	0.68	3.90	0.43	3.78	0.60	3.63	0.62	3.09	0.89	3.48	0.93	3.48	0.97	3.03	0.97	3.09	0.68
4	4.56	>1.00	4.32	0.85	5.08	0.83	5.20	0.14	5.04	0.16	4.84	0.63	4.12	0.94	4.64	>1.00	4.64	>1.00	4.04	>1.00	4.12	0.82
5	5.70	>1.00	5.40	0.93	6.35	0.83	6.50	0.13	6.30	0.24	6.05	0.64	5.15	>1.00	5.80	>1.00	5.80	>1.00	5.05	>1.00	5.15	0.73
6	6.84	>1.00	6.48	0.91	7.62	0.76	7.80	0.35	7.56	0.18	7.26	0.68	6.18	>1.00	6.96	>1.00	6.96	>1.00	6.06	>1.00	6.18	0.60
7	7.98	>1.00	7.56	0.82	8.89	0.77	9.10	0.41	8.82	0.36	8.47	0.71	7.21	0.89	8.12	0.98	8.12	0.92	7.07	>1.00	7.21	0.62
8	9.12	0.85	8.64	0.76	10.16	0.63	10.40	0.38	10.08	0.31	9.68	0.73	8.24	0.69	9.28	0.79	9.28	0.77	8.08	0.94	8.24	0.44
9	10.26	0.59	9.72	0.43	11.43	0.41	11.70	0.44	11.34	0.28	10.89	0.54	9.27	0.55	10.44	0.49	10.44	0.54	9.09	0.66	9.27	0.14
Right Bank	11.40	0.00	10.80	0.00	12.70	0.00	13.00	0.00	12.60	0.00	12.10	0.00	10.30	0.00	11.60	0.00	11.60	0.00	10.10	0.00	10.30	0.00
Feature Type (riffle, run, or pool)	Pool		Pool		Pool		Pool		Run		Pool		Pool		Pool		Pool		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 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: 10/9/2008

WBID # 0649

Site # 04

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: 10/9/08 11:01	Location Description (e.g., road crossing): 198th st crossing
Stream Name: Old Channel Chariton	
Current Weather Conditions: sunny clear	Facility Name(s): Davis Farm
Weather Conditions for Past 10 days: 0.85" of rain	Permit Number(s): MOG 010048
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): 0524547	Northing (UTM Y): 4477123	Horizontal Accuracy: (EPE / FOM / PDOP) 15 ~~Meters~~ ft
Site 11	Easting (UTM X): 0524690	Northing (UTM Y) 4476905	Horizontal Accuracy: (EPE / FOM / PDOP) 19 ~~Meters~~ ft

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
90	upstream	91	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 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 SRW

Stream Name & WBID # Old Channel Chariton 0649 Date of Survey 10/9/08

Site # ~~06~~ 04

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, agricultural

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 SRW			

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

— % Cobble	10 % Gravel	10 % Sand	20 % Silt	~~60~~ 70 % Mud/Clay	— % Bedrock

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

Duckweed - sparse

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☑ None	☐ Other:
Color:	☑ Clear	☐ Green	☐ Gray	☐ Milky	☑ Other: Brown
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 # Old Channel Chariton 0649 Date of Survey 10/9/08

Site # 04

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 SRW

Comments: (Please record any additional comments here.)

