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Survey of Area Streams Near Hanover High School

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Testing Water Quality of Hanover Streams

- Purpose
- Procedure
- Watershed Testing Map
- Fecal Coliform tests
- Macroinvertebrates & Biotic Index
- Concentration of Phosphates & nitrates over 24 hrs
- Nitrate and phosphate loads
- Phosphate & nitrate concentrations - grab samples
- Temperature, pH and D.O. at site A over 24 hours
- Conclusion
- Acknowledgments





Purpose

The **purpose** of this experiment was to test the water quality of Hanover Streams.



Setting up sampling
equipment
Site B

Procedure

Indicators:

- pH level of the stream
- Nitrate & phosphate concentration of the stream
- Temperature of the stream
- Dissolved Oxygen
- Fecal coliform sample
- Macroinvertebrates

Sites A & B: 24 hour phosphate and nitrate samples, and nutrient load

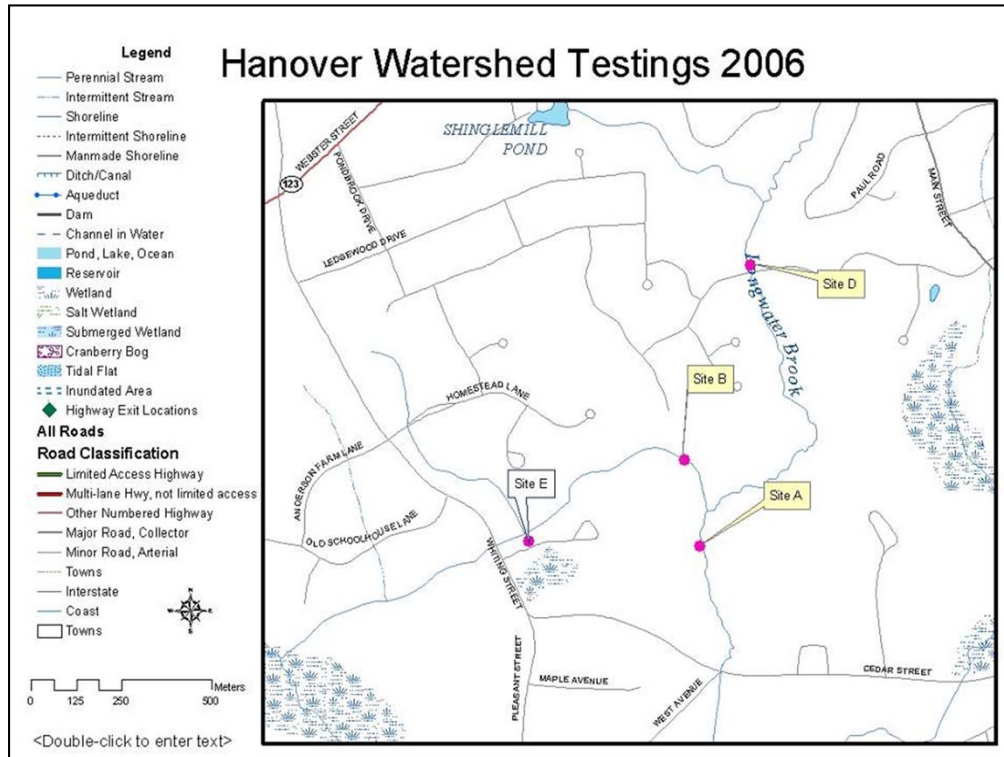
Site A only: dissolved oxygen, temperature, pH

A-C: fecal coliform, single time point analysis of pH, temperature, nitrates and phosphates



Watershed Map

- The sites on the maps are the four different locations of streams that we tested.
- The map indicates Site; A, B, D, & E
- The most common water sources are patches of wetlands, ponds, and the streams we researched.



