

DEPARTMENT OF ENVIRONMENTAL QUALITY
~~OFFICE OF OIL, GAS, AND MINERALS~~ DIVISION

OIL AND GAS OPERATIONS

Filed with the Secretary of State on

These rules become effective immediately upon filing with the Secretary of State unless adopted under section 33, 44, or 45a (6) of the 1969 PA 306. Rules adopted under these sections become effective 7 days after filing with the Secretary of State.

(By authority conferred on the supervisor of wells and the director of the department of environmental quality by section 61506 of 1994 PA 451, MCL 324.61506, sections 9 and 251 of 1965 PA 380, MCL 16.109 and 16.251, and Executive Reorganization Order No. 1991-22, MCL 299.13).

R 324.103, R 324.201, R 324.206, R 324.208, R 324.212, R 324.703, R 324.704, R 324.801, R 324.802, R 324.803, R 324.804, R 324.805, R 324.806, R 324.807, R 324.808 and R 324.1002 of the Michigan Administrative Code are amended; and R 324.809, R 324.810, R 324.811, R 324.812, R 324.813, R 324.814, R 324.815 and R 324.816 of the Code are added as follows:

PART 1. GENERAL PROVISIONS

R 324.103 Definitions; N to Z.

Rule 103. As used in these rules:

(a) "Nuisance odor" means an emission of any gas, vapor, fume, or mist, or combination thereof, from a well or its associated surface facilities, in whatever quantities, that causes, either alone or in reaction with other air contaminants, injurious effects to human health or safety; unreasonable injurious effects to animal life, plant life of significant value, or property; or unreasonable interference with the comfortable enjoyment of life or property.

(b) "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.

(c) "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.

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- (ix) Separating.
- (x) Storing.
- (xi) Injecting.
- (xii) Testing.
- (xiii) Reporting.
- (xiv) Maintenance and use of surface facilities.
- (xv) Secondary recovery.

(d) "Organization report" means a listing of all corporate officers, directors, incorporators, partners, or shareholders who have the authority to make, or are responsible for making, operational decisions, including the siting, drilling, operating, producing, reworking, and plugging of wells.

(e) "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.

(f) "Plugging operations" means the sealing of the fluids in the strata penetrated by an oil or gas well, or both, upon abandonment of the well or a portion of the well bore, so that the fluid from one stratum will not escape into another or to the surface.

(g) "Ppm" means parts per million by volume.

(h) "Producing interval" means any section of a wellbore that is open to, or intended to be open to, a formation or part of a formation that is intended to produce or is capable of producing oil or gas, or both, after well completion operations. The section of the wellbore may be open to the formation or part of the formation by any means, and may include but is not limited to, a section of a wellbore that is either uncased or has perforated casing.

(i) "Psi" means pounds per square inch.

(j) "Psig" means pounds per square inch gauge.

(k) "Secondary recovery" means the introduction or utilization of fluid or energy into or within a pool for the purpose of increasing the ultimate recovery of hydrocarbons from the pool.

(l) "Shut-in" means an action by a permittee to close down a producing well, a well capable of producing, or an injection well temporarily for any of the following reasons:

- (i) Repair.
- (ii) Cleaning out.
- (iii) Building up reservoir pressure.
- (iv) Planning for secondary recovery.
- (v) Other injection projects.
- (vi) While awaiting connection of a sales line.
- (vii) Lack of a market.

(m) "Site restoration" means all of the following:

- (i) The filling and leveling of all cellars, pits, and excavations.
- (ii) The removal or elimination of all debris.
- (iii) The elimination of all conditions that may create a fire or pollution hazard.
- (iv) The minimization of erosion.

(v) The restoration of the well site as nearly as practicable to the original land contour or to a condition approved by the supervisor.

(n) "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.

(o) “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.

(p) “Surface casing” means the casing string or strings used primarily for protecting fresh water or mineralized water resources from potential contamination during the drilling and operation of an oil or gas well, or both.

