



more *Insight.*

ShaleGasOperations

EvolvingAir&WaterRegulations

byMaryAnnPoirier

*OhioStateBarAssociation's27th AnnualOhioEnvironment,
EnergyandResourcesLawSeminar, April20,2012*

We will be covering:

- ▶ ODNR vs. Other Authorities' Roles
- ▶ Air Issues
 - ▶ U.S. EPA Oil and Gas NSPS/NESHAP
 - ▶ Ohio Air General Permit
 - ▶ Stationary Engines
 - ▶ Aggregation/Source Determination
 - ▶ Other air issues
- ▶ Water Issues
 - ▶ NPDES Exemption/WQS
 - ▶ Dredge & Fill Permits (Wetlands/Streams)
 - ▶ Other pending water issues

ODNR's Almost-Exclusive Role:

▶ **ORC § 1509.02:**

There is hereby created in the department of natural resources the division of oil and gas resources management... sole and exclusive authority to regulate the permitting, spacing of oil and gas wells and production operations within the state, *excepting only those activities regulated under federal laws for which oversight has been delegated to the environmental protection agency and activities regulated under sections 6111.02 to 6111.029 of the Revised Code.* The regulation of oil and gas activities is a matter of general statewide interest that requires uniform statewide regulation, and this chapter and rules adopted under it constitute a comprehensive plan with respect to all aspects of locating, drilling, well stimulation, completing, and operating oil and gas wells within this state, including site construction and restoration, permitting related to those activities, and the disposal of wastes from those wells.

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ODNR's Almost-Exclusive Role, cont'd:

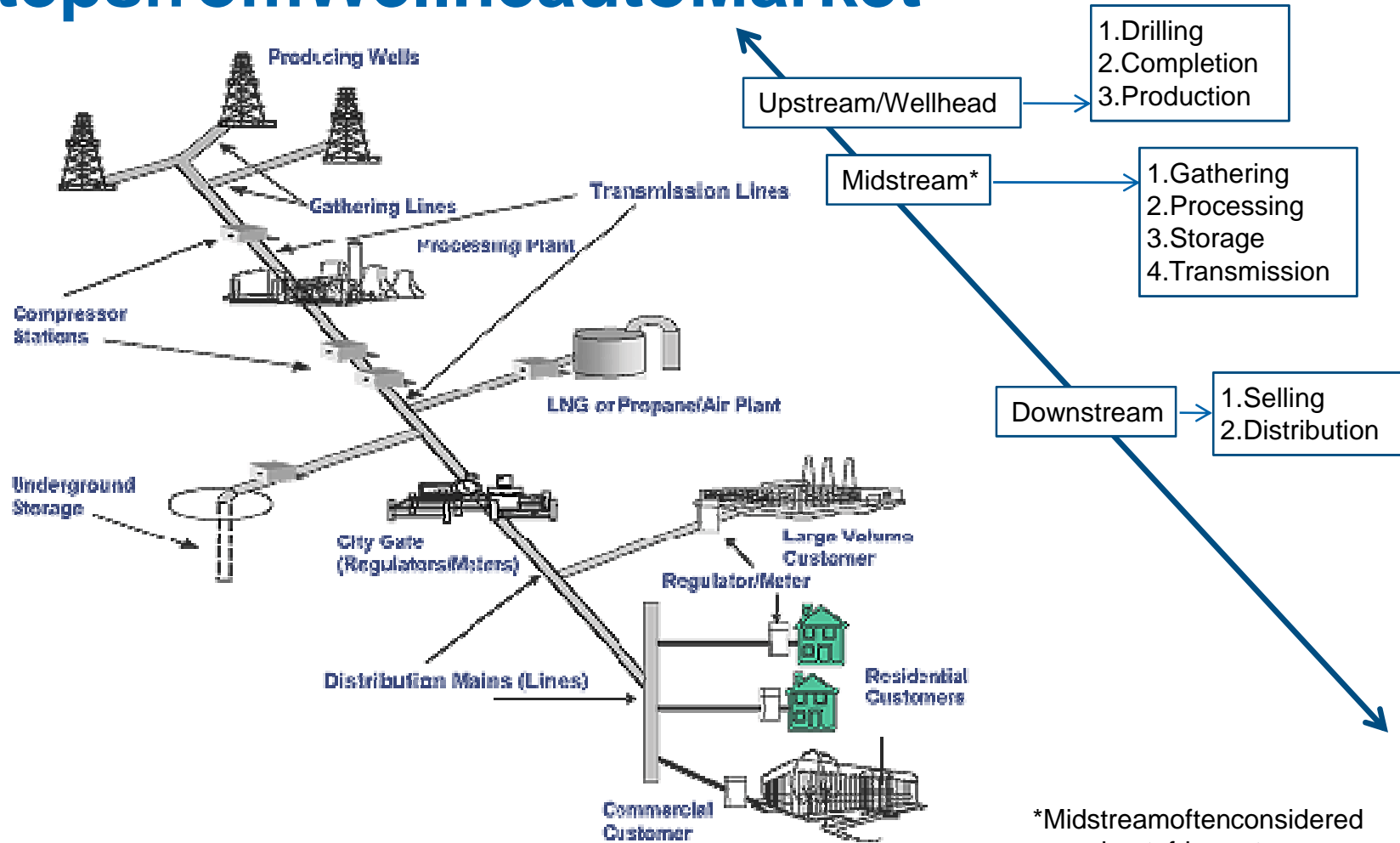
▶ **ORC 1509.02, cont'd:**

Nothing in this section affects the authority granted to the director of transportation and local authorities in section 723.01 or 4513.34 of the Revised Code, provided that the authority granted under those sections shall not be exercised in a manner that discriminates against, unfairly impedes, or obstructs oil and gas activities and operations regulated under this chapter.

ODNR's Almost-Exclusive Role, cont'd:

- ▶ The exceptions:
 - ▶ Activities regulated under federal laws for which oversight has been delegated to OEPA
 - ▶ *E.g.*, air impacts; NPDES, related water issues, waste-handling
 - ▶ Activities regulated under sections 6111.02 to 6111.029 of the Revised Code.
 - ▶ Impacts to isolated wetlands (wetlands not subject to CWA)
 - ▶ ORC § 723.01
 - ▶ Municipal regulation of streets
 - ▶ ORC § 4513.34
 - ▶ Permits for oversized vehicles

Steps from Wellhead to Market



Source: <http://www.epa.gov/gasstar/basic-information/>

Regulation of Air Impacts

▶ Potential Air Emission Sources and Issues

- ▶ Engine emissions from drill rigs, fracking equipment and on-site power generation
- ▶ Fugitive emissions from hydrocarbons in flowback
- ▶ Emissions from venting and flaring of gas during flowback (prior to routing of gas to gathering or capture)
- ▶ Separators (to heat multi-phase production)
- ▶ Storage vessels
- ▶ Pneumatic controls
- ▶ Glycol dehydrators
- ▶ Compressors
- ▶ Desulfurization units

Regulation of Air Impacts

- ▶ U.S. EPA Final NSPS and NESHAP for oil and gas (final rules signed April 17, 2012; not yet published in Fed. Reg.) :
 - ▶ New Source Performance Standards (NSPS)
 - ▶ Under Section 111 of the Clean Air Act (CAA)
 - ▶ For new, modified or reconstructed sources in categories of sources that EPA has determined cause or contribute significantly to air pollution
 - ▶ Based on best system of emission reduction
 - ▶ 8-year review, revised as appropriate
 - ▶ NSPS at issue:
 - ▶ 40 CFR part 60, subpart KKK: leak detection of VOCs & repairs at gas processing plants
 - ▶ 40 CFR part 60, subpart LLL: SO₂ controls at gas processing plants
 - ▶ Set in 1985
 - ▶ Duty to comply with systems from proposal of revised NSPS (Aug. 23, 2011)

