



Missouri
Department of
Natural Resources

**EAST FORK ROUBIDOUX CREEK
WBID 1518**

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):	East Fork Roubidoux Creek		
Missouri Water Body Identification (WBID) Number:	1518		
8-digit HUC:	10290201	County:	Texas
Upstream Legal Description (from Table H):	24, 31W, 11W		
Downstream Legal Description (from Table H):	4, 31W, 11W		
Number of sites evaluated	2		
List all sites numbers, listed cnsquently upstream to downstream:	Site 1, Site 2		

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

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Upstream Coordinates:		Downstream Coordinates:	
UTM X	Y	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):	Success Quarry
Discharger Permit Number(s):	MO 6490280

IV. UAA Surveyor (please print legibly)

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

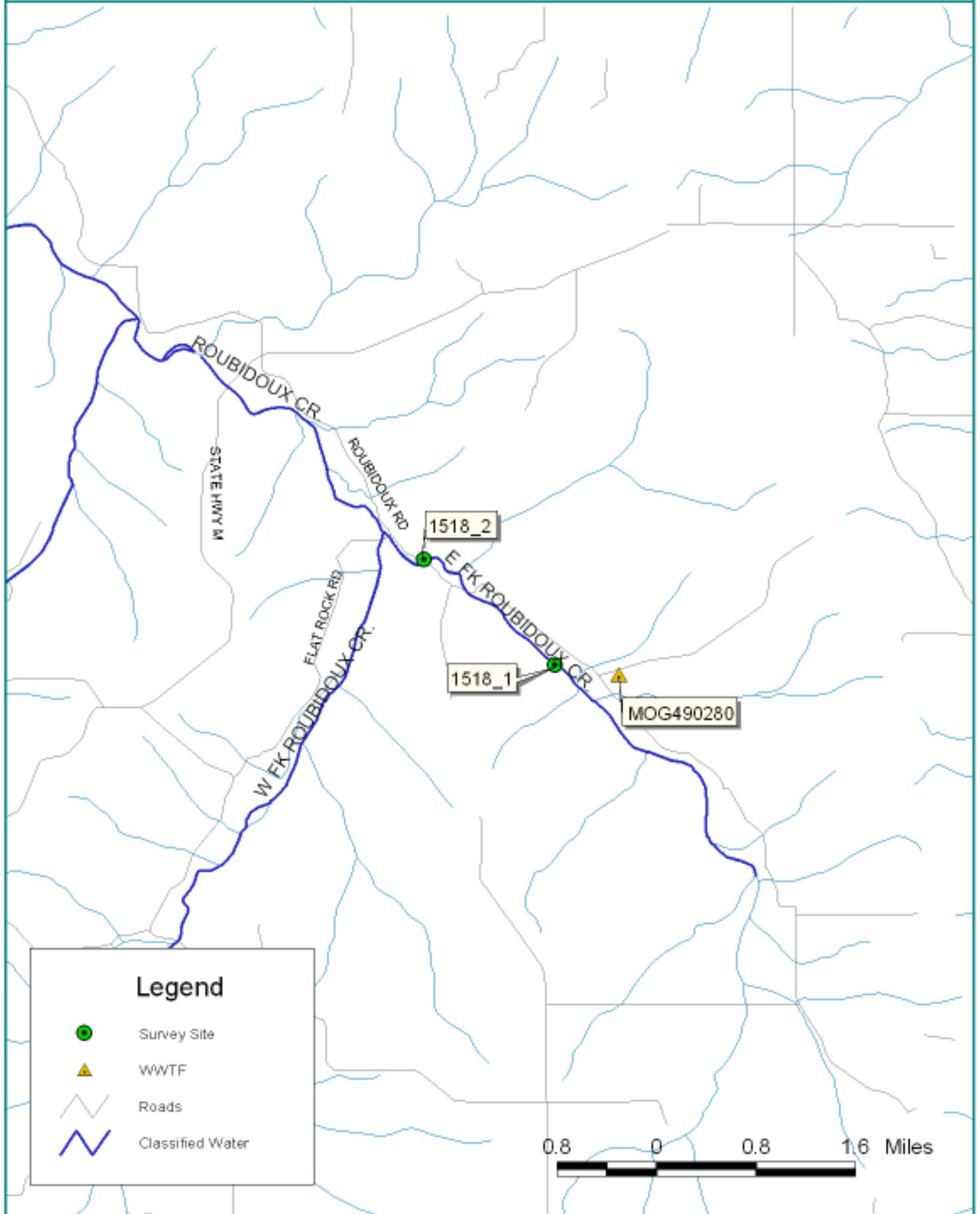
Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Signed: Nick Muenks Date: 5/8/07

