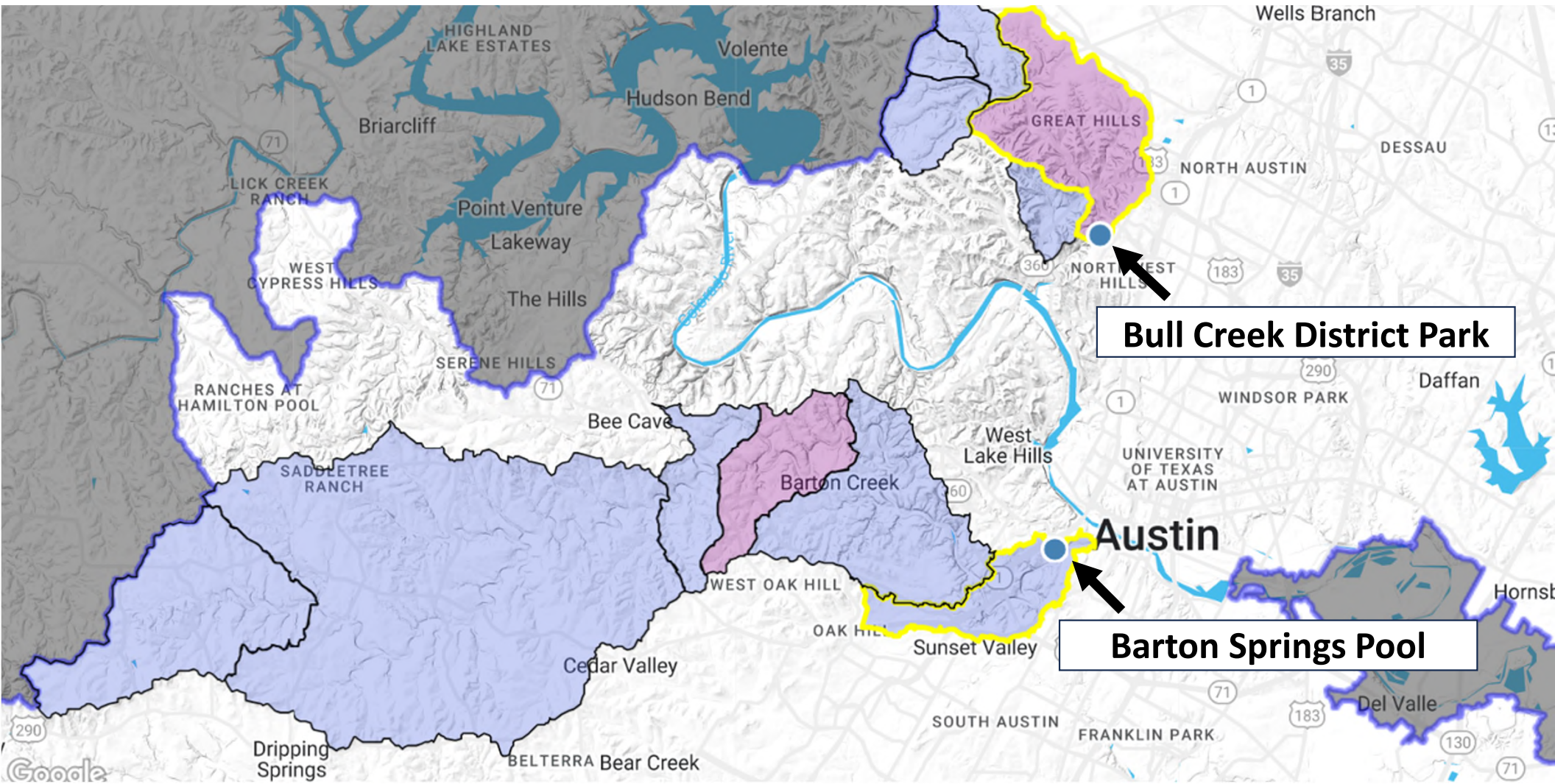


Retrospective of Austin Public Health *E. coli* sampling at Barton Springs and Bull Creek District Park