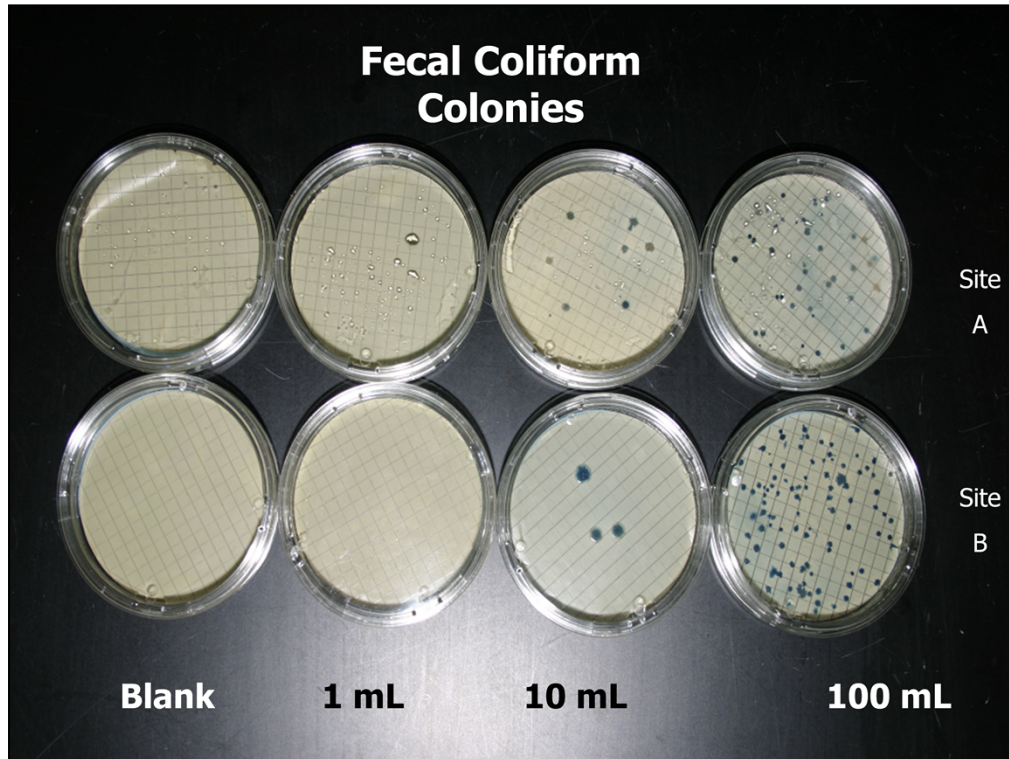
The sites on the maps were the four different locations of streams that we tested.

The map indicated Site; A, B, D, & E

The most common water sources are patches of wetlands, ponds, and the streams we researched.

