

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
SUPERVISOR OF WELLS INSTRUCTION 1-2015

OIL AND GAS DEVELOPMENT IN HIGH POPULATION DENSITY AREAS

Purpose

The purpose of this Instruction is to minimize potential land use conflicts over oil and gas development in areas with high residential population densities while protecting the rights of mineral owners and lessees to explore for and develop oil and gas resources on their property. This Instruction provides direction under the existing oil and gas rules for oil and gas wells within high population density areas, under the authority of Part 615, Supervisor of Wells, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, and the administrative rules promulgated thereunder.

Applicable Statute and Rule

Section 61506 of Part 615 states:

The supervisor shall prevent the waste prohibited by this part. To that end, acting directly or through his or her authorized representatives, the supervisor is specifically empowered to do all of the following:

(a) To promulgate and enforce rules, issue orders and instructions necessary to enforce the rules, and do whatever may be necessary with respect to the subject matter stated in this part to implement this part, whether or not indicated, specified, or enumerated in this or any other section of this part....

R 324.1301 of the administrative rules promulgated under Part 615 states:

The supervisor, under section 61506 of the act, may do any of the following:

(a) Enforce all rules, issue orders, determinations, and instructions necessary to enforce the rules and regulations, and do whatever may be necessary with respect to the subject matter stated in these rules to carry out the purposes of these rules and the act, whether or not the orders, determinations, or instructions are indicated, specified, or enumerated in the act or rules....

Definitions

As used in this Instruction:

"dB(A)" means decibels on the a-weighted network.

"High population density site" means an oil and gas well location where all of the following conditions exist:

- (a) The well location is in a county with a population of 750,000 or more.
- (b) The well location is zoned exclusively for residential use by the local zoning authority at the time a permit application is received by the Michigan Department of Environmental Quality (MDEQ).
- (c) There are 40 or more structures used for public or private occupancy, in any 90-degree quadrant within 1,320 feet of the well location.

"MSDS" means Material Safety Data Sheet that is required under Section 311 of the federal Emergency Planning and Community Right-to-Know Act of 1986, Public Law 99-499, 42 U.S.C. 2010.

Other terms used in this Instruction have the same meaning as in the administrative rules promulgated under Part 615. For reference, the definitions of pertinent terms in the administrative rules are listed in Appendix A of this Instruction.

Applicability of Instruction

This Instruction applies to oil and gas operations commenced after the effective date of the Instruction.

Permit Applications

The following requirements apply to an application for a permit at a high population density site:

1. A permit applicant shall provide notice of the application to the owners of record of structures used for public or private occupancy within 1,320 feet of the proposed well location. The notice shall be given to the owner within 7 days of submitting the permit application to the MDEQ's Office of Oil, Gas, and Minerals (OOGM), by first-class United States (U.S.) mail addressed to the last known address of the owner of record as evidenced by the current register of deeds office or assessor's records. The notice shall contain at least all of the following information:
 - a. The name and address of the applicant.
 - b. A statement that the applicant has applied for a permit to drill and operate an oil and gas well.
 - c. A statement that a person may submit comments on the application by mail at MDEQ, OOGM, P.O. Box 30256, Lansing, Michigan 48909-7756; or by

accessing the OOGM Weekly List of Applications and Permits for Oil and Gas Wells on the MDEQ Web site: <http://www.michigan.gov/ogs>.

- d. A copy of the first page of the permit application.
2. The OOGM shall provide notice of the permit application and permit decision to the supervisor of the township where the well is to be located and to the State Senator and State Representative of the respective districts wherein the well is to be located. The notice shall be given by email to the respective offices, or by first-class U.S. mail if so requested by the respective official.
3. A permit application shall include all of the following:
 - a. An evaluation of feasible and prudent alternatives for the proposed well location. The evaluation shall include an identification of potential well locations that are further removed from structures used for public or private occupancy, property ownership and legal constraints, and technical and environmental safety aspects of alternative sites.
 - b. Plans and schedules for berming, screening, and/or enclosures to limit public views of wellheads and pump jacks after well completion operations are concluded.
 - c. A depiction on the plat required under Rule 324.201(2)(b) of all structures used for public or private occupancy within 1,320 feet of the well location.
 - d. Plans for reducing noise levels to meet the requirements of the Drilling, Completion, and Production Operations, Item 4, of this Instruction.

