



Since 1935

Petronila Creek Monitoring Site Recommendations

Nueces River Authority

Recommendation: Continue routine water quality monitoring at all 13 existing Petronila Creek and tributary monitoring stations.

1. Purpose

The Nueces River Authority (NRA) is submitting the following recommendation to stakeholders for consideration during review of the Petronila Creek monitoring network. This recommendation reflects a review of long-term water quality data collected at the network's monitoring stations, including chloride, sulfate, and total dissolved solids (TDS) results from 2007 through 2026.

2. Monitoring Site Recommendation

NRA recommends that no monitoring locations be removed from the current Petronila Creek network. Continued sampling at all 13 stations will maintain coverage of Petronila Creek and its tributaries throughout the monitored watershed and preserve the existing dataset for evaluating spatial and temporal changes in water quality. Chloride, sulfate, and TDS concentrations at these stations have historically been elevated relative to applicable screening levels and show considerable variability over time, including periodic high-concentration events at several tributary stations, further supporting the need for continued data collection at every location.

3. Basis for Recommendation

- **Maintain spatial coverage:** The 13 stations provide monitoring locations distributed along Petronila Creek and throughout connected tributary areas, allowing conditions to be evaluated across multiple portions of the watershed.
- **Capture tributary contributions:** The network includes both main-stem creek stations and tributary stations. Retaining the tributary locations helps maintain the ability to identify and evaluate localized water quality conditions and potential contributions to Petronila Creek.
- **Preserve long-term comparability:** Continuing sampling at established locations supports consistent comparison of water quality conditions over time and reduces gaps in the existing monitoring record.
- **Support stakeholder and watershed decision-making:** Maintaining the full network provides stakeholders with a broader dataset for identifying trends, evaluating potential areas of concern, and informing future watershed management and monitoring decisions.
- **Track elevated and variable salinity conditions:** Long-term chloride, sulfate, and TDS data collected across the network (2007-2026) frequently exceed applicable screening levels at most stations and show considerable variability, including periodic high-concentration events at several tributary locations. Continued sampling at all 13 stations is needed to track these conditions and determine whether they are increasing, stable, or improving over time.

4. Recommended Monitoring Stations

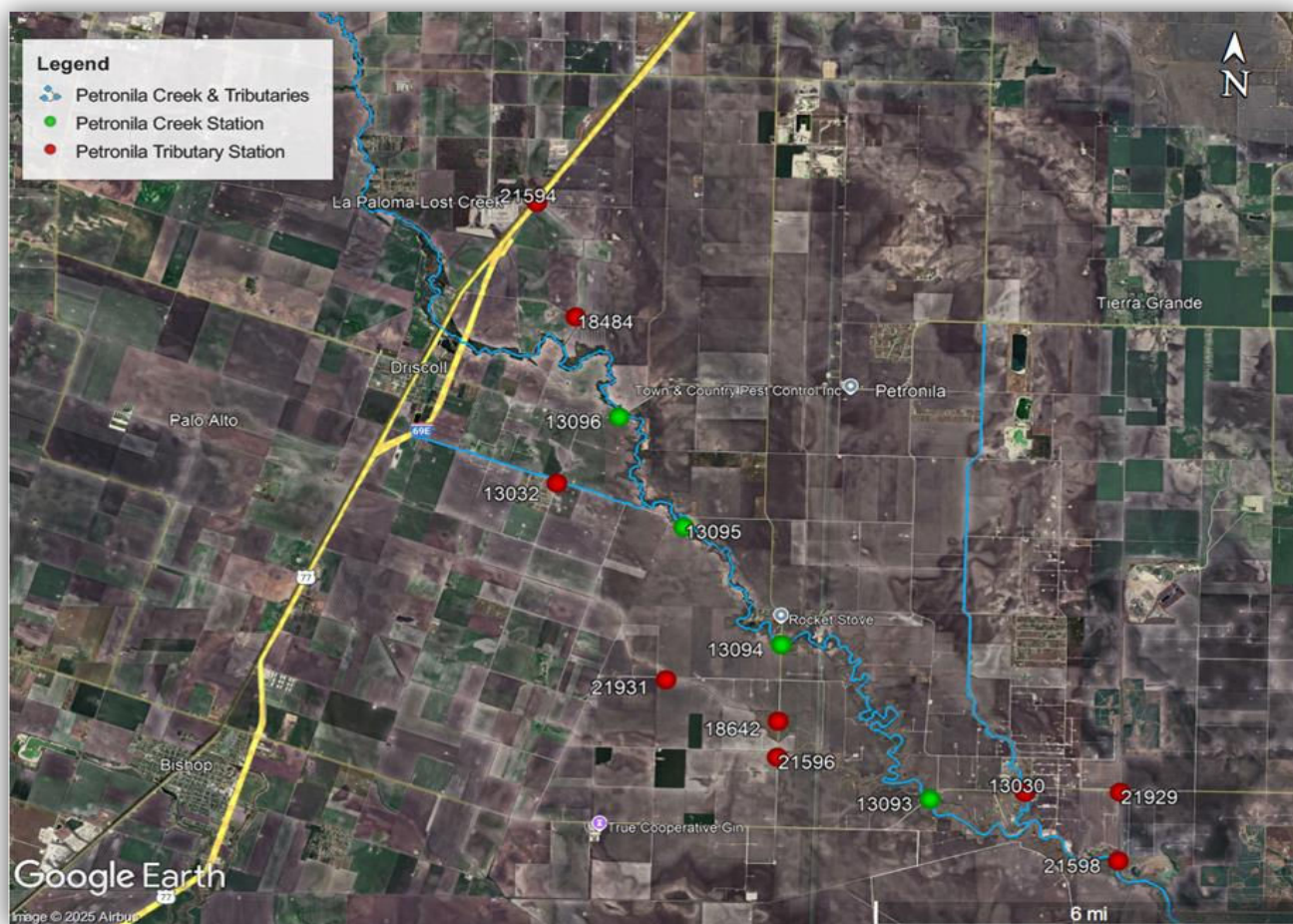
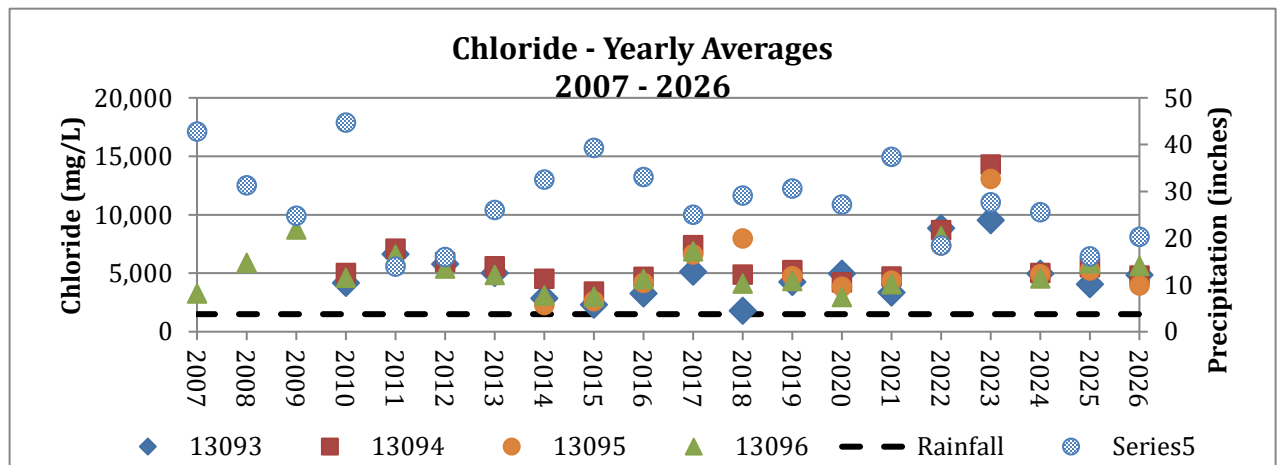
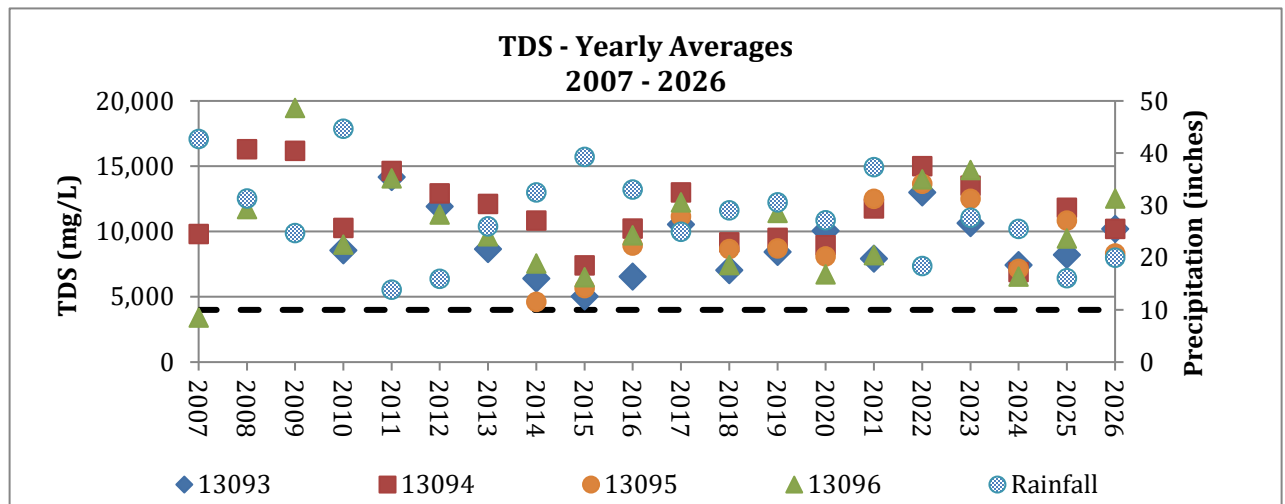
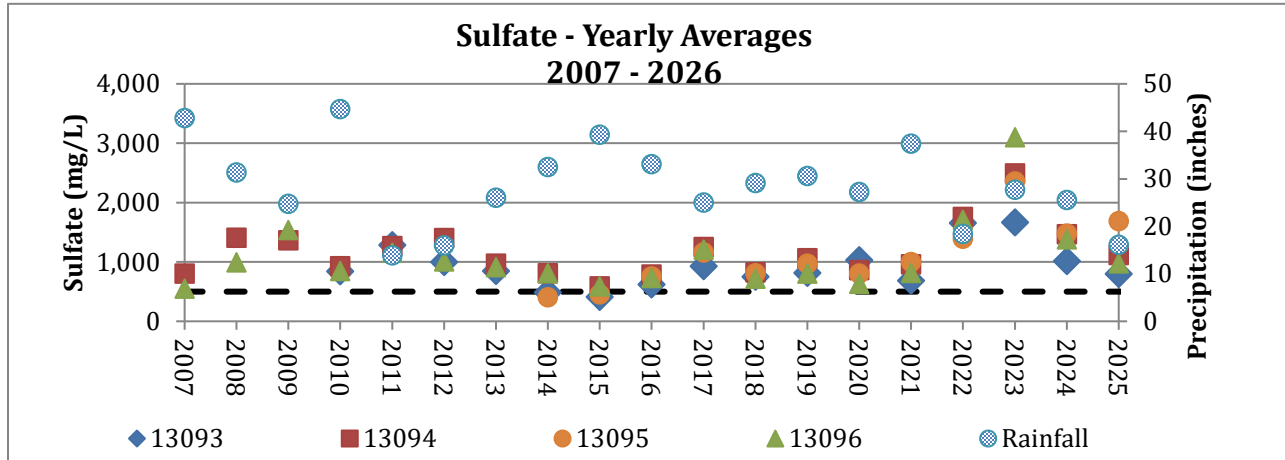


