TOMS CREEK
WBID 2759

Recreational Use Attainability Analysis

May 2007

PREPARED FOR:
RFP No: B3Z07134
Water Quality Monitoring & Assessment Section
Water Protection Program
Division of Environmental Quality
MISSOURI DEPARTMENT OF NATURAL RESOURCES
301 West High Street
Jefferson City, MO 65102

PREPARED BY:
MEC WATER RESOURCES, INC
.1123 Wilkes Blvd., Ste. 400
Columbia, MO 65201

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): Toms Creek	
Missouri Water Body Identification (WBID) Number: 2759	
8-digit HUC: 11010007	County: Reynolds
Upstream Legal Description (from Table H): 10, 32N, 2W	
Downstream Legal Description(from Table H): mouth	
Number of sites evaluated 3	
List all sites numbers, listed cnsequantly upstream to downstream: Site 3, 2, 1	

II. Subsegmentation (fill this section out only in cases where subsegmentation is being proposed)

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Upstream Coordinates: UTM X Y		Downstream Coordinates: UTM X Y	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± _____ Feet or ± _____ Meters		
PDOP		± _____ Feet or ± _____ Meters	

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

Discharger Facility Name(s): Bunker WWTF
Discharger Permit Number(s): MO 0117951

IV. UAA Surveyor (please print legibly)

Name of Surveyor Nick Muenks	Telephone Number: 573-443-4100
Organization/Employer: MEC WATER Resources	
Position: Water Quality Scientist	

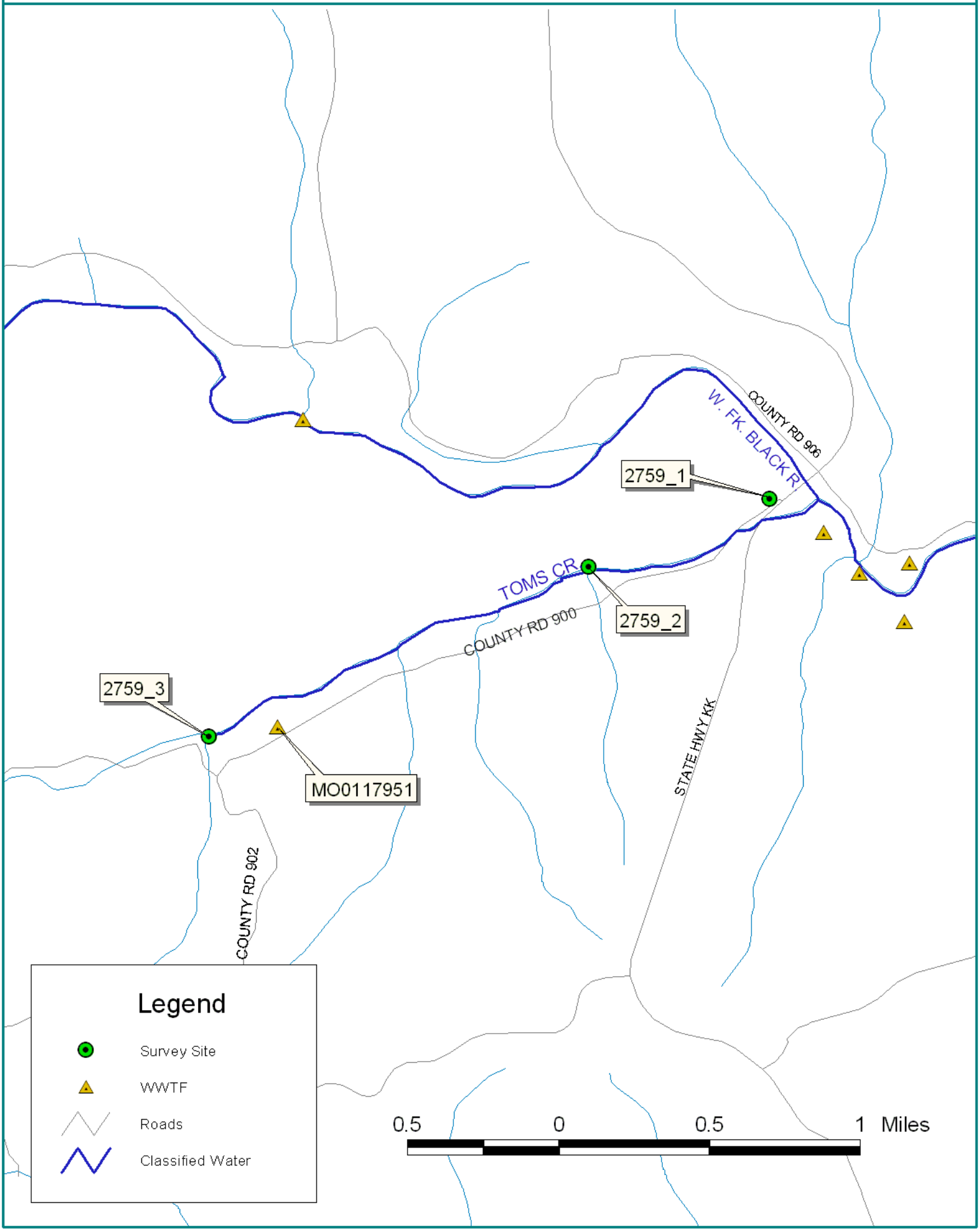
Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Signed: Nick Muenks **Date:** 5/7/07