Active beaver sign

A lot of woody debris throughout site

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

Printed Names of Personnel Collecting Data: Tiffanie Hamilton + Jonathon Witte

Surveyor's Signature: JA Hamilton Date of Survey: 10/9/08

Organization: AE Solutions Position: ~~Environm~~ SRW Field Technician

SRW 10-15-08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: Old Chan. Chariton R. Waterbody ID: 0649 Site #: 0649_04

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: 524547 UTM Y: 4477123 +/- 15 (feet)

11 UTM X: 524690 UTM Y: 4476905 +/- 19 (feet)

Average Stream Width: 9.5 (meters) Length of Survey Segment: 190 (meters)

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

Field Staff: TAH, JW

Dissolved Oxygen

Date: 10/9/2008 Time: 11:01

Dissolved Oxygen: 3.25 (mg/L)

Dissolved Oxygen: 31.5 (% sat)

Specific Cond: 336 (µS/cm)

Water Temperature: 13.7 (°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	0.85	0.51	1.11	0.38	1.16	0.44	1.13	0.52	1.07	0.38	1.14	0.52	1.15	0.51	1.09	0.48	1.04	0.33	0.15	0.03	0.50	0.04
2	1.70	0.94	2.22	0.47	2.32	0.53	2.26	0.66	2.14	0.55	2.28	0.82	2.30	0.63	2.18	0.58	2.08	0.42	0.30	0.05	1.00	0.00
3	2.55	>1.00	3.33	0.37	3.48	0.55	3.39	0.74	3.21	0.64	3.42	0.77	3.45	0.65	3.27	0.59	3.12	0.43	0.45	0.07	1.50	0.04
4	3.40	>1.00	4.44	0.08	4.64	0.57	4.52	0.84	4.28	0.75	4.56	0.81	4.60	0.68	4.36	0.66	4.16	0.46	0.60	0.07	2.00	0.20
5	4.25	>1.00	5.55	0.00	5.80	0.54	5.65	0.76	5.35	0.73	5.70	0.78	5.75	0.70	5.45	0.56	5.20	0.47	0.75	0.08	2.50	0.23
6	5.10	>1.00	6.66	0.00	6.96	0.54	6.78	0.76	6.42	0.73	6.84	0.74	6.90	0.66	6.54	0.53	6.24	0.45	0.90	0.10	3.00	0.16
7	5.95	>1.00	7.77	0.00	8.12	0.56	7.91	0.71	7.49	0.71	7.98	0.72	8.05	0.58	7.63	0.44	7.28	0.40	1.05	0.08	3.50	0.14
8	6.80	0.96	8.88	0.24	9.28	0.51	9.04	0.59	8.56	0.69	9.12	0.65	9.20	0.50	8.72	0.39	8.32	0.34	1.20	0.06	4.00	0.12
9	7.65	0.42	9.99	0.38	10.44	0.36	10.17	0.39	9.63	0.52	10.26	0.45	10.35	0.39	9.81	0.26	9.36	0.30	1.35	0.04	4.50	0.06
Right Bank	8.50	0.00	11.10	0.00	11.60	0.00	11.30	0.00	10.70	0.00	11.40	0.00	11.50	0.00	10.90	0.00	10.40	0.00	1.50	0.00	5.00	0.00
Feature Type (riffle, run, or pool)	Pool		Pool		Pool		Pool		Pool		Pool		Pool		Pool		Pool		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 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: 10/9/2008

WBID # 0649

Site # 05

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: 10/9/08 11:41	Location Description (e.g., road crossing): ~300m downstream of Site 4 Transect 11
Stream Name: Old Channel Charlton	
Current Weather Conditions: sunny, clear	Facility Name(s): Davis Farm
Weather Conditions for Past 10 days: 0.85" of rain	Permit Number(s): MOG 010648
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): 0524879	Northing (UTM Y): 4476733	Horizontal Accuracy: (EPE / FOM / PDOP) 14 ~~Meters~~ m ft
Site 11	Easting (UTM X): 0525105	Northing (UTM Y): 4476672	Horizontal Accuracy: (EPE / FOM / PDOP) 16 ~~Meters~~ m ft

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
92	upstream	93	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 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 SRW

Stream Name & WBID # Old Chan. Chariton R. # 0649 Date of Survey 10/9/08

Site # 05

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, agricultural

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 SRW			

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

— % Cobble	15 % Gravel	75 % Sand	5 % Silt	5 % 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 # Old Chan. Charlton R. # 0649 Date of Survey 10/9/08

Site # 05

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	SRW		

Comments: (Please record any additional comments here.)

