OKLAHOMA WATER RESOURCES BOARD

Lake Thunderbird Water Quality Monitoring

Water Quality Monitoring

- Monitoring in some capacity since 2000

•Biweekly sampling from April – October with winter sample

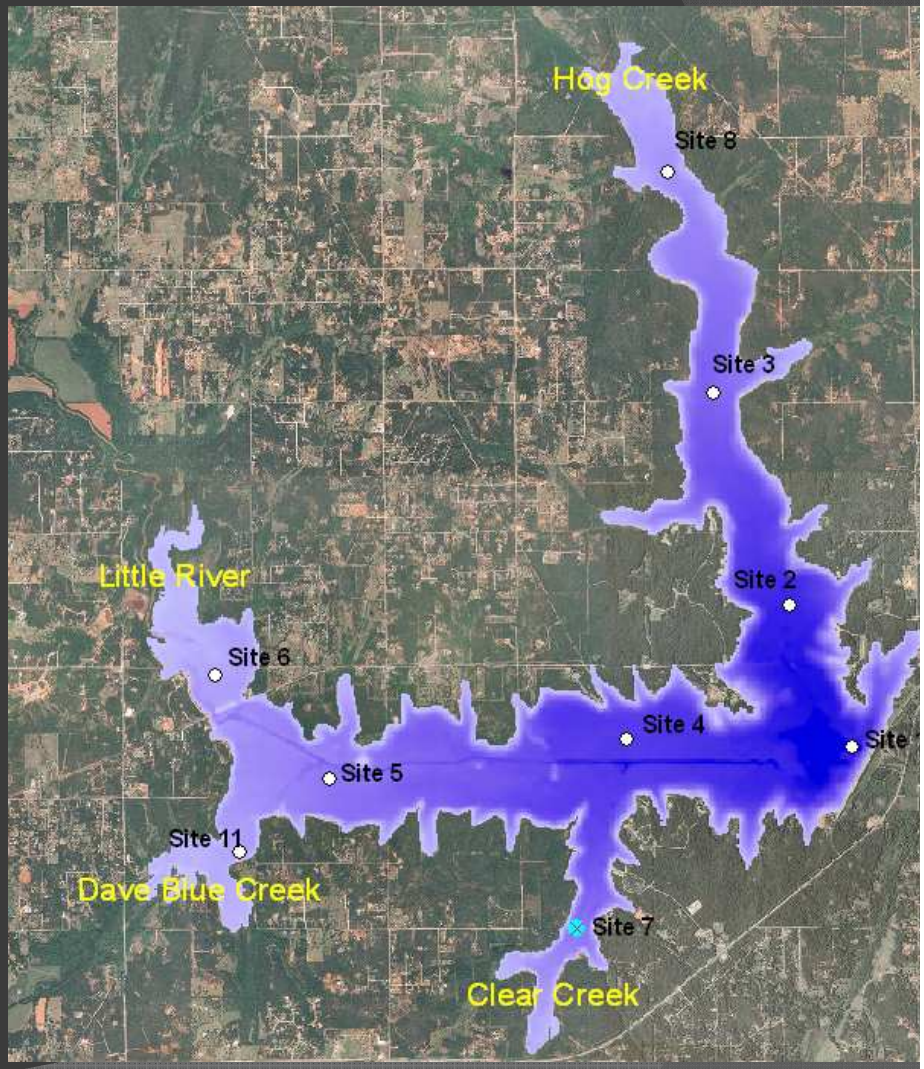
- General water quality profiles performed at 8 sites in one-meter intervals with sonde as well as Secchi, Turbidity, and Chl-*a*

  Dissolved Oxygen %Saturation and Concentration, Oxidation-reduction potential, Temperature, Specific Conductance, pH

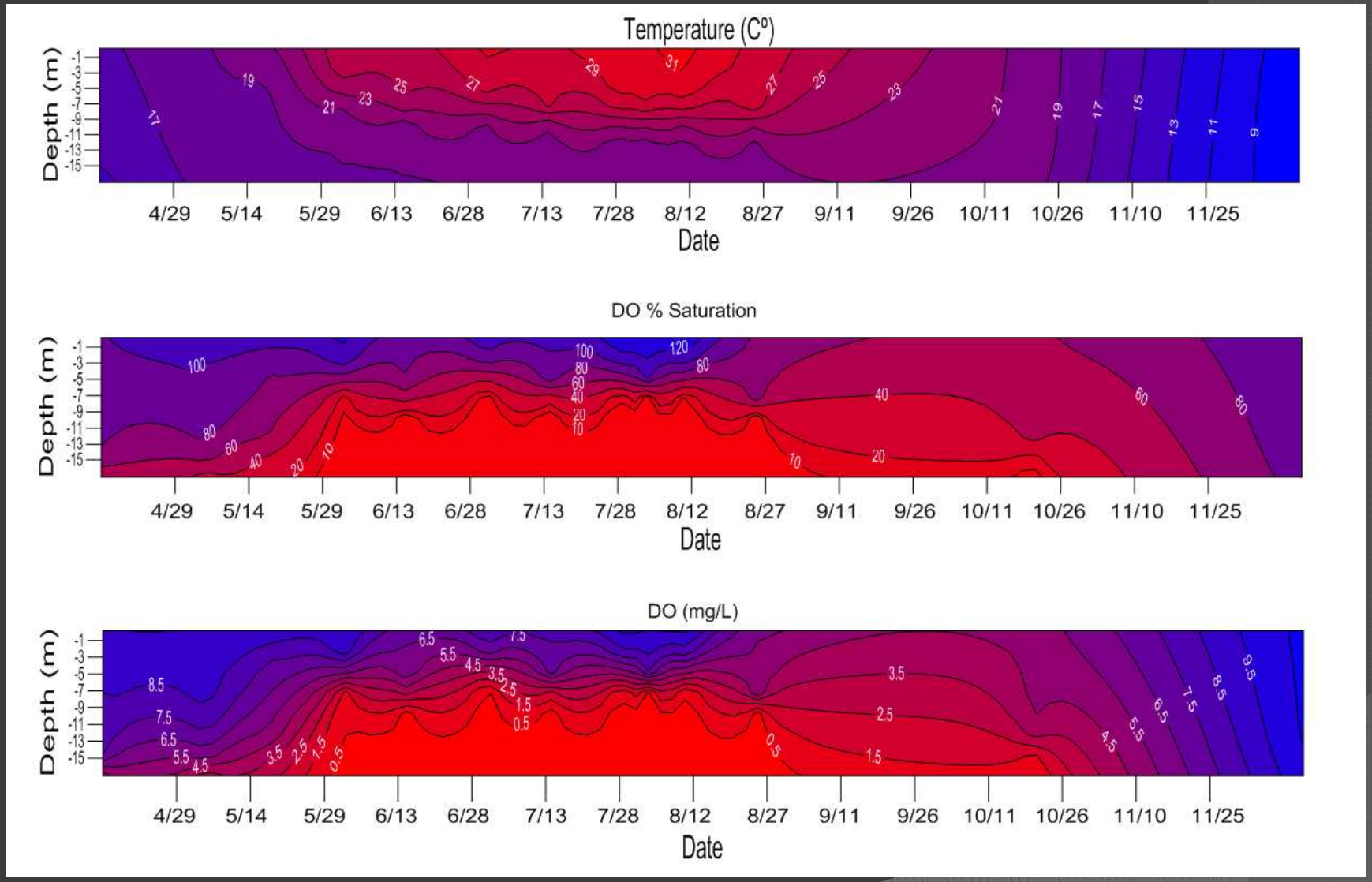
•Recent (2008) focus shifted to include nutrient sampling at the lakes three main tributaries (6,8,11) as well as a 4 meter depth profile (1) to support reservoir modeling efforts

