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A non-profit coalition to promote the efficient production of quality food and fiber while protecting human health, personal property and the environment, through the integrated, responsible use of pest management products, soil nutrients and biotechnology.

November 25, 2025

Dear Board of Agriculture Members,

Thank you for the second opportunity to provide input on our concerns about the LUBGWMA rulemaking. OFS is a non-profit coalition of over 700 operations and organizations from agriculture, forestry, and other industries that rely on pesticides, fertilizers, and biotechnology to produce food and fiber. Our membership includes Oregon's top commodity groups and timber-related trade organizations, as well as many national trade organizations. One of our primary organizational goals is to advocate for science-based pesticide, fertilizer, and biotechnology regulation.

Serving on the Rulemaking Advisory Committee (RAC) for the Lower Umatilla Basin Groundwater Management Area has given me the opportunity to engage directly in the development of these draft rules. I greatly appreciate the effort that has gone into this process to date, and the receptiveness of the ODA staff to suggestions, concerns, and revisions. Since August, ODA has made changes that addressed several concerns, including mis-matched timing between deadlines and typical practices in the LUB, sampling requirements that would stretch laboratory processing capacity, and expanding options for evaluating Annual Nitrogen Plans.

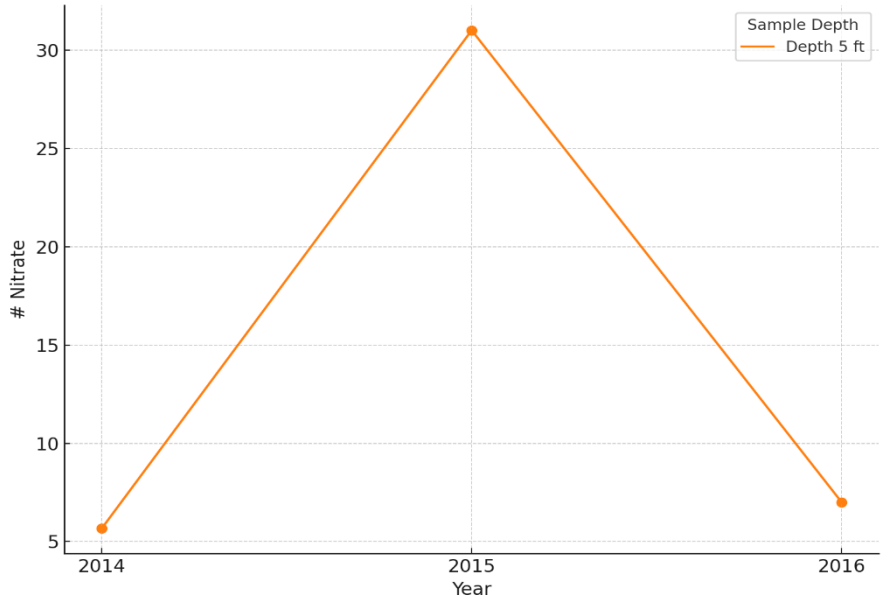
Despite these changes, I continue to have significant concerns; not about the goal of the rulemaking, which is important and widely supported, but about whether the rule evaluation metrics chosen will be effective and scientifically sound. Unless addressed, these issues could undermine the credibility of the program.

Program Evaluation and Metrics of Success, Sections 603-095-5070 and 603-95-5075

Our concerns about the LUBGWMA rule evaluation and metrics for success remain largely unaddressed from comments submitted in August. ODA's reliance on deep soil nitrate measurements, collected every 5 years, is unlikely to produce a dataset that can be analyzed by a scientifically acceptable method. Problems with this approach include:

- **High variability:** Residual nitrate levels fluctuate wildly within fields, based the crop that is being produced, and whether the field is single cropped or double cropped during that growing season[1]. While deep soil nitrate levels are undoubtedly affected by fertilization and irrigation practices, they are also strongly influenced by conditions producers cannot control, such as drought, heavy rainfall, or crop failure. **Even low test results can be misleading.** Over-irrigation could lead to low deep nitrate numbers in cases where the nitrate has leached deeper than the sampling depth. It is impossible to draw conclusions from even low numbers, particularly when they are stripped of agronomic and climatic context.