Regulation of Air Impacts

- ▶ EPA Final NSPS and NESHAP for oil and gas, cont'd:
 - ▶ National Emissions Standards for Hazardous Air Pollutants (NESHAP)
 - ▶ Under Section 112 of the CAA
 - ▶ From major sources:
 - ▶ those with PTE 10 tpy of a hazardous air pollutant (HAP), or
 - ▶ those with PTE 25 tpy of any combination of HAPs
 - ▶ Based on the maximum degree of emission reduction of HAP achievable (“maximum achievable control technology” or MACT)
 - ▶ 8-year technology review & one-time “residual risk” review
 - ▶ NESHAPs at issue:
 - ▶ Benzene, toluene, ethylbenzene, xylene and n-hexane
 - ▶ 40 CFR part 63, subpart HH: oil and natural gas **production operations** (tanks, leaks, certain glycol dehydrators)
 - ▶ 40 CFR part 63, subpart HHH: glycol dehydrators at natural gas **transmission and storage operations** that are considered major
 - ▶ Set in 1999

Regulation of Air Impacts

- ▶ EPANSPS/NESHAP Final Rule, cont'd:
 - ▶ Background behind rulemaking:
 - ▶ “Deadlinesuit” brought by Wild Earth Guardians & San Juan Citizens Alliance in January 2009, U.S. District Court in D.C.; resulted in consent decree
 - ▶ July 28, 2011: signature date for proposal (published August 23, 2011*)
 - ▶ November 30, 2011: comment deadline
 - ▶ March 2, 2012: sent by EPA to OMB
 - ▶ April 3, 2012: signature date for final
 - ▶ May?? Publication in Fed. Register
 - ▶ Significant claims by EPA:
 - ▶ Methane emissions significantly reduced (not directly controlled) – 1.0 to 1.7 million short tons (revised from 3.4 million in proposed rule)
 - ▶ Industry will actually save money! (\$11 to 19 million annually [revised from \$30 million estimated in proposed rule])
 - ▶ *But* API study released March 15, 2012: production from shale will decrease 31% to 51%

Regulation of Air Impacts

- ▶ EPANSPS/NESHAP Final Rule – NSPSC Component:
 - ▶ New 40 CFR Part 60, Subpart OOOO
 - ▶ Well completions & recompletions:
 - ▶ **Phase 1: before January 1, 2015**
 - ▶ Reduce VOCs either by:
 - ▶ Flare using completion combustion device (NOx by-product), *OR*
 - ▶ **Green** completion, a.k.a. “reduced emissions completion”
 - ▶ **Phase 2: after January 1, 2015**
 - ▶ Operators *must* capture gas (such as by green completions)
 - ▶ Exceptions for certain new wells (flaring ok): exploratory wells, low pressure wells
 - ▶ Refractured/recompleted wells using green completions not considered “modified”
 - ▶ 2-day advance notice (30-day had been proposed); annual reporting; *final rule does not include post-30-day report*

Regulation of Air Impacts

- ▶ EPANSPS/MACT Final Rule – NSPS Component, cont'd:
 - ▶ Centrifugal natural gas compressors
 - ▶ Use of dry seal systems encouraged; not “affected facilities” under rule
 - ▶ If wet seals, must achieve 95% VOC reduction (through flare or capture)
 - ▶ Reciprocating compressors
 - ▶ Rod packing changed every 26,000 hours (documented) or every 36 months
 - ▶ Pneumatic controllers (continuous bleed, natural gas-driven)
 - ▶ At processing plants: 0 emissions limit (few exemptions)
 - ▶ Other locations (e.g., gathering/boosting stations)
 - ▶ Bleed limit of 6 scf/hr
 - ▶ 1-year phase-in

Regulation of Air Impacts

- ▶ EPANSPS/MACT Final Rule – NSPSC Component, cont'd:
 - ▶ Storage tanks
 - ▶ If >6 tonsemissions/year, must achieve 95% reduction in VOC emissions (1-year phase-in)
 - ▶ If at wellsites with no wells in production, 30 days from start-up to determine amount, 30 days to add controls
 - ▶ Existing NSPSC for processing plants
 - ▶ Tighten requirements for leak detection and repair (LDAR) to reflect VOC equipment leak standards at 40 CFR 60, subpart VVa; changes “leak” def’n from 10,000 ppm to 500 ppm
 - ▶ Tighten SO₂ controls (up to 99.9% control) for facilities with highest sulfur feed rates and H₂S concentrations

Regulation of Air Impacts

- ▶ EPANSPS/MACT Final Rule – NSPS Component, cont'd:
 - ▶ Apply during startup, shutdown & malfunction (SSM)
 - ▶ Affirmative defense if malfunction
 - ▶ Annual certification of compliance (with annual report), plus other notice & record keeping

Regulation of Air Impacts

▶ EPANSPS/MACT Final Rule – NESHAP

Component:

- ▶ Glycol dehydrators at production facilities and natural gas transmission and storage sources:
 - ▶ Large dehydrators: 95% reduction in total air toxics or “benzene 1 tpy compliance option” (departure from proposal)
 - ▶ Small dehydrators: Must meet unit -specific BTEX limits based on formula (small if annual avg. natural gas < 85,000 scf/day or actual annual benzene < 1 TPY)
- ▶ Storage vessels:
 - ▶ Requirements – namely closed vent systems, 95% emission reduction – apply to storage vessels with potential for flash emissions (departure from proposal, which applied to *all*)

Regulation of Air Impacts

- ▶ EPANSPS/MACT Final Rule – NESHAP Component, cont'd:
 - ▶ Change in “leak” definition for valves:
 - ▶ From 10,000 parts per million (ppm) to 500 ppm
 - ▶ Elimination of startup, shutdown & malfunction exemption
 - ▶ Affirmative defense if malfunction
 - ▶ Compliance deadlines depend on specific source

Regulation of Air Impacts

- ▶ OEPA Air General Permit
 - ▶ Finalized Feb. 1, 2012
 - ▶ Cover equipment during **production** phase of shale well; drilling and completion activities are exempt
 - ▶ Non - Title V Facilities (*i.e.*, non-major)
 - ▶ Permit constitutes both permit-to-install (ORC 3704.03(F)) & permit-to-operate (ORC 3704.03(G))

Regulation of Air Impacts

- ▶ OEPAAirGeneralPermit, cont'd
 - ▶ Multiple emissions sources covered:
 - ▶ **Glycol dehydration unit**
 - ▶ Limits for VOCs (not CH_4 , C_2H_6), SO_2 , CO from flares, visible emissions
 - ▶ **Natural gas and diesel engines**
 - ▶ HP ≤ 1800 ; if diesel, certified to Tier 3 with combined HP ≤ 250
 - ▶ Varying limits (depending on HP) for CO, NO_x, VOCs
 - ▶ Also limit on particulate emissions, SO_2 , PM (diesel),
 - ▶ **Fixed roof storage tanks**
 - ▶ Combined tanks $\leq 252,000$ gal. (6000 bbl.), individual $\leq 39,894$ gal. (950 bbl.)
 - ▶ VOCs, add-on controls
 - ▶ **Flares**
 - ▶ Maximum capacity heat input ≤ 250 MMBtu/hr, op. ≤ 10 MMBtu/hr
 - ▶ Limit on VOCs, CO, NO_x, SO_2
 - ▶ **Ancillary equipment/pipeline leaks**
 - ▶ VOCs

Regulation of Air Impacts

- ▶ OEPA Air General Permit, cont'd
 - ▶ Facility-Wide Terms & Conditions state at Para. 3:
“The permittee shall comply with any applicable requirements of 40 CFR Part 60 Subpart OOOO [a.k.a. the new U.S. EPA oil and gas NSPS] once it becomes rule.”
 - ▶ Emissions Unit Terms & Conditions also reference compliance with 40 CFR Part 63, Subpart HH, and any amendments to those regulations (a.k.a. the new U.S. EPA oil and gas NESHA for production operations)

Regulation of Air Impacts

▶ Stationary internal combustion engines

- ▶ Relatively recent federal MACT/GACT for toxic air emissions from existing stationary reciprocating internal combustion engines (RICE)
 - ▶ Used in natural gas transmission, gathering, underground storage tanks and processing plants
 - ▶ Codified at 40 CFR Part 63 Subpart ZZZZ
 - ▶ August 2010 Final Rule: Spark-ignited RICE > 100 HP located at major area (non-major) sources and engines greater than 500 HP located at sources generally must comply with numerical CO or formaldehyde emissions standards (as surrogates)
 - ▶ March 2010 Final Rule: Diesel compression-ignited at major sources and engines greater than 300 HP located at area sources must comply with numerical standards
 - ▶ Under both rules, engines not otherwise covered by numeric limits & located at area sources are subject to certain maintenance practices
- ▶ **New EPA Air Permits specifically state that facilities are subject to these requirements but EPA has no authority to enforce the GACT standards; therefore enforced by U.S. EPA**