  Alkalinity, chloride, sulfate, total suspended solids, total organic carbon, and phosphorous and nitrogen series.

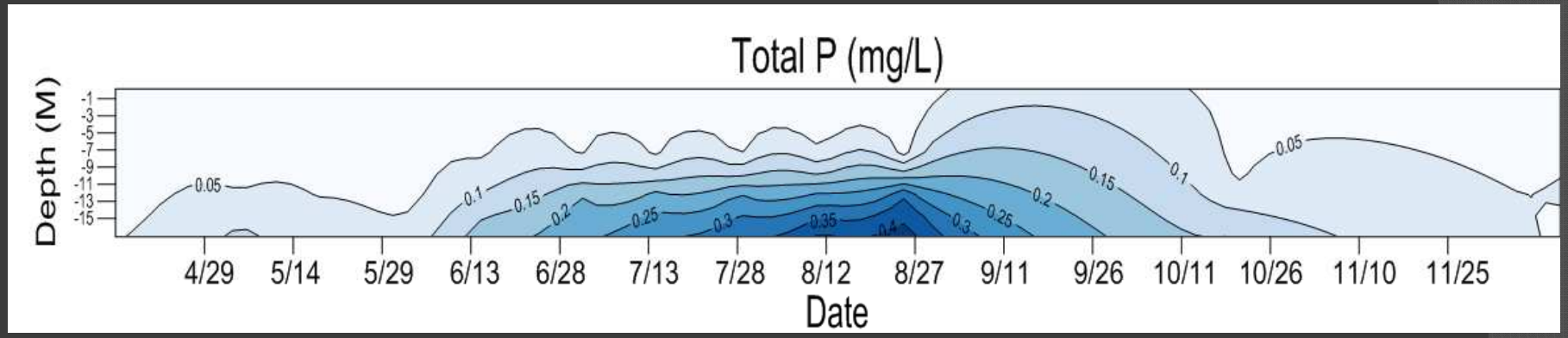
•QA/QC measures: Blanks, Replicate and Duplicates of Site 1

