



Missouri
Department of
Natural Resources

Use Attainability Analysis

for

WBID 0148 Bean Branch

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):	Bean Branch
Missouri Water Body Identification (WBID) Number:	0148
8-digit HUC:	07110006
County(ies), Listed Upstream to Downstream:	Audrain, Audrain
Upstream Legal Description (from Table H):	Hwy. 54
Downstream Legal Description (from Table H):	Mouth
Number of sites evaluated:	5
List all site numbers, <u>consecutively upstream to downstream</u> :	Site 1, Site 2, Site 3 Site 4, Site 5
Include a Site Location Map(s). The map must include all requirements detailed in the <i>Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol</i> (Section IV.D.8.a).	

II. Facility Information (list all permitted discharges to this water body segment)

Facility Name(s) and Permit Number(s):
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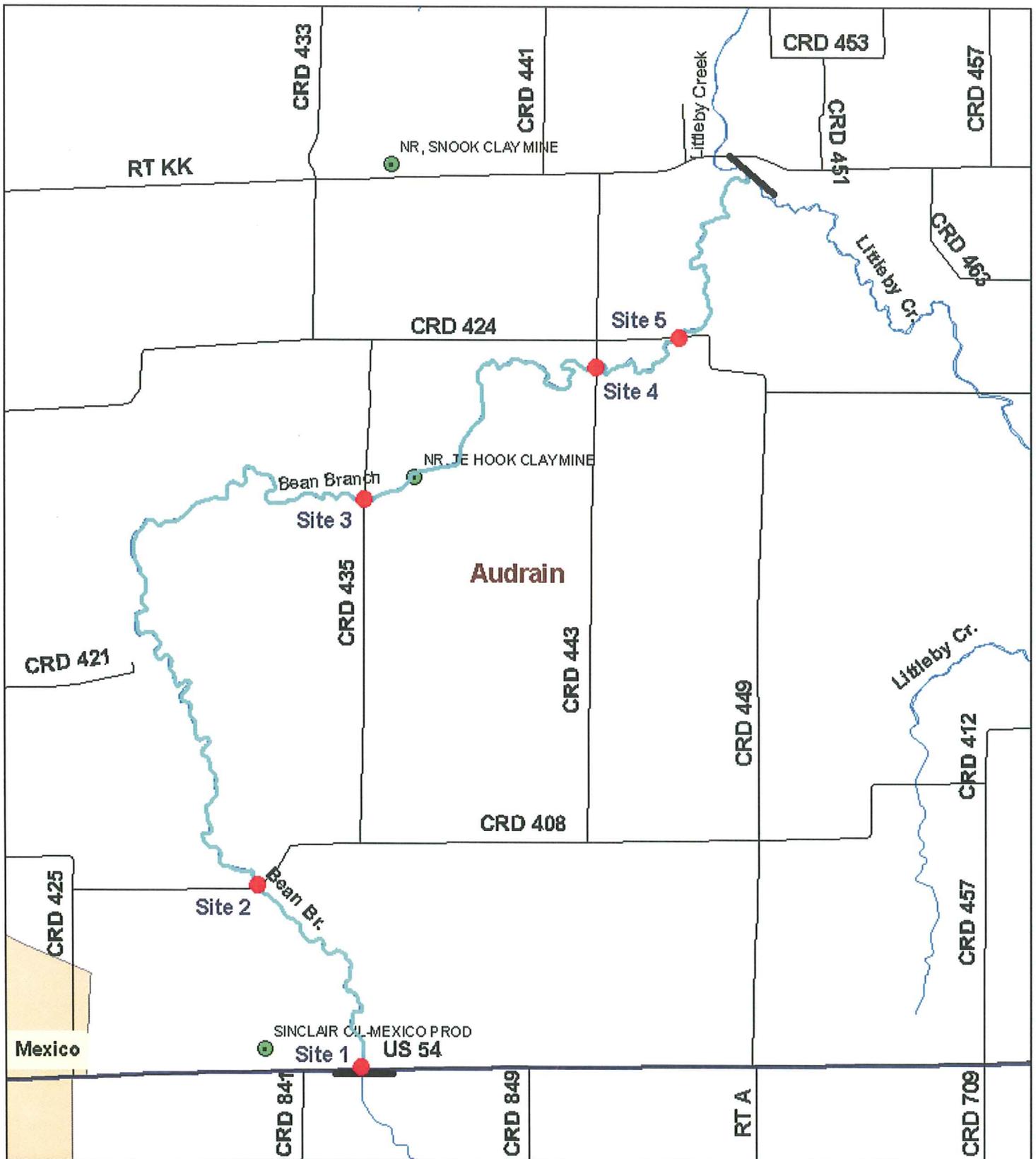
III. UAA Surveyor (please **PRINT** legibly)

