

DITCH # 1
WBID 3048

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): <u>Ditch # 1</u> | |
| Missouri Water Body Identification (WBID) Number: <u>3048</u> | |
| 8-digit HUC: <u>08020204</u> | County: <u>Scott</u> |
| Upstream Legal Description (from Table H): <u>4, 27N, 13E</u> | |
| Downstream Legal Description (from Table H): <u>15, 27N, 13E</u> | |
| Number of sites evaluated <u>3</u> | |
| List all sites numbers, listed consequently upstream to downstream: <u>Sites - 1, 2, 3</u> | |

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): <u>Dran WWTF</u> |
| Discharger Permit Number(s): <u>MO 0043532</u> |

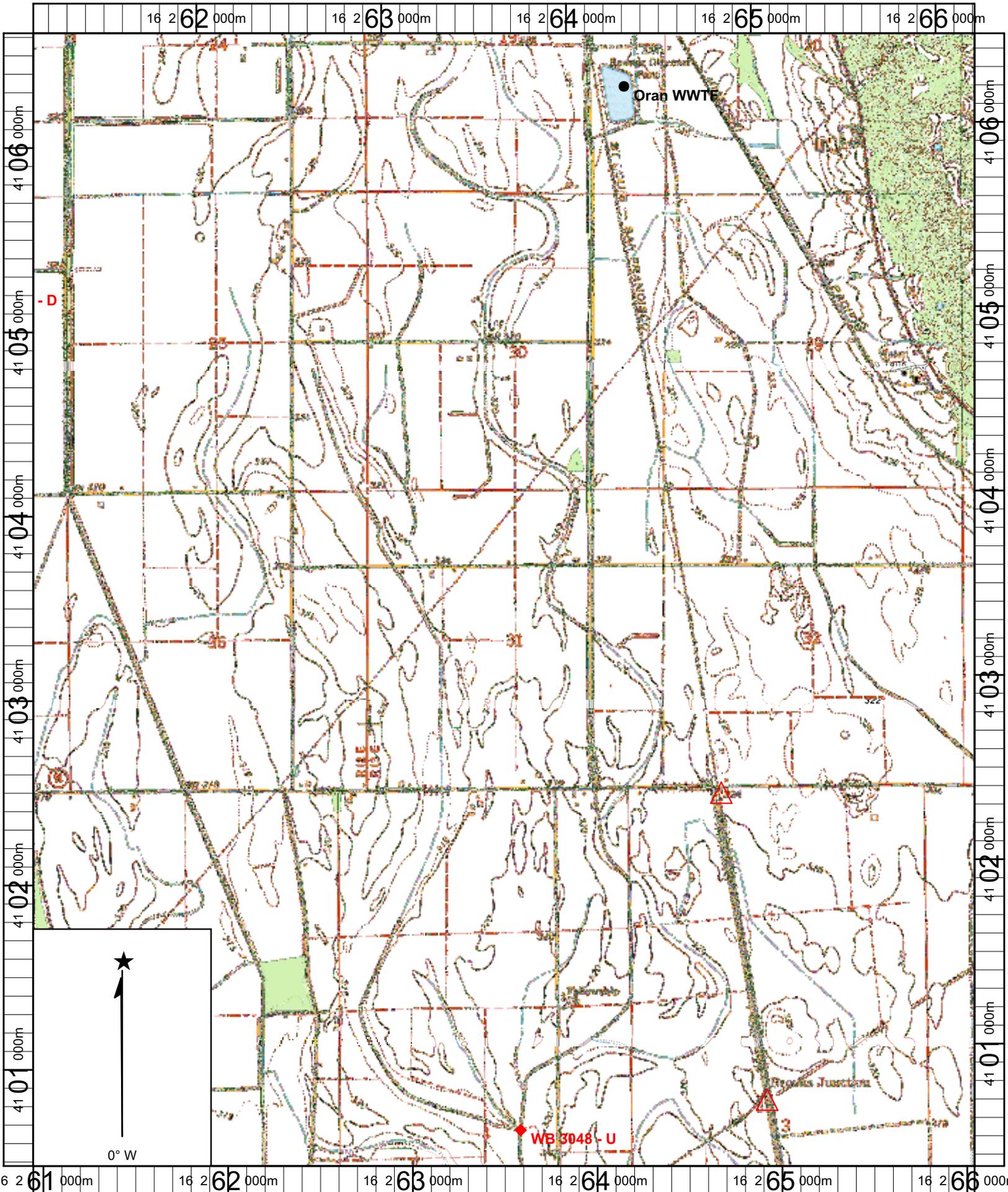
IV. UAA Surveyor (please print legibly)

| | |
|--|---|
| Name of Surveyor: <u>Robert R. Bacon</u> | Telephone Number: <u>(573) 634-7078</u> |
| Organization/Employer: <u>ERC</u> | |
| Position: <u>Field Manager</u> | |