RNC 5-14-07

[illegible] 5/19/07

Toms Creek (2759), Length = 1.5 mi., Permit # MO0117951



WBID# 2759
Site# 1

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: 5/7/07 8:15	Site Location Description (e.g., road crossing): Cnty 900 near confluence w/ Black River
Personnel (Data Collectors): NM, JR	
Current Weather Conditions: Mostly Sunny	Facility Name: Bunker WWTF Permit Number: MO 0117951
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought ☑; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: 0666873		Y: 4151295	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	X	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± 50 Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID_Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID_Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
2759 1	dwnstrm		
2759 1	"		
2759 1	upstream		
2759 1	upstream		

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.)

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	☐ Campgrounds
☐ Boating accesses	☐ State parks	☒ National forests	☐ Nature trails	☐ Stairs/walkway
☐ No trespass sign	☐ Fence	☐ Steep slopes	☐ None of the above	☐ Other:

Comments: ~~county road~~ NM

WBID# 2759
Site# 1

Field Data Sheets for Recreational Use Stream Surveys

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

Indications of Human Use*: (attach photos)

☒ Roads	☐ Rope swings	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Camping Sites		☐ Fire pit/ring	~~☒ NPDES Discharge~~ NM	☐ Fishing Tackle	☐ Other:
Comments:					

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? ☒ Yes ☐ No

If so, is there an obvious current? ☒ Yes ☐ No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE	1	60	6.70	150		0.27
RUN	11	60	5.8	70		0.38
POOL					None	present

Downstream View's Physical Descriptions: Is there any water present at this view? ☐ Yes ☐ No

If so, is there an obvious current? ☐ Yes ☐ No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

~~0~~ 5 % Cobble NM	85 % Gravel	10 % Sand	0 % Silt	0 % Mud/Clay	0 % Bedrock

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

None observed

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:
WATER SURFACE DEPOSITION:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ Other:

Comments: Please attach any additional comments to this form.

*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.

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

Surveyor's Signature: Nick Maenks Date of Survey: 5/7/07

Organization: MEC Water Resources Position: Water Quality Scientist

February 16, 2007

[illegible] 5-14-07

[illegible] 5/22/07

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: ~~2795~~ NM 2759 Site #: 1
(WBID_Site#)

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

GPS Location (taken at transect 1):
UTM X: 0666873 UTM Y: 4151295
Horizontal Accuracy Estimate (GPS Data Quality): +/- 52.0 (feet)

Average Stream Width: 7.6 (meters) Length of Survey Segment: 152 (meters)
(20x average stream width)

Field Staff: Nick Muenks Jerrod Roberts

Dissolved Oxygen

Date: ~~5/7/06~~ NM 5/7/07 Time: 815

Dissolved Oxygen: 9.43 (mg/L)

Dissolved Oxygen: 94.2 (% sat)

Specific Cond: 172.3 (µS/cm)

Water Temperature: 15.7 (°C)