Filtering water
collected by the
Sigma
Site A

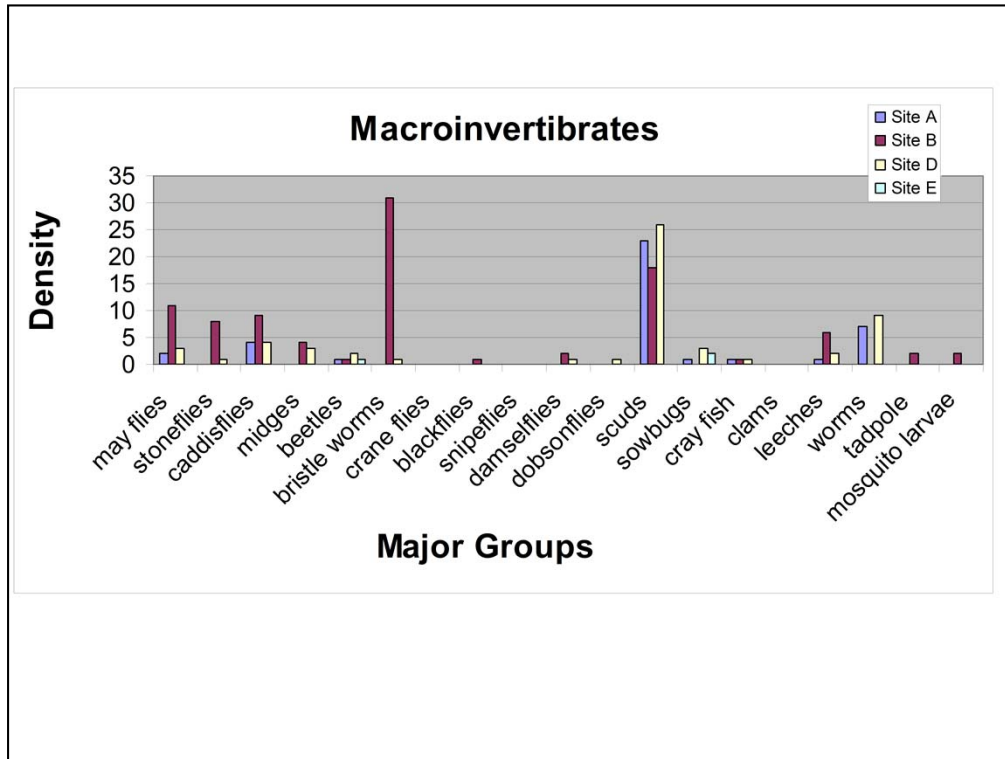




1, 10 and 100 ml samples were analyzed for Fecal coliform content at BSC
Each blue dot is the result of a Fecal coliform bacterium

Fecal coliform

Site	ml filtered	FC Filter Count	FC Colonies per 100ml
A1	100	28	28
A2	100	45	45
B	100	87	87
D1	100	43	43
E	100	29	29



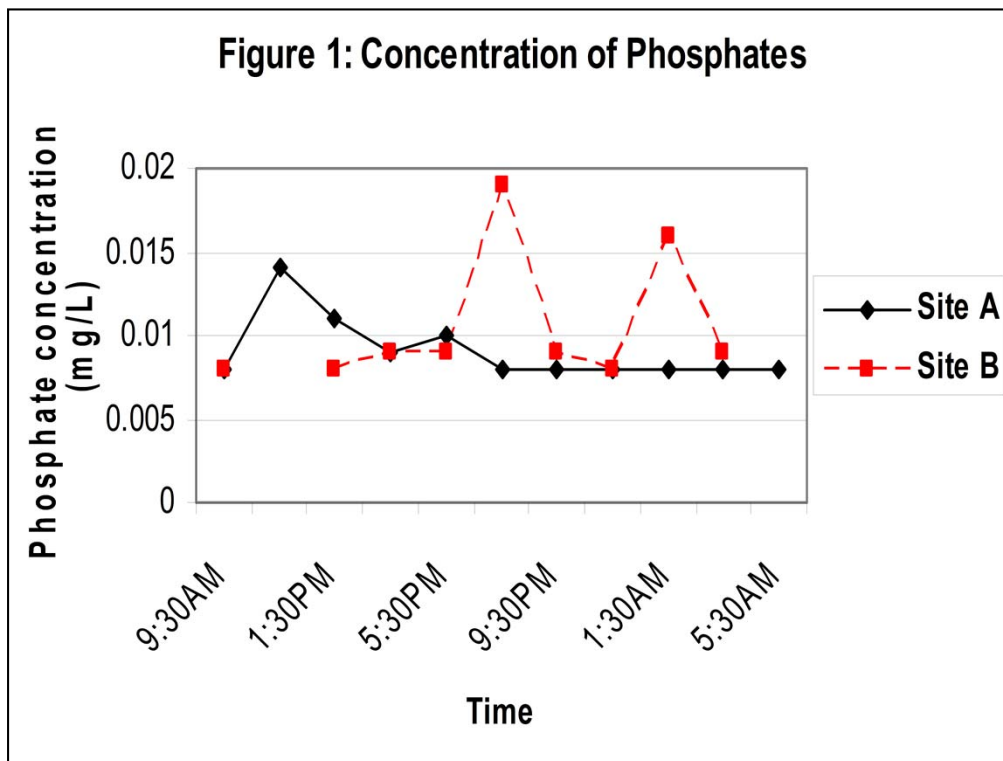
Site Biotic Indexes Based Upon Macroinvertebrates