N/A SRW

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

Printed Names of Personnel Collecting Data: Tiffanie Hamilton + Jonathon Witte

Surveyor's Signature: TA Hamilton Date of Survey: 10/9/08

Organization: AESolutions Position: Field Technician

SRW 10-15-08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: Old Chan. Chariton R. Waterbody ID: 0649 Site #: 0649_05

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: 524879 UTM Y: 4476733 +/- 14 (feet)

11 UTM X: 525105 UTM Y: 4476672 +/- 16 (feet)

Average Stream Width: 3.5 (meters) Length of Survey Segment: 150 (meters)
(To determne Length of Reach) (20x average stream width)

Field Staff: TAH, JW

Dissolved Oxygen

Date: 10/9/2008 Time: 11:41

Dissolved Oxygen: 6.42 (mg/L)

Dissolved Oxygen: 62.6 (% sat)

Specific Cond: 504 (µS/cm)

Water Temperature: 14.2 (°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	0.15	0.01	0.24	0.04	0.25	0.08	0.38	0.14	0.37	0.08	0.42	0.06	0.29	0.20	0.49	0.17	0.44	0.11	0.44	0.34	0.42	0.10
2	0.30	0.06	0.48	0.06	0.50	0.13	0.76	0.10	0.74	0.10	0.84	0.07	0.58	0.18	0.98	0.29	0.88	0.18	0.88	0.49	0.84	0.28
3	0.45	0.04	0.72	0.05	0.75	0.17	1.14	0.08	1.11	0.12	1.26	0.00	0.87	0.12	1.47	0.30	1.32	0.19	1.32	0.58	1.26	0.33
4	0.60	0.07	0.96	0.05	1.00	0.20	1.52	0.09	1.48	0.10	1.68	0.00	1.16	0.11	1.96	0.23	1.76	0.19	1.76	0.54	1.68	0.38
5	0.75	0.08	1.20	0.07	1.25	0.27	1.90	0.08	1.85	0.08	2.10	0.06	1.45	0.11	2.45	0.21	2.20	0.19	2.20	0.45	2.10	0.46
6	0.90	0.08	1.44	0.06	1.50	0.34	2.28	0.04	2.22	0.09	2.52	0.21	1.74	0.13	2.94	0.18	2.64	0.16	2.64	0.42	2.52	0.52
7	1.05	0.08	1.68	0.05	1.75	0.33	2.66	0.03	2.59	0.13	2.94	0.26	2.03	0.10	3.43	0.18	3.08	0.15	3.08	0.42	2.94	0.51
8	1.20	0.07	1.92	0.07	2.00	0.36	3.04	0.02	2.96	0.12	3.36	0.25	2.32	0.06	3.92	0.15	3.52	0.14	3.52	0.41	3.36	0.43
9	1.35	0.04	2.16	0.06	2.25	0.27	3.42	0.02	3.33	0.10	3.78	0.21	2.61	0.04	4.41	0.11	3.96	0.08	3.96	0.33	3.78	0.29
Right Bank	1.50	0.00	2.40	0.00	2.50	0.00	3.80	0.00	3.70	0.00	4.20	0.00	2.90	0.00	4.90	0.00	4.40	0.00	4.40	0.00	4.20	0.00
Feature Type (riffle, run, or pool)	Run		Run		Run		Run		Run		Pool		Run		Run		Run		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 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: 10/9/2008

WBID # 0649

Site # 04

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: 10/9/08 12:55	Location Description (e.g., road crossing): un-named Rd off Rt W
Stream Name: Old Channel Charlotte	
Current Weather Conditions: sunny, clear	Facility Name(s): Davis Farm
Weather Conditions for Past 10 days: 0.85" of rain	Permit Number(s): MOG 010648
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): 0526938	Northing (UTM Y): 4474252	Horizontal Accuracy: (EPE / FOM / PDOP) 16 ~~Meters~~ Ft
Site 11	Easting (UTM X): 0527123	Northing (UTM Y): 4474302	Horizontal Accuracy: (EPE / FOM / PDOP) 14 ~~Meters~~ Ft

