OSC 12
Ohio Safety Congress & Expo

WELL AT HOME. SAFE AT WORK.

541 Partnering For Safety in The Oil & Gas Industry

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Wednesday, March 28, 8:30 to 9:30 a.m.

Ohio | Bureau of Workers' Compensation

Ohio Department of Natural Resources, Division of Oil and Gas Resources Management

Ohio Safety Congress
3/28/2012

On Behalf of ODNR

Director: James Zehringer

Assistant Director: Fred Shimp

Chief: Richard Simmers

Presenter: Brent Bear

Today's Presentation

- **Brief history of oil and natural gas development in Ohio**
- **Regulatory authority**
- **Division's responsibilities**
- **Oil and gas inspector activity**
- **Online emergency response oil and gas well locator program**

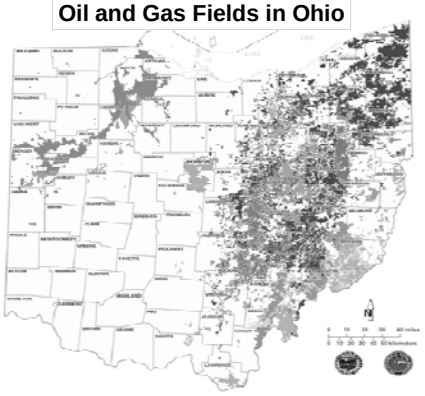
Ohio's Historical Drilling Activity

Year	Wells Drilled
1895	6,147
1930	2,134
1980-82	5,167 (avg)
2008	1,087
2010	431
2011	420 + -

Ohio's Historical Drilling Activity

COUNTY	EXISTING WELLS	Total WELLS DRILLED
Summit	1131	3572
Cuyahoga	345	3279
Geauga	1203	2153
Medina	1307	6517
Portage	2324	4430
Stark	2998	6457
Wayne	1966	6864

Oil and Gas Fields in Ohio



Legal Authority For The Regulation of Oil and Natural Gas Development

- Ohio Revised Code 1509
- Ohio Administrative Code 1501
- ORC 1509 effective in 1965: Morrow County Oil-Boom
- From 1893–1965 there were minimal regulations in place, primarily self enforced with focus on underground miner safety in eastern Ohio

Basis for Oil & Gas Laws and Rules

- Protection of the environment
- Conservation
- Public health & safety

Basis for Oil & Gas Laws and Rules

Conservation Based Laws & Rules

- For the effective development of Ohio's oil and natural gas resources to prevent waste

- Maximize Recoverable Resources -

Basis for Oil & Gas Laws and Rules

Public Health/Safety and Environmental Protection

Accomplished Through:
- Laws
- Rules
- Policies and Best Management practices (BMP's)

Provide protection:
- Land surface
- Surface and ground water
- Public health and safety

Senate Bill 165

- Effective on June 30, 2010
- Strengthened enforcement
- Provided additional funding for operations and Orphan Well Plugging Program
- Increased insurance requirements

Senate Bill 165 (Cont)

Required additional notifications:

- **Commencement of drilling**
- **Placement of conductor, surface, and production casings**
- **Well stimulation**

With our well construction notification requirements, proper *well construction*, *well control* and *fluid control*, impacts to the environment and public are prevented.

ODNR Organization Change

The Oil & Gas program became a stand alone division Oct. 1, 2011

- **Acknowledgement of the importance for a direct focus on oil and natural gas development**

The Division's Responsibilities

We are the state agency that is responsible for the regulation of Ohio's oil and gas industry activity:

- **Permitting**
- **Location spacing**
- **Drilling operations**
- **Production operations**
- **Site restoration**
- **Disposal of wastes from those wells**

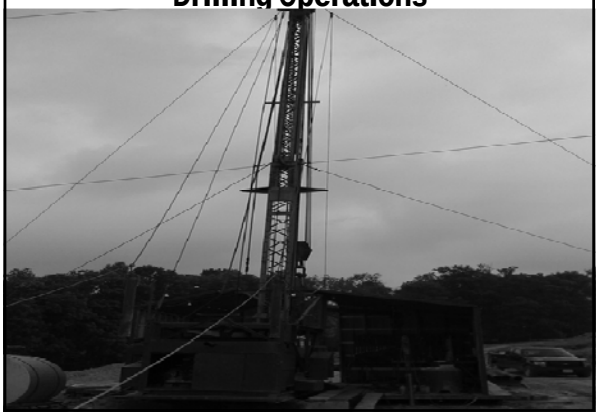
What we don't do…

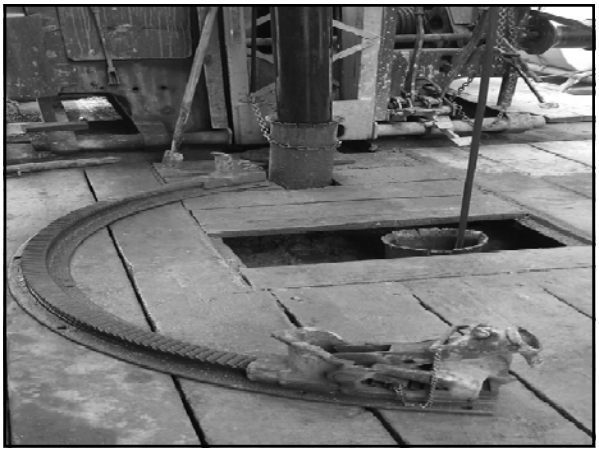
- **Regulation of land right's issues (i.e. oil and gas lease)**
- **Commercial Natural Gas Sales Lines**
- **Safety inspection of industries oil and gas equipment and personnel**