- **Local data show how challenging deep soil nitrate data are to understand**. An ODA funded study in the LUBGWMA from 2014 to 2016 provides data from a single field, managed with high level irrigation and fertilizer best management practices, and rotated between grain, onions and carrots[2]. Deep soil nitrate results are shown in the below figure. Across the three years, deep soil nitrate bounced between values of less than 10 to over 30 pounds of nitrogen. The study authors were unable to explain why nitrate levels in year two were so much greater than the other years, despite extensive data collection on a variety of factors. ***These fluctuations are one reason why California's panel of experts recommended against using residual soil nitrate as a programmatic metric (see next point).***



[1]Mendoza (2017). Lower Yakima Valley Deep Soil Sampling Summary Analysis. In Lower Yakima Valley Groundwater Management Program Volume II Appendices, published June 2019.
[2]GSI Water Solutions Inc (2017). Lower Umatilla Basin (LUB) Soil Moisture Monitoring Project. Prepared for the ODA Fertilizer Research Program.

- **Lack of Precedent:** No other state nitrate management program uses residual soil nitrate as a regulatory metric. In fact, California's expert panel of agronomists, soil scientists, and hydrogeologists explicitly recommended against it in their Irrigated Lands Program. As they stated in their final report, "The Panel does not include residual nitrogen in its reporting recommendations because it is difficult to quantify and is subject to potentially large short-term fluctuations."[3]

- **Expert Opposition:** Oregon State University extension publications recommend post-harvest soil nitrate tests as valuable grower tool for improving their management practices, but explicitly warn against using post-harvest soil nitrate tests as a regulatory tool: "Note that the postharvest test is not intended to predict groundwater nitrate concentrations. Recent studies by Washington Department of Ecology have demonstrated that the postharvest soil nitrate test is only a rough indicator of the risk of nitrate leaching."[4] Soil nitrate tests can be a valuable grower tool, but are not appropriate as a regulatory metric.

- **Unnecessary risks to producers in the region**: In a region that is prone to litigation over nitrate issues, maintaining anonymity with post-harvest soil nitrate results is an important consideration for encouraging compliance. Other states have mitigated confidentiality concerns by utilizing a 3rd party to compile and aggregate data that is ultimately submitted to the state.

Other states have implemented regulatory programs on irrigated agriculture, and while soil testing is routinely included as a component of these programs, it is not used to evaluate program success. Anchoring the program's success to residual soil nitrate trends has no basis in science and burdens growers with the costs of collecting samples that carry little meaning out of the context of the production details.

Evaluation of Annual Nitrogen Plans (ANP), Section 603-095-5055

This section of the rules proposes methods for evaluating whether a producer has "followed" their Annual Nitrogen Plan. We appreciate the addition of a fourth option (A/R ratio) since earlier rule drafts. However, the following concern remains:

- **Required crop coefficients not developed for Oregon:** Two of the four available evaluation methods: Applied – Removed (A-R) and Applied/Removed (A/R ratio) rely on a crop coefficient to convert harvested yield to pounds of nitrogen removed. However, regionally developed crop coefficients **are not available for crops grown in the LUB**, and until these coefficients have been established by Oregon State University or another research organization, these two methods cannot be utilized. Funding should be prioritized for research into crop coefficient development so that producers subject to this rule are able to utilize the full range of Annual Nitrogen Plan evaluation options.

[3]ITRC (2014). Conclusions of the Agricultural Expert Panel: Recommendations to the State Water Resources Control Board pertaining to the Irrigated Lands Regulatory Program.
[4]Sullivan et al (2021). Postharvest Soil Nitrate Testing for Manured Grass and Silage Corn (West of the Cascades). Oregon State Extension Publication EM-8832.

The goals of the LUBGWMA rulemaking are important and broadly shared. However, the reliance on residual soil nitrate as a success metric is especially problematic, risking credibility of the entire program. A regulatory framework that reflects sound science and on-the-ground realities will be effective in achieving the shared goal of protecting groundwater quality while sustaining the LUB's agricultural economy.

Thank you for the opportunity to comment,

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November 25, 2025

State Board of Agriculture
635 Capitol St. NE
Salem, OR 97301

Delivered via electronic mail to BoardAgriculture@oda.oregon.gov

On behalf of the Oregon Seed Council, thank you for the opportunity to provide comments on the Lower Umatilla Basin Ground Water Management Area (LUBGWMA) Rulemaking.

The Oregon Seed Council (OSC) is a trade organization that brings together seed farmers, marketers, brokers, researchers, and others involved in the Oregon seed industry from when the seed is planted to when the seed ultimately makes it to the hands of consumers. Through our membership, OSC represents approximately 1,300 grass, legume, and specialty seed growers in Oregon, and our industry drives employment in many rural areas of the state, employing an estimated 10,000 Oregonians.

I am writing to express OSC's concerns regarding the Oregon Department of Agriculture proposed rules for the LUBGWMA:

Evaluation of Annual Nitrogen Plans
In the proposed rules, the four methods for determining if a nitrogen plan was followed, have been improved from previous drafts.