Regulation of Air Impacts

- ▶ Aggregation/Source Determination
 - ▶ The grouping of two or more pollutant-emitting activities together as a single source of emissions
 - ▶ 2007: Bill Wehrum (EPA Acting AA for Office of Air & Radiation)
 - ▶ Proximity would be given particular emphasis in source determination
 - ▶ 2009: Gina McCarthy (EPA AA for OAR)
 - ▶ Withdrew Wehrum memo
 - ▶ Consider equally:
 - ▶ whether the activities are under common control;
 - ▶ whether they are located on one or more contiguous or adjacent properties;
 - ▶ whether belong to the same industrial grouping

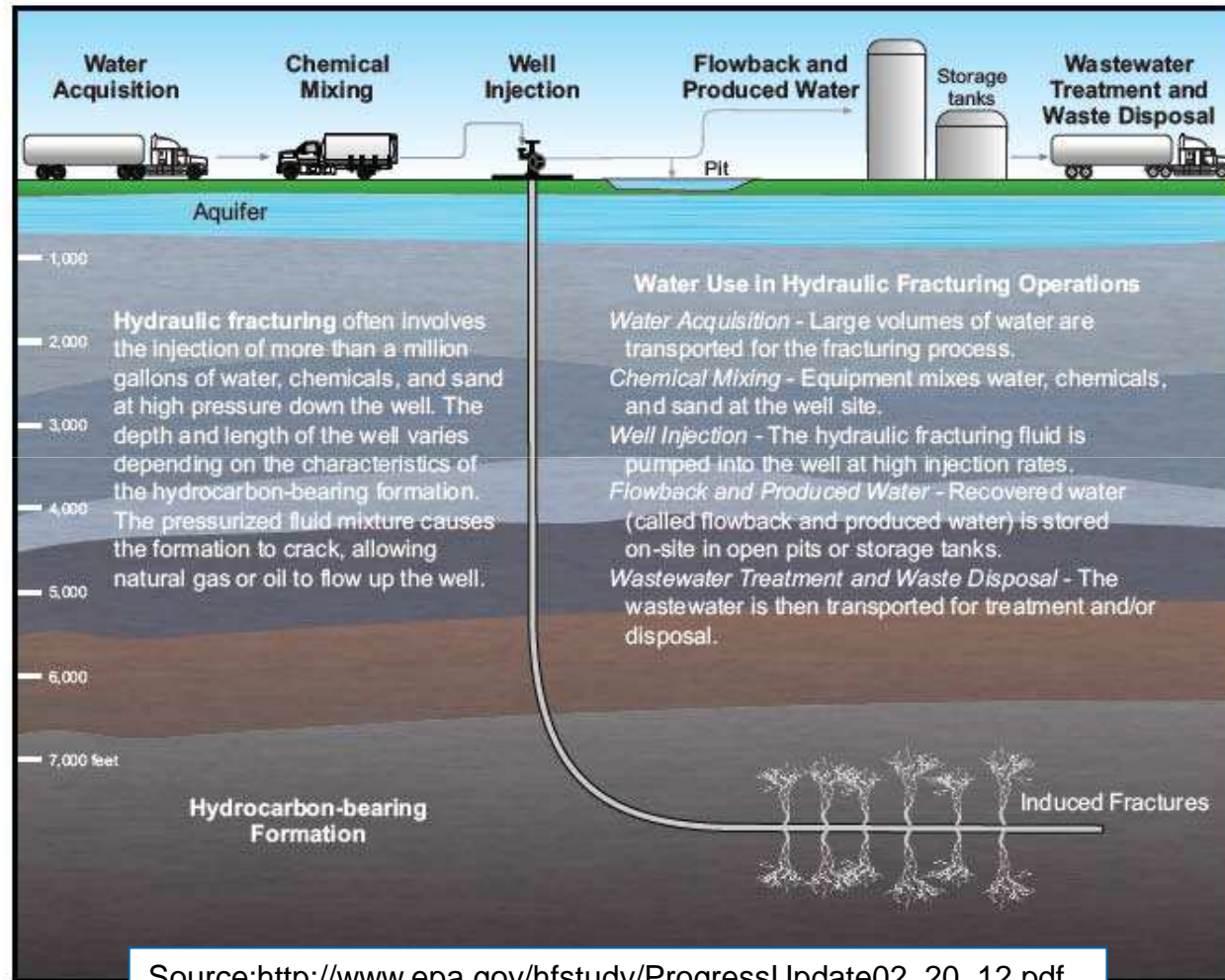
Regulation of Air Impacts

- ▶ Aggregation/Source Determination, cont'd
 - ▶ In practice, now a “dedicated interdependence” standard?
 - ▶ EPA Region 5, re Summit Petroleum’s Mt. Pleasant, MI sour gas wells, sweetening plant and associated flares
 - ▶ Single source found
 - ▶ Analyzed “nature of the relationship between the facilities and the degree of interdependence between them in determining whether multiple non-contiguous emissions points should be considered as single source”
 - ▶ Appealed to 6th Circuit; oral argument April 17, 2012
 - ▶ EPA Region 8, re BP Florida River compressor facility in Durango, CO
 - ▶ *Not* a single source
 - ▶ Wells at issue did not have “dedicated interrelatedness”
 - ▶ EAB appeal by Wild Earth Guardians; dismissed March 15, 2012 (settled in exchange for “pilot program”)
 - ▶ CO re Kerr-McGee/Anadarko Title V renewal for Frederick Compressor Station
 - ▶ Long disagreement between CO & EPA
 - ▶ February 2011, EPA agreed *not* single source – “did not have a unique or dedicated interdependent relationship and were not proximate and therefore were not contiguous and adjacent”
 - ▶ Appealed to 10th Circuit by Wild Earth Guardians; settled with BP case
 - ▶ **As midstream operations pickup in Ohio, issues like *lytobe* encountered more**

