

# PA Department of Environmental Protection

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kindly shared by:

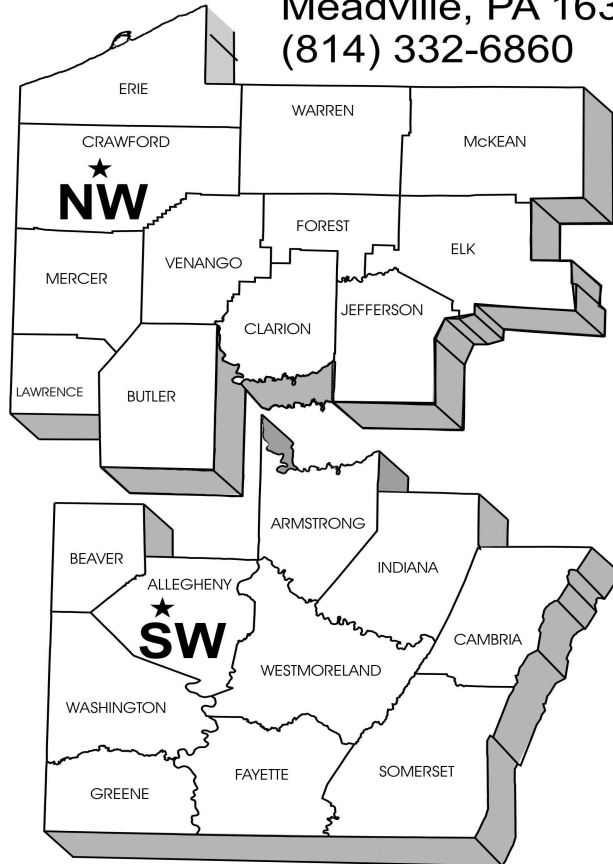
Jennifer Means- Regional Mgr. of the  
NCentral Office &

Craig Lobins- NW Regional Mgr. for the  
Oil & Gas Program

# Oil and Gas Regions

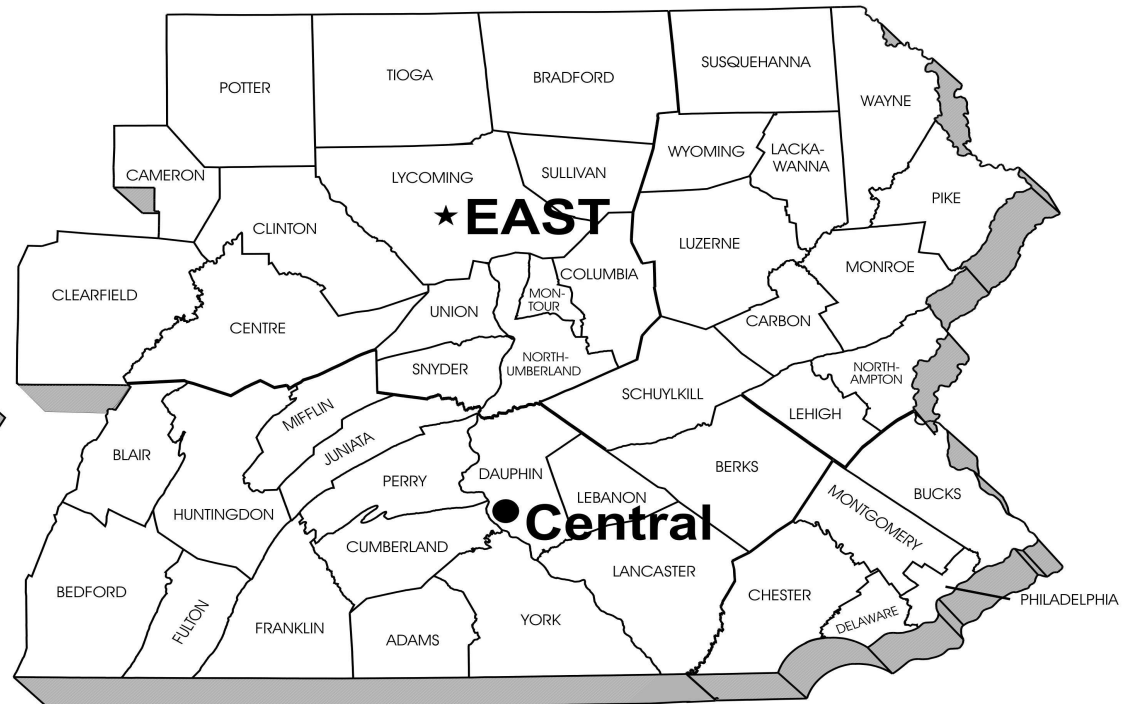
## ★ Northwest Region

230 Chestnut Street  
Meadville, PA 16335-3481  
(814) 332-6860



## ★ Eastern Region

208 West Third Street  
Williamsport, PA 17701-6448  
(570) 321-6550



## ★ Southwest Region

400 Waterfront Drive  
Pittsburgh, PA 15222-4745  
(412) 442-4024

## ● Central Office

Bureau of Oil and Gas Management  
PO Box 8765  
Harrisburg, PA 17105-8765  
(717) 772-2199