(q) “Surface facility” means a facility used in the injection of fluids or in the production, processing, or treatment of oil or gas, or both, including any of the following:

(i) Pumping equipment.

(ii) Fluid disposal equipment.

(iii) Facility piping.

(iv) Load outs.

(v) Separators.

(vi) Storage tanks.

(vii) Treatment equipment.

(viii) Compressors.

(r) “Surface water” means a body of water, and the associated sediments, which has a top surface that is exposed to the atmosphere and is not solely for wastewater conveyance, treatment, or control. Surface water may be any of the following:

(i) A Great Lake or its connecting waters.

(ii) An inland lake or pond.

(iii) A river or stream, including intermittent streams.

(iv) An impoundment.

(v) An open drain.

(vi) A wetland.

(s) “Underground source of drinking water” means **fresh water or mineral water** within an aquifer or portion of an aquifer that satisfies either of the following criteria:

(i) The aquifer or portion thereof supplies a public water system.

(ii) The aquifer or portion thereof contains a sufficient quantity of ground water to supply a public water system and meets either of the following criteria:

(A) The aquifer or portion thereof currently supplies drinking water for human consumption.

(B) The aquifer or portion thereof contains ground water that has fewer than 10,000 milligrams per liter total dissolved solids.

(t) “Well completion” means the time when a well has been tested and found to be incapable of producing hydrocarbons in commercial quantities and has been plugged or has been found capable of producing commercial quantities of hydrocarbons or when the well has been equipped to perform the service for which it was intended.

(u) “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.

(v) “Well location” means the surface location of a well.

(w) “Zoned residential” means a geographic area that was zoned by a local unit of government before January 8, 1993, as an area designated principally for permanent or recreational residences.

PART 2. PERMITS TO DRILL AND OPERATE

R 324.201 Application for permit to drill and operate requirements; issuance of permit.

Rule 201. (1) Until a person has complied with the requirements of subrule (2) of this rule, a person shall not begin the drilling or operation of a well for any of the following:

- (a) Oil or gas, or both.
- (b) Injection for secondary recovery.
- (c) Injection for the disposal of brine, oil or gas field waste, or other fluids incidental to the drilling, producing, or treating of wells for oil or gas, or both, or the storage of natural hydrocarbons or liquefied petroleum gas derived from oil or gas.
- (d) Injection or withdrawal for the storage of natural dry gas or oil well gas.
- (e) Injection or withdrawal for the storage of liquid hydrocarbons or liquefied petroleum gas.

(2) A permit applicant shall comply with all of the following permit application requirements:

(a) The exact well location shall be surveyed by a surveyor licensed in this state, a readily visible stake or marker shall be set at the well location, and a flagged route shall be established to the well location.

(b) The survey required by subdivision (a) of this subrule shall include a plat that shows all of the following:

- (i) The correct well location and bottom hole location description.
- (ii) A flagged route or explanation of how the well location may be reached.
- (iii) Footages from the nearest section, quarter section, and drilling unit lines.
- (iv) Information relative to the approximate distances and directions from the stake or marker to special hazards or conditions, including all of the following:

(A) Surface waters and other environmentally sensitive areas within 1,320 feet of the proposed well. Environmentally sensitive areas are identified by the department pursuant to applicable state and federal laws and regulations.

(B) Floodplains associated with surface waters within 1,320 feet of the proposed well.

(C) Wetlands, as identified by the provisions of sections 30301 to 30323 of the act, within 1,320 feet of the proposed well.

(D) Natural rivers, as identified by the provisions of sections 30501 to 30515 of the act, within 1,320 feet of the proposed well.

(E) Critical dune areas, as designated by the provisions of sections 35301 to 35326 of the act, within 1,320 feet of the proposed well.

(F) Threatened or endangered species, as identified by the provisions of sections 36501 to 36507 of the act, within 1,320 feet of the proposed well.

(G) All buildings, recorded fresh water wells and reasonably identifiable fresh water wells utilized for human consumption, public roads, pipelines, and power lines that lie within 600 feet of the proposed well location.