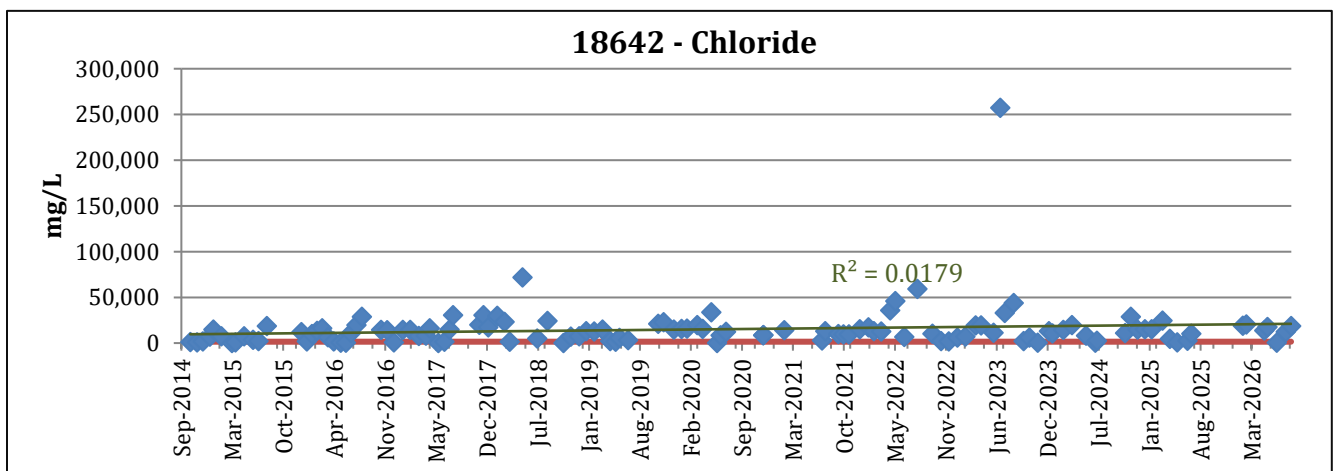
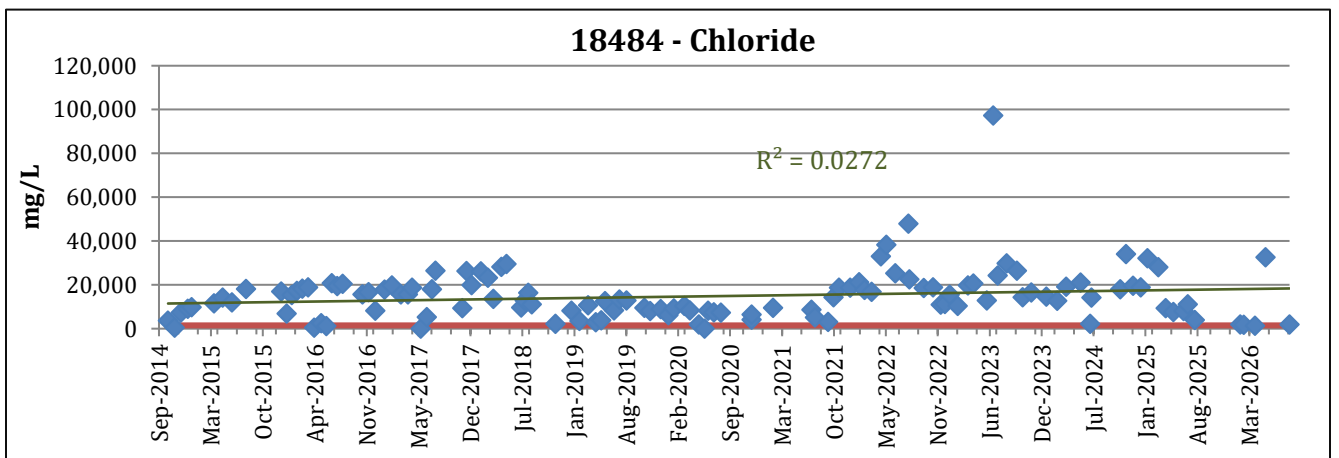
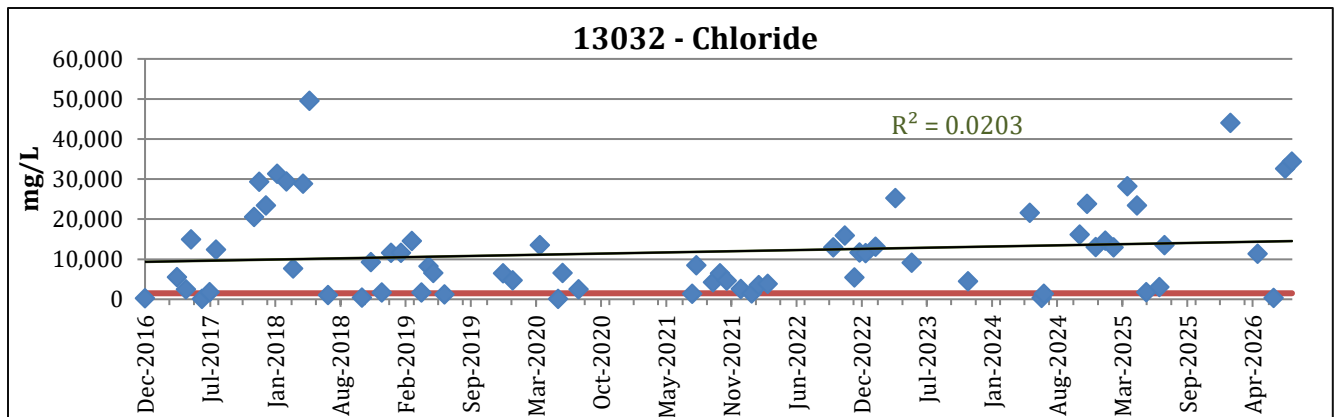
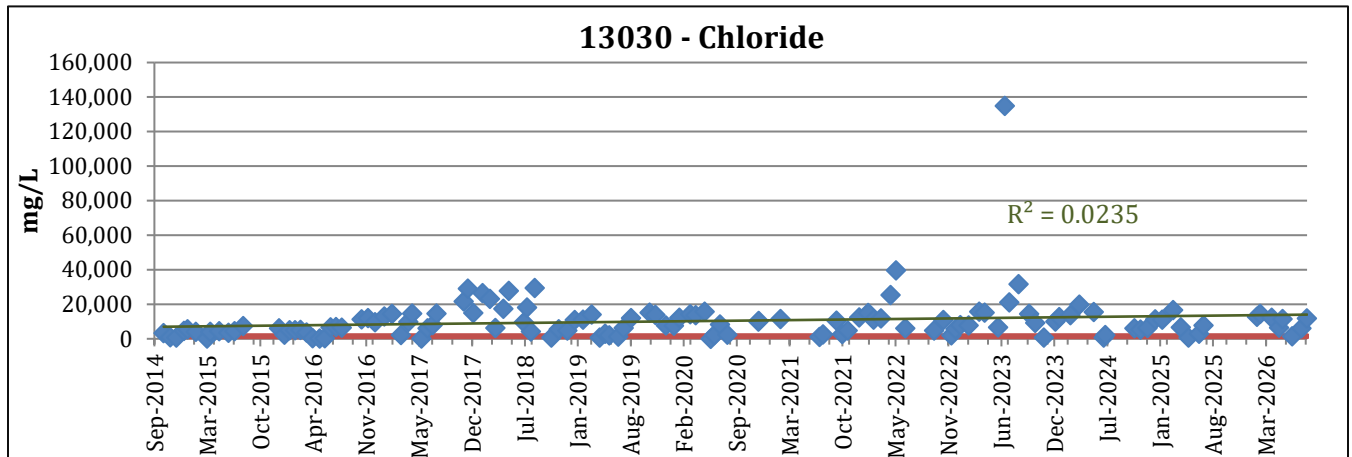
Figure 1. Current Petronila Creek and tributary monitoring stations. Green symbols represent Petronila Creek stations and red symbols represent Petronila tributary stations.