Name of Surveyor: Jonathan Witte, Cody Luebbering	Telephone Number: (573) 443-4100
Organization/Employer: MEL Water Resources Inc.	

Please verify that you have completed all sections of all data sheets, checked all applicable boxes, provided a map (that includes all requirements listed in the *Missouri Recreational Use Attainability Analyses: Water Body Survey and Assessment Protocol*) and that this form is complete.

Signed: Cody Luebbering Date: 9-16-08

RLC 9-16-08



**Bean Branch
WBID 0148
Audrain County**



WBID # 148
 Site # 1

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: <u>8.15.08</u> <u>0720</u>	Location Description (e.g., road crossing): <u>at US 54 crossing</u>
Stream Name: <u>Bear Branch</u>	
Current Weather Conditions: <u>65°F, Overcast</u>	Facility Name(s):
Weather Conditions for Past 10 days: <u>2 in. rainfall</u>	Permit Number(s):
Official Drought Conditions at time of this survey (search DNR home page for "drought"): 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 Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): <u>604084</u>	Northing (UTM Y): <u>4335698</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>10.8</u> Meters
Site 11	Easting (UTM X): <u>604090</u>	Northing (UTM Y): <u>4335838</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>9.3</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>148-01-006</u>	<u>Dn Stream</u>	<u>148-01-007</u>	<u>Up Stream</u>		

Uses Observed*: (Uses actually observed at the 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.) <u>N/A</u>				

Stream Name & WBID # Bean Cr. #148

Date of Survey 8.15.08

Site # 1

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.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: <u>row erop</u>
Comments: <p style="text-align: center;">N/A</p>				

Evidence of Human Use*: (Attach photos and reference in "Photos" section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other: <p style="text-align: center;">N/A</p>			

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

<u>0</u> % Cobble	<u>5</u> % Gravel	<u>10</u> % Sand	<u>25</u> % Silt	<u>60</u> % Mud/Clay	<u>0</u> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Few plants, Algal growth uncommon

Water Characteristics*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input checked="" type="checkbox"/> Chemical	<input type="checkbox"/> None	<input type="checkbox"/> Other: <u>methane</u>
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" 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:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> 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 # Bean Br. #148

Date of Survey 8.15.08

Site # 1

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)
Log Jam	80m	7m	3m	—	—

Comments: (Please record any additional comments here.)

