Response to Inquiry

Subject:	Petition for EPA to use Emergency Powers to Solve Nitrate Groundwater Contamination that Exceeds Federal Drinking Water Standards in the Lower Yakima Valley in Washington State
To:	Jeff Kenknight, US Environmental Protection Agency (EPA) Region 10
From:	Holly Myers, Director Office of Drinking Water (ODW), Washington Department of Health (DOH)
Date:	February 8, 2022

In 2021, three public interest groups petitioned U.S. EPA to exercise its emergency powers under Section 1431 of the Safe Drinking Water Act (SDWA), 42 U.S.C. § 300i, to address nitrate groundwater contamination that continues to present an ever-increasing imminent and substantial endangerment to drinking water and public health in the Lower Yakima Valley (LYV) in Washington State.

We understand that EPA is collecting information it needs to evaluate the situation and determine how it will respond to the petition, and has therefore asked ODW for the following information:

> ***EPA requests*** *the Department of Health's cooperation in providing* ***additional information related to nitrate contamination in the LYV*** *and the* ***actions that DOH is or will be taking to protect public health****. For example, EPA seeks information related to any* ***recent testing of residential wells****, DOH's* ***estimate for the number of residential wells with nitrate concentrations exceeding the maximum contaminant level****, and* ***whether nitrate contamination impacts wells serving Group A and Group B water systems****.*

This document provides answers to these questions.

1. Ecology's Testing Data for individual well users

The Department of Health does not test residential wells and does not have complete data on them. The table below represents Ecology's data of 170 well samples for nitrate in 2021. This effort is supported by legislative funding to continue quarterly for 2 years and annually beyond that time. This data set includes 34 monitoring wells and 136 private domestic wells within the LYV-GWMA area.

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Estimate of 2900 people that do not have access to safe drinking water in LYV-GWMA, using Ecology's calculation based on Pacific Groundwater Groups Request of Identification 2011 data. (71,400 population, 34% private well users, 12% exceed nitrate drinking water standard.)

All Wells	**Summer 2021**	**Fall 2021**
Wells less than **drinking water standard (10 mg/L)**	79%	81%
Wells greater than 10 mg/L	21%	19%
Type of Wells		
Monitoring wells greater than 10 mg/L	47%	44%
Private domestic wells greater than 10 mg/L	15%	13%

2. Nitrate Contamination Impacts to Group A and Group B Water Systems Wells

The DOH database for source water quality data was queried for the period January 1, 2010 through December 31, 2021. A list is provided below of Group A Comm, Group A TNC, Group A NTNC and Group B systems treating to remove nitrate.

- Group A
  - City of Grandview (WS ID: 28970; population served: 11,010)
  - Lombard Loop Water Assoc (WS ID: 45720; population served: 180)
  - City of Mabton (WS ID: 49650; population served: 2,290)
  - Valicoff Housing (WS ID: AD483; population served: 96)
  - Faith Community Choice (Group A TNC) (WS ID: 06287; population served: 52)
- Group B
  - Windy Point Fruit Ranch (WS ID: AA432; population served: 22)

3. DOH Actions to Protect Public Health and Drinking Water in the LYV-GWMA

A. Past -Present Actions

1. Regulating Drinking Water Plants/Public Water Systems

EPA delegated to ODW authority to administer and enforce in Washington State federal drinking water regulations promulgated under the federal Safe Drinking Water Act. ODW exercises this authority over Group A public water systems, and delegates authority for Group B systems to local health jurisdictions. This is true for the public water systems in the LYV-GWMA boundary.

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2. Assisting Private Domestic Well Users

ODW does not exercise any regulatory authority over private domestic wells.

However, as a participating member of the LYV-GWMA, ODW staff have participated in GWAC interventions. In particular, ODW staff played a key role in the GWMA's:

- Public outreach program – writing and distributing public outreach materials. This work is still ongoing.
- Nitrate Treatment Pilot Program, which sampled numerous domestic wells and provided point of use treatment systems to numerous residential households. ODW staff helped to manage this program.

3. Septic Tanks and Sewer Systems

On-site Sewage Systems (OSS).

DOH provides help and information for OSSes that are managed by homeowners and regulated by local health jurisdictions. Also known as septic systems, these treat wastewater from private residences and restaurants. Defined in Chapter 246-272A WAC, OSSs are those sewage systems that have flows of less than 3,500 gallons per day.[1]

Large On-site Sewer Systems (LOSS).

DOH reviews and approves LOSS project applications. The LOSS rule is Chapter 246-272B WAC, developed under authority of Chapter 70A.115 RCW. All existing LOSS are required to obtain and renew annual operating permits from the Department of Health. Annual LOSS reports are submitted to DOH.[2]

LOSSes serve multiple residences or establishments, serving twenty or more people per day or having a design volume of between 3,500 to 100,000 gallons per day.

DOH records show that there are two of these systems located within the GWMA. One system is located outside of Zillah with a design capacity of 5,000 gallons. The second is located outside of Granger with a design capacity of 4,850 gallons.[3]

B. Future Actions

The LYV-GWMA Program sets forth 64 Recommended Actions. DOH is a responsible entity for implementing four Recommended Actions. DOH plans to assist and provide support for implementing other Recommended

[1] On-site Sewage Systems (OSS) :: Washington State Department of Health.
[2] Large On-site Sewage Systems (LOSS) :: Washington State Department of Health.
[3] GWMA Volume I (yakimacounty.us), p. 28.

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Actions for which other entities are primarily responsible. Both categories of Recommended Actions are listed below.

A number corresponding with each item in column 1 indicates the priority that the GWAC assigned to the item (out of 64); this is subject to change during the GWAMA Implementation Committee's (IC's) future deliberations.