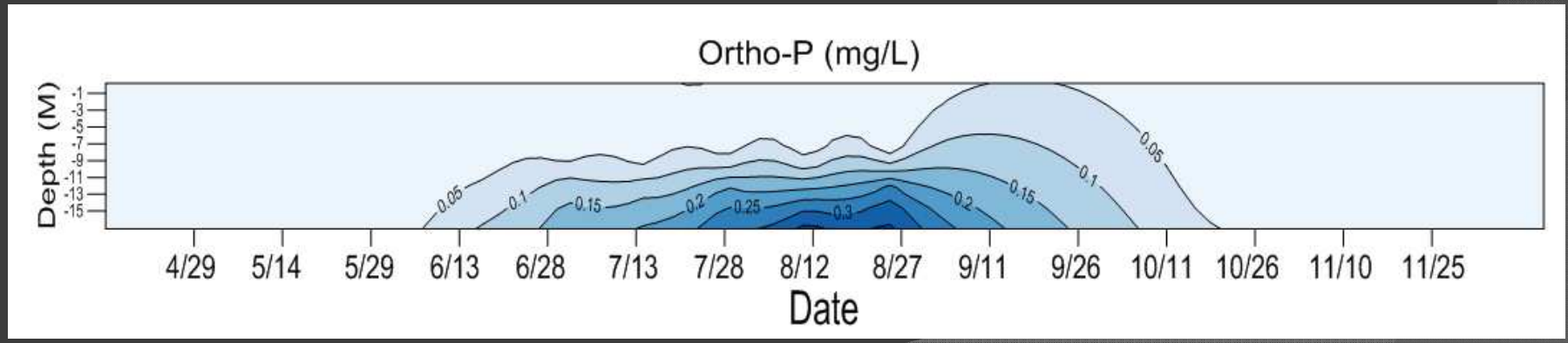


2010 Site 1: Temperature and Dissolved Oxygen

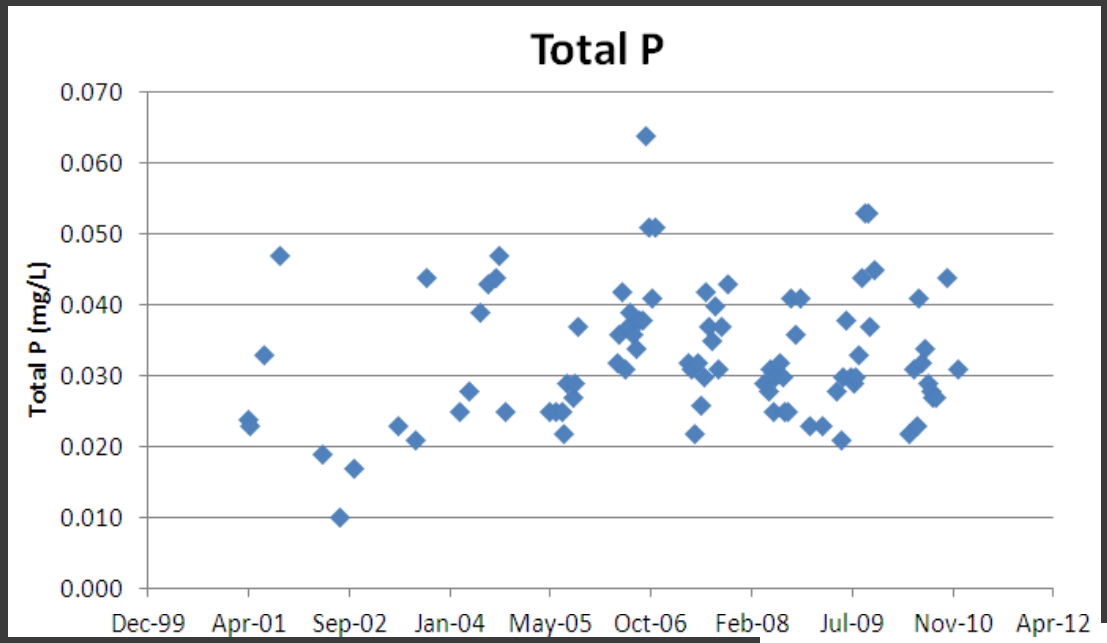


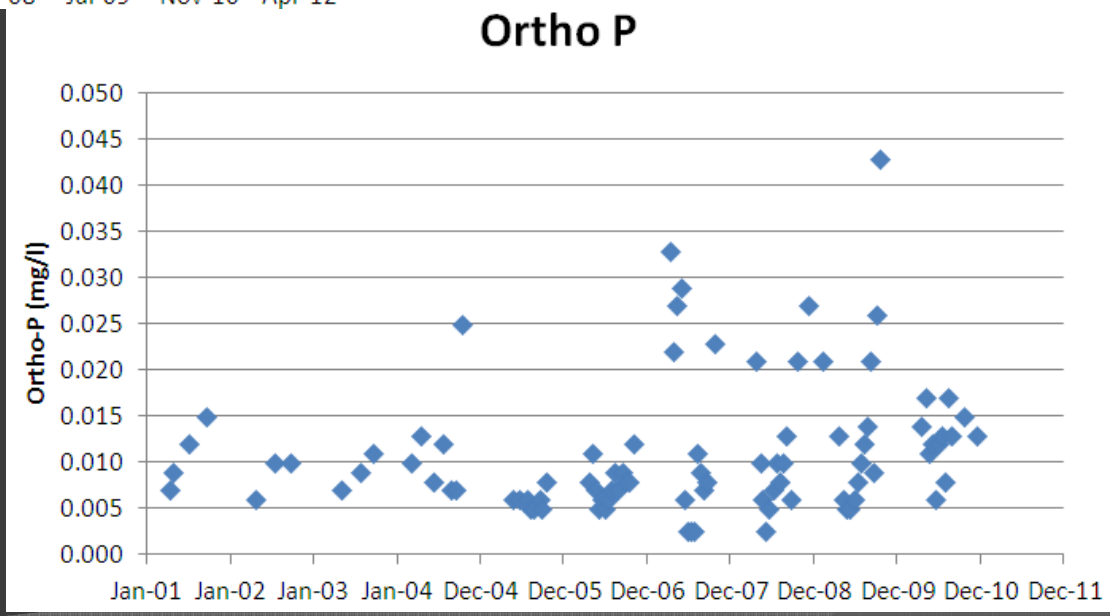
Seasonal Total and Ortho-Phosphorous: Site 1