Water Quality Advisory Committee Meeting
5/23/2024

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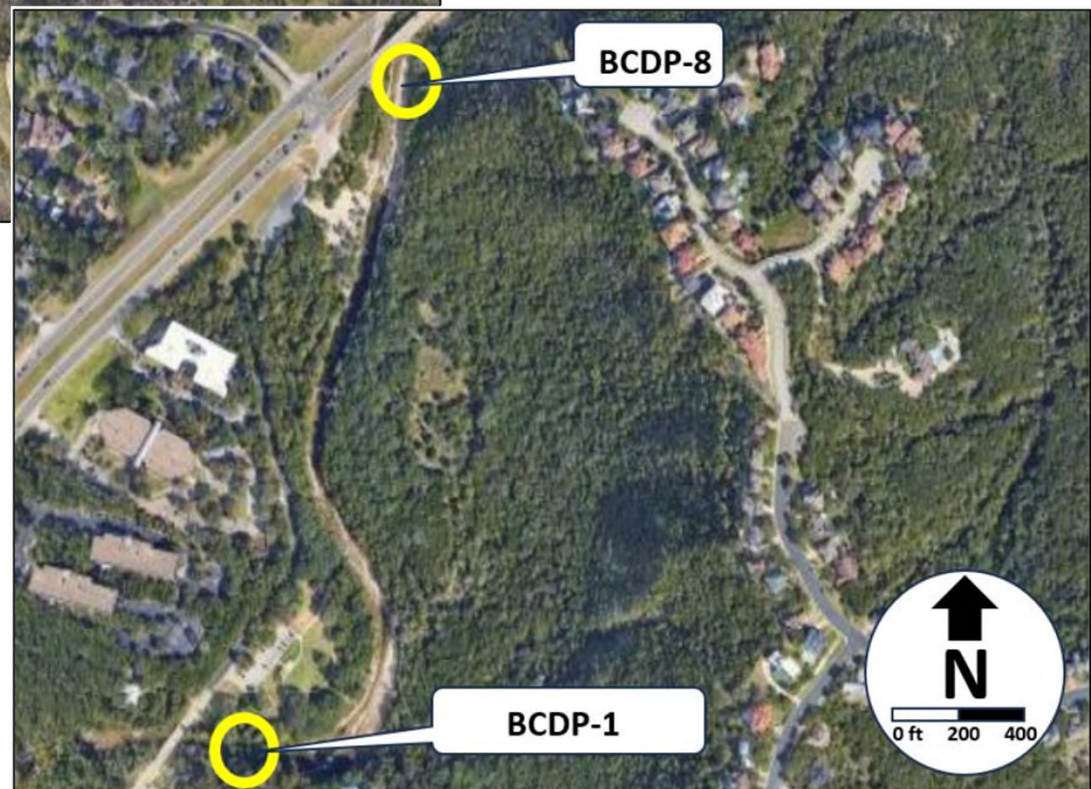
Study Area



