

***DRBC Engagement
in Natural Gas Exploration and
Development***

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Delaware River Basin Commission
Marcellus Shale Meeting
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Delaware River Basin Commission

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



***May 19, 2009 Executive Director
Determination***

***Natural Gas Well Activates Within the
Drainage Area of SPW***

- **Shale formations within the drainage area of SPW**
- **Natural gas well activities (NGWA) covered regardless of DRBC thresholds in RPP and Water Code (WC)**
- **RPP Section 2.3.5.B.6. Water Code Section 3.40**
- **NGWA may not commence without obtaining DRBC approval**

DRBC Role in Natural Gas Activities

- 1. Water Withdrawal**
- 2. Well Site Activities**
- 3. Wastewater Storage, Treatment and Disposal.**

Natural Gas Well Wastewater

Wastewater Generated During Development of the Natural Gas Well

- **Domestic Wastewater**
- **Non-domestic Wastewater**

Domestic Wastewater

Typical sanitary wastewater generally from on-site septic tanks/portable toilets. Likely to be treated at domestic wastewater treatment plants located near natural gas well sites.

Non-Domestic Wastewater

1. Brine generated during well construction.

2. Drilling fluids

3. Flowback from Well Stimulation

- **Vast majority of wastewater generated.**
- **18% to 30% of stimulation fluids used are expected to return as flowback (estimated 2-3 million gallons per well)**
- **Flowback contains water, sand, and chemicals used in stimulation process and absorbed from geologic formation.**

Non-Domestic Wastewater Characteristics

Characteristics will vary with well site and geologic formation stimulated.

Total Dissolved Solids (TDS) - may potentially contain 2-300,000 mg/l TDS.

Concentrations of metals, chlorides, and organic chemicals.

Levels of radioactivity contributed by the target geologic formation.

DRBC Regulates at the Well Site

Monitoring and characterization of wastewater generated at site.

Storage, tracking, and transportation of wastewater generated.

Disposal of Wastewater

Wastewater Sources and Treatment and Disposal Sites

Sources of non-domestic wastewater and wastewater treatment and disposal can be:

- Inside of the Delaware River Basin (DRB)
Only at DRBC/state approved sites.**
- Outside of the DRB only at state approved Sites**

In-Basin Non-Domestic Wastewater Treatment Facilities

Currently, there are no DRBC approved non-domestic wastewater treatment facilities.

Only one application in house for approval (DELCORA)

Wastewater treatment facilities must receive DRBC/state approval.

Facility must demonstrate compliance with the more stringent of state or DRBC effluent standards or water quality standards (WQS)

Effluent requirements are set for all domestic or industrial wastewater facilities-technology based

WQS

- Basin wide standards**
- In-stream specific standards to protect designated use**

Critical Demonstration and Effluent Requirements

- 1. Total Dissolved Solids (TDS)**
- 2. Acute/Chronic Toxicity (in estuary waters)**

Demonstration shall be performed for specific discharge location

TDS Basin-Wide Standard

Demonstration that discharge will not exceed 133% of background in stream to receive discharge.

OR

Effluent shall not exceed 1,000 mg/l.

Stream specific – Standards may be more restrictive

Estuary Toxicity Standards

Aquatic Health

Human Health

Location Specific

Radioactivity Standards

Stream Specific WQS for Radioactivity

e.g. Zone 4 – Max. 3 pCi/l alpha emitters

1,000 pCi/l beta emitters

DRBC Review/Decision Process

Receipt of Application for Project

Notice to Interested Parties (IP's)

Development and Review of Draft Docket or Recommendation to DRBC Commissioners

Public Notice

- **Generally 10-days prior to Commission hearing of docket**
- **Includes notice to IP's**

Commission Public Hearing

Appeal Provisions

Check in with the Commission early in the process:

**Water Resources Management Branch
Project Review Section**

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David Kovach

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609-883-9500 ext. 216

Regulations and applications are available on the Commission's website:

www.drbc.net

Thank you.

