

Investigating Water Quality in Private Domestic Well in Santa Cruz County, Arizona

Sofia Grigera¹, Jen Parks², Mary Kay O'Rourke³, and Laura M. Norman⁴

¹ University of Arizona, School of Natural Resources and the Environment, ² Friends of the Santa Cruz River, ³ Mel and Enid Zuckerman College of Public Health, ⁴ United States Geological Survey, Western Geographic Science Center

Background:

Our research is funded by the US EPA's Environmental Justice Small Grants Program (EJSG), Grant # EPA-OECA-OEJ-11-01. EJSG provides funding for eligible applicants for projects that address local environmental and public health issues within an affected community.

Goal:

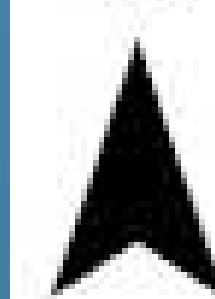
The goal of the project is to assure that all people living in Santa Cruz County, with private wells impacted by the Santa Cruz River, are drinking water that meets the US EPA Maximum Contaminant Level (MCLs) in all categories..

Introduction:

Water samples collected in the Santa Cruz Watershed, located in Southeast Arizona and Northern Sonora, contain a number of contaminants in both surface and monitoring-well water. According to the Safe Drinking Water Act, many wells in Santa Cruz County are exempt from water-quality monitoring, based on the scarcity of people served by the well. There is concern that the local populace may be exposed to water-borne contaminants in the surface water. Collaborating with the U.S. Geological Survey, the Mel and Enid Zuckerman College of Public Health, and Southeastern Arizona Area Health Education Center (SEAHEC), Friends of the Santa Cruz River (FOSCR) will investigate water quality at private wells. The study is funded by the EPA Environmental Justice Small Grants Program.



Study Area map with private and exempt wells located within ½-mile of either Nogales Wash tributary (south of the Nogales International Wastewater Treatment Plant (NIWWTP)) or the Santa Cruz River (north of the NIWWTP)



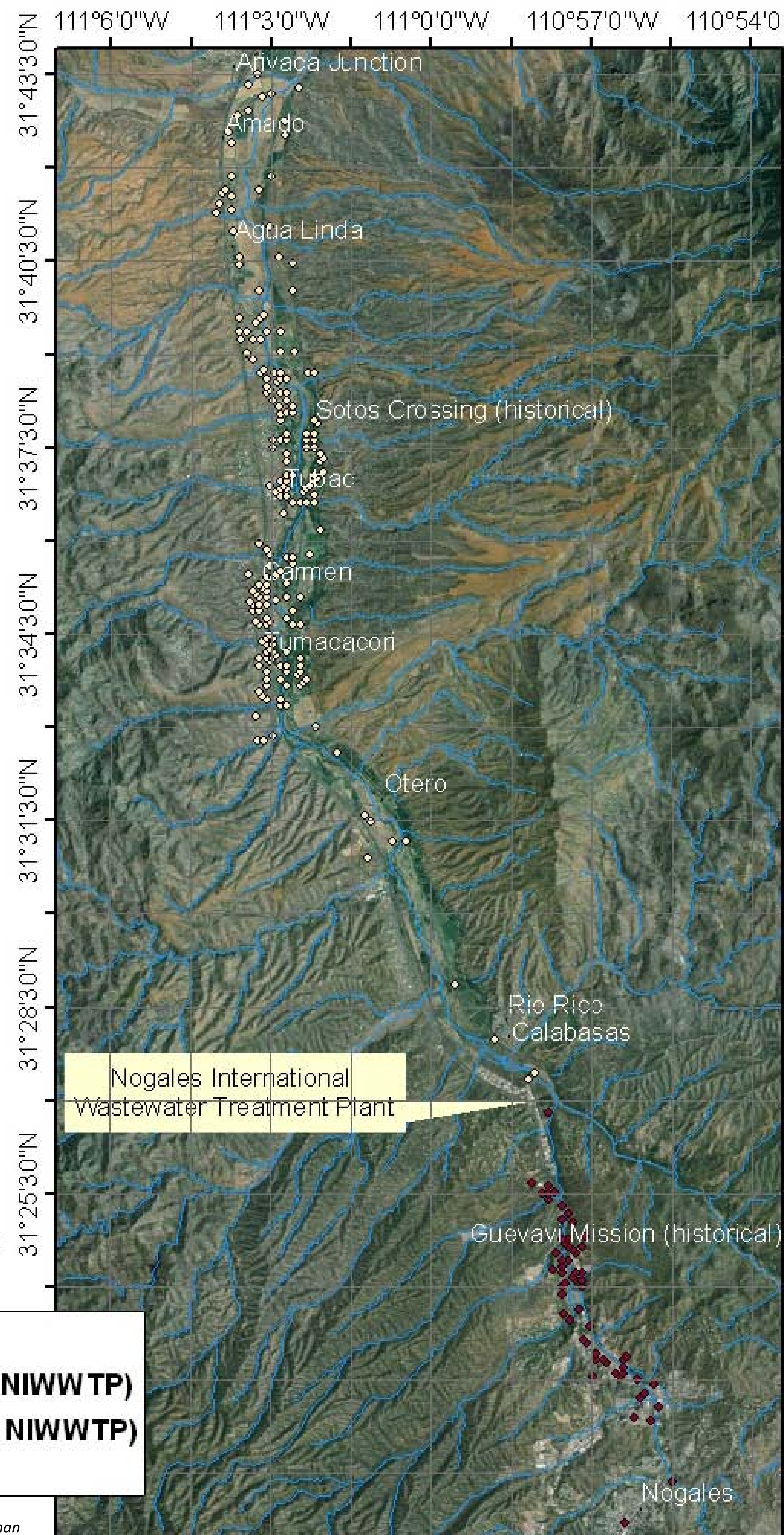
0 2.5 5 Kilometers

0 2.5 5 Miles

Legend

- ◊ Exempt Wells (North NIWWTP)
- ◆ Exempt Wells (South NIWWTP)
- Surface Water

Map created by Laura M. Norman



Objectives:

1. To collect and evaluate water samples in the Nogales/Rio Rico area for metals, E.coli, nitrates, and emerging contaminants.
2. To create partnerships among local area agencies, schools, and individuals interested in the water quality of the Nogales/Rio Rico communities.

Methods:

1. Use well registries to identify private domestic wells within .5 miles of surface waters (see map insert).
2. Acquire approval from the University of Arizona Institutional Review Board (IRB) to send out recruitment material (Acquired January 2012).
3. Recruit up to 40 homes via phone or mail invitation, radio ad, and press release (scheduled for Spring 2012).
4. Sample the tap water served by each well 4 times over the next 1.5 years during 2 wet and 2 dry seasons (scheduled to begin Summer 2012 through Fall 2013).
5. Laboratories will evaluate water for metals (As, Cd, Cr, Cu, Pb, Hg), E.coli, NO₃, emerging contaminants (PFOS, PFOA, Sucralose).
6. Provide participants with water test results, and explanations in the (Summer 2013).

Questions?

Contact Sofia Grigera
sgrigera@email.arizona.edu