Transect Cross-Section

Measurement	01 Distance (m)	01 Depth (m)	02 Distance (m)	02 Depth (m)	03 Distance (m)	03 Depth (m)	04 Distance (m)	04 Depth (m)	05 Distance (m)	05 Depth (m)	06 Distance (m)	06 Depth (m)	07 Distance (m)	07 Depth (m)	08 Distance (m)	08 Depth (m)	09 Distance (m)	09 Depth (m)	10 Distance (m)	10 Depth (m)	11 Distance (m)	11 Depth (m)
1	0.15	0.14	0.20	0.10	1.85	0.10	0.60	0.10	0.20	0.11	0.25	0.12	0.00	0.11	0.10	0.12	0.10	0.11	0.20	0.10	0.20	0.11
2	0.80	0.10	1.01	0.12	2.51	0.19	1.46	0.10	1.10	0.10	1.03	0.17	1.00	0.20	1.00	0.13	0.96	0.20	0.78	0.28	0.57	0.30
3	1.45	0.16	1.92	0.10	3.17	0.18	2.32	<0.10	2.00	0.10	2.01	0.10	2.00	<0.10	1.90	0.30	1.82	0.21	1.36	0.27	0.94	0.36
4	2.10	0.25	2.73	0.12	3.83	0.14	3.18	0.10	2.90	0.10	2.99	<0.10	3.00	0.36	2.80	0.29	2.68	0.27	1.94	0.22	1.31	0.38
5	2.75	0.26	3.54	0.16	4.49	0.14	4.04	0.16	3.80	0.10	3.97	0.10	4.00	0.17	3.70	0.18	3.54	0.23	2.52	0.30	1.68	0.33
6	3.40	0.23	4.35	0.20	5.15	0.18	4.90	0.23	4.70	0.16	4.95	0.14	5.00	0.10	4.60	<0.10	4.40	0.18	3.10	0.18	2.05	0.30
7	4.05	0.21	5.16	0.21	5.81	0.19	5.76	0.25	5.60	0.22	5.93	0.17	6.00	<0.10	5.50	0	5.26	<0.10	3.68	0.11	2.42	0.28
8	4.70	0.27	5.97	0.21	6.47	0.19	6.62	0.25	6.50	0.21	6.91	0.20	7.00	0.11	6.40	<0.10	6.12	<0.10	4.26	0.12	2.79	0.22
9	5.35	0.22	6.78	0.18	7.13	0.22	7.48	0.34	7.40	0.16	7.89	0.24	8.00	0.14	7.30	0.17	6.98	0.23	4.84	0.13	3.16	0.17
10	6.00	0.21	7.59	0.11	7.79	0.19	8.34	0.32	8.30	0.20	8.87	0.16	9.00	0.16	8.20	0.15	7.84	0.25	5.42	0.11	3.53	0.14
11	6.65	0.17	7.85	0.10	8.43	0.10	9.20	0.14	9.20	0.18	9.85	0.16	10.00	0.13	9.10	0.18	8.70	0.18	6.00	0.10	3.90	0.11
12	6.70	0	8.10	0	9.80	0	9.25	0	9.50	0	10.05	0	10.60	0	9.15	0	8.85	0	9.90	0	5.80	0
Feature Type (riffle, run, or pool)	riffle		riffle		riffle		riffle		riffle		riffle		riffle		riffle		riffle		riffle		run	

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.
Transects in order of up to downstream.
Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1
Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: Nick Muenks Date: 5/7/07

RMC 5-18-07
AK 5/22/07

WBID# 2759
Site# 2

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: 5/7/07 11:15	Site Location Description (e.g., road crossing): @ 0.10 miles North of Cnty 900 down small path near small tributary
Personnel (Data Collectors): NM / JR	
Current Weather Conditions: Mostly Sunny	Facility Name:
	Permit Number:
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought ☒; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X:		Y:	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	X	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± 50 Feet or ± _____ Meters		
PDOP		± _____ Feet or ± _____ Meters	

Photos:

Photo ID# (WBID_Site#_##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID_Site#_##)	Photo Purpose and Direction (upstream, downstream, other)
2759 2	upstream ~~Downstream~~ transect 10	2759 2	~~D~~ NM Upstream Transect 1
2759 2	~~upstream transect 10~~ NM " " "	2759 2	" " "
~~2759 2~~	upstrm " "	2759 2	Dwnstrm Transect 1
2759 2	Down stream		" " "
	Downstream " "		

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.)

