Oregon Drinking Water Standards, Pesticides, & Public Health
Oregon Public Health is responsible for the health and safety of all Oregonians.
Related OHA Statutory Obligations

Safe Drinking Water Act (SDWA)

Special Studies on Human Health
Health Impacts of Pesticide Exposure

**ACUTE HEALTH EFFECTS**
Oregon Cases 2002-2007

<table>
<thead>
<tr>
<th>Condition</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory</td>
<td>249</td>
<td>36.1</td>
</tr>
<tr>
<td>Ocular</td>
<td>248</td>
<td>36.0</td>
</tr>
<tr>
<td>Neurological</td>
<td>226</td>
<td>32.8</td>
</tr>
<tr>
<td>Gastrointestinal</td>
<td>220</td>
<td>32.0</td>
</tr>
<tr>
<td>Dermal</td>
<td>177</td>
<td>25.7</td>
</tr>
<tr>
<td>Cardiac</td>
<td>28</td>
<td>4.1</td>
</tr>
<tr>
<td>Renal</td>
<td>2</td>
<td>0.3</td>
</tr>
<tr>
<td>Other</td>
<td>74</td>
<td>10.7</td>
</tr>
</tbody>
</table>

(fever, fatigue, etc)

**CHRONIC IMPACTS**

The Agricultural Health Study Increases in
- headaches
- fatigue
- insomnia
- dizziness
- hand tremors
- other neurological symptoms.
Enacted in 1981, the statute includes Oregon Revised Statute (ORS) 448.119 to 448.285; 454.235; and 454.255. The purpose of the act is (in part) to:

- Ensure that all Oregonians have safe drinking water
- Provide a simple and effective regulatory program for drinking water systems; and
- Provide a means to improve inadequate drinking water systems
All waters in Oregon are designated for beneficial uses: aquatic life and public health.

DEQ implements the Clean Water Act (CWA) water quality standards; applying to all waters of the state (including above intakes).

OHA implements the Safe Drinking Water Act (SDWA) which regulates treated drinking water quality.
Oregon’s source areas for public water systems
Human ingestion of pesticides at very low levels (ppm and ppb) in drinking water over many years (chronic exposure) can result in numerous adverse health effects.

The primary sources of pesticides in water bodies are run-off and aerial deposition.

~57% of Oregonians served by public drinking water systems receive drinking water from watersheds that include privately managed forests.
Important considerations regarding drinking water risks

- **Treatment technology limitations**
  - “Standard” conventional treatment systems are not designed to remove chemical contaminants, including pesticides
  - Even the most advanced technology cannot remove all contaminants

- **Required monitoring does not capture all risks**
  - Typical public systems monitor only twice every three years for pesticides
  - Timing of sampling may not capture short term events (acute exposures)
  - Not all pesticides in use are sampled
  - Sampling for chemicals is very expensive

- **Unknown synergistic public health effects**
  - Toxicological data not available for most emerging contaminants
# OHA Drinking Water Data

## TOP CHEMICALS DETECTED
- Nitrates (>3 mg/L)
- Arsenic
- Tetrachloroethylene
- Phthalates
- Xylene, Toluene
- Other VOCs
  - TCE, 1,1-DCE, Cis-1,2-DCE, 1,1,1-TCA
- SOCs/Pesticides
  - 53 PWS -- 1,200,000 population served

## TOP 5 HIGHEST POTENTIAL RISKS
- Harvested Forests
- Crops – Irrigated
- Grazing Animals (>5 large /acre)
- Above Ground Fuel Tanks
- Highways – Stream Crossings
Forestry pesticides

- McKenzie basin 112,350 lbs/year (EWEB, 2006)
  - 10 primary pesticides used in private forests
  - Drinking water monitoring: 2 of those are tested @ 2 samples every 3 years
- Statewide data: 9 primary pesticides (ODF, 2008)
  - Drinking water monitoring for 3 of those

Agricultural pesticides

- Willamette basin 4,024,596 lbs/year (OSU, 1997)
  - Top 5 found in groundwater: diuron, atrazine, MCPA, maneb, diclofop-methyl (USGS, 1997)
  - Drinking water monitoring: atrazine only @1 sample every 3 years
Raw source water contaminants:

- 63 pesticides
- 16 fuel compounds - BTEX
- 8 personal care products
- 9 solvents

Treated drinking water:

- 15 pesticides
- 8 fuel compounds - BTEX
- 4 personal care products
- 3 solvents
What’s being done currently to address the known drinking water contaminants?

- **2011-13 OHA/DEQ Strategic Plan includes:**
  - Strengthening the science
    - Continue data collection to assess risks
  - Prioritizing exposures for risk reduction
  - Working to reduce input from known sources
    - Ex: pesticide collection events

- **EPA new use of existing authorities to protect drinking water (ex. FIFRA and TSCA) and development of additional health advisories**
  - EPA Human Health Benchmarks:
For More Information...

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