

# PROJECT UPDATE #2

August-2007



- 💧 June-July Overview & Lab Results
  - 💧 Rain Event Sampling
  - 💧 Water Surface & Odor
  - 💧 Secchi Depth Comparison



## PROJECT OVERVIEW

Thanks to you, the project continues to gather lots of good information. In June and July, nearly all (89%) of the volunteer sites were sampled and 107 water samples were cultured at the minilabs!!!

**Project Sample Sites: 55 total**  
 33 sites in 7 lakes:  
 Kampeska- 2  
 Pelican- 6  
 Campbell- 10  
 Herman- 6  
 Madison- 4  
 Round- 1  
 Brant- 4  
 22 sites in river & creeks:  
 Central Big Sioux- 19  
 Lake Herman tribs- 1  
 Lake Madison tribs- 2

**Volunteers:** 32 people trained and supplied; and 27 people submitted data in June and July

**Volunteer Water Samples Cultured:**  
 Watertown Minilab- 17  
 Brookings Minilab- 48  
 Madison Minilab- 42  
**TOTAL- 107**

Bacteriological results, organized by lake name and site ID, are shown in Table 1 for all samples submitted by volunteers in June and July. Data is graphed in Figure 1. Lab or field blanks are not included, but all the blank samples continued to culture no bacteria.

Lake	Sample Site ID	June		July	
		Coliscan Easygel (Coli)	3M Petrifilm (Petri)	Coli	Petri
Brant	BLT9				0
	BLT10				0
	LBRA1				0
Campbell	LCAM1	0	0	0,0	0
	LCAM2	0	0	33	0
	LCAM3	0	200	0	0
	LCAM4	20, <b>250</b>	100,0	175	200
	LCAM5	20, 20	0, 0	0	0, 0
	LCAM7	40	0	0, 25	0, 0
	LCAM8			0	0
	LCAM9			120; <b>2,440;</b> 0;0;0	100; <b>2,200;</b> 0;0;0
9606B	0	0	0	0	
Herman	LH1A		200		0
	LH1B		100		0
	LMT1		0		0
	LHER1	100, <b>280</b>	0, 200	0	0,0
	LHER2	180	100,10,0	20	0
	LHER3		0, 100		0
4306B		0		0	
Kampeska	LKAM1	80,60, 0		0	
	9508B	0		0,0	
Madison	LMT6		<b>300,300</b>		<b>500</b>
	LMAD1		0		0
	LMAD3		100		0
	LMAD4		0		200
	BLT8		0		<b>900</b>
	4309A		0		0
Pelican	LPEL1			0,50,0	
	LPEL4			0,0	
	LPEL5			0,50,0	
	9517B			0,50	
Round	4312		200		0

Most (65%) of the volunteer samples cultured **no E. coli** bacteria. About 15% (5 of 32) of the sample sites exceeded the EPA recommendation for single sample maximum (red bold font in Table 1), similar to April and May conditions. Samples with high bacteria levels came from tributaries to Lake Madison or near the shoreline in Lakes Campbell and Herman. Samples from LCAM9 cultured the highest E.coli numbers from

any lake site in the project to date, but additional testing showed no E. coli.

Volunteers collected most of the June and July samples under dry conditions, only 10 samples (9%) reflect wet-weather conditions and one wet weather sample exceeded the EPA recommendation for single-sample maximum.

Table 2 shows project data collected from streams in the Central Big Sioux Watershed. E. coli bacteria concentrations in streams were **much higher** than samples from the lakes. Samples were collected from 16 sites and 48 cultures were prepared. About 81% of the sites and 79% of the cultures exceeded the EPA-recommended standard for even **infrequent** immersion recreation (red bold font). About 46% of the samples were collected under wet weather conditions: June storm- 2.5 to 3" rain; July storm- 0.75 to 1" rain. **All** cultures prepared after wet weather conditions, and 62% of dry-weather cultures, exceeded the EPA recommendation for infrequent immersion recreation.

Central Big Sioux Watershed Streams					
Site ID	Stream Name	June		July	
		Coli	Petri	Coli	Petri
R4	Big Sioux			350	100
T1	N. Deer			<b>900</b>	<b>1,500</b>
T3	Sixmile			0, 50	100; 200
T4	Sixmile			<b>2,200</b>	<b>1,700</b>
T5	N. Deer			<b>&gt;10,000*</b>	<b>9,500</b>
T15	N. Buffalo	<b>833;</b> <b>733</b>	<b>1,200;</b> <b>500</b>		
T19	Colton	<b>2,400</b>	<b>2,800</b>		
T20	W. Branch Skunk	400	200		
T21	Skunk	<b>867</b>	<b>800</b>		
T22	Willow	<b>675</b>	<b>1,300</b>		
T27	W. Pipestone	<b>&gt;10,000</b>	<b>&gt;10,000</b>	<b>7,500</b>	<b>&gt;10,000</b>
T28	Pipestone	<b>1,000</b>	<b>600</b>		
T29	Pipestone	<b>1,400</b>	<b>1,200</b>	560	<b>800</b>
T31	Split Rock	<b>&gt;10,000</b>	<b>&gt;10,000</b>	<b>3,250</b>	<b>3,100</b>
T32a	Beaver Ck trib	<b>&gt;10,000</b>	<b>&gt;10,000</b>	<b>&gt;10,000</b>	<b>&gt;10,000</b>
T33	Beaver	<b>&gt;10,000</b>	<b>&gt;10,000</b>	<b>700;</b> <b>650</b>	<b>800;</b> <b>600</b>

\*>10,000 means colonies were too numerous to count (TNTC)

The Bacteria Monitoring Project is interpreting lab results using EPA-recommended standards for E. coli concentration. Recommendations are based on the intensity of swimming use:

- 💧 Intense (designated beach)- ≤235 CFU
- 💧 Moderate- ≤298
- 💧 Light- ≤410
- 💧 Infrequent- ≤576

**SOUTH DAKOTA RECREATIONAL WATER STANDARDS ARE BASED ON FECAL COLIFORM BACTERIA, NOT E. COLI**