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	☐ Campgrounds
☐ Boating accesses	☐ State parks	☒ National forests	☐ Nature trails	☐ Stairs/walkway
☐ No trespass sign	☐ Fence	☐ Steep slopes	☐ None of the above	☐ Other:

Comments:

WBID# 2759
Site# 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Indications of Human Use*: (attach photos)

☒ Roads	☐ Rope swings	☒ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☒ RV / ATV Tracks
☐ Camping Sites		☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Other:

Comments: Path lead from County road to stream, had recent ATV tracks, Gravel mining ~~beig~~ being conducted downstream of ~~Tran~~ Transect 11

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? ☒ Yes ☐ No

If so, is there an obvious current? ☒ Yes ☐ No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE	08	200	6.50	120		0.36
RUN	11	75	6.00	72		0.50
~~POOL~~			None observed			

Downstream View's Physical Descriptions: Is there any water present at this view? ☐ Yes ☐ No

If so, is there an obvious current? ☐ Yes ☐ No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

40	% Cobble	45	% Gravel	10	% Sand	0	% Silt	5	% Mud/Clay	0	% Bedrock

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

None observed

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:
WATER SURFACE DEPOSITION:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ Other:

Comments: Please attach any additional comments to this form.

*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.

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

Surveyor's Signature: [signature] Date of Survey: 5/7/07

Organization: MEC Water Resources Position: Water Quality Scientist

BWC 5-14-07

February 16, 2007

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 2759 Site #: 2
(WBID_Site#)

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

GPS Location (taken at transect 1):
UTM X: 0665907 UTM Y: 4150936
Horizontal Accuracy Estimate (GPS Data Quality): +/- 25 (feet)

Average Stream Width: 12 (meters) Length of Survey Segment: 240 (meters)
(20x average stream width)

Field Staff: Nick Muenks Jerrod Roberts

Dissolved Oxygen

Date: 5/7/07 Time: 11:15

Dissolved Oxygen: 9.53 (mg/L)

Dissolved Oxygen: 98.7 (% sat)

Specific Cond: 174 (µS/cm)

Water Temperature: 17.2 (°C)

Transect Cross-Section

Measurement	01 Distance (m)	01 Depth (m)	02 Distance (m)	02 Depth (m)	03 Distance (m)	03 Depth (m)	04 Distance (m)	04 Depth (m)	05 Distance (m)	05 Depth (m)	06 Distance (m)	06 Depth (m)	07 Distance (m)	07 Depth (m)	08 Distance (m)	08 Depth (m)	09 Distance (m)	09 Depth (m)	10 Distance (m)	10 Depth (m)	11 Distance (m)	11 Depth (m)
1	0.20	0.10	0.20	0.10	1.0	0.10	0.20	0.10	0.80	0.10	0.10	0.10	1.0	0.10	0.20	0.12	0.60	0.10	0.10	0.11	1.50	0.10
2	1.30	0.16	1.10	0.10	1.80	0.13	1.00	<0.10	1.55	<0.10	0.70	0.27	1.43	0.14	0.80	0	1.20	0.15	0.83	0.40	1.95	0.12
3	2.40	0.16	2.00	0.25	2.60	0.17	1.80	<0.10	2.30	<0.10	1.30	0.19	1.86	0.22	1.40	0.10	1.80	0.26	1.56	0.44	2.40	0.14
4	3.50	0.22	2.90	0.24	3.40	0.16	2.60	0.11	3.05	0.13	1.90	0.14	2.29	0.26	2.00	0.13	2.40	0.27	2.39	0.34	2.85	0.17
5	4.60	<0.10	3.80	0.20	4.20	0.20	3.40	0.12	3.80	0.18	2.50	0.17	2.72	0.24	2.60	0.25	3.00	0.37	3.22	0.20	3.30	0.21
6	5.70	0	4.70	0.12	5.00	0.22	4.20	0.10	4.55	0.20	3.10	0.18	3.15	0.31	3.20	0.28	3.60	0.42	4.05	0.10	3.75	0.34
7	6.80	0	5.60	0.10	5.80	0.18	5.00	0.14	5.30	0.20	3.70	0.18	4.58	0.28	3.80	0.36	4.20	0.43	4.88	<0.10	4.20	0.50
8	7.90	0.13	6.50	<0.10	6.60	0.15	5.80	0.16	6.05	0.20	4.30	0.21	5.01	0.27	4.40	0.28	4.80	0.42	5.71	<0.10	4.65	0.41
9	8.00	0.21	7.40	0.10	7.40	0.10	6.60	0.20	6.80	0.19	4.60	0.27	5.44	0.31	5.00	0.19	5.40	0.40	6.54	0.12	5.10	0.37
10	9.10	0.21	8.30	<0.10	8.20	0.13	7.40	0.23	7.55	0.19	5.20	0.19	5.87	0.32	5.60	0.21	6.00	0.28	7.37	0.23	5.55	0.28
11	10.20	0.10	9.20	0.10	9.00	0.10	8.20	0.11	8.30	0.11	5.80	0.10	6.30	0.26	6.20	0.10	6.60	0.11	8.20	0.10	~~7.00~~ 6.00	0.13
12	10.30	0	10.00	0	9.05	0	8.70	0	9.65	0	6.25	0	~~7.07~~ 7.15	0	6.50	0	6.75	0	8.20	0	6.00	0
Feature Type (riffle, run, or pool)	riffle		riffle		riffle		riffle		riffle		riffle		riffle		riffle		run		run		run	

