

# Using Remote Monitoring to Detect Water Quality Issues During Stream Restoration Construction

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# Today's Discussion



- 1 Importance of Construction Site Water Quality Monitoring
- 2 Case Study: College Lake Dam Removal
- 3 Lessons Learned from Biological Monitoring

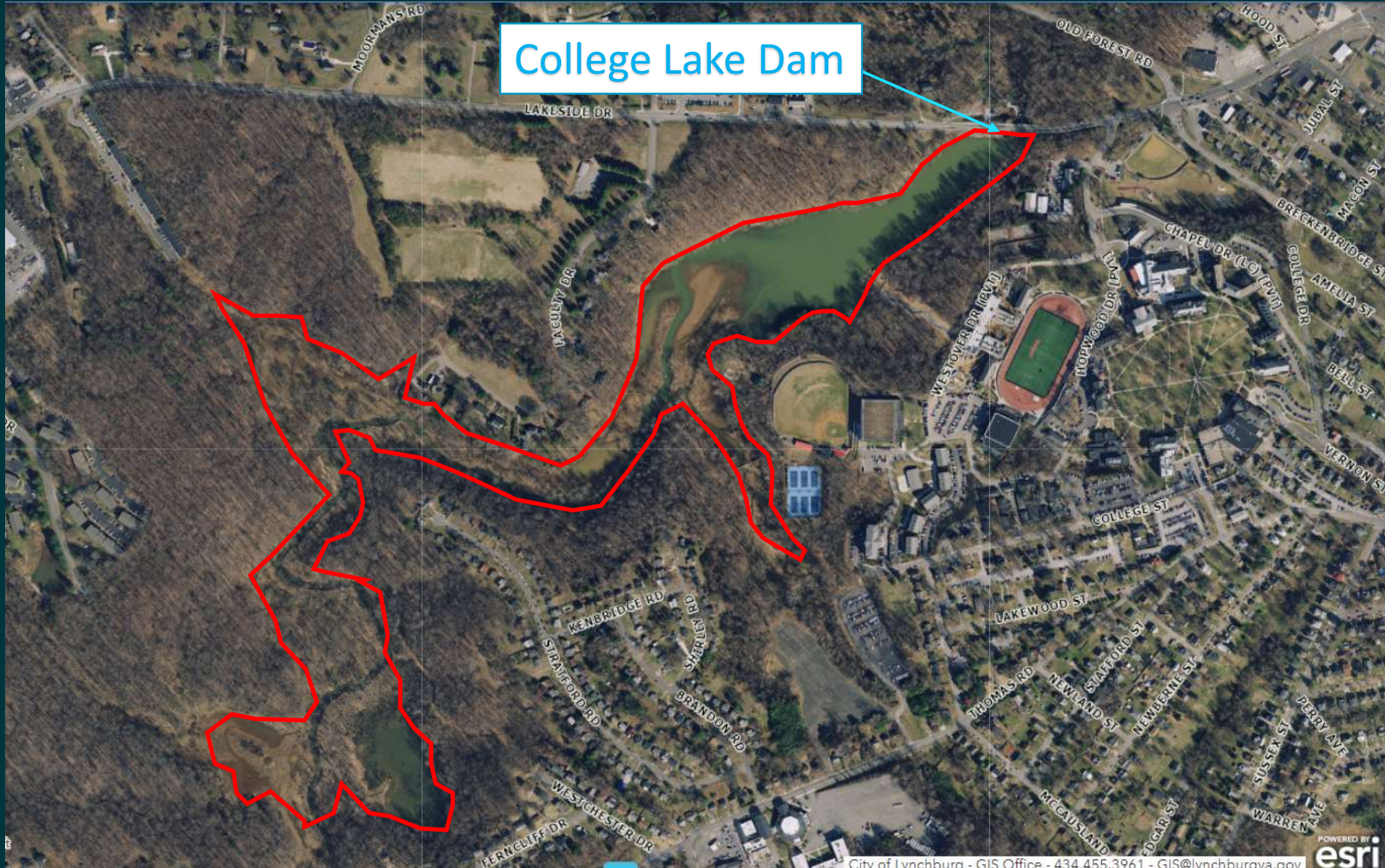
# Water Quality Monitoring – Why it Matters