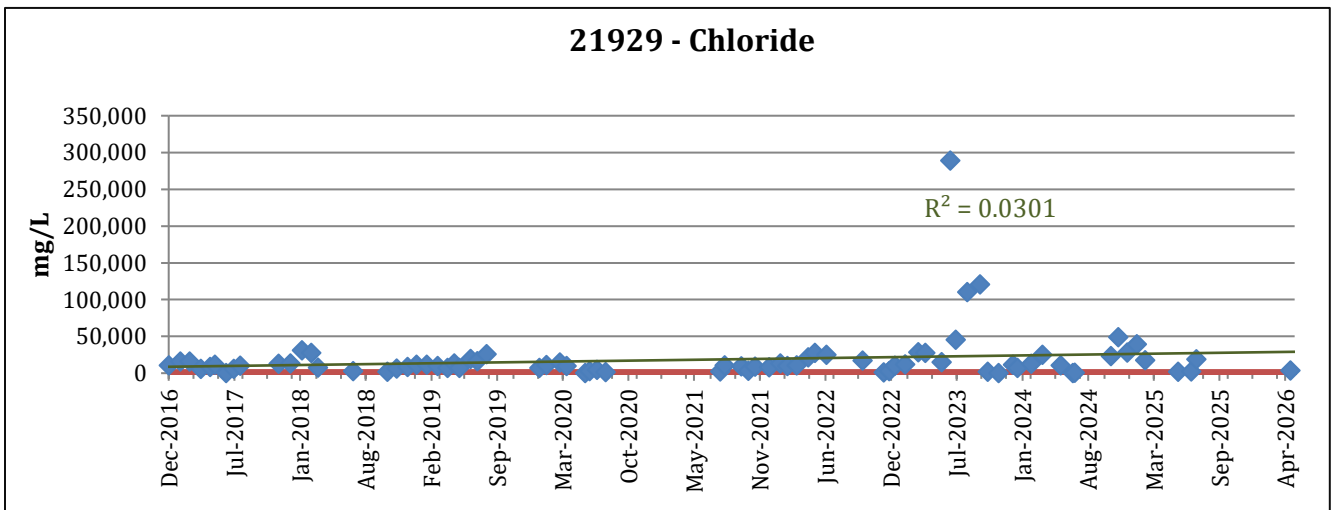
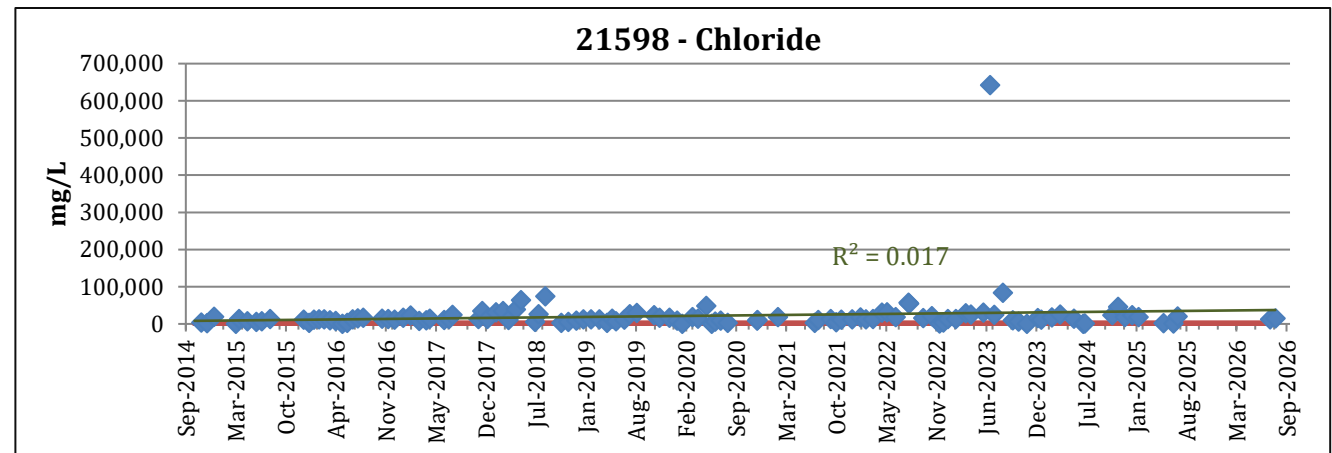
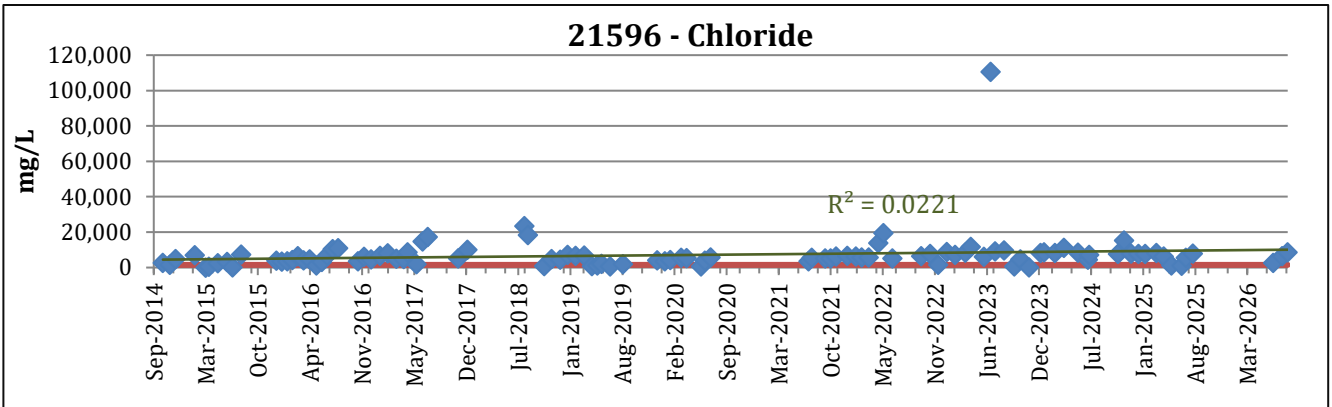
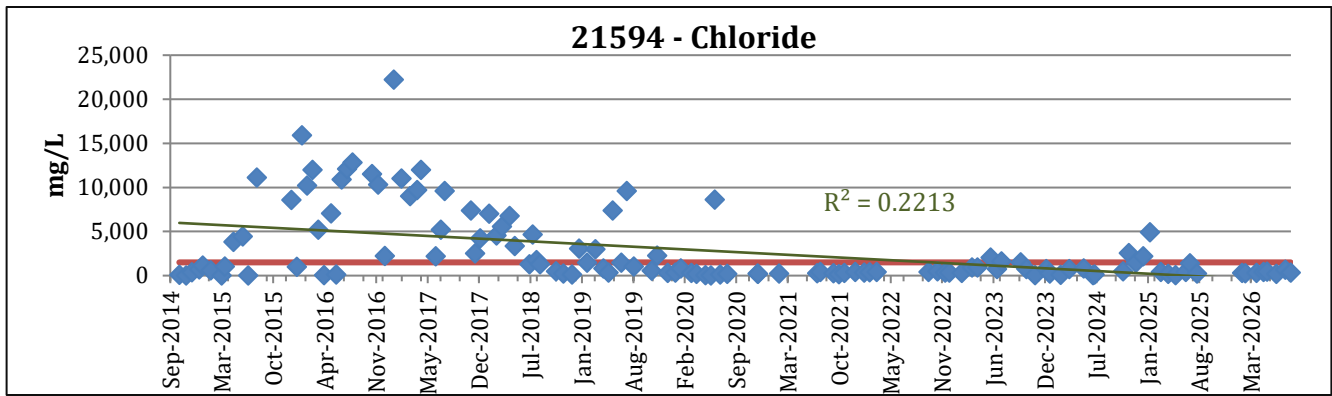
The recommendation applies to all 13 stations identified on the current map.

