Use Attainability Analysis

for

Water Body Identification # 1746

Big Bottom Creek

Conducted by:

Environmental Resources Coalition

To:

Missouri Department of Natural Resources
Water Protection Program

Submitted: July 14, 2005

Environmental Resources Coalition

Stream Description – WB ID: 1746 – Big Bottom Creek

Big Bottom Creek (WB 1746) is a five mile Class C stream. The water body is located in central Ste. Genevieve County in the Ozark Border physiographic region (Thom and Wilson 1980). The Ozark Border physiographic region includes the rugged river hills with deep, relatively productive soils along both sides of the Missouri River and extending along the lower Mississippi River on the eastern border of the state to the Mississippi Lowlands physiographic region. The Mississippi River Section of the Ozark Border region is characterized by streams flowing to the Mississippi River and the Mississippi River Lowlands region. The dominant topography of the region is highly dissected gentle rolling plains. Soils range from deep productive loess soils to shallow soils derived from bedrock.

Big Bottom Creek is the receiving water body for the Lake Forest Estates Subdivision Lagoon (MO0035742). The classified reach begins Schweiss Drive (located off Highway 32), where the stream is ephemeral flowing only with direct runoff. Form Schweiss Drive the stream flows north the down the valley to Lake Ann. At the base of the dam, Big Bottom Creek flows north under the Highway O bridge (site # 1) to the confluence with Establishment Creek. The effluent from the Lake Forest Estates Subdivision Lagoon enters Big Bottom Creek at the base of the dam immediately downstream from site # 2.

Thom, R. H. and J. H. Wilson. 1980. The Natural Divisions of Missouri. Trans. Mo. Acad. Sci. 14: 9-23.

Note: During the first visit to each site, ERC selected an assessment location (either upstream or downstream) based on which side appeared deepest and or most likely for whole body recreation.

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet A: Water Body Identification

Water Body Name: Big Bottom Creek
8 – digit HUC: 07140101
Missouri WBID # 1746
County: Ste. Genevieve
Upstream Legal Description: Sec. 13, T37N, R7E, Ste. Genevieve County
Downstream Legal Description:
Upstream Coordinates: Latitude 37.9208335° N , Longitude 90.2021077 W
Downstream Coordinates: Latitude 37.9742685 ° N , Longitude 90.1991259 ° W
Discharger Facility Name(s): Lake Forest Estates Subdivision
Discharger Permit Number(s): MO0035742
Number of Sites Evaluated: 3
Name of Surveyor and Telephone Number: Robert R. Bacon, (573) 634-7078
Organization: Environmental Resources Coalition (ERC)
Position: Director of Aquatic Services

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA sheet is true and accurate.