Riparian width ~ 15m

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

Printed Names of Personnel Collecting Data: Jonathan Witte, Cody Luebbering

Surveyor's Signature: Cody Luebbering Date of Survey: 8-15-08

Organization: MEC Water Resources Position: Water Quality Scientist I

BWC 9-1-08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Bean Branch</u> Waterbody ID: <u>148</u> Site #: <u>1</u> Estimated Channel Incision: <u>0</u> (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: <u>604084</u> UTM Y: <u>4335698</u> +/- <u>10.8</u> (meters) 11 UTM X: <u>604090</u> UTM Y: <u>4335838</u> +/- <u>9.3</u> (meters) Average Stream Width: <u>5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>JW, CL</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>8/15/2008</u> Time: <u>7:20</u> Dissolved Oxygen: <u>4.35</u> (mg/L) Dissolved Oxygen: <u>46.8</u> (% sat) Specific Cond: <u>762</u> (µS/cm) Water Temperature: <u>18.2</u> (°C)
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Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	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	0.36	0.10	0.37	0.12	0.44	0.22	0.52	0.09	0.49	0.25	0.43	0.14	0.34	0.07	0.32	0.04	0.25	0.18	0.43	0.10	0.33	0.08
2	0.72	0.14	0.74	0.19	0.88	0.48	1.04	0.22	0.98	0.37	0.86	0.21	0.68	0.10	0.64	0.05	0.50	0.30	0.86	0.17	0.66	0.11
3	1.08	0.14	1.11	0.19	1.32	0.53	1.56	0.20	1.47	0.35	1.29	0.20	1.02	0.09	0.96	0.04	0.75	0.28	1.29	0.30	0.99	0.15
4	1.44	0.17	1.48	0.26	1.76	0.62	2.08	0.35	1.96	0.31	1.72	0.21	1.36	0.12	1.28	0.00	1.00	0.28	1.72	0.42	1.32	0.20
5	1.80	0.14	1.85	0.36	2.20	0.57	2.60	0.40	2.45	0.30	2.15	0.19	1.70	0.13	1.60	0.00	1.25	0.25	2.15	0.43	1.65	0.21
6	2.16	0.15	2.22	0.35	2.64	0.57	3.12	0.41	2.94	0.29	2.58	0.11	2.04	0.22	1.92	0.00	1.50	0.26	2.58	0.40	1.98	0.20
7	2.52	0.27	2.59	0.30	3.08	0.39	3.64	0.50	3.43	0.30	3.01	0.12	2.38	0.20	2.24	0.01	1.75	0.24	3.01	0.32	2.31	0.19
8	2.88	0.33	2.96	0.19	3.52	0.32	4.16	0.51	3.92	0.30	3.44	0.10	2.72	0.15	2.56	0.03	2.00	0.19	3.44	0.20	2.64	0.16
9	3.24	0.20	3.33	0.08	3.96	0.25	4.68	0.40	4.41	0.17	3.87	0.04	3.06	0.09	2.88	0.02	2.25	0.10	3.87	0.08	2.97	0.13
Right Bank	3.60	0.00	3.70	0.00	4.40	0.00	5.20	0.00	4.90	0.00	4.30	0.00	3.40	0.00	3.20	0.00	2.50	0.00	4.30	0.00	3.30	0.00
Feature Type <small>(riffle, run, or pool)</small>	Run		Riffle		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 by 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: 8/15/2008

WBID # 0148

Site # 02

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: <u>8-15-08</u> <u>08:00</u>	Location Description (e.g., road crossing): <u>at co. rd. 408 crossing</u>
Stream Name: <u>Bean Branch</u>	
Current Weather Conditions: <u>70°F, overcast</u>	Facility Name(s):
Weather Conditions for Past 10 days: <u>.2 in/rainfall</u>	Permit Number(s):
Official Drought Conditions at time of this survey (search DNR home page for "drought"): 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 Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): <u>603438</u>	Northing (UTM Y): <u>4336881</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>5.9</u> Meters
Site 11	Easting (UTM X): <u>603326</u>	Northing (UTM Y): <u>4336975</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>7.7</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>0148-02-008</u>	<u>Tributary</u>	<u>0148-02-009</u>	<u>UPstream</u>	<u>0148-02-010</u>	<u>DNStream</u>

Uses Observed*: (Uses actually observed at the 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.) <p align="center"><u>N/A</u></p>				

Stream Name & WBID # Bean Branch 148

Date of Survey 8.15.08

Site # 2

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.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> Other: <u>pasture</u>
Comments: <p style="text-align: center;">N/A</p>				