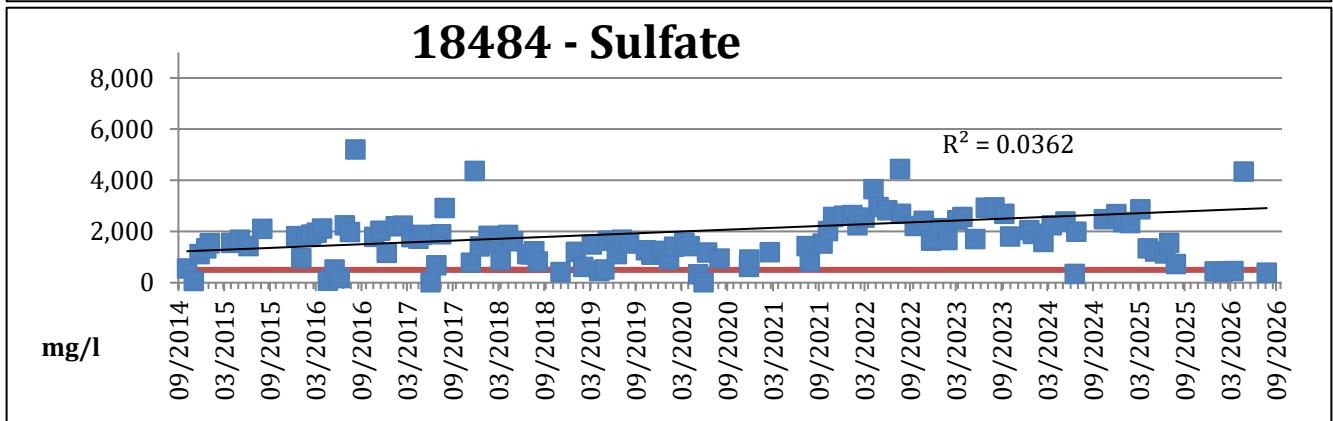
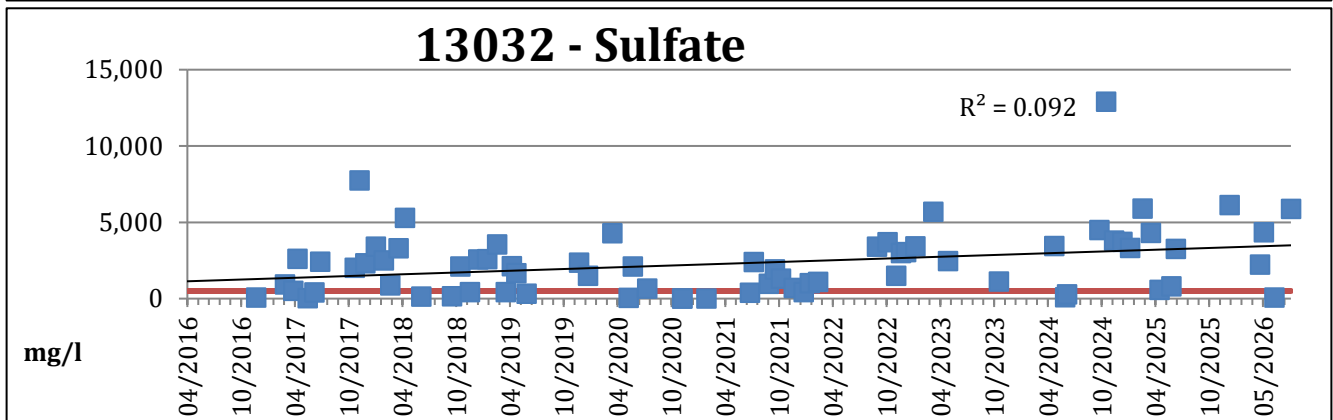
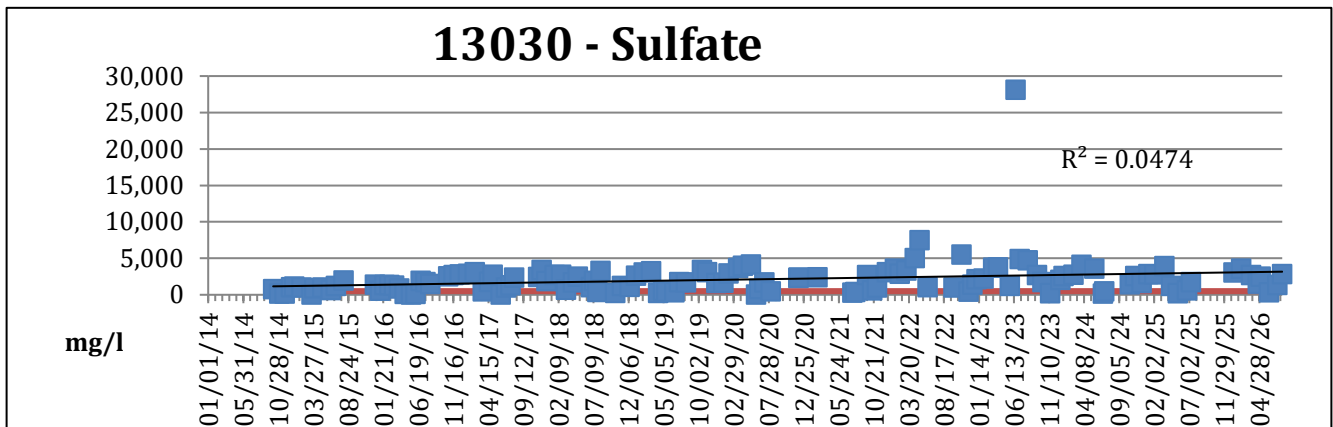
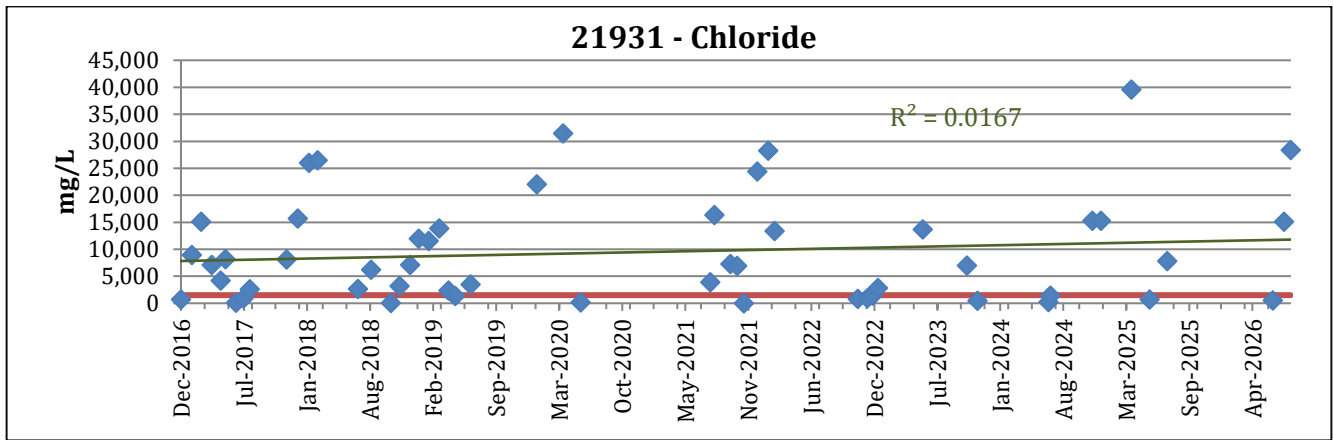
Station ID	Station Type	Recommendation
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13095	Petronila Creek	Continue sampling
13094	Petronila Creek	Continue sampling
13093	Petronila Creek	Continue sampling
13030	Petronila Tributary	Continue sampling
21594	Petronila Tributary	Continue sampling
18484	Petronila Tributary	Continue sampling
13032	Petronila Tributary	Continue sampling
21931	Petronila Tributary	Continue sampling
18642	Petronila Tributary	Continue sampling
21596	Petronila Tributary	Continue sampling
21598	Petronila Tributary	Continue sampling
21929	Petronila Tributary	Continue sampling