(H) All public water supply wells identified as type I and IIa that lie within 2,000 feet of the proposed well location and type IIb and III that lie within 800 feet of the proposed well location, as defined in 1976 PA 399, MCL 325.1001 to 325.1023.

(I) Identification of the existing local zoning designation of the surface location of the well.

(c) If the applicant intends to utilize high volume hydraulic fracturing, the application shall

include a list showing the specific identity and associated CAS number of each chemical constituent the applicant anticipates will be added to the primary carrier fluid, except that the specific identities and CAS numbers of trade secret chemicals may be withheld under the provisions of paragraph (i) of this rule.

(i) If the specific identity of a chemical constituent and its associated CAS number are a trade secret, the applicant may withhold the specific identity of the chemical constituent and its associated CAS number, but shall list the chemical family associated with the chemical constituent, or provide a similar description, and provide a statement that a claim of trade secret protection has been made by the entity entitled to make such a claim.

(ii) Listing of a chemical constituent under the requirements of this subdivision does not preclude a permittee from utilizing other chemical constituents in a high volume hydraulic fracturing operation; however, the chemical constituents actually used shall be submitted under the requirements of rule 1406 of these rules.

(d) One signed and sealed copy of the survey, on a form prescribed by the supervisor, shall be filed with an application for a permit to drill and operate or e-filed using a procedure approved by the supervisor.

(e) A person applying to drill and operate a well shall completely and accurately fill out, sign, and file a written application for a permit to drill on a form prescribed by the supervisor or e-filed using a procedure approved by the supervisor. The application shall be submitted to the supervisor at the offices of the Michigan Department of Environmental Quality, Office of Oil, Gas, and Minerals, P.O. Box 30256, Lansing, Michigan 48909, and a copy of the first page of the permit application shall be mailed to the clerk of the county and the surface owner of record of the land on which the well location is to be located within 7 days of submitting the permit application by first-class United States mail addressed to the surface owner's last known address as evidenced by the current property tax roll records.

(f) When the proposed well location is in or adjacent to any areas described in subdivision (b)(iv)(A) or (B) of this subrule, a person shall file for and obtain all applicable permits from the department of environmental quality before developing the well site or access to the well site or before drilling of the well. The person shall also file for and obtain any additional permits that may be required before the installation of flow lines or production equipment or before operating the well.

(g) A person shall file an environmental impact assessment as instructed by the supervisor.

(h) A person shall file an organization report if a current organization report is not on file with the supervisor.

(i) A person shall file a conformance bond or statement of financial responsibility pursuant to R 324.210.

(j) A person shall pay the fee as specified by statute. A fee filed with an application shall not be applied to a subsequent application. The fee shall be returned if a permit is not issued.

(k) A person shall provide additional information as required in R 324.802 ~~All of the following additional information shall be submitted~~ with an application for a permit to drill and operate an injection well or to convert a previously drilled well to an injection well.

~~(i) A plat that shows the location and total depth of the proposed injection well, shows each abandoned, producing, or drilling well and dry hole within 1,320 feet of the proposed injection well location, and identifies the surface owner of the land on which the proposed injection well location is to be located and each operator of a producing leasehold within 1,320 feet of the proposed injection well location.~~

—(ii) If a well is proposed to be converted to an injection well, a copy of the completion report, together with the written geologic description log or record filed pursuant to R 324.418(a) and borehole and stratum evaluation logs filed pursuant to R 324.419(1). The permittee shall also file an application for change of well status pursuant to R 324.511.

—(iii) Plugging records of all abandoned wells and casing, sealing, and completion records of all other wells within 1,320 feet of the proposed injection well location. An applicant shall also submit a plan reflecting the steps or modifications believed necessary to prevent proposed injected fluids from migrating up, into, or through inadequately plugged, sealed, or completed wells.

—(iv) A schematic diagram of the proposed injection well that shows all of the following information:

—(A) The total depth or plug back depth of the proposed injection well.

—(B) The true vertical depth and thickness of the disposal or injection interval.

—(C) The geological name of the disposal interval.

