BEFORE THE
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Petition for Emergency Action Pursuant to the Safe Drinking Water Act § 1431, 42 U.S.C. § 300i, to Protect Citizens of the Lower Umatilla Basin in Oregon from Imminent and Substantial Endangerment to Public Health Caused by Nitrate Contamination of Public Water Systems and Underground Sources of Drinking Water	)	EPA Docket No. _____ January 16, 2020

Submitted on Behalf of Petitioners Food & Water Watch, Columbia Riverkeeper, Eileen Laramore, Friends of Family Farmers, Humane Voters Oregon, WaterWatch of Oregon, Animal Legal Defense Fund, Center for Biological Diversity, and Center for Food Safety

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ED_005296_00000585-00001

TABLE OF CONTENTS

I. INTRODUCTION **3**

II. INTERESTS OF PETITIONERS **4**

III. LEGAL BACKGROUND OF THE SAFE DRINKING WATER ACT AND EPA'S EMERGENCY POWERS **5**

IV. DRINKING WATER CONTAMINATION IN THE LUBGWMA CONSTITUTES AN ENDANGERMENT UNDER THE SDWA AND NECESSITATES EMERGENCY ACTION BY EPA **9**

- **A. The LUBGWMA's Hydrogeology Makes the Area's Drinking Water Particularly Vulnerable to Nitrate Pollution** **10**
- **B. The LUBGWMA Has a Well-Documented History of Nitrate Contamination in Its Groundwater** **11**
- **C. CAFOs and Irrigated Agriculture Are the Dominant Land Use Activities and Are the Predominant Cause of Nitrate Contamination in the LUBGWMA** **15**
- **D. Conditions in the LUBGWMA Constitute an Imminent and Substantial Endangerment to Human Health Under the SDWA** **20**
  1. Nitrate Contamination in the LUBGWMA Drinking Water Constitutes an Endangerment ... 20
  2. The Public Health Endangerment Is Imminent 21
  3. The Public Health Endangerment Is Substantial 22

V. OREGON OFFICIALS HAVE FAILED TO ACHIEVE SAFE DRINKING WATER QUALITY DESPITE DECADES OF ATTEMPTING TO IMPLEMENT MITIGATION PLANS **23**

VI. EPA EMERGENCY ACTION IS NECESSARY TO ABATE ONGOING AND EVER-INCREASING ENDANGERMENT TO HUMAN HEALTH FROM NITRATE CONTAMINATION **27**

VII. CONCLUSION **29**

ED_005296_00000585-00002

I. INTRODUCTION

The undersigned Petitioners respectfully petition the United States Environmental Protection Agency ("EPA") to exercise its emergency powers established in Section 1431 of the Safe Drinking Water Act ("SDWA" or "the Act"), 42 U.S.C. § 300i, to address groundwater contamination that has presented, and continues to present at ever-increasing levels, an imminent and substantial endangerment to the health of the residents of the Lower Umatilla Basin ("LUB") in Oregon. This petition is based primarily on data that have been compiled by the Oregon Department of Environmental Quality ("DEQ"), the Oregon Health Authority ("OHA"), Oregon Department of Agriculture ("ODA"), Umatilla and Morrow County Soil and Water Conservation Districts, and the Lower Umatilla Basin Ground Water Management Area Committee ("LUBGWMA Committee"), all of which demonstrate that nitrate concentrations in public water systems and underground sources of drinking water have routinely exceeded both federal and state drinking water standards, putting the health of area residents at serious risk. Every methodology employed by Oregon officials confirms that not only have past, voluntary measures relied on by the State been unsuccessful at reducing nitrate concentrations in crucial drinking water sources to below federal and state standards, but also that the unambiguous and unabated trend is towards ever greater levels of nitrate contamination. Instead of changing tack based on these findings and mandating actions necessary to improve water quality, Oregon officials recently doubled down on their voluntary-only approach, as outlined in the now-operative Second Lower Umatilla Basin Groundwater Management Area Local Action Plan ("Second Action Plan").[1]

As explained in this Petition, the well-documented nitrate contamination of eastern Oregon's LUB drinking water necessitates prompt and decisive EPA emergency action under the SDWA. Elevated levels of nitrate in drinking water is known to increase the risk of a wide range of very serious health problems, including birth defects, "blue-baby syndrome," various cancers, thyroid disease, and other maladies.[2] This contamination poses an imminent and substantial threat to human health, and the problem is only getting worse. Despite Oregon applying for and being granted "primacy" under the SDWA, state and local officials have failed to do what is needed to remediate this contamination and instead have allowed nitrate concentrations in the area's drinking water to rise over the span of three decades. Oregon officials have effectively abandoned their responsibility to protect Oregon's citizens by merely repackaging their failed voluntary-only approach, which continues to put control in the hands of the very polluters that have turned a once pristine source of drinking water into a pervasive threat to human health. EPA is fully empowered under the SDWA to take emergency action to protect human health in the LUB given present circumstances.

Therefore, Petitioners request that EPA act to protect human health and effectuate the goals of the SDWA in the LUB. Specifically, Petitioners request that EPA, at a minimum, provide a safe alternative source of drinking water for the impacted communities so long as dangerous nitrate contamination persists, further monitor drinking water quality and identify the

[1] Lower Umatilla Basin Groundwater Management Committee, *Second Lower Umatilla Basin Groundwater Management Area Local Action Plan* (updated Feb. 12, 2019) (hereinafter "Second Action Plan, App A") (included here as Appendix A).
[2] *See infra* Section IV.D.1.

ED_005296_00000585-00003

specific entities and land use practices causing the contamination, and issue orders necessary to begin reducing nitrate loadings and eventually return the area's underground aquifers to a safe and drinkable condition.

II. INTERESTS OF PETITIONERS

Food & Water Watch ("FWW") is a national, nonprofit membership organization that mobilizes regular people to build political power to move bold and uncompromised solutions to the most pressing food, water, and climate problems of our time. FWW uses grassroots organizing, media outreach, public education, research, policy analysis, and litigation to protect people's health, communities, and democracy from the growing destructive power of the most powerful economic interests.

Columbia Riverkeeper's ("Riverkeeper") mission is to protect and restore the water quality of the Columbia River and all life connected to it, from the headwaters to the Pacific Ocean. Riverkeeper works with people in dozens of communities—rural and urban—with the same goals: protecting the health of their families and the places they love. Riverkeeper enforces environmental laws to stop illegal pollution, protect salmon habitat, and challenge harmful fossil fuel terminals. Riverkeeper uses policy advocacy, litigation, and community organizing, partnering with Columbia River communities to protect clean water.

Eileen Laramore in her individual capacity. Ms. Laramore is a resident of Umatilla County who has a long history of engagement in the area. Her activities in Umatilla County include: founder and Executive Director of Friends of the Oxbow Property, Umatilla County, which works on a 222-acre restoration site on the Umatilla River near Hermiston, Oregon; founder and Executive Director of Tour of Knowledge, a grassroots citizen group that toured area facilities and sites that affected regional natural resources (disbanded in 2017); Master Gardner in Marion and Umatilla counties; and member of Friends of the Columbia River Gorge. Ms. Laramore also has an extensive history of civic service in the area that includes being Public Representative on the Umatilla Basin Critical Groundwater Area Task Force; Co-Chair of the Rural, Residual and Open Spaces Committee for the Lower Umatilla Basin Groundwater Management Area; Board Member on the Umatilla County Invasive Weed Committee (represented Hermiston, Oregon); and an attendee of Oregon Hanford Cleanup board meetings for two years.

Friends of Family Farmers ("FoFF") is a grassroots, nonprofit organization based in Oregon with more than 8000 supporters from across the state. FoFF brings together farmers and citizens to shape and support socially and environmentally responsible family-scale agriculture in Oregon. We build a strong and united voice for Oregon's independent family farmers, food advocates, and concerned citizens who are working to foster an approach to agriculture that respects the land, treats animals humanely, and sustains local communities. It is our belief that every person — urban and agrarian, farmer and eater — has the ability to make choices that can help regenerate our food system.

Humane Voters Oregon ("HVO") is an Oregon non-profit organization advocating in Oregon's political process and elections for improved animal welfare. HVO also participates in

ED_005296_00000585-00004

selected administrative and legal proceedings, and promote policies, that improve human health and the environment while also improving animal welfare.

WaterWatch of Oregon protects and restores natural flows in Oregon rivers and advocates for wise and equitable management of all Oregon water resources, including groundwater.

The Animal Legal Defense Fund is a national nonprofit organization founded in 1979 in Cotati, California. ALDF's mission is to protect the lives and advance the interests of animals through the legal system. Advocating for effective oversight and regulation of CAFO development, expansion, and pollution across the United States is one of ALDF's central goals, which it achieves by filing lawsuits, administrative comments, and rulemaking petitions to increase legal protections for animals and communities affected by CAFOs. ALDF conducts this work on behalf of itself and more than 235,000 members and supporters throughout the United States, including over 50 in Eastern Oregon. Through these efforts, ALDF seeks to ensure transparency in the CAFO system, which is paramount to its ability to protect farmed animals and ALDF members from CAFOs' immensely harmful effects.

The Center for Biological Diversity ("the Center") is a non-profit, public interest environmental organization with more than 1.6 million members and online activists that is dedicated to the protection of native species and their habitats through science, policy, and environmental law. For decades the Center has worked to protect imperiled plants and wildlife, open spaces, and air and water quality, as well as to preserve the overall quality of life for people and animals. The Center and its members and supporters are concerned about the fate of imperiled species, including water-dependent species and their habitats, and alarmed by the increasing rate of extinction and loss of biological diversity across the United States.

Center for Food Safety ("CFS") is a national non-profit organization with a mission to empower people, support farmers, and protect the environment from industrial agriculture. CFS represents nearly 1 million members and supporters nationwide and tens of thousands in the Pacific Northwest, including Oregon. CFS uses education, policy and legislation, and impact litigation to address the negative effects to public health and the environment from harmful food production technologies, and supports ecological food production, like organic and beyond. CFS's regional program in the Pacific Northwest and Oregon specifically focuses on the negative impacts to community health, farmers, and wildlife from animal factories.

III. LEGAL BACKGROUND OF THE SAFE DRINKING WATER ACT AND EPA'S EMERGENCY POWERS

Congress enacted the SDWA as a powerful tool for protecting drinking water resources throughout the United States. Under the Act, EPA and state authorities are encouraged to work together to ensure access to safe drinking water. On the federal level, the SDWA "requires EPA to protect the public from . . . drinking water contaminants."[3] States may apply for and EPA may grant "primacy" to states, which shifts significant authority and responsibility to state officials to

[3] *City of Portland v. EPA*, 507 F.3d 706, 709 (D.C. Cir. 2007).

ED_005296_00000585-00005

implement the SDWA.[4] To assume primacy, the state is supposed to adopt regulations at least as stringent as EPA's national requirements, develop adequate procedures for enforcement and levying penalties, conduct inventories of water systems, maintain records and compliance data, and develop a plan for providing safe drinking water under emergency conditions.[5] While a state granted primacy has responsibility to implement the SWDA's provisions in that state, EPA retains emergency powers under Section 1431 of the Act to take actions necessary to abate imminent and substantial endangerment to the health of persons caused by drinking water contamination when state officials have failed to effectively do so on their own.