Regulation of Air Impacts

- ▶ Other air issues:
 - ▶ Ozone NAAQS
 - ▶ Oil and gas activities have been blamed for winter-time exceedances of existing ozone standards (most recently set in 2008, at 75 ppb)
 - ▶ Last set in 2008 at 75 ppb
 - ▶ January 2010: Proposal to change to 60 to 70 ppb
 - ▶ Sept. 2011: Pres. Obama announced would *not* be changing it after all
 - ▶ Stay tuned: Regular 5-year review due in 2013
 - ▶ GHG Mandatory Reporting
 - ▶ Petroleum and natural gas facilities that emit 25,000 tpy CO₂-e to report (for 2011) certain GHG emissions by September 28, 2012
 - ▶ Ohio fugitive dust rules still apply (e.g., roadways)

Regulation of Water Impacts



Regulation of Water Impacts

▶ NPDES Exemption, Water Quality Standards:

- ▶ Section 402 of the Clean Water Act ordinarily requires a “National Pollutant Discharge Elimination System” permit in order for a point source (a discrete conveyance) to discharge pollutants into waters of the United States
- ▶ *But* the Energy Policy Act of 2005 added an exemption for oil and gas construction activities:

▶ (1)(2) Stormwater runoff from oil, gas, and mining operations

The Administrator shall not require a permit under this section, nor shall the Administrator directly or indirectly require any State to require a permit, for discharges of stormwater runoff from mining operations or **oil and gas exploration, production, processing, or treatment operations or transmission facilities**, composed entirely of flows which are from conveyances or systems of conveyances (including but not limited to pipes, conduits, ditches, and channels) used for collecting and conveying precipitation runoff and which are not contaminated by contact with, or do not come into contact with, any overburden, raw material, intermediate products, finished product, byproduct, or waste products located on the site of such operations.