ORC 5-19-07

AMC 5/21/07

E Fk Roubidoux Creek (1518), Length = 4.0 mi., Permit # MOG490280



WBID# 1518
 Site# 1

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>5/8/07 11:15</u>	Site Location Description (e.g., road crossing): <u>Off Roubidoux Rd (south) approx 1/4 mile through farm field @ 0.120 miles west of AN junction</u>
Personnel (Data Collectors): <u>NM/JR</u>	Facility Name: <u>Success Quarry</u>
Current Weather Conditions: <u>Mostly Sunny</u>	Permit Number: <u>MO 6490280</u>
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought <input type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>0577665</u>		Y: <u>4140389</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode	<input checked="" type="checkbox"/>	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	± <u>16.</u> 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)
<u>1518-1-565</u>	<u>Downstream T1</u>	<u>1518-1-569</u>	<u>upstream from T8</u>
<u>1518-1-566</u>	<u>Downstream TL</u>	<u>1518-1-570</u>	<u>downstream from T8</u>
<u>1518-1-567</u>	<u>Upstream T1</u>	<u>1518-1-571</u>	<u>Road into stream at T11</u>
<u>1518-1-568</u>	<u>Upstream T1</u>		

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

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments: <u>Site located through farm on private property</u>				

WBID# 1518
 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)

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input checked="" type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites		<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:
Comments: <u>Gravel mining in stream</u>					

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) <i>% of reach</i>	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE			<u>20</u>			
RUN			<u>40</u>			
POOL			<u>40</u>			

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%.)

<u>80</u> % Cobble	<u>15</u> % Gravel	<u>5</u> % Sand	<u>0</u> % Silt	<u>0</u> % Mud/Clay	<u>0</u> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Algal mats present throughout site, benthic algae present at all sites covering about 90% of substrate (except in riffles)

Water Characteristics*: (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> 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 Muenke Date of Survey: 5/8/07
 Organization: MEC Water Resources Position: Water Quality Scientist

REC 5-19-07
AK 5/21/07

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: <u>1518</u> Site #: <u>4</u> (WBID_Site#) Estimated Channel Incision: <u>0.10</u> (m) (height between low bank width and water) GPS Location (taken at transect 1): UTM X: <u>05 77665</u> UTM Y: <u>4140 389</u> Horizontal Accuracy Estimate (GPS Data Quality): <u>+/- 16</u> (feet)	Dissolved Oxygen Date: <u>5/8/07</u> Time: <u>11:15</u> Dissolved Oxygen: <u>9.00</u> (mg/L) Dissolved Oxygen: <u>96.0</u> (% sat) Specific Cond: <u>420.2</u> (µS/cm) Water Temperature: <u>18.4</u> (°C)
Average Stream Width: <u>10</u> (meters) Length of Survey Segment: <u>300</u> (meters) (20x average stream width) Field Staff: <u>Nick Muenks Jerrod Roberts</u>	

