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# Wyoming's Integrated Oil & Gas Management Approach

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EPA/States Oil and Gas Emissions Summit

November 4, 2014

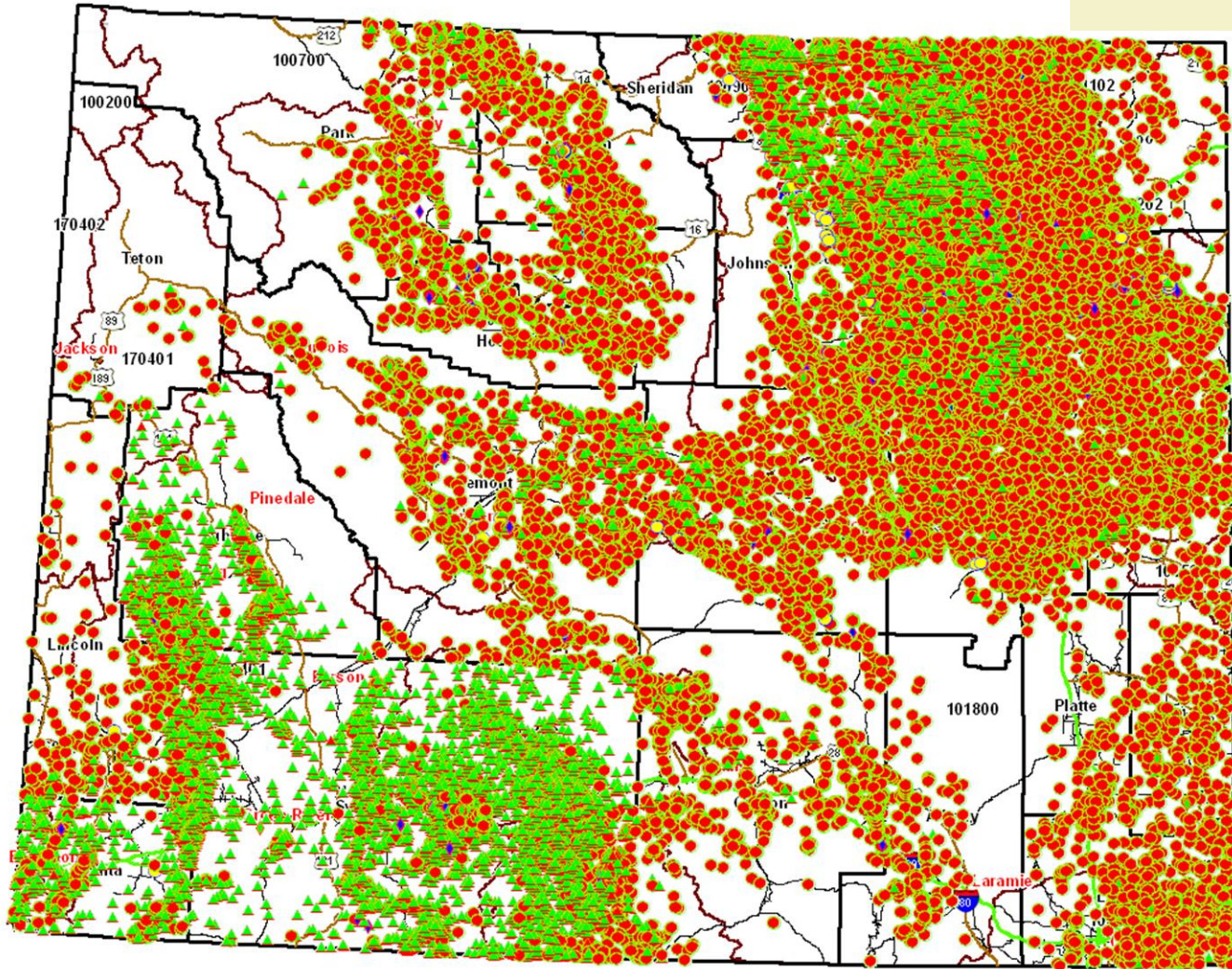
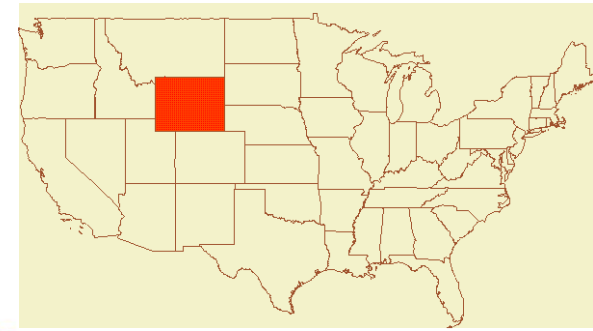
Darla Potter

