Reviewer's report

Title: Air concentrations of volatile compounds near oil and gas production: A community-based exploratory study

Version: 1 Date: 29 August 2014

Reviewer: Robert Oswald

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Due to intrinsic variability, air testing near operations associated with oil and gas operations is very difficult. The value of this study is that it assesses locations that have been identified by the public as potentially problematic. It is not the final answer to the question of how widespread and dangerous is the pollution associated with this industry, but it provides a strong indication that the concerns raised by the public have validity and should be investigated further.

Minor essential revisions:

1) In Tables 2-4, it would be of considerable value to have an estimate of the error of the measurements and the level and the actual values of the ATSDR MRLs. I realize that this would make the table larger, but it is essential information.

2) For any of the sampling sites, it would be of interest to note if there are or are not any other sources of the chemicals detected (e.g., detection of benzene near a highway).

3) I am a little confused about Table A6. How does it relate to Table S5 (shouldn't it be A5?)? I think a legend to the table would be helpful. Also, the authors might want to define "Christmas trees" to distinguish this structure from other cultural icons.

4) Figures: The legends refer to dashed and dotted lines, but all I see are two types of dashed lines. Also, the data for Wyoming are much more dramatic than those for Arkansas and Pennsylvania; however, the fact Wyoming is shown on a log scale and the others on a linear scale obscures this difference. A casual reader is unlikely to notice the y-axis of the Wyoming data. I wonder if the authors can find a way to make this distinction stand out a bit more?

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests