

Lower Umatilla Basin Groundwater Management Area

Background and Update on Implementation of the State's Nitrate Reduction Plan

Courtney Warner Crowell – Governor's Office

Chris Kowitz – OWRD

Laura Gleim – ODEQ

Kevin Fenn - ODA

June 13, 2025

OREGON NITRATE REDUCTION PLAN

for the Lower Umatilla Basin Groundwater Management Area

Office of Governor Tina Kotek
Oregon Department of Environmental Quality
Oregon Department of Agriculture
Oregon Water Resources Department
Oregon Health Authority

September 20, 2024



Background

Lower Umatilla Groundwater Management Area (LUBGWMA)



Governor's Office

- State agencies directed to develop a plan to meaningfully reduce nitrate contamination in the LUBGWMA
- Multi-agency coordination with EPA to develop the Nitrate Reduction Plan
- Initial priority to provide safe drinking water
- State natural resource agencies are working to implement long-term strategies to reduce nitrate levels in groundwater

Development and Implementation of the Nitrate Reduction Plan

Oregon State and County Government Roles and Responsibilities in LUBGWMA

Oregon Department of Agriculture (ODA)



Oregon Department of Environmental Quality (DEQ)



Oregon Water Resources Department (OWRD)



Oregon Health Authority (OHA)



+ County
Public Health

Morrow County

Land use planning, septic systems,
public health



Umatilla County



Oregon Nitrate Reduction Plan (NRP)



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Nitrate Reduction Plan

- Background
- Collaborative Governance
- Nitrate Reduction Strategies by Source
- Monitoring, Data, and Analysis
- Safe Drinking Water Strategies

<https://ordeq.org/LUBGWMA>



Separate but related paths forward:



1. Short/medium-term:

Safe drinking water (OHA, ODHS, counties)



2. Long-term: Minimize nitrate loading, reduce contamination (ODA, DEQ, OWRD, counties)

Oregon Department of Environmental Quality – Update on Implementation

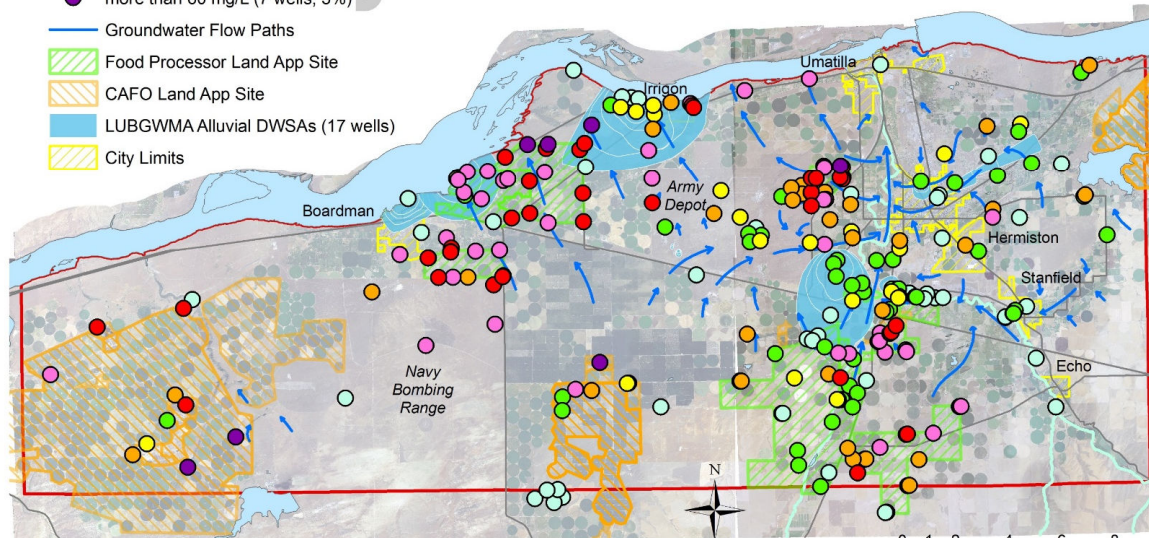
Legend

- less than 3 mg/L (50 wells; 20%)
- 3 to 7 mg/L (53 wells; 21%)
- 7 to 10 mg/L (29 wells; 11%)
- 10 to 20 mg/L (34 wells; 13%)
- 20 to 40 mg/L (44 wells; 17%)
- 40 to 60 mg/L (38 wells; 15%)
- more than 60 mg/L (7 wells; 3%)