Wyoming DEQ – Air Quality Division

Air Quality Resource Management

Program Manager

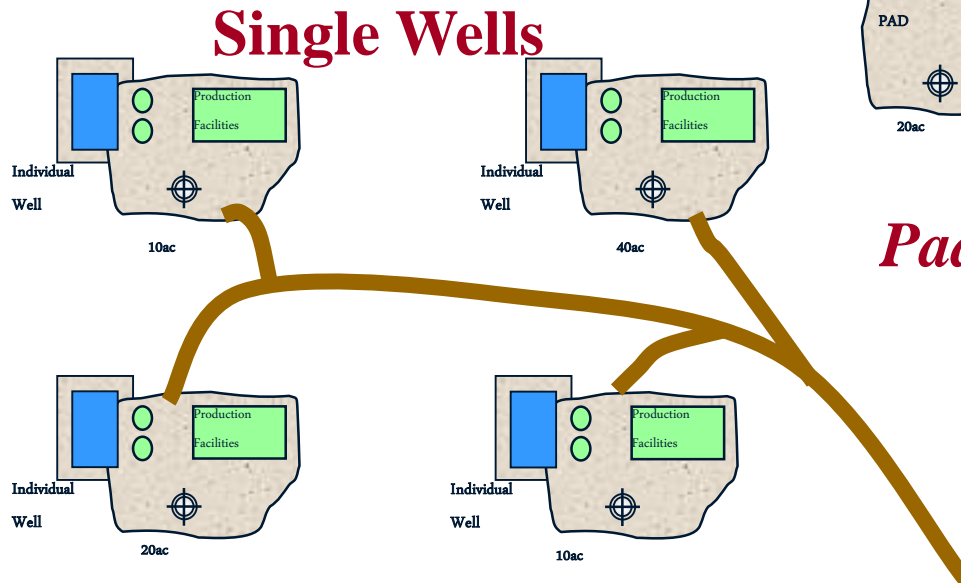
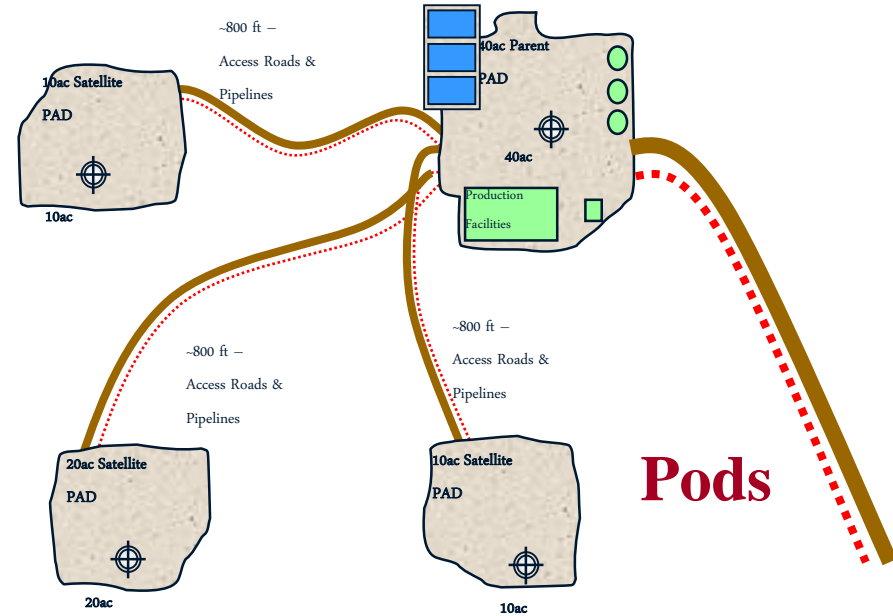
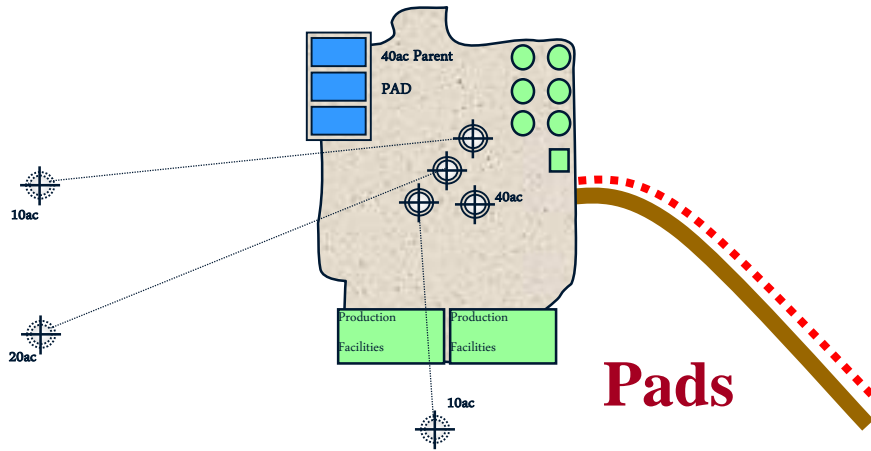
# Producing Well Sites