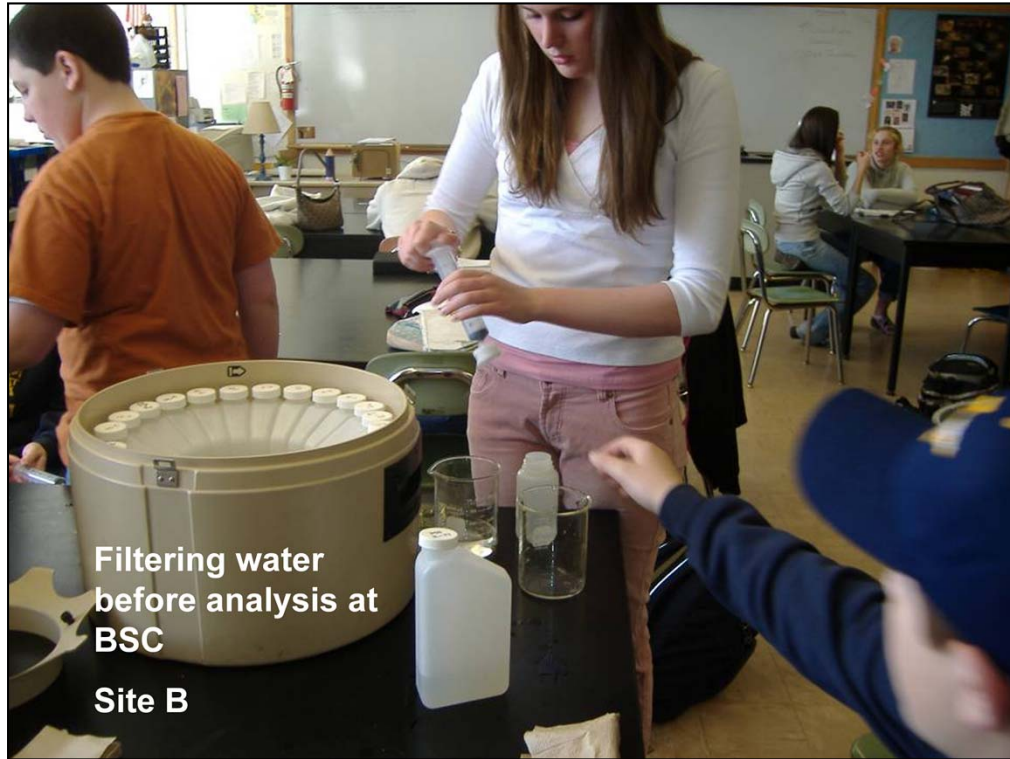
Site A: 6.5

Site B: 5.8

Site D: 6.5

Site E: 6.7

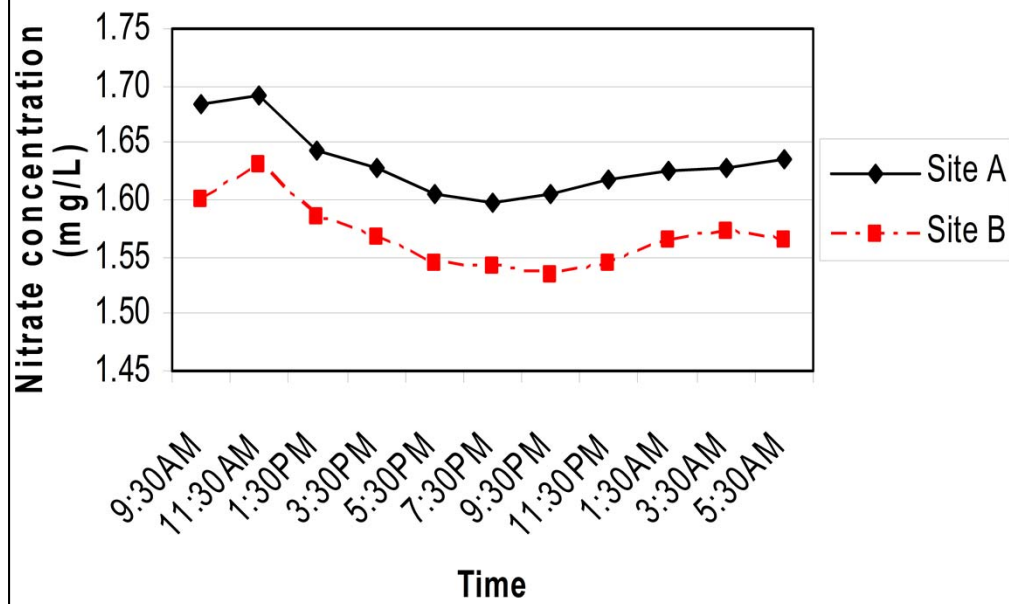




Filtering water
before analysis at
BSC

Site B

Figure 2: Concentration of Nitrates



Nitrate Load