Regulation of Water Impacts

- ▶ NPDES Exemption, Water Quality Standards (cont'd):

- ▶ Ohio follows this exemption:

- OAC 3745-39-04(A)(2):

- The director shall not require a permit for discharges of stormwater runoff from the following:

- (b) All field activities or operations associated with **oil and gas exploration, production, processing, or treatment operations or transmission facilities**, including activities necessary to prepare a site for drilling and for the movement and placement of drilling equipment, whether or not such field activities or operations may be considered to be construction activities, except in accordance with paragraph (C)(1)(c) of this rule. Discharges of sediment from construction activities associated with oil and gas exploration, production, processing, or treatment operations or transmission facilities are not subject to the provisions of paragraph (C)(1)(c)(iii) of this rule.

Regulation of Water Impacts

- ▶ NPDES Exemption, Water Quality Standards (cont'd):
 - ▶ However...
 - ▶ OEA encourages operators to implement Best Management Practices to minimize discharges of pollutants (comment to OAC 3745-39-04(A)(2)(b))
 - ▶ *And* the exemption goes away if the facility:
 - ▶ Has had a discharge of stormwater resulting in the discharge of a reportable quantity of certain hazardous substances or oil
 - OR
 - ▶ **Contributes to the violation of a water quality standard**
- (OAC 3745-39-04(C)(1)(c))

Regulation of Water Impacts

- ▶ NPDES Exemption, Water Quality Standards (cont'd):
 - ▶ But...the Ohio Water Quality Standards are in a state of flux:
 - ▶ December 28, 2011: OEPA proposed revised WQS (rule package had first been introduced in February 2006)
 - ▶ Issued mere days before "Common Sense Initiative" was to take effect
 - ▶ February 1, 2012: OEPA withdrew proposal

Regulation of Water Impacts

- ▶ Dredge & Fill Permits (Wetlands/Streams)
 - ▶ U.S. Army COE 404 Permit + State CWA 401 Water Quality Certification
 - ▶ Dec. 14, 2011: OEPA issued draft Section 401 Water Quality Certification General Permit
 - ▶ Would regulate discharge of dredged or fill material into waters of the state associated with oil and gas drilling activities
 - ▶ Drilling pad construction, reserve/mud pits, water storage ponds, transmission lines, access roads
 - ▶ Impacts no greater than cumulative 0.5 acres of flow -medium quality wetlands and 300 ft. streams

Regulation of Water Impacts

- ▶ Dredge & Fill Permits (Wetlands/Streams), cont'd:
 - ▶ February 21, 2012 Federal Register Notice: U.S. Army COE reissued most of existing nationwide 404 permits
 - ▶ Nationwide Permit 39 (“Commercial and Institutional Developments”) now covers “the construction of pads for oil and gas wells”
 - ▶ District engineer may add conditions to require the removal of the pads and restoration of site once extraction operations have ceased and wells no longer used
 - ▶ Effective March 19, 2012