- Construction activities can generate harmful pollutants
- Monitoring water quality is a tool for mitigating risk
- Critical water quality parameters include:
  - Turbidity
  - pH
  - Dissolved Oxygen
  - Temperature





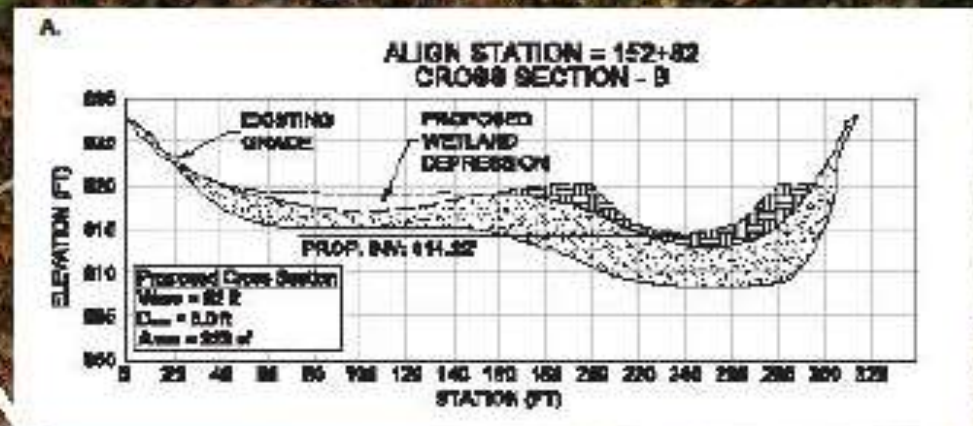
# HISTORY | COLLEGE LAKE







**Bridge Cross Section Rendering**  
(Looking Upstream)



**Cross Section B**  
(Facing Downstream)

- A. Engineered Cross Section
- B. Rendered Interpretation



