



Recomputation of Ambient Water Quality in the Santa Ana River Watershed

BMPTF: April 24, 2019

BMPTF is achieving critical objectives for the Watershed

Powerful tool in managing the water resources in the Santa Ana Watershed.

AWQ Recomputation

Identifies TDS/Nitrate Trends

Permitting Reuse Projects

Identification of areas of potential concern

Supports SAR Wasteload Allocations

Assessment of assimilative capacity

Regional Board and Stakeholder Collaboration

Ambient Water Quality Phases

1: Data Gathering

- ✓ Data compilation
- ✓ QA/QC, process, and upload recent data

2: Point Statistics

- ✓ Calculate water quality point statistics
- ✓ Shapiro-Wilk test for normality

3: Computations

- ✓ Groundwater elevation contours
- ✓ Nitrate, TDS concentrations
- ✓ Compute ambient water quality for GMZs

4: Interpretive Tools

- ✓ Innovative Interpretive Tools

1: Data Gathering

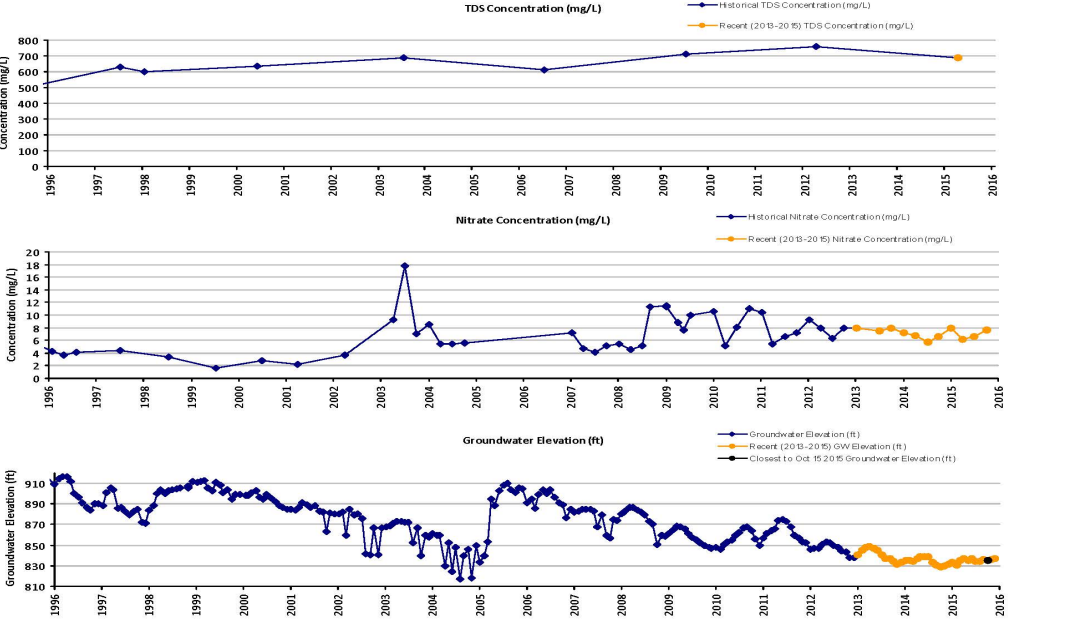
Data Compilation

Agency	Letter mailed	Letter Resent	Emailed Data Contact	Received Response	Received Data	Date Received	WQ Data Formatted	WQ Data Uploaded
Banning, City of	8/17/2015	9/14/2016	aveja@ci.banning.ca.us	9/8/16 - Left message with receptionist 9/14/16 - Email Follow up 1/4/16 - Follow up with Hannibal Blandon regarding data for the Banning and Beaumont areas. 1/12/17 - Talked to Hannibal, He said he could get me the data tomorrow (1-13-17) 1/25/17 - Follow up email with Hannibal	YES	2/2/2017	2/2/2017	2/2/2017
Beaumont Cherry Valley Water District	8/17/2015	9/14/2016	eric.fraser@bcvwd.org	8/31/16 - Left a VM for Eric Fraser (General Manager) 9/14/16 - Email Follow up 10/11/16 - Left VM for Eric Fraser 10/11/16 - Call back saying the production manager has been working on the data but is gone for the day. Expect to here back tomorrow	YES	10/11/2016	11/14/2016	11/14/2016
Beaumont, City of	8/17/2015	9/8/2016	ajakher@ci.beaumont.ca.us	8/31/16 - Resent RWQCB Request Letter to Amer Jakher (Director of Public Works) 9/8/16 - Call back from Joe Shaw - They have a consultant compiling similar data and will work with them to get us the data. I requested they send the data by the end of the month. 1/4/16 - Follow up with Hannibal Blandon regarding data for the Banning and Beaumont areas. 1/12/17 - Talked to Hannibal, He said he could get me the data tomorrow (1-13-17) 1/25/17 - Follow up email with Hannibal	YES	2/2/2017	2/2/2017	2/2/2017
Chino Basin Watermaster	8/17/2015		pkavounas@cbwm.org	8/23/16 - Anna Truong: Privacy Concerns 8/24/16 - Joe LeCaire: Offering to sign a non-disclosure agreement 8/25/16 - Anna Truong: Acknowledged request, watermaster to review 9/6/16 - Anna Truong: Watermaster has drafted NDA for review by Ag pool. Anticipating response after committee meeting Thursday (9-8-16) 9/8/16 - Anna Truong: Ag pool met - intending to reach out to private well owners to obtain consent prior to signing NDA. 11/28/16 - Partial data recieved (everything but the Ag pool)	Yes			