Evidence of Human Use*: (Attach photos and reference in "Photos" section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other: <p style="text-align: center;">N/A</p>			

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

<u>5</u> % Cobble	<u>5</u> % Gravel	<u>10</u> % Sand	<u>40</u> % Silt	<u>40</u> % Mud/Clay	<u>0</u> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Arrowhead, other aq. grasses

Algal growth uncommon

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 type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: <u>brown</u>
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> 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 # Bean Branch 148

Date of Survey 8-15-08

Site # 02

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)
Tributary	120m	3	UNKNOWN	0.15m	0.30m

Comments: (Please record any additional comments here.)

Riparian ~ 20m

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

Printed Names of Personnel Collecting Data: Sonathan Witte, Cody Luebbering

Surveyor's Signature: Cody Luebbering Date of Survey: 8-15-08

Organization: MEC Water Resources Position: Water Quality Scientist I

AWC 9-16-08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Bean Branch</u> Waterbody ID: <u>148</u> Site #: <u>2</u> Estimated Channel Incision: <u>0</u> (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: <u>603438</u> UTM Y: <u>4336881</u> +/- <u>5.9</u> (meters) 11 UTM X: <u>603326</u> UTM Y: <u>4336975</u> +/- <u>7.7</u> (meters) Average Stream Width: <u>5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>JW, CL</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>8/15/2008</u> Time: <u>8:00</u> Dissolved Oxygen: <u>4.59</u> (mg/L) Dissolved Oxygen: <u>50.7</u> (% sat) Specific Cond: <u>358.1</u> (µS/cm) Water Temperature: <u>19.9</u> (°C)
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Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	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	0.36	0.03	0.11	0.12	0.37	0.04	0.32	0.20	0.44	0.28	0.53	0.12	0.53	0.20	0.65	0.23	0.18	0.12	0.41	0.09	0.33	0.08
2	0.72	0.10	0.22	0.15	0.74	0.12	0.64	0.31	0.88	0.47	1.06	0.20	1.06	0.29	1.30	0.48	0.36	0.19	0.82	0.15	0.66	0.30
3	1.08	0.18	0.33	0.14	1.11	0.15	0.96	0.37	1.32	0.50	1.59	0.22	1.59	0.32	1.95	0.53	0.54	0.15	1.23	0.19	0.99	0.41
4	1.44	0.33	0.44	0.14	1.48	0.14	1.28	0.43	1.76	0.54	2.12	0.27	2.12	0.42	2.60	0.54	0.72	0.23	1.64	0.21	1.32	0.49
5	1.80	0.49	0.55	0.05	1.85	0.10	1.60	0.41	2.20	0.57	2.65	0.32	2.65	0.50	3.25	0.53	0.90	0.22	2.05	0.24	1.65	0.42
6	2.16	0.57	0.66	0.16	2.22	0.05	1.92	0.30	2.64	0.61	3.18	0.29	3.18	0.48	3.90	0.49	1.08	0.22	2.46	0.22	1.98	0.33
7	2.52	0.60	0.77	0.08	2.59	0.04	2.24	0.24	3.08	0.46	3.71	0.20	3.71	0.48	4.55	0.39	1.26	0.19	2.87	0.19	2.31	0.24
8	2.88	0.49	0.88	0.10	2.96	0.00	2.56	0.15	3.52	0.29	4.24	0.26	4.24	0.37	5.20	0.24	1.44	0.12	3.28	0.16	2.64	0.25
9	3.24	0.18	0.99	0.05	3.33	0.05	2.88	0.08	3.96	0.13	4.77	0.17	4.77	0.22	5.85	0.15	1.62	0.05	3.69	0.09	2.97	0.07
Right Bank	3.60	0.00	1.10	0.00	3.70	0.00	3.20	0.00	4.40	0.00	5.30	0.00	5.30	0.00	6.50	0.00	1.80	0.00	4.10	0.00	3.30	0.00
Feature Type <small>(riffle, run, or pool)</small>	Pool		Riffle		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 by 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: 8/15/2008