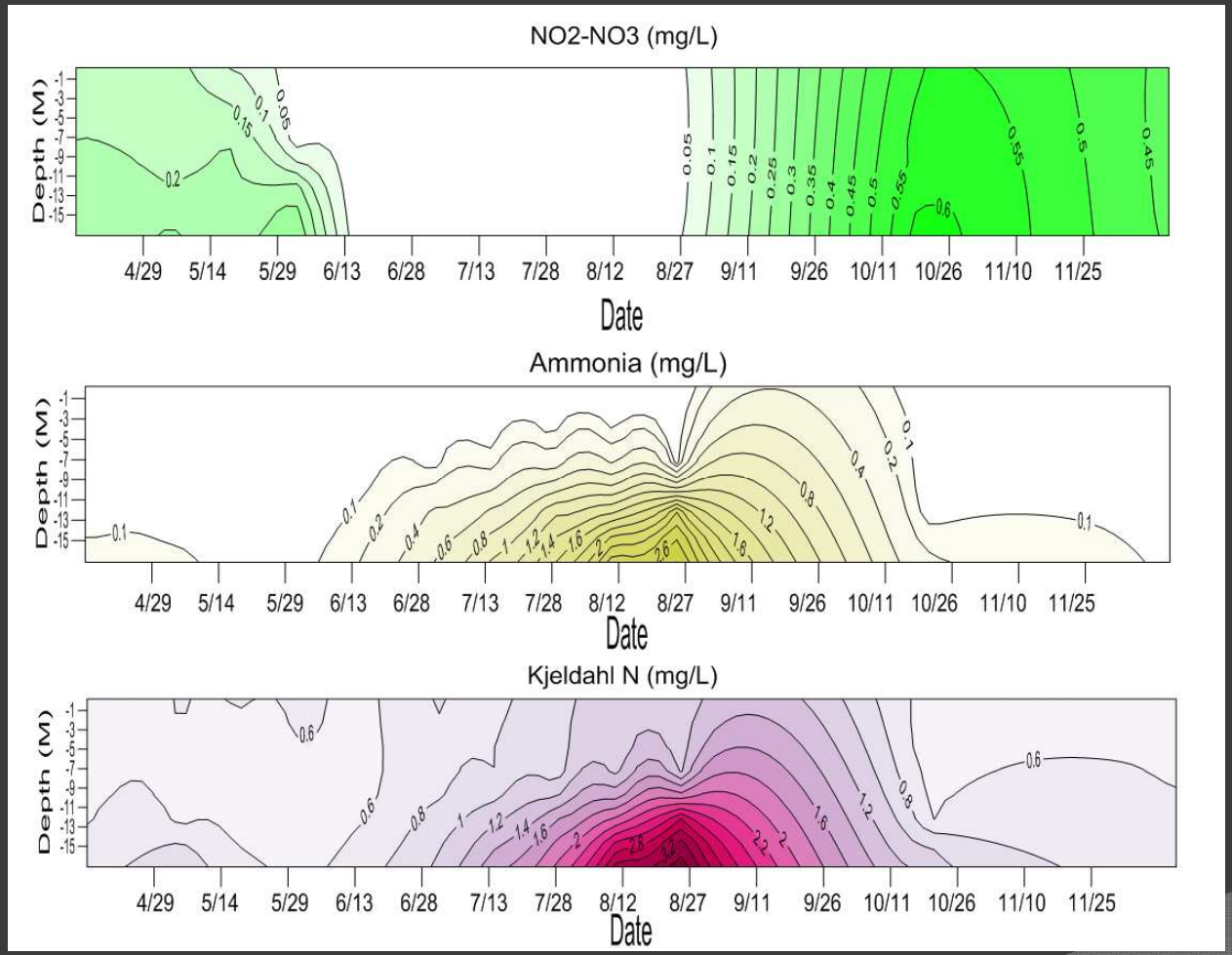


Phosphorus Historical Trend: Site 1 Surface

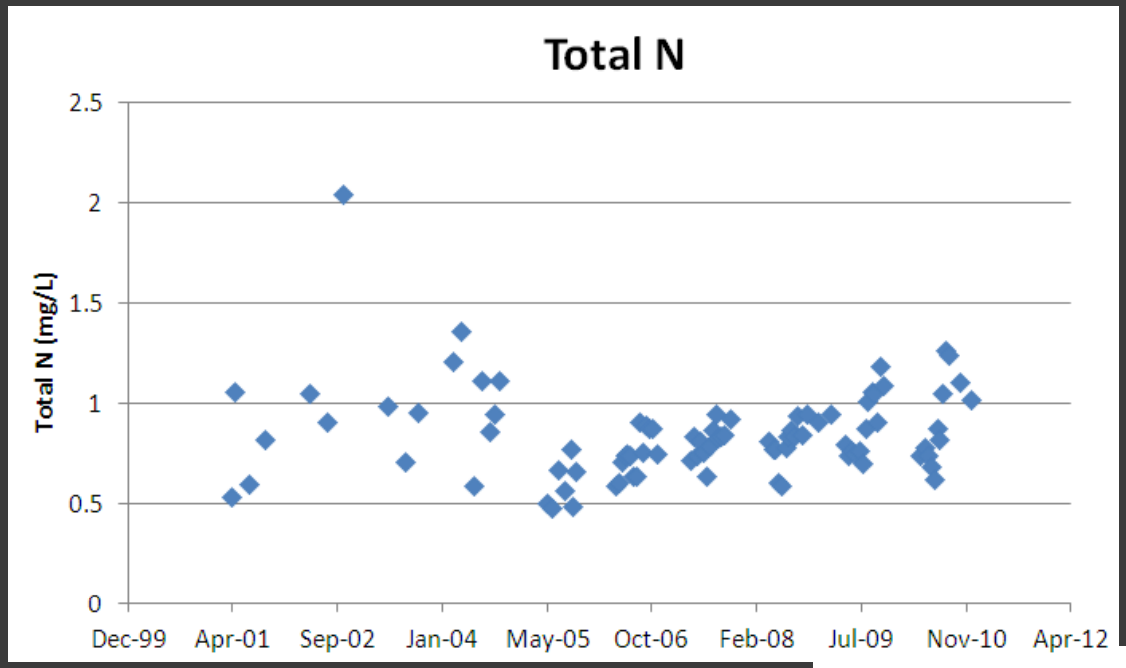