# 1995 - 2013 Gas and Oil Production



# Development Options

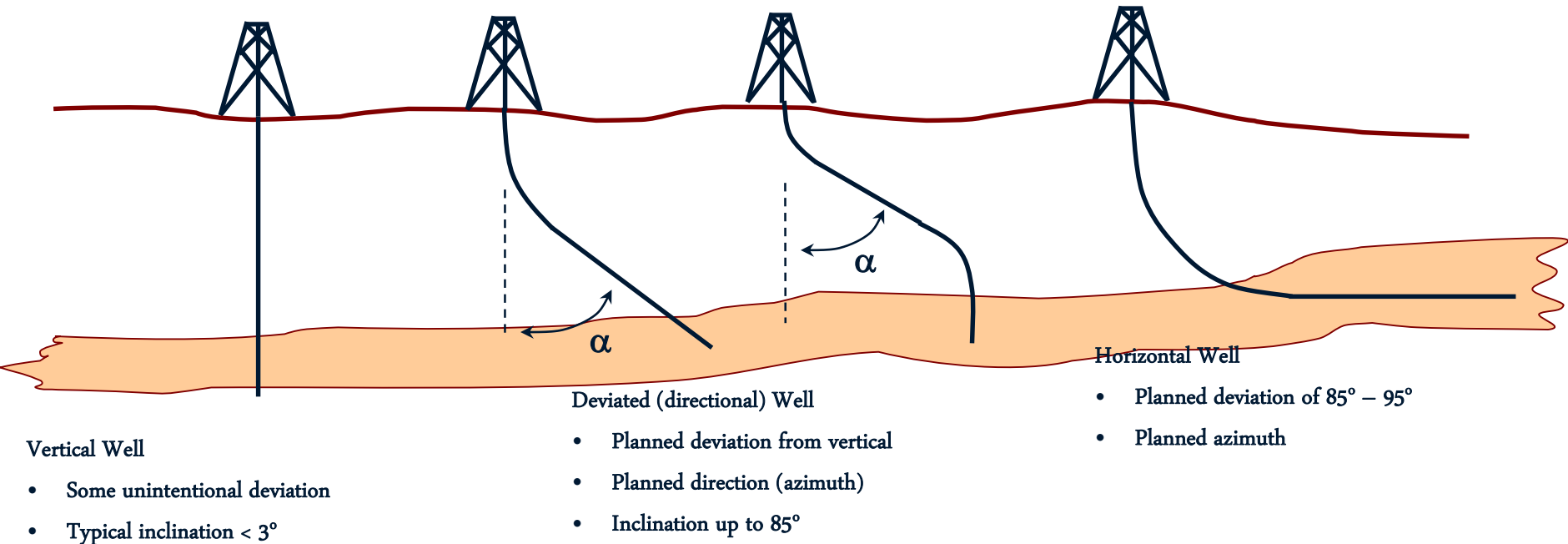


*Pads; Pods; or Single Wells...*

# Directional Drilling

## At the basic level:

- A deviated (or directional) well is a well that has been intentionally deviated from vertical. The deviation (or inclination) is measured from the vertical.
- A horizontal well is a deviated well with an inclination at or near  $90^\circ$