WBID # 148
 Site # 3

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: <u>8.15.08 0850</u>	Location Description (e.g., road crossing): <u>at Rd. 435 crossing</u>
Stream Name: <u>Bean Branch</u>	
Current Weather Conditions: <u>70°F, Mostly Sunny</u>	Facility Name(s):
Weather Conditions for Past 10 days: <u>2 in. rainfall</u>	Permit Number(s):
Official Drought Conditions at time of this survey (search DNR home page for "drought"): 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 Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): <u>604118</u>	Northing (UTM Y): <u>4339771</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>11.0</u> Meters
Site 11	Easting (UTM X): <u>604276</u>	Northing (UTM Y): <u>4339859</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>8.0</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>148-03-011</u>	<u>Dist Stream</u>	<u>148-03-012</u>	<u>Up Stream</u>		

Uses Observed*: (Uses actually observed at the 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.)

N/A

Stream Name & WBID # Bean Br. #148

Date of Survey 8.15.08

Site # 3

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.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:
Fully forested riparian

Evidence of Human Use*: (Attach photos and reference in "Photos" section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other: <u>N/A</u>			

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

<u>0</u> % Cobble	<u>5</u> % Gravel	<u>15</u> % Sand	<u>40</u> % Silt	<u>40</u> % Mud/Clay	<u>0</u> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Few aq. grasses, algal growth minimal

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 type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: <u>brown</u>
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> 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 # Bean Br. #148
Site # 3

Date of Survey 8.15.08

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			

Comments: (Please record any additional comments here.)

N/A.

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

Printed Names of Personnel Collecting Data: Sonathan Witte, Cody Luebbering

Surveyor's Signature: Cody Luebbering Date of Survey: 8-15-08

Organization: MEC Water Resources Position: Water Quality Scientist I

BWC 9-16-08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Bean Branch</u> Waterbody ID: <u>148</u> Site #: <u>3</u> Estimated Channel Incision: <u>0</u> (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: <u>604118</u> UTM Y: <u>4339771</u> +/- <u>11</u> (meters) 11 UTM X: <u>604276</u> UTM Y: <u>4339859</u> +/- <u>8</u> (meters) Average Stream Width: <u>8</u> (meters) Length of Survey Segment: <u>160</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>JW, CL</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>8/15/2008</u> Time: <u>8:50</u> Dissolved Oxygen: <u>4.1</u> (mg/L) Dissolved Oxygen: <u>46.2</u> (% sat) Specific Cond: <u>596</u> (µS/cm) Water Temperature: <u>20.3</u> (°C)
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Transect Cross-Section

