Regulating Land Application of Manure
Regulatory & Technical Assistance Tools to Keep Manure Out of the Water

2018 National CAFO Roundtable – September 26, 2018

Kyrre Flege - Regulatory Lead/Nutrient Management Inspector
Dairy Nutrient Management Program
Washington State Department of Agriculture
At cow dairy farms:

- More than half of the issues we see resulting in enforcement are related to land application of manure.

- Compared to challenges at the facility, there are far more variables outside of producers control when dealing with land applications.
Outline

- Authorities Regulating Manure Application in Washington State
- Voluntary Guidance and Technical Assistance Resources
- Tools used to Evaluate Manure Applications
- Challenges
- Successes
Authority

Dairy Cattle Operations (AGR)
- Complaint response
- RCW 90.64
  - Recordkeeping
  - Routine inspection

Non-Dairy Cattle Operations (ECOLOGY)
- Complaint response

Permitted Cattle Operations (AGR & ECY)
- No discharge above WQ standards
- Routine inspection
- Recordkeeping
- Land application requirements

No Pollution Discharge RCW 90.48
Authority

Permit Land Application Requirements:

- Nutrient Budget – adaptive mgmt.
- Application rates based on budget
- Restrictions
  - Equipment calibration
  - Frozen, snow-covered or saturated soil
  - Bare soil if not being planted
- Edge of field mgmt. practices
  - 100 ft setback from waterways OR
  - Compliance alternative
    - 35 ft vegetated buffer
    - Edge of field berm
    - Approved alternative practice
Authority

No Pollution Discharge RCW 90.48

Dairy Cattle Operations (AGR)

Non-Dairy Cattle Operations (ECOLOGY)

Permitted Cattle Operations (AGR & ECY)
Voluntary Guidance

• Manure Spreading Advisory
• Application Risk Management
• Variable Application Setbacks
• Technical Review
• Nutrient Management Training

https://www.wadairyplan.org/MSA

• Interactive map
• continually updated with local weather
Voluntary Guidance

- Manure Spreading Advisory
- Application Risk Management
- Variable Application Setbacks
- Technical Review
- Nutrient Management Training

https://www.wadairyplan.org/ARM

- Comprehensive worksheet
- Individual field evaluation
- Hands on
Variable setbacks are encouraged to:

- Account for conditions and provide sufficient protection of surface water
- Supply beneficial fertilizer to edges of field when appropriate

Manure application setback distance (Feet)

<table>
<thead>
<tr>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 4</td>
<td>80 4</td>
<td>40</td>
<td>40</td>
<td>40/10</td>
<td>10 2</td>
<td>10 2</td>
<td>10 2</td>
<td>40</td>
<td>80</td>
<td>80 3,4</td>
<td>80 3,4</td>
</tr>
</tbody>
</table>

1. This is a floating date and should be evaluated based on current weather and forecast information.
2. A big gun applicator should NEVER be closer than 40 feet at any time of the year due to drift.
3. Application during November and December is typically not necessary and must be shown to be agronomic before manure is applied.
4. Any manure application made from November-February must have a winter spreading plan in place. Contact your CD planner to add this to your DNMP.

*These guidelines apply equally to both liquid and solid manures*
Voluntary Guidance

- Manure Spreading Advisory
- Application Risk Management
- Variable Application Setbacks
- Technical Review
- Nutrient Management Training

- We encourage producers to ask questions and request a review of their application plan.
- We refer producers to technical service providers who are experts in the field.
We sponsor Nutrient Management Training events to support broad use of the technical resources that exist.

Voluntary Guidance

- Manure Spreading Advisory
- Application Risk Management
- Variable Application Setbacks
- Technical Review
- Nutrient Management Training
Tools to evaluate land applications

- Water Quality Monitoring
- Windshield Surveys
- Aerial Surveys
- “Nutrient Tracker”
- Recordkeeping Compliance
- Investigative Sampling

- Where do we focus our efforts?
- What does current data say about water quality?
Tools to evaluate land applications

- Water Quality Monitoring
- **Windshield Surveys**
- Aerial Surveys
- “Nutrient Tracker”
- Recordkeeping Compliance
- Investigative Sampling

- Spend time driving and observing practices
- Planned routes during application season
- Unplanned trips to and from inspections
Tools to evaluate land applications

• Water Quality Monitoring
• Windshield Surveys
• Aerial Surveys
• “Nutrient Tracker”
• Recordkeeping Compliance
• Investigative Sampling

• Improve coverage
• See through the trees
Tools to evaluate land applications

- Water Quality Monitoring
- Windshield Surveys
- Aerial Surveys
- "Nutrient Tracker"
- Recordkeeping Compliance
- Investigative Sampling

- Collect manure application data
- Evaluate characteristics of application
  - Timing
  - Placement
  - Source
  - Rate
Tools to evaluate land applications

- Water Quality Monitoring
- Windshield Surveys
- Aerial Surveys
- “Nutrient Tracker”
- Recordkeeping Compliance
- Investigative Sampling

Risk Factor (All data)

- Consider risk factors
- Prioritize follow-up based on risk
Tools to evaluate land applications

- Water Quality Monitoring
- Windshield Surveys
- Aerial Surveys
- “Nutrient Tracker”
- Recordkeeping Compliance
- Investigative Sampling

- Incomplete or unclear records may indicate poor agronomy
- Cross check producer records with what we see on the ground.
Tools to evaluate land applications

- Water Quality Monitoring
- Windshield Surveys
- Aerial Surveys
- “Nutrient Tracker”
- Recordkeeping Compliance
- Investigative Sampling

When a surface water discharge is suspected, we collect samples for fecal coliform analysis.
Challenges

- Resource intensive approach
- Different rulebooks
- Equitable enforcement across the state
Successes

- Data!
- Improving practices!
- Deeper understanding of conditions that cause discharge
- Adaptive approach
Questions?

Kyrre Flege
kflege@agr.wa.gov