# Dewatering Plan







## Dewatering Concerns

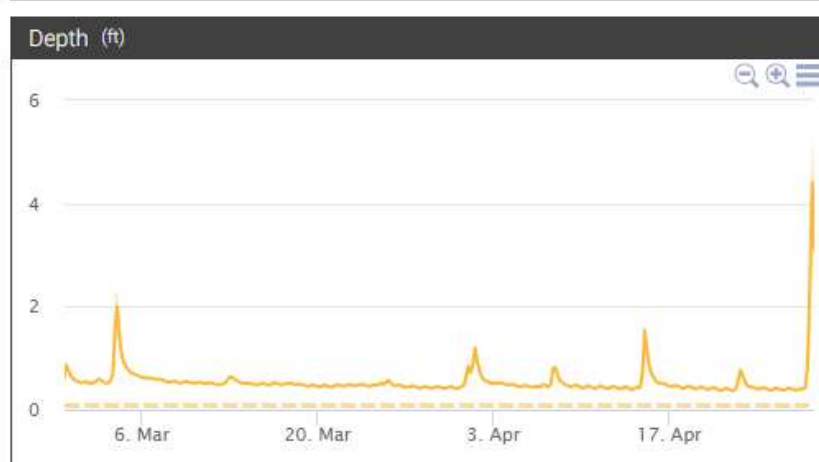
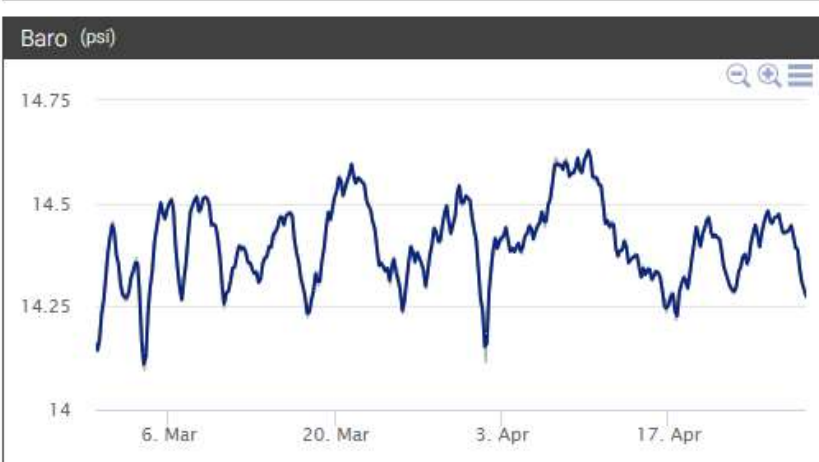
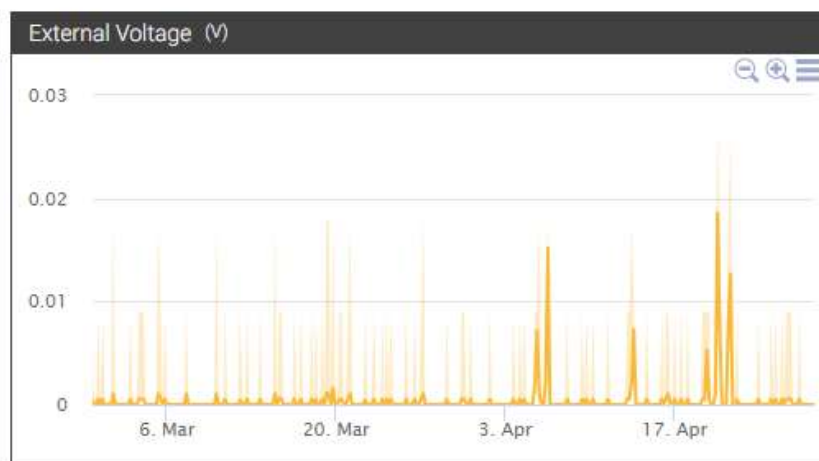
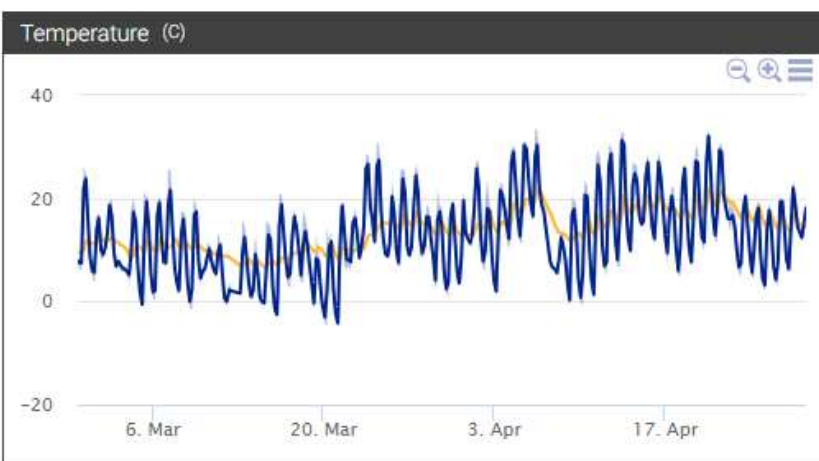
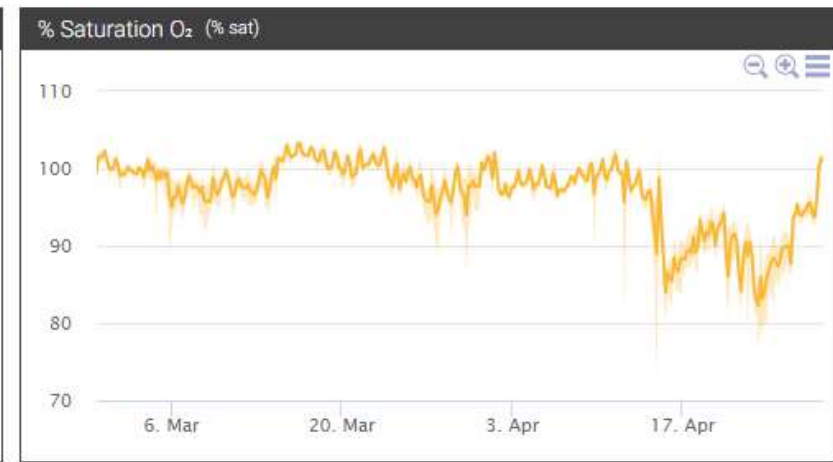
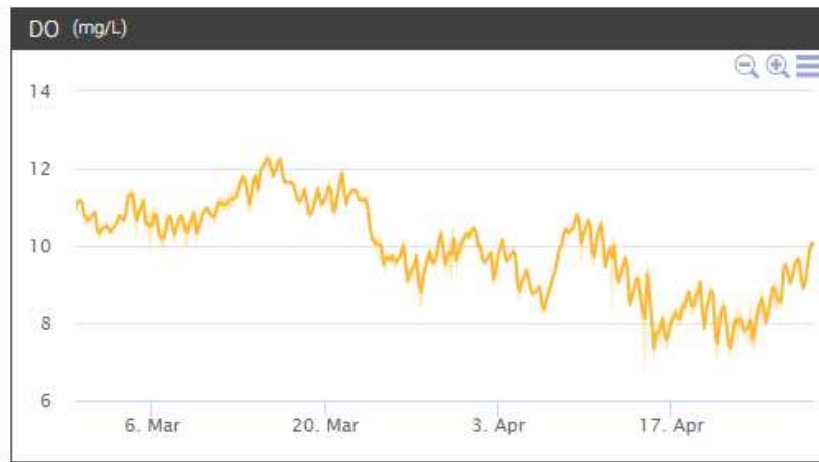
- Mobilization of sediment
- Reduced dissolved oxygen and increased turbidity downstream
- Ecological disruption
  - Impact to benthic organisms and aquatic species