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

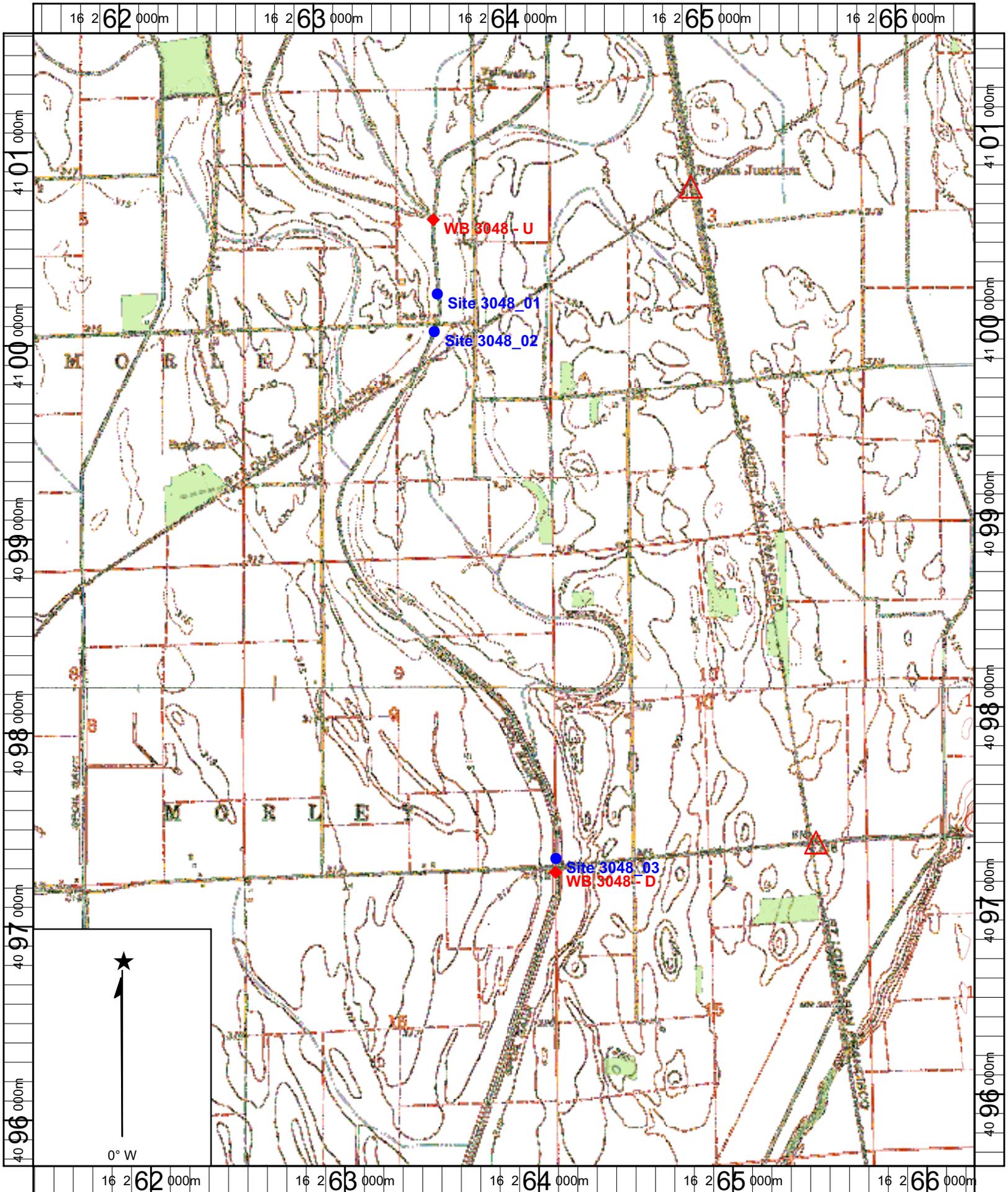
Signed: Robert R. Bacon Date: 5-24-2007

ERC 5-29-07



Name: ORAN
Date: 5/28/2007
Scale: 1 inch equals 2105 feet

Location: 16 0263576 E 4103481 N



Name: VANDUSER
Date: 5/28/2007
Scale: 1 inch equals 2000 feet

Location: 16 0263900 E 4098622 N

WBID# 3048
 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 16:25</u> | Site Location Description (e.g., road crossing): <u>upstream of CR 432</u> |
| Personnel (Data Collectors): <u>Abby + Bob</u> | Facility Name: <u>Gran WWTF</u> |
| Current Weather Conditions: <u>Sunny; scattered clouds</u> | Permit Number: <u>MO 0042532</u> |
| Weather Conditions for Past 10 days: | |
| Drought Conditions?: No drought <input checked="" 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>16S 0263605</u> | | Y: <u>4100208</u> | |
| 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 | ± <u>18</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>A29</u> | <u>Upstream TI</u> | <u>A28</u> | <u>Downstream TII</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 *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.)

