

# DRBC Natural Gas Regulations

Public Hearings Presentation  
February 22 and 24, 2011

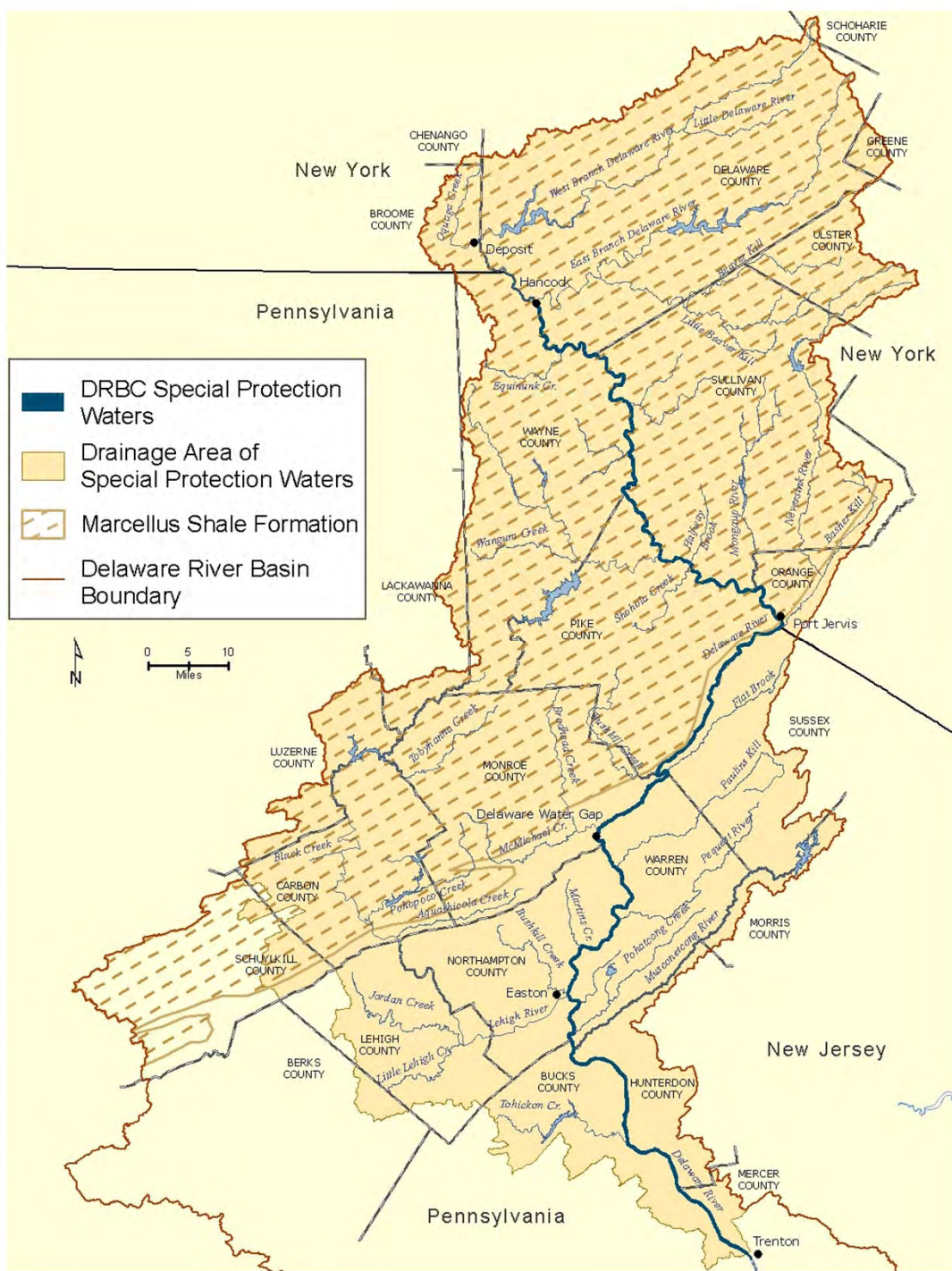
# Delaware River Basin



# Delaware River Basin Commission

- Founded in 1961
- Five Members:
  - Delaware
  - New Jersey
  - Pennsylvania
  - New York State
  - Federal Government





# Marcellus Shale and Special Protection Waters

36% (4,937 mi<sup>2</sup>) of the Delaware Basin is underlain by the Marcellus Shale

# Expected Natural Gas Well Development

- 15,000-18,000 horizontal wells
- Does not include vertical wells
- 2,000-2,200 well pads
- 10,000-12,000 acres (well pads)
- Additional acres for support infrastructure