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.
Transects in order of up to downstream.
Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1
Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: Nick Muenks Date: 5/7/07

MKC 5-14-07
CAL 5/22/07

WBID# 2759
Site# 3

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: 5/7/07 ~~14~~ NM 1345	Site Location Description (e.g., road crossing): strm at bend in Cnty Rd 900 access cnty Rd 90 Bend N → W
Personnel (Data Collectors): NM / JR	
Current Weather Conditions: Partly Sunny	Facility Name: Bunker WWTF
	Permit Number: MO 0117951
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought ☒; Phase I ☐; Phase II ☐; Phase III ☐; Phase IV ☐; Unknown ☐	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: 0663888		Y: 4150031	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	X	Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± 21.0 Feet or ± _____ Meters		
PDOP		± _____ Feet or ± _____ Meters	

Photos:

Photo ID# (WBID_Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID_Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
2759_3	Down Transect 3		
2759_3	Down "		
2759_3	Up "		
2759_3	Up "		

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.)

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	☐ Campgrounds
☐ Boating accesses	☐ State parks	☒ National forests	☐ Nature trails	☐ Stairs/walkway
☐ No trespass sign	☐ Fence	☐ Steep slopes	☐ None of the above	☐ Other:

Comments:

WBID# 2759
Site# 3

Field Data Sheets for Recreational Use Stream Surveys

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

Indications of Human Use*: (attach photos)

☒ Roads	☐ Rope swings	☐ Foot paths/prints	☐ Dock/platform	☐ Livestock Watering	☐ RV / ATV Tracks
☐ Camping Sites		☐ Fire pit/ring	☐ NPDES Discharge	☐ Fishing Tackle	☐ Other:
Comments:					

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? ☒ Yes ☐ No

If so, is there an obvious current? ☒ Yes ☐ No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE	10	90	6.20	15		0.29
RUN	11	100	3.70	20		0.76
POOL		None	Observed			

Downstream View's Physical Descriptions: Is there any water present at this view? ☐ Yes ☐ No

If so, is there an obvious current? ☐ Yes ☐ No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

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

15 % Cobble	80 % Gravel	5 % Sand	0 % Silt	0 % Mud/Clay	0 % Bedrock

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

None observed

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:
WATER SURFACE DEPOSITION:	☐ Oil	☐ Scum	☐ Foam	☒ None	☐ Other:

Comments: Please attach any additional comments to this form.

*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.

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

Surveyor's Signature: Nick Muenks Date of Survey: 5/7/07

Organization: MEC Water Resources Position: Water Quality Scientist

mc 5-14-07

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 2759 Site #: 3
(WBID_Site#)

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

GPS Location (taken at transect 1):
~~UTM X~~ UTM Y: 4150031 UTM X: 0663888

Horizontal Accuracy Estimate (GPS Data Quality): +/- 21.0 (feet)

Average Stream Width: 5 (meters) Length of Survey Segment: 100 (meters)
(20x average stream width)

Field Staff: Nick Muenks Jerrod Roberts

Dissolved Oxygen

Date: 5/7/07 Time: 13:45

Dissolved Oxygen: 11.77 (mg/L)

Dissolved Oxygen: 128.5 (% sat)

Specific Cond: 177.6 (µS/cm)