Station		01		02		03		04		05		06		07		08		09		10		11	
		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	
	1	0.78	0.32	0.37	0.13	0.81	0.35	0.54	0.18	0.61	0.13	0.88	0.13	0.69	0.34	0.65	0.17	0.64	0.17	0.61	0.30	1.01	0.22
	2	1.56	0.40	0.74	0.18	1.62	0.63	1.08	0.25	1.22	0.23	1.76	0.36	1.38	0.56	1.30	0.38	1.28	0.37	1.22	0.40	2.02	0.37
	3	2.34	0.55	1.11	0.21	2.43	0.80	1.62	0.29	1.83	0.36	2.64	0.42	2.07	0.56	1.95	0.34	1.92	0.49	1.83	0.50	3.03	0.36
	4	3.12	0.50	1.48	0.19	3.24	0.78	2.16	0.32	2.44	0.47	3.52	0.47	2.76	0.52	2.60	0.40	2.56	0.50	2.44	0.41	4.04	0.42
	5	3.90	0.42	1.85	0.19	4.05	0.74	2.70	0.30	3.05	0.54	4.40	0.52	3.45	0.49	3.25	0.47	3.20	0.53	3.05	0.43	5.05	0.43
	6	4.68	0.43	2.22	0.19	4.86	0.59	3.24	0.29	3.66	0.57	5.28	0.56	4.14	0.50	3.90	0.46	3.84	0.38	3.66	48.00	6.06	0.10
	7	5.46	0.41	2.59	0.22	5.67	0.33	3.78	0.23	4.27	0.49	6.16	0.46	4.83	0.41	4.55	0.35	4.48	0.35	4.27	0.51	7.07	0.76
	8	6.24	0.29	2.96	0.20	6.48	0.21	4.32	0.19	4.88	0.46	7.04	0.46	5.52	0.38	5.20	0.30	5.12	0.23	4.88	0.47	8.08	0.80
	9	7.02	0.12	3.33	0.08	7.29	0.09	4.86	0.10	5.49	0.30	7.92	0.32	6.21	0.26	5.85	0.16	5.76	0.20	5.49	0.22	9.09	0.46
Right Bank		7.80	0.00	3.70	0.00	8.10	0.00	5.40	0.00	6.10	0.00	8.80	0.00	6.90	0.00	6.50	0.00	6.40	0.00	6.10	0.00	10.10	0.00
Feature Type		Pool		Run		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 by 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: 8/15/2008

WBID # 148

Site # 4

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: <u>8.15.08</u> <u>0945</u>	Location Description (e.g., road crossing):
Stream Name: <u>Bean Branch</u>	<u>at Rd. 443 crossing</u>
Current Weather Conditions: <u>75°F, Mostly Sunny</u>	Facility Name(s):
Weather Conditions for Past 10 days: <u>2 in / rain fall</u>	Permit Number(s):
Official Drought Conditions at time of this survey (search DNR home page for "drought"): 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 Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): <u>605809</u>	Northing (UTM Y): <u>4340727</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>11.4</u> Meters
Site 11	Easting (UTM X): <u>605871</u>	Northing (UTM Y): <u>4340700</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>6.4</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>148-04-013</u>	<u>Up Stream</u>	<u>148-04-014</u>	<u>Dn Stream</u>		
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.)

<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.)

N/A

Stream Name & WBID # Bean Branch 0148
 Site # 04

Date of Survey 8-15-08

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.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:
Comments: <u>Fully Forested Riparian</u>				

Evidence of Human Use*: (Attach photos and reference in "Photos" section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other: <u>N/A</u>			

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

<u>0</u> % Cobble	<u>0</u> % Gravel	<u>10</u> % Sand	<u>25</u> % Silt	<u>65</u> % Mud/Clay	<u>0</u> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

<u>Few Aqu. Plants</u>
<u>Algal growth minimal</u>

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 type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" 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:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> 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 # Bran Branch 0148

Date of Survey 8-15-08

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			

Comments: (Please record any additional comments here.)