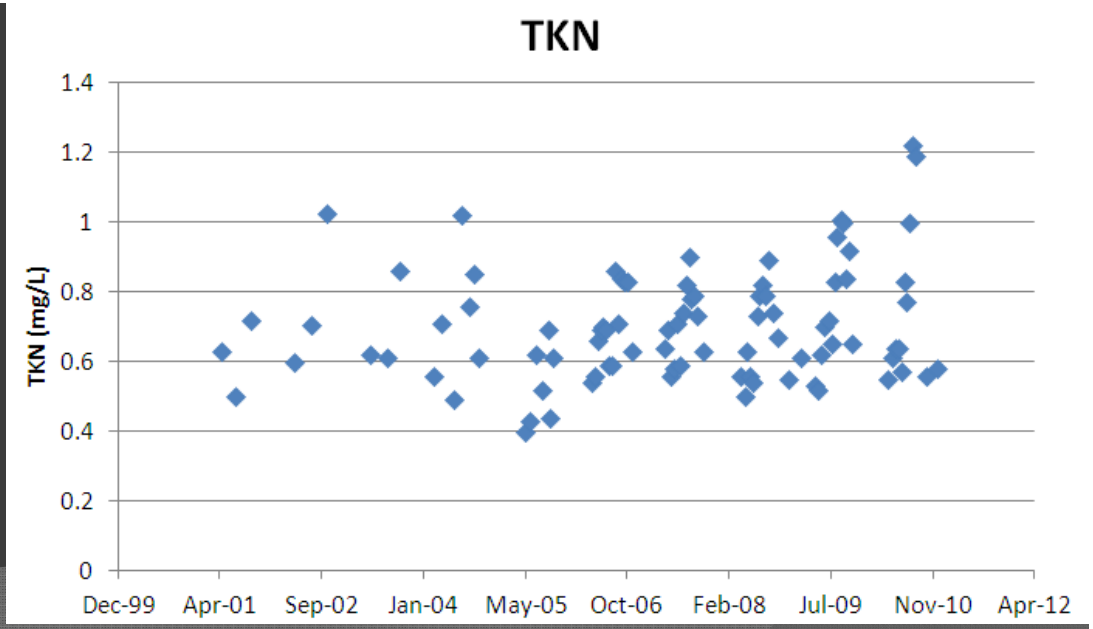


2010 Seasonal Nitrogen Series: Site 1

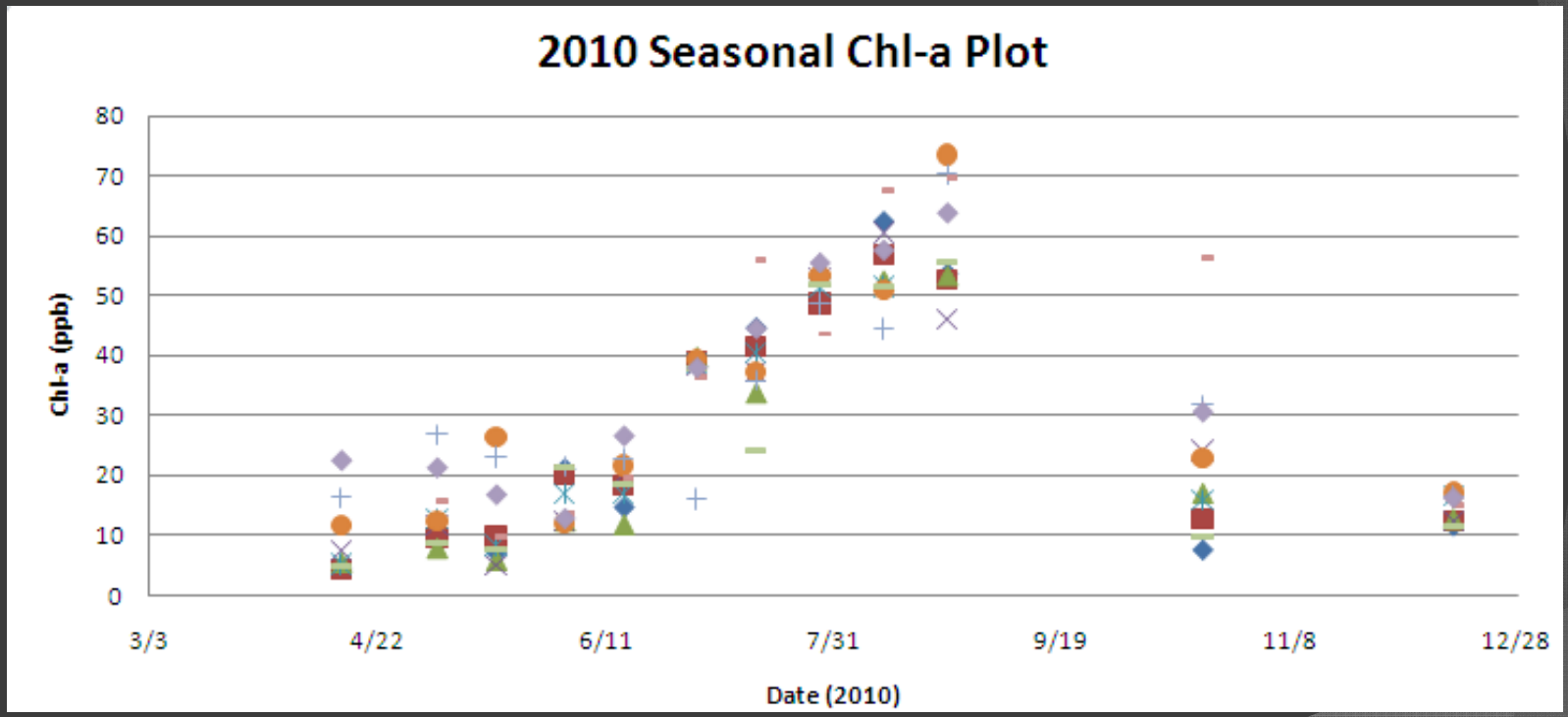