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
96	upstream	97	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 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 SRW

Stream Name & WBID # Old Chan. Chariton # 0649 Date of Survey 10/9/08

Site # 06

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, Agricultural

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 SRW			

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

— % Cobble	— % Gravel	— % Sand	10 % Silt	90 % Mud/Clay	— % Bedrock

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

NONE

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☑ None	☐ Other:
Color:	☑ Clear	☐ Green	☐ Gray	☐ Milky	☑ Other: rust
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 # Old Chan Chariton # 0649 Date of Survey 10/9/08

Site # 06

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)
			SRW		
		N/A			

Comments: (Please record any additional comments here.)

Ferrous oxide deposits throughout site

Several trees ~~over~~ fallen over stream

woody debris throughout site

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

Printed Names of Personnel Collecting Data: Tiffanie Hamilton + Jonathon Witte

Surveyor's Signature: TA Hamilton Date of Survey: 10/9/08

Organization: AE Solutions Position: Field Technician

SRW 10-15-08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: Old Chan. Chariton R. Waterbody ID: 0649 Site #: 0649_06

Estimated Channel Incision: 1.0 (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: 526938 UTM Y: 4474257 +/- 16 (feet)

11 UTM X: 527123 UTM Y: 4474302 +/- 14 (feet)

Average Stream Width: 4.0 (meters) Length of Survey Segment: 150 (meters)
(To determne Length of Reach) (20x average stream width)

Field Staff: TAH, JW

Dissolved Oxygen

Date: 10/9/2008 Time: 12:55

Dissolved Oxygen: 3.74 (mg/L)

Dissolved Oxygen: 35.3 (% sat)

Specific Cond: 444 (µS/cm)

Water Temperature: 13.3 (°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	0.44	0.14	0.37	0.20	0.47	0.04	0.43	0.10	0.29	0.11	0.33	0.05	0.39	0.15	0.35	0.26	0.38	0.06	0.44	0.05	0.44	0.04
2	0.88	0.10	0.74	0.14	0.94	0.16	0.86	0.10	0.58	0.13	0.66	0.14	0.78	0.26	0.70	0.34	0.76	0.19	0.88	0.13	0.88	0.06
3	1.32	0.19	1.11	0.26	1.41	0.24	1.29	0.16	0.87	0.10	0.99	0.15	1.17	0.29	1.05	0.40	1.14	0.28	1.32	0.25	1.32	0.08
4	1.76	0.14	1.48	0.25	1.88	0.28	1.72	0.14	1.16	0.08	1.32	0.13	1.56	0.29	1.40	0.43	1.52	0.36	1.76	0.27	1.76	0.05
5	2.20	0.16	1.85	0.23	2.35	0.26	2.15	0.18	1.45	0.08	1.65	0.11	1.95	0.33	1.75	0.41	1.90	0.38	2.20	0.28	2.20	0.07
6	2.64	0.17	2.22	0.19	2.82	0.24	2.58	0.18	1.74	0.06	1.98	0.08	2.34	0.38	2.10	0.37	2.28	0.36	2.64	0.27	2.64	0.10
7	3.08	0.23	2.59	0.24	3.29	0.19	3.01	0.20	2.03	0.04	2.31	0.06	2.73	0.33	2.45	0.29	2.66	0.28	3.08	0.30	3.08	0.09
8	3.52	0.29	2.96	0.14	3.76	0.12	3.44	0.23	2.32	0.03	2.64	0.05	3.12	0.18	2.80	0.20	3.04	0.18	3.52	0.24	3.52	0.08
9	3.96	0.09	3.33	0.08	4.23	0.14	3.87	0.17	2.61	0.02	2.97	0.03	3.51	0.13	3.15	0.09	3.42	0.12	3.96	0.13	3.96	0.06
Right Bank	4.40	0.00	3.70	0.00	4.70	0.00	4.30	0.00	2.90	0.00	3.30	0.00	3.90	0.00	3.50	0.00	3.80	0.00	4.40	0.00	4.40	0.00
Feature Type (riffle, run, or pool)	Run		Run		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 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: 10/9/2008