Composite of Available Nitrate Data in the LUBGWMA Second LUBGWMA Action Plan

48% Exceed 10 mg/L Drinking Water Standard
60% Exceed 7 mg/L GWMA Trigger Level

- Groundwater Flow Paths
- ▨ Food Processor Land App Site
- ▨ CAFO Land App Site
- ▨ LUBGWMA Alluvial DWSAs (17 wells)
- ▨ City Limits



255 wells sampled between November 2015 and April 2016.

Wells sampled include the 17 alluvial aquifer public supply wells, 56 private water supply wells, 10 irrigation wells, 171 monitoring wells, and 1 stock watering well.

0 1 2 4 6 8 Miles

DEQ – Update on Implementation

Nitrate Reduction Plan Responsibilities:

- **Land Application of Industrial and Domestic Wastewater**
 - Wastewater Permitting and Compliance
- **Rural Residential**
 - Onsite Septic System Permitting and Compliance
 - Onsite Septic System Repair and Replacement Funding
 - Public Wastewater Treatment System and Irrigation Modernization Funding
- **Monitoring, Data, and Analysis**
 - Groundwater Quality Sampling and Monitoring
 - Groundwater Quality Trends Analysis
 - Nitrate Leaching Estimation Update
 - Groundwater Data Coordination Effort and GIS Platform

