Title: Environmental justice and drinking water quality: Are there socioeconomic disparities in nitrate levels in U.S. drinking water?

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Reviewer: Michael Pennino

Reviewer's report:

Review of Environmental Health Journal Article: "Environmental justice and drinking water quality: Are there socioeconomic disparities in nitrate levels in U.S. drinking water?"

By Laurel A. Schaider, Lucien R. Swetschinski, Christopher Campbell, Ruthann A. Rudel

This is the first nationwide assessment of links between drinking water nitrate and environmental justice. Overall, this is a well written article, with the methods, results, and discussion sections clearly described. For example, the methods on how the authors decided to use city served and county served fields for demographic estimates and the description in the discussion on the strengths and limitations of the study were well written.

Specific Comments

I did not notice you report the overall model R-squared values for the mixed-effects linear regression models (at each scale) used in this analysis. Please add to the text or tables.

Table 2. It is not clear what the units are for the values in this table. Please fix.

Table 3. Add a sentence to describe how the values correspond to the % change associated with a 1% change in the demographic variable (as described in the text). This would help the table should stand alone.

Line 83. Provide a citation for "existing studies have found associations between poorer drinking water quality and environmental justice indicators."

Lines 268-272. This paragraph is a little unclear. Can you add a sentence to provide an example to show what you mean by what is described here?
Line 281. Is the use of "years" here correct: "accounting for 189,065 (92.9%) years of system activity"? If so, you should more clearly specify that it is a total of 189,065 years across all systems.

Lines 297-303. At the end of this section describing the detection limit approach, can you add a statement, such as "this is addressed in more detail below in the statistical analysis section," because it was unclear whether the value of 1 mg/L was given to all nondetects that were missing a DL (12.3% of all samples)?

Line 408-410. This sentence "For instance, in counties in the top quartile for cropland, 9.1% of CWSs were high nitrate, while in counties in the bottom quartile for cropland 1.8% of CWS were high nitrate," says high nitrate for both the top and the bottom quartiles, is that correct?

Line 510. Typo: remove extra "are"

Lastly, check the figures in SI to make sure all axis labels, are displayed properly. There might be an issue with the special characters being used for Figure S2, in particular.

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Please indicate how interesting you found the manuscript:

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