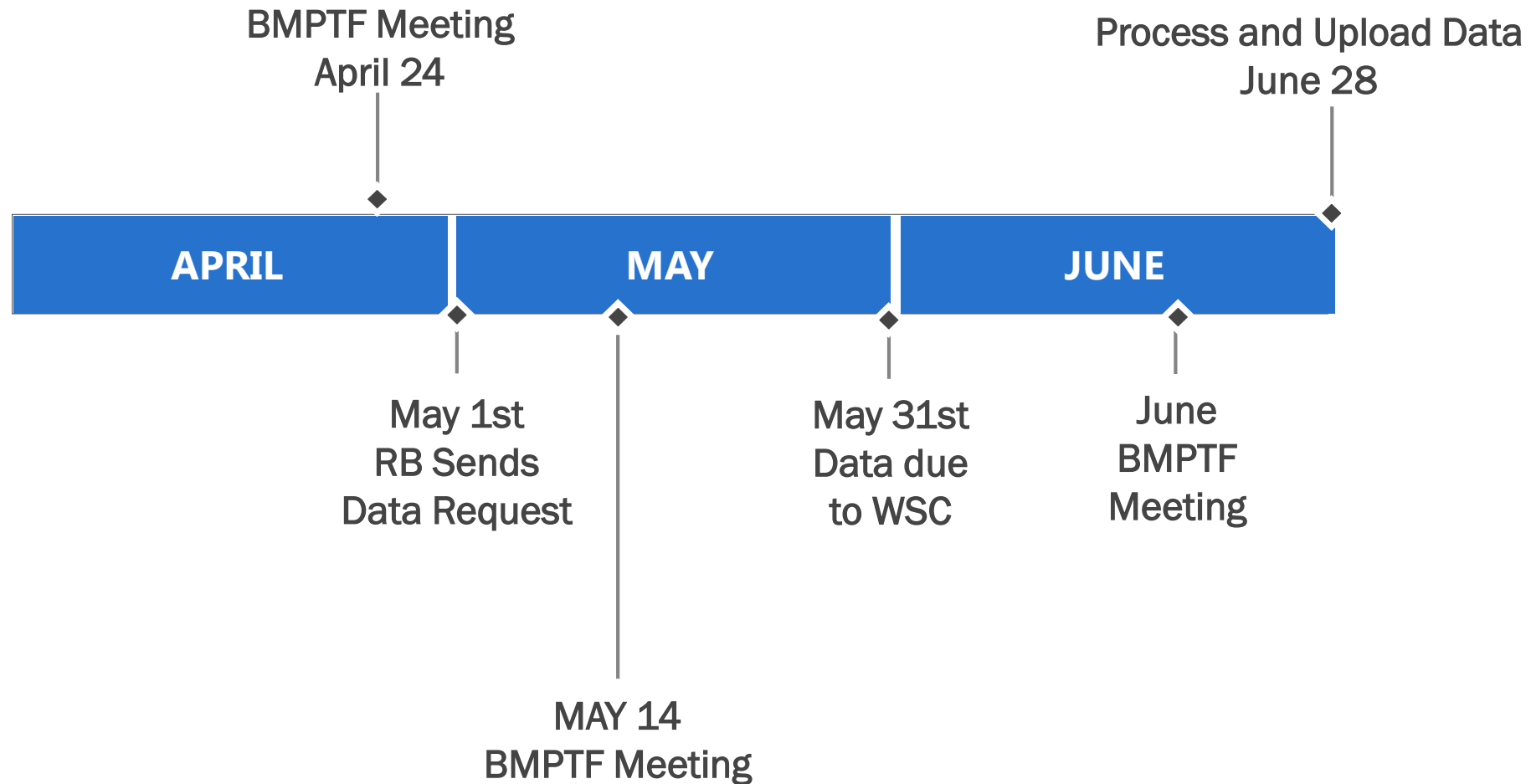
QA/QC, Process, and Upload Recent Data

Ambient Water Quality Trend Charts for TDS, Nitrate, and Groundwater Elevation for the Recomputation Period 1996 to 2015

Well ID 1001958