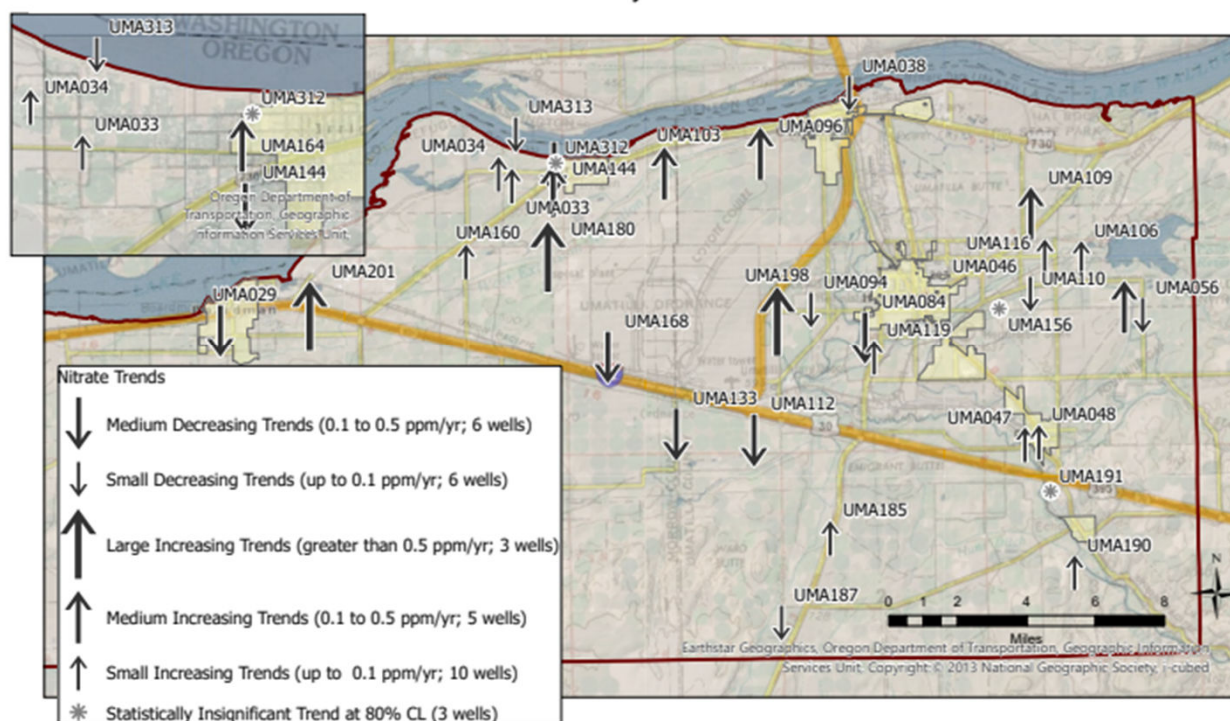
DEQ – Update on Implementation

Monitoring, Data, and Analysis

- Updated trend analysis report in January 2025 for DEQ's long-term well network.
- **Trend analysis** reviewed concentrations across the 33-well network over 32 years and found an overall increasing nitrate trend, with some decreases.
- **Next steps:**
 - Evaluate trends using data from permitted facilities.
 - Improve geographic extent of well network to expand usefulness in evaluating the entire LUBGWMA.
 - Continue ongoing sampling and analysis.

DEQ – Trends Analysis Report

Figure 9
Nitrate Trends at Individual Wells
Groundwater Nitrate Trend Analysis - LUBGWMA Well Network

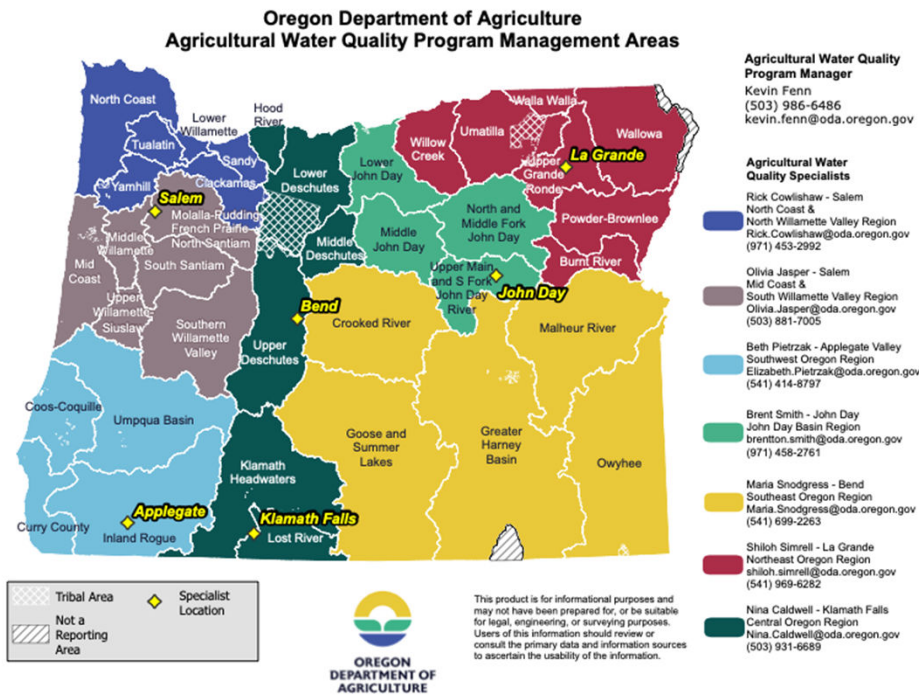


Notes:

- (1) Symbols for UMA312 and UMA164 overlap. See inset map for more details.
- (2) Trends at 29 wells are from September 1991 through November 2023. Trends at four wells are shorter. See Table 1 for timeframes and trend slope.
- (3) Recent nitrate concentrations shown in Figure 5, average nitrate concentrations shown in Figure 6, and short-term changes in nitrate concentrations shown by LOESS lines in Appendix D are useful to place long-term trends into context.