Signed: Robert R Bacon

Date: 7-14-2005

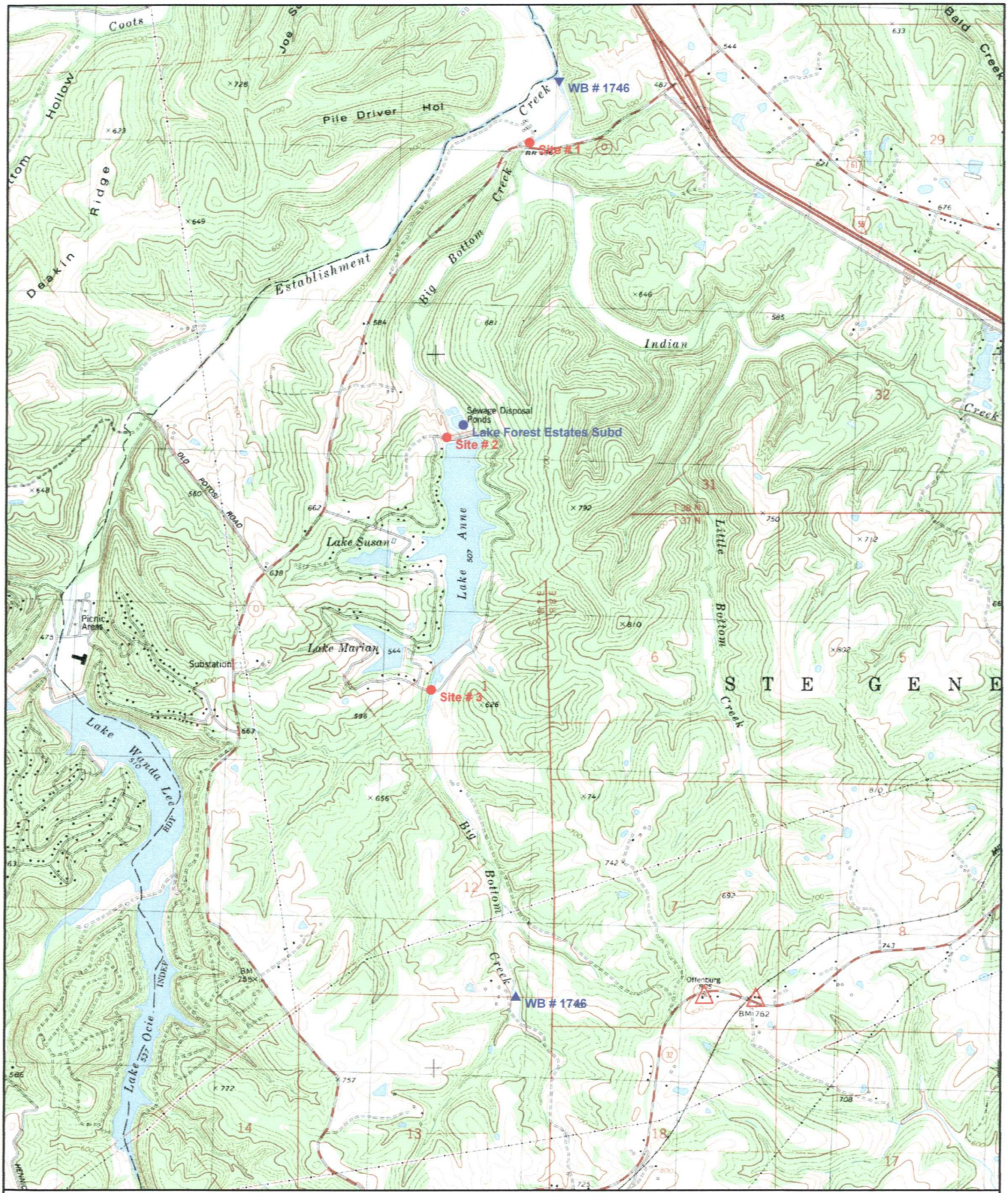
Weather Conditions

Weather conditions for the field surveys and the previous ten days are listed in the tables below.

Data from the Midwestern Regional Climate Center
Farmington, Missouri, Station ID: 232809

Date	Precipitation (Inches)	Min. Temp (°F)	Max. Temp (°F)	Average Temp (°F)
04/06/2005	0	55	68	62
04/07/2005	0.07	46	60	53
04/08/2005	0.08	46	70	58
04/09/2005	0	44	77	61
04/10/2005	0	57	78	68
04/11/2005	0	57	66	62
04/12/2005	0.53	51	65	58
04/13/2005	0.48	44	53	49
04/14/2005	0	37	65	51
04/15/2005	0	37	72	55
04/16/2005	0	40	77	59

Date	Precipitation (Inches)	Min. Temp (°F)	Max. Temp (°F)	Average Temp (°F)
05/25/2005	0	49	73	61
05/26/2005	0	50	70	60
05/27/2005	0	46	79	63
05/28/2005	0.33	49	77	63
05/29/2005	0.13	55	80	68
05/30/2005	0	54	81	68
05/31/2005	0	57	80	69
06/01/2005	0	57	80	69
06/02/2005	0	54	81	68
06/03/2005	0	60	69	65
06/04/2005	0	56	82	69



Name: WEINGARTEN
Date: 7/14/2005
Scale: 1 inch equals 2500 feet

Location: 037.9441892° N 090.2031892° W

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WB # 1746 – Big Bottom Creek

Site # 1 - Highway O

GPS Location	**37.9706989 North** **90.2014223 West**
Elevation (feet)	**456.2**

Upstream Views

04/16/05

06/04/05

Downstream Views

04/16/05

06/04/05

Physical Dimensions – Site # 1

	04/16/05	06/04/05
Assessment Location	Upstream	Upstream
Time	5:25 PM	10:19 AM
Stream Type	Run	Run
Width (m)	9.14	9.14
Length (m)	60.96	60.96
Ave Depth (cm)	22.05	24.82
Maximum Depth (cm)*	46.0	44.0
Flow Present	Yes	Yes
Flow (cfs)	-	-
SUBSTRATE		
Cobble	40%	20%
Gravel	20%	0%
Sand	0%	0%
Silt	0%	0%
Mud / Clay	0%	0%
Bedrock	40%	80%
	100%	100%
OTHER		
Uses Observed	Livestock watering	None
Evidence of Human Use (WBCR)	None	None
Aquatic Vegetation	Thick periphyton layer, floating mats of algae	periphyton
Water Characteristics		
Odor	None	None
Color	Green	Turbid
Bottom Deposits	thick periphyton layer	periphyton
Surface Deposits	Red bacteria and floating mats of algae	Little foam and oily scum

* Maximum depth is maximum measured depth within the stream cross-section.

NOTES: Site # 1 is the farthest downstream site on Big Bottom Creek.