# Integrated “Toolbox”

Regulations

Guidance

NEPA  
Coordination

Permitting

Monitoring

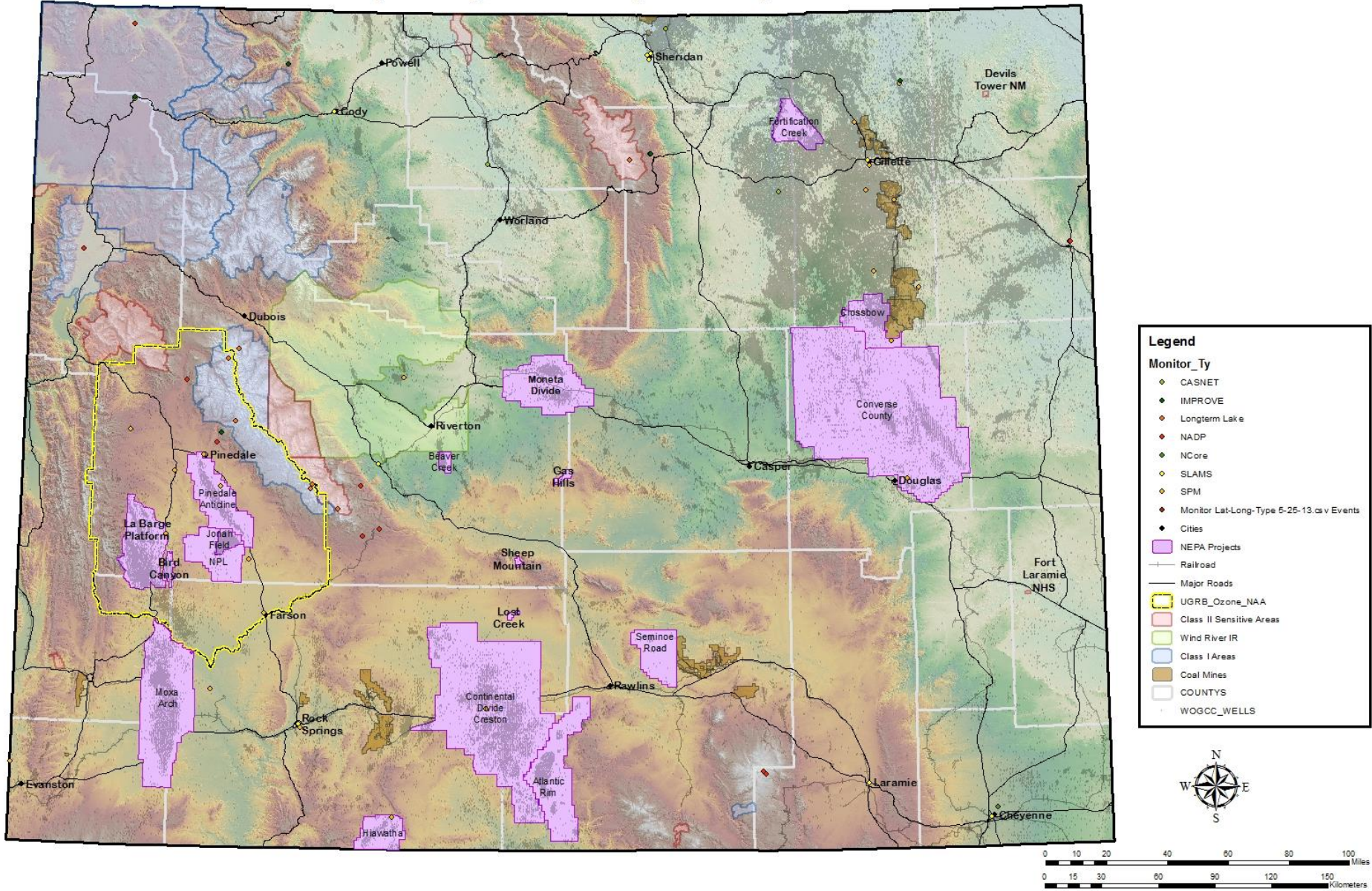
Modeling

Compliance



Inventory

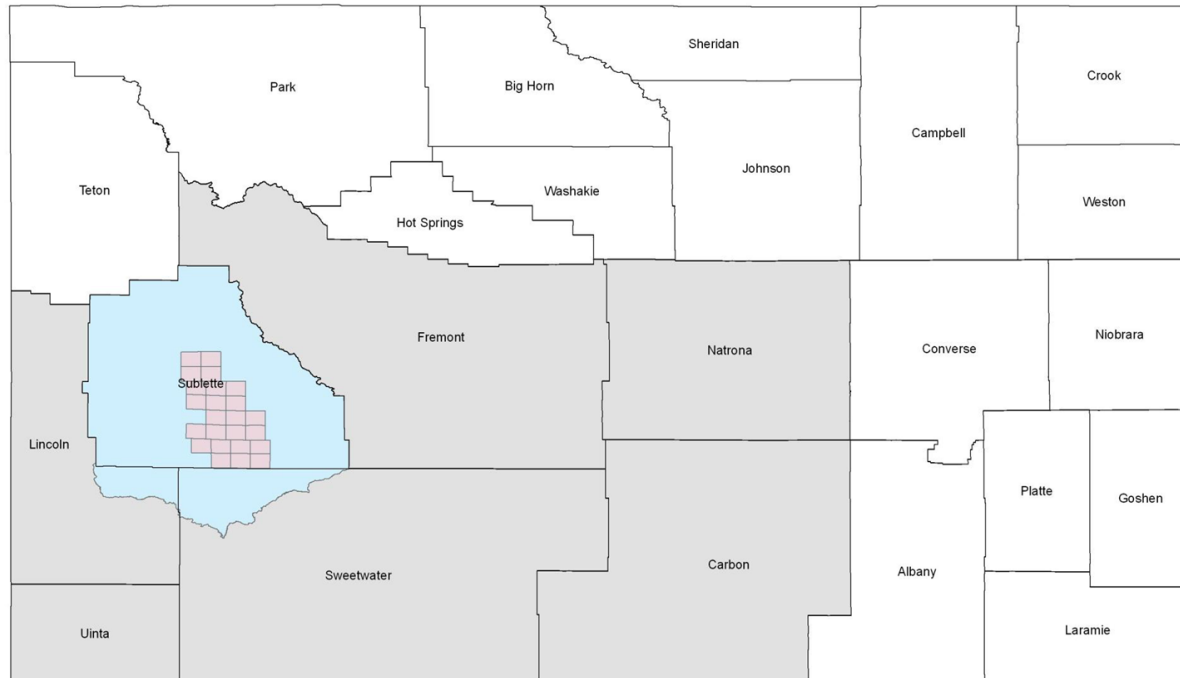
# Wyoming NEPA Projects Map





WYOMING DEPARTMENT OF  
ENVIRONMENTAL  
QUALITY

# O&G Production Facilities Permitting Guidance



## Legend

JPAD/NPL UGRB CDA Statewide

- ◆ June 1997
- ◆ November 1998 rev
- ◆ January 2000 rev
- ◆ August 2001 rev
- ◆ July 2004 rev
- ◆ August 2007 rev
- ◆ March 2010 rev
- ◆ September 2013 rev