For EPA to exercise its Section 1431 authority, two conditions must be met. First, the EPA must have received "information that a contaminant which is present in or likely to enter a public water system or an underground source of drinking water, … may present an imminent and substantial endangerment to the health of persons."[6] Second, EPA must have received information that "appropriate State and local authorities have not acted to protect the health of such persons" in a timely and effective manner.[7]

The SDWA defines a contaminant as "any physical, chemical, biological, or radiological substance or matter in water."[8] While this broad definition does not require a substance to be regulated under the Act in order to be classified as a "contaminant," nitrate is listed as a contaminant with an established maximum contaminate level ("MCL") of 10 mg/L.[9] Establishing nationwide, health-based MCLs is central to EPA's role in protecting drinking water in the U.S. under the SDWA.[10] An MCL is the "maximum permissible level of a contaminant in water which is delivered to any user of a public water system."[11] MCLs are promulgated after a determination by EPA based on the best available, peer-reviewed science and data that regulating the contaminant will reduce a threat to public health.[12]

An endangerment from a contaminant is "imminent" if conditions that give rise to it are present, even if the actual harm may not be realized for years.[13] Congress intended that EPA's exercise of its emergency powers "must occur early enough to prevent the potential hazard from

[4] 42 U.S.C. § 300g-2.
[5] MARY TIEMANN, CONG. RESEARCH SERV., RL31243, SAFE DRINKING WATER ACT (SDWA): A SUMMARY OF THE ACT AND ITS MAJOR REQUIREMENTS 7 (Mar. 1, 2017).
[6] 42 U.S.C. § 300i; EPA Memorandum, Updated Guidance on Emergency Authority under Section 1431 of the Safe Drinking Water Act 8 (May 30, 2018), https://www.epa.gov/sites/production/files/2018-09/documents/updatedguidanceonemergencyauthorityundersection1431sdwa.pdf (last visited Nov. 4, 2019) (hereinafter "Emergency Authority Guidance, App. B") (included here as Appendix B).
[7] 42 U.S.C. § 300i; Emergency Authority Guidance, App. B at 12-13.
[8] 42 U.S.C. § 300f(6).
[9] 40 C.F.R. § 141.62(b).
[10] 42 U.S.C. § 300g-1(b)(4)(B). Before establishing an MCL, EPA first identifies a "maximum contaminant level goal" (MCLG) indicating the level at which no known adverse health consequences will occur. *Id.* § 300g-1(b)(4)(A). The MCL is then set as close to the MCLG as is feasible when using "the best technology, treatment techniques and other means which the Administrator finds . . . are available (taking cost into consideration)." *Id.* § 300g-1(b)(4)(D).
[11] *Id.* § 300f(3).
[12] *Id.* § 300g-l(b)(1)(A), 300g-l(b)(3)(A).
[13] SDWA Emergency Authority Guidance, App. B at 8 (citing *U.S. v. Conservation Chemical Co.*, 619 F. Supp. 162, 193-194 (W.D. Mo. 1985)).

ED_005296_00000585-00006

materializing."[14] Courts have established that an "imminent hazard" may be declared at any point in a chain of events that may ultimately result in harm to the public.[15] Information presented to EPA need not demonstrate that residents are actually drinking contaminated water and becoming ill to warrant EPA exercising its Section 1431 emergency authority.[16] In other words, an actual injury need not have occurred for EPA to act, and to wait for such actual injury to befall the public would be counter to the protectionary intent behind the SDWA. Thus, while the threat or risk of harm must be "imminent" for EPA to act, actual and documented harm itself need not be.[17] While endangerments are readily determined to be imminent where MCL violations expose sensitive populations to a contaminant, contaminants that lead to chronic health effects may also be considered to cause "imminent endangerment."[18] In such cases, it is appropriate to consider the length of time a population has been or could be exposed to a contaminant. [19]

An endangerment is "substantial" "if there is a reasonable cause for concern that someone may be exposed to a risk of harm."[20] Congress determined that an endangerment may be regarded as sufficiently substantial where there is "a substantial likelihood that contaminants capable of causing adverse health effects will be ingested by consumers if preventative action is not taken."[21] As with imminence, EPA has made clear that actual reports of human illness resulting from contaminated drinking water are not necessary to establish substantial endangerment.[22]

EPA granted Oregon primacy under the SDWA in 2009, and Oregon has promulgated a framework similar to EPA's MCLs as well as threshold triggers pursuant to the Oregon Groundwater Protection Act of 1989.[23] These triggers, when met or exceeded at least partly because of nonpoint source activities, require the state to investigate and declare a "groundwater management area" ("GWMA") to address the contamination.[24] For most contaminants, Oregon law sets the trigger level at 50% of the national MCL, but for nitrate contamination it established a less protective 70% threshold.[25] Therefore, when nitrate levels meet or exceed 7 mg/L (70% of the 10 mg/L MCL), Oregon officials are required to establish a GWMA.

Because water quality testing has consistently found concentrations of nitrates in excess of the state trigger level, Oregon officials designated the Lower Umatilla Basin Groundwater Management Area ("LUBGWMA") in 1990.[26] The LUBGWMA "was established to allow for the identification and implementation of practices that will reduce nitrate loading and ultimately

[14] H. Rpt. 93-1185, pp. 35-36 (1974).
[15] SDWA Emergency Authority Guidance, App. B at 8 n.15 (citing cases).
[16] *See Trinity Am. Corp. v. EPA*, 150 F.3d 389, 399 (4th Cir. 1998).
[17] Emergency Authority Guidance, App. B at 8.
[18] SDWA Emergency Authority Guidance, App. B at 8.
[19] *Id.*
[20] *See* SDWA Emergency Authority Guidance, App. B at 11.
[21] H. Rpt. 93-1185, p. 36 (1974).
[22] *See* SDWA Emergency Authority Guidance, App. B 11 (citing *United States v. North Adams*, 777 F. Supp. 61, 84 (D. Mass. 1991)).
[23] DEQ, *SDWA Regulatory Overview*, https://www.oregon.gov/deq/wq/programs/Pages/DWP-Regulatory-Overview.aspx (last visited Nov. 4, 2019).
[24] Second Action Plan, App. A at 2.
[25] ORS 468B.180.
[26] LUBGWMA Committee, https://lubgwma.org/ (last visited Nov. 4, 2019).

ED_005296_00000585-00007

reduce groundwater nitrate concentrations below 7 mg/L."[27] The designation has remained in effect ever since because the state has been unable to reduce nitrate contamination to within safe levels.

Oregon also established the LUBGWMA Committee to accomplish the task of bringing the area's drinking water back below the 7 mg/L trigger level. The Committee is an official body comprising local residents and government officials that represent certain interests within the basin,[28] and is responsible for implementation of Action Plans intended to achieve various goals that, if met, should bring water quality within target nitrate concentrations. DEQ designated the Morrow and Umatilla County Soil and Water Conservation Districts to lead development of the First Action Plan, and then the Morrow County Soil and Water Conservation District to develop the Second Action Plan.[29] The First Action Plan was finalized in 1997, and dictated LUBGWMA efforts for more than twenty years. The Second Action Plan, which Morrow County and DEQ finalized in early 2019, is now the operative Action Plan for the LUBGWMA.[30]

Yet, even where, as in Oregon, EPA has granted a state primacy, it retains permanent emergency powers to abate present or likely contamination of public water systems ("PWSs") or underground sources of drinking water ("USDWs") when such contamination poses an imminent and substantial threat to human health and the state "ha[s] not acted to protect the health of [endangered] persons."[31]

EPA's Section 1431 authority extends to contaminated PWSs or USDWs that pose a threat to human health,[32] including sources that supply private wells.[33] EPA defines a USDW as an aquifer or part of an aquifer "(1) [w]hich supplies any public water systems; or (2) which contains a sufficient quantity of ground water to supply a public water system; and (i) currently supplies drinking water for human consumption."[34] A PWS is one that provides water for human consumption and "has at least fifteen service connections or regularly serves at least twenty-five individuals."[35]

Groundwater supplies almost all of the drinking water in the LUBGWMA, where numerous private wells and 59 public water systems serve tens of thousands of residents.[36] Therefore, these underground aquifers qualify as USDWs, and both the USDWs and PWSs in the area are within the purview of the SDWA.

[27] *Id.*
[28] *Id.*
[29] Second Action Plan, App. A at 6.
[30] LUBGWMA Committee, Action Plans and Annual Reports, https://lubgwma.org/draft-action-plan/ (last visited Nov. 4, 2019).
[31] 42 U.S.C. § 300i(a).
[32] 42 U.S.C. § 300i.
[33] Emergency Authority Guidance, App. B at 7-8.
[34] 40 C.F.R. § 144.3.
[35] 42 U.S.C. § 300f(4)(A).
[36] *See* DEQ Water Quality Division, Analysis of Groundwater Nitrate Concentrations in the Lower Umatilla Basin Groundwater Management Area 44 (Feb. 23 2012) (hereinafter "2012 Nitrate Report, App. C") (included here as Appendix C) (noting that 58 of the 59 active public water systems rely on groundwater, and that the City of Hermiston is almost entirely supplied by groundwater but for one food processing operation that uses surface water).

ED_005296_00000585-00008

To abate endangerment to human health that arises despite a state's efforts to curtail it, Congress authorized EPA, among other things, to issue "such orders as may be necessary to protect the health of persons who are or may be users of" the affected drinking water supplies and to commence civil enforcement actions against entities causing threats to public health by contaminating drinking water supplies.[37]

IV. DRINKING WATER CONTAMINATION IN THE LUBGWMA CONSTITUTES AN ENDANGERMENT UNDER THE SDWA AND NECESSITATES EMERGENCY ACTION BY EPA

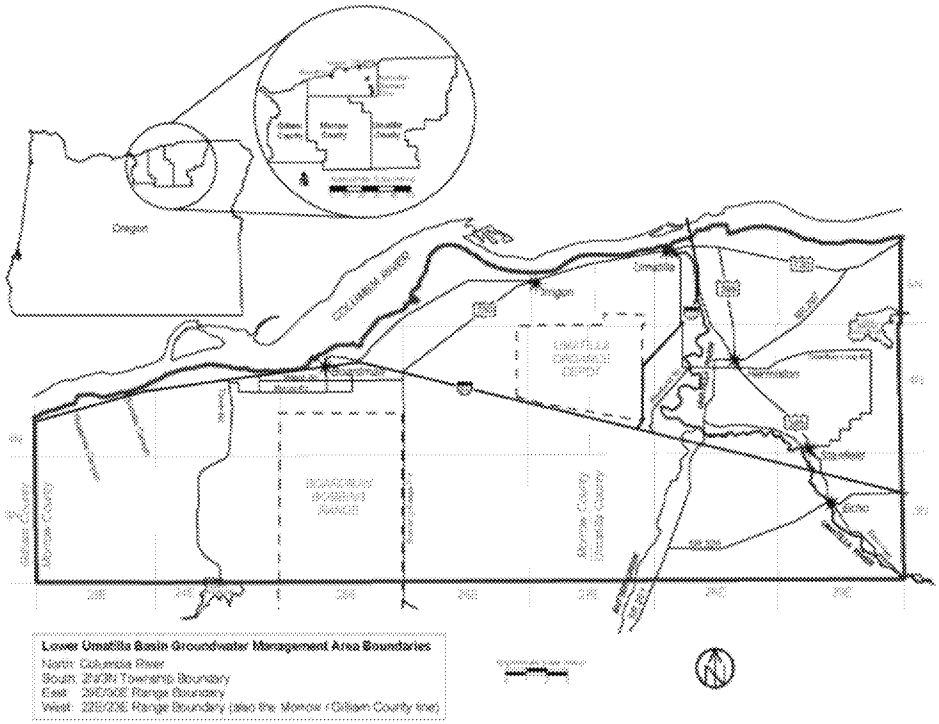
Widespread nitrate contamination of critical drinking water resources in the LUBGWMA is ongoing and is found at increasing concentrations with each new round of water quality testing. The region's hydrogeology, paired with pervasive nitrogen-intensive land use practices, has created a dangerous situation where tens of thousands of people are using and depending on drinking water that may be dangerously polluted. The cause of the ongoing endangerment is no mystery; Oregon officials know that large-scale animal agriculture and nutrient management practices in the LUBGWMA are primarily to blame for the region's nitrate problem.