Nitrogen Historical Trend: Site 1 Surface

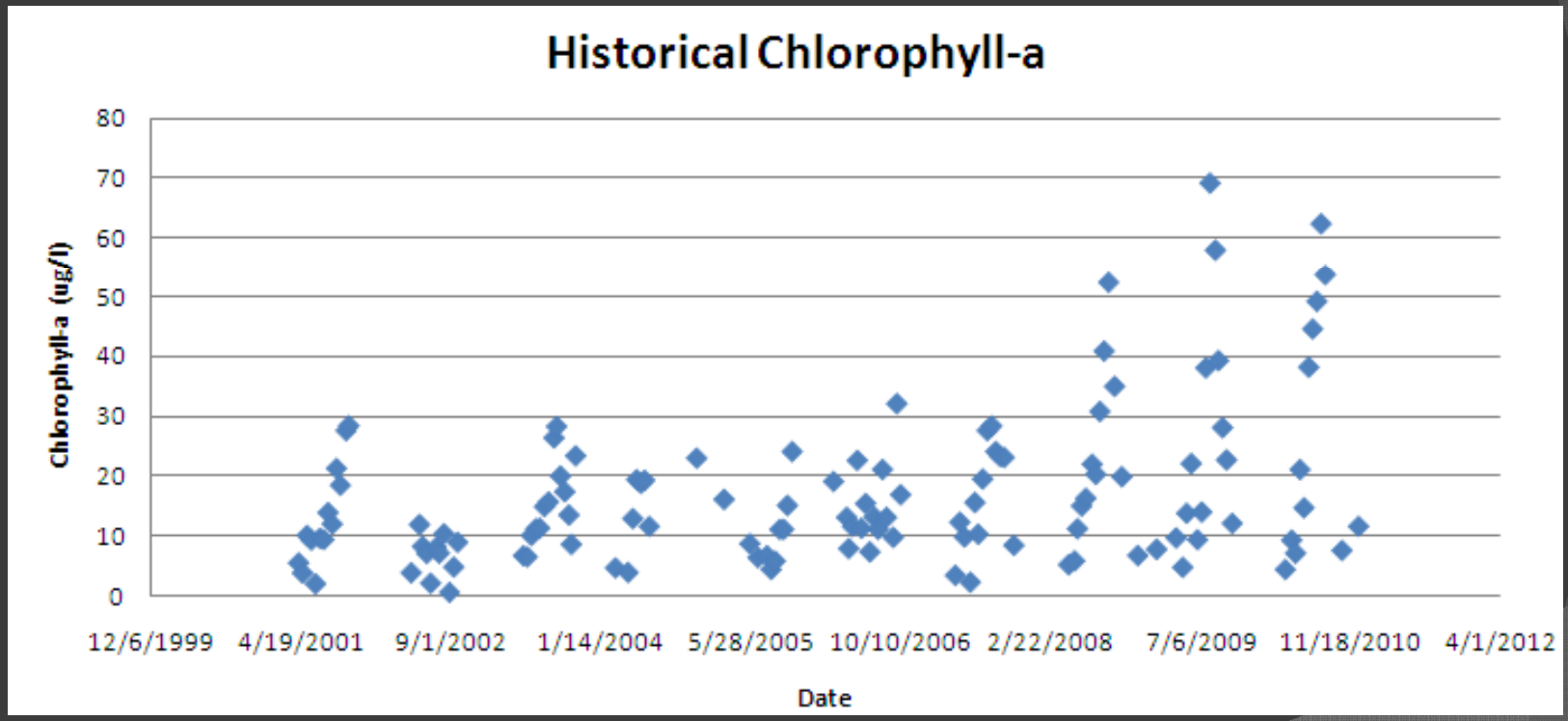




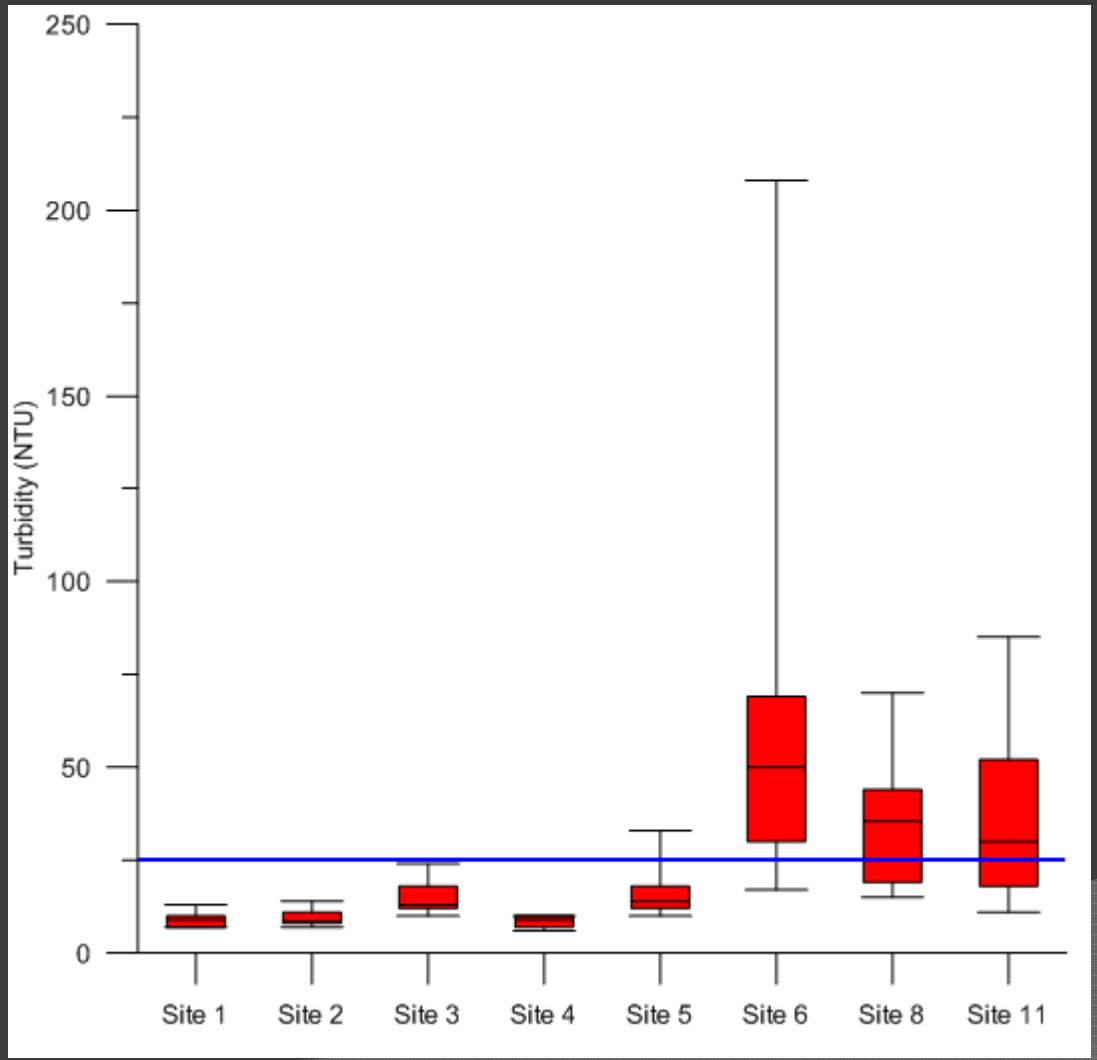