Management Zone Riverside A

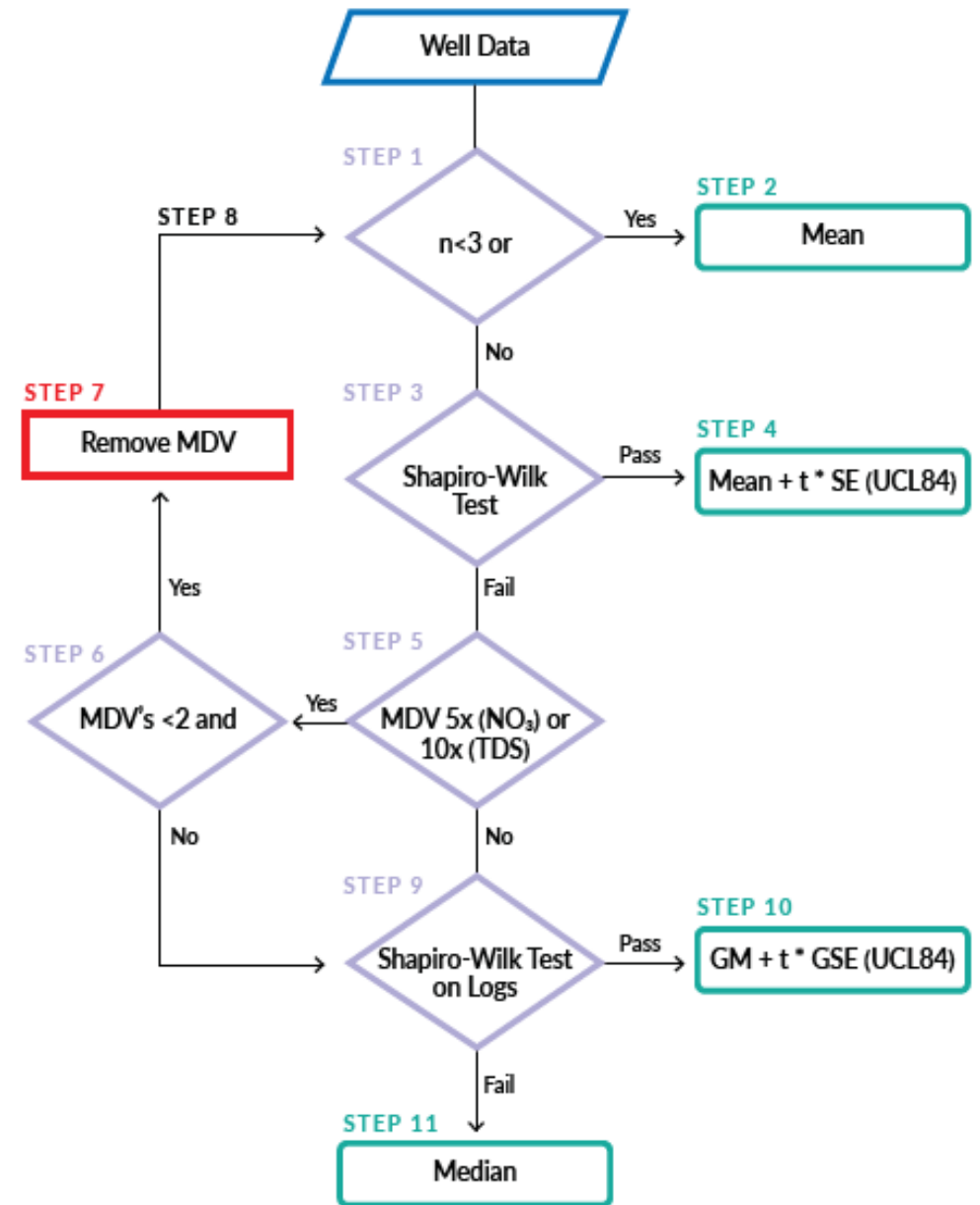


Near-Term Schedule



2: Point Statistics

- ✓ Calculate Water Quality Point Statistics
- ✓ Groundwater Elevation Contours
- ✓ Nitrate, TDS Concentrations