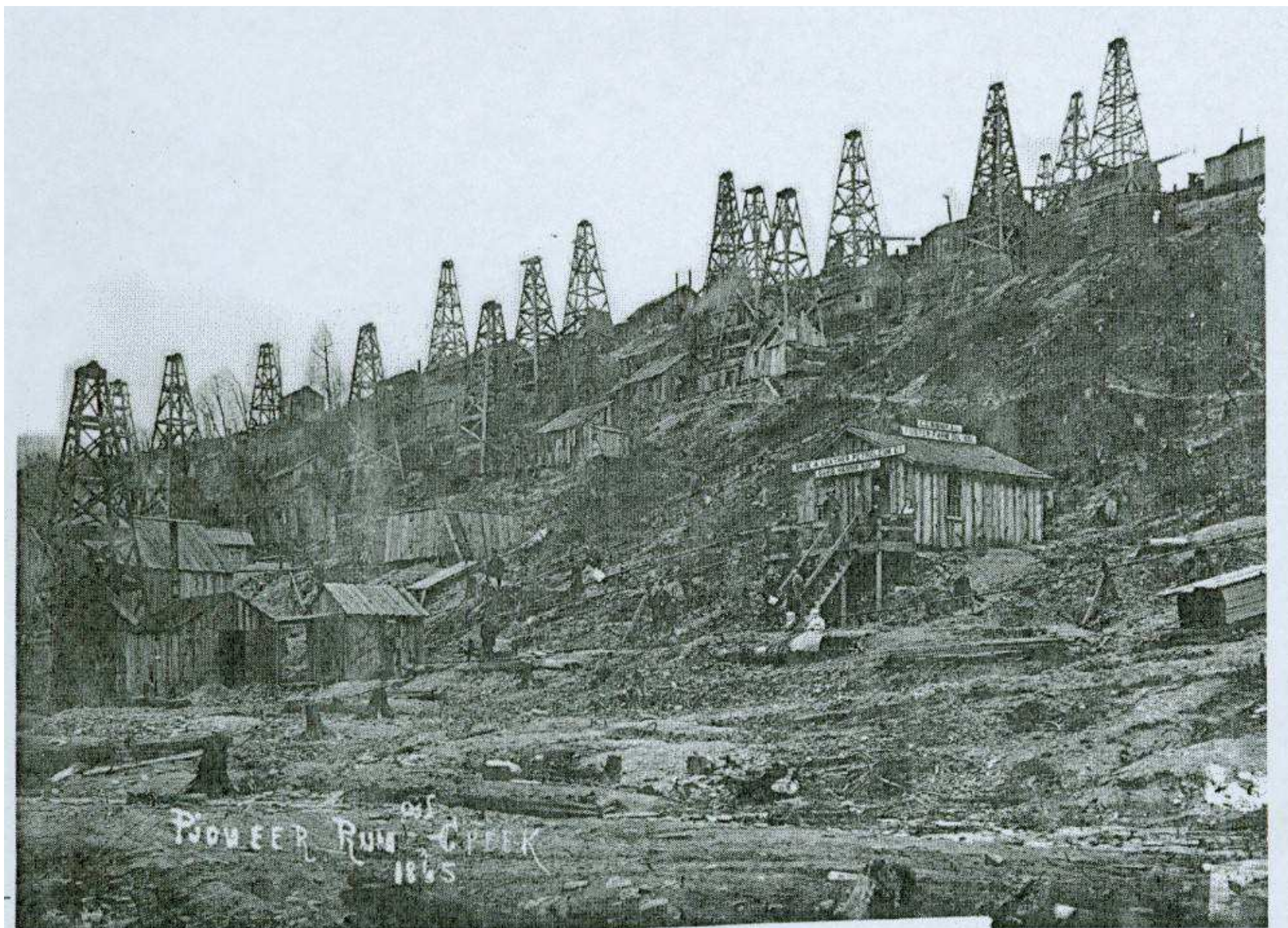
## **Pennsylvania's Oil and Gas Act (Act 223)**

### **Sec. 601.102. Declaration of purpose**

The purposes of this act are to:

- (1) Permit the optimal development of the oil and gas resources of Pennsylvania consistent with the protection of the health, safety, environment and property of the citizens of the Commonwealth.
- (2) Protect the safety of personnel and facilities employed in the exploration, development, storage and production of natural gas or oil or the mining of coal.
- (3) Protect the safety and property rights of persons residing in areas where such exploration, development, storage or production occurs.
- (4) Protect the natural resources, environmental rights and values secured by the Pennsylvania Constitution.





PIONEER RUN CREEK  
1865

# McKeesport Gas Boom 1919

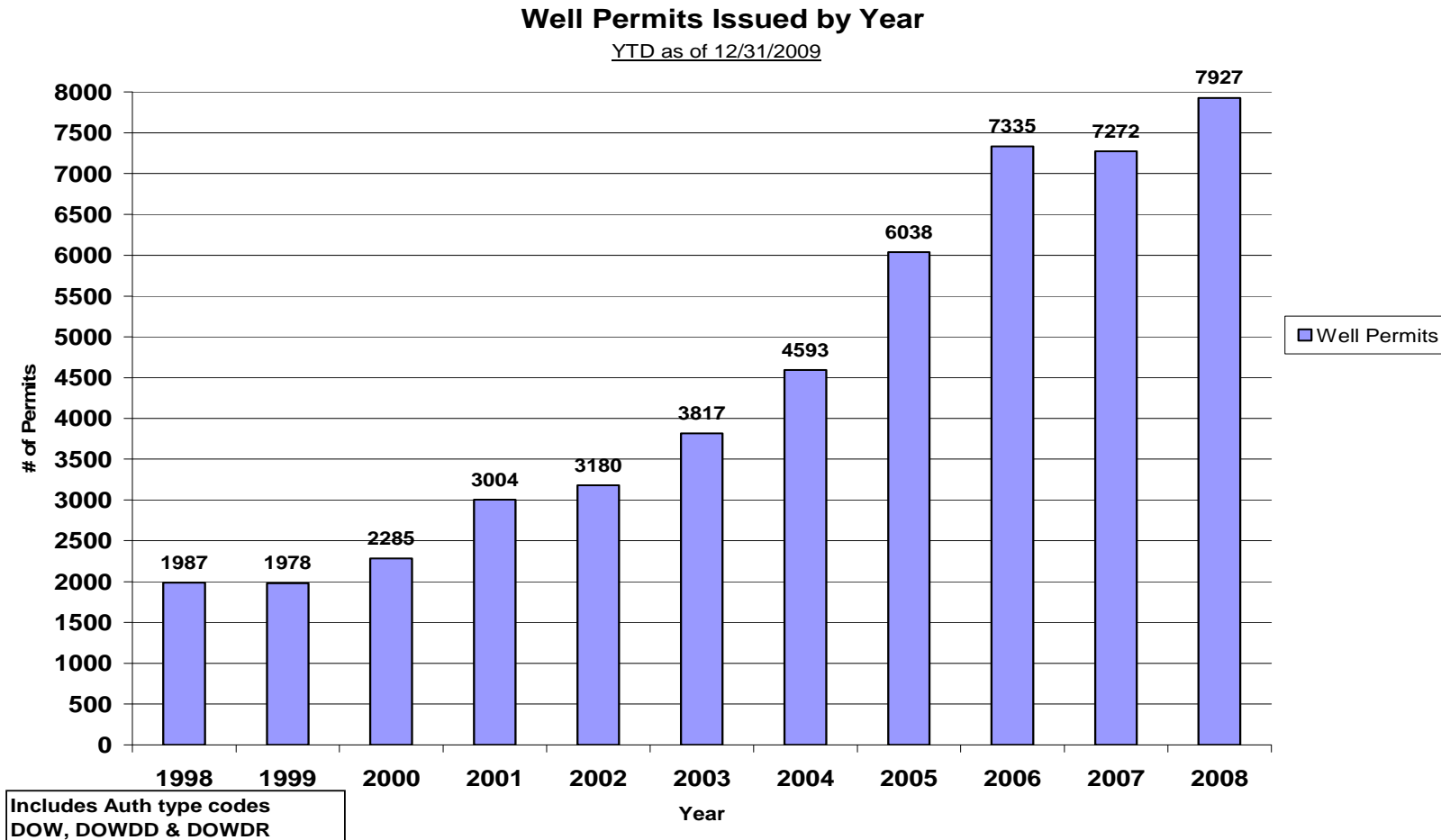


# Oil & Gas Wells in PA

- Total wells: 161,697
- Active: 112,642
- Plugged: 46,603
- Abandoned: 2,452
- Unknown: ??



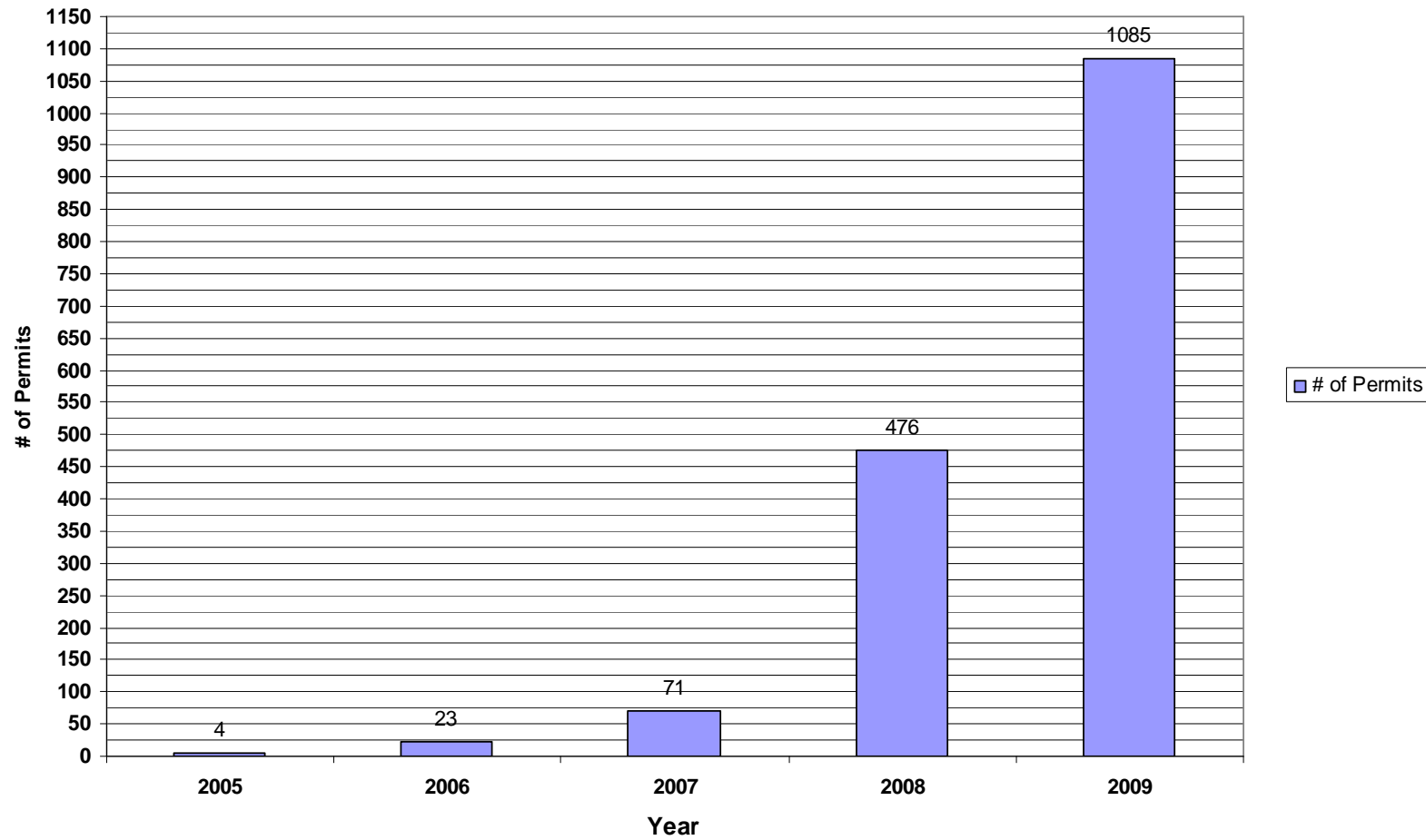
**Department of Environmental Protection  
Bureau of Oil and Gas Management  
Year End Workload Report  
(January 1, 2008 thru December 31, 2008)**



# Department of Environmental Protection

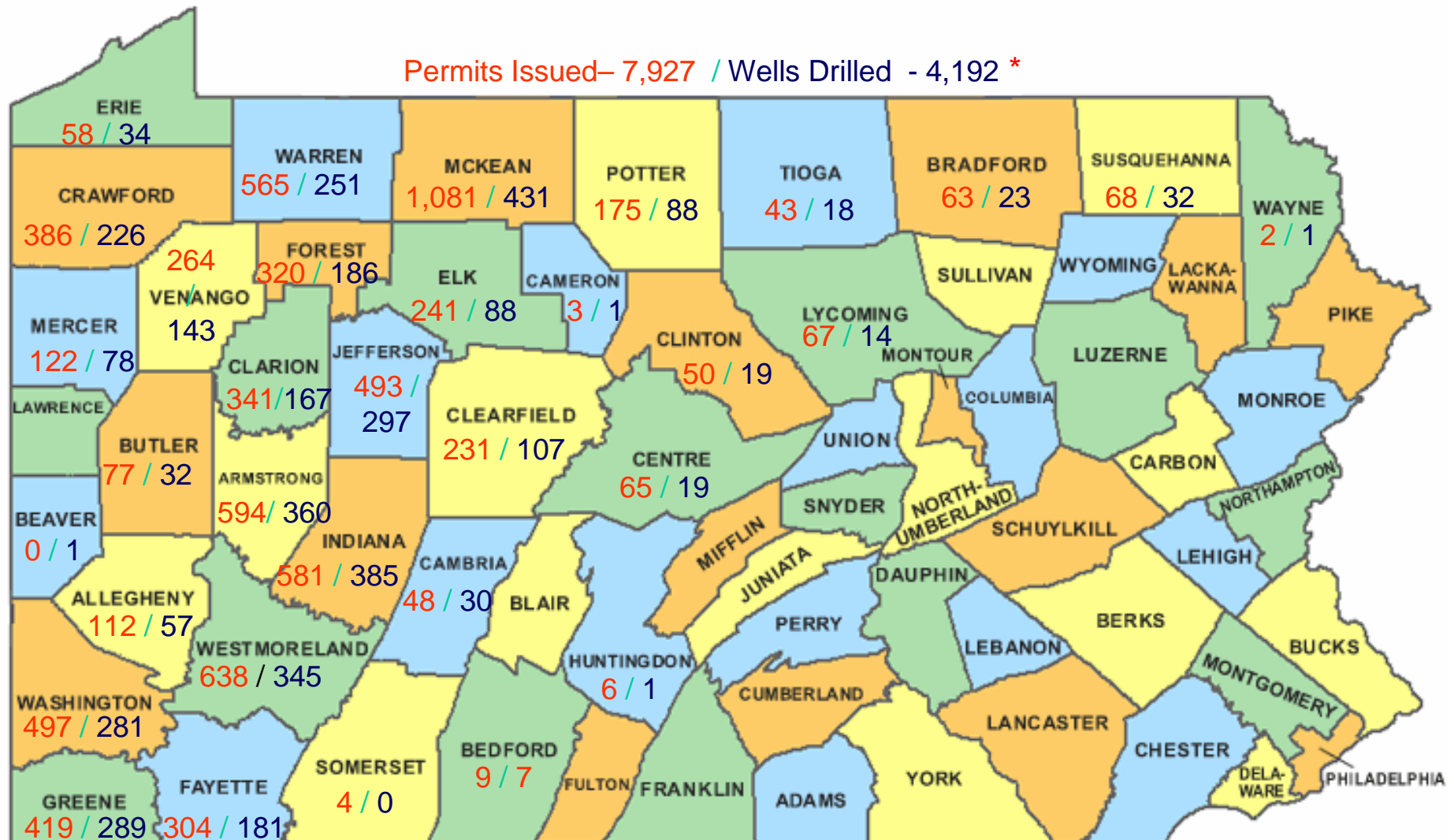
## Bureau of Oil & Gas Management

Marcellus Shale Permits  
January 1, 2009 thru August 21, 2009





Department of Environmental Protection  
Bureau of Oil and Gas Management  
All Permits Issued & Wells Drilled  
(January 1, 2008 thru December 31, 2008)



Copyright 2005 digital-topo-maps.com

\* Reported by Operators Week Ending January 9, 2009

Map Courtesy of [Digital-Topo-Maps.com](http://Digital-Topo-Maps.com)

# Permits, Etc.

To drill a Marcellus gas well in Pennsylvania the operator needs...

- **Drilling permit**
- **E & S plan or permit**
- **Water Management Plan**

Additional permits and/or approvals may be needed

- **SRBC or DRBC approval**
- **Chapter 105 encroachment permit**
- **Dam permit**
- **PennDOT or Township highway occupancy permit**

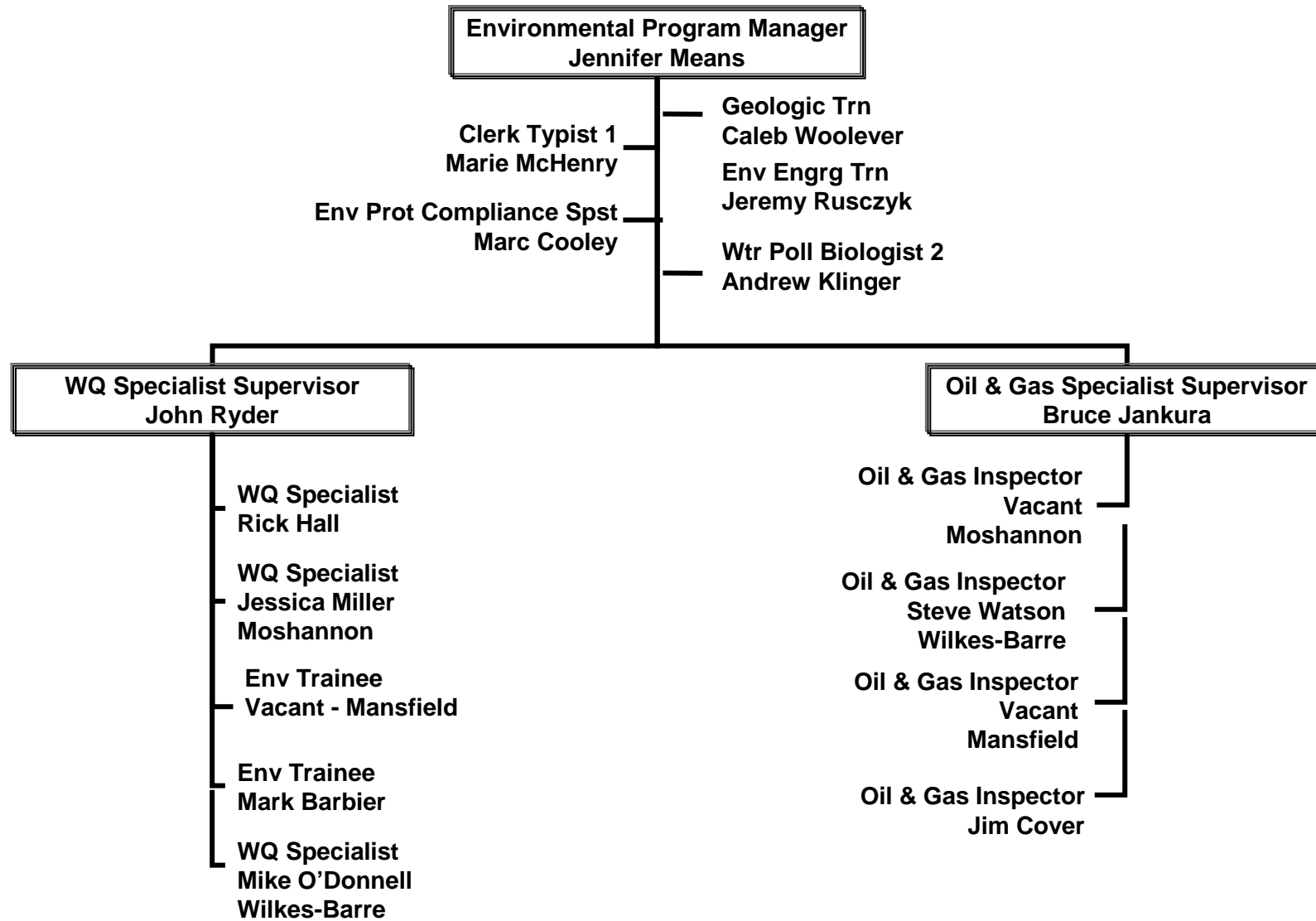
## **Distance Restrictions:**

- **100 ft. - stream, spring or body of water identified on the most current 7 ½ minute USGS topographic map.**
- **100 ft. must be maintained to any wetland greater than one acre in size.**
- **200 ft from an existing building or water well without written consent of the owner.**
- **The department may grant a waiver to the distance restriction.**

# Eastern Oil and Gas Region

Jennifer Means

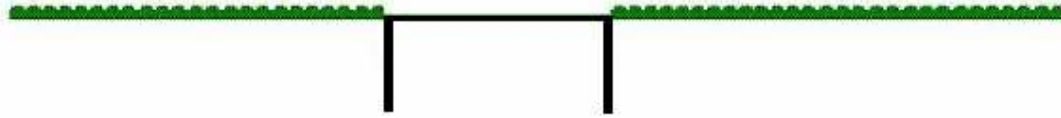
PA Department of Environmental  
Protection





# Gas Drilling & Water Resources

- Stormwater
  - Construction
  - Post-construction
- Stream/Wetland Encroachments
- Chemical storage
- Drilling
- Water use
- Wastewater disposal



Fresh

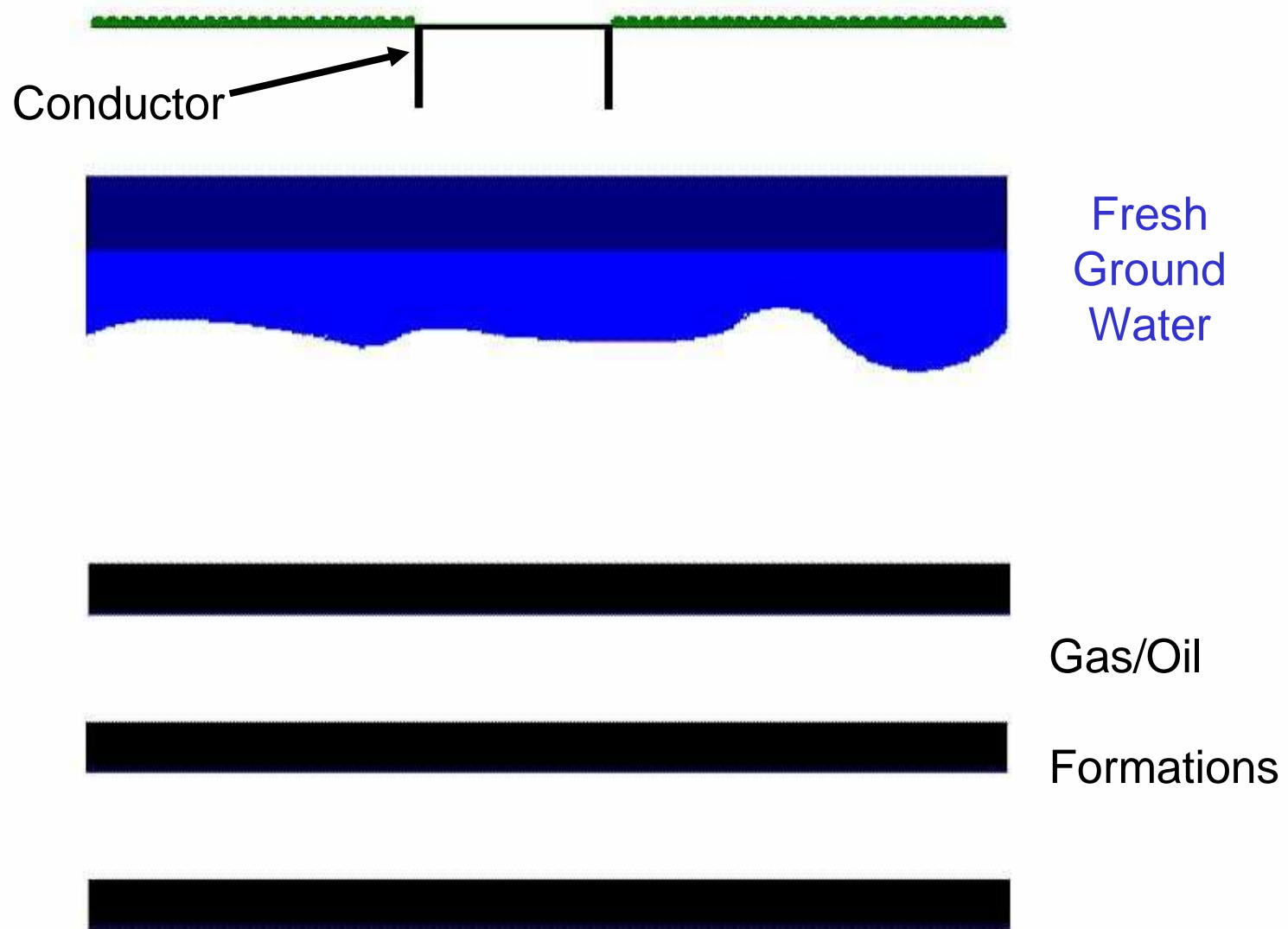
# How a Well is Drilled

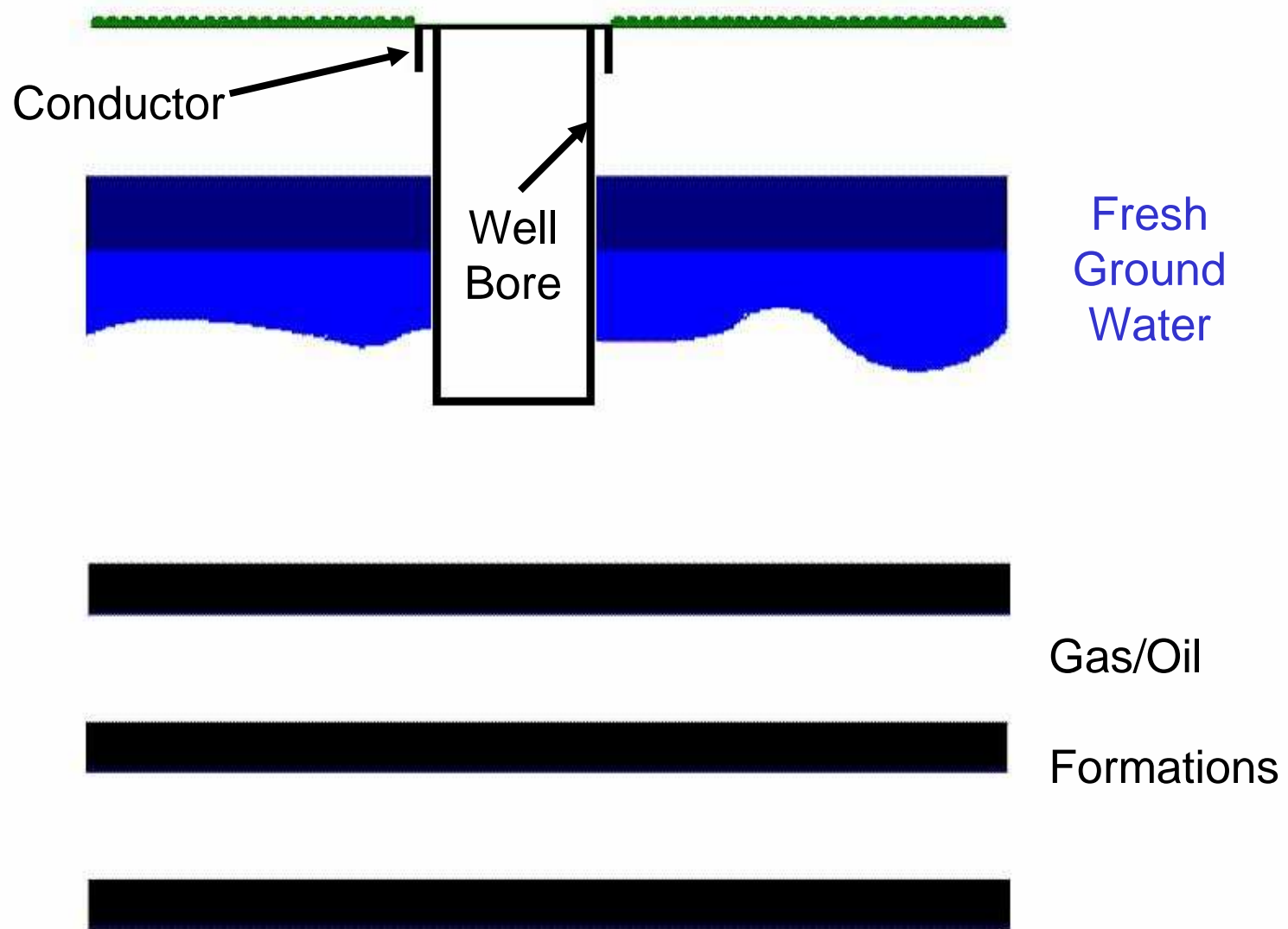
Gas/Oil

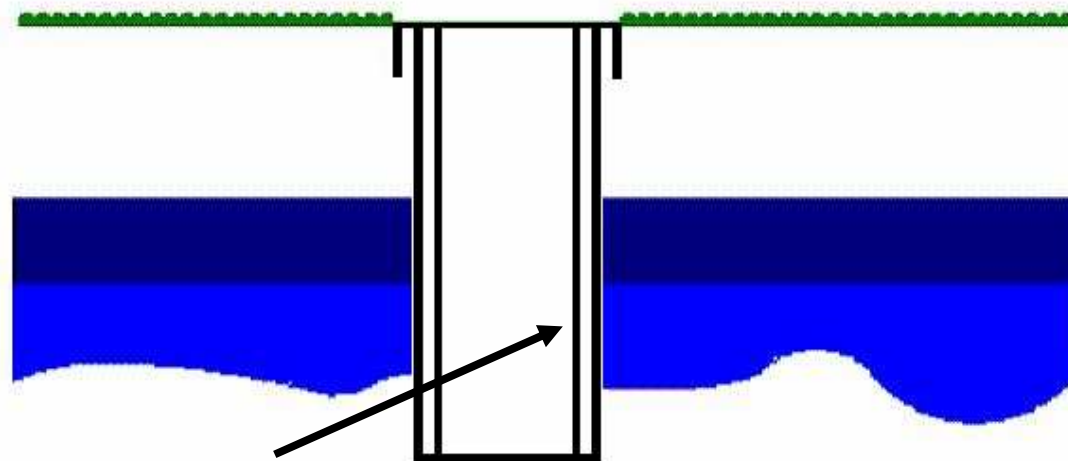


Formations







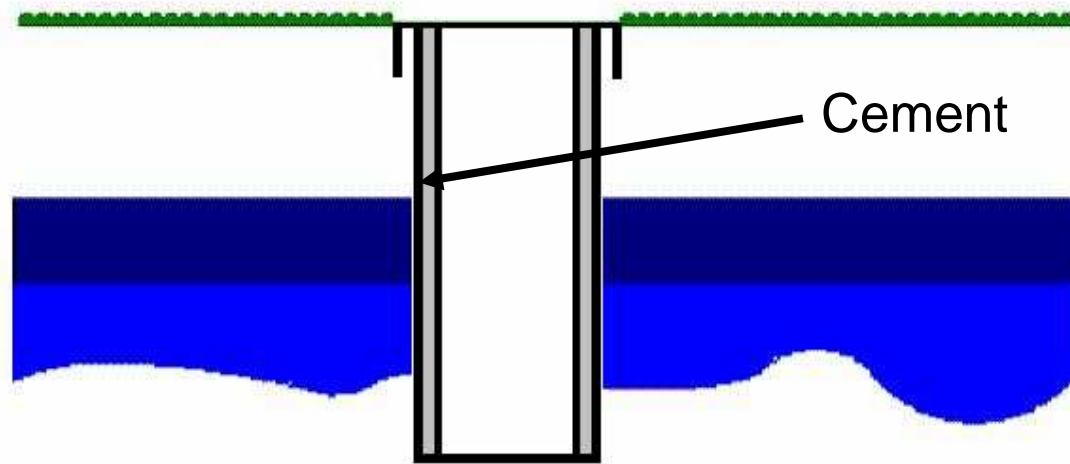


Fresh Water  
Casing

Fresh  
Ground  
Water

Gas/Oil

Formations



Cement

Fresh  
Ground  
Water

Gas/Oil

