



*Friends of Toppenish Creek*

Dec. 5, 2022

Sage Park  
Regional Director, Central Region Office  
WA State Dept. of Ecology  
1250 W. Alder Street  
Union Gap, WA 98903

Dear Ms. Park:

This is a partial response to your letter of November 9, 2022. The Friends of Toppenish Creek (FOTC) appreciate your stated willingness to continue our conversations as part of the WA State Dept of Ecology's (Ecology's) community engagement.

In this letter we will connect certain aspects of air quality in Yakima County to proposals for Lower Yakima Valley (LYV) manure bio-digesters. There are potential problems associated with the transport of manure to and from proposed digesters.

FOTC understands that:

- Yakima County has been close to non-attainment for fine particulate matter for many years.
- In 2022 fine particulate (PM 2.5) levels exceeded the federal standard of  $35 \mu\text{m}^3$  in Sunnyside on January 5, January 12, October 19, and November 23.<sup>1</sup> These exceedances were not due to wildfires.
- In 2015 Ecology published the Yakima Air Winter Nitrate Study (YAWNS) that found over 30% of fine particulate matter in Yakima is ammonium nitrate, and, "High ammonia emissions from agricultural sources in the area lead to elevated atmospheric concentrations, which drives virtually all available nitric acid into the particulate phase, and results in a condition where any additional nitric acid production would lead directly to greater particulate nitrate levels."<sup>2, 3</sup>
- According to one proposed plan for a manure bio-digester in the Lower Yakima Valley (LYV) there will be a fleet of 20 trucks. Each truck will make 4 round trips per day to bring manure to the facility.<sup>4, 5</sup> We assume these will be diesel powered trucks.
- According to our calculations 20 trucks making 4 round trips per day with an average round trip of 15 miles and 2.4 kg  $\text{NO}_x$  emitted per mile<sup>6</sup> yields a total of 1051 kg per year - about one metric ton of  $\text{NO}_x$  per year from manure transport for bio-digestion.

FOTC asks whether these NO<sub>x</sub> emissions from manure transport are large enough to increase PM 2.5 levels in Sunnyside above the federal standard of 35 μ/m<sup>3</sup> and push Yakima County into non-attainment for this criteria pollutant. Please consider this a starting point for air quality discussions related to renewable natural gas production in Yakima County.

Sincerely,

A handwritten signature in blue ink that reads "Jean Mendoza". The signature is written over a horizontal line.

Jean Mendoza  
Executive Director, Friends of Toppenish Creek

3142 Signal Peak Road  
White Swan, WA 98952

<sup>1</sup> Yakima Regional Clean Air Agency, December 2022 Board Packet.  
[https://www.yakimacleanair.org/site/files/file\\_manager/page/shared/Decembert\\_2022\\_Complete\\_Board\\_Packet.pdf](https://www.yakimacleanair.org/site/files/file_manager/page/shared/Decembert_2022_Complete_Board_Packet.pdf)

<sup>2</sup> Yakima Air Winter Nitrate Study. 2015. Page 5. <https://ecology.wa.gov/DOE/files/a6/a67789dd-aed4-461e-b138-e77537dd1952.pdf>

<sup>3</sup> Data was gathered in the City of Yakima where ammonia levels are lower than those in the Lower Yakima Valley. A smaller amount of data was gathered in the City of Toppenish.

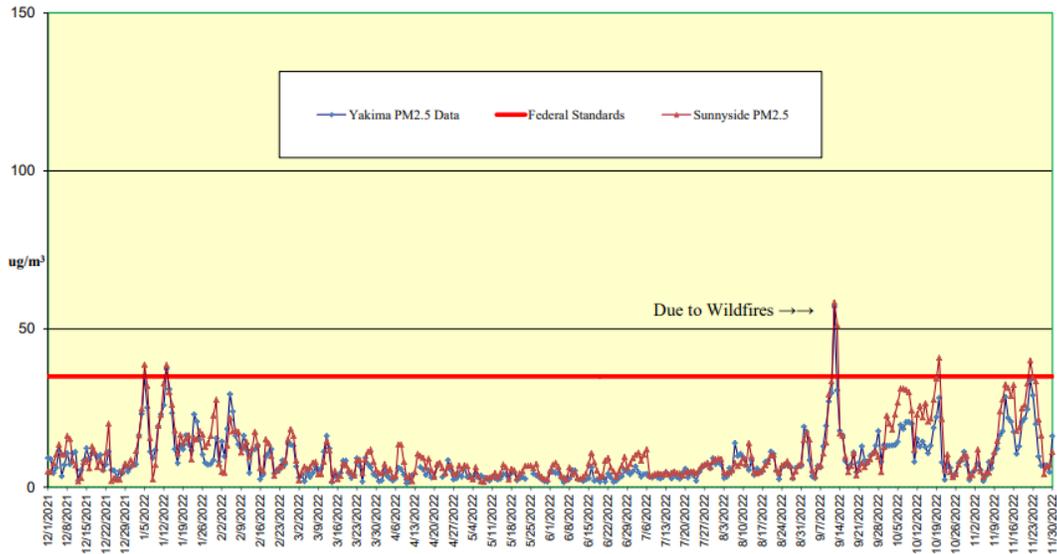
<sup>4</sup> Letter to Shane Fisher, SS Public Works Director. 2021. CUP00059/SEP00044 SS RNG. Page 57/107.  
[http://www.friendsoftoppenishcreek.org/cabinet/data/SS%20RNG%20CUP2021-00059\\_SEP2021-00044\\_\(Under\\_Review\).pdf](http://www.friendsoftoppenishcreek.org/cabinet/data/SS%20RNG%20CUP2021-00059_SEP2021-00044_(Under_Review).pdf)