The mass of nitrates passing through the stream in a 24 hour period

- Site A: 10.69 kg/day
- Site B: 17.7 kg/day

Phosphate Load

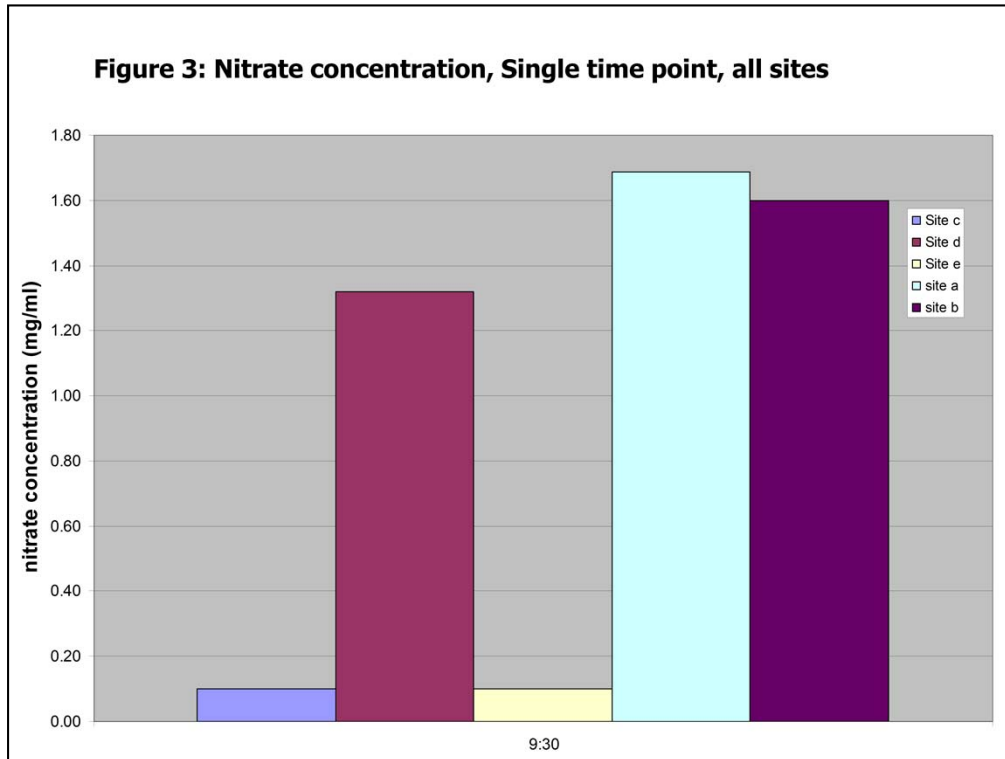
The mass of phosphates passing through the stream in a 24 hour period