WBID # 0649

Site # 07

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: 10/9/08 1230	Location Description (e.g., road crossing):
Stream Name: Old Channel Chariton	Rt. W. crossing
Current Weather Conditions: sunny, clear	Facility Name(s): Davis Farm
Weather Conditions for Past 10 days: 0.85" of rain	Permit Number(s): MOG 010648
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): 0527487	Northing (UTM Y): 4473989	Horizontal Accuracy: (EPE / FOM / PDOP) 19	~~Meters~~ Ft
Site 11	Easting (UTM X): 0527580	Northing (UTM Y): 4473843	Horizontal Accuracy: (EPE / FOM / PDOP) 16	~~Meters~~ Ft

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
94	Upstream	95	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 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 SRW

Stream Name & WBID # Old Chan. Chariton R. # 0649 Date of Survey 10/9/08

Site # 07

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, agricultural

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 SRW			

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

— % Cobble	— % Gravel	10 % Sand	20 % Silt	70 % Mud/Clay	— % Bedrock

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

~~Log jam~~ JW

none

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:

*only at log jam

*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 # Old Chan. Chariton # 0649 Date of Survey 10/9/08

Site # 07

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	SRW		

Comments: (Please record any additional comments here.)

Ferrous oxide deposits on bottom throughout site
Woody debris throughout site
Log jam at Transect 10

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

Printed Names of Personnel Collecting Data: Tiffanie Hamilton + Jonathon Witte

Surveyor's Signature: TA Hamilton Date of Survey: 10/9/08

Organization: AE Solutions Position: ~~JRH~~ Field Technician

SRW 10-15-08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: Old Chan. Chariton R. Waterbody ID: 0649 Site #: 0649_07

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: 527487 UTM Y: 4473989 +/- 19 (feet)

11 UTM X: 527580 UTM Y: 4479843 +/- 16 (feet)

Average Stream Width: 3.9 (meters) Length of Survey Segment: 150 (meters)

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

Field Staff: TAH, JW

Dissolved Oxygen

Date: 10/9/2008 Time: 12:30

Dissolved Oxygen: 4.37 (mg/L)

Dissolved Oxygen: 42.0 (% sat)

Specific Cond: 432 (µS/cm)

Water Temperature: 13.6 (°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	0.30	0.04	0.41	0.01	0.55	0.07	0.50	0.08	0.44	0.14	0.50	0.04	0.28	0.05	0.38	0.19	0.38	0.20	0.13	0.07	0.40	0.13
2	0.60	0.18	0.82	0.04	1.10	0.15	1.00	0.20	0.88	0.27	1.00	0.10	0.56	0.17	0.76	0.31	0.76	0.30	0.26	0.14	0.80	0.10
3	0.90	0.32	1.23	0.20	1.65	0.15	1.50	0.27	1.32	0.31	1.50	0.18	0.84	0.14	1.14	0.42	1.14	0.40	0.39	0.13	1.20	0.15
4	1.20	0.37	1.64	0.27	2.20	0.19	2.00	0.30	1.76	0.36	2.00	0.17	1.12	0.21	1.52	0.45	1.52	0.46	0.52	0.08	1.60	0.13
5	1.50	0.34	2.05	0.26	2.75	0.19	2.50	0.29	2.20	0.35	2.50	0.18	1.40	0.20	1.90	0.48	1.90	0.48	0.65	0.14	2.00	0.12
6	1.80	0.29	2.46	0.39	3.30	0.16	3.00	0.33	2.64	0.35	3.00	0.18	1.68	0.23	2.28	0.43	2.28	0.43	0.78	0.16	2.40	0.24
7	2.10	0.25	2.87	0.39	3.85	0.30	3.50	0.36	3.08	0.26	3.50	0.20	1.96	0.25	2.66	0.43	2.66	0.40	0.91	0.16	2.80	0.11
8	2.40	0.15	3.28	0.15	4.40	0.18	4.00	0.28	3.52	0.16	4.00	0.17	2.24	0.21	3.04	0.40	3.04	0.32	1.04	0.15	3.20	0.08
9	2.70	0.10	3.69	0.08	4.95	0.08	4.50	0.15	3.96	0.11	4.50	0.09	2.52	0.14	3.42	0.32	3.42	0.20	1.17	0.08	3.60	0.05
Right Bank	3.00	0.00	4.10	0.00	5.50	0.00	5.00	0.00	4.40	0.00	5.00	0.00	2.80	0.00	3.80	0.00	3.80	0.00	1.30	0.00	4.00	0.00
Feature Type (riffle, run, or pool)	Run		Run		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 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: 10/9/2008

