



# WASTING AWAY: Four states' failure to manage gas and oil field waste from the Marcellus and Utica Shale

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Executive Summary



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## Four states' failure to manage gas and oil field waste from the Marcellus and Utica Shale

The federal Resource Conservation and Recovery Act (RCRA) governs waste disposal to protect the environment and the public. Within RCRA lies the federal definition of hazardous waste. But in 1988, by regulatory fiat, the US Environmental Protection Agency (EPA) exempted oil and gas exploration, development, and production (E&P) waste from this definition.

EPA did not exempt E&P waste—including such products as produced water, flowback, drill cuttings, drilling muds, and fracturing sand—from RCRA because they aren't hazardous. In fact, EPA reported that without regulatory exemption, much E&P waste would likely have the characteristics to meet RCRA's definition as "hazardous." *Instead, the agency based its exemption upon its argument that state regulations of these wastes is "adequate."*

As a result, for the last 30 years, states have had the primary authority to regulate oil and gas field waste. **This report comprehensively evaluates how four of the states overlying the Marcellus and Utica shale plays—Ohio, Pennsylvania, West Virginia, and New York—manage waste and how they are performing. It addresses the question of whether EPA was right in declaring that state oversight of E&P waste is "adequate."**

**Not surprising to those living with oil and gas development in their communities, and to many regulators, the answer is "no." But more importantly, the report also explains why the answer is no, why current proposals by the four states do not change the answer, and what states should do to change the answer to "yes."**

The pivotal challenges that states currently face in managing waste from oil and gas development include:

- Methods of characterizing wastes.
- Risks posed by open pits and impoundments.
- The radioactive content of waste.
- Limitations and risks of underground injection.
- Industry's quest to "repurpose" wastes.

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▶ For the full report go to <http://wastingaway.earthworksaction.org>



**More than 1.1 million active oil and gas wells are nationwide. Many policymakers and advocates have started to ask: as drilling continues and expands, where is all the waste going and what happens as a result?**

Photo above: Drill cuttings stored at a well site in West Virginia. By Bill Hughes.  
Cover photos: Donna Carver (upper), Pennsylvania DEP (lower).

## All four states discussed in this report have at least implicitly acknowledged the inadequacy of how they currently manage E&P waste.

States are revising regulations and policies in an attempt to catch up with growing volumes and associated problems. See the chart on the next page for a summary of current and proposed practices; a more extensive chart is included in the full report.

**However, these efforts by states, both current and proposed, are lacking. Five key factors explain why:**

1. States classify oil and gas field waste as residual or solid, rather than as industrial or hazardous. States do not govern the waste based upon its characteristics, i.e., they do not determine if waste is actually hazardous according to RCRA's definition (were it not exempted by the EPA). Consequently these wastes are treated and disposed of using systems not designed to handle them.
2. Attempts to begin to address regulatory inadequacies are piecemeal and reactive, rather than planned and comprehensive; as a result, wide gaps in regulations and oversight remain.

3. The division of responsibility across regulatory agencies and departments prevents the comprehensive and consistent application of the regulations and policies that do exist.
4. Waste tracking and reporting systems are limited and operators and waste facilities have wide discretion in deciding how to characterize and dispose of waste. In turn, regulators and the public must make decisions based upon general, incomplete, and unverified information.
5. Publicly available data are limited and hard to access, making it difficult to fully assess or verify the origin, volumes, types, and ultimate destination of gas and oil field waste. This is the case both within each state and, even more so, when it crosses state borders.