—(D) The geological name and the top and bottom depths of all fresh water strata to be penetrated.

—(E) The depths of the top and bottom of the casing or casings and cement to be used in the proposed injection well.

—(F) The size of the casing and tubing and the depth of the packer.

—(v) Information confirming that injection of liquids into the proposed zone will not exceed the fracture pressure gradient or, information showing that injection into the proposed geological strata will not initiate fractures through the overlying strata.

—(vi) Proposed operating data, excluding injection wells utilized for gas storage, including all of the following data:

—(A) The daily injection rates and pressures.

—(B) The types of fluids to be injected.

—(C) A qualitative and quantitative analysis of a representative sample of fluids to be injected. A chemical analysis shall be prepared for each type of fluid to be injected showing specific conductance as an indication of the dissolved solids and a determination of the concentration of the following parameters for chemical balance and indicators for comparison of water quality:

Cations _____ Anions

Cations _____ Anions

Calcium _____ Chloride

Sodium _____ Sulfate

Magnesium _____ Bicarbonate

Potassium

—However, if the fluid to be injected is fresh water, then an analysis is not required.

—(D) The geological name of the injection strata and the vertical distance separating the top of the injection strata from the base of the deepest underground source of drinking water.

—(E) A plan for conducting 5 year mechanical integrity tests of casing pursuant to R 324.805.

—(vii) For a proposed injection well to dispose of oil or gas field waste, or both, into a zone that would likely constitute a producing oil or gas pool, a list of all offset operators and certification that the person making application for an injection well has notified all offset operators of the person's intention by certified mail. If within 21 days after the mailing date a

~~substantive objection is filed with the supervisor by an offset operator, then the application shall not be granted without a hearing pursuant to part 12 of these rules. A hearing may also be scheduled by the supervisor to determine the need or desirability of granting permission for the proposed injection well.~~

~~—(viii) A proposed plugging and abandonment plan.~~

~~—(ix) Information demonstrating that construction of the well will prevent the movement of fluid containing any contaminant into an underground source of drinking water.~~

(1) A person shall receive and post the permit in a conspicuous place at the well location. The permit shall remain posted at the well location until well completion.

(3) A person who desires to directionally drill a well shall apply for and obtain a permit to drill and operate as provided in this rule. The application to drill a directionally drilled well shall include, in addition to the information specified in subrule (2) of this rule, all of the following information:

(a) The depth at which deviation from vertical is planned.

(b) The angle and path of each deviation.

(c) The proposed horizontal distance and direction from the well location to the bottom hole.

(d) The well's measured and true vertical depths.

(4) The supervisor shall process a permit application for a well and issue or deny a permit to drill and operate pursuant to section 61525 of the act. Pursuant to R 324.205, the supervisor shall not issue a permit to a person or an authorized representative of a person if the person is not eligible for a permit.

R 324.206 Modification of permits; deepening permits; change of ownership.

Rule 206. (1) A permit shall not be transferred to a location outside of the drilling unit.

(2) A permittee of a well who has not initiated drilling of a well shall not do either of the following:

(a) Change the well location within the drilling unit without the prior approval of the supervisor or authorized representative of the supervisor. To receive approval, a permittee shall return the permit to the Lansing office of the supervisor together with a revised application with corrected attachments and supplements. If the permittee requests a change in the well location **greater than 165 feet from the permitted location**, then a new permit and an additional fee are required. **If the permittee requests a change in the well location to a location less than 165 feet from the permitted location, then the change will require a revised permit and no additional fee. A change of location for an injection well, regardless of distance, requires a new permit and an additional fee.** Drilling shall not begin until the new permit or revised permit has been issued by the supervisor or authorized representative of the supervisor and posted at the drilling site.

(b) Change the method of drilling, casing and sealing programs, or other conditions of the permit without the prior approval of the supervisor or authorized representative of the supervisor. To receive approval, the permittee shall return the permit to the Lansing office of the supervisor together with a revised application with corrected attachments and supplements. If the permittee only requests a modification of the existing permit conditions, then an additional fee is not required. Drilling shall not begin until the revised permit has been approved by the supervisor or authorized representative of the supervisor and posted at the drilling site.