5. Data

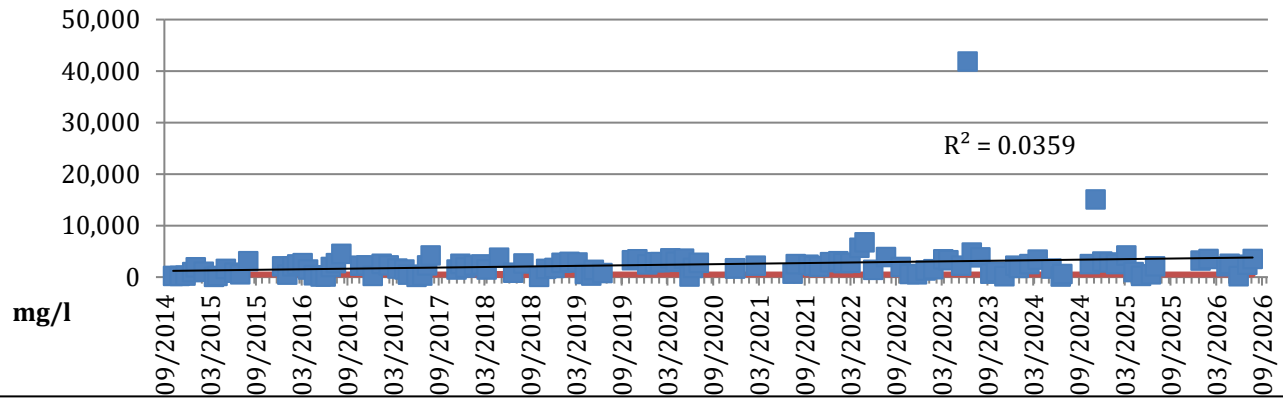




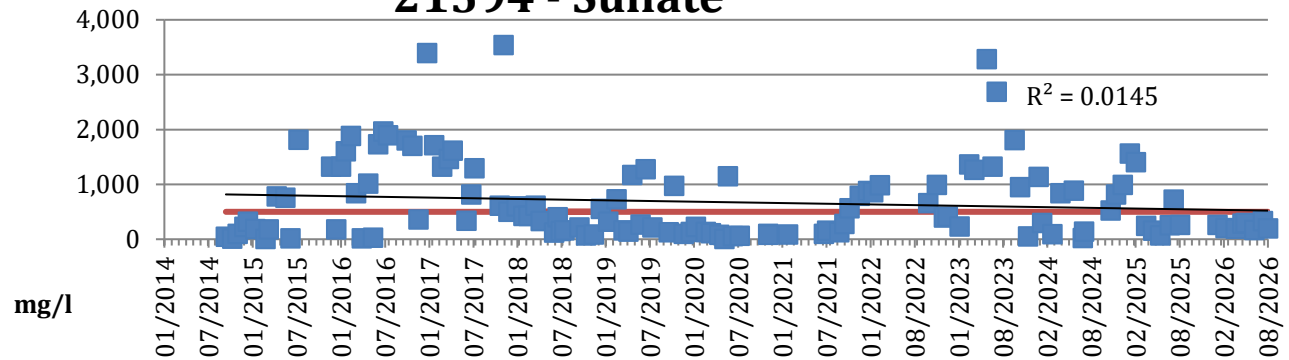




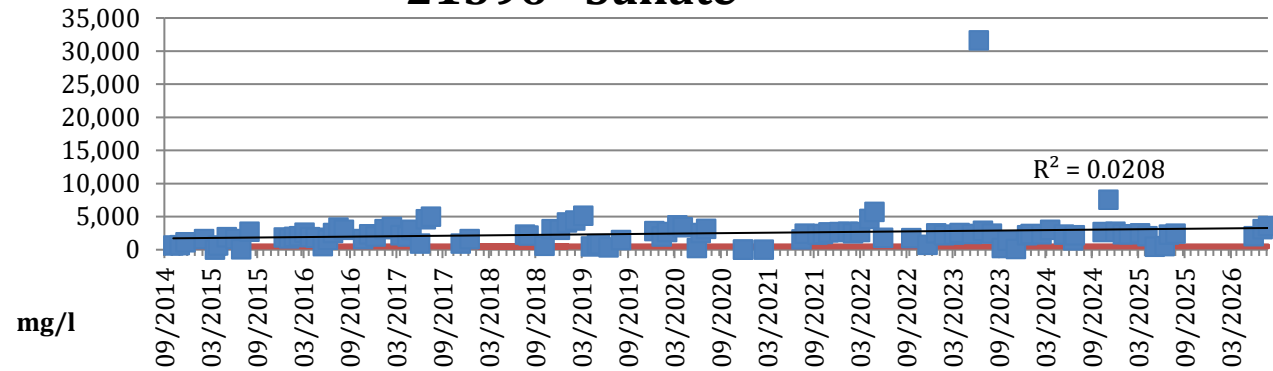
18642 - Sulfate



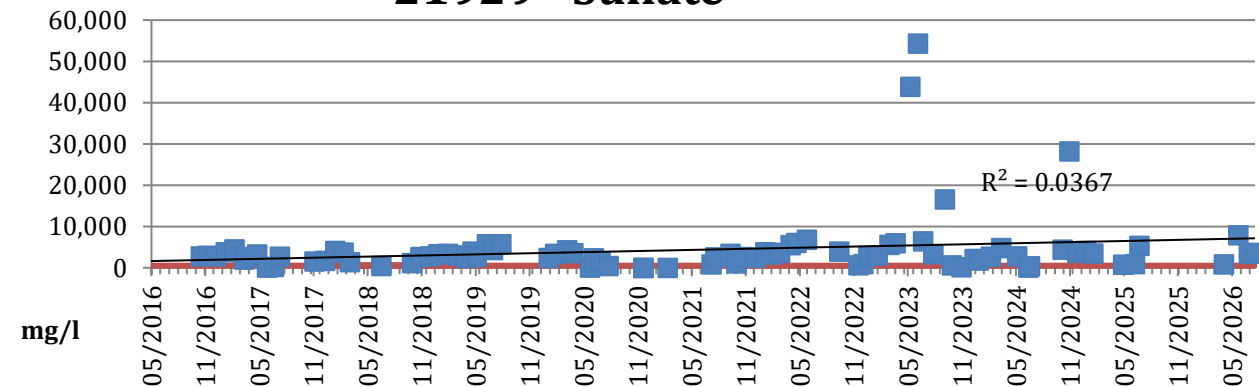