WBID # 0649

Site # 08 24

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: 10/9/08 1333	Location Description (e.g., road crossing):
Stream Name: old channel Chariton	225th St. dead end @ stream
Current Weather Conditions: sunny, clear	Facility Name(s): Davis Farm
Weather Conditions for Past 10 days: 0.85" of rain	Permit Number(s): MO 010648
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): 0527701	Northing (UTM Y): 4473049	Horizontal Accuracy: (EPE / FOM / PDOP) 22 ~~Meters~~ 24 Ft
Site 11	Easting (UTM X): 0527595	Northing (UTM Y) 4472885	Horizontal Accuracy: (EPE / FOM / PDOP) 15 ~~Meters~~ 24 Ft

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
98	Upstream	99	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 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 SRW

Stream Name & WBID # Old Chan. Charlton R # 0649 Date of Survey 10/9/08

Site # 08 24

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; Agricultural

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 SRW			

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

— % Cobble	— % Gravel	— % Sand	10 % Silt	90% Mud/Clay	— % Bedrock

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

Duckweed

Benthic algae - moderate

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☐ None	☐ Other:
Color:	☑ Clear	☐ Green	☐ Gray	☐ Milky	☑ Other: rust
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 # Old Chan. Chariton R # 0649 Date of Survey 10/9/08

Site # 08 ~~24~~

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 SRW		

Comments: (Please record any additional comments here.)

Ferrous oxide deposits throughout site
Lots of woody debris

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

Printed Names of Personnel Collecting Data: Tiffanie Hamilton + Jonathon Witte

Surveyor's Signature: TA Hamilton Date of Survey: 10/9/08

Organization: AESolutions Position: Field Technician

SRW 10-15-08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: Old Chan. Chariton R. Waterbody ID: 0649 Site #: 0649_08

Estimated Channel Incision: 1.0 (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: 527701 UTM Y: 4473049 +/- 22 (feet)

11 UTM X: 527595 UTM Y: 4472885 +/- 15 (feet)

Average Stream Width: 5.8 (meters) Length of Survey Segment: 150 (meters)
(To determne Length of Reach) (20x average stream width)

Field Staff: TAH, JW

Dissolved Oxygen

Date: 10/9/2008 Time: 13:33

Dissolved Oxygen: 5.91 (mg/L)

Dissolved Oxygen: 62.5 (% sat)

Specific Cond: 202 (µS/cm)