# Water Quality Monitoring



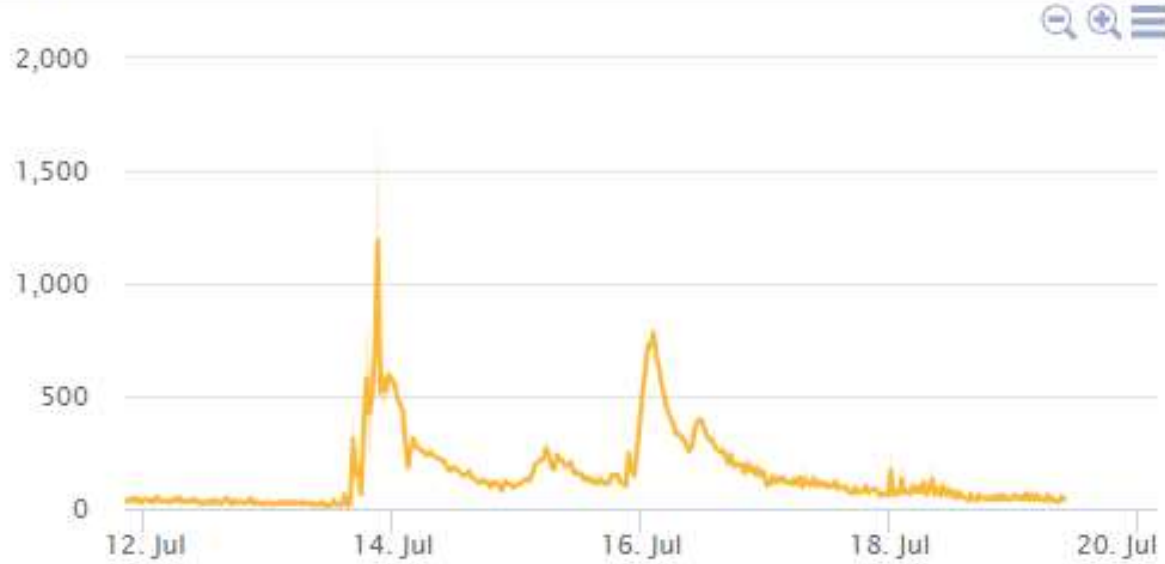




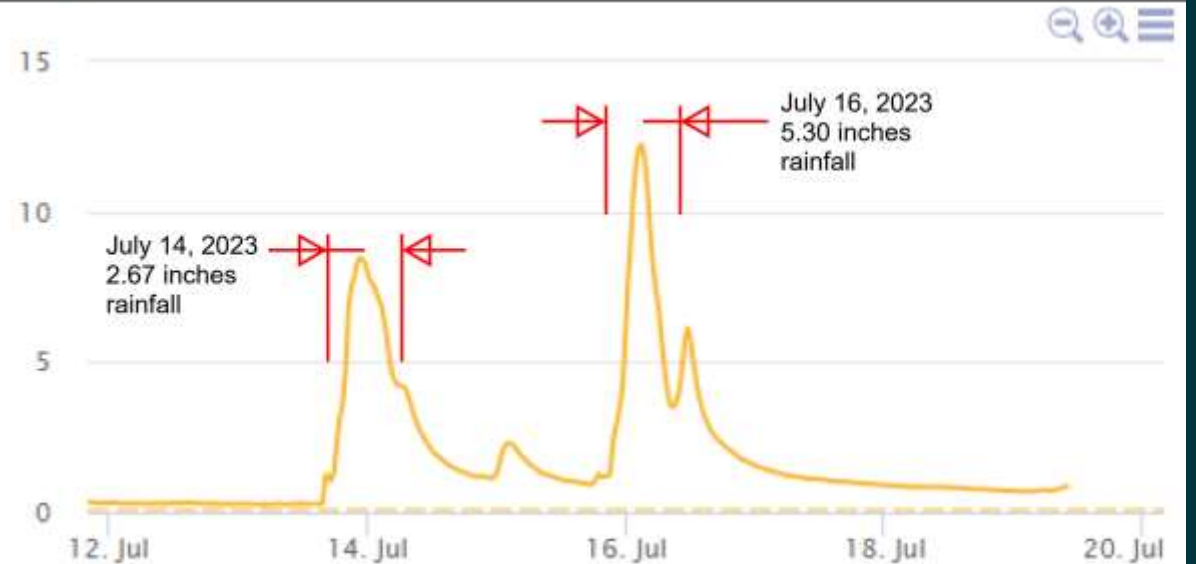


# Water Quality Trends

Turbidity (NTU)