(3) A permittee of a well who begins the drilling of a well and encounters drilling problems or other drilling conditions that necessitate a change shall not do either of the following:

(a) Change the well location within the drilling unit, other than as provided by R 324.203, without the prior approval of the supervisor or authorized representative of the supervisor. To receive approval to change the well location, the permittee shall return the permit to the Lansing office of the supervisor together with a revised application with corrected attachments and supplements. Drilling shall not begin at the new location until the ~~new~~ **revised** permit has been issued by the supervisor or authorized representative of the supervisor. ~~A new permit and an additional fee are required.~~

(b) Change the method of drilling, casing and sealing programs, or other conditions of the permit without the prior approval of the supervisor or authorized representative of the supervisor. To receive approval to modify an existing permit condition only, the permittee shall contact the supervisor or authorized representative of the supervisor by letter, telephone, or visit and explain the drilling circumstances and request the necessary changes to the permit. The supervisor or authorized representative of the supervisor may give verbal approval to modify the permit with conditions for additional reporting requirements by the permittee. If approval to modify an existing permit is granted, then the revised permit and corrected attachments and supplements shall be filed, within 10 days, at the offices of the Michigan Department of Environmental Quality, Office of Oil, Gas, and Minerals, P.O. Box 30256, Lansing, Michigan 48909. An additional permit fee is not required.

(4) A permittee of a well who desires to deepen a well below the permitted stratigraphic or producing horizon where well completion has occurred shall file an application for a deepening permit. The application shall set forth, in detail, the new proposed total depth and the plan for casing and sealing off the oil, gas, brine, or fresh water strata to be found, or expected to be found, in the deepening operation. The deepening operation shall not be commenced until the application has been approved by the supervisor or authorized representative of the supervisor. A deepening permit and an additional fee are required.

(5) A permittee of a well who desires to continue the drilling of a well below the permitted depth, but within the permitted stratigraphic or producing horizon where drilling completion or well completion has occurred, shall file an application for change of well status pursuant to R 324.511. The application shall set forth, in detail, the new proposed total depth and the plan for casing and sealing off the oil, gas, brine, or fresh water strata found, or expected to be found, when drilling is continued. The approval of the change of well status shall serve to revise the permit to reflect the new permitted depth. The continuation of drilling shall not be commenced until the application for change of well status has been approved by the supervisor or authorized representative of the supervisor. To obtain approval to continue the drilling below the permitted depth, but within the permitted stratigraphic or producing horizon with the drilling rig then on location, the permittee shall contact the supervisor or authorized representative of the supervisor by letter, telephone, or visit and explain the circumstances for the request to continue the drilling. The supervisor or authorized representative may give verbal approval to continue the drilling below the permitted depth, but within the permitted stratigraphic or producing horizon. If approval to continue the drilling is granted, then the permittee shall file the application for change of well status pursuant to R 324.511, within 10 days of approval, at the offices of the Michigan Department of Environmental Quality, Office of Oil, Gas, and Minerals, P.O. Box 30256, Lansing, Michigan 48909. An additional permit fee is not required.

(6) If a permittee of a well conveys his or her rights as an owner of a well to another person, or ceases to be the authorized representative of the owner of a well, before final completion, then a request for the transfer of the permit to the acquiring person shall be submitted by the acquiring person to the supervisor at the offices of the Michigan Department of Environmental Quality, Office of Oil, Gas, and Minerals, P.O. Box 30256, Lansing, Michigan 48909, on forms as prescribed by the supervisor. The transfer of the permit may be approved upon receipt of a properly completed request, including the signatures of the permittee of record and the acquiring person, and upon the filing by the acquiring person of the conformance bond or a statement of financial responsibility as required by R 324.210. Pending the transfer of the existing permit, the acquiring person shall not operate the well. The acquiring person shall ~~be required to~~ file an organization report pursuant to R 324.201(2)(h).