Measurement	01		02		03		04		05		06		07		08		09		10		11		
	Distance (m)	Depth (m)																					
1	0.10	0.10	0.60	0.10	1.0	0.10	0.50	0.11	4.0	0.13	3.0	0.10	1.0	0.14	2.40	0.10	0.40	0.10	0.40	0.10	0.20	0.10	0.10
2	1.05	0.26	1.55	0.43	1.75	0.16	1.34	0.16	4.18	0.13	3.20	0.14	1.55	0.18	2.80	0.10	1.10	0.32	0.80	0.10	0.80	0.10	0.23
3	2.10	0.32	2.50	0.68	3.30	0.16	1.68	0.11	4.36	0.16	3.40	0.13	2.10	0.17	3.20	0.10	1.80	0.37	1.40	0.19	0.19	0.19	0.19
4	3.15	0.46	3.45	0.92	4.85	0.10	2.02	0.14	4.54	0.18	3.60	0.14	2.65	0.23	3.60	0.10	2.50	0.44	2.00	0.17	0.17	0.17	0.17
5	4.20	0.56	4.40	0.92	6.40	0.10	2.36	0.13	4.72	0.18	3.80	0.18	3.20	0.30	4.00	0.10	3.20	0.39	2.60	0.13	0.13	0.13	0.13
6	5.25	0.66	5.35	1.00	7.95	0.10	2.70	0.16	4.90	0.15	4.00	0.14	3.75	0.29	4.40	0.10	3.90	0.33	3.20	0.16	0.16	0.16	0.16
7	6.30	0.69	6.30	0.85	9.50	0	3.04	0.19	5.08	0.18	4.20	0.14	4.30	0.30	4.80	0.10	4.60	0.16	3.80	0.23	0.23	0.23	0.23
8	7.35	0.69	7.25	0.89	11.05	0	3.38	0.15	5.26	0.33	5.40	0.11	4.85	0.29	5.20	0.10	5.30	0.16	4.40	0.25	0.25	0.25	0.25
9	8.40	0.71	8.20	0.69	12.60	0.29	3.72	0.18	5.44	0.12	4.60	0.10	5.40	0.23	5.60	0.10	6.00	0.14	5.00	0.19	0.19	0.19	0.19
10	9.45	0.54	9.15	0.40	14.15	0.21	4.06	0.19	6.62	0.13	4.80	0.12	5.95	0.19	6.00	0.10	6.70	0.12	5.60	0.15	0.15	0.15	0.15
11	10.50	0.14	10.10	0.12	15.70	0.12	4.40	0.15	5.80	0.10	5.00	0.10	6.50	0.18	6.40	0.10	7.40	0.11	6.20	0.10	0.10	0.10	0.10
12	10.90	0	10.20	0	15.70	0	5.00	0	6.50	0	5.80	0	8.10	0	7.20	0	8.20	0	6.50	0	0	0	0
Feature Type (riffle, run, or pool)	pool	pool	pool	pool	riffle	pool	pool	pool	pool														

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.
 Transacts 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: 5/8/07
RR 5/21/07

WBID# 1518
 Site# 2

Field Data Sheets for Recreational Use Stream Surveys

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

Date & Time: <u>5/8/07</u>	Site Location Description (e.g., road crossing): <u>Western Most Rd crossing at Roubidoux Rd</u>
Personnel (Data Collectors): <u>NM/SR</u>	Facility Name: <u>Success Quarry</u>
Current Weather Conditions: <u>Mostly Cloudy</u>	Permit Number: <u>MO 6490280</u>
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought <input type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>0575984</u>		Y: <u>4141756</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)			
Static Mode	<input checked="" type="checkbox"/>	Interpolation	
Dynamic Mode (Kinematic)	<input type="checkbox"/>	Topographic Map or DRG	
Precise Positioning Service	<input type="checkbox"/>	Aerial Photograph or DOQQ	
Signal Averaging	<input type="checkbox"/>	Satellite Imagery	
Real Time Differential Processing	<input type="checkbox"/>	Interpolation Other	
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>22.0</u> 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)
<u>1518-2-572</u>	<u>Upstream from T1</u>	<u>1518-2-576</u>	<u>Downstream from T1</u>
<u>1518-2-573</u>	<u>Upstream from T1</u>	<u>1518-2-577</u>	<u>Upstream from T9</u>
<u>1518-2-574</u>	<u>Downstream from T1</u>	<u>1518-2-578</u>	<u>Downstream from T9</u>
<u>1518-2-575</u>	<u>Downstream from T1</u>	<u>1518-2-579</u>	<u>Downstream from T9</u>
		<u>1518-2-580</u>	<u>road crossing</u>

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

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes *	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments: * at ^{up} upstream from road crossing				

WBID# 1578
 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)

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments: <u># road crossing - no tracks in stream</u>					

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) <i>% of reach</i>	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE			<u>25</u>			
RUN			<u>15</u>			
POOL			<u>60</u>			

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%.)

<u>40</u> % Cobble	<u>50</u> % Gravel	<u>10</u> % Sand	<u>0</u> % Silt	<u>0</u> % Mud/Clay	<u>0</u> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Leathic algae covering approximately 5% of substrate in reach

Water Characteristics*: (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> 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: Neil Muehle Date of Survey: 5/8/07
 Organization: MEC Water Resources Position: Water Quality Scientist

*By WC 5-19-07
 AMK 5/24/07*

MEC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 1518 Site #: 2 (WBID_Site#)
 Estimated Channel Incision: 0.20 (m) (height between low bank width and water)
 GPS Location (taken at transect 1): X:0575984 Y:4141756
 UTM X: 0575927m UTM Y: 4141742
 Horizontal Accuracy Estimate (GPS Data Quality): +/- 18.2m (feet) 22.0
 Average Stream Width: 15.8m 10m (meters) Length of Survey Segment: 300 (meters)
 (20x average stream width)
 Field Staff: Nick Muenkel Sevrod Roberts