| | | | | |
|--|--------------------------------------|--|--|---|
| <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: Farm fields

WBID# 3048
 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 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>NONE</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) | Length (m) | Median Depth (m) | Max. Depth (m) |
|-----------------|--------------|--------------------------|-----------|------------|------------------|----------------|
| RIFFLE | | | | | | |
| RUN | | | | | | |
| POOL | | | | | | |

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%.)

| | | | | | |
|----------|----------|------------------|------------------|------------|-----------|
| % Cobble | % Gravel | <u>15</u> % Sand | <u>85</u> % Silt | % Mud/Clay | % Bedrock |
|----------|----------|------------------|------------------|------------|-----------|

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

very dense macrophyte growth covering 90-95% of the channel
very deep macrophyte + sediment layer 30-60 cm deep - only one cross-section

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 type="checkbox"/> Clear | <input checked="" 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 checked="" type="checkbox"/> Fine sediments | <input type="checkbox"/> None | <input type="checkbox"/> Other: |
| WATER SURFACE DEPOSITION: | <input checked="" type="checkbox"/> Oil | <input type="checkbox"/> Scum | <input type="checkbox"/> Foam | <input 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: Bandy Crawford for Robert Bacon Date of Survey: 5-8-07

Organization: ERC Position: Field Manager

ARC 5-28-07

ERC Recreational Use Attainability Analysis Field Survey Sheet

oil 3/20/07

CDA 028 Down 01-01
029 up 01-01

Waterbody ID: 2048 Site #: 01

Weather Conditions: sunny few clouds 80°

GPS Location:
 UTM X: 16S0263605 UTM Y: 4100208
 Horizontal Accuracy Estimate (GPS Data Quality): +/- 18 (feet)

Average Stream Width: 12 (meters) Length of Survey Segment: — (meters)

Field Staff: Abley & Bob

— NO channel incision and measurements taken

way pt #14

Water Quality Parameters

Dissolved Oxygen: 7.17 (mg/L)

Dissolved Oxygen: 87.7 (% sat)

Specific Cond: 311 (µS/cm)

Water Temperature: 25.6 (°C)

Time: 16:16

Transect Cross-Section

| | 01 | | 02 | | 03 | | 04 | | 05 | | 06 | | 07 | | 08 | | 09 | | 10 | | 11 | |
|-------------------------------------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|----|--|
| | Distance (m) | Depth (m) | | |
| 1 | 0 | .02 | | | | | | | | | | | | | | | | | | | | |
| 2 | 1.5 | .56 | | | | | | | | | | | | | | | | | | | | |
| 3 | 3.0 | .84 | | | | | | | | | | | | | | | | | | | | |
| 4 | 4.5 | .76 | | | | | | | | | | | | | | | | | | | | |
| 5 | 6.0 | .70 | | | | | | | | | | | | | | | | | | | | |
| 6 | 7.5 | .64 | | | | | | | | | | | | | | | | | | | | |
| 7 | 8.0 | .45 | | | | | | | | | | | | | | | | | | | | |
| 8 | 9.5 | .20 | | | | | | | | | | | | | | | | | | | | |
| 9 | 10.0 | .17 | | | | | | | | | | | | | | | | | | | | |
| 10 | 11.5 | .13 | | | | | | | | | | | | | | | | | | | | |
| 11 | 12.0 | .01 | | | | | | | | | | | | | | | | | | | | |
| 12 | — | | | | | | | | | | | | | | | | | | | | | |
| Feature Type (riffle, run, or pool) | glide pool | | | | | | | | | | | | | | | | | | | | | |

Fishing Pole Method

Dense vegetation and deep mud made measurements too treacherous

BWC

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.