Additionally, DOH has identified independent actions it can take to support desired outcomes in the LYV-GWMA. These items are also set forth below.

DOH has or plans to dedicate staffing and other resources to the Recommended Actions set forth below.

Responsible Entity; Recommended Action Number	**Recommended Action:**	**Detail:**
DOH, Yakima Health District and Yakima County **Priority #15**	Develop a bilingual, health-risk education and outreach campaign.	Establish a public education program regarding nitrate pollution and health risk over a 5- to 10-year period. Partner with UW Pediatric Environmental Health Specialty Unit to continue training local healthcare providers to recognize and address nitrate risk in their patients (pregnant women and infants up to six months).
DOH **Priority #34**	Determine, prior to issuing or reissuing LOSS permits, that all employee counts are regularly reported	So that the LOSS will continue to operate as designed.
Ecology and DOH **Priority #42**	Establish time-based performance objectives against which well monitoring data can be compared. Establish criteria to measure whether performance of nitrate reduction strategies are successful	E.g. number of at-risk wells, BMP implementation, funding success, reduction in number of underperforming farming practices. Use both method-based measurement and performance-based measurement.
DOH **Priority #57**	Revise WAC 246-203-130, Keeping of Animals Rule	So that it includes specific and enforceable requirements designed to protect human health.

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Yakima Health District Priority #2	Collect data from Ambient Groundwater Monitoring Wells.	Study short-term seasonal variations in nitrate concentrations over next year or two and address effects of changes in nutrient application over the agricultural cycle. Study long-term trends that develop over several years to track whether time-based performance objectives are being met.
Yakima Health District Priority #4	Publish and distribute homeowner guide on how to maintain septic systems.	
Yakima Health District Priority #12	Study potential nitrate contamination attributable to improperly operated septic systems	Consider restoration/retrofit of older septic systems through incentives or county property tax breaks. Require nitrogen reducing technologies for onsite septic systems where appropriate. Assist hobby farmer to locate ROSS drain fields on their property to avoid animal farming over the drain fields.
Yakima County Priority #17	Encourage municipalities within the GWMA to extend municipal sewer systems within urban growth areas and retire ROSS and LOSS; alternatively, extend public water systems. Encourage connection of residences within urban growth zones to sewer systems extended by municipalities.	
EPA, WSDA, and Ecology Priority #25	Streamline current regulatory enforcement activities.	Improve customer service and protocols. Increase clarity of process, escalate enforcement for facilities not following management practices. Identify methods to discourage repeatedly unfounded complaints and improve overall transparency.
Ecology Priority #30	Develop a plan for finding and decommissioning abandoned wells, using the GWMA as a pilot project.	Educate the public regarding liability of an ill-secured well, and the importance of the integrity of wells, particularly those without a well log. Educate realtors and banking industry officials about disclosure of

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		abandoned wells in property transfers. Compare Google Earth to GIS images to determine where building or usage changes indicate possible well usage changes. Focus first on hotspot high density areas in GWMA. Ground truth suspected problem wells. Offer incentives for property owners to identify and properly abandon wells. Offer grant funding to Yakima Health District or professional engineers for well inspections and to assist in abandoned well decommissioning. Provide some form of protection for self-reporting of abandoned or improperly decommissioned wells.
Yakima Health District Priority #36	Require new developments outside of town to address potential impacts to groundwater quality	Work with Yakima County Planning and Building Divisions' permit program to identify methods of permitting while reducing impacts to groundwater.
Yakima County Public Works Priority #44	Perform an engineering study of water supply alternatives.	Possible alternatives: 1) Discontinue use of contaminated shallow wells. Build new 1,500-foot community wells. 2) Rebuild, repair, or replace poorly constructed wells. 3) Construct a potable water line from nearby developed area into deadhead water stations at central rural location (permit potable water collection at deadhead water stations). 4) Offer incentives to drill deeper wells or connect households on private wells near community water systems to connect to a community water system (Nitrate Treatment Pilot Program – June 2011).
Yakima County Priority #48	Contract with USGS to do particle tracking model study to indicate where groundwater moves faster	USGS Particle Tracking Model Overview – potentially combined with MT3D MODFLOW application to the vadose Zone.

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Not included in the Recommended Actions, but DOH will prioritize this work:		
Actor:	**Action:**	**Detail:**
DOH	Assist the Yakima Health District in providing alternative potable water or water treatment to private homeowners whose wells have high nitrate -- exceeding 5 mg/L. Do ASAP.	Access Foundational Public Health monies available to DOH to support this work. Provide funding to YHD through existing contracts. Options under consideration, depending on community input are: 1. Contracted water supplier to deliver water to well users with elevated nitrate levels (within the study initially, later more broadly). 2. Provide installation of point-of-use treatment and maintenance for a period of time.
DOH	Conduct a health assessment – evaluate the nitrate contamination and impacts on the community.	A toxicologist with DOH's Office of Environmental Public Health Sciences will conduct a human health risk assessment to evaluate the levels of nitrate in drinking water in the LYV and compare them to health standards. This will help to identify risk of potential health hazards from nitrate exposure in drinking water. The results will inform recommendations about how to protect and improve the health of the community, explain how community members could be exposed, and recommend actions that agencies and communities can take to reduce or eliminate exposure to nitrates.
DOH	Contract to use a numerical model to delineate well head protection zones for Group A sources for the 6-month, 1, 5 and 10-year Time of Travel, within the study area.	Use Source Water Protection Funds available to DOH to support this work. Building upon an existing USGS model in the area, the time of travel for contaminants to move in the groundwater to a source will be delineated using a numerical model. This information can then be used with other data sources and information to support informed decisions.

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