3: AWQ Computations

- ✓ Groundwater Elevation Contours
- ✓ Nitrate, TDS Concentrations
- ✓ Compute ambient water quality for GMZs


Explanation
Riverside-A 5.6 Groundwater Management Zone 1996-2015 NO₃-N AWQ (mg/L)

*SWO: Surface Water Objectives Apply


N/A: Not enough data were available to calculate AWQ values.

 RWQCB Boundary
 Groundwater Management Zone Boundary


 Recharge Basin

 Rivers and Streams

NO₃-N Concentration

 < 1.0 mg/L

 10 mg/L

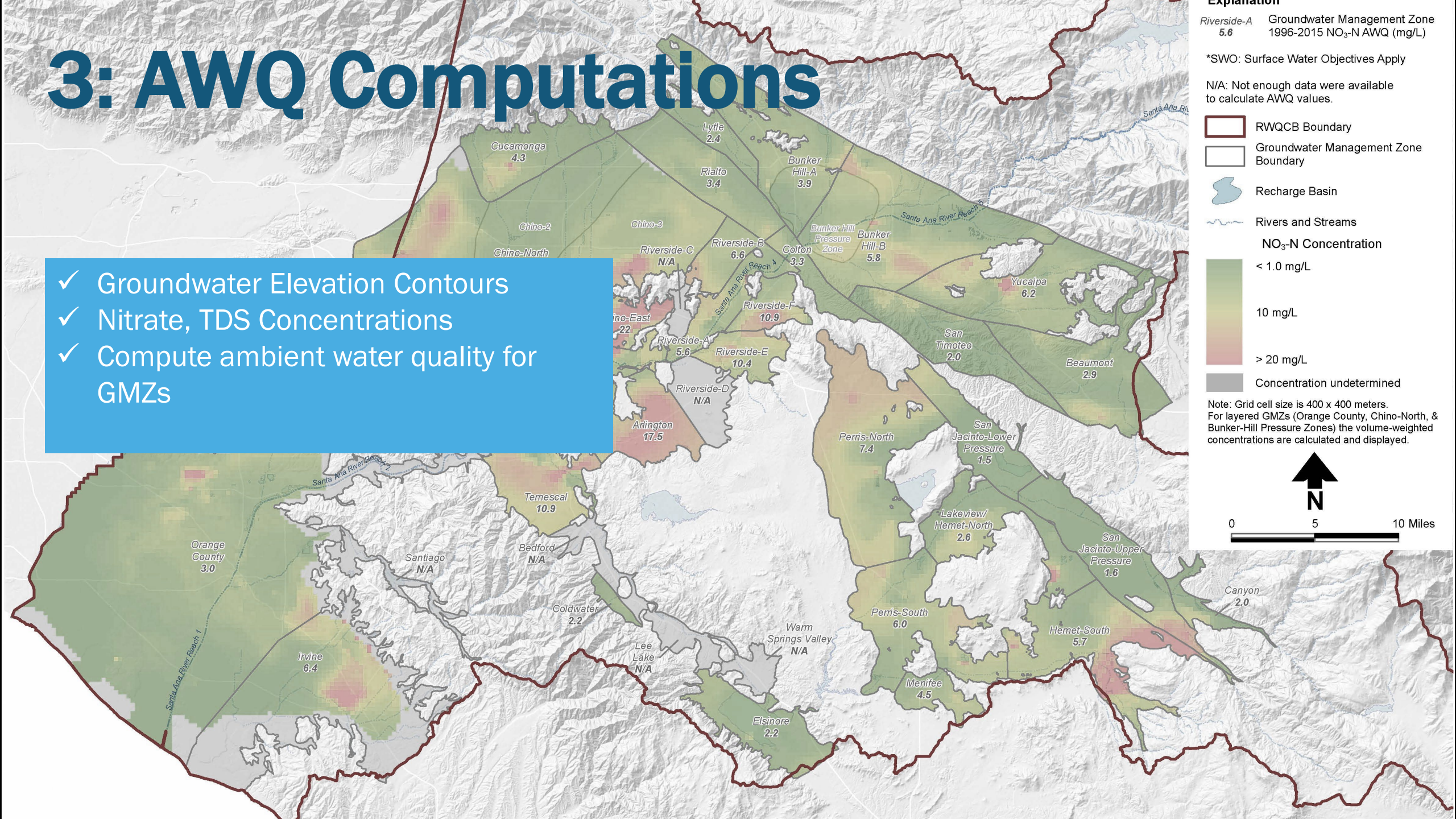
 > 20 mg/L

 Concentration undetermined

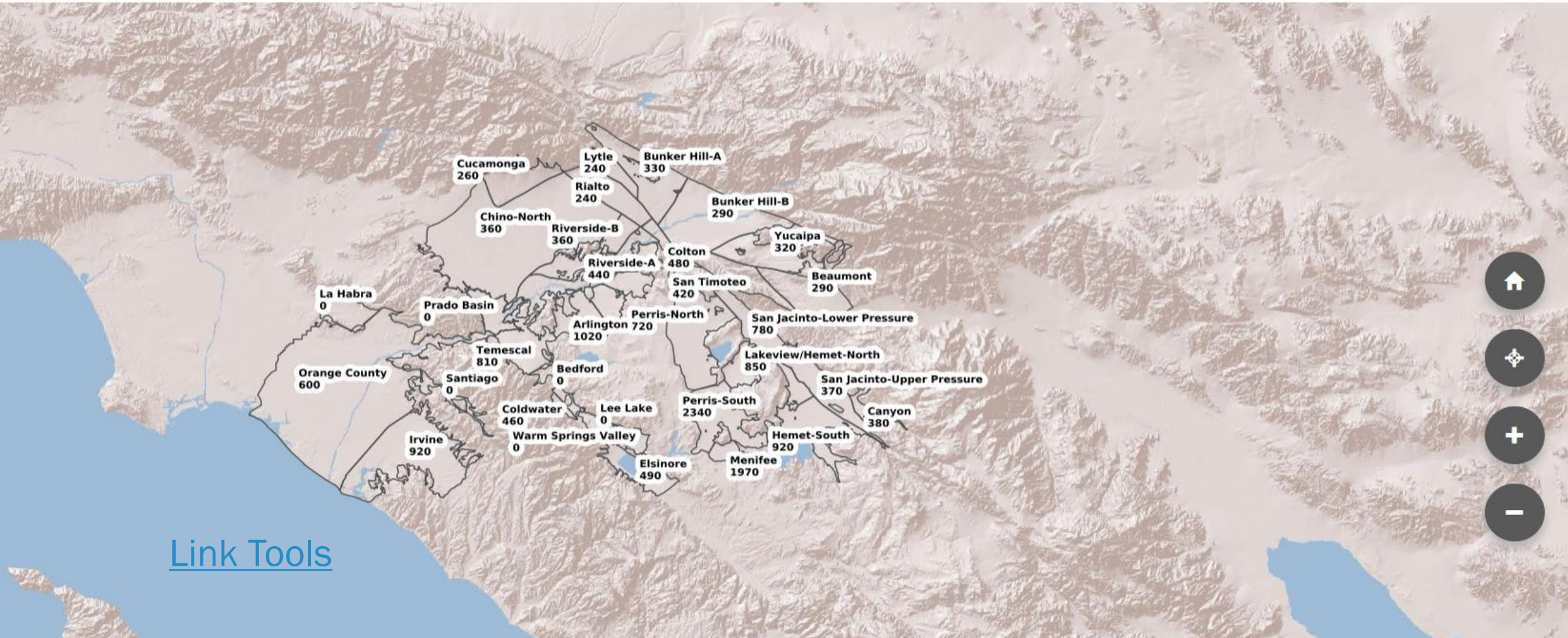
Note: Grid cell size is 400 x 400 meters.
For layered GMZs (Orange County, Chino-North, & Bunker-Hill Pressure Zones) the volume-weighted concentrations are calculated and displayed.



0 5 10 Miles



4: Interactive Interpretive Tools



[Link Tools](#)

A photograph of two people kayaking on a calm body of water. The person in the foreground is on the left, wearing a green shirt, with their arms and a black paddle visible. The person in the background is further away, also in a kayak, with a yellow paddle. The water is still, reflecting the sky and the kayakers. A thin white horizontal line with a central dot is positioned above the text.

QUESTIONS?