BWC 5-24-07

Signed: Abley & Welton

Date: 05/08/07

WBID# 3048
 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 16:00</u> | Site Location Description (e.g., road crossing): <u>@ CR 432</u> |
| Personnel (Data Collectors): <u>Abby + Bob</u> | Facility Name: <u>oran WWTF</u> |
| Current Weather Conditions: <u>Sunny; scattered clouds^{90°}</u> | Permit Number: <u>MO 0043532</u> |
| Weather Conditions for Past 10 days: | |
| Drought Conditions?: No drought <input checked="" 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>1680263585</u> | | Y: <u>4100013</u> | |
| 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 | ± <u>15</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>A27</u> | <u>Upstream TII</u> | <u>A26</u> | <u>Downstream TII</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: <u>Farm fields</u> | | | | |

WBID# 3048
 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 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>NONE</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) | Length (m) | Median Depth (m) | Max. Depth (m) |
|-----------------|--------------|--------------------------|-----------|------------|------------------|----------------|
| RIFFLE | | | | | | |
| RUN | | | | | | |
| POOL | | | | | | |

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%.)

| | | | | | |
|----------|----------|------------------|------------------|------------|-----------|
| % Cobble | % Gravel | <u>15</u> % Sand | <u>85</u> % Silt | % Mud/Clay | % Bedrock |
|----------|----------|------------------|------------------|------------|-----------|

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

Very thick macrophyte growth covering 100% of the channel
Very thick macrophyte mat and sediment approx. 30-60 cm deep

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 type="checkbox"/> Clear | <input checked="" 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 checked="" type="checkbox"/> Fine sediments | <input 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: Stacy Hanford Date of Survey: 5-8-07
Bob Bacon

Organization: ERC Position: Field Manager

ERC 5-29-07

ERC Recreational Use Attainability Analysis Field Survey Sheet

100% macroinvertebrate

picture 027 up (02-01)
CD-A 026 down (02-01)

Waterbody ID: 2048 Site #: 02

Weather Conditions: Sunny few clouds 80°F *no channel incision measurements are taken*

GPS Location:
UTM X: 16S 0263585 UTM Y: 4100013
Horizontal Accuracy Estimate (GPS Data Quality): +/- 15 (feet)

Average Stream Width: 12 (meters) Length of Survey Segment: — (meters)

Field Staff: Alvory + Bob

Wump pt #13

Water Quality Parameters

Dissolved Oxygen: 6.74 (mg/L)

Dissolved Oxygen: 84.2 (% sat)

Specific Cond: 319 (µS/cm)

Water Temperature: 26.72 (°C)

Time: 16:10

Transect Cross-Section

| | 01 | | 02 | | 03 | | 04 | | 05 | | 06 | | 07 | | 08 | | 09 | | 10 | | 11 | |
|-------------------------------------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|----|--|
| | Distance (m) | Depth (m) | | |
| 1 | 0 | .01 | | | | | | | | | | | | | | | | | | | | |
| 2 | 1 | .22 | | | | | | | | | | | | | | | | | | | | |
| 3 | 2 | .38 | | | | | | | | | | | | | | | | | | | | |
| 4 | 3 | .54 | | | | | | | | | | | | | | | | | | | | |
| 5 | 4 | .67 | | | | | | | | | | | | | | | | | | | | |
| 6 | 5 | .76 | | | | | | | | | | | | | | | | | | | | |
| 7 | 6 | .78 | | | | | | | | | | | | | | | | | | | | |
| 8 | 7 | .69 | | | | | | | | | | | | | | | | | | | | |
| 9 | 8 | .53 | | | | | | | | | | | | | | | | | | | | |
| 10 | 9 | .33 | | | | | | | | | | | | | | | | | | | | |
| 11 | 10 | .01 | | | | | | | | | | | | | | | | | | | | |
| 12 | — | | | | | | | | | | | | | | | | | | | | | |
| Feature Type (riffle, run, or pool) | slide pool | | | | | | | | | | | | | | | | | | | | | |

Fishing Pole Method

Dense vegetation and deep mud made measurements too treacherous.

AWC

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.

AWC 5-29-07

Signed: Alvory + Bob Date: 05/08/07

WBID# 3048
 Site# 3

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 15:30</u> | Site Location Description (e.g., road crossing): <u>@ Hwy Z bridge</u> |
| Personnel (Data Collectors): <u>About Bob</u> | |
| Current Weather Conditions: <u>Sunny; ptly cloudy</u> | Facility Name: <u>Oren WWTF</u> |
| Weather Conditions for Past 10 days: | Permit Number: <u>MO 0043532</u> |
| Drought Conditions?: No drought <input checked="" 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>16 S 0264137</u> | Y: <u>4097239</u> |
| HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.) | |
| Global Positioning System (GPS) | |
| Static Mode | Interpolation |
| Dynamic Mode (Kinematic) | Topographic Map or DRG |
| Precise Positioning Service | Aerial Photograph or DOQQ |
| Signal Averaging | Satellite Imagery |
| Real Time Differential Processing | Interpolation Other |
| HORIZONTAL ACCURACY ESTIMATE | |
| GPS Data Quality | Interpolation Data Quality |
| FOM ± _____ Meters | Source Map Scale: 1:24,000 1:100,000 Other _____ ± _____ Feet or ± _____ Meters |
| EPE ± <u>24</u> 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>A25</u> | <u>Upstream T11</u> | <u>A24</u> | <u>Deep sediment + vegetation mats</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 *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.)