- Site A: 0.059 kg/day
- Site B: 0.12 kg/day



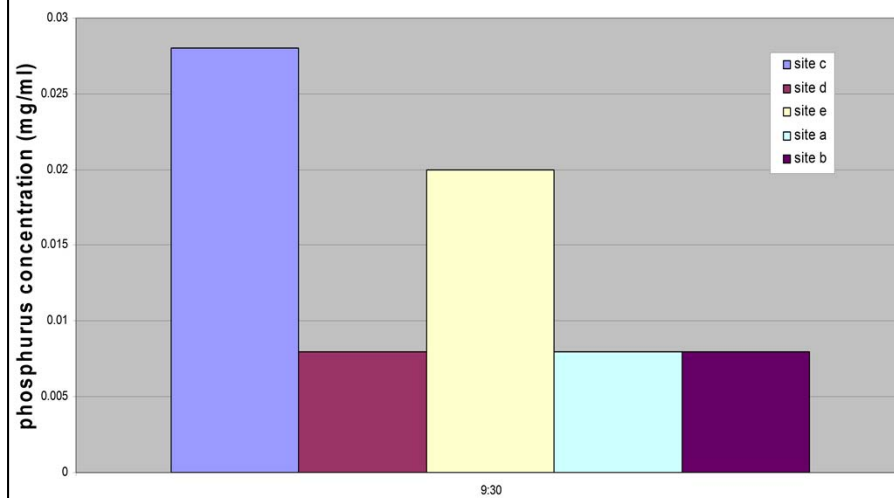
Setting up the
Sigma
Site A





Bar graph phosphates

**Figure 4: Phosphate concentration,
single sample, all sites**



Bar graph nitrates





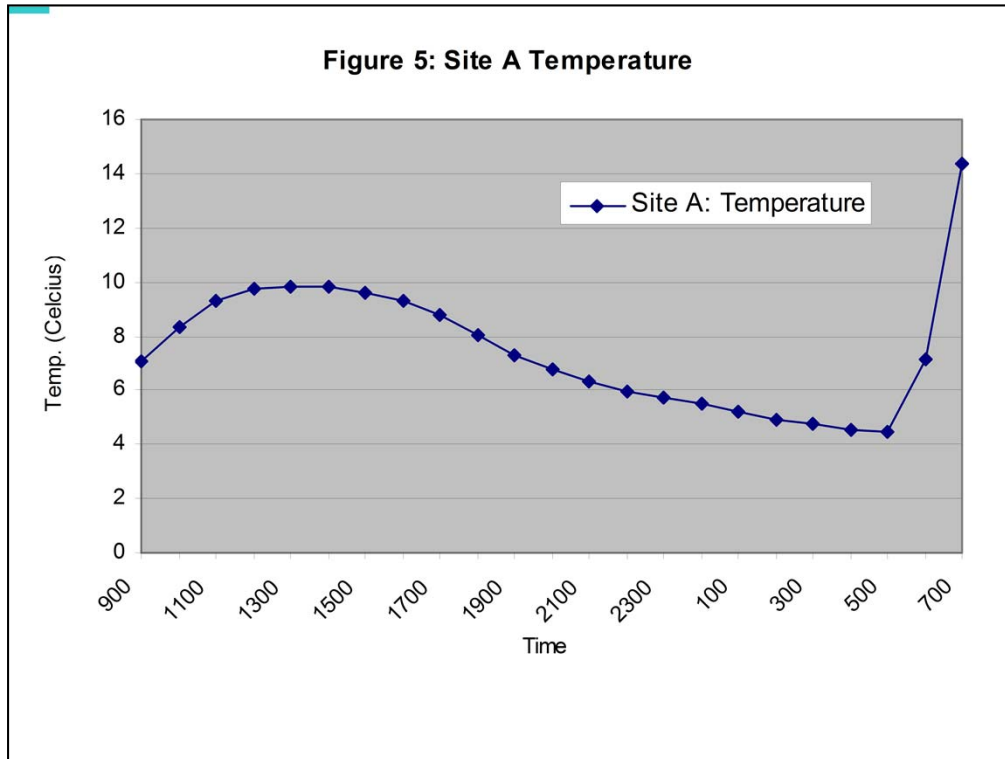


Figure 6: Site A pH

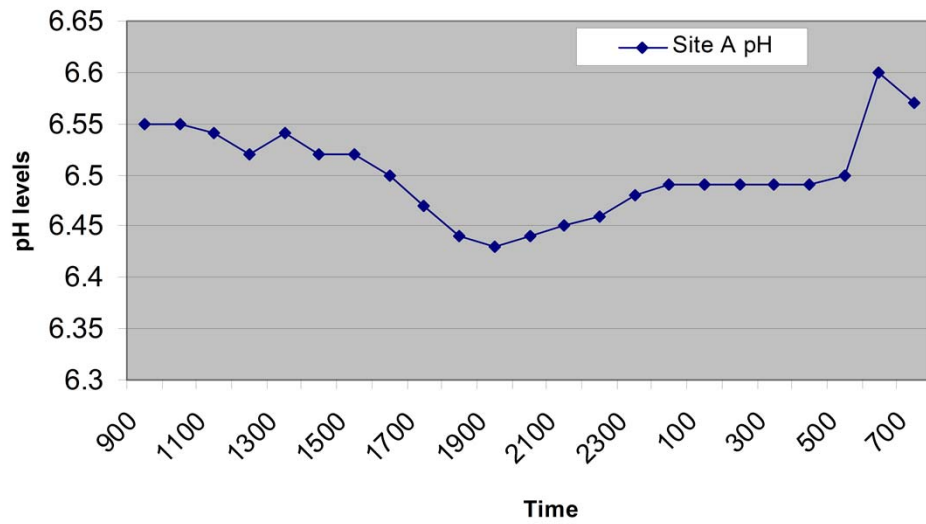
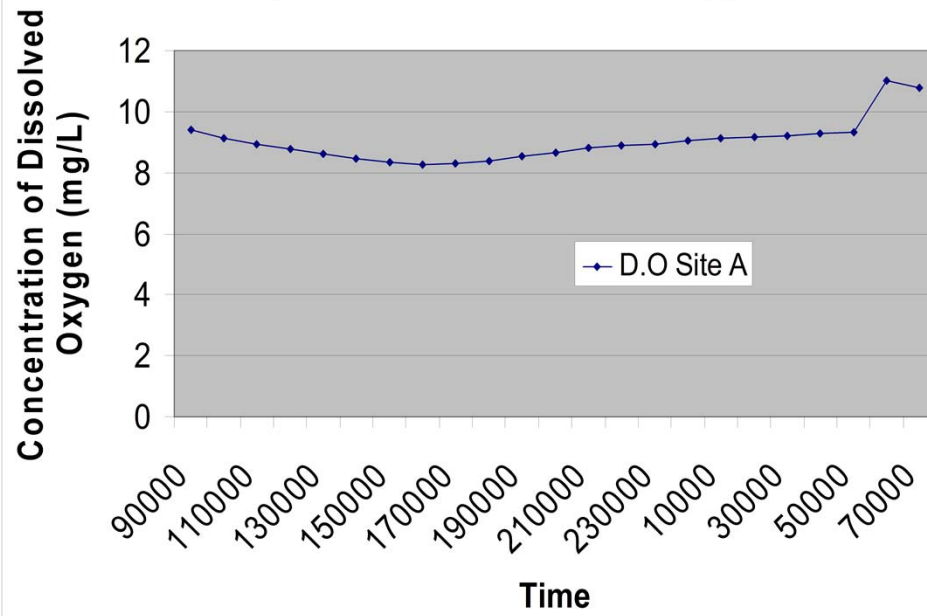


Figure 7: Site A Dissolved Oxygen



Conclusions:

- Despite appearance Site E tested normal.
- Nitrate and phosphate levels were acceptable.
- Fecal coliform counts were below state limits.
- Temperature, dissolved oxygen and pH were also within limits.

Further studies: Despite test results, Site E will go through further testing.

Acknowledgements:

Thank you to:

- Bridgewater State College
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