Barton Springs Pool

Sample Sites

Bull Creek District Park



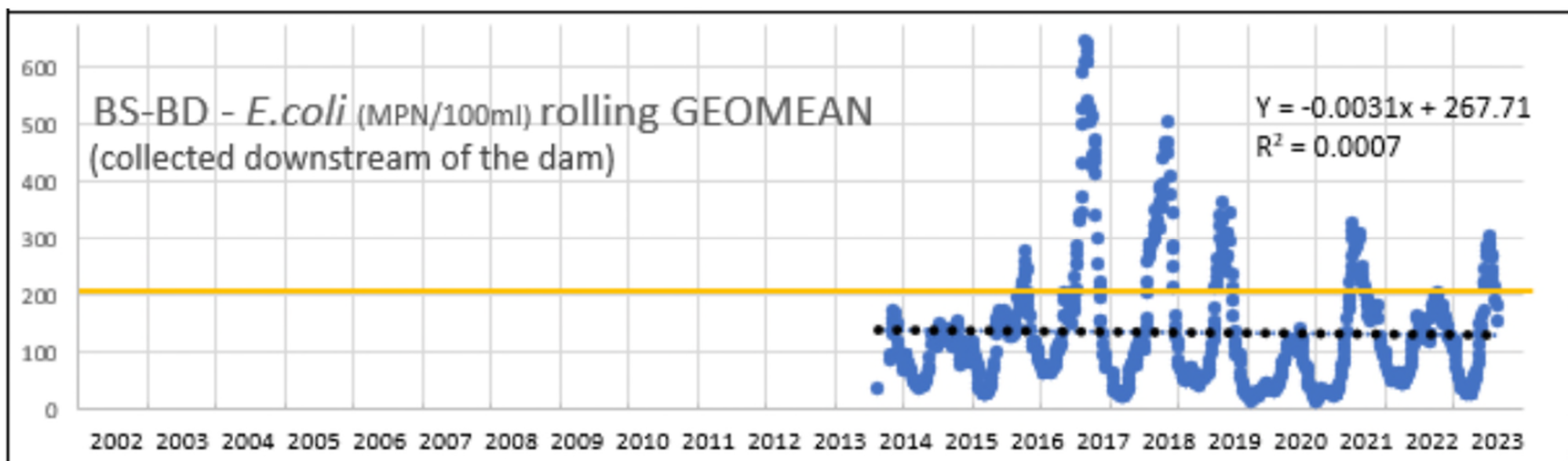
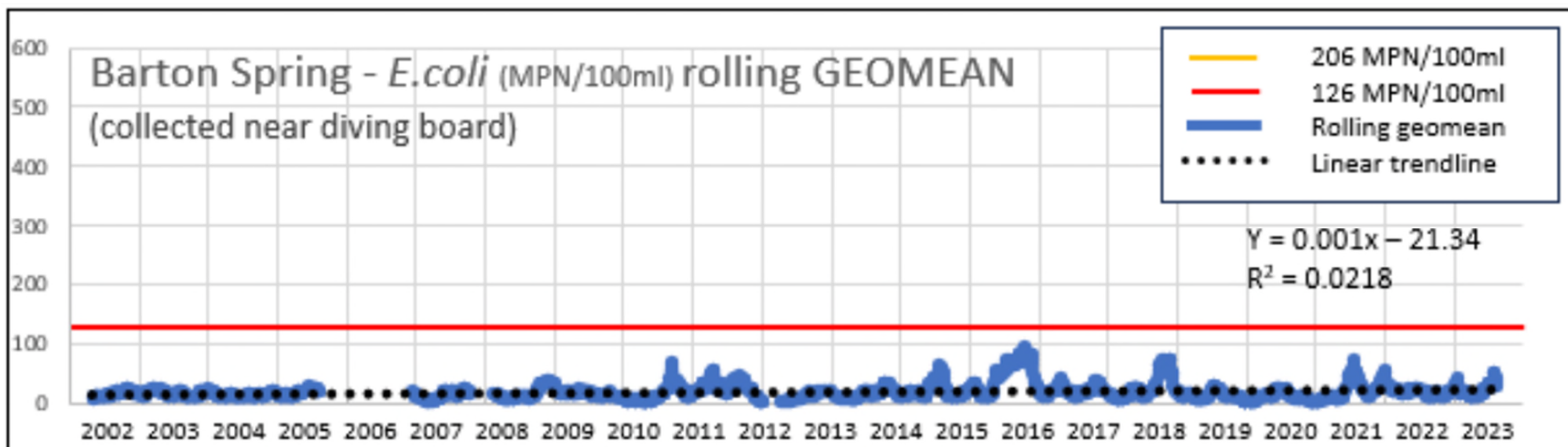
Total number of samples and date range

