

# Clean Water Action & Sierra Club: Michigan Should Delay Before Drilling

*Make Natural Gas Fracking Safe for Michigan's Waters*

## Summary

Michigan's economy-- from fishing, boating, and other recreation and tourism to agriculture and manufacturing-- all depend on water and our other natural resources. These valuable treasures are being threatened by a competing economic force: the production of natural gas.

Michigan is entering a natural gas boom based on a new extraction process called multi-stage horizontal hydraulic fracturing or "fracking". This new type of drilling process allows access to the deep Collingwood and Utica shale formations in the northern Lower Peninsula and has set off a flurry of natural gas prospecting. Fracking in Michigan takes place in areas with abundant drinking water sources and near vital water bodies, including trout streams.

While fracking is an efficient drilling method for oil and gas interests, it's an extremely dangerous one for the public. A new Congressional report lists 750 chemicals and compounds used in fracking, including 29 chemicals that are either known or possible carcinogens or are regulated by the federal government because of other risks to human health. Deep fracking uses 100 times as much water as traditional types of natural gas drilling and extraction and has similar increases in the amounts dangerous chemicals that permanently pollute the water used for fracking.

Michigan's regulations are seriously outdated to address the impacts of this new fracking process. The permitting process is shrouded in a veil of secrecy without public disclosure of the chemicals being injected. Nor are permits subject to public review. This must change before fracking is allowed to proceed in Michigan.

In other states, thousands of environmental contaminations from fracking have been reported. In Michigan, a recent spill connected to shallow drilling serves as a warning signal that we should pause and examine *all* aspects of natural gas production before it is allowed to proceed.

**Governor Snyder must act now to direct his Administrative Departments to delay issuing permits and/or the state Legislature should immediately pass legislation delaying all new natural gas exploration and extraction until requirements have been put in place to protect water quantity and quality and to require public disclosure and participation in the permitting process for natural gas drilling.**

## **This includes:**

- Protecting Michigan's water supply by eliminating a special interest exemption from state water use laws so natural gas companies are treated the same as all other large water users in Michigan. Standards for fracking must be adopted that ensure there are no adverse impacts on our water resources as a result of water withdrawals.
- Protecting water quality by requiring public disclosure of specific fracking chemicals used by natural gas companies when they apply for a permit to drill. The public's right to know what is in our water outweighs any corporate claims of confidentiality involving the use of chemicals. The Administration and Legislature must regulate drilling operations to

ensure they are safe, including proper disposal of chemical waste and other byproducts of fracking.

- Requiring public participation in the permitting process so all of the facts are known before a permit is issued and all stakeholders—including people who own wells, fish streams and use drinking water—have the right to be heard.

## Background

As currently done, hydraulic Fracturing (“fracking”) poses an unreasonable risk to Michigan’s water and natural resources, including threatening the drinking water of the state’s residents. The legislature must act now to ensure the state has the proper safeguards in place before additional natural gas wells are allowed.

The specific chemicals used for fracking are considered proprietary by the drilling companies and are not available to the public. Moreover, fracking is exempt from a number of key federal environmental regulations, including the Underground Injection Control program of the Safe Drinking Water Act.

The U.S. Environmental Protection Agency (EPA) is currently studying the full range of dangers associated with fracking, with preliminary results not due until 2012. In the meantime, other studies have identified 29 carcinogenic chemicals often used in fracking fluid.

Michigan’s water is a public resource. Spills and other releases of fracking fluids during natural gas drilling and extraction threaten our water resources. Additionally, fracking activities in deep shale formations use millions of gallons of water per well, and all operations in effect divert water from local watersheds and the Great Lakes basin by polluting it and removing it from the water cycle through disposing of it in deep injection wells.

The short and long-term cumulative impacts of all natural gas wells in the state have not been examined, especially fracking of deep shale formations, including increases in air pollution, habitat destruction, and total water consumption. The long-term effects of deep well disposal must also be studied, including storage capacity, chemical mixing, and potential for seismic disruption.

Though all citizens have rights in our water resources, under current rules, the public has no ability to weigh in before wells are leased or permitted in their area. Moreover individuals’ mineral rights may be compulsorily pooled in with those of their neighbors.

Other states have reported over a thousand instances of environmental harm attributed to natural gas operations. The 2011 spill in Benzie County, with the extent of its contamination still being assessed, stands as a clear example of why Michigan cannot sit back unconcerned as numerous new wells are being proposed across the state. We must put a halt on all newly proposed natural gas exploration and production while proper safeguards are put in place.

***It is in the best interest of Michigan’s residents, water, and natural resources for the Governor or the Legislature to establish a delay on newly proposed hydraulic fracturing for purposes of natural gas exploration or production through enacting legislative or administrative moratoriums until certain conditions are met.***

## **Proposed Solutions**

Administrative actions must be taken or legislation must be passed that delays newly proposed hydraulic fracturing (fracking) for natural gas exploration and production until all of the following listed legislative and regulatory changes have been achieved.