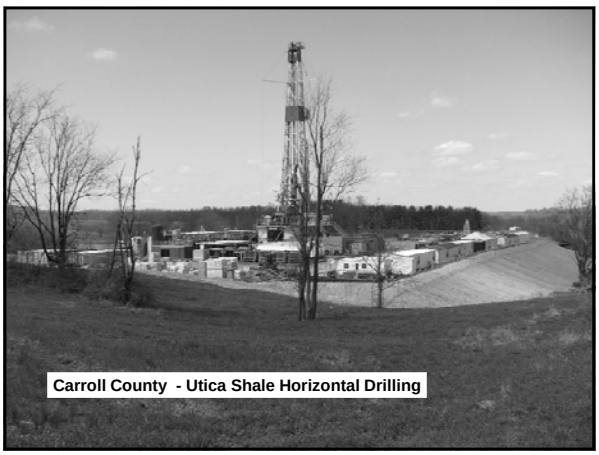
Oil and Gas Inspector Activity

- **Witness the cementing of casing strings and well stimulation activity**
- **Evaluate restoration projects**
- **Oversee the plugging and abandonment of all oil and gas wells**
- **Response to spills and tank fires**
- **Inspect oil and gas producing operations and Class II injection wells**
- **Investigate complaints alleging violations of ORC 1509 and OAC 1501**

Drilling Operations







Carroll County - Utica Shale Horizontal Drilling

Erosion/Sediment Controls

Spill Prevention Control

Difference Between a Traditional and Horizontal Well

Everything is bigger – It takes longer

- **Well site 3-5 acres vs. 1-2 acres**
- **Shale rig is much larger**
- **Associated equipment – more of it**
- **One month/well to drill vs. one week**
- **6 or more wells can be drilled per pad**
- **$5-7+ million vs. $400,000**

Producing Operations

Harrison County – First Productive Utica Shale Well

Ohio Orphan Well Program

- **Established in 1977 to plug improperly abandoned oil and gas wells**
- **Proper plugging of orphan wells is necessary to protect:**
  1. **Public health and safety**
  2. **Conserve natural resources**
  3. **Allows for efficient development of Ohio's oil and natural gas resources**

Ohio Orphan Well Program (Cont)

- **Ohio law requires the well owner to plug and abandon any well which cannot produce oil and/or gas in commercial quantities. The "owner" of a well is the person or company who has the right to drill or produce the oil and/or natural gas**
- **To Qualify:**
  1. **Well must be verified as oil and gas well**
  2. **No legal owner with money to plug**
  3. **State has forfeited owner's surety bond**
- **Identifying leaking abandoned oil and gas wells:**
  1. **Steel casing or wellhead**
  2. **Area where vegetation will not grow**
  3. **Odor (crude or natural gas)**
  4. **Water well contaminated by saltwater, crude oil, or natural gas (surging, odor at tap, bubbling)**

Ohio Orphan Well Program (Cont)

- **Funded by portion of state tax on oil and gas production**
- **Four separate programs used to plug wells:**
  1. **Emergency Services**
  2. **Traditional**
  3. **Landowner Grant**
  4. **Cost-Share Grants**
- **The Division awards a contract to the lowest qualified bidder to plug and abandon**

Orphan Well Plugging

Orphan Well Plugging (Cont)

Casing Burial and ID Plate Install

Completing the Restoration

Waste Disposal

- With the exploration of oil and natural gas, wastes are generated
  - Cuttings
  - Flowback fluids
  - Brine

Waste Disposal (cont.)

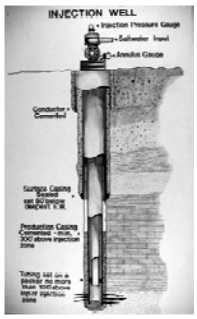
- The flowback fluid is:
  - Recycled and reused or,
  - Disposed of in a Class II Injection well
- Brine is disposed of in a Class II injection well or used for dust and ice control

Waste Disposal by Class II Injection Wells

- Primacy granted to ODNR by U.S. EPA in 1983
- Ohio's laws and rules are more stringent than federal law
- ~98% of all brine is injected back into depleted oil/gas and brine bearing formations

CLASS II SALTWATER INJECTION WELLS

- Requires three layers of steel casing to protect aquifers
- Surface casing set at least 50 feet below the USDW
- Protect up to 10,000 ppm TDS

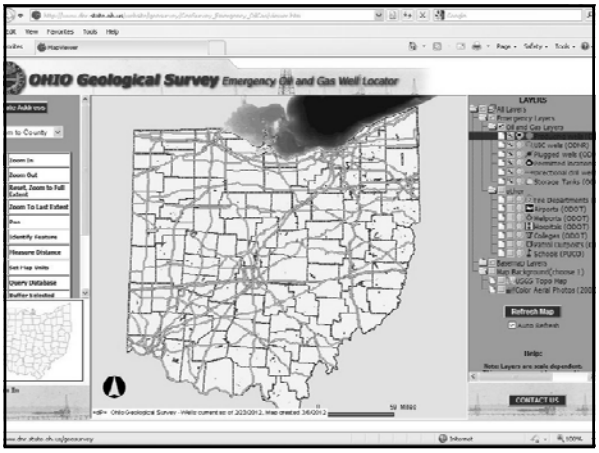


Cross Sectional View of Casing Strings

Emergency Oil and Gas Well Locator

In the event of an emergency:

- Allows you to enter a known address
- Retrieve facility and contact information
- Locate hospitals, roads and bodies of water



Resources

- ODNR, Division of Mineral Resources: www.ohiodnr.com/mineral
- ODNR, Division of Geological Survey: www.ohiodnr.com/geosurvey

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