EPA emergency action is necessary in the LUBGWMA because nitrate levels in the area's drinking water pose an imminent and substantial risk to human health, which Oregon officials have been unable or unwilling to remedy almost 30 years after becoming aware of the contamination.[38] Dangerous levels of nitrate pollution are present and are likely to increase in PWSs and USDWs absent emergency action by EPA. Congress enacted, and later strengthened, the SDWA so that EPA could protect public health in just these types of situations.[39] While state and local authorities have attempted to address nitrogen pollution through outreach, public education, and voluntary measures, the area's continually rising levels of contamination pose an increasing risk to public health, demonstrating that these actions are insufficient. Furthermore, Oregon's officials are in the process of permitting yet another massive concentrated animal feeding operation ("CAFO") in the LUBGWMA. This facility is likely to exacerbate the current public health crisis by introducing even more nitrogen pollution into the area.[40] Therefore, EPA action is appropriate and necessary.[41]

[37] Emergency Authority Guidance, App. B at Attachment 2.
[38] *See, e.g.*, Second Action Plan, App. A at 26, 30, 33, 34, 36 (acknowledging that nitrate levels are generally on the rise and that the state has not met the First Action Plan's goals of reducing nitrate levels to within the standards required by EPA and Oregon law to protect human health).
[39] *See* 42 U.S.C. § 300i; P.L. 99-339, 100 Stat. 642 (extending EPA's emergency authority to cover contamination of USDW as well as PWS, and adding to the actions EPA can take to remedy imminent and substantial endangerments).
[40] *See infra* pp. 13, 16-17.
[41] *See Cmty. Ass'n for Restoration of the Env't v. George & Margaret LLC*, 954 F.Supp. 2d 1151, 1154 ("EPA Administrator may 'take action necessary to protect the public's health from an imminent and substantial endangerment created by contaminants in a public water system or an underground source of drinking water'" (quoting *W.R. Grace & Co. v. EPA*, 261 F.3d 330, 338-39 (3d Cir. 2001))).

ED_005296_00000585-00009

Fig. 1, Location and Boundaries of the LUBGWMA



A. The LUBGWMA's Hydrogeology Makes the Area's Drinking Water Particularly Vulnerable to Nitrate Pollution

The widespread groundwater contamination in the LUBGWMA can be attributed in part to the hydrogeology of the region, which is particularly susceptible to nitrate pollution. The principal aquifers of the LUBGWMA occur in alluvial sands and gravels, which overlie a sequence of basalt lavas collectively known as the Columbia River Basalt Group.[42] The alluvial aquifer and two or three upper basalt aquifers are the principal sources of domestic and municipal drinking water in the basin.[43] Above these shallow aquifers lie porous, sandy soils, which are subject to high rates of permeability when exposed to moisture. While the region receives relatively low amounts of rainfall (only 8 to 10 inches annually), widespread irrigation of agricultural lands brings large volumes of water to these permeable soils, allowing contaminants to reach groundwater in a matter of months.[44] These conditions create a significant risk of nitrate leaching into and contaminating groundwater; 88% of the area has high or moderately high nitrate leaching potential under irrigated conditions.[45]

[42] Gerald H. Grondin et al., Hydrogeology, Groundwater Chemistry and Land Uses in the Lower Umatilla Basin Groundwater Management Area 1-9 (hereinafter "1995 Hydrogeology Report, App. D") (included here as Appendix D).
[43] *Id.*
[44] *Id.* at ES-2-3.
[45] Second Action Plan, App. A at 11.

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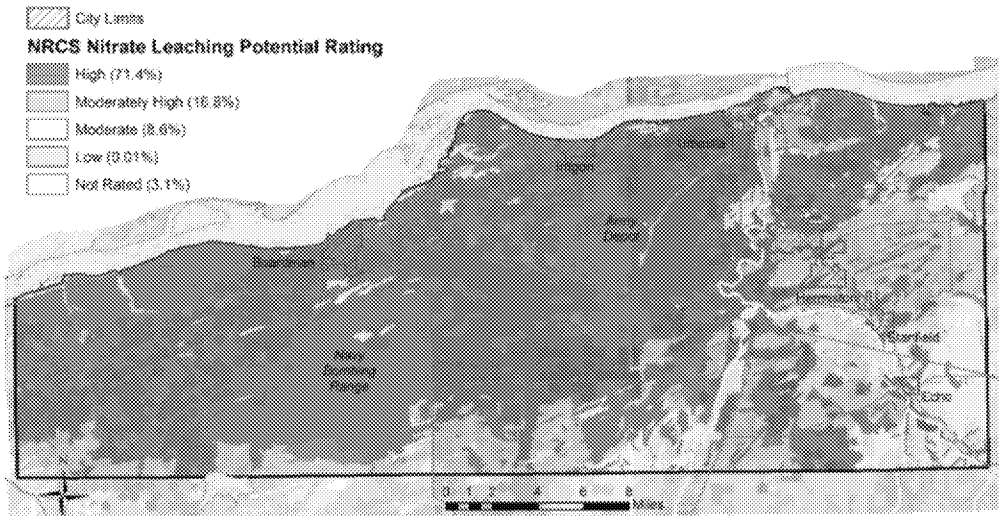
Fig. 2, Nitrate Leaching Potential in LUBGWMA[46]



As noted by Oregon DEQ, these stark figures "highlight[] the vulnerability of the shallow aquifer to contamination."[47] Once present in groundwater, nitrate can remain and accumulate in the aquifers for decades before eventually discharging into the Columbia River.[48]

Pairing this vulnerability with nitrogen-intensive land use practices is an obvious recipe for disaster, and Oregon officials have consistently failed to take the situation seriously enough to remedy the ongoing and increasing threat to area residents.

B. The LUBGWMA Has a Well-Documented History of Nitrate Contamination in Its Groundwater

The LUBGWMA has an extensive and well-documented history of nitrate contamination in its groundwater aquifers, which are the sole source of drinking water for much of the area's population of approximately 46,000 individuals.[49] Spanning 550 square miles of northern Umatilla and Morrow Counties, the region has been plagued with high nitrate concentrations dating back to at least the mid-1980s, when groundwater sampling first revealed the problem.[50] In response, DEQ designated the LUBGWMA in 1990 with the intention that it would address nitrate contamination and mitigate nitrogen pollution so that groundwater concentrations would fall below the 7 mg/L state trigger level.[51] Unfortunately, the designation has not resulted in improved water quality as intended; to the contrary, dangerous levels of nitrates in drinking water persist, and are in fact increasing, in the LUBGWMA.

[46] *Id.*
[47] *Id.*
[48] 1995 Hydrogeology Report, App. D at ES-2.
[49] *See* 2012 Nitrate Report, App. C at Table 6-1; Second Action Plan, App. A at 8 (providing population estimates).
[50] 1995 Hydrogeology Report, App. D at ES-1 & 6.
[51] Second Action Plan, App. A at 1.

Testing conducted in the 1990s found nearly a third (30%) of groundwater samples from monitoring wells exceeded the state trigger level.[52] Samples from areas dominated by CAFOs and agricultural fields where CAFO waste is land applied were showing nitrate levels that reached and exceeded 70 mg/L[53] – seven times the 10 mg/L MCL for nitrate.[54] A 1996 study showed that 23% of the surveyed population were drinking private well water with nitrate concentrations over the 10 mg/L MCL.[55] Of the households with nitrate levels over the MCL, 72% were not taking measures to effectively remove the nitrates before human consumption.[56]

More recent figures suggest that the problem has only worsened. The LUBGWMA Committee compiled the results of well sampling conducted in the region between 2015 and 2016 from a data set of 255 wells, and concluded that nearly half (48%) exceeded the 10 mg/L drinking water standard and nearly two thirds (60%) exceeded the 7 mg/L state trigger level.[57] In a separate survey examining just private domestic wells, the Committee found that 42% of the region's domestic wells contained nitrate levels exceeding the safe drinking water standard.[58]

In fact, DEQ found that some of the largest water systems in the LUBGWMA are not just susceptible to contamination, but already face substantial nitrate risks. In 2011, DEQ conducted a survey considering the factors influencing nitrate risks at the area's PWSs, and examined the extent to which these systems were compromised. The report focused solely on Community and Non-Transient, Non-Community systems,[59] and found that at least ten LUBGWMA systems had substantial nitrate problems or risks.[60] The at-risk systems included Boardman, Hermiston, and Irrigon, three of the five municipal water systems within the region. In total, the known substantial risk systems serve approximately 25,023 LUBGWMA residents (58% of all residents served by public water systems in the LUBGWMA).[61]

[52] 1995 Hydrogeology Report, App. D at ES-1 & 5. At the time of these initial tests, the Oregon trigger level was set equal to EPA's MCL of 10 mg/L, but has since been adjusted to the more protective standard of 7 mg/L. *Id.* at ES-2.
[53] *Id.* at ES 6-7.
[54] 40 C.F.R. § 141.11(d).
[55] Thomas J. Mitchell & Anna K. Harding, *Who Is Drinking Nitrate in Their Well Water? A Study Conducted in Rural Northeastern Oregon,* J. ENVTL. HEALTH 14, 14 (Oct. 1996) (included here as Appendix E).
[56] *Id.* at 18.
[57] Section Action Plan, App. A at 33-34. The sampling data included 17 alluvial aquifer public supply wells, 56 private domestic water supply wells, 10 irrigation wells, 171 monitoring wells, and 1 stock well. *Id.* at 34.
[58] *Id.* at 73.
[59] "Community Water Systems" are ones "that supply water to the same population year-round," and "non-transient non-community water systems" are ones "that regularly suppl[y] water to at least 25 of the same people at least six months per year[, such as] schools, factories, office buildings, and hospitals." EPA, *Information about Public Water Systems*, https://www.epa.gov/dwreginfo/information-about-public-water-systems (last visited Nov. 13, 2019).
[60] DEQ, Factors Influencing Nitrate Risks at Oregon Public Water Systems 6-7 (updated Jan. 1, 2012) (hereinafter "Factors Influencing Nitrate Risk Report, App. F") (included here as Appendix F). DEQ defined "substantial" as either having a nitrate-N measurement at or above 10 mg/L or by having the 90th percentile of the nitrate-N measurements greater than 5 mg/L. *Id.* at 6.
[61] *Id.* at 6-7.