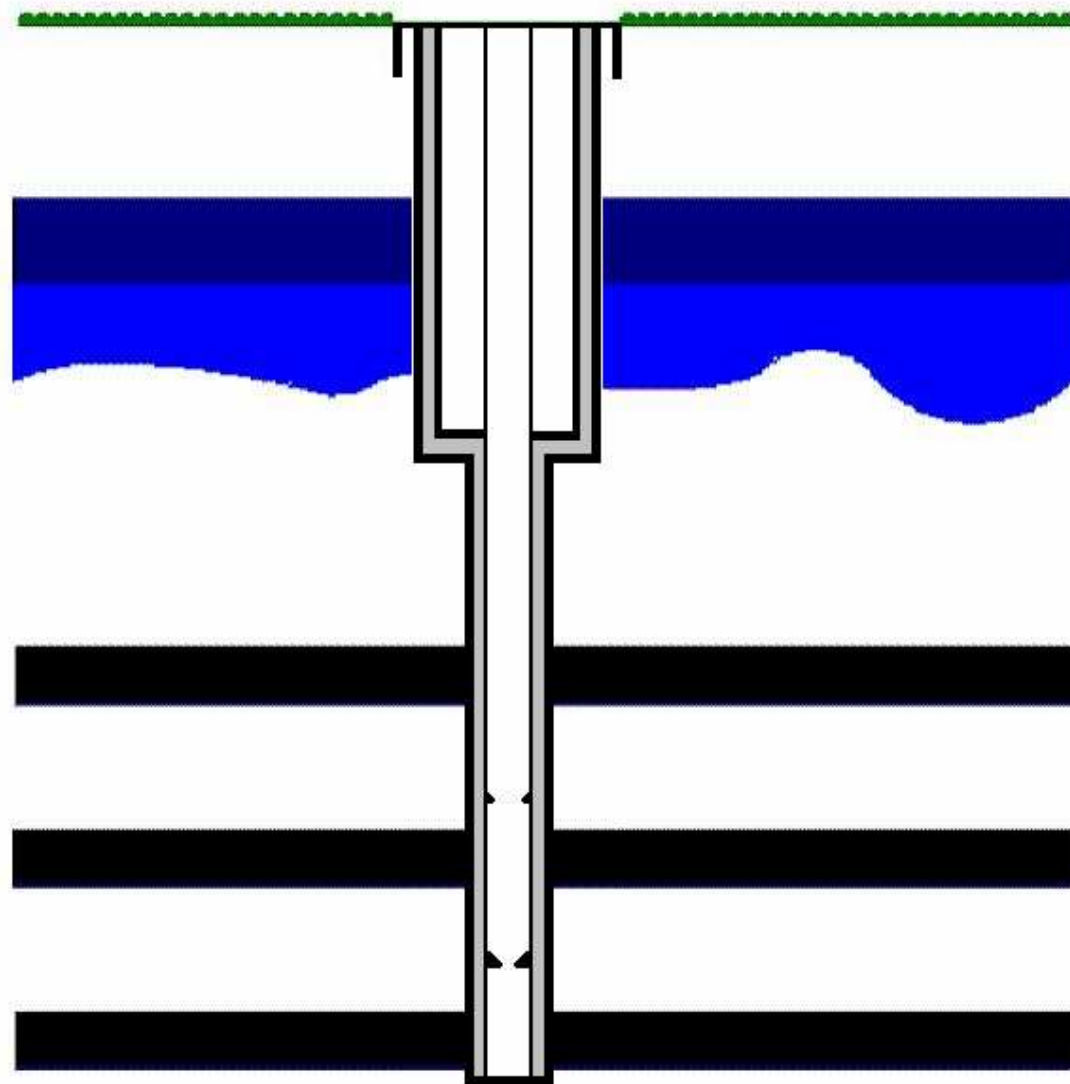
Formations



# Cement Returns from the annular space



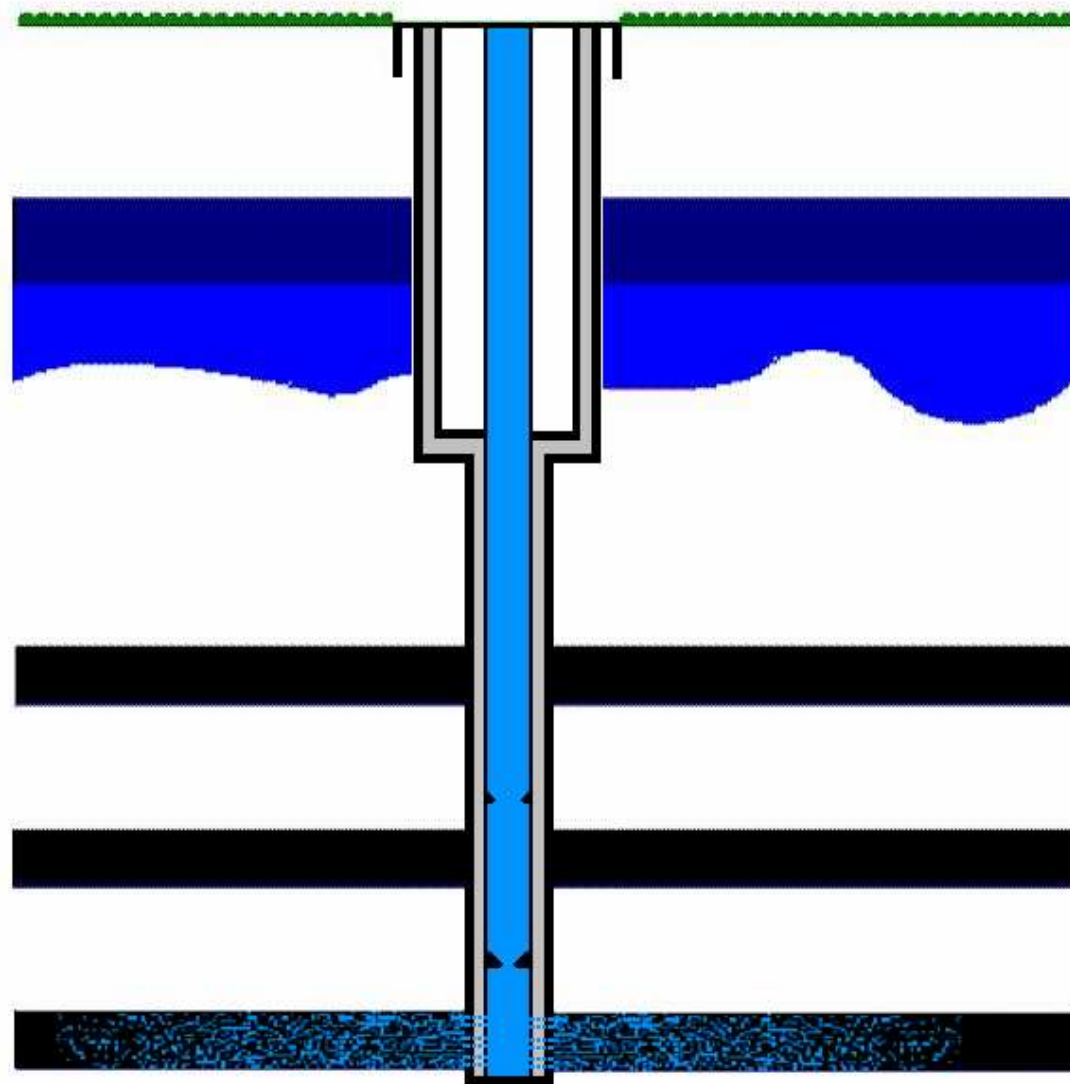




Fresh  
Ground  
Water

Gas/Oil

Formations



Fresh  
Ground  
Water

Gas/Oil

Formations

**Baker 1**  
API 37-115-20026

Drilled 08/13--08/31/08  
GasSearch DS Rig 9  
Completed 11/22/08

Elevation: 1545'