| | | | | |
|--|--------------------------------------|--|--|---|
| <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: Farm fields

WBID# 3048
 Site# 03

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 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>NONE</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) | Length (m) | Median Depth (m) | Max. Depth (m) |
|-----------------|--------------|--------------------------|-----------|------------|------------------|----------------|
| RIFFLE | | | | | | |
| RUN | | | | | | |
| POOL | | | | | | |

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%.)

| | | | | | |
|----------|----------|------------------|------------------|------------|-----------|
| % Cobble | % Gravel | <u>10</u> % Sand | <u>90</u> % Silt | % Mud/Clay | % Bedrock |
|----------|----------|------------------|------------------|------------|-----------|

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

| | |
|---|--|
| <u>80% vegetation cover (macrophytes)</u> <u>- thick macrophyte growth</u> | <u>Sediment layer + macrophyte mat =</u> <u>80-70 cm deep</u> |
|---|--|

Water Characteristics*: (Mark all that apply.)

| | | | | | |
|---------------------------|---------------------------------|---|--|--|---------------------------------|
| ODOR: | <input type="checkbox"/> Sewage | <input checked="" type="checkbox"/> Musky | <input type="checkbox"/> Chemical | <input type="checkbox"/> None | <input type="checkbox"/> Other: |
| COLOR: | <input type="checkbox"/> Clear | <input checked="" 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 checked="" type="checkbox"/> Fine sediments | <input 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: *Jimmy Hoopes for Bob Bacon* Date of Survey: 5-8-07
 Organization: ERC Position: Field Manager

CDA UP 025
+ 024 deep channel + veg

ERC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 3048 Site #: 03

Weather Conditions: Sunny partly cloudy 85°

GPS Location:
 UTM X: 16S0204137 UTM Y: 4097239
 Horizontal Accuracy Estimate (GPS Data Quality): +/- 24 (feet)

Average Stream Width: 10.0 (meters) Length of Survey Segment: 200 (meters)

Field Staff: Abby + Bob

Water Quality Parameters:

Dissolved Oxygen: 10.84 (mg/L)

Dissolved Oxygen: 132.2 (% sat)

Specific Cond: 290 (µS/cm)

Water Temperature: 25.44 (°C)

Time: 15:20

Transect Cross-Section

| | 01 | | 02 | | 03 | | 04 | | 05 | | 06 | | 07 | | 08 | | 09 | | 10 | | 11 | | |
|-------------------------------------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-----------|--|
| | Distance (m) | Depth (m) | |
| 1 | 0 | .01 | | | | | | | | | | | | | | | | | | | | | |
| 2 | 1 | .06 | | | | | | | | | | | | | | | | | | | | | |
| 3 | 2 | .12 | | | | | | | | | | | | | | | | | | | | | |
| 4 | 3 | .40 | | | | | | | | | | | | | | | | | | | | | |
| 5 | 4 | .45 | | | | | | | | | | | | | | | | | | | | | |
| 6 | 5 | .55 | | | | | | | | | | | | | | | | | | | | | |
| 7 | 6 | .32 | | | | | | | | | | | | | | | | | | | | | |
| 8 | 7 | .15 | | | | | | | | | | | | | | | | | | | | | |
| 9 | 8 | .07 | | | | | | | | | | | | | | | | | | | | | |
| 10 | 9 | .02 | | | | | | | | | | | | | | | | | | | | | |
| 11 | 10 | .01 | | | | | | | | | | | | | | | | | | | | | |
| 12 | — | | | | | | | | | | | | | | | | | | | | | | |
| Feature Type (riffle, run, or pool) | slide pool | | | | | | | | | | | | | | | | | | | | | | |

Fishing Pole Method

Dense vegetation and deep mud made measurements too treacherous.

Bob

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.

Bob 5-29-07
Signed: Bob

Date: 5-9-2007

WBID# 3048



Site# 1 Photo ID# A29, Upstream



Site# 1 Photo ID# A28, Downstream



Site# 2 Photo ID# A27, Upstream



Site# 2 Photo ID# A26, Downstream

WBID# 3048



Site# 3 Photo ID# A25, Upstream



Site# 3 Photo ID# A24, Deep sediment