# O&G Emissions Inventory Development

- ◆ Inventories began in 2004
  - Annual, Production Facilities
  - Jonah and Pinedale Anticline Development area
  - 8 Emission Sources, 7 Pollutants
- ◆ Winter Inventories began in 2007
  - Upper Green River Basin
- ◆ Inventory evolution circa 2008
  - Annual, Production Facilities & Midstream Facilities
  - Upper Green River Basin & Statewide
  - 14 Emission Sources, 25 Pollutants

# O&G Emissions Inventory Level of Effort

- ◆ O&G Production and Midstream Facilities
  - Annual Inventories Collected
    - 1,305 from 2004 – 2013
    - Includes 2008 & 2011 Statewide Inventories
  - UGRB Winter Inventories Collected
    - 635 from 2007 – 2014
  - Each inventory can contain information for one to several thousand individual production facilities

# O&G Emissions Inventory Data Management

- ◆ OGER (Oil & Gas Emissions Reporting)  
Data System
  - Access to data from Wyoming Oil & Gas Conservation Commission
  - Store emissions data
  - Nonpoint data flow to EPA EIS
- ◆ Query Wizard (<http://qrywiz.wyo.gov/>)
  - Quality assured actual emissions inventory data
  - Public access without formal information request

# www.WyVisNet.com

Wyoming Department of Environmental Quality

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Wyoming Air Quality Monitoring Network

Live Sites Data Image Gallery Ambient Standards Glossary Contact Us

### Air Quality Data and Image Monitor Locations

Map Satellite

Visit our new **Lovell Monitoring Site**

**VIEW 2014 NETWORK PLAN**

1 Hr O <sub>3</sub> (ppb)	8-Hr Avg O <sub>3</sub> (ppb)	1-Hr NO <sub>2</sub> (ppb)	24-Hr Avg PM <sub>10</sub> (µg/m <sup>3</sup> )	24-Hr Avg PM <sub>2.5</sub> (µg/m <sup>3</sup> )	1-Hr Wind Speed (mph)
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Choose a monitoring site



# Studies

- ◆ Upper Green Winter Ozone Study
  - Monitoring to aid in the understanding of ozone formation
- ◆ EPA Office of Research & Development
  - Mobile monitoring studies and diffusion tube monitoring studies
- ◆ Extended Hydrocarbon Analyses
  - Generate emissions factor groups by similar field and formation
- ◆ Produced Water Tank Study
  - Field sampling to research and quantify emissions
- ◆ Emissions Inventory Study
  - Field sampling to assess combustor control effectiveness and quantify emissions from fugitive sources
- ◆ Produced Water Pond Study
  - Field sampling to research and quantify emissions



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# Websites/Links/Contact

- ◆ Inventory Web Page: <http://deq.state.wy.us/aqd/ei.asp>
- ◆ Actual Emissions Web Page:  
<http://deq.state.wy.us/aqd/Actual%20Emissions.asp>
- ◆ Oil & Gas Production Facilities Guidance Document (September 2013):  
[http://deq.state.wy.us/aqd/Resources-New%20Source%20Review/Guidance%20Documents/September%202013%20FINAL\\_Oil%20and%20Gas%20Revision\\_UGRB.pdf](http://deq.state.wy.us/aqd/Resources-New%20Source%20Review/Guidance%20Documents/September%202013%20FINAL_Oil%20and%20Gas%20Revision_UGRB.pdf)
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