ED_005296_00000585-00012

Table 1, C & NTNC Public Water Systems at "Substantial Nitrate Risk"[62]

PWS Name	Population	System Type	Location	County
Boardman, City of	3500	C	Boardman, OR 97818	Morrow
Country Garden Estates MHP	175	C	Irrigon, OR 97844	Morrow
Hat Rock Mobile Court	60	C	Hermiston, OR 97838	Umatilla
Hat Rock Water Company	96	C	Hermiston, OR 97838	Umatilla
Hermiston, City of	17107	C	Hermiston, OR 97838	Umatilla
Irrigon, City of	1885	C	Irrigon, OR 97844	Morrow
North Hill Water Corporation	100	C	Hermiston, OR 97838	Umatilla
Port of Morrow	1350	NTNC	Boardman, OR 97818	Morrow
River Point Farms LLC	250	NTNC	Hermiston, OR 97838	Umatilla
Conagra Lamb Weston	500	NTNC	Hermiston, OR 97838	Umatilla

Indeed, actual PWS contamination has already occurred and been documented. Since declaration of the LUBGWMA, many of the area's PWSs have exceeded the 10 mg/L MCL or the 7 mg/L trigger level at least once—and in most cases, have done so repeatedly.

Table 2, LUBGWMA PWS Exceedances from 2002 to 2019[63]

PWS Name	Population Served	System Type	Highest Recorded Nitrate Level	Contamination Frequency	County
Alive and Well	50	NC	10.2 mg/L	1 sample > MCL	Umatilla

[62] *Id.* (list derived from those systems listed at page 7, after removing systems located outside the LUBGWMA). Updated population numbers gathered at: Oregon Health Authority, *Inventory List for Oregon Drinking Water Systems*, https://yourwater.oregon.gov/inventorylist.php (last accessed Oct. 20, 2019) (providing updated population numbers for the following PWS, searching by PWS name: Boardman, Hermiston, North Hill Water Corp, Irrigon, County Garden Estates MHP, Hat Rock Water Co., Port of Morrow, Hat Rock Mobile Court, Lamb Weston, and River Point Farms).

[63] Derived from *Oregon Public Health Drinking Water Data Online*, Oregon Health Authority, https://yourwater.oregon.gov/index.html (last accessed Nov. 5, 2019) (included here as Appendix G). Individual entry details can be found by following the "WS Name Look Up" link, then submitting the PWS's name as shown above. Then follow "Alerts" link under "For further information on this public water system, click on the area of interest below" and review those alerts for nitrate contamination. Even more exceedances are recorded in Oregon's archived records from before 2002, which are also available at the above website.

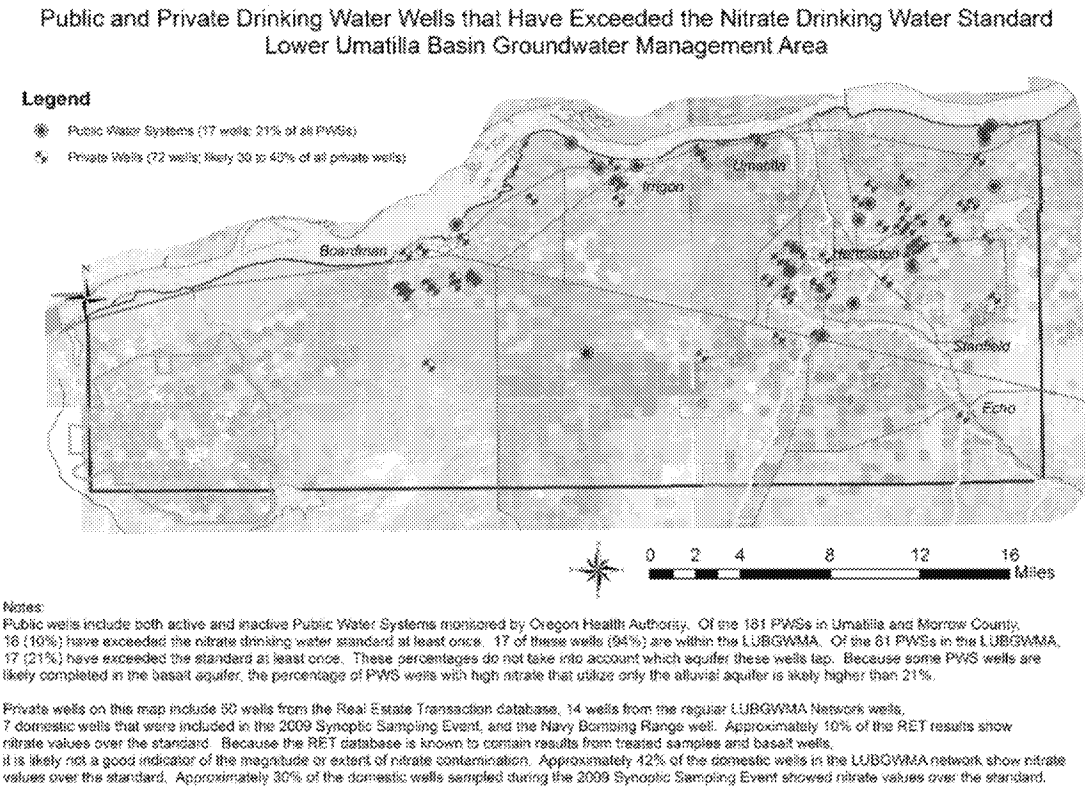
ED_005296_00000585-00013

Bellinger Produce	100	NC	60.8 mg/L	32 samples > MCL, 44 samples > TL	Umatilla
Boardman, City of	3,500	C	7.5 mg/L	1 sample > TL	Morrow
Comfort Inn & Suites-Hermiston	100	NC	37 mg/L	16 samples > MCL, 63 samples > TL	Umatilla
Lamb Weston	500	NTNC	12 mg/L	2 samples > MCL, 5 samples > TL	Umatilla
Country Garden Estates MHP	175	C	9.8 mg/L	4 samples > TL	Morrow
Hat Rock Mobile Court	60	C	10 mg/L	2 samples = MCL, 5 samples > TL	Umatilla
Hat Rock Water Company	96	C	14 mg/L	11 samples > MCL, 26 samples > TL	Umatilla
Herreras Park	20	NP	8.9 mg/L	6 samples > TL	Morrow
Irrigon, City of	1,885	C	18 mg/L	26 samples > MCL, 42 samples > TL	Morrow
JR Simplot/Calpine	22	NP	9.9 mg/L	9 samples > TL	Umatilla
North Hill Water Corporation	100	C	9 mg/L	1 sample > TL	Umatilla
ODF/WL Irrigon Fish Hatchery	18	NP	40.9 mg/L	21 samples > MCL, 48 samples > TL	Morrow
OPRD Hat Rock State Park	500	NC	19.4 mg/L	9 samples > MCL, 15 samples > TL	Umatilla
Port of Morrow	1,350	NTNC	10.4 mg/L	2 samples > MCL, 47 samples > TL	Morrow
River Point Farms LLC	250	NTNC	28.5 mg/L	16 samples > MCL, 23 samples > TL	Umatilla
Short Stop #1	200	NC	9.2 mg/L	5 samples > TL	Umatilla
Space Age Fuel	950	NC	28.5 mg/L	11 samples > MCL, 17 samples > TL	Umatilla
Sunridge Water Inc.	200	C	14 mg/L	1 sample > MCL, 31 samples > TL	Umatilla
Upper Columbia Mill	70	NTNC	14 mg/L	14 samples > MCL, 18 samples > TL	Umatilla

Furthermore, Oregon officials have documented nitrate contamination in both public and private drinking wells used by residents of the LUBGWMA.

ED_005296_00000585-00014

Fig. 3, Drinking Water Sources with Documented Nitrate Exceedances[64]



Notes:
Public wells include both active and inactive Public Water Systems monitored by Oregon Health Authority. Of the 181 PWSs in Umatilla and Morrow County, 18 (10%) have exceeded the nitrate drinking water standard at least once. 17 of these wells (94%) are within the LUBGWMA. Of the 81 PWSs in the LUBGWMA, 17 (21%) have exceeded the standard at least once. These percentages do not take into account which aquifer these wells tap. Because some PWS wells are likely completed in the basalt aquifer, the percentage of PWS wells with high nitrate that utilize only the alluvial aquifer is likely higher than 21%.

Private wells on this map include 50 wells from the Real Estate Transaction database, 14 wells from the regular LUBGWMA Network wells, 7 domestic wells that were included in the 2009 Synoptic Sampling Event, and the Navy Bombing Range well. Approximately 10% of the RET results show nitrate values over the standard. Because the RET database is known to contain results from treated samples and basalt wells, it is likely not a good indicator of the magnitude or extent of nitrate contamination. Approximately 42% of the domestic wells in the LUBGWMA network show nitrate values over the standard. Approximately 30% of the domestic wells sampled during the 2009 Synoptic Sampling Event showed nitrate values over the standard.

Given that the region is and will remain particularly susceptible to groundwater contamination, this nitrate contamination in the LUBGWMA's drinking water will persist and is likely to get worse without significant changes to current, nitrogen-intensive land use practices.

C. CAFOs and Irrigated Agriculture Are the Dominant Land Use Activities and Are the Predominant Cause of Nitrate Contamination in the LUBGWMA

Two related land use activities make up the vast majority of nitrate pollution in the LUBGWMA's groundwater: CAFOs and irrigated agriculture.[65] The primary source of nitrogen in the LUBGWMA is the region's CAFOs.[66] There are currently ten permitted CAFO facilities—including one of the nation's largest dairy CAFOs—operating within the borders of the LUBGWMA.[67] Together, these permitted CAFOs have been housing over 148,000 animals, with state issued permits allowing expansion up to 179,000 animals.[68] For comparison, cows

[64] Second Action Plan, App. A at 73.
[65] Second Action Plan, App. A at 16.
[66] Estimation of N Sources at ii, 11.
[67] Second Action Plan, App. A at 62.
[68] Derived from information obtained by Food & Water Watch from ODA, collected by ODA in 2018 and 2019. Data included here as Appendix H.