Seasonal Chl-*a* Plot: All Sites



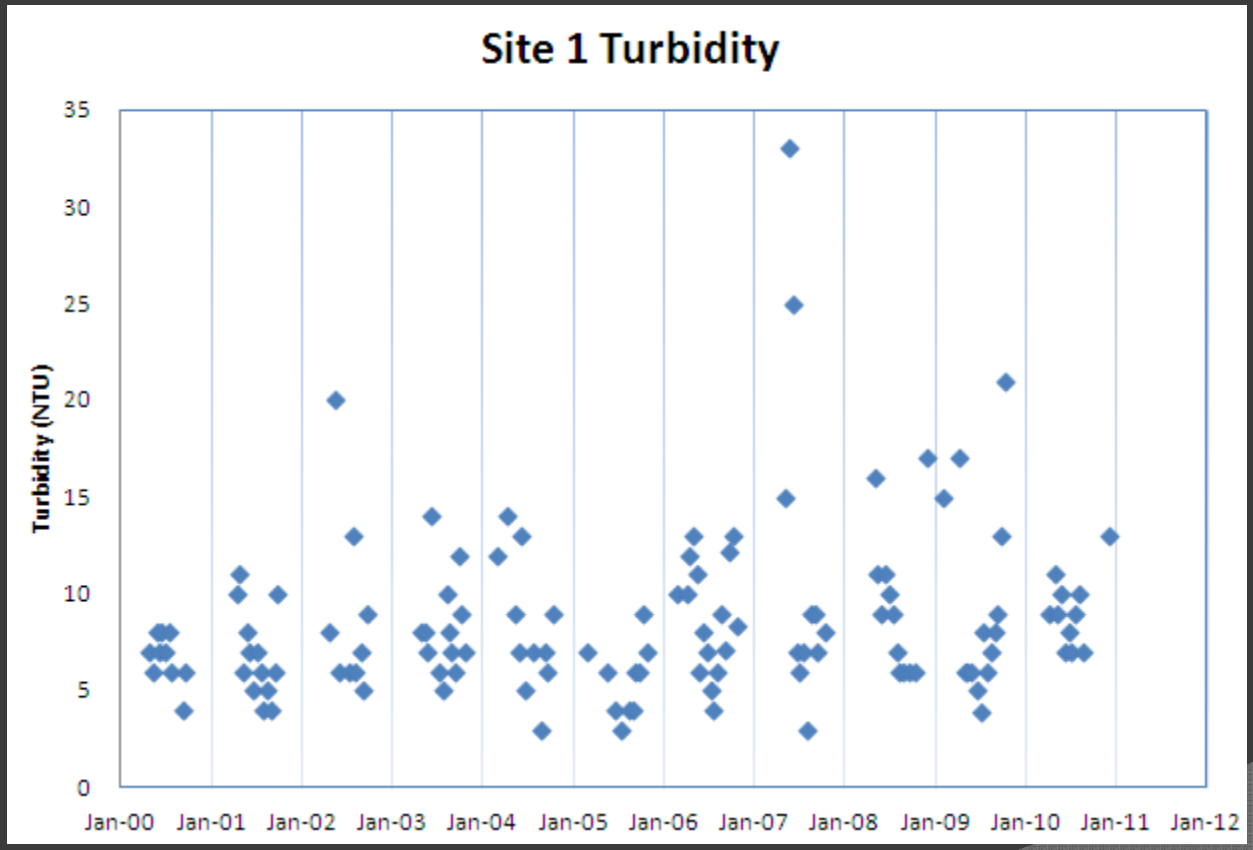
Historical Chlorophyll-*a:* Site 1 Surface