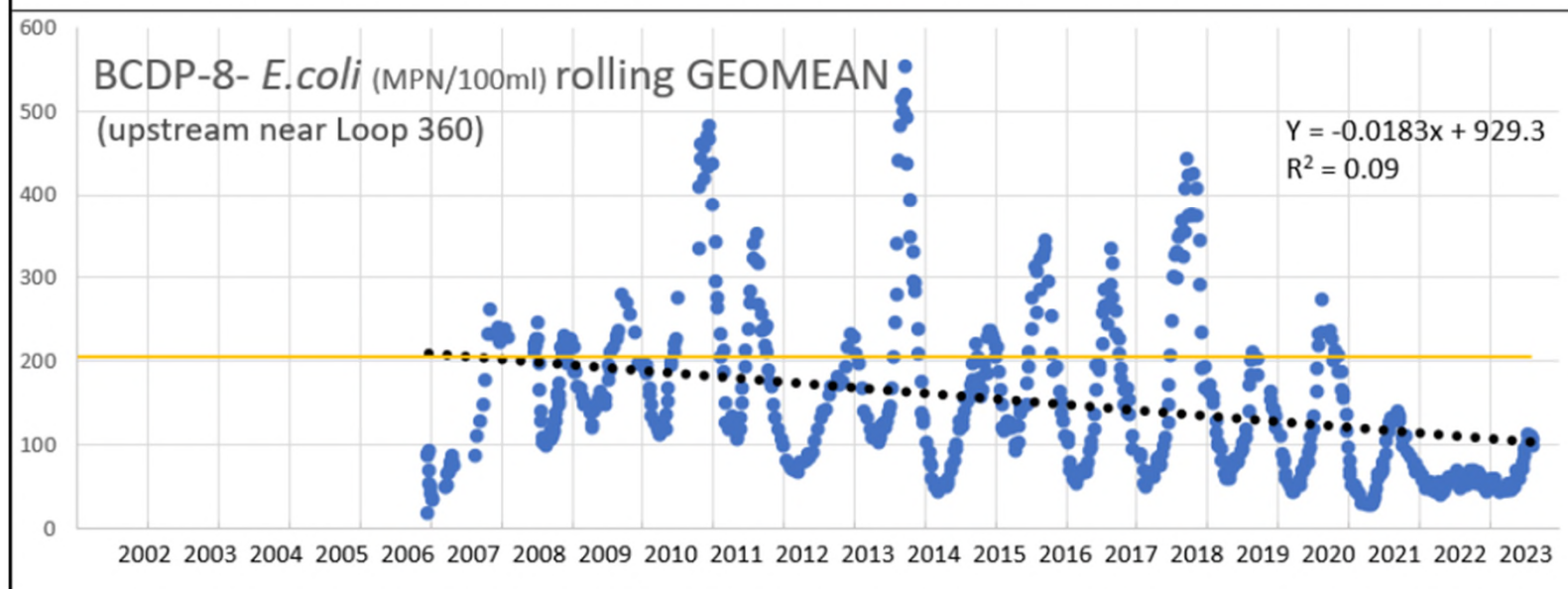
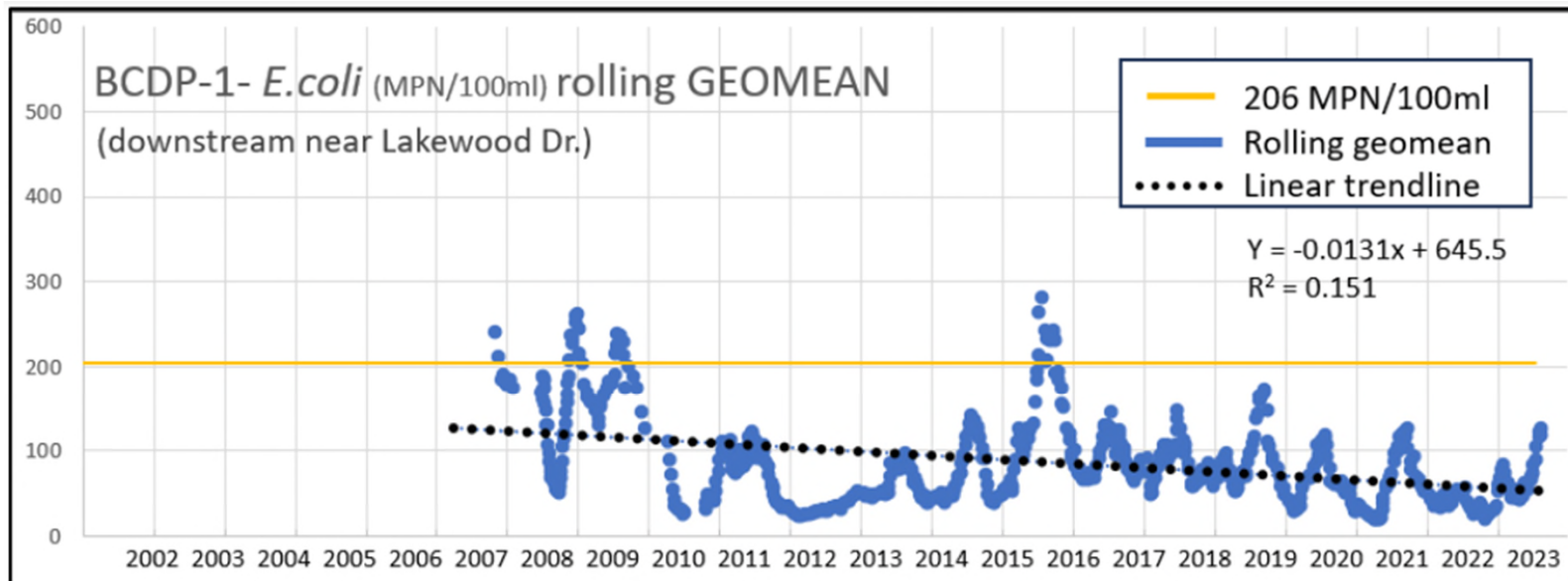
Site	Total number of samples	First Sample Date	Most recent sample used in this analysis
Barton Springs (near main springs)	1630	04/21/2003	08/02/2023
BS-S (north steps)	1634	04/21/2003	08/02/2023
BS-D (near dam)	1632	04/21/2003	08/02/2023
BS-BD (below dam)	849	07/31/2014	08/02/2023
BCDP-1 (downstream)	663	03/10/2008	08/02/2023
BCDP-8 (upstream)	663	12/10/2007	08/02/2023