N/A

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

Printed Names of Personnel Collecting Data: Sonathan Witte, Cody Luebbing

Surveyor's Signature: Cody Luebbing Date of Survey: 8-15-08

Organization: MEC Water Resources Position: Water Quality Scientist I

BWC 9-16-08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Bean Branch</u> Waterbody ID: <u>148</u> Site #: <u>4</u> Estimated Channel Incision: <u>0</u> (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: <u>605809</u> UTM Y: <u>4340727</u> +/- <u>11.4</u> (meters) 11 UTM X: <u>605871</u> UTM Y: <u>4340700</u> +/- <u>6.4</u> (meters) Average Stream Width: <u>8</u> (meters) Length of Survey Segment: <u>160</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>JW, CL</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>8.15.08</u> Time: <u>945</u> Dissolved Oxygen: <u>5.38</u> (mg/L) Dissolved Oxygen: <u>61</u> (% sat) Specific Cond: <u>676</u> (µS/cm) Water Temperature: <u>20.9</u> (°C)
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Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.56	0.22	0.41	0.60	0.72	0.48	0.35	0.18	0.41	0.15	0.44	0.17	0.82	0.24	0.53	0.20	0.69	>1	0.52	0.17	0.66	0.39
2	1.12	0.54	0.82	0.85	1.44	0.65	0.70	0.22	0.82	0.04	0.88	0.23	1.64	0.45	1.06	0.32	1.38	>1	1.04	0.23	1.32	0.56
3	1.68	0.62	1.23	>1	2.16	>1	1.05	0.38	1.23	0.18	1.32	0.38	2.46	0.63	1.59	0.43	2.07	>1	1.56	0.35	1.98	0.90
4	2.24	0.53	1.64	>1	2.88	>1	1.40	0.37	1.64	0.28	1.76	0.64	3.28	0.62	2.12	0.41	2.76	>1	2.08	0.40	2.64	>1
5	2.80	0.47	2.05	>1	3.60	>1	1.75	0.36	2.05	0.31	2.20	0.41	4.10	0.64	2.65	0.32	3.45	0.96	2.60	0.42	3.30	>1
6	3.36	0.40	2.46	>1	4.32	>1	2.10	0.30	2.46	0.27	2.64	0.19	4.92	0.73	3.18	0.25	4.14	0.83	3.12	0.50	3.96	0.84
7	3.92	0.38	2.87	>1	5.04	>1	2.45	0.30	2.87	0.22	3.08	0.17	5.74	0.50	3.71	0.27	4.83	0.74	3.64	0.62	4.62	0.72
8	4.48	0.30	3.28	>1	5.76	0.88	2.80	0.25	3.28	0.20	3.52	0.13	6.56	0.23	4.24	0.25	5.52	0.51	4.16	0.50	5.28	0.34
9	5.04	0.10	3.69	>1	6.48	0.61	3.15	0.16	3.69	0.09	3.96	0.09	7.38	0.12	4.77	0.14	6.21	0.20	4.68	0.28	5.94	0.14
Right Bank	5.60	0.00	4.10	0.00	7.20	0.00	3.50	0.00	4.10	0.00	4.40	0.00	8.20	0.00	5.30	0.00	6.90	0.00	5.20	0.00	6.60	0.00
Feature Type	Run		Pool		Pool		Run		Run		Run		Pool		Run		Pool		Run		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 by 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: 8.15.08

WBID # 148
 Site # 5

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: <u>8.15.08</u> <u>1015</u>	Location Description (e.g., road crossing): <u>at Rd. 424 crossing</u>
Stream Name: <u>Bean Branch</u>	
Current Weather Conditions: <u>75°F, Mostly Sunny</u>	Facility Name(s):
Weather Conditions for Past 10 days: <u>2 in / rainfall</u>	Permit Number(s):
Official Drought Conditions at time of this survey (search DNR home page for "drought"): 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 Location:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site 01	Easting (UTM X): <u>606416</u>	Northing (UTM Y): <u>4341002</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>6.2</u> Meters
Site 11	Easting (UTM X): <u>606569</u>	Northing (UTM Y): <u>4341049</u>	Horizontal Accuracy: (EPE / FOM / PDOP) <u>7.7</u> Meters

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>148-05-016</u>	<u>Up Stream</u>	<u>148-05-015</u>	<u>Down Stream</u>		

Uses Observed*: (Uses actually observed at the 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.)

N/A

Stream Name & WBID # Bean Branch 0148
 Site # 05

Date of Survey 8-15-08

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.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> Other:

Comments:
Riparian zone ~ 50m
New bridge recently constructed

Evidence of Human Use*: (Attach photos and reference in "Photos" section.)