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outnumber residents by a ratio of 3:1, and cows living in the area as of June 2019 were producing over 4.3 billion pounds of manure annually–516 times more than the human population of the area.[69]

Over half of the land in the LUBGWMA is used to cultivate crops on irrigated fields.[70] CAFOs are also responsible for much of the nitrate leached from irrigated agricultural lands because much of this irrigated crop production is controlled by the area's CAFOs (approximately 42,000 acres of crop and pasture lands),[71] which are used to land apply animal waste generated at the CAFOs. Additionally, CAFOs sell or give away animal waste as fertilizer to other farmers as part of standard manure management practices.[72] Oregon estimates that 90% of the animal waste from CAFOs in the LUBGWMA is land applied to irrigated agriculture.[73] In total, irrigated agriculture applies nearly 23 million pounds of nitrogen to fields each year.[74] According to Oregon officials, nitrogen loading from CAFOs and irrigated agriculture combined accounts for an estimated 82% of the nitrogen imported into the LUBGWMA, and 81.6% of the nitrate that leaches into the LUBGWMA's vulnerable aquifers.[75]

Table 3, CAFOs Operating in LUBGWMA[76]

Facility	Designation	Date Permitted	Permitted Animals	Actual Animals
Beef Northwest Feeders	Large Concentrated	6/29/2009	38,500	42,046
Threemile Heifer Facility	Large Concentrated	7/14/2000	32,000	8,944
Threemile Canyon Farms' Sixmile Dairy	Large Concentrated	6/7/2000	36,100	35,295
Threemile Canyon Farms' Columbia River Dairy	Large Concentrated	6/1/2000	28,000	26,340

[69] Food & Water Watch calculations based on the following: EPA, EPA/600/R-04/042, Risk Assessment Evaluation for Concentrated Animal Feeding Operations 9 (May 2004); USDA National Resources Conservation Service, Agricultural Waste Management Field Handbook, Chapter 4 at 4-12 to 4-20 (March 2008), https://www.wcc.nrcs.usda.gov/ftpref/wntsc/AWM/handbook/ch4.pdf (last visited Nov. 4, 2019); Appendix H. Local values used: 75,060 beef cattle (producing 1,382,680,260 lbs of waste) and 73,814 dairy cows (producing 2,992,493,374 lbs of waste), compared with 46,320 humans (producing 8,476,560 lbs of waste).
[70] Second Action Plan, App. A at 12.
[71] Second Action Plan, App. A at 62.
[72] *See, e.g.*, DEQ Water Quality Division, Estimation of Nitrogen Sources, Nitrogen Applied, and Nitrogen Leached to Groundwater in the Lower Umatilla Basin Groundwater Management Area 6 (Jun. 13, 2011) (hereinafter "Estimation of N Sources, App. I") (included here as Appendix I); DEQ & ODA, Oregon Confined Animal Feeding Operation National Pollutant Discharge Elimination System General Permit Number 01-2016, at 12, 19 (allowing for transfers of animal waste, litter, and process wastewater to non-CAFO operators under NPDES general permit for CAFOs), https://www.oregon.gov/ODA/shared/Documents/Publications/NaturalResources/NPDESGeneralPermit.pdf (last visited Nov. 13, 2019).
[73] Estimation of N Sources, App. I at 6, 11.
[74] *See id.* at 11, 15-16; Second Action Plan, App. A at 42, 62.
[75] Estimation of N Sources, App. I at 11, 15.
[76] *See* Appendix H for data received from Oregon Department of Agriculture.

ED_005296_00000585-00016

Double M Ranch	Large Concentrated	10/17/2018	6,000	5,960
Columbia Feeders	Large Concentrated	10/30/2018	4,000	2,109
Beef City	Small Concentrated	10/5/2018	299	85
GT Land & Cattle	Large Concentrated	10/5/2018	10,000	10,615
Top Cut Cattle	Medium Concentrated	11/9/2018	908	410
H3 Feeders	Large Concentrated	10/30/2018	8,000	6,065
Meenderinck Dairy	Large Concentrated	9/4/2001	3,000	203
Sage Hollow Ranch	Large Concentrated	11/19/2009	8,700	7,770
Cold Springs Dairy	Large Concentrated	10/11/2018	3,600	3,032
		Total:	**179,107**	**148,874**

In addition to these CAFOs, Oregon is moving towards permitting yet another massive dairy CAFO in the LUBGWMA that has the potential to bring up to 28,300 more cows to the area, along with over 173 million gallons of waste needing disposal annually (40,882,123.64 gallons of liquid manure; 44,224,120.52 gallons of solid manure/litter; and 88,172,845.714 gallons of wastewater).[77] The prevalence and proposed expansion of CAFOs and other livestock production in the LUBGWMA virtually ensures that contamination is likely to continue and worsen without a change in approach.

The reason CAFOs have such potential to introduce massive quantities of nitrogen into the environment and the LUBGWMA's drinking water is simple: managing and disposing of the overwhelming quantities of nitrogen-laden animal waste is an unavoidable part of their everyday operating procedures. Under these facilities' Animal Waste Management Plans ("AWMPs"), a requirement for coverage under Oregon's general Clean Water Act National Pollutant Discharge Elimination System (NPDES) permit for CAFOs in the state,[78] CAFOs typically manage the enormous amounts of animal waste they produce by storing it in "lagoons" or other storage facilities and then land applying it to nearby agricultural lands.[79] While Oregon's permitting of CAFOs ostensibly provides for conditions that restrain land applications to within appropriate agronomic rates,[80] data confirming widespread nitrate contamination tell a very different story. Oregon DEQ admits that the greatest increases in nitrate contamination it has found are on lands subjected to CAFO manure land applications. And the most recent data available show test wells on lands utilized by the state's largest dairy, Threemile Canyon Farms, contain nitrate levels over 60 mg/L.[81] Oregon's AWMPs do not require CAFOs to monitor surface water or groundwater, even though monitoring is an exceedingly valuable tool in a situation like the one facing the LUBGWMA, unless the facility "discharges to waters twice in a 24-month period."[82] Given that land application runoff is generally considered stormwater rather than a discharge, which ignores

[77] *See* Easterday Application to Register to the Oregon CAFO General Permit, at 3 (July 1, 2019) (hereinafter Easterday CAFO Application, App. J) (included here as Appendix J). Cubic feet converted to gallons using 1:7.48052 conversion ratio.
[78] DEQ, Oregon's Nutrient Management Program (June 2014) 13-14 (included here as Appendix K).
[79] *See, e.g.*, *id.*
[80] EPA's description of "agronomic rates" can be found here: EPA, Managing Manure Nutrients at Concentrated Animal Feeding Operations at App. I (Dec. 2004), https://www.epa.gov/sites/production/files/2015-08/documents/cafo_manure_guidance.pdf (last visited Nov. 5, 2019).
[81] Second Action Plan, App. A at 33-34.
[82] DEQ, Oregon's Nutrient Management Program at 14, App. K.

ED_005296_00000585-00017

leaching into groundwater rather than runoff to surface water, CAFOs will rarely trigger this requirement.

CAFOs in the LUBGWMA have a history of causing concern about drinking water quality in the area. For example, the region previously was home to the Lost Valley Farm mega-dairy, which ODA cited for hundreds of violations of its Clean Water Act NPDES permit within 18 months of opening.[83] Oregon officials approved the facility despite DEQ and ODA acknowledging that the CAFO was "a new potential source of nitrate in the [LUB]GWMA."[84] Among these violations were consistent, unauthorized discharges over the top of lagoon liners, repeated overflow of wastewater onto permeable surfaces, storage of wastewater in improperly lined and unlined lagoons, failure to install leak detection systems, and land application of waste exceeding agronomic rates.[85] The Lost Valley Farm dairy was permitted to house up to 30,000 cows, despite being sited on top of the LUB's especially vulnerable groundwater aquifer and the area's preexisting nitrate contamination problems.[86] In a display of apparent disregard for the implications of another Lost Valley Farm debacle, Oregon legislators rejected several pieces of proposed legislation designed to protect public health and avert a repeat of this kind of situation in the future.[87]

This problem is not limited to Lost Valley Farms. DEQ employees' analysis indicates that current practices at Threemile Canyon Farms, unrelated to any AWMP or permit violations, are likely contributing to the area's nitrate pollution.[88] Yet the Second Action Plan does not require or even suggest any changes to Threemile Canyon's or other CAFOs' waste management practices.

Furthermore, DEQ only tracks the leaching potential of land-applied CAFO waste, and does not account for leaching directly from CAFO manure lagoons or other waste storage facilities. The lagoons that are used to store manure prior to land application can leach nitrogen-heavy waste into the underlying soil and subsequently the aquifers below. In fact, even when "properly" constructed according to standards set by the USDA's Natural Resources

[83] *See, e.g.*, Tracy Loew, *Troubled Oregon Megadairy Lost Falley Farm to Be Shut Down and Sold*, STATESMAN JOURNAL (Oct. 24, 2018) (included here as Appendix L).
[84] *In the Matter of Greg de Velde, dba, Lost Valley Farm*, Notice of Revocation of Individual Permit No. OR995129 and Notice of Right to a Contested Case Hearing at 5 (Jun. 27, 2018) (hereinafter "Lost Valley Notice of Revocation, App. M") (included here as Appendix M).
[85] *Id.* at 12-13, 17, 26-30.
[86] *See id.* at 31 (noting that the CAFO is located over "porous soils … in an area where the aquifer is on average approximately 33 feet below land surface" and "ODA generally treats aquifers of depths less than 100 feet as being vulnerable to surface contaminants"); DEQ & ODA, Lost Valley Farm CAFO Permit FAQs (included here at Appendix N) (noting the 30,000 permitted limit and attempting to justify approval of the facility to a concerned public, before eventually having to close the facility due to repeated and consistent violations).
[87] Lynne Terry, *Is Oregon Paving the Way for More Mega-Dairies?*, CIVIL EATS (June 13, 2019) (included here as Appendix O) (discussing the failure of Senate Bill 876); Tracy Loew, *Megadairy Regulation Proposals Die in Oregon Legislature as Key Deadline Passes*, STATESMAN JOURNAL (Apr. 11, 2019) (included here as Appendix P) (discussing three failed legislative attempts to protect public health from future CAFO failures).
[88] Email from Phil Richerson, DEQ Nonpoint Source Hydrogeologist, to Don Butcher, DEQ (Feb. 14, 2017) (included here as Appendix Q) (obtained through an Oregon Public Records Law request).

ED_005296_00000585-00018

Conservation Service and in compliance with Oregon requirements for storage of CAFO wastes, lagoons are actually *designed* to leak.[89]

Even this is not the full story. DEQ acknowledges that nitrate pollution from CAFOs is higher than estimated because the state has not looked at or accounted for several additional ways that CAFOs contaminate the environment with nitrogen pollution.[90] These unaccounted for sources include the re-deposition of the approximately 50% of nitrogen excreted by CAFO animals that is lost to the atmosphere during waste handling and storage, and spills and leaks of animal waste (of which there are several documented cases).[91] If DEQ had factored these other sources of nitrate pollution into its estimates, the agency acknowledges the nitrate contamination attributable to CAFOs would be even larger.[92]

Thus, even while not fully accounted for, the unavoidable conclusion is that CAFOs and irrigated agriculture's use of CAFO waste are primarily responsible for nitrate pollution of drinking water in the LUBGWMA. The consequences of this failure to control CAFOs' contributions to elevated nitrate levels are shown by on-the-ground data and trends. For example, DEQ's 2012 Nitrate Report looked specifically at well samples from the Threemile Canyon Farms CAFO. Of the 15 wells examined, 13 had nitrate concentrations over the 10 mg/L MCL.[93] And unfortunately, the data trends show that nitrate pollution on lands receiving CAFO waste is only getting worse. The most recent sampling data from 2015 and 2016 found multiple wells located within CAFO land application areas with nitrate concentrations over 60 mg/L, and "[t]he single largest increase [of nitrate pollution] was at a CAFO monitoring well."[94]

Yet, despite this stark and unavoidable reality, Oregon officials are moving towards approval of yet another massive CAFO in the LUBGWMA to replace the failed Lost Valley Farm.[95] The proposed new owner/operator of the site, Easterday Farms, intends to reopen the