FW @ 990'

Coal--none reported

SW @ 2300'

TIL 12/02/08

37# 13.375" Casing @ 44'KB  
Grtd w/25 sks Portland

26# 9.625" Casing @ 1094'KB  
Cmtd w/380 sks Class A (1.21)  
Sqz TOC @ 1270'KB

19# & 23# 7" Casing @ 1534'KB  
Cmtd w/140 sks Class A w/4% gel (1.51) & 100 sks Class A (1.21)

4937'  
Mahatango Shale

Sqz TOC @ 5490'KB  
5493'  
4spf 40H  
5503'

6856'  
6856'  
Upper Marcellus Shale SLB

Sqzd @ 6860-61' w/42 bbl Class A (10/22/08)  
6890'  
2spf 110H  
6945'

7040'  
7040'  
Purcell Limestone

227 JIS 4.70# 8rd 2.375" Tubing @ 6993'KB (03/05/09)  
\*Primary cmt locked-up; drilled-out cmt 3995'-7304'

7130'  
7130'  
Lower Marcellus Shale SLB

Primary TOC @ 7100'KB  
7100'  
2spf 280H Bi-wire  
7240'

7350'  
7350'  
Onondaga Limestone

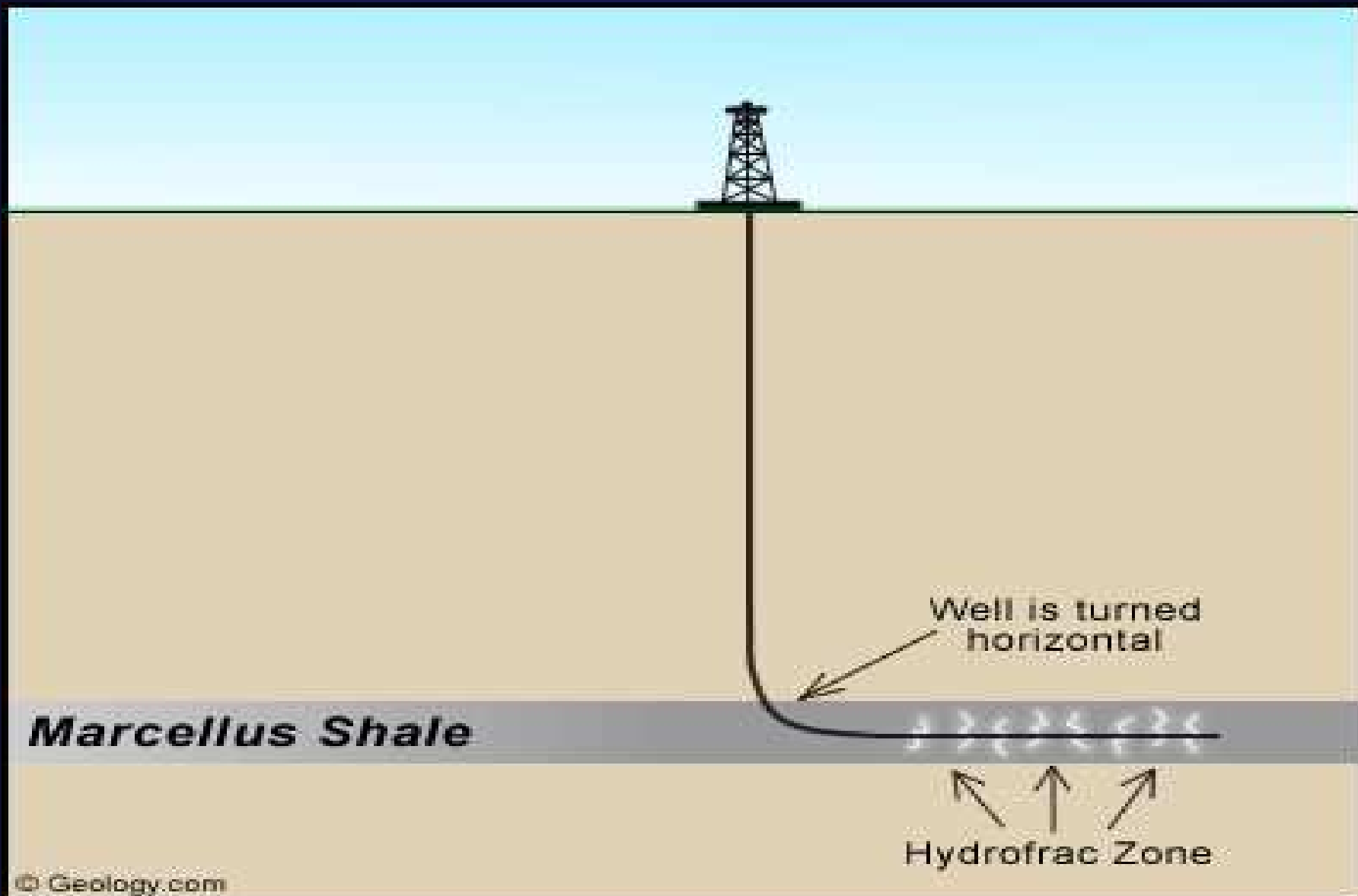
CIBP @ 7275'KB (11/10/08)  
Insert @ 7308'KB  
11.60# P110 4.50" Casing @ 7311'KB  
Cmtd w/365 sks Type I w/2% Gel (1.38)

7450'  
LTD @ 6700'KB (bad hole)  
Schematic is not to scale

DTD @ 7450'KB

03/18/09

# Directional Drilling





# Marcellus Drill Site





# Contact Information

- [www.dep.state.pa.us/dep/deputate/minres/oilgas/oilgas.htm](http://www.dep.state.pa.us/dep/deputate/minres/oilgas/oilgas.htm)
- e NOTICE: [www.dep.state.pa.us/enotice](http://www.dep.state.pa.us/enotice)
- Service Representative:
  - Maribeth Nestor, Northeast (570) 820-4871
  - Barbara Santonico, Northcentral (570) 327-0549
- **Emergencies & Reporting: Toll Free: 866-255-5158**
- Oil & Gas Program
  - Jennifer Means (570) 321-6550
  - Craig Lobins (814) 332-6860