However, we are concerned that the proposed rules assume that presence of post-harvest nitrogen is an indicator of poor fertilizer management. Presence of nitrogen is not inherently linked to bad practices.

In addition, half of the proposed methods of determining use of a plan do not have the data available to use the methods. This would require Oregon State University or another research agency to generate nitrogen coefficient data for each crop grown in the LUB before the methods could be used.

Finally, the rules focus on usage of "total nitrogen applied" rather than "plant available nitrogen" in calculation of nitrogen applied to the field. Not all applied nitrogen is available to the plant, and similarly, not all applied nitrogen is subject to leaching.

Program Evaluation and Metrics of Rule Success
We are concerned about how the rules propose elevation and metrics for success. The rule evaluation is to be based on trends in deep soil samples taken every five years on 10 percent of the fields from "large" operations within the LUBGWMA. However, the rules do not take into account that residual soil nitrate levels are influenced by many factors outside of producer control. Regional drought, high rainfall years, temperature, or crop failure are all examples of factors not taken into account that are outside of a producer's control.

Further, residual soil nitrate levels are highly variable within a field and fluctuate depending on where in the annual rotation cycle a field is in.

No other states with nitrate rules use the deep soil metric for measuring regulatory success. We are concerned about why this was selected as a measure, when even an expert panel in California explicitly recommended against using residual soil nitrate as a reporting metric in the California Irrigated Lands Regulatory Program.

There is a lack of scientific basis for this method, and the proposed rules indicate that ODA will conduct trend analysis on residual soil nitrate levels. This assertion is concerning due to the aforementioned concerns, and the fact that there are ***no peer-reviewed scientific studies*** that have performed analysis using this type of data, nor is there any research to suggest samples will have any scientific value.

We also see that while landowners are required to produce these records for data that lacks scientific value, the records will become public record. Results could be taken out of context, and there is no clear scientific basis for interpretation.

Application of Rules
Under the draft rules, there are different requirements made for “large” operations defined as 500 acres or more and “small” operations as 499 acres or less. These numbers are arbitrary. In previous drafts, the rules listed “large” operations as greater than 1,000 acres.

Costs and Fiscal Impact
The proposed rules put undue financial burden on producers. These financial pressures include lab costs for soil analysis (estimated to be between $7 and $10/sample by ODA); labor for soil sampling, record-keeping costs; and for some, purchase of additional equipment to pull samples from deeper depths.

Unfortunately, the rules put the burden of data collection on producers and the data sought provides no meaningful purpose and no context to why nutrients are being applied.

Capacity
There is also a limit to how much labs will be able to process, and we are concerned that local agricultural labs will not have capacity to process all required samples within the timeframes required from the proposed rules.

Removal of Water Quality Certification Program and Agreements Section
The draft rules presented to the rulemaking advisory committee described a voluntary agreement between ODA and landowners. The voluntary agreement described management and sampling requirements a landowner could conduct in exchange for regulatory certainty, recognition that landowner practices are protective of water quality, and priority access to technical and financial assistance. We are concerned that this section has been removed from the proposed rules.

While we have listed a number of concerns, paramount is that the measurement for success of these rules is not founded on a scientific basis and the cost and data collection for those measurements is being placed on our producers who are operating on slim-to-sometimes negative margins.

Thank you for your consideration of our concerns.

Sincerely,

Megan Chuinard
Executive Director
Oregon Seed Council
Megan@MAC-Consulting-LLC.com

November 25, 2025

Oregon Department of Agriculture
Board of Agriculture
635 Capitol Street NE
Salem, OR 97301

RE: Lower Umatilla Basin Groundwater Management Area Rulemaking

Dear Members of the Board of Agriculture,

The Oregon Farm Bureau (OFB) is Oregon's largest general agriculture organization, representing nearly 6,500 farm and ranch families across the state. Our members live and work in every corner of Oregon, including in the Lower Umatilla Basin Groundwater Management Area (LUBGWMA), where agriculture has long been the backbone of local communities. Farms in the Basin supply food, fiber, and seed to national and international markets, support thousands of jobs, and sustain rural economies in Umatilla and Morrow counties. Because of the importance of agriculture to this region and the essential need for safe drinking water, OFB supports the underlying goal of this rulemaking and appreciates the Oregon Department of Agriculture's (ODA) efforts to develop new rules aimed at reducing nitrate loading to groundwater. We also appreciate the opportunity to provide the Board with some of our thoughts on the ongoing LUBGWMA rulemaking process.

OFB members share the goal of protecting groundwater. Farmers in the LUBGWMA have already made significant investments in modern irrigation systems, precision nutrient management, soil health practices, and water conservation technologies. Many have worked constructively with ODA through the RAC, and we recognize that the Department has made improvements in the drafting process.