# Expected Water Needs



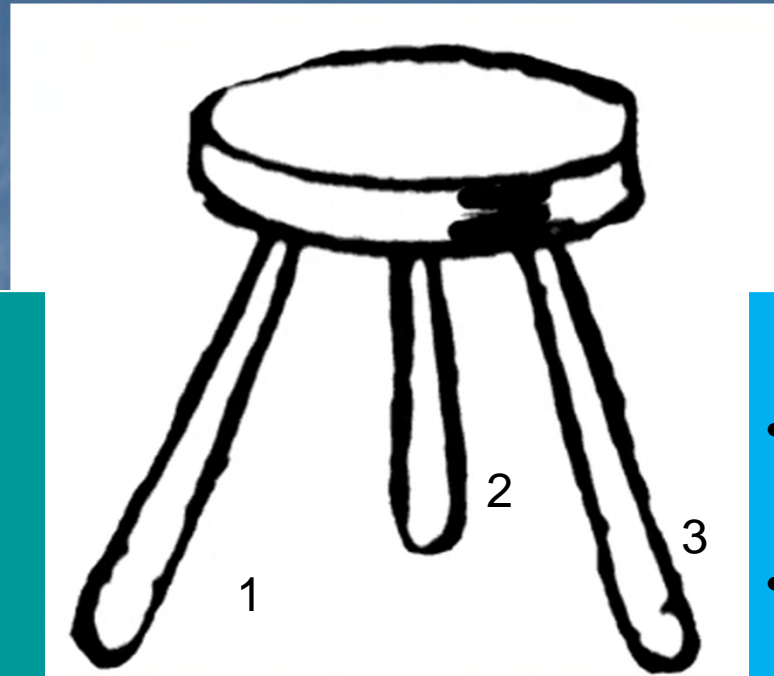
- 5 million gallons per horizontal well constructed
- 90 BG - no reuse
- 72 BG – 90% reuse
- Over 10-20 year development

# Wastewater Treatment & Disposal

- Flowback – water 20% frac volume
- 1 MG per well
- 18 BG over 10-20 years
- Treatment capacity and capability



# DRBC Natural Gas Regulatory Strategy



## 1. Water Withdrawal

- Protect surface and groundwater supplies
- Preserve ecological flows
- Ensure assimilative capacity for discharges

## 2. Well Pads and Ancillary Infrastructure

- Natural Gas Development Plan
- Manage water use & disposal
- Monitor and protect surface water & groundwater

## 3. Wastewater Disposal

- Protect receiving water bodies
- Track wastewater production, reuse, and disposal
- Ensure adequate treatment is available for expected waste stream



# Purpose of Natural Gas Regulations

- Manage the Water Resources of the Basin

- Basin provides water to over 15 million people
- Incredible natural resource to mid-Atlantic metropolitan area
- Three quarters of the non-tidal river is designated in the National Wild and Scenic Rivers System
- Exceptional water quality is protected by the DRBC Special Protection Waters Program

- Comply with Compact Requirements

- Regulations implement statutory authority that is granted in the **DRBC Compact** by the signatory parties
- Supplements Commission's **Comprehensive Plan**
- Fulfills requirements of existing Commission Regulations
  - Groundwater Section 3.40 - Special Protection Waters
  - Flood Plains - Water Withdrawal and Water Quality