### **Water Quantity Protections**

- The exemption for natural gas operations under state water withdrawal legislation Part 327 must be removed, requiring full use of the state's water withdrawal assessment process for all water withdrawals for natural gas drilling.
- Through a collaborative process, a standard for site-specific reviews of gas drilling-related water withdrawal proposals has been developed, to determine whether large water withdrawals associated with natural gas drilling and extraction are likely to cause adverse impacts on water resources.
- Water conservation practices have been required, and technology identified that recycles fracking water using a fully-contained system with minimal air pollution.

### **Water Quality Protections**

- Before natural gas permits are granted, upfront public disclosure has been required of the specific chemical ingredients used in the fracking process. The chemical disclosure must be sufficient for both baseline testing and emergency response activities.
- Claims of confidentiality about chemical fracking additive mixtures have been disallowed. The burden to prove confidentiality rests with the company. If they can prove proprietary information, then only partial redaction should be allowed under which the company must disclose a sufficient number of tracer constituent chemicals to allow for testing for contamination.
- Enforceable regulations, with sufficient fines to prevent negligence, have been developed that require proper water quality management practices onsite including at least the following:
  - Maximum protections have been developed to ensure produced, or "flow back," water, does not spill or leak during the drilling, production, transportation, and disposal processes, including requirements for the best possible tanker safety protocols and secondary containment for chemicals--even while stored prior to mixing;
  - The setbacks for wells from surface water resources have been extended to 500 feet at minimum, with appropriate buffers required;
  - Nontoxic fracking fluids have been required to be used when available; and
  - The best possible storm water control measures have been required to protect water quality, including strong erosion and sediment controls.

### **Reduced impacts on Air and Habitat**

- Controls on flaring and venting during drilling are in place to minimize methane releases.
- Strong air pollution controls have been instituted, that require use of idling limits, clean diesels, electric and alternative fueled vehicles, and the least-polluting electric generators. Condensate tanks have been required to be equipped with vapor recovery units and to be monitored for the control of VOC emissions.
- Full reclamation of the drilling site has been required, including up to the wellhead, and replantings that use native species.
- Plans to reduce traffic and related impacts have been required, including seasonal road restrictions, speed limit enforcement, and shuttling workers to the site.

- Open mud mixing pits have been disallowed when using chemical additives or saline.
- Plans for proper placement of utility lines have been required, with the least possible disturbance of habitat.
- The best possible noise control techniques have been required.

### **Protections for Waste Disposal**

- All solid waste from drilling and extraction operations, including well bore tailings, has been required to be properly disposed of in appropriate regulated waste disposal facilities.
- Michigan has established limits to state injection wells, to prevent our state from becoming a repository for waste from other states.
- The oil and gas waste injection well permit application requirements have been updated to include the following:
  - A complete listing of constituent chemicals, including all hazardous chemicals;
  - Annual projections for the number of additional injection wells that would be needed to manage the higher levels of flowback water from proposed new wells; and
  - Documentation that injection wells are not planned where seismic activity could occur.

### **Public Participation Process**

- An up-front process has been established that allows for public participation in the permitting process, that enables all parties to comment on, protest, or appeal the issuance of new permits.
- Compulsory pooling requirements have been removed so that persons retain control over their mineral rights.
- More appropriate and protective setbacks have been required for well placement near facilities like schools and hospitals.

### **Monitoring and enforcement**

- Conformance bond and financial responsibility statement requirements have been increased for gas drilling operations and for plugging the injection wells.
- Proper monitoring has been required, that includes at least:
  - Seismic monitoring or other cutting-edge technologies to ensure that hydraulic fracturing is inducing microseismic activity only within the shale gas reservoir and gas fissures are effectively maximized;
  - Testing for the presence of Naturally Occurring Radioactive Material (NORMs) in flow back water;
  - Monitoring and reporting of fracturing fluid flowback volume, especially estimates of contaminated water that remains in the well and rock formations; and
  - Where networks of pipes are used to transport flowback and produced water or natural gas products, pipeline “pigging” and other testing is performed to evaluate pipe thickness and leak detection.
- Emergency procedures have been developed and tested and clear lines of authority over fracking spills and cleanups has been established between the state and federal government and between state departments, including during transport of fracking chemicals and flowback fluids.
- Proper funding, appropriation, and staffing for the Department of Environmental Quality’s water and air monitoring, enforcement, and remediation programs has been re-established,

in addition to the Office of Geological Survey's permit compliance, inspection, monitoring, and enforcement activities.

- Proper oversight of plugged and abandoned wells has been instituted, including a system of regular inspections.

### **Ongoing Study**

- The Department of Environmental Quality has been required to conduct a study of total cumulative impacts of natural gas operations in the state. After the study has been completed, additional standards and regulatory structures are to be established to address cumulative impacts across multiple drill sites, including the following:
  - Water withdrawals;
  - Potential for spills and other contamination;
  - Methane releases and other air emissions from drill sites and production sites; and
  - Forest and habitat fragmentation from drill sites, production sites, roads, and pipelines.
- The state's natural gas rules and regulations have been required to be reassessed after EPA releases preliminary results of the study due out in 2012, and Michigan's rules are modified as needed.
- The results of these and other credible studies have been required to inform lease and permit decisions made by the Department.

Policy drafted by Michigan Clean Water Action and Sierra Club Michigan Chapter  
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