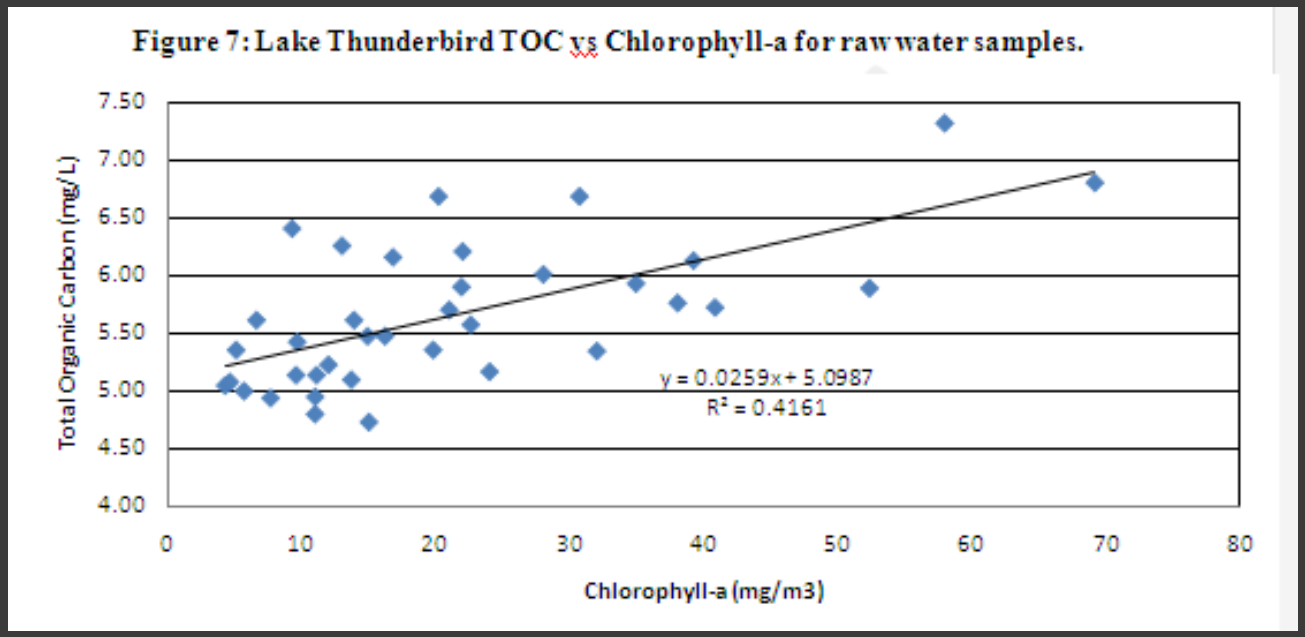
Turbidity


250
200
150
100
50
0
Turbidity (NTU)
Site 1
Site 2
Site 3
Site 4
Site 5
Site 6
Site 8
Site 11

Historical Turbidity



Impact on Drinking Water



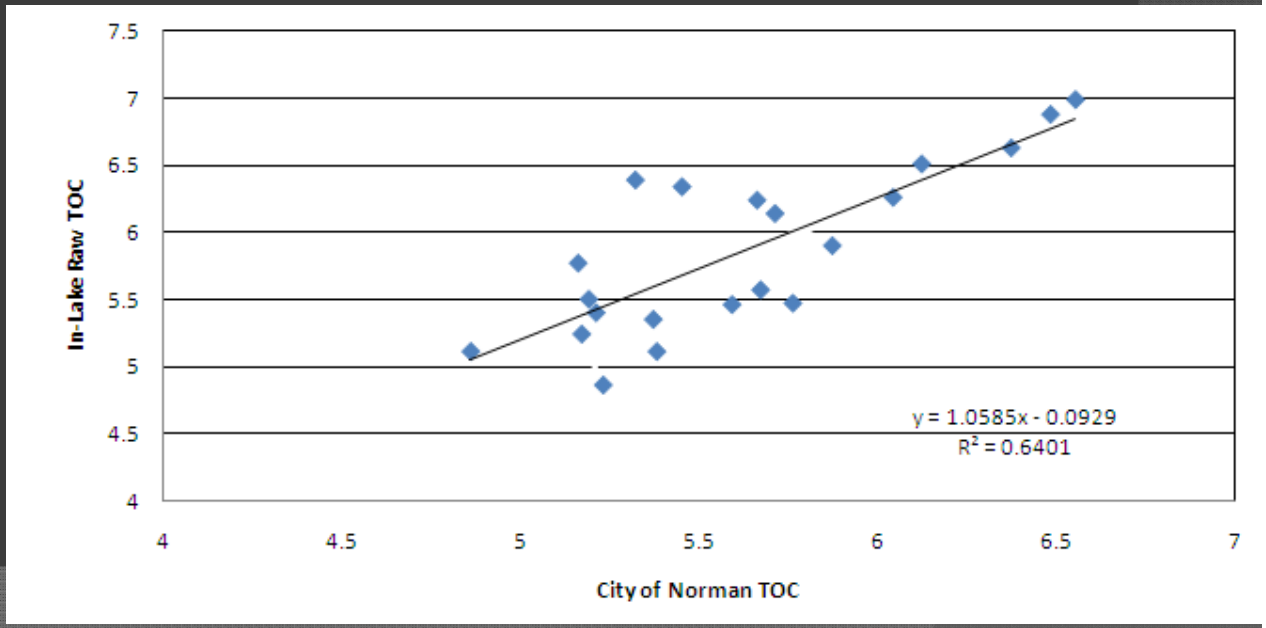


Figure 13: City of Norman treatment costs vs raw TOC. Dataset 2002-2009.

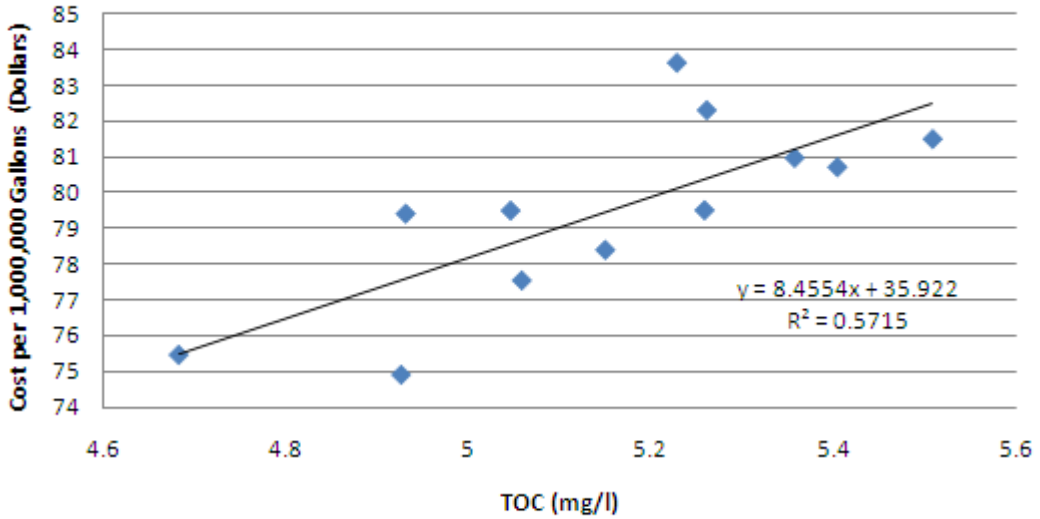


Figure 14: Average TOC and Cost per 1,000,000 gallons by month. Dataset 2002-2009