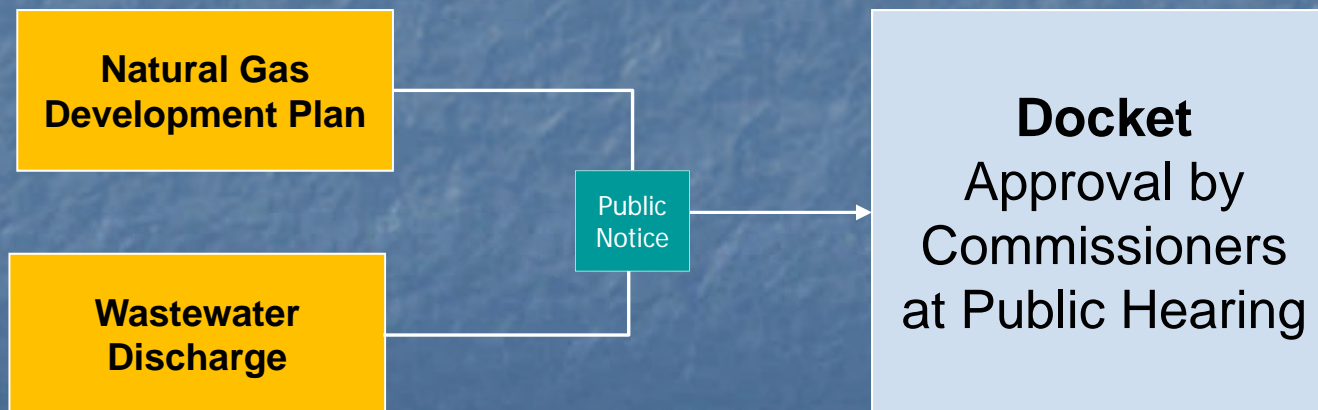
# Natural Gas Regulations

- Consolidate requirements in one WQR Section- Article 7 of Part III- Basin Regulations
- Include rules for water withdrawals; well pads and natural gas development plans; wastewater disposal
- Provide certainty to the industry
- Include approval by rule process for water sources and well pads
- Rely on NY/PA programs and expertise to regulate well construction and operations
- Applies to all natural gas target formations

# Framework of Natural Gas Regulations

- **Section 7.1** Purpose, Authority, Scope and Relationship to other Requirements and Rules
- **Section 7.2** Definitions
- **Section 7.3** Administration
- **Section 7.4** Water Sources for Uses Related to Natural Gas Development
- **Section 7.5** Well Pads for Natural Gas Activities
- **Section 7.6** Wastewater Generated by Natural Gas Development
- **Appendix:** Wording of Financial Assurance Instruments

# Types of Approvals



# Water Withdrawal and Use Approvals

## **New Source**

Groundwater withdrawal  
Surface water withdrawal  
Treated wastewater  
Non-contact cooling water  
Mine drainage water

## **Existing Approved DRBC Source**

Groundwater withdrawal  
Surface water withdrawal  
Treated wastewater  
Non-contact cooling water

**Reuse of Recovered  
Flowback  
or  
Production Water**

**Imported Water or  
Imported  
Mine Drainage  
Water**



# Water Withdrawal and Use Approvals

## Rule Features

- On-site new water sources and recovered flowback reuse can be approved as condition in Natural Gas Development Plan (NGDP)
- Existing approved sources can get ABR to provide water for natural gas development
- Water tracking and reporting requirements
- Aquifer testing requirements
- Pass-by flow requirements



# Well Pad and Natural Gas Development Plan Approvals

## Well Pad

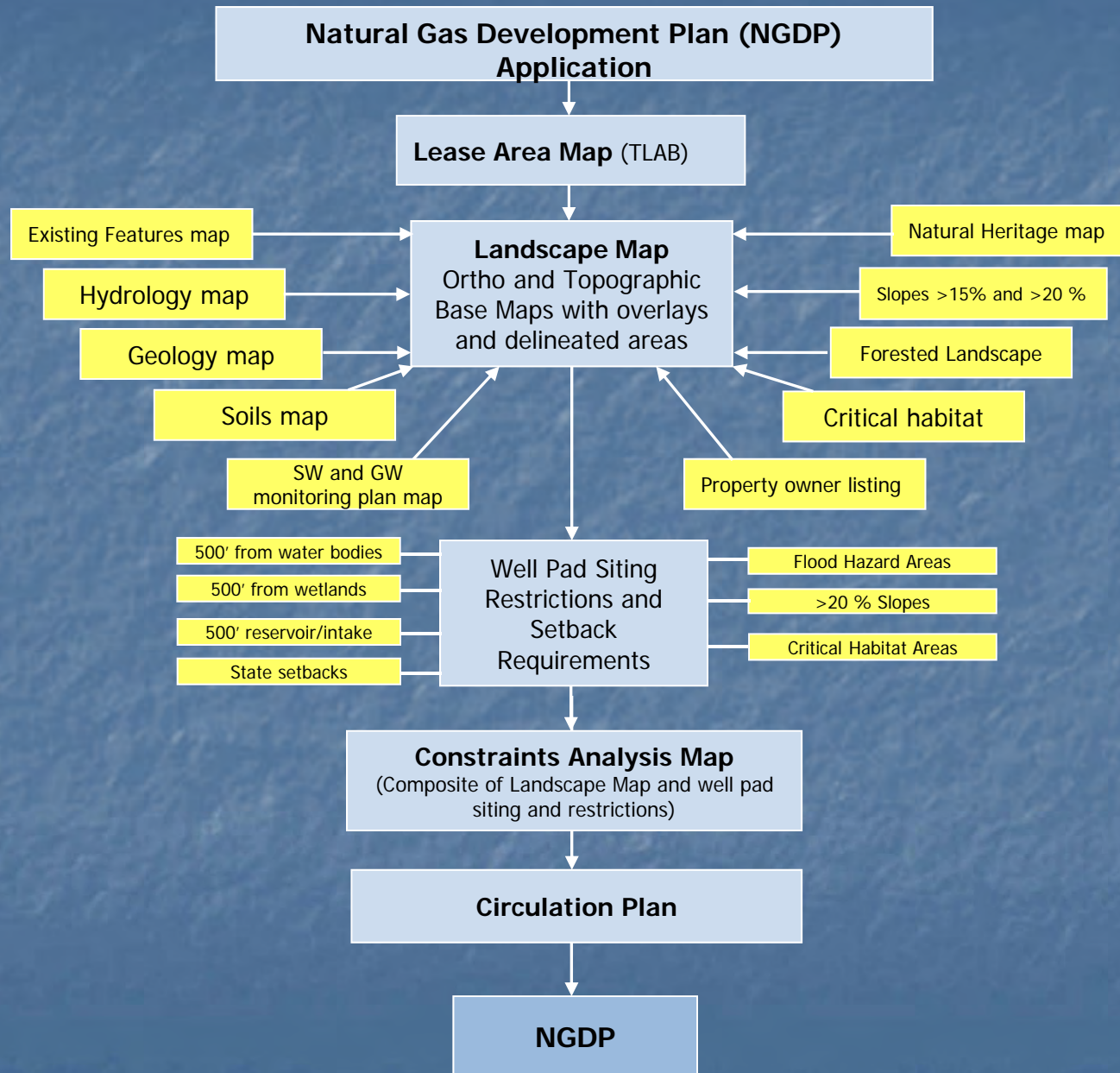
Low volume hydraulically fractured wells and exploratory wells and  
High volume hydraulically fractured wells

