

THE NATURAL GAS REFORM CAMPAIGN

Deborah Nardone, Director
State College, PA



Sierra Club Natural Gas Reform Campaign

The Sierra Club won't stand for reckless drilling

- Local and state regulatory reform
- Federal reform and closure of exemptions
 - Protection of sensitive areas



SIERRA
CLUB
FOUNDED 1892

Department of Environmental Protection Bureau of Oil and Gas Management Marcellus Shale Formation



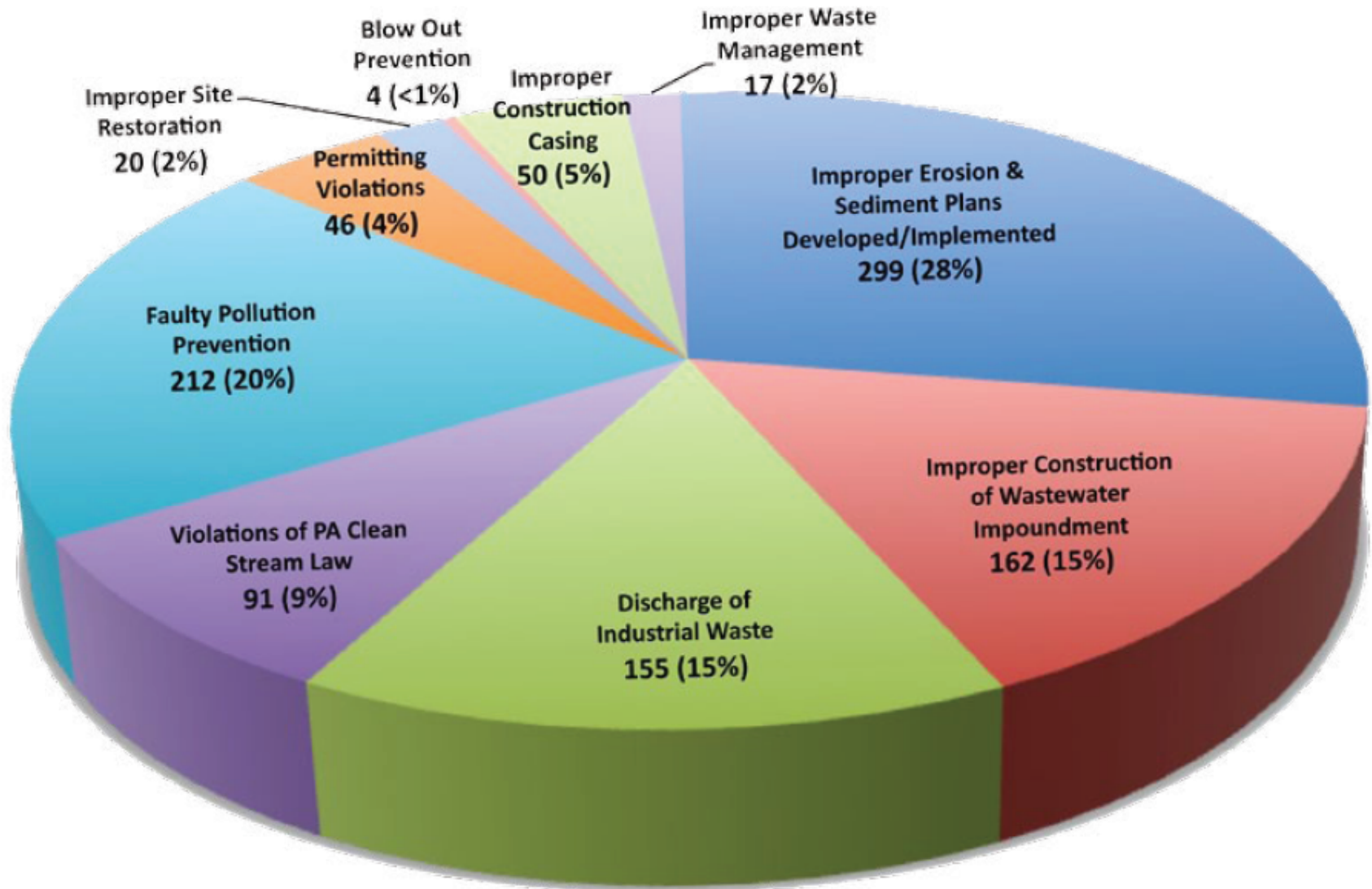
64% of PA is underlain by Marcellus Shale
2010 1,368 Marcellus wells drilled
1544 violations cited by DEP in 2010