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV / ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock Watering
<input checked="" type="checkbox"/> None of the above	Comments / Other: <u>N/A</u>			

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

<u>10</u> % Cobble	<u>10</u> % Gravel	<u>20</u> % Sand	<u>30</u> % Silt	<u>30</u> % Mud/Clay	<u>0</u> % Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Few Aquatic grasses
Algal minimal

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 checked="" 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:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input checked="" type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> 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 # Bean Branch 0148
 Site # 05

Date of Survey 8-15-08

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			

Comments: (Please record any additional comments here.)

N/A

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

Printed Names of Personnel Collecting Data: Jonathan Witte, Cody Luebbering

Surveyor's Signature: Cody Luebbering Date of Survey: 8-15-08

Organization: MEC Water Resources Position: Water Quality Scientist I

RWC 9-16-08

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Stream Name: <u>Bean Branch</u> Waterbody ID: <u>148</u> Site #: <u>5</u> Estimated Channel Incision: <u>0</u> (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: <u>606416</u> UTM Y: <u>4341002</u> +/- <u>6.2</u> (meters) 11 UTM X: <u>605569</u> UTM Y: <u>4341049</u> +/- <u>7.7</u> (meters) Average Stream Width: <u>5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>JW, CL</u>	<h4 style="text-align: center; margin: 0;">Dissolved Oxygen</h4> Date: <u>8.15.08</u> Time: <u>1015</u> Dissolved Oxygen: <u>6.95</u> (mg/L) Dissolved Oxygen: <u>78.1</u> (% sat) Specific Cond: <u>684</u> (µS/cm) Water Temperature: <u>21.1</u> (°C)
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Transect Cross-Section

Station		01		02		03		04		05		06		07		08		09		10		11	
		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	
	1	0.44	0.08	0.47	0.06	0.51	0.20	0.20	0.09	0.69	0.31	0.39	0.20	0.26	0.18	0.32	0.10	0.51	0.11	0.57	0.18	0.55	0.38
	2	0.88	0.07	0.94	0.12	1.02	0.29	0.40	0.11	1.38	0.48	0.78	0.18	0.52	0.27	0.64	0.27	1.02	0.24	1.14	0.23	1.10	0.41
	3	1.32	0.05	1.41	0.18	1.53	0.20	0.60	0.11	2.07	0.44	1.17	0.28	0.78	0.27	0.96	0.40	1.53	0.30	1.71	0.28	1.65	0.47
	4	1.76	0.07	1.88	0.27	2.04	0.18	0.80	0.17	2.76	0.40	1.56	0.26	1.04	0.30	1.28	0.56	2.04	0.43	2.28	0.30	2.20	0.47
	5	2.20	0.08	2.35	0.33	2.55	0.21	1.00	0.16	3.45	0.50	1.95	0.23	1.30	0.32	1.60	0.60	2.55	0.43	2.85	0.32	2.75	0.43
	6	2.64	0.08	2.82	0.28	3.06	0.30	1.20	0.15	4.14	0.40	2.34	0.16	1.56	0.32	1.92	0.55	3.06	0.31	3.42	0.34	3.30	0.45
	7	3.08	0.08	3.29	0.31	3.57	0.22	1.40	0.10	4.83	0.22	2.73	0.13	1.82	0.28	2.24	0.16	3.57	0.45	3.99	0.35	3.85	0.42
	8	3.52	0.08	3.76	0.30	4.08	0.20	1.60	0.09	5.52	0.23	3.12	0.10	2.08	0.25	2.56	0.27	4.08	0.40	4.56	0.36	4.40	0.45
	9	3.96	0.08	4.23	0.26	4.59	0.17	1.80	0.04	6.21	0.19	3.51	0.03	2.34	0.13	2.88	0.20	4.59	0.30	5.13	0.20	4.95	0.32
Right Bank		4.40	0.00	4.70	0.00	5.10	0.00	2.00	0.00	6.90	0.00	3.90	0.00	2.60	0.00	3.20	0.00	5.10	0.00	5.70	0.00	5.50	0.00
Feature Type		Riffle		Run		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 by 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: 8.15.08