Water Temperature: 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	0.19	0.06	0.22	0.01	0.44	0.03	0.57	0.07	1.02	0.18	0.84	0.21	0.97	0.24	0.58	0.07	0.51	0.05	0.49	0.12	0.52	0.18
2	0.38	0.06	0.44	0.01	0.88	0.03	1.14	0.08	2.04	0.35	1.68	0.35	1.94	0.36	1.16	0.19	1.02	0.18	0.98	0.20	1.04	0.28
3	0.57	0.06	0.66	0.02	1.32	0.04	1.71	0.28	3.06	0.44	2.52	0.45	2.91	0.45	1.74	0.26	1.53	0.30	1.47	0.28	1.56	0.32
4	0.76	0.07	0.88	0.02	1.76	0.12	2.28	0.36	4.08	0.51	3.36	0.47	3.88	0.56	2.32	0.29	2.04	0.27	1.96	0.32	2.08	0.40
5	0.95	0.09	1.10	0.05	2.20	0.26	2.85	0.34	5.10	0.55	4.20	0.54	4.85	0.60	2.90	0.39	2.55	0.43	2.45	0.38	2.60	0.42
6	1.14	0.14	1.32	0.06	2.64	0.24	3.42	0.32	6.12	0.46	5.04	0.54	5.82	0.67	3.48	0.35	3.06	0.40	2.94	0.45	3.12	0.48
7	1.33	0.13	1.54	0.06	3.08	0.15	3.99	0.33	7.14	0.45	5.88	0.49	6.79	0.54	4.06	0.34	3.57	0.33	3.43	0.38	3.64	0.56
8	1.52	0.13	1.76	0.07	3.52	0.08	4.56	0.28	8.16	0.46	6.72	0.38	7.76	0.37	4.64	0.26	4.08	0.28	3.92	0.26	4.16	0.43
9	1.71	0.12	1.98	0.05	3.96	0.05	5.13	0.19	9.18	0.29	7.56	0.18	8.73	0.19	5.22	0.17	4.59	0.15	4.41	0.19	4.68	0.31
Right Bank	1.90	0.00	2.20	0.00	4.40	0.00	5.70	0.00	10.20	0.00	8.40	0.00	9.70	0.00	5.80	0.00	5.10	0.00	4.90	0.00	5.20	0.00
Feature Type (riffle, run, or pool)	Run		Run		Run		Run		Run		Run		Pool		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 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: 10/9/2008

WBID # 0649

Site # 09

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: 10/9/08 1401	Location Description (e.g., road crossing): 100 m downstream of Site 8 transect 11
Stream Name: Old Channel Charitan	
Current Weather Conditions: sunny clear	Facility Name(s): Davis Farm
Weather Conditions for Past 10 days: 0.85" of rain	Permit Number(s): MCG 010648
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): 0527645	Northing (UTM Y): 4472702	Horizontal Accuracy: (EPE / FOM / PDOP) 16 ~~Meters~~ Ft
Site 11	Easting (UTM X): 0527767	Northing (UTM Y): 4472620	Horizontal Accuracy: (EPE / FOM / PDOP) 15 ~~Meters~~ Ft

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
100	upstream	101	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 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 SRW

Stream Name & WBID # Old Channel Chanton R # 0649 Date of Survey 10/9/08

Site # 09

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, Agricultural

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 SAW			

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

— % Cobble	— % Gravel	— % Sand	10 % Silt	90 % Mud/Clay	— % Bedrock

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

Duckweed – abundant; Smartweed, Sedges } sparse; Benthic algae – moderate

Water Characteristics*: (Mark all that apply.)

Odor:	☐ Sewage	☐ Musky	☐ Chemical	☑ None	☐ Other:
Color:	☑ Clear	☐ Green	☐ Gray	☐ Milky	☑ Other: rust
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 # Old Channel Charlton R # 0649 Date of Survey 10/9/08

Site # 09

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 SRW

Comments: (Please record any additional comments here.)