Trends Analysis Report: <https://ordeq.org/NitrateTrend>

Oregon Department of Agriculture – Update on Implementation



Agricultural Water Quality Management Act – 1993 – existing authorities

- ODA regulates agriculture
 - ODF - Forestry
 - DEQ – Industry & Municipal
- Managed at the local level
 - Area Plans (guidelines)
 - Rules (requirements)
- SWCDs – Voluntary role
- ODA – Regulatory role

ODA – Update on Implementation

Nitrate Reduction Plan Responsibilities:

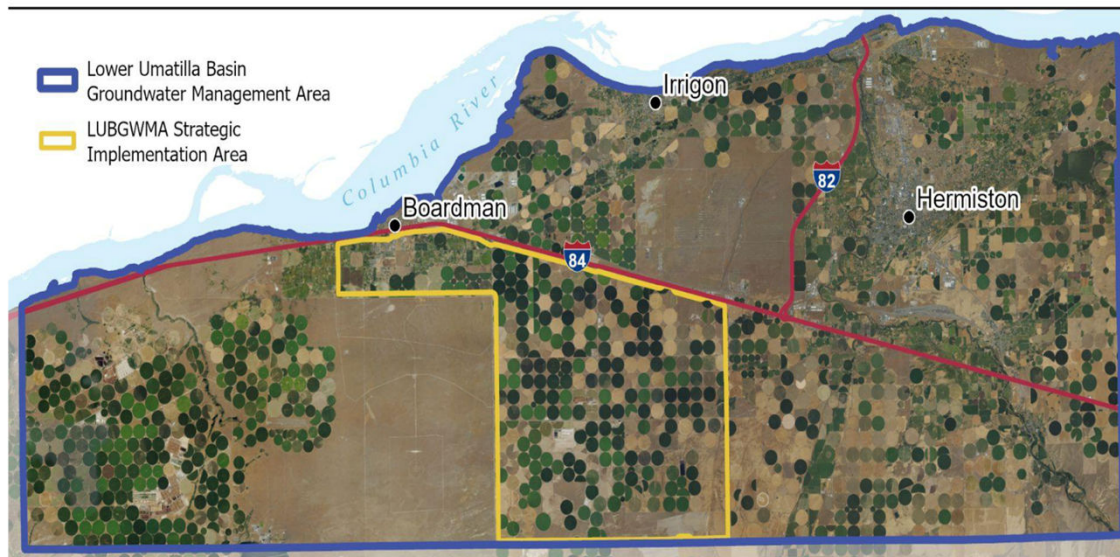
- **Irrigated Agriculture**
 - Agricultural Water Quality Program
 - Strategic Implementation Area
 - Best Management Practices (BMPs) for Nutrient & Irrigation Management
 - Fertilizer Registration Program
- **Confined Animal Feeding Operations**
 - Permit compliance
- **Livestock Grazing**
 - Agricultural Water Quality Program
 - Inventory of Livestock Operations
 - Manure Management
- **Rural Residential**
 - Agricultural Water Quality Program