(7) A permit for a well shall not be transferred to a person who has been determined to be in violation of any of the following until the permittee has corrected the violation or the supervisor has accepted a compliance schedule and a written agreement has been reached to correct the violations:

- (a) The act.
- (b) These rules.
- (c) Permit conditions.
- (d) Instructions.
- (e) Orders of the supervisor.
- (f) An order of the department of environmental quality.

An additional conformance bond covering the period of the compliance schedule may be required. The conformance bond is ~~shall be~~ in addition to the conformance bonds filed pursuant to R 324.212(a) or (b).

(8) If the permittee of a well is under notice because of unsatisfactory conditions at the well site involved in the transfer, then the permit for a well shall not be transferred to a person until the permittee has completed the necessary corrective actions or the acquiring person has entered into a written agreement to correct all of the unsatisfactory conditions.

R 324.208 Termination of permit.

Rule 208. (1) **A Subject to subrule (2) of this rule**, a permit issued pursuant to R 324.201(4), or transferred pursuant to R 324.206(6) or rules that were in effect before the effective date of these rules, shall terminate 2 years after the date of issuance, unless the drilling operation has reached a depth of not less than 100 feet below the ground surface elevation and the drilling operation is diligently proceeding or the well is otherwise being used for its permitted purpose.

(2) If a permit is subject to termination under this rule, the permittee may submit a written request to the supervisor to extend the permit at least 30 days before the scheduled termination date. Upon receipt of a request, the supervisor may extend the permit for a period of up to 2 additional years provided there have been no significant changes in the features or conditions described in R 324.201, or in requirements of these rules or the act, that would require modifications of the permit.

(3) Terminated permits may not be reactivated or transferred and the permit fee shall not be refunded.

R 324.212 Conformance bond amounts.

Rule 212. A person who drills or operates a well shall file a conformance bond with the supervisor for the following amounts, as applicable:

(a) Single well conformance bonds shall be filed in the following amounts, as applicable:

(i) ~~\$10,000.00~~ **\$20,000.00** for wells up to and including 2,000 feet deep, true vertical depth.

(ii) ~~\$20,000.00~~ **\$40,000.00** for wells deeper than 2,000 feet, but not deeper than 4,000 feet, true vertical depth.

(iii) ~~\$25,000.00~~ **\$50,000.00** for wells deeper than 4,000 feet, but not deeper than 7,500 feet, true vertical depth.

(iv) ~~\$30,000.00~~ **\$60,000.00** for wells deeper than 7,500 feet, true vertical depth.

(b) A person may file single well conformance bonds in an amount equal to 1/2 of the amount specified in subdivision (a) of this rule for wells where well completion operations have not commenced. A person ~~shall~~**may** not file single well conformance bonds under this subdivision for more than 5 wells. A person shall file single well conformance bonds in the full amount specified in subdivision (a) of this rule or file a blanket conformance bond as specified in subdivision (c) of this rule or submit a statement of financial responsibility pursuant to R 324.210 before the commencement of well completion operations on any well.

(c) Blanket conformance bonds may be filed as an alternative to single well conformance bonds. If a blanket conformance bond is utilized, then the permittee shall provide the supervisor with a list of wells covered by the blanket conformance bond. A maximum of 100 wells may be covered by a blanket conformance bond. If the permittee has more than 100 wells in a category, then the additional wells may be covered by single well conformance bonds or additional blanket conformance bonds. Blanket conformance bonds shall be filed in the following amounts, as applicable:

(i) \$100,000.00 for wells up to and including 2,000 feet deep, true vertical depth.

(ii) \$200,000.00 for wells deeper than 2,000 feet, but not deeper than 4,000 feet, true vertical depth.

(iii) \$250,000.00 for wells deeper than 4,000 feet, true vertical depth.

(d) A person shall not be required to file a blanket conformance bond or bonds in an aggregate amount of more than \$250,000.00. When the aggregate amount of the conformance bonds is \$250,000.00, the permittee may file 1 blanket conformance bond of \$250,000.00 to cover all of his or her wells.