WB # 1746 – Big Bottom Creek

Site # 2 - Lake Forest Estates Spillway

GPS Location **37.953479 North**
90.2074798 West

Upstream Views

04/16/05 **06/04/05**

Did not take pictures on this date

Downstream Views

04/16/05 **06/04/05**

Did not take pictures on this date

Physical Dimensions – Site # 2

	04/16/05	06/04/05
Assessment Location	Spillway	Spillway
Time	5:50PM	10:47 AM
SUBSTRATE -	UNKNOWN	UNKNOWN
Cobble		
Gravel		
Sand		
Silt		
Mud / Clay		
Bedrock		
OTHER		
Uses Observed	Fishing boating, swimming, skiing	Boating, fishing skiing, etc.
Evidence of Human Use (WBCR)	Lake, boat docks, boat ramps, etc.	Lake, boat docks and ramps
Aquatic Vegetation	Pelagic algae	Pelagic algae
Water Characteristics		
Odor	None	None
Color	Light green	Clear
Bottom Deposits	None	None
Surface Deposits	Algae	Algae

NOTES:

06/04/05 – Lagoon cells on back side of dam

WB # 1746 – Big Bottom Creek

Site # 3 - Inflow to Lake Ann

GPS Location **37.9387694 North**
90.2086153 West

Upstream Views

04/16/05 **06/04/05**

Did not take pictures on this date

Downstream Views

04/16/05 **06/04/05**

Did not take pictures on this date

Physical Dimensions – Site # 3

	04/16/05	06/04/05
Assessment Location	Inflow	Inflow
Time	6:00 PM	10:55 AM
SUBSTRATE -	UNKNOWN	UNKNOWN
Cobble		
Gravel		
Sand		
Silt		
Mud / Clay		
Bedrock		
OTHER		
Uses Observed	Downstream - fishing boating, swimming, skiing	Same as previous visit
Evidence of Human Use (WBCR)	Lake, boat docks, boat ramps, etc.	Same as previous visit
Aquatic Vegetation	Pelagic algae	Pelagic algae
Water Characteristics		
Odor	None	None
Color	Light green	green
Bottom Deposits	None	None
Surface Deposits	Algae	Algae

NOTES:

06/04/05 – Beach area on Lake Ann

Site Descriptions

Site #1: Site #1 of Big Bottom Creek is located at the Highway O bridge, and is the farthest downstream site. Hay fields and wooded areas surround the stream at this site. At this location the stream is very difficult to access. Just outside of the road easement there are no trespassing signs. The water is turbid and has a thick periphyton layer on the bottom.

Site #2: Site #2 of Big Bottom Creek is located at the Lake Forest Estates spillway of Lake Anne. A lakeside development surrounds the lake at this site. Pelagic algae are on the surface of the water at the spillway. Evidence of fishing, boating, swimming, and skiing on Lake Anne are prevalent. Boat ramps and boat docks line the banks of the lake.

Site #3: Site #3 of Big Bottom Creek is located at the inflow into Lake Anne. A lakeside development surrounds the lake at this site. Pelagic algae color the lake water light-green. Evidence of fishing, boating, swimming, and skiing on Lake Anne are prevalent. Boat ramps and boat docks line the banks of the lake. The lake when at full pool backs up the creek for a short distance at this location. However, outside of the influence of the lake the stream bed quickly becomes ephemeral as it rapidly gains gradient working it's up the valley toward Schweiss Drive.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on the UAA datasheets, are true and accurate.

Signed: Robert R Bacon

Date: 7-14-2005

Organization: ERC

Position: Dir of Aquatic Services

Summaries of Interviews

The following interviews were conducted by Abby Welschmeyer and Anna Welschmeyer with landowners and creek users during the month of June of 2005. Questions were asked of the interviewee either in person or over the phone, and survey sheets were completed based on the information acquired by the interviewer. The questions asked are as follows:

- How long have you lived near this body of water?
- Do you or your family utilize this body of water for recreational activities?
- If not used, why?
- If used, what types of activities, what season, how many times per period, and what flow conditions (low, medium, or high)?
- Have you witnessed other people utilizing the water body? (If so, the aforementioned questions apply.)

To assist in the collection of interviews, letters were developed detailing the water quality rule, our affiliation with the Missouri Department of Natural Resources and our contact information. These letters were left at residences nearby the water body where no one answered the door. This turned out to be a very effective way of quickly collecting key interviews of people most familiar with the resource.

Date: 06/04/05
Time: 10:35 AM
Name: Scott Naeger
Reason for interview: lives near site #1

Scott Naeger has lived near Big Bottom Creek for 2 years. He stated that his daughter uses the Establishment Creek for swimming about twice a day during the summer months, and he fishes once or twice a week during the summer. Mr. Naeger also commented that he and his daughter are probably the only ones that use the stream from site #1 to Lake Anne. He said he has not seen anyone else use the stream because most of it lies on private property and it is difficult to access.

Date: 06/25/05
Time: 6:27 PM
Name: Tom Bowman
Reason for Interview: family owns land along water body (from site #1 to Lake Anne)

Tom Bowman, his father, and his uncle have owned land along Big Bottom Creek for 35 to 40 years. They own 300 acres around the stream, which runs along approximately one mile along the water body. He stated that they do not use the stream for recreation because they have no need to do so. Mr. Bowman commented that he has not seen anyone using the stream because the majority of it lies on their property.