ODA: Irrigated Ag Rules Update

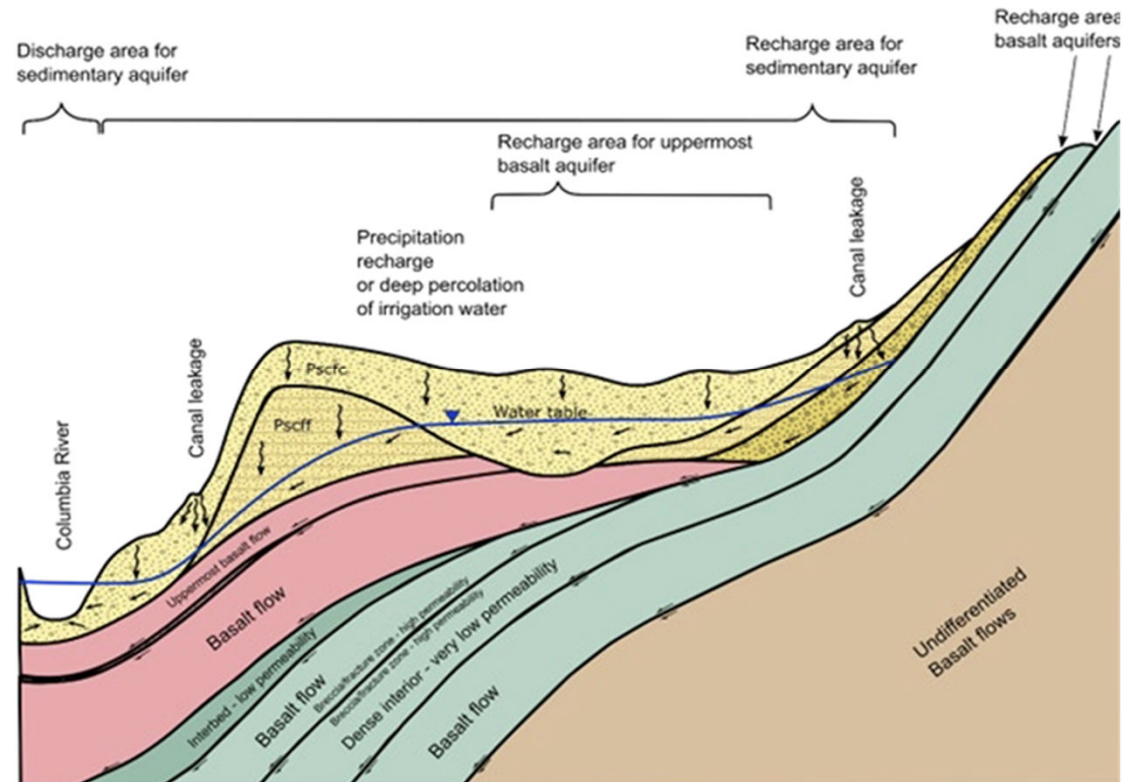
- Initiated rulemaking to development additional groundwater quality rules for the LUBGWMA.
- Rules Advisory Committee (RAC) meeting monthly March to August (longer if needed).
- After RAC process, agency will go through public input process for rules
- ODA Rulemaking website - <https://www.oregon.gov/oda/agriculture/Pages/rulemaking.aspx>

ODA - Strategic Implementation Area

- Proactive focused effort that includes outreach, technical assistance to achieve compliance with rules.
 - Remote and field evaluations of tax lots
 - Identify compliance opportunities
 - Technical assistance in partnership with SWCD
- Data collection to inform development of recommended INMPs.
- Community outreach
- Compliance and Enforcement if needed



Oregon Water Resources Department— Update on Implementation



WRD – Update on Implementation

Nitrate Reduction Plan Responsibilities:

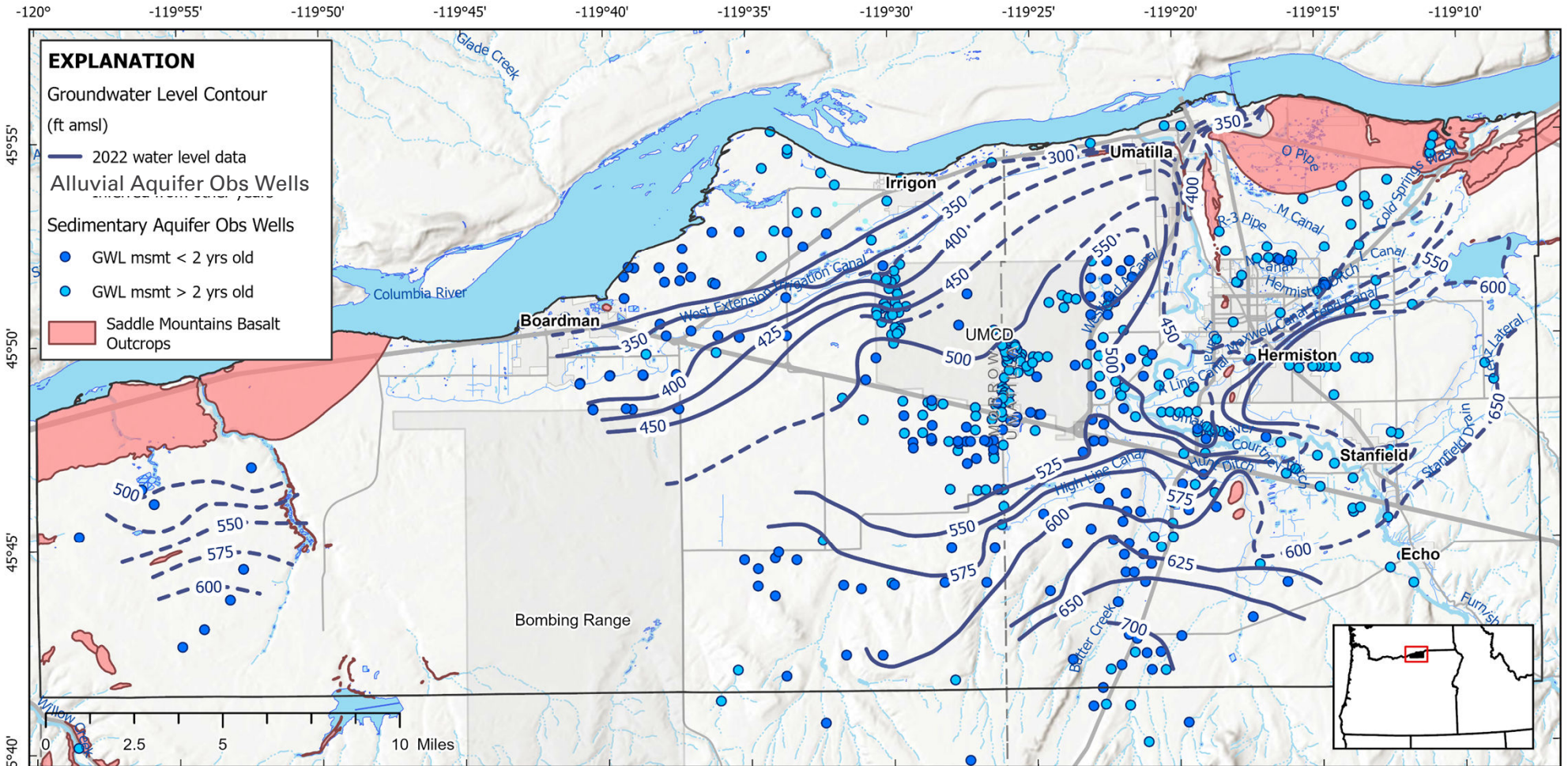
- **Rural Residential**

- Domestic Well Construction and Compliance

- **Monitoring, Data, and Analysis**

- Hydrogeology of the Lower Umatilla Basin - Update of Conceptual Model
- Ongoing Groundwater Levels Data Collection

WRD – Conceptual Model Update



Base map modified from U.S. Geological Survey and other digital data, various scales.
Projection: NAD 1983 Oregon Statewide Lambert. North American Datum of 1983

Backflow Prevention

- New effort to ensure backflow prevention devices are installed at all wells in the LUBGWMA that are actively utilizing chemigation



MORR 51307

Wrap-up

- State agencies are focusing on source control
- Restoration of the aquifer's water quality will take a long-term effort from all levels of government and local stakeholders
- Sound science and data will be vital to guide continued implementation of the Nitrate Reduction Plan

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Thank you!



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