## Natural Gas Development Plan (NGDP)

### Rule Features

- 
- **Siting restrictions and setbacks**
  - ABR available for well pad that meet siting restrictions and setbacks and as part of approved NGDP
  - **Water and wastewater tracking and reporting requirements**
  - **background groundwater and surface water monitoring and sampling**
  - Drought, metering, invasive species plans
  - **Planning requirements**
  - Recovered flowback reuse can be approved as condition in well pad approval and NGDP
  - Consumptive water use charges
  - Financial assurance requirements
  - Flowback storage in tanks
  - **Off-site drill cuttings disposal**
  - Modified public noticing procedures

# Natural Gas Development Plan Process





# Wastewater Discharge Approvals



## Rule Features

- Applies to all treatment facilities to accept non-domestic wastewaters
- **Treatability study requirement**
- **Site specific discharge requirements**
- Non-exceedance of EPA Primary and Secondary Drinking Water Standards
- Analysis for DRBC Zone Specific Water Quality Criteria – Tables 3 – 7 of the WQRs
- **Analysis for Acute and Chronic Toxicity per Section 7.6 (e)( 1)**
- **Analysis for TDS Stream Quality Objectives**
- NMC to EWQ analysis required

# Rule Hearings

## Tuesday February 22

### **Honesdale High School**

459 Terrace St.

Honesdale, PA 18431

### **Liberty High School**

125 Buckley St.

Liberty, NY 12754

## Thursday February 24

### **Patriots Theater at the War Memorial**

1 Memorial Drive

Trenton, NJ 08608

**Two sessions will be held at each venue**

### **1st Session**

1:30 pm - 2:00 pm Pre-hearing Comments & Brief Rule Summary

2:00 pm - 5:00 pm Hearing Session where testimony is received.

### **2nd Session**

6:00 pm - 6:30 pm Pre-hearing Comments & Brief Rule Summary

6:30 pm - 9:30 pm Hearing Session where testimony is received.



**90-day comment period, with written comments accepted through the close of business (5 p.m.) March 16, 2011, by the following two methods:**



**Electronic submission** using PEPC through [www.drbc.net](http://www.drbc.net)



**Paper submission** mailed or delivered to:  
Commission Secretary, DRBC, P.O. Box 7360, 25 State Police Drive, West Trenton, NJ 08628. Please be sure to include the name, address, and affiliation (if any) of the commenter. Paper submissions will also be accepted at the three public hearings.

*Due to the expected volume, comments that are faxed, telephoned, or emailed to individual DRBC Commissioners and staff will not be accepted for the rulemaking record.*

# Questions?



Contacts at DRBC  
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609-883-9500 ext. 216

Existing and proposed regulations,  
applications, and updates are available on  
the Commission's website:

[www.drbc.net](http://www.drbc.net)

*Thank you.*