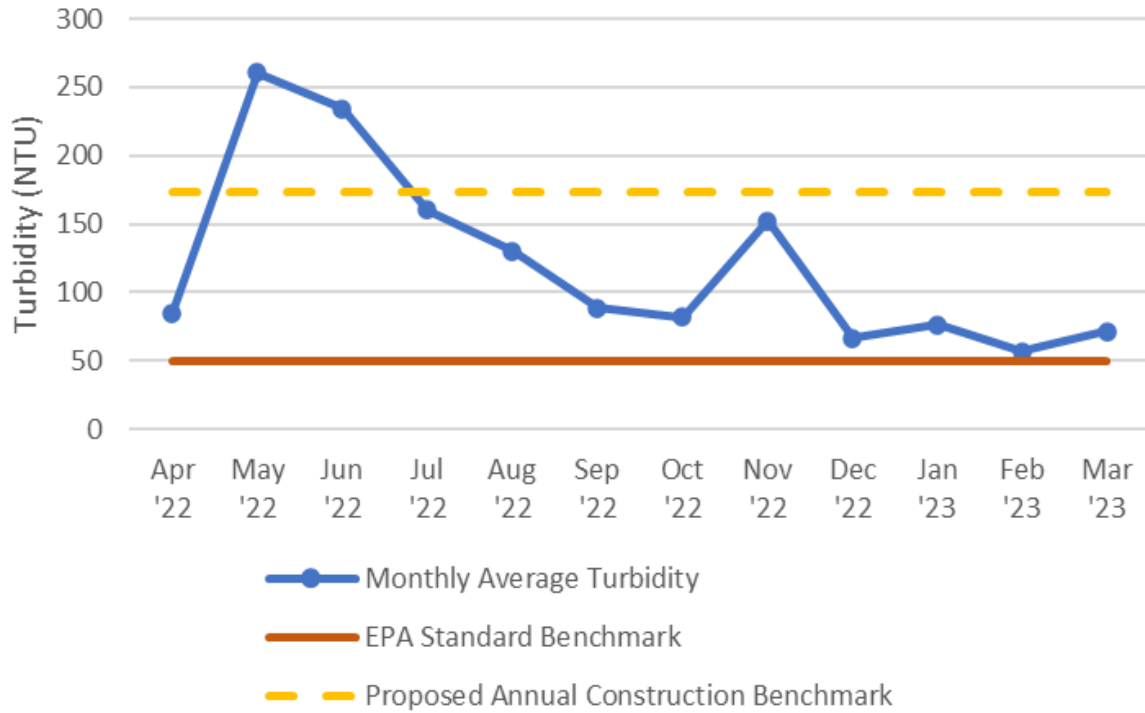
Depth (ft)