[89] *See, e.g.*, *Cmty. Ass'n for Restoration of the Envt. v. Cow Palace, LLC*, 80 F. Supp. 3d 1180, 1223 (E.D. Wash. 2015) ("even assuming the lagoons were constructed pursuant to NRCS standards, these standards specifically allow for permeability and, thus, the lagoons are *designed to leak*" (emphasis added)); EPA, EPA/600/R-04/042, Risk Assessment Evaluation for Concentrated Animal Feeding Operations 24 (May 2004) (noting that nitrate contamination can be caused by manure lagoons that are known to leak into groundwater for a variety of reasons); Food & Water Watch et al., Public Comments on Proposed NPDES Permit for Lost Valley Ranch Dairy CAFO at 11 (Aug. 4, 2016) (included here as Appendix R) (noting that even the engineers hired by Lost Valley Ranch estimated the potential for 1,480 gallons of leakage per day when using the most protective type of lagoon liners); NRCS, Agricultural Waste Management Field Handbook, Chapter 10 at 10D-4 (Aug. 2009), https://www.wcc.nrcs.usda.gov/ftpref/wntsc/AWM/handbook/ch10.pdf (last visited Nov. 5, 2019) (recognizing that even the more protective synthetic liners can only "reduce seepage," not eliminate it).
[90] Estimation of N Sources, App. I at 7.
[91] *Id.*
[92] *Id.*
[93] 2012 Nitrate Report, App. C at v.
[94] Second Action Plan, App. A at 33-34.
[95] DEQ, Director's Report Memorandum (Sept. 26-27, 2019) at 4-5, https://www.oregon.gov/deq/EQCdocs/09272019_ItemI_DirectorsReport.pdf (last visited Oct. 23, 2019) (discussing the reopening of the site under new ownership, and stating that "DEQ will continue to keep the commission updated on developments as this project moves forward."); ODA, Easterday Farms Dairy, LLC: Talking Points (July 16, 2019) (included here as Appendix S) (obtained through an Oregon Public Records Law request) (discussing where the CAFO "will be located," implying that a permit will issue once ODA approves clean-up efforts at the site to address the previous Lost Valley mismanagement, and outlining "talking points" for agency personnel to use to

ED_005296_00000585-00019

facility as another CAFO with up to 28,300 animals under a new NPDES permit.[96] If allowed to proceed as planned, the Easterday Farms CAFO will have the potential to introduce hundreds of millions of pounds of additional nitrogen-laden waste to the area[97]—enough waste to fill over 262 Olympic sized swimming pools each year.[98] Operating a CAFO on this site "presents serious concerns for water quality and safe drinking water" because any new CAFO is a source of nitrates further endangering the area's groundwater.[99] Being upgradient of a large part of the LUBGWMA, with five PWS and many private wells near the site, "any groundwater pollutant emanating from the dairy could potentially impact" these crucial sources of drinking water.[100] The Easterdays intend to land apply the animal waste to be generated at the CAFO to surrounding agricultural fields.[101]

As long as CAFOs and other agricultural operations are allowed to continue polluting the LUBGWMA with excessive nitrogen, the imminent and substantial endangerment to human health will continue and will only worsen, leaving local populations at ever increasing risk to their health in direct contravention of the SDWA.

D. Conditions in the LUBGWMA Constitute an Imminent and Substantial Endangerment to Human Health Under the SDWA

The present and increasing nitrate contamination in the LUBGWMA presents an imminent and substantial endangerment to human health because nitrate contamination creates a known and significant health risk and there is a reasonable cause for concern that individuals are and will be exposed to this risk at ever increasing concentrations.

1. Nitrate Contamination in the LUBGWMA Drinking Water Constitutes an Endangerment

Nitrate is plainly an endangerment to public health under the SDWA because EPA not only categorizes it as a "contaminant,"[102] but as an "acute contaminant" known to pose significant health risks.[103] EPA previously found that nitrate levels above the MCL of 10 mg/L present an imminent and substantial endangerment to human health.[104] Drinking water

defend their authorizing the new Easterday CAFO); George Plaven, *Easterday Family Plans to Re-Open State's Second-Largest Dairy*, CAPITOL PRESS (July 9, 2019) (included here as Appendix T) (describing the new owner's intent to open another dairy on the Lost Valley site).

[96] *See* Easterday CAFO Application, App. J.

[97] *See* Easterday CAFO Application, at 3, App. J; *supra* note 77 and accompanying text.

[98] Using 660,253.09 gallon swimming pool volume. *See* Jeremy Hoefs, *Measurements for an Olympic Size Swimming Pool*, https://www.livestrong.com/article/350103-measurements-for-an-olympic-size-swimming-pool/ (last accessed Nov. 4, 2019).

[99] *See* Lost Valley Notice of Revocation at 4, App. M.

[100] *See id.* at 31.

[101] *See* Plaven, App. T; Easterday CAFO Application, App. J at 3.

[102] 42 U.S.C. § 141.62(b).

[103] *See* DEQ, *Fact Sheet: Nitrate in Drinking Water* (Aug 15, 2017) (hereinafter "DEQ, *Fact Sheet*, App. U") (included here as Appendix U); Mary H. Ward et al., *Drinking Water Nitrate and Human Health: An Updated Review*, 15(7) INT'L J. ENVTL. RESEARCH PUB. HEALTH 1557 (July 2018) (included here as Appendix V); Oregon Health Authority, *Nitrate in Drinking Water – Frequently Asked Questions* (included here at Appendix W).

[104] In the Matter of: Yakima Valley Dairies, SDWA-10-2013-0080, at 7 (EPA Mar. 19, 2013).

ED_005296_00000585-00020

contaminated with nitrate has well-documented adverse health risks including a variety of cancers, thyroid disease, "blue-baby syndrome," and reproductive and gestational problems.[105] EPA's categorization of nitrate as an "acute contaminant" indicates that "one exposure can affect a person's health," and that "[t]oo much nitrate in your body makes it harder for red blood cells to carry oxygen."[106]

Moreover, nitrate-contaminated drinking water is especially dangerous for sensitive populations such as infants and pregnant women. High levels of nitrate in drinking water are "a serious health concern for infants and pregnant or nursing women," and are known to cause methemoglobinemia, or "blue-baby syndrome," a potentially fatal condition in which an infant's skin turns blue from lack of oxygen in the blood.[107] Nitrate in water supplies has also been linked to spontaneous miscarriages and birth defects.[108]

According to the census estimates for the LUBGWMA region, significant populations that are especially sensitive to nitrate—infants and pregnant and nursing women—reside in the LUBGWMA. Census data show that 12.3% of women between the age of 15 and 50 living in Morrow County gave birth to a child from 2016 to 2017.[109] Six and a half percent of the same demographic living in Umatilla County gave birth to a child between 2017 and 2018.[110]

Nitrate contamination is already present and will continue to be present at increasingly elevated levels in USDWs for the LUBGWMA without EPA action. The fact that a contaminant known to cause disease and illness is present at unsafe levels in the LUBGWMA's private wells and PWS, which are used by tens of thousands of residents, demonstrates an unambiguous SDWA "endangerment."

2. *The Public Health Endangerment Is Imminent*

Since the present contamination of the region's drinking water is thoroughly documented, endangerment is clearly imminent. As explained above, an endangerment is "imminent" if conditions that give rise to it are present, even if actual harm has not already been documented in the contaminated area.[111]

Unsafe levels of nitrate contamination in the LUBGWMA's water supply were first identified over 30 years ago, and data trends indicate that nitrate contamination overall is increasing in the LUBGWMA, despite Oregon's 20 plus years of implementing mitigation

[105] *See* DEQ, *Fact Sheet*, App. U; JoAnn Burkholder et al., *Impacts of Waste from Concentrated Animal Feeding Operations on Water Quality,* 115 ENVTL. HEALTH PERSPECTIVE 308, 310 (2008) (hereinafter "Burkholder, *Impacts of Waste*, App. X") (included here as Appendix X)
[106] EPA Region 10, *Lower Yakima Valley Groundwater: Why is Nitrate a Concern?* (included here as Appendix Y).
[107] DEQ, *Fact Sheet*, App. U.
[108] *Id.*; Burkholder, *Impacts of Waste*, App. X at 310.
[109] Census Reporter, Morrow County, OR, https://censusreporter.org/profiles/05000US41049-morrow-county-or/ (last visited Nov. 5, 2019).
[110] Census Reporter, Umatilla County, OR, https://censusreporter.org/profiles/05000US41059-umatilla-county-or/ (last visited Nov. 5, 2019).
[111] SDWA Emergency Authority Guidance, App. B at 8 (citing *U.S. v. Conservation Chemical Co.*, 619 F. Supp. 162, 193-194 (W.D. Mo 1985)).

ED_005296_00000585-00021

measures meant to decrease nitrates under the GWMA designation. The greatest increases in nitrate levels have been found at wells located where CAFOs land apply their animal waste.[112] This further demonstrates that endangerment is imminent and that CAFO operations and the waste they introduce to the area are the primary culprit. This upward trend increases both the likelihood that individuals will be exposed to nitrate at harmful levels and the severity of those exposures. Oregon's Nitrate Report demonstrated that 55% of the wells tested showed increasing concentrations of nitrate.[113]

Finally, the endangerment caused by nitrate contamination in the LUBGWMA is imminent because the likely primary causes of the contamination–CAFOs and their high-risk waste management practices–are present and increasingly dominant in the area, with 10 permitted CAFOs already in operation and the Easterday Farms mega-dairy threatening to open in the near future. Of these 10 existing facilities, four are dairies and six are cattle feedlots. These CAFOs manage approximately 42,000 acres of crop and pasture land in the LUBGWMA where they dispose of animal wastes, and this is in addition to any non-CAFO owned irrigated agriculture lands that nonetheless utilize CAFO waste as fertilizer.[114]

Existing concentrations of irrigated agriculture and CAFOs in the LUBGWMA make clear that an endangerment to human health is imminent. Data collected over the span of decades confirm this. Oregon officials' plan to permit another 28,300 cow CAFO in the area atop a particularly vulnerable aquifer pushes the needle off the scale, leaving no question as to imminence.

3. *The Public Health Endangerment Is Substantial*

The health risks associated with nitrate contamination in the LUBGWMA constitute a substantial endangerment under the SDWA. Several PWSs and many private wells within the LUBGWMA have already been found to exceed drinking water standards for nitrate contamination, and thus residents of the LUBGWMA have been and are currently being "exposed to a risk of harm."[115] This alone demonstrates that the endangerment is substantial.

Moreover, because nitrate levels are on the rise in the LUBGWMA and the state's ineffective, voluntary-only plan remains practically unchanged, there is currently no realistic potential for *fewer* PWSs and private wells to be contaminated or contaminated at lower levels than they currently are, absent emergency action by EPA. Petitioners have reasonably concluded (and Oregon officials have themselves implied) that more people's drinking water will become contaminated over time, and that the level of contamination will continue to increase. These exposures constitute a serious risk of harm, indicating that the substantial endangerment that already exists will only become more substantial and in need of emergency EPA action.