Drilling, Completion, and Production Operations

The following requirements apply to drilling operations, well completion operations, and operation of oil and gas wells at a high population density site:

1. A permittee shall install at least one groundwater monitoring well in close proximity to, and down gradient of, the well location prior to commencing drilling operations. The permittee shall collect a water sample from the monitor well prior to commencing drilling operations and at approximately three months and six months following drilling completion. The water samples shall be tested for specific conductance, chloride, benzene, ethylbenzene, toluene, and xylene. The permittee shall provide the results of the sample analysis to the OOGM within seven days of the date the results are available.
2. A permittee shall communicate with the local fire marshal and emergency responders to explain and describe the timing, sequence, and critical points at the drilling operation at least seven days before moving a drilling rig to the well location and on an as-needed basis during drilling operations, and shall provide the fire marshal and emergency responders with a means to contact a representative of the permittee on a 24-hour basis.
3. A permittee shall post an identification sign in a clearly visible place at the entrance to the well location. The permittee shall post the sign at least five days

before commencing drilling operations and shall maintain the sign until after drilling operations are completed. The sign shall have lettering at least 1 1/2 inches high and legible under normal conditions at a distance of 25 feet, and shall show the following information:

- a. A statement that the site is the location of an oil and gas well;
- b. the expected duration of the drilling operation;
- c. the name of the permittee; and
- d. a telephone number by which an authorized representative of the permittee may be contacted at any time to respond to an emergency at the well.

4. A permittee shall take necessary measures to prevent nuisance noise associated with drilling operations.
 - a. Drill rig engines shall be equipped with quiet design mufflers or equivalent. All mufflers shall be properly installed and maintained in proper working order.
 - b. Drilling operations shall be conducted in a manner to reduce sound to either of the following levels, whichever is higher, at the nearest structure used for public or private occupancy:
 - i. 75 dB(A) between 8:00 a.m. and 8:00 p.m., and 70 dB(A) between 8:00 p.m. and 8:00 a.m.
 - ii. A sound level 10 dB(A) higher than background.
 - c. If measurement of sound levels at the nearest structure used for public or private occupancy is impractical, the measurement may be taken at a lesser distance and extrapolated using the following formula:
$$dB(A)_2 = dB(A)_1 - 20 \times \log_{10} (D_1/D_2)$$
Where:
dB(A)₂ = Calculated decibel level at the nearest structure used for public or private occupancy
dB(A)₁ = Decibel level at the point of measurement
D₁ = Distance from well location to point of measurement
D₂ = Distance from well location to the nearest structure used for public or private occupancy
 - d. Sound levels shall be determined by averaging minute-by-minute measurements made over a minimum 15-minute sample duration if practicable.
 - e. If the supervisor or authorized representative of the supervisor receives one or more complaints of noise heard by the occupant of a structure used for public or private occupancy that is attributed to a drilling operation, then the supervisor may require the permittee to collect decibel readings to determine the sound levels at the structure or an alternative location as described in Item 4(c). If the sound level exceeds the levels in Item 4(b), then the permittee shall immediately implement reasonable measures to meet those sound levels.
 - f. The requirements of this paragraph shall not apply during emergency conditions.

5. Drill cuttings, muds, and fluids used in drilling a well shall be contained in tanks and shall not be stored in in-ground pits or disposed of at the well location.
6. Drill rig lighting shall be shielded to prevent unnecessary light being directed toward structures used for human occupancy within 600 feet of the well location.
7. A permittee shall assure that a supervisory person who is qualified in well safety is present at the well site at all times during drilling operations.
8. Fencing shall be maintained around the perimeter of the well site to limit access during drilling operations, well completion operations, and operation of an oil and gas well.
9. A permittee shall provide site security as needed to prevent unauthorized access to the well site during drilling operations.
10. A permittee shall post MSDSs for all chemicals that are used or stored at a well site for which MSDSs are required under Section 311 of the federal Emergency Planning and Community Right-to-Know Act. The MSDSs shall be posted at the entrance to the access drive in a manner such that they can be accessed by the public and emergency response personnel.
11. Combustible gas and vapor produced during well completion, testing, and production shall be captured or burned in a flare or incinerator. A flare shall be surrounded by a shroud so that the flame shall not be visible at the ground level in surrounding areas.
12. Transportation of equipment and supplies to a well or associated facility after well completion operations shall be limited to the hours of 8:00 a.m. to 8:00 p.m. except as needed for emergencies.

Exceptions

The Supervisor may grant an exception to the provisions of this Instruction if necessary to protect the environment, public safety, or worker safety.

THIS INSTRUCTION IS EFFECTIVE FEBRUARY 24, 2015.