PART 7. DISPOSAL OF OIL OR GAS FIELD WASTE, OR BOTH

R 324.703 Disposal of oil or gas field fluid wastes, or both.

Rule 703. A permittee of a well shall inject oil or gas field fluid wastes, or both, into an approved underground formation **through an approved Class II well** in a manner that prevents waste. The ~~disposal formation~~ **injection interval** shall be isolated from ~~fresh water strata~~ **underground sources of drinking water** by ~~an impervious confining formation interval~~.

R 324.704 Use of annular space for disposal prohibited; temporary exception.

Rule 704. A permittee of **any well, including Class II wells**, shall not dispose of fluid wastes in the annular space between strings of casing. The supervisor may grant a temporary

exception to the prohibition if the supervisor determines that annular disposal will not damage underground ~~fresh~~ **sources of drinking** water, oil, gas, or other minerals.

PART 8. INJECTION WELLS

R 324.801 ~~Construction and operation of injection wells~~ **Definitions.**

Rule 801. ~~As used in these rules: (1) A permittee of a well shall ensure that the injection of fluid into a well is through adequate tubing and packer. During injection operations, the tubing to casing annulus shall be filled with a noncorrosive liquid. Injection wells utilized for gas storage are exempt from this subrule.~~

~~(2) A permittee of a well shall ensure that surface access to all casing annuli is provided.~~

~~(3) A permittee of a well shall ensure that an injection well is constructed and operated so that the injection of fluids is confined to strata approved by the supervisor or authorized representative of the supervisor.~~

~~(4) A permittee of a well shall ensure that construction, operation, maintenance, conversion, and plugging and abandonment of the well will not allow the movement of fluid containing any contaminant into an underground source of drinking water.~~

(a) **“Administrator” means the administrator of the USEPA.**

(b) **“Area of review” means that area within a fixed radius of 1320 feet around an injection well.**

(c) **“Class II Well” means a well that does either of the following:**

(i) **Injects fluids under any of the following conditions:**

(A) **That are brought to the surface in connection with oil or natural gas production and may be commingled with waste waters from gas plants which are an integral part of production operations, unless those waters are classified as a hazardous waste at the time of injection.**

(B) **For enhanced recovery of oil or natural gas.**

(C) **For storage of hydrocarbons that are liquid at standard temperature and pressure.**

(ii) **Utilizes diesel fuel as a component of hydraulic fracturing fluid.**

(d) **“Class II well operator” means the person having secured a permit for any of the following:**

(i) **A new Class II well.**

(ii) **An existing Class II well.**

(iii) **A conversion of an existing well to a Class II well.**

(iv) **A rule authorized well in operation before the effective date of primacy.**

(e) **“Commercial disposal well” means a Class II well that is permitted to accept wastes other than those generated by the owner or operator of the well.**

(f) **“Confining interval” means a geological formation, group of formations, or part of a formation that is capable of limiting fluid movement above an injection interval.**

(g) **“Contaminant” means any physical, chemical, biological, or radiological substance or matter in water.**

(h) **“Date of primacy” means the effective date of the Administrator’s approval of the Michigan underground injection control program for Class II wells pursuant to section 1425 of the federal safe drinking water act of 1974, 42 U.S.C. 300h-4.**

(i) **“Diesel fuel(s)” means fluids that are associated with 5 specific Chemical Abstracts**

Services Registry Numbers (68334-30-5, 68476-34-6, 68476-30-2, 68476-31-3, and 8008-20-6).

(j) “Endangerment to an underground source of drinking water” means the presence of a contaminant in an underground source of drinking water, which supplies or may reasonably be expected to supply any public water system, where both of the following apply:

(A) The presence of the contaminant results from an injection operation.

(B) The presence of that contaminant may result in violation of any national primary drinking water regulation or may otherwise adversely affect the health of persons.

(k) “Enhanced Oil Recovery” or “Enhanced Recovery” means secondary recovery.