Regulation of Water Impacts

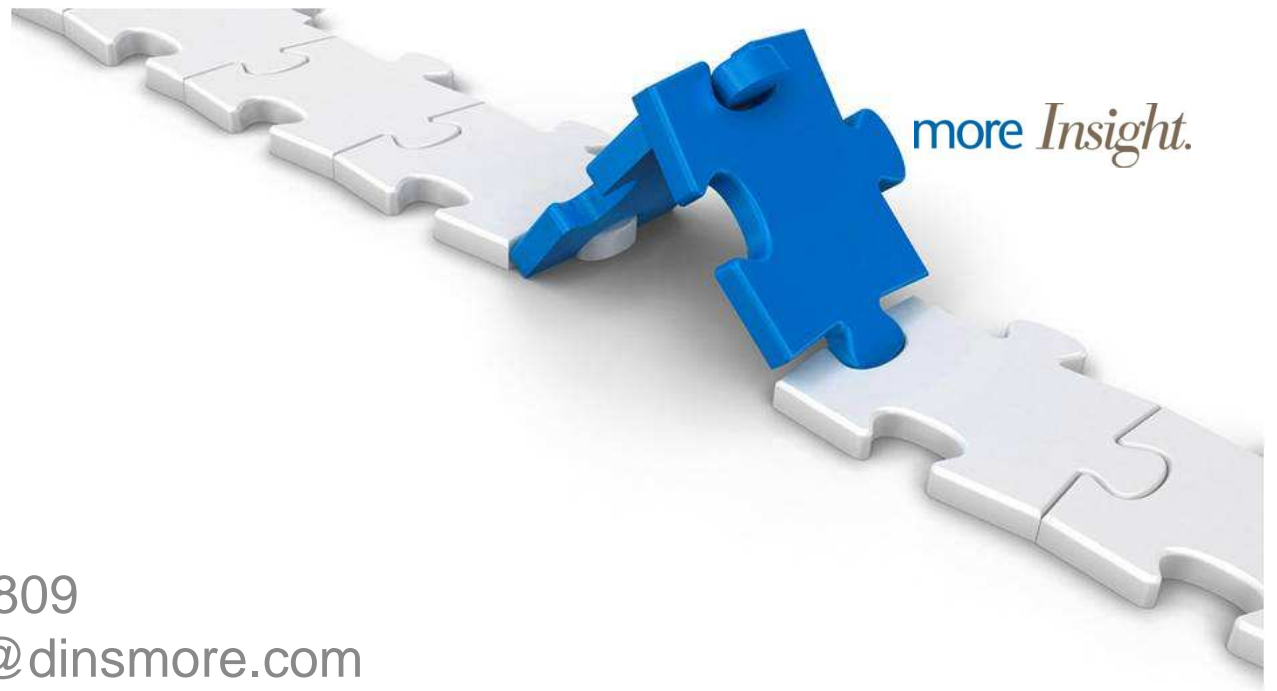
- ▶ Dredge & Fill Permits (Wetlands/Streams), cont'd:
 - ▶ Fate of OEPA Section 401 Water Quality Certification in light of N.P. 39: **no longer needed** (but revisit?)
 - ▶ And the ever-murky backdrop: Just what is a “water U.S.”?
 - ▶ *Rapanos v. U.S./Carabell v. U.S.*
 - ▶ June 2007: EPA/COE Legal Memorandum/guidance issued
 - ▶ December 2008: EPA/COE Guidance issued
 - ▶ April 27, 2011: EPA/COE Draft Guidance issued (230,000 comments received!)
 - ▶ February 2012: EPA/COE Guidance submitted to OMB
 - ▶ Lesson: ***If in doubt, avoid if you can!***

Regulation of Water Impacts

- ▶ Other pending water issues:
 - ▶ Great Lakes Compact between 8 states & 2 Canadian provinces regarding use of Great Lakes Basin water supply
 - ▶ December 2005 agreement; ratified in 2008
 - ▶ Ohio implementing legislation still needed...
 - ▶ July 15, 2011: H.B. 231 vetoed
 - ▶ Kasich: "lacks clear standards for conservation and withdrawals and does not allow for sufficient evaluation and monitoring of withdrawals or storage"
 - ▶ March 7, 2012: H.B. 473 introduced
 - ▶ Would regulate withdrawals and consumptive use
 - ▶ Wetland mitigation:
 - ▶ Feb. 9, 2012: Ohio S.B. 294 introduced
 - ▶ In lieu fee program
 - ▶ Other water protections? S.B. 315 (introduced March 22, 2012)

Regulation of Water Impacts

- ▶ Other pending water issues, cont'd:
 - ▶ U.S. EPA's study of Pavillion, WY gasfield
 - ▶ Dec. 2011 draft report
 - ▶ March 8, 2012: announced additional studies
 - ▶ Dimock, PA testing (latest results issued April 6th)
 - ▶ Larger U.S. EPA study of impacts on drinking water (per Congressional Appropriations Conf. Committee's FY2010 Budget Report):
 - ▶ November 2011 Final Plan: EPA's Study of Hydraulic Fracturing and Its Potential Impact on Drinking Water Resources
 - ▶ Additional info available at <http://www.epa.gov/hfstudy/>
 - ▶ Oct. 2011 announcement: U.S. EPA to develop Effluent Limit Guidelines for shale extraction wastewater (proposed in 2014)
 - ▶ April 13, 2012 Executive Order creating Interagency Working Group



Questions?

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