**To date, states haven't adequately managed oil and gas waste. To stem risks to water, soil, and air quality they should take immediate action to achieve the following. However, if states do not robustly and swiftly pursue these recommendations, then the federal exemption for E&P waste in the Resource Conservation and Recovery Act should be reversed—an action that Earthworks and its partners have called for in the past.**

1. Apply state-level hazardous waste policies to oil and gas field wastes through new regulations or legislation. If waste has the characteristics of hazardous waste, it should be treated as such. Oil and gas operators should be required to follow the same rules as other industries generating hazardous wastes.
2. Implement "cradle-to-grave" waste tracking and reporting systems that are comprehensive, consistent, binding, verifiable and transparent to both regulators and the public. These systems should include online reporting that is accessible to the public and regulators across states, and verification of these reports by regulators.
3. Develop and adopt waste management regulations that address remaining gaps in state oil and gas laws. All states should have detailed regulations in place to ensure that operators maintain responsibility for waste and its potential impacts over time.
4. Require operators to conduct comprehensive, consistent testing of wastes before they leave the well site.
5. Require treatment and disposal of wastes at specialized facilities designed and equipped to remove chemicals, radioactive elements, total dissolved solids, metals, and other pollutants.
6. Require disposal facilities to obtain consistent, detailed documentation from waste generators and transporters regarding the type, characteristics, and content of waste.
7. Require operators and disposal facilities to test all E&P wastes that are diluted, downblended, solidified, or bulked with other materials, prior to disposal.
8. Adopt policies for the frequent monitoring of groundwater, surface waters, soil, leachate, and effluent from and near waste treatment and disposal facilities.
9. Test and handle radioactive E&P wastes according to more stringent guidelines based on radioactive content, not whether it's "naturally occurring." Existing regulations related to radioactive material should be expanded to include E&P wastes.
10. Strengthen standards for current and future underground injection control well facilities that accept E&P wastes.



Photo by Frank Finan

# Waste Management at a Glance —

## A summary of current and proposed practices.

A more extensive chart is included in the full report, <http://wastingaway.earthworksaction.org>

Waste Management Table Key	N = No	Y = Yes	\ = Partial, with exceptions
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Type of waste management	Ohio		Pennsylvania		West Virginia		New York	
	Current	Proposed	Current	Proposed	Current	Proposed	Current	Proposed*
<b>STORAGE PRACTICES</b>								
Production/reserve pits allowed	Y	Y	Y	\	Y	Y	Y	Y
Centralized impoundments for waste allowed	Y	Y	Y	Y	Y	Y	Y	\
Closed-loop and tank systems required	N	N	N	\	N	N	N	N
<b>DISPOSAL PRACTICES</b>								
Onsite waste pit burial allowed	Y	Y	Y	\	Y	Y	Y	\
Land application of solid waste allowed	Y	Y	Y	Y	Y	Y	Y	Y
Road-spreading of liquid waste allowed**	\	\	\	\	\	\	\	\
Solid waste disposal at municipal landfills allowed	Y	Y	Y	Y	Y	Y	Y	Y
Solid waste disposal at specialized landfills/facilities required	N	N	N	N	N	N	N	\
Wastewater disposal at municipal treatment plants allowed	Y	Y	Y	Y	Y	Y	Y	Y
Wastewater disposal at specialized or industrial plants required	N	N	\	\	N	N	N	N
Liquid waste can be injected underground	Y	Y	Y	Y	Y	Y	Y	Y
Financial assurance (bonding) for oil and gas wells covers waste removal	N	N	N	N	N	N	N	N
<b>CHARACTERIZATION REQUIREMENTS</b>								
Operators test and report chemical composition of liquid waste	N	N	\	\	\	\	\	\
Operators test and report chemical composition of solid waste	\	\	\	\	\	\	\	\
Treatment plants and/or injection wells test and set limits on chemical composition and radioactivity	\	\	\	\	\	\	\	\
Landfills test and set limits on chemical composition and radioactivity	\	\	\	\	\	\	\	\
Oil & gas waste may be classified as industrial	N	N	N	N	N	N	N	N
Oil & gas waste may be classified as hazardous	N	N	N	N	N	N	N	N

\* New York's proposed regulatory changes only would have applied to unconventional, high-volume wells had the state decided to move forward with such drilling.

\*\* All four states allow road-spreading of brine for de-icing and dust suppression. In New York, Ohio, and Pennsylvania, regulations specify that only brine from conventional wells, not high-volume shale wells, can be used. West Virginia hasn't specified such a prohibition, although the state has set limits on the allowable concentrations of total dissolved solids, chloride, benzene, and other contaminants in the brine.