

PROJECT UPDATE #1

June-2007



- April-May Overview & Lab Results
- Thermometer Maintenance
- Documenting the Sample Site
- Mini-lab Coordination
- Shipping Samples to State Lab



PROJECT OVERVIEW

Central Big Sioux- 5
 Lake Herman tribs- 1
 Lake Madison tribs- 2

Site Document- 15 total
 Lakes and ponds- 9
 Rivers and streams- 6

Thanks to you, the project is off to a great start with numerous sample sites, volunteer monitors, and collected samples.

Volunteers: 27 people trained and supplied; and 19 people submitted data in April and May

Lab Results:
 E. coli & total coliform cultures: 84 total

Project Sample Sites: 42 total

34 sites in 8 lakes:

- Kampeska- 2
- Pelican- 6
- Campbell- 15
- Herman- 6
- Madison- 4
- Round- 1
- Brant- 4
- Long- 2

8 sites in rivers & creeks:

Samples Received:

- Watertown Mini-lab- 6
- Brookings Mini-lab- 11
- Madison Mini-lab- 39
- SD State Health Lab- 4

Data Received:

- Field Data- 55 total
- Lakes and ponds- 34
- Rivers & streams- 21

Mini-lab cultures included duplicates, blanks, and "split" samples prepared using both lab methods: Coliscan Easygel-35 and 3M Petrifilm.

Both methods count colonies of bacteria, reported as colony forming units (CFU)

Table 1 lists the bacteriological results for all submitted samples by sample site ID. Table does not include lab or field blanks, but all the blank samples cultured zero bacteria which is the goal. The table highlights sites where the *E. coli* bacteria concentrations exceeded the EPA-recommended standards. Results are graphed on back page.

TABLE 1. E. COLI CONCENTRATIONS (CFU/100 ml)					
Lake	Sample Site ID	April		May	
		Coliscan Easygel	3M Petrifilm	Coliscan Easygel	3M Petrifilm
Brant	BLT9		0	0	0
	BLT10		0	0	0
	LBRA1		0	0	0
Herman	LH1A		0, 200	200; 1,160; 900	300, 800; 1,100
	LH1B		200	140; 880	300; 200; 500
	LMT1		0	220	200; 200
	LHER1		0	60	0
	LHER2		300	440; 1,760	300; 1,200
	LHER3				0; 200
	4306B			0	0
Kampeska	LKAM1			0	
	9508B			0	
Madison	LMT6		200; 200	60	0
	LMAD1		0	80	0
	LMAD3		0	40	100
	LMAD4		0		0
	BLT8		0	0	0
	4309A				0
Pelican	LPEL1			0	
	LPEL4			280	
	LPEL5			0	
	9517B			0	
Round	4312		0	80	0
Central Big Sioux River Watershed	R4	200	0	180	0
	T2	0	100	75	0
	T4	0	0	2,250	2,800
	T5	0	0	800	800
	T11	200	200	1,900	500

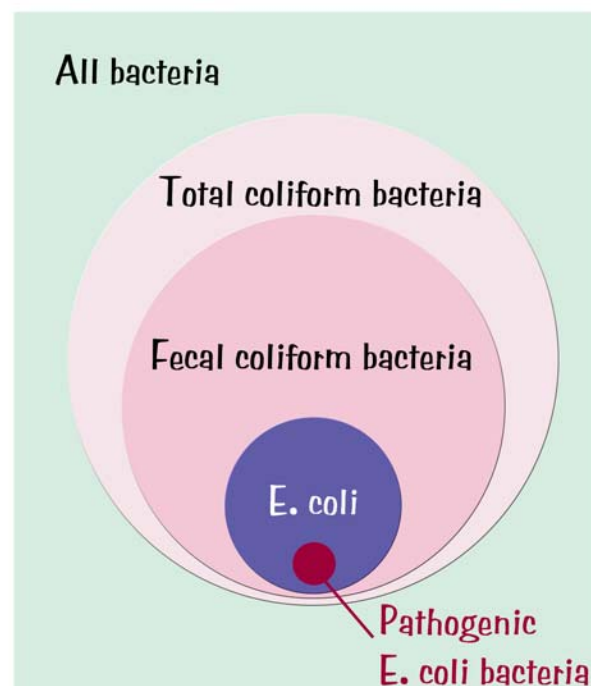
Due to high bacteria concentrations, two sites on Lake Herman (LH1A and LHER2) were re-sampled and analyzed at the Madison Mini-lab and South Dakota State Health Lab. Re-sampling confirmed the high *E. coli* levels and high fecal coliform bacteria levels (see diagram to right). The highest concentrations occurred after intense rainfall in early May and both sample sites are located where streams enter the lake. The effect of wet and dry conditions on bacteria levels in the lake will be clearer as more data is collected.

EPA-RECOMMENDED CRITERIA

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

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

REMEMBER THAT SOUTH DAKOTA STANDARDS FOR RECREATIONAL USE OF WATER ARE BASED ON FECAL COLIFORM BACTERIA, NOT *E. COLI*.



Escherichia coli (*E. coli*)