<sup>5</sup> This calculation does not address transport of cellulosic material to the bio-digester which we assume would come from more distant locations.

<sup>6</sup> Current State of NO<sub>x</sub> Emissions from In-Use Heavy-Duty Diesel Vehicles in the United States. International Council on Clean Transportation. Page ii. 2019. [https://theicct.org/wp-content/uploads/2021/06/NOx\\_Emissions\\_In\\_Use\\_HDV\\_US\\_20191125.pdf](https://theicct.org/wp-content/uploads/2021/06/NOx_Emissions_In_Use_HDV_US_20191125.pdf)

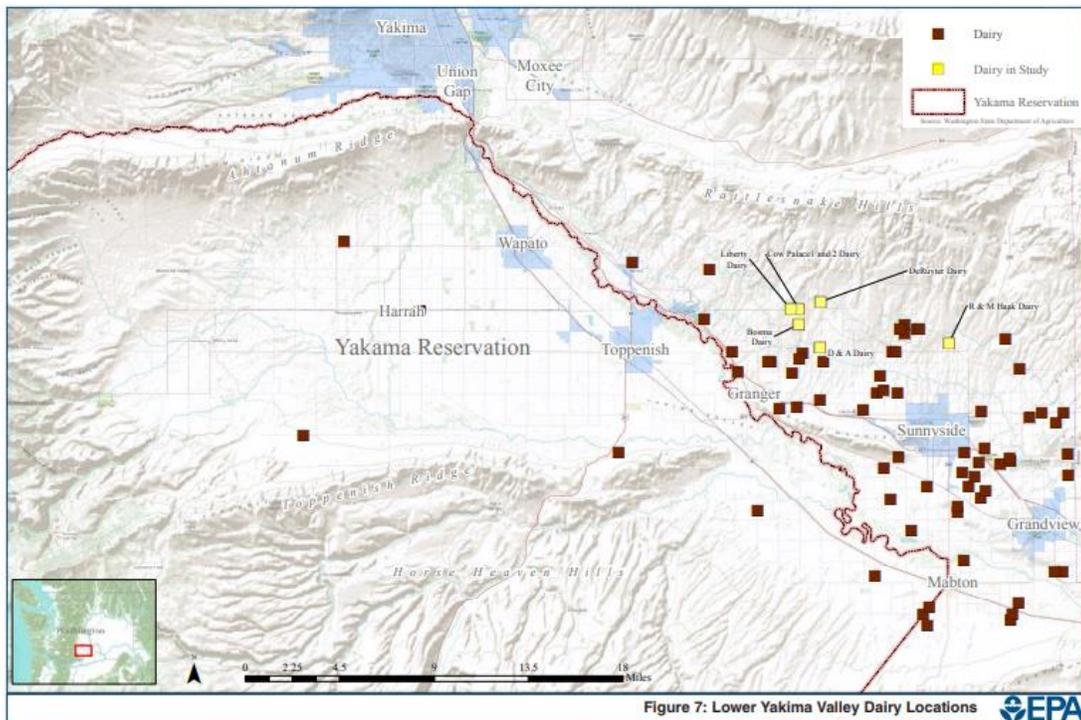
PM<sub>2.5</sub> FEM/BAM2.5 (starting September 15, 2015) Annual Air Monitoring Data, Cities of Yakima and Sunnyside

Daily Average Values from December 1, 2021 through November 30, 2022



From the YRCAA December 2022 Board Packet at

[https://www.yakimacleanair.org/site/files/file\\_manager/page/shared/Decembert\\_2022\\_Complete\\_Board\\_Packet.pdf](https://www.yakimacleanair.org/site/files/file_manager/page/shared/Decembert_2022_Complete_Board_Packet.pdf)



Environmental Protection Agency. Relation Between Nitrate in Water Wells and Potential Sources in the Lower Yakima Valley, Washington. Page 127/311. 2013. <https://www.epa.gov/sites/default/files/2017-12/documents/lower-yakima-valley-groundwater-report-2013.pdf> <https://www.epa.gov/sites/default/files/2017-12/documents/lower-yakima-valley-groundwater-report-2013.pdf>