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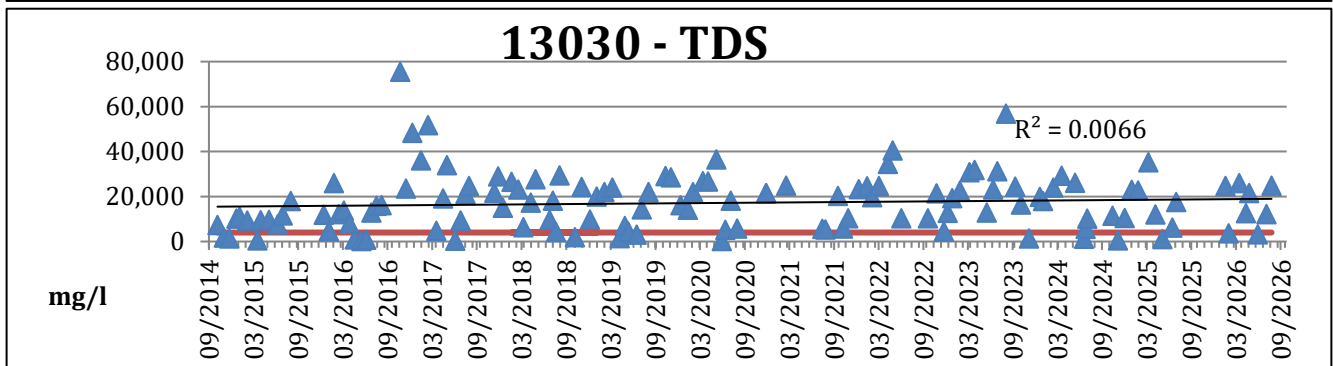
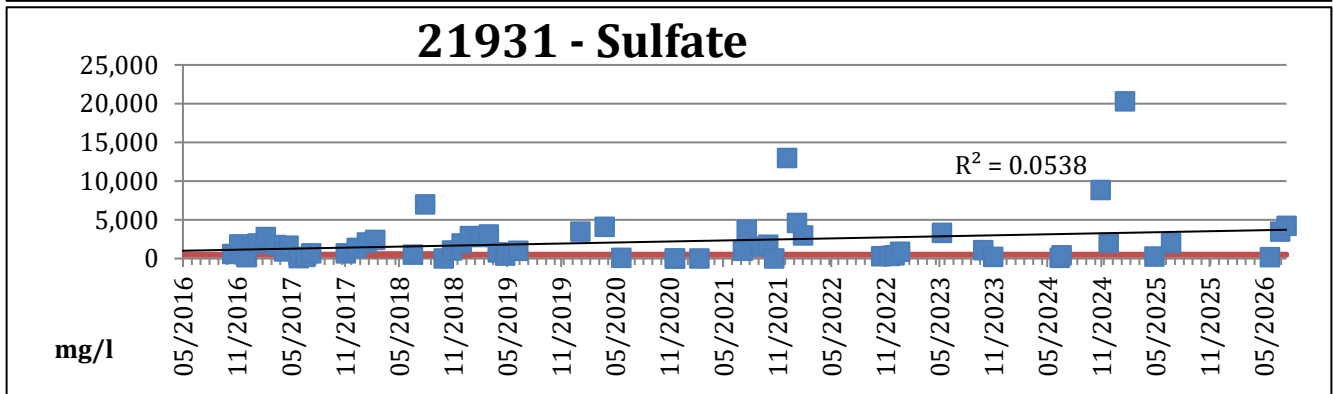
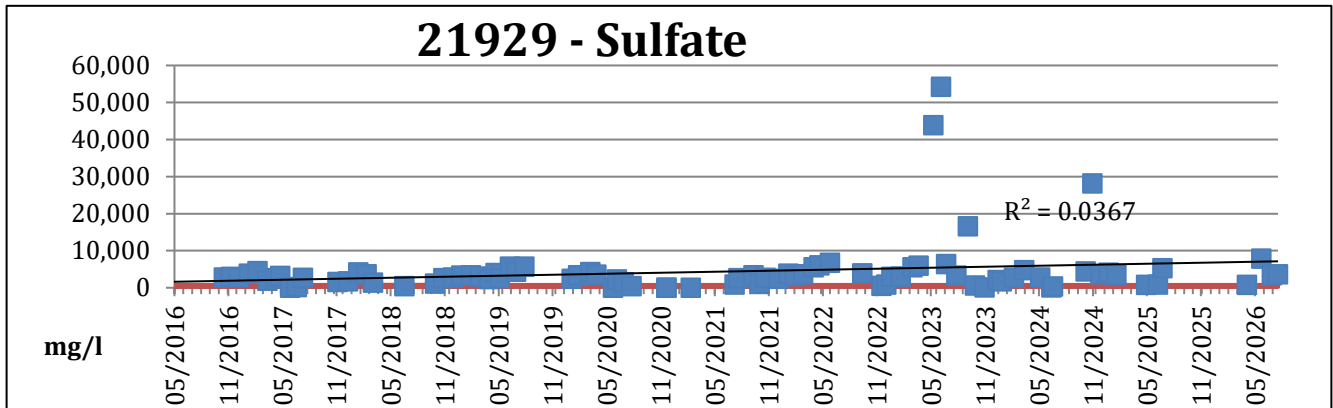
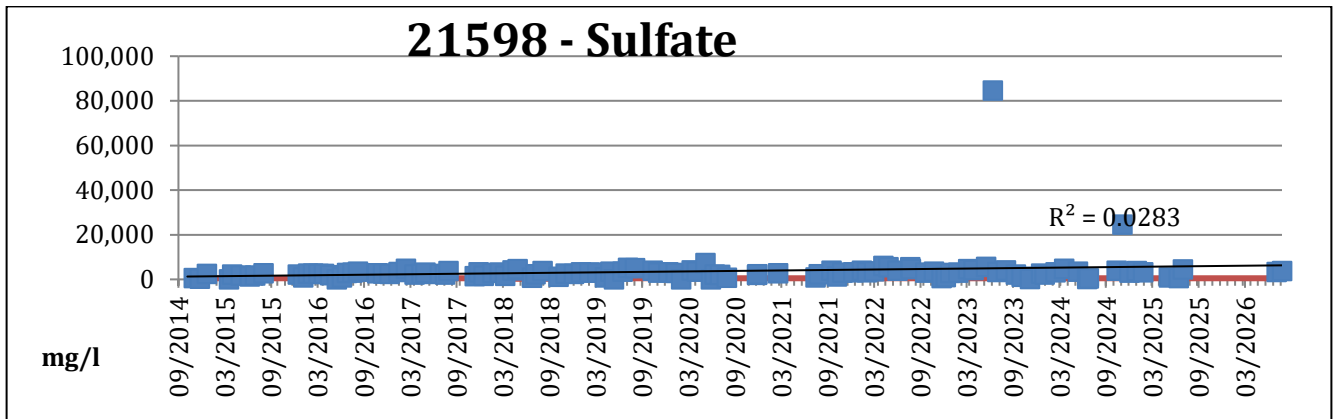


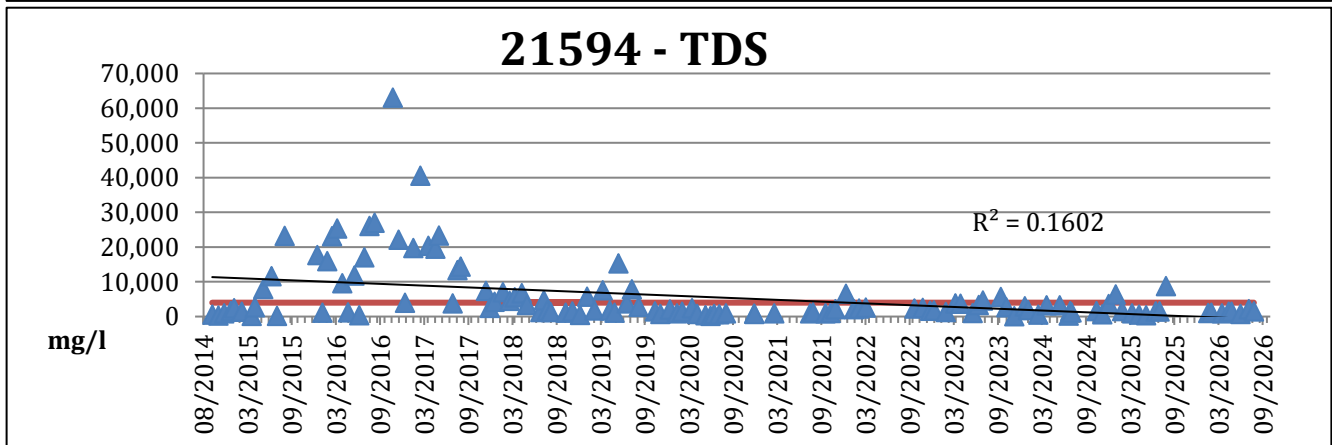
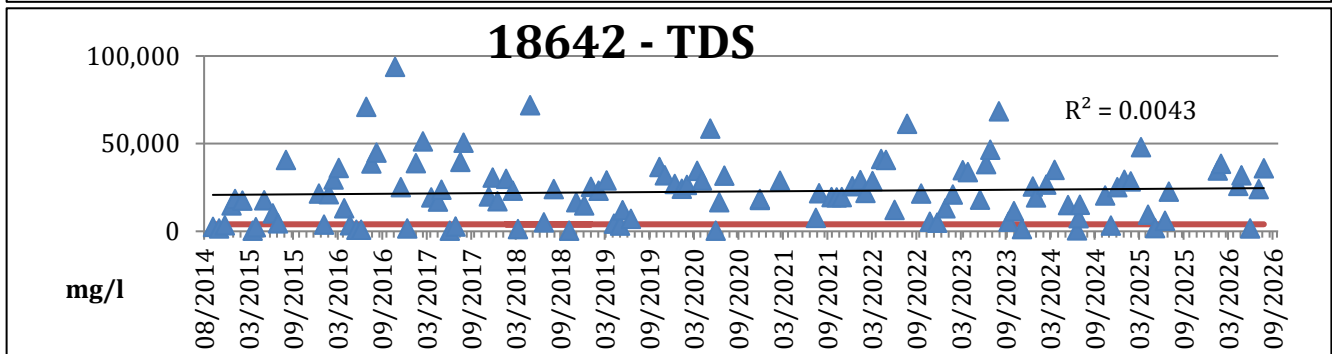
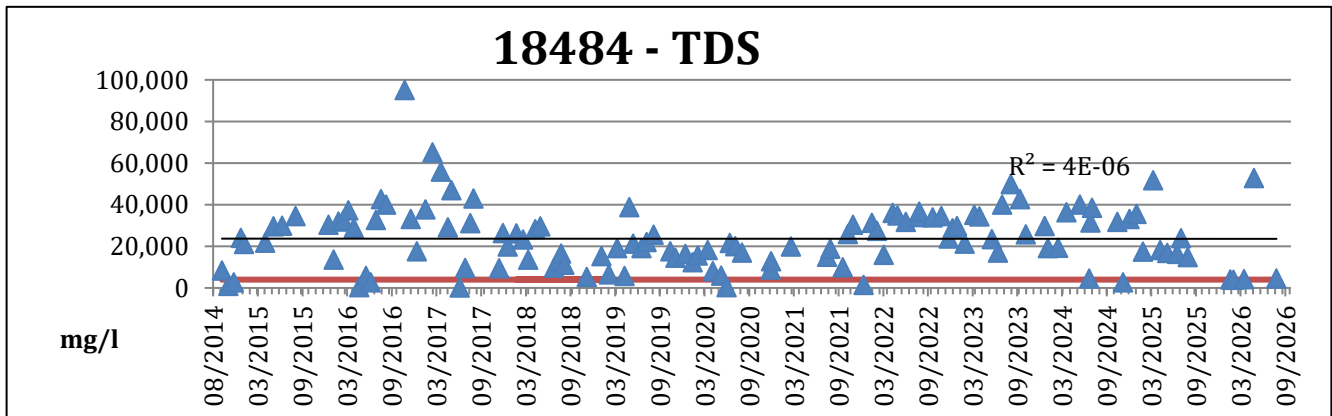
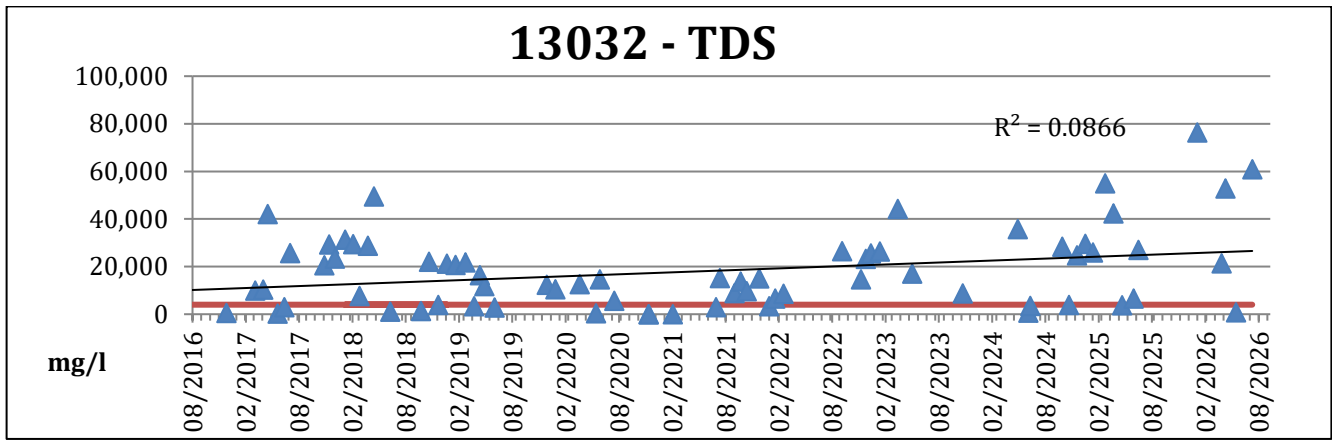
21596 - Sulfate