Water Temperature: 19.5 (°C)

Transect Cross-Section

Measurement	01 Distance (m)	01 Depth (m)	02 Distance (m)	02 Depth (m)	03 Distance (m)	03 Depth (m)	04 Distance (m)	04 Depth (m)	05 Distance (m)	05 Depth (m)	06 Distance (m)	06 Depth (m)	07 Distance (m)	07 Depth (m)	08 Distance (m)	08 Depth (m)	09 Distance (m)	09 Depth (m)	10 Distance (m)	10 Depth (m)	11 Distance (m)	11 Depth (m)
1	1.0	0.10	1.3	0.10	2.0	0.10	0.60	0.10	0.0	0.15	0.60	0.10	0.30	0.13	0.40	0.10	1.0	0.10	0.30	0.11	0.0	0.62
2	1.45	0.13	1.65	0.15	2.37	0.13	1.10	0.14	0.35	0.23	1.05	0.14	0.73	0.19	1.05	0.15	1.45	0.11	0.85	0.22	0.30	0.68
3	1.90	0.15	2.00	0.17	2.74	0.18	1.60	0.19	0.70	0.24	1.50	0.20	1.16	0.20	1.70	0.18	1.90	0.11	1.40	0.21	0.60	0.76
4	2.35	0.17	2.35	0.21	3.11	0.21	2.10	0.21	1.05	0.24	1.95	0.22	1.59	0.22	2.35	0.18	2.35	0.17	1.95	0.29	0.90	0.67
5	2.80	0.18	2.70	0.26	4.48	0.23	2.60	0.22	1.40	0.23	2.40	0.22	2.02	0.18	3.00	0.21	2.80	0.19	2.50	0.18	1.20	0.64
6	3.25	0.20	3.05	0.28	4.85	0.24	3.10	0.22	1.75	0.23	2.85	0.19	2.45	0.20	3.65	0.32	3.25	0.20	3.05	0.17	1.50	0.58
7	3.70	0.33	3.40	0.32	5.22	0.26	3.60	0.20	~~2.24~~ 2.60	0.21	3.30	0.19	2.88	0.19	4.30	0.56	3.70	0.25	3.60	0.18	1.80	0.46
8	4.15	0.47	3.75	0.30	5.59	0.23	4.10	0.17	2.45	0.21	3.75	0.21	3.31	0.17	4.95	0.55	4.15	0.28	4.15	0.11	2.10	0.33
9	4.60	0.39	4.10	0.21	5.96	0.14	4.60	0.17	2.80	0.15	4.20	0.28	3.74	0.10	5.60	0.54	4.60	0.29	4.70	<0.10	2.40	0.19
10	5.05	0.19	4.45	0.19	6.33	0.23	5.10	0.22	3.15	0.12	4.65	0.36	4.17	0.10	6.35	0.45	5.05	0.22	5.25	<0.10	2.70	0.14
11	5.50	0.10	4.80	0.11	6.70	0.20	5.60	0.13	3.50	0.10	5.10	0.10	4.60	0.10	7.00	0.19	5.50	0.12	5.80	0.18	3.00	0.17
12	5.80	0	5.00	0	6.78	0	5.60	0	5.60	0	5.30	0	4.80	0	7.15	0	6.10	0	6.20	0	3.70	0
Feature Type (riffle, run, or pool)	run		run		riffle		riffle		riffle		~~riffle~~ run		riffle		run		run		riffle		run	

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.
Transects in order of up to downstream.
Mark dry depth measurements as 0; measurements less than 0.1m as <0.1; and greater than 1m as >1
Measurement 1 depth = 0.1m (unless depth is insufficient); Measurement 11 depth = 0.1m (unless depth is insufficient); Measurement 12 distance = entire wetted width distance and depth = 0m.

Signed: Nick Muenks Date: 5/7/07

5-14-07

5/22/07

WBID# 2759 Toms Creek

Site# 1 Photo ID# 518, Downstream

Site# 1 Photo ID# 520, Upstream

Site# 2 Photo ID# 522, T 10, Downstream

Site# 2 Photo ID# 525, T 10, Upstream

WBID# 2759 Toms Creek

Site# 2 Photo ID# 527, T1

Site# 2 Photo ID# 529, T1

Site# 3 Photo ID# 532, Downstream

Site# 3 Photo ID# 533, Upstream