Day	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Total number of samples collected during the period of record	2,390	968	2,182	1,375	149	3	3

Sample Protocol

- Twice a week (typically Mon/Wed or Tue/Thur)
- Typically mid-morning, but variable 9am-3pm
- Rain or shine, regardless of antecedent conditions
- No additional data (days since rain, flow, recreation, etc)





Conclusions:

- Continued sampling in the current regime is unlikely to reveal new insights
- Barton Springs Pool geomean is below threshold for Primary ConRec 1
- Barton Springs Creek below pool and Bull Creek District Park are below threshold for Primary ConRec 2
- Trend over time reducing concentration at Bull Creek District Park, but no temporal trend in Barton
- Seasonal trends are significant and salient using geomean
- Sample regime (frequency, time of day, day of week, etc.) can limit analysis

Recommendations:

- Suspend current sampling regime or reduce sample sites and/or frequency
- If additional sampling desired:
 - Form one or more hypotheses and/or an actionable use for the results
 - Form a new experimental design to test the hypotheses
 - Record days since rain and amount of rain in watershed

Take Home:

Three important things in any scientific study:

1) Experimental Design

2) Experimental Design

3) Experimental Design

- Seasonal differences are significant (most salient using geomean)
- Sample regime (frequency, time of day, day of week, etc.) can limit analysis
- Possible to have big differences over a short distance