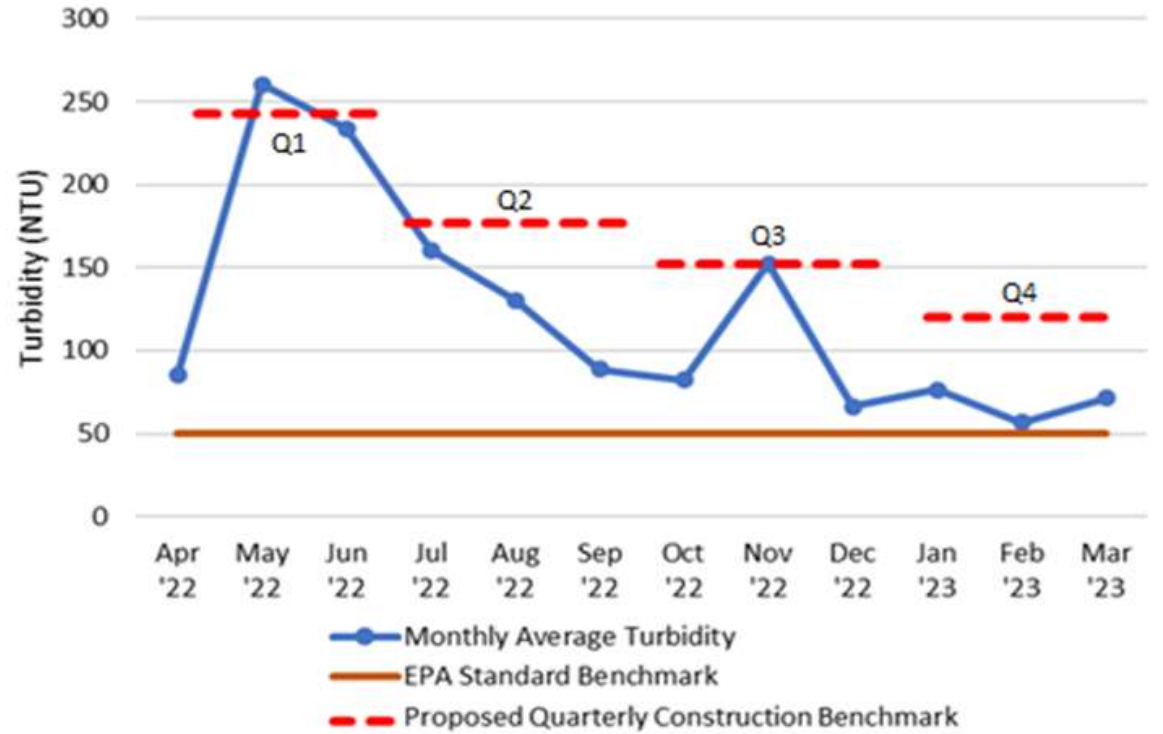


# Proposed Construction Benchmarks

## Monthly Average Turbidity (NTU)



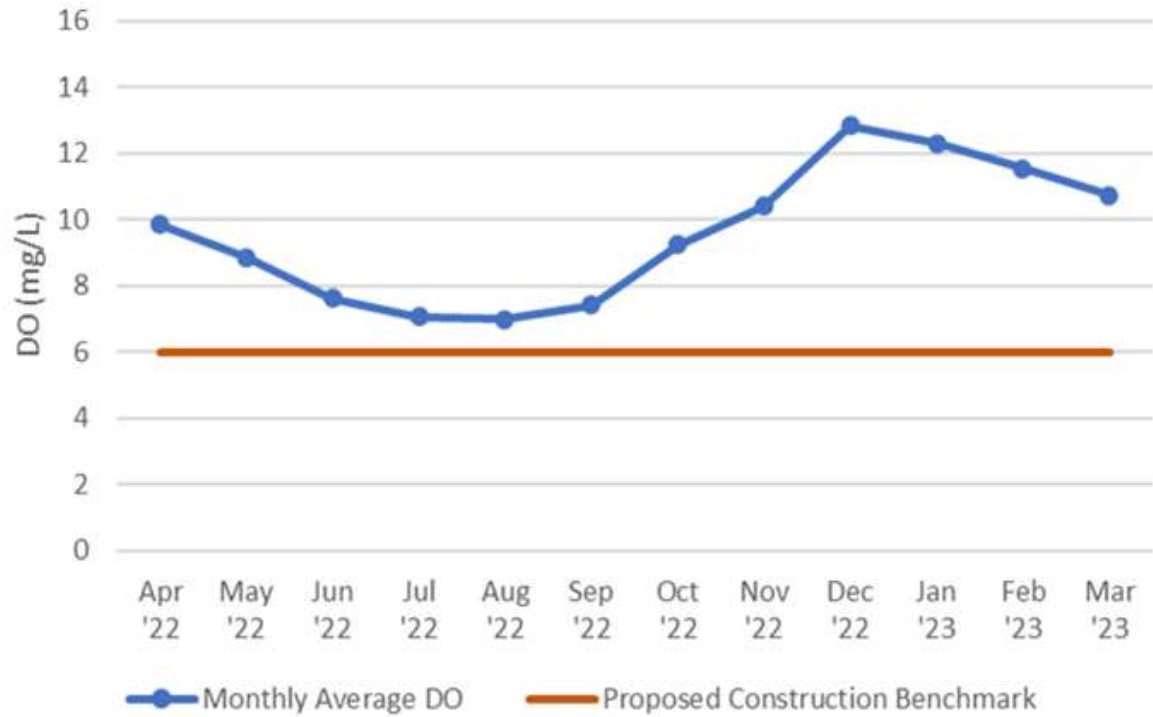
## Monthly Average Turbidity (NTU)





# Proposed Construction Benchmarks

Monthly Average DO (mg/L)





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## Lessons Learned

- Advantages of remote monitoring
  - Provides real time data
  - Continuous monitoring results
  - Less labor intensive than traditional monitoring
- Traditional monitoring still has benefits in certain applications





Questions?