[112] Second Action Plan, App. A at 33.
[113] *See* 2012 Nitrate Report, App. C at 5.
[114] Second Action Plan, App. A at 62.
[115] *See* SDWA Emergency Authority Guidance, App. B at 11 (explaining that an endangerment is substantial "if there is a reasonable cause of concern that someone may be exposed to a risk of harm").

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V. OREGON OFFICIALS HAVE FAILED TO ACHIEVE SAFE DRINKING WATER QUALITY DESPITE DECADES OF ATTEMPTING TO IMPLEMENT MITIGATION PLANS

EPA should exercise its emergency authority under Section 1431 of the SDWA because users of USDWs and PWSs in the LUBGWMA face imminent and substantial endangerment, and whatever action Oregon officials have taken or are taking is obviously not timely or effective.[116]

Nearly thirty years after designation of the LUBGWMA, the endangerment to public health has worsened. As of 2016, the area's USDWs were exhibiting increasing contamination trends, with nearly half (48%) of tested wells exceeding the federal standard and 60% of wells surpassing the state action level standard of 7 mg/L.[117] Moreover, the threat extends to communities well beyond those living in purely agricultural areas: Oregon considers at least ten community and non-transient, non-community PWSs in the LUBGWMA, which serve approximately 25,000 residents, "substantial nitrate risks."[118] More than half of the LUBGWMA population is at substantial risk from nitrate-contaminated drinking water, with a number of water systems testing positive for unsafe nitrate levels. Thus, Oregon officials are and have been fully aware of the ongoing threat to human health that exists in the LUBGWMA.

Oregon's agencies and officials have proven ineffective at dealing with this imminent and substantial endangerment. After designation of the LUBGWMA, the primary tools for bringing drinking water quality back within safe levels have been the LUBGWMA Committee's First and Second Action Plans. The Committee finalized the First Action Plan and began implementation in 1997.[119] It finalized the Second Action Plan in 2019.[120]

Several Oregon agencies have failed to execute their responsibility to address the LUBGWMA's dangerous nitrate problems. The Oregon Health Authority ("OHA") has primary responsibility for implementing the SDWA in Oregon.[121] The Oregon Department of Environmental Quality ("DEQ") is responsible for regulating and addressing pollutants that affect waterways under the Clean Water Act. The Oregon Department of Agriculture ("ODA") is responsible for developing those portions of the GWMA's Action Plan that deals with farming practices.[122] These agencies work together to implement drinking water protections in Oregon.[123] The LUBGWMA Committee is the body tasked with implementing and overseeing the Action Plans. While Oregon officials have clear authority to adopt the mandatory regulations necessary to solve this problem, they have consistently refused to take such action, instead relying on voluntary-only plans in the past and again in the Second Action Plan.

[116] *See supra* Section III.
[117] Second Action Plan, App. A at 37.
[118] Factors Influencing Nitrate Risk Report, App. F at 6-7; Table 2, *supra*.
[119] DEQ, Lower Umatilla Basin Groundwater Management Area Action Plan (Dec. 8, 1997) (hereinafter "First Action Plan, App. Z") (included here as Appendix Z).
[120] Second Action Plan, App. A.
[121] *See* ORS 448.277.
[122] Second Action Plan, App. A at 6.
[123] *Oregon's Water Quality Programs Regulatory Overview* (included here as Appendix AA).

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The Action Plans suggest, but do not mandate, practices that could begin to abate the ongoing endangerment to human health.[124] Since declaration of the LUBGWMA, state and local officials have been operating under the assumption that "once businesses, organizations, governments and individuals are aware of the environmental consequences of certain practices, they will seek alternatives to reduce the likelihood of groundwater contamination."[125] Consequently, the LUBGWMA Committee has taken a purely "voluntary approach" to combatting groundwater contamination rather than implementing mandatory or regulatory measures to reduce nitrates in the area's groundwater.[126] Additionally, while DEQ and the LUBGWMA Committee memorialized a number of mitigation goals, recommendations, and strategies in the 1997 Action Plan, Oregon allocated no funding to actually execute the Plan.[127] Instead, the state placed the implementation burden on local jurisdictions that were admittedly plagued by "resource constraints" and already "under great pressure to complete many mandatory activities prior to implementing voluntary and non-regulatory tasks."[128] Oregon again has failed to provide a dedicated funding source for implementation of the Second Action Plan, instead merely noting several disparate potential funding sources that it encourages local and state agencies to seek out.[129]

In addition to the tools available to DEQ and the LUBGWMA Committee, ODA has authority to address the pervasive nitrate pollution in the region, which it refuses to meaningfully implement. Under the Agricultural Water Quality Management Act,[130] ODA develops Agricultural Water Quality Management Area ("WQMA") Plans and Rules.[131] While Area Plans are "neither regulatory nor enforceable," ODA's Area Rules are regulatory and contain enforcement provisions. The Umatilla Agricultural WQMA, which the Second Action Plan points to for ODA authority to help improve water quality in the LUBGWMA,[132] and the Willow Creek WQMA provide the operative set of Area Plans and Rules relevant to the LUBGWMA. The Umatilla Agricultural WQMA covers the eastern portion of LUBGWMA,[133] while the Willow Creek WQMA covers the western portion.[134] Both Area Plans rely on voluntary measures and refer back to the LUBGWMA's Action Plan in circular, and predictably impotent, ways.[135]

While the LUBGWMA's Second Action Plan relies on the potential "regulatory backstops [in the form of WQMA Rules] to the voluntary efforts described in the area plans," that "backstop" is no more than a paper tiger since the Area Rules lack any degree of specificity and have not been implemented in a manner that has reduced or could actually reduce nitrate

[124] LUBGWMA Committee, https://lubgwma.org/ (last visited Nov. 5, 2019).
[125] First Action Plan, App. Z at 28.
[126] First Action Plan, App. Z at 11.
[127] *Id.* at 30.
[128] Second Action Plan, App. A at 82.
[129] *See* Second Action Plan, App. A.
[130] ORS 568.900-.933
[131] Second Action Plan, App. A at 4.
[132] *Id.*
[133] ODA, Umatilla Agricultural Water Quality Management Area Plan 17 (Dec. 6, 2018) (included here as Appendix AB).
[134] ODA, Willow Creek Water Quality Management Area Plan 17 (Mar. 2019) (included here as Appendix AC).
[135] Umatilla WQMA Plan, App. AB at 23-24, 41; Willow Creek WQMA Plan, App. AC at 37, 41.

ED_005296_00000585-00024

levels in the area. In fact, ODA is open about the fact that Area Rules, unlike actual rules, "don't specify" how each agricultural landowner must avoid further contaminating drinking water.[136] The Area Rules for the Umatilla and Willow Creek Agricultural WQMAs lay out cursory and generalized requirements that are supposedly enforceable by ODA, but given that drinking water contamination in the area has increased over time despite the Rules clearly shows their ineffectiveness. The Umatilla Area Rules purport to require that land application of nutrients, "including manure . . . , must be done at a time and in a manner that does not pollute waters of the state."[137] The Willow Creek Area Rules lack even this vague requirement, instead requiring only that "irrigation must be done in a manner that *limits* the amount of pollutants in the runoff from the irrigated area or that leaches into groundwater."[138] Thus, the Willow Creek Rules on their face *allow for* continued groundwater contamination. The Area Rules do not provide any requirements regarding how to avoid contaminating drinking water in this particularly vulnerable area, and their overarching mandates have never been enforced, as proven by data showing long-standing and increasing nitrate pollution to USDWs. Given the decades of dangerous nitrate contamination in the LUBGWMA, these two sets of vague and poorly-enforced WQMA Plans and Rules fall far short of what is needed, and far short of what would constitute action to protect public health precluding EPA from taking its own emergency action under the SDWA.

Without the necessary funding or regulatory mandates that are clear and enforceable, the First Action Plan was left largely unimplemented and predictably failed to bring nitrate levels within state and federal standards. The plan articulated eight goals to be met by December 2009, the most important of which was achieving a downward trend in nitrate levels throughout most of the region. Not only was this goal not met, even 10 years after intended, only three of the other goals were actually met. Additionally, of the eighteen recommended tasks, only five were implemented in full.

Table 4, Attainment of First Action Plan Goals[139]

Goal	Status
Data indicates a downward trend in nitrate levels throughout most of the GWMA	Not Met
95% of irrigated acreage is implementing an accepted system of BMPs or are covered by an implementation plan and the recommendations are in place and being used	Not Met
80% of residents are still aware of the nitrate problem and are aware of at least one activity which contributes to the problem. 75% can cite at least one activity they have changed because of their awareness of the issue	Not Met
All local area governments can cite procedures, requirements, and/or practices they have instituted as a result of the GWMA declaration	Partially Met

[136] ODA, A Landowner's Guide to Oregon's Agricultural Water Quality Management Program 4 (included here as Appendix AD).
[137] OAR 603-095-0340(7)(a); OAR 603-095-2840; *see also* OAR 603-095-0340(2) & 603-095-2480(2) (cross-referencing to ORS 468B.25 (prohibiting any person from "[c]aus[ing] pollution of any waters of the state") and 468B.050 (requiring facilities to obtain coverage under state water quality permits)).
[138] OAR 603-095-2840(5) (emphasis added).
[139] Second Action Plan, App. A.

ED_005296_00000585-00025

Methods to address and reduce the impact of septic systems have been adopted in all areas considered high risk for nitrate loading from high densities of septic systems	Partially Met
Monitoring data show no violation of permit specific concentration limits imposed on Food Processors	Met
90% of CAFOs are implementing an accepted system of BMPs or are covered by an implementation plan	Met
The Umatilla Chemical Depot Washout treatment system is working as expected and reinjection water is not migrating beyond the capture zone of the treatment system	Met

Importantly, even though the goal that "90% of CAFOs are implementing an accepted system of [Best Management Practices] or are covered by an implementation plan" was met, the greatest increases in nitrate levels were found at test wells where CAFOs land apply manure, as discussed above. Thus, it appears that the referenced BMPs for CAFO's manure management were unsuccessful at actually reducing or stopping the increase in nitrate contamination despite successful "implementation" at 90% or more of the area's CAFOs. Despite this, "accepted BMPs" have not been strengthened by state agencies.

Now in 2019, after more than 20 years of voluntary-only BMPs and implementation measures failing to reduce nitrate levels or even stop the ongoing increases in nitrate concentrations, Oregon *again* refused to adopt a single mandatory measure to reduce existing or future nitrate pollution in the area's groundwater. The Second Action Plan does not discuss this glaring fact, much less provide an explanation why Oregon officials believe more of the same will yield different results. At most, the Second Action Plan provides that "[i]f progress in implementing strategies (that lead to reductions [sic] the groundwater nitrate levels) is not accomplished" when the Committee conducts its annual assessments, it "*may* include mandatory actions or regulatory changes to address protection of groundwater."[140]

Tellingly, this is precisely what the First Action Plan said over 20 years ago in 1997: "If the voluntary approach does not result in satisfactory progress towards reducing nitrate contamination in the groundwater, mandatory requirements will be considered as part of the action plan. The Groundwater Protection Act (ORS 468.183) provides for inclusion of mandatory requirements as part of the action plan."[141] The First Action Plan also relied on ODA to take mandatory action if such action was "deemed necessary."[142] After 22 years, state and local officials have demonstrated their unwillingness to enact the mandatory measures required to end the endangerment to human health in the LUBGWMA, and have again kicked the can down the road indefinitely rather than taking necessary action.