Potential Areas for Problems

- ❑ **Leaks in casing or pipe**
- ❑ **Leaks in the pits and from liners in ponds**
- ❑ **Spills from transportation of water to and from well site**
- ❑ **Storm water overflow from pits and ponds**
- ❑ **Site erosion into streams and wetlands**
- ❑ **Fuel spills from operations**

Marcellus Shale Drillers in Pennsylvania Amass 1614 Violations since 2008

1056 Identified as Most Likely to Harm the Environment



Key Environmental Issues

- **Water Withdrawals**
- **Waste Water Treatment and Disposal**
- **Ground and Surface Drinking Water Contamination**
- **Protecting our HQ and EV streams**
- **Forest fragmentation**
- **Roads, Pipelines and Compressors**
- **Long Term Consequences / cumulative impacts**
- **Air quality impacts**
- **Lack of monitoring, enforcement and inspection**
- **Federal exemptions**

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Water Withdrawals

- 2-5 million gallons consumed each well frac
- Hydrologic regime may be disrupted
- Best protective low flow for aquatic species and habitat?
- Inconsistent water withdrawal regs across Pennsylvania
- Assessment prior to withdrawal permit?
- Inconsistent tracking and enforcement

Wastewater

□ **Frac Fluids**

- **Contains chemicals such as:** demulsifiers, corrosion inhibitors, friction reducers, clay stabilizers, scale inhibitors, biocides, breaker aids, mutual solvents, alcohols, surfactants, anti-foam agents, defoamers, viscosity stabilizers, iron control agents, diverters, emulsifiers, foamers, oxygen scavengers, pH control agents, and buffers.

□ **Produced water or brine from shale**

- **Contains high total dissolved solids, chlorides, sulfates, heavy metals, and some radioactive material**

Wastewater Treatment

Currently, no easy technological method to treat volume of wastewater from fracked wells

- DEP allows municipal sewage treatment plants to accept wastewater untreated**
- DEP states that new Total Dissolved Solids standards will be implemented in two years**

Some companies state that they can recycle almost all frac water

Ground & Drinking Water Contamination

- Water contamination reported in several PA counties (chemical contaminants and methane gas)
- Poor gas well casings, leaking pits, spills



Special Protection Watersheds

- Fast tracked permitting
- Drilling in EV and HQ watersheds, WTS
- Potential degradation of the best streams and rivers in the State
- Cumulative Impacts



Earth Disturbance and Stormwater

- Fast-track permitting and no onsite review prior to issuance
- Post-construction storm water and anti-deg?
- Stripped permit review from CCD's
- GP-1 < 5 acres



Inspection, Enforcement and Monitoring

- ❑ Lack of enforcement & inspection
- ❑ No baseline data in some watersheds
- ❑ No required monitoring prior, during and after



Federal Exemptions

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- Resource Conservation and Recovery Act (RCRA)
- Safe Drinking Water Act
- Clean Water Act
- Clean Air Act
- National Environmental Policy Act (NEPA)
- Toxic Release Inventory under the Emergency Planning and Community Right-to-Know Act

Questions?



**Deb Nardone, Director
Natural Gas Reform Campaign
deb.nardone@sierraclub.org
(814) 308-9767**