Date: Feb. 10, 2015


HAROLD R. FITCH
ASSISTANT SUPERVISOR OF WELLS

APPENDIX A

Supervisor of Wells Instruction 1-2015

Partial list of definitions in the Part 615 administrative rules that apply to this Instruction:

"Decibel" means a unit of sound level on a logarithmic scale measured relative to the threshold of audible sound by the human ear in compliance with the ANSI standard 1.1, entitled "Acoustical Terminology," 1994 edition, which is adopted by reference in these rules. Copies of the standard are available for inspection at the Lansing office of the geological survey division [now OOGM] of the department of environmental quality. Copies may be obtained from the Michigan Department of Environmental Quality, Geological Survey Division [OOGM], P.O. Box 30256, Lansing, Michigan 48909, at a cost as of the time of adoption of these rules of \$100.00 each, and from the American National Standards Institute, 11 West 42nd Street, New York, NY 10036, at a cost as of the time of adoption of these rules of \$100.00 each. (R 324.1015(3)(a))

"Decibels on the a-weighted network" means decibels measured on the a-weighted network of a sound level meter, as specified in the ANSI standard 1.4, entitled "Specifications for Sound Level Meters," 1983 edition, which is adopted by reference in these rules. Copies of the standard are available for inspection at the Lansing office of the geological survey division [now OOGM] of the department of environmental quality. Copies may be obtained from the Michigan Department of Environmental Quality, Geological Survey Division [OOGM], P.O. Box 30256, Lansing, Michigan 48909, at a cost as of the time of adoption of these rules of \$70.00 each, and from the American National Standards Institute, 11 West 42nd Street, New York, NY 10036, at a cost as of the time of adoption of these rules of \$70.00 each. (R 324.1015(3)(b))

"Drilling completion" means the time when a well has reached its permitted depth or the supervisor has determined drilling has ceased. (R 324.102(l))

"Drilling operations" means all of the physical and mechanical aspects of constructing a well for the exploration or production of oil or gas, or both, for injection of fluids associated with the production of oil or gas, or both, or the storage of natural hydrocarbons or liquefied petroleum gas derived from oil or gas, and includes all of the following:

- (i) Moving drilling equipment onto the drill site.
- (ii) Penetration of the ground by the drill bit and drilling of the well bore.
- (iii) Casing and sealing of the well bore.
- (iv) Construction of well sites and access roads. (R 324.102(m))

"Flare" means a device for the burning of gasses in which the flame is exposed to the atmosphere and burning takes place at a height of not less than 20 feet above the ground. (R 324.1101(f))

"Incinerator" means a device specifically designed for the destruction, by burning, of combustible gasses, in which the products of combustion are emitted to the outer air by passing through a stack or chimney that opens to the outer air at a height of not less than 20 feet above the ground. (R 324.1101(h))

"Nuisance noise" means any noise from a well or its associated surface facilities that causes injurious effects to human health or safety or the unreasonable interference with the comfortable enjoyment of life or property. (R 324.1015(3)(d))

"Oil and gas operations" means permitting activities required under R 324.201, drilling operations, well completion operations, operation of oil and gas wells, plugging operations, and site restoration. (R 324.103(b))

"Operation of oil and gas wells" means the process of producing oil or gas, or both, or the storage of natural hydrocarbons or liquefied petroleum gas, including all of the following:

- (i) Production, pumping, and flowing.
- (ii) Processing.
- (iii) Gathering.
- (iv) Compressing.
- (v) Treating.
- (vi) Transporting.
- (vii) Conditioning.
- (viii) Brine removal and disposal.
- (ix) Separating.
- (x) Storing.
- (xi) Injecting.
- (xii) Testing.
- (xiii) Reporting.
- (xiv) Maintenance and use of surface facilities.
- (xv) Secondary recovery. (R 324.103(c))

"Permit" means a permit to drill and operate an oil or gas well, or both, or an injection well, including associated surface facilities and flow lines. (R 324.103(e))

"Structure used for public or private occupancy" means a residential dwelling or place of business, place of worship, school, hospital, government building, or other building where people are usually present at least 4 hours per day. (R 324.103(m))

"Supervisor" means the director of the department of environmental quality or his or her assistants as approved by the director of the department of environmental quality. (R 324.103(n))

"Well completion operations" means work performed in an oil or gas well, or both, after the well has been drilled to its permitted depth and the production string of casing has been set, including perforating, artificial stimulation, and production testing. (R 324.103(s))

"Well location" means the surface location of a well. (R 324.103(t))