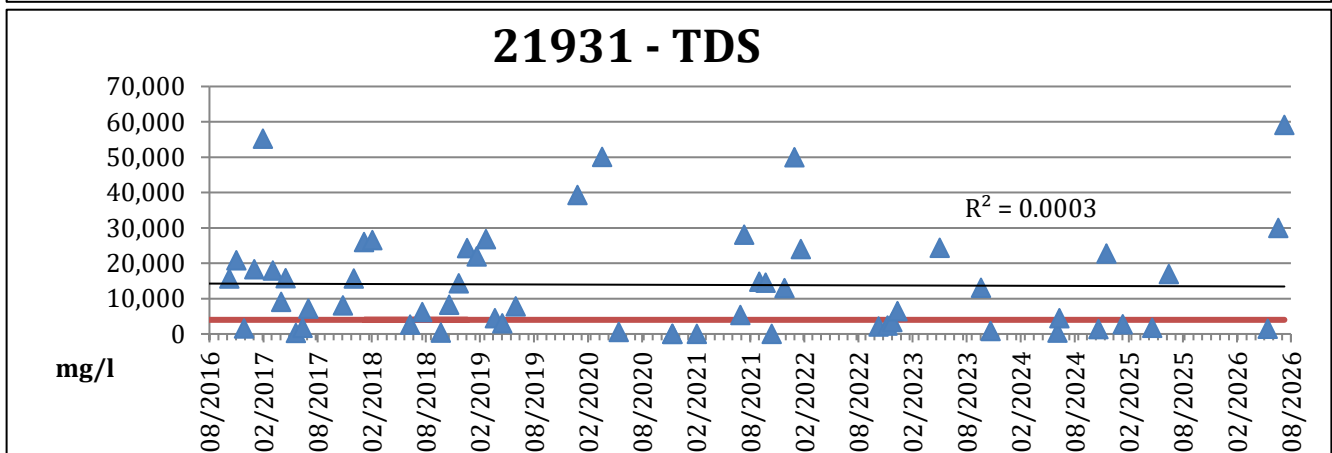
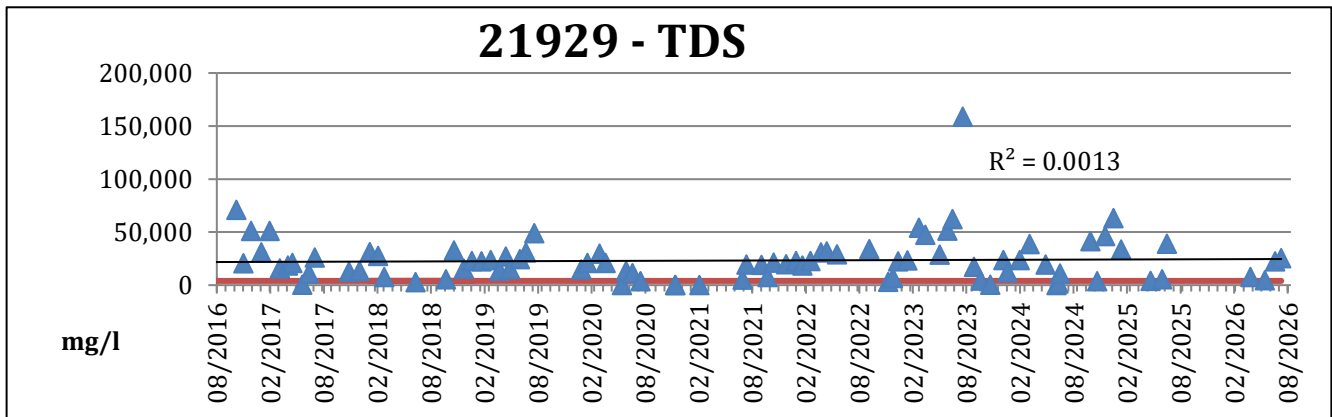
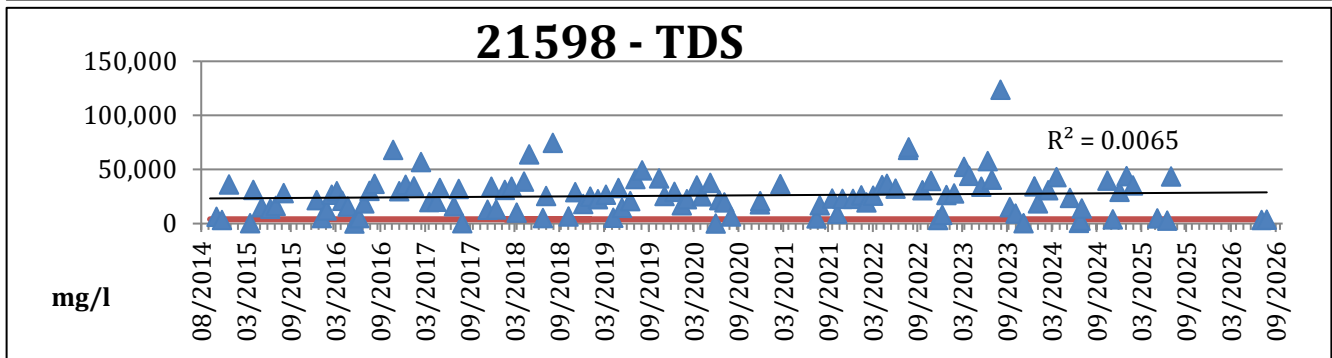
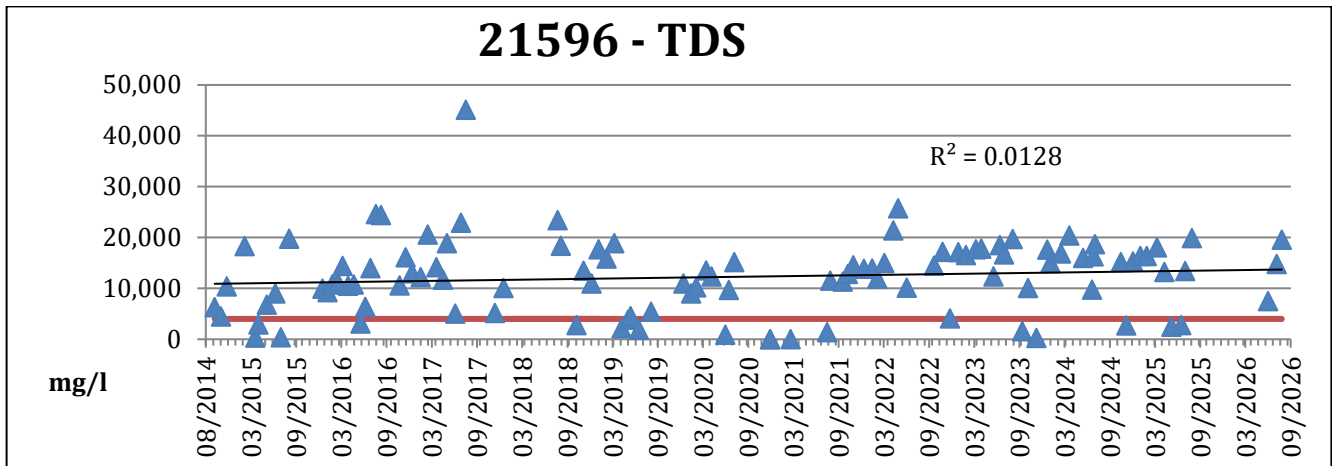


21929 - Sulfate









6. Summary

NRA recommends continuing sampling at all 13 existing Petronila Creek and tributary monitoring locations. Retaining the complete network will provide continued spatial coverage, preserve the long-term monitoring record, and support stakeholder evaluation of water quality conditions and future watershed management needs. Long-term data show chloride, sulfate, and TDS concentrations that are frequently elevated and variable across the network, reinforcing the importance of continued monitoring at every station to track these conditions over time.

Prepared by: Nueces River Authority, Water Quality Program.