Dissolved Oxygen
 Date: 5/8/07 Time: 1320
 Dissolved Oxygen: 10.54 (mg/L)
 Dissolved Oxygen: 116.2 (% sat)
 Specific Cond: 413.0 (µS/cm)
 Water Temperature: 20.0 (°C)

Transect Cross-Section

Measurement	01		02		03		04		05		06		07		08		09		10		11		
	Distance (m)	Depth (m)																					
1	0.0	0.13	0.2	0.11	0.0	0.1	0.0	0.1	0.0	0.12	0.10	0.10	0.10	0.10	0.10	0.29	1.0	0.10	0.40	0.40	0.30	0.30	0.10
2	1.85	0.71	1.80	0.72	1.67	0.53	2.03	0.53	3.70	0.30	0.12	1.52	0.20	2.25	0.52	1.17	0.15	0.82	0.82	0.30	1.45	0.57	0.57
3	3.70	0.77	3.40	0.71	3.34	0.67	4.06	0.67	7.10	0.71	1.80	0.12	2.44	0.24	3.60	0.65	1.34	0.15	1.24	0.30	2.60	0.52	0.52
4	5.55	0.78	5.00	0.71	5.01	0.70	5.09	0.70	11.10	0.70	2.05	0.13	3.36	0.26	4.95	0.33	1.51	0.10	1.66	0.34	3.75	0.41	0.41
5	7.40	0.76	6.60	0.71	6.68	1.00	8.12	0.69	14.80	0.70	2.30	0.15	4.28	0.36	6.30	0.70	1.68	0.12	2.08	0.40	4.90	0.43	0.43
6	9.25	0.75	8.20	0.96	9.35	0.82	9.15	0.61	18.50	0.70	2.55	0.13	5.20	0.34	7.65	0.70	1.85	0.15	2.50	0.38	6.05	0.31	0.31
7	11.10	0.80	9.80	0.73	10.02	0.72	12.18	0.52	22.00	0.70	2.80	0.16	6.12	0.30	9.00	0.67	2.02	0.26	2.92	0.38	7.20	0.27	0.27
8	12.95	0.79	11.40	0.53	11.69	0.58	14.21	0.58	25.90	0.70	3.05	0.13	7.04	0.21	10.35	0.13	2.19	0.23	3.34	0.34	8.35	0.23	0.23
9	14.80	0.67	13.00	0.36	13.36	0.43	16.24	0.51	29.60	0.73	3.30	0.13	7.96	0.14	11.70	0.37	2.36	0.14	3.76	0.25	9.50	0.20	0.20
10	16.65	0.55	14.60	0.19	15.03	0.28	18.27	0.50	32.30	0.48	3.55	0.11	8.88	0.11	13.05	0.61	2.53	0.10	4.18	0.15	10.65	0.19	0.19
11	18.50	0.12	16.20	0.10	16.70	0.10	20.30	0.13	37.00	0.10	3.80	0.10	9.80	0.10	14.40	0.10	2.70	0.10	4.60	0.11	11.80	0.11	0.11
12	pool	pool	pool																				

Feature Type (riffle, run, or pool): pool pool

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 Muenkel Date: 5/8/07
RWC 5-19-07
5/24/07

WBID# 1518



Site# 1 Photo ID# 1518-1-565, Downstream T-1



Site# 1 Photo ID# 1518-1-566, Downstream T-1



Site# 1 Photo ID# 1518-1-567, Upstream T-1



Site# 1 Photo ID# 1518-1-568, Upstream T-1

WBID# 1518



Site# 1 Photo ID# 1518-1-569, Upstream T-8



Site# 1 Photo ID# 1518-1-570, Downstream T-8



Site# 1 Photo ID# 1518-1-571, Road into stream



Site# 2 Photo ID# 1518-2-572, Upstream T-1

WBID# 1518



Site# 2 Photo ID# 1518-2-573, Upstream T-1



Site# 2 Photo ID# 1518-2-574, Downstream T-1



Site# 2 Photo ID# 1518-2-575, Downstream T-1



Site# 2 Photo ID# 1518-2-576, Downstream T-1

WBID# 1518



Site# 2 Photo ID# 1518-2-577, Upstream T-9



Site# 2 Photo ID# 1518-2-578, Downstream T-9



Site# 2 Photo ID# 1518-2-579, Downstream T-9



Site# 2 Photo ID# 1518-2-580, Road crossing