A LOT of woody debris throughout site

Ferrous oxide deposits throughout site

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

Printed Names of Personnel Collecting Data: Tiffanie Hamilton + Jonathon Witte

Surveyor's Signature: TA Hamilton Date of Survey: 10/9/08

Organization: AE Solutions Position: Field Technician

SRW 10-13-08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: Old Chan. Chariton R. Waterbody ID: 0649 Site #: 0649_09

Estimated Channel Incision: 1.0 (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: 527645 UTM Y: 4472702 +/- 16 (feet)

11 UTM X: 527767 UTM Y: 4472620 +/- 15 (feet)

Average Stream Width: 9.1 (meters) Length of Survey Segment: 182 (meters)
(To determne Length of Reach) (20x average stream width)

Field Staff: TAH, JW

Dissolved Oxygen

Date: 10/9/2008 Time: 14:01

Dissolved Oxygen: 0.28 (mg/L)

Dissolved Oxygen: 3.2 (% sat)

Specific Cond: 244 (µS/cm)

Water Temperature: 14.3 (°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	0.64	0.22	0.70	0.08	0.66	0.17	0.82	0.08	0.98	0.17	0.43	0.12	0.89	0.23	1.01	0.25	1.16	0.27	1.27	0.41	1.40	0.37
2	1.28	0.29	1.40	0.19	1.32	0.30	1.64	0.24	1.96	0.33	0.86	0.18	1.78	0.40	2.02	0.38	2.32	0.40	2.54	0.60	2.80	0.59
3	1.92	0.39	2.10	0.25	1.98	0.37	2.46	0.26	2.94	0.50	1.29	0.20	2.67	0.53	3.03	0.58	3.48	0.56	3.81	0.71	4.20	0.79
4	2.56	0.46	2.80	0.29	2.64	0.44	3.28	0.34	3.92	0.73	1.72	0.42	3.56	0.60	4.04	0.61	4.64	0.68	5.08	0.90	5.60	>1.00
5	3.20	0.41	3.50	0.32	3.30	0.46	4.10	0.38	4.90	>1.00	2.15	0.35	4.45	0.53	5.05	0.70	5.80	0.79	6.35	>1.00	7.00	>1.00
6	3.84	0.43	4.20	0.47	3.96	0.54	4.92	0.39	5.88	>1.00	2.58	0.32	5.34	0.52	6.06	0.72	6.96	0.91	7.62	>1.00	8.40	>1.00
7	4.48	0.35	4.90	0.34	4.62	0.43	5.74	0.48	6.86	0.84	3.01	0.15	6.23	0.49	7.07	0.63	8.12	0.72	8.89	0.82	9.80	0.82
8	5.12	0.31	5.60	0.26	5.28	0.31	6.56	0.57	7.84	0.69	3.44	0.10	7.12	0.45	8.08	0.57	9.28	0.61	10.16	0.71	11.20	0.61
9	5.76	0.14	6.30	0.21	5.94	0.19	7.38	0.38	8.82	0.49	3.87	0.07	8.01	0.35	9.09	0.35	10.44	0.42	11.43	0.58	12.60	0.46
Right Bank	6.40	0.00	7.00	0.00	6.60	0.00	8.20	0.00	9.80	0.00	4.30	0.00	8.90	0.00	10.10	0.00	11.60	0.00	12.70	0.00	14.00	0.00
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 (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: 10/9/2008

WBID #0049

Site #1

Upstream

WBID #0049

Site #2

Upstream

WBID #0049

Site #1

Downstream

WBID #0049

Site #2

Downstream

WBID #0049
Site #3
Downstream

WBID #0049
Site #4
Downstream

WBID #0049
Site #3
Upstream

WBID #0049
Site #4
Upstream

WBID #0049

Site #5

Downstream

WBID #0049

Site #6

Downstream

WBID #0049

Site #5

Upstream

WBID #0049

Site #6

Upstream

WBID #0649
Site #7
Downstream

WBID #0649
Site #8
Downstream

WBID #0649
Site #7
Upstream

WBID #0649
Site #8
Upstream

WBID #0049
Site #9
Downstream

WBID #0049
Site #9
Upstream