However, as currently drafted, several elements of the rule blur the line between a regulatory program and a research project. A workable regulatory framework must rely on scientifically validated, consistent, and interpretable metrics. Yet the proposed rules incorporate tools and evaluation mechanisms that remain experimental, untested at

regulatory scale, or unsupported by Oregon-specific research. This conflation threatens the credibility and effectiveness of the program and could unintentionally create narratives about producer behavior that are misleading or unfair.

One of the clearest examples is the proposed reliance on deep residual soil nitrate testing—a requirement that growers take 60-inch post-harvest soil samples on 10 percent of their irrigated fields every five years. This metric is intended to serve as a key indicator of program success. Yet no other state uses deep soil nitrate as a regulatory benchmark. California's expert panel explicitly recommended against its use, because deep soil nitrate fluctuates dramatically and is influenced by numerous factors outside a producer's control. Oregon State University echoes this concern, noting that post-harvest soil nitrate tests "are not intended to predict groundwater nitrate concentrations" and are at best a rough indicator of leaching potential.

Local studies reinforce this point. An ODA-funded project monitoring a single well-managed field found deep nitrate levels swinging from under 10 pounds to over 30 pounds across three years—even under high-quality irrigation and nutrient management practices—and researchers could not fully explain the variation. These fluctuations demonstrate why deep soil nitrate is not a reliable or scientifically defensible regulatory tool. It is a research instrument—not a compliance metric.

The draft rules also assume that the mere presence of post-harvest soil nitrogen indicates poor management, when in reality many agronomic factors can leave residual nitrogen in the soil without any misapplication by growers. For example, potato vines break down rapidly after harvest and naturally release nitrogen; unexpected rainfall or drought can distort soil nitrate levels; and over-irrigation can actually flush nitrate below the sampling depth, creating the misleading impression of "low" nitrate even where leaching risk remains. In this context, drawing conclusions from deep soil sampling risks producing narratives that are incomplete, inaccurate, or divorced from real-world agricultural practice.

A related concern is that several of the rule's evaluation methods depend on crop nitrogen-removal coefficients that do not yet exist for most crops grown in the Basin. Until Oregon-specific coefficients are developed—likely requiring new research at OSU—growers cannot use two of the four evaluation options for their Annual Nitrogen Plans. This again illustrates the rule's reliance on tools that have not reached regulatory maturity.

These scientific and technical shortcomings also interact with serious privacy and public-perception risks. The rules currently require that deep soil nitrate results be submitted directly to the Department, where they will become public records. In a region with ongoing litigation and intense public scrutiny, raw nitrate data—stripped of agronomic context—could easily be taken out of context, misinterpreted, or weaponized against producers who have done nothing wrong. Other states with similar nitrate challenges have successfully

protected farmers by using third-party aggregation or anonymization. OFB urges ODA to follow those models rather than exposing producers to unnecessary and unproductive risk.

Beyond scientific and privacy concerns, the rules introduce significant administrative costs at a time when the regional farm economy is already strained. Soil sampling, laboratory fees, deep coring equipment, and extensive recordkeeping are not trivial expenses. ODA itself estimates lab costs of $7–$10 per sample—before considering labor, equipment, and the increased sampling frequency for large irrigated operations. Many farms will need specialized tools to pull 5-foot cores. Local laboratory capacity may be insufficient to meet the compressed timelines required under the rule, further complicating compliance. These costs are not merely operational, and they compound economic pressures already facing agriculture. Regulations meant to protect groundwater should not unintentionally undermine the economic viability of the very operations they seek to support, especially in communities already facing economic stress.

In light of these challenges, OFB believes it is essential that the final rules be grounded in established science and proven best practices, rather than experimental metrics that create uncertainty and invite misinterpretation. Farmers in the LUBGWMA want to be part of the solution—and already are—but to succeed, the regulatory framework must rely on tools that are accurate, reliable, and reflective of real-world agricultural systems.

OFB will respectfully urge ODA to refine the proposed rules by removing or replacing scientifically unsupported evaluation metrics, protecting producer privacy, ensuring that compliance obligations are economically realistic, and anchoring the rule in the best available science and practical management practices. A rulemaking built on sound science, credible tools, and workable implementation will protect groundwater, build trust, and strengthen the long-term resilience of agriculture in the Lower Umatilla Basin.

OFB appreciates the opportunity to provide comments to the Board of Agriculture and remains committed to working collaboratively with ODA to ensure that the final rule achieves its intended outcomes while sustaining the farms, families, and communities of the LUBGWMA.

Sincerely,

Ryan J. Krabill
Oregon Farm Bureau