This is not an abstract exercise in public-private partnership building that voluntary-only measures may help foster; real people have been expecting change, apparently in vain, for decades. As stated by the East Oregonian newspaper in 2004, "The [LUBGWMA] committee must submit an evaluation of its progress to the state every four years. As long as the group is

[140] Second Action Plan, App. A at 6 (emphasis added).
[141] First Action Plan, App. Z at 8.
[142] First Action Plan, App. Z at 6.

ED_005296_00000585-00026

making improvements, water quality control stays in its hands. If the group is unable to encourage citizens to voluntarily solve water quality concerns, the state government will mandate what must be done."[143] Then again in 2009, the East Oregonian wrote that, after testing data showed that nitrate contamination "remain[ed] stubbornly high" despite past voluntary efforts, new regulations and rules "concern[ing] how and when farmers apply nitrogen to their fields" may be necessary.[144] Over ten years later, with nitrate levels at all-time highs, meaningful action is necessary, and Oregon officials have proven themselves unable and unwilling to deliver.

Petitioners and those living in the LUB who rely on the area's groundwater for everyday life can no longer depend on DEQ, OHA, ODA, or the local officials in charge of implementing corrective measures in the LUBGWMA to fix the ongoing and worsening endangerment to human health caused by nitrate contamination. Decades of objective failure to rein in nitrate pollution from the area's CAFOs and irrigated agricultural practices have been left unaddressed by the now-operative Second Action Plan, which gives no more than a passing nod to the possibility of imposing the past due mandatory measures necessary to improve water quality. EPA must not let another 20 years pass as the problem continually gets worse and Oregon officials continue to sit on the sidelines while the threat to the health of Oregon citizens grows.

VI. EPA EMERGENCY ACTION IS NECESSARY TO ABATE ONGOING AND EVER-INCREASING ENDANGERMENT TO HUMAN HEALTH FROM NITRATE CONTAMINATION

EPA's SDWA guidance states that if EPA knows state or local agencies are going to act, EPA must decide if the actions are timely and effective.[145] And if they are insufficient, EPA should proceed with emergency action necessary to protect human health.[146] EPA action is necessary here because although state and local authorities have taken various actions to try and address nitrate contamination in the LUBGWMA over the past decades, such as testing, monitoring, and establishing action plans, these actions have not been timely or effective.[147] State and local officials have failed to protect public health from nitrate contamination, and their latest plan doubles down on the failed voluntary-only approach. Meanwhile, other state actions such as the continued approval and permitting of CAFO operations with inadequate protections directly undermine any efforts at improving the region's groundwater quality. The state has its head in the sand, and is only digging itself deeper. Thus, EPA has the authority to take emergency action because although the state and local agencies have already started to act, they have not done so in a timely or effective way.

[143] *Women Sound Nitrate Warning*, EAST OREGONIAN (Mar. 8, 2004) (included here as Appendix AE).
[144] *Stubbornly High Nitrate Numbers Could Lead to DEQ Regulation*, EAST OREGONIAN (Nov. 28, 2009) (included here as Appendix AF).
[145] *See* SDWA Emergency Authority Guidance, App. B at 9, 13.
[146] *Id.*
[147] *See* H.R. Rep. No. 1185, 93rd Cong., 2d Sess., 35-36 (1974) (discussing the legislative intent to "direct the Administrator to refrain from precipitous preemption of effective State or local emergency abatement efforts" unless action is not timely or effective); *see also* SDWA Emergency Authority Guidance, App. B at 9.

ED_005296_00000585-00027

The endangerment in the LUBGWMA therefore meets all of the criteria for EPA action. As discussed in detail above, the statutory prerequisites for emergency action under 42 U.S.C. § 300i are satisfied here.[148] First, nitrate, which is a "contaminant" under the SDWA,[149] is present in and continues to leach into USDWs in the LUBGWMA. Moreover, nitrate contamination has been present in and continues to be a problem for LUBGWMA's PWSs. Second, the presence of nitrate contamination in groundwater is causing an imminent and substantial endangerment to public health; an alarming number of LUB residents rely on USDWs and PWSs that have been identified as carrying substantial nitrate risks for users. Finally, neither the State of Oregon nor Umatilla and Morrow County Soil and Water Conservation Districts have taken timely or effective action to abate the public health endangerment. Though DEQ and ODA have taken some steps to investigate the nature and scope of the threat, Oregon officials have failed to exercise their authority to effectively regulate the predominant sources of contamination, instead relying on public outreach and voluntary measures that have consistently failed to protect groundwater quality from further deterioration. And while county and city authorities have engaged in public education and research related to groundwater quality, their limited action has similarly proven insufficient to remedy the problem.

EPA has broad authority to investigate and remediate threats to public health under the SDWA in these circumstances. "Once EPA determines that action under Section 1431 is needed, a very broad range of options is available" as necessary to protect users of USDWs.[150] The tools available to EPA include conducting studies, halting the disposal of contaminants that may be contributing to the endangerment, and issuing orders such as mandatory changes to manure generation, handling, and land application practices.[151] In fact, "EPA may take such actions notwithstanding any exemption, variance, permit, license, regulation, order, or other requirement that would otherwise apply."[152]

EPA should prioritize investigating and abating nitrate contamination caused by CAFOs and land application of CAFO wastes to irrigated agriculture in the LUBGWMA. As explained, these interrelated land use activities constitute the vast majority of nitrogen pollution in the region—approximately 82%—and this contamination has degraded the area's USDWs for decades.[153]

Specifically, Petitioners request EPA take at least the following measures under its Section 1431 SDWA emergency powers:

- Supply a free source of clean drinking water to residents of the LUBGWMA whose wells or PWSs exceeds safe limits for nitrate;

- Conduct additional investigation and monitoring throughout the LUBGWMA to more accurately trace the sources and quantities of nitrate-nitrogen pollution, and

[148] *See also* SDWA Emergency Authority Guidance, App. B.
[149] 40 C.F.R. §§ 141.11(d); 141.62(b).
[150] SDWA Emergency Authority Guidance, App. B at 10.
[151] *See id.* at 10-11.
[152] *Id.* at 9.
[153] *See supra* Section IV.C.

ED_005296_00000585-00028

work to identify which CAFOs and manure management practices are causing nitrate contamination;

- Issue orders requiring CAFOs and irrigated agriculture land applying CAFO waste or other nitrogen fertilizers to modify their practices so that these operations will cease overburdening the area with nitrogen pollution via lagoon leaching, land application of manure, and/or spills and leaks;

- Issue an order prohibiting the proposed Easterday Farms CAFO or any other new CAFO from opening on the failed Lost Valley Farm site or elsewhere in the LUBGWMA unless and until nitrate concentrations in the area consistently fall below the established, health-based MCL of 10 mg/L;

- Investigate Oregon's BMPs for CAFO nutrient management to determine why they have been unsuccessful at protecting groundwater in the LUBGWMA and what more effective BMPs are necessary; and

- Determine what enforcement measures should be implemented to effectively reduce nitrogen pollution from these sources, and initiate those enforcement actions as soon as practicable.

VII. CONCLUSION

In conclusion, for the reasons and upon the bases stated above, the undersigned Petitioners respectfully request that EPA invoke its emergency authority under section 1431 of the Safe Drinking Water Act, 42 U.S.C. § 300i, to address the imminent and substantial endangerment to public health within the LUBGWMA caused by ongoing and increasing nitrate contamination. Please contact Tarah Heinzen by email at theinzen@fwwatch.org or phone at (202) 683-2457 with questions or for more information regarding this petition or the basis of our request.

Respectfully Submitted January 16, 2020

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ED_005296_00000585-00029

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ED_005296_00000585-00030

APPENDIX TABLE OF CONTENTS

App. A: Second LUBMGWA Action Plan.....1
App. B: EPA Memorandum, Updated Guidance on Emergency Authority under Section 1431 of the Safe Drinking Water Act.....100
App. C: DEQ Water Quality Division, Analysis of Groundwater Nitrate Concentrations in the Lower Umatilla Basin Groundwater Management Area.....143
App. D: Gerald H. Grondin et al., Hydrogeology, Groundwater Chemistry and Land Uses in the Lower Umatilla Basin Groundwater Management Area.....283
App. E: Thomas J. Mitchell & Anna K. Harding, Who Is Drinking Nitrate in their Well Water? A Study Conducted in Rural Northeastern Oregon.....875
App. F: DEQ, Factors Influencing Nitrate Risks at Oregon Public Water Systems.....882
App. G: Oregon Public Health Drinking Water Contamination Alerts.....1008
App. H: Animal Feeding Operations data provided by Oregon Dept. of Agriculture 1051
App. I: DEQ Water Quality Division, Estimation of Nitrogen Sources, Nitrogen Applied, And Nitrogen Leached to Groundwater in the LUBGWMA 1054
App. J: Easterday Application to Register to the Oregon CAFO General Permit 1080
App. K: DEQ, Oregon's Nutrient Management Program 1086
App. L: Tracy Loew, Troubled Oregon Megadairy Lost Falley Farm to Be Shut Down and Sold 1114
App. M: In the Matter of Greg de Velde, dba, Lost Valley Farm, Notice of Revocation of Individual Permit No. OR995129 and Notice of Right to a Contested Case Hearing 1118
App. N: DEQ & ODA, Lost Valley Farm CAFO Permit FAQs 1155
App. O: Lynne Terry, Is Oregon Paving the Way for More Mega-Dairies?.....1159
App. P: Tracy Loew, Megadairy Regulation Proposals Die in Oregon Legislature as Key Deadline Passes 1168
App. Q: Email from Phil Richerson to Don Butcher, DEQ (Feb. 14, 2017).....1174
App. R: Food & Water Watch et al., Public Comments on Proposed NPDES Permit for Lost Valley Ranch Dairy CAFO.....1178
App. S: ODA, Easterday Farms Dairy, LLC: Talking Points 1195
App. T: George Plavin, Easterday Family Plans to Re-Open State's Second-Largest Dairy...1200
App. U: DEQ, Fact Sheet: Nitrate in Drinking Water.....1212
App. V: Mary H. Ward et al., Drinking Water Nitrate and Human Health: An Updated Review 1215
App. W: Oregon Health Authority, Nitrate in Drinking Water – Frequently Asked Questions.....1247
App. X: JoAnn Burkholder et al., Impacts of Waste from Concentrated Animal Feeding Operations on Water Quality.....1252
App. Y: EPA Region 10, Lower Yakima Valley Groundwater: Why is Nitrate a Concern?....1258
App. Z: First LUBGWMA Action Plan.....1264
App. AA: Oregon's Water Quality Programs Regulatory Overview.....1348
App. AB: ODA, Umatilla Agricultural Water Quality Management Area Plan 1351
App. AC: ODA, Willow Creek Agricultural Water Quality Management Area Plan.....1419
App. AD: ODA, A Landowner's Guide to Oregon's Agricultural Water Quality Management Program.....1473
App. AE: East Oregonian, Women Sound Nitrate Warning.....1484

ED_005296_00000585-00031

App. AF: East Oregonian, Stubbornly High Nitrate Numbers Could Lead to DEQ Regulation……..1487