(l) “Existing Class II well” means a Class II well that has been approved, constructed, or converted prior to date of primacy.

(m) “Injection casing” means the long string of casing set into, through, or just above the injection interval, in which the packer and tubing may be set.

(n) “Injection interval” means the geological formation or group of formations or part of a formation receiving fluids through an injection well. There must be a confining interval above the injection interval.

(o) “Karst” means a type of topography that is formed over limestone, dolomite, or gypsum by solution of the rock and is characterized by closed depressions or sinkholes, caves, and underground drainage.

(p) “Mechanical integrity” means a well condition that exists if there is no significant leakage in the well’s casing, tubing, or packer and if there is no significant fluid movement into an underground source of drinking water through vertical channels adjacent to the injection well bore.

(q) “New Class II well” means a Class II well that is constructed or converted under Part 615 after date of primacy.

(r) “Oil or Gas Field Fluid Wastes” means liquid wastes resulting, obtained, or produced from the exploration, drilling, or production of oil or gas, or both.

(s) “Part 615” means Part 615 of 1994 PA 451, MCL 324.61501 to 324.627.

(t) “Rule authorized well” means a Class II well that was classified and/or treated by the USEPA as an authorized by rule well on or after January 1, 1984.

(u) “USEPA” means the United States Environmental Protection Agency.

(v) “Waste” as defined in MCL 324.61501 (q)(i)-(iii), includes unreasonable damage to an underground source of drinking water.

~~R 324.802 Temporary authority to inject~~ **Application for permit to drill, convert, and operate injection well.**

~~Rule 802. The supervisor may grant a permittee of a well temporary authorization, for a period of not more than 30 days, to inject fluid for the limited purpose of running injectivity tests. Injection wells utilized for gas storage are exempt from this rule.~~ **In addition to requirements in R 324.201, the following additional information shall be submitted with an application for a permit to drill and operate an injection well or to convert a previously drilled well to an injection well:**

(a) Notification information including the following:

(i) The name and address of the permittee of each oil, gas, and injection well and permitted location or locations within 1,320 feet of the proposed injection well location.

(ii) The name and address of the last surface owner or owners of record within 1,320 feet of a proposed Class II well location as reasonably determined by the records of the register of deeds office or equalization records.

(b) Required plat pursuant to R 324.201, that also shows the following:

(i) The location and total depth of the proposed injection well.

(ii) Each oil, gas, injection, and abandoned well and permitted location or locations within 1,320 feet of the proposed injection well location, including dry holes and wells that have been plugged and abandoned.

(iii) The surface owner or owners of record of the land on which the proposed injection well is to be located.

(iv) Each permittee of a well or permitted well location within 1,320 feet of the proposed injection well.

(v) Fresh water, irrigation, and public water supply wells within 1,320 feet of the proposed injection well.

(c) If a well is proposed to be converted to an injection well, all requirements of R 324.201(1) and R 324.201(2) apply, and the applicant must submit a copy of the completion report, together with the written geologic description log or record filed pursuant to R 324.418(a) and borehole and stratum evaluation logs filed pursuant to R 324.419(1). Pursuant to R 324.204 any well to be converted for liquid hydrocarbon storage is a proposed Class II well and subject to this subdivision.

(d) Plugging records of all abandoned wells and casing, sealing, and completion records of all other wells within 1,320 feet of the proposed injection well location. An applicant shall also submit a plan reflecting the steps or modifications believed necessary to prevent proposed injected fluids from migrating into an underground source of drinking water through inadequately plugged, sealed, or completed wells.

(e) A schematic diagram of the proposed injection well that shows all of the following information:

(i) The total depth or plug-back depth of the proposed injection well.

(ii) The geological formation name or names, true vertical depth, thickness, and lithology of the injection interval, and the confining interval.

(iii) The geological formation name or names and the top and bottom depths of all underground sources of drinking water to be penetrated.

(iv) The depths of the top and bottom of the casing or casings and cement to be used in the proposed injection well.

(v) The size of the casing and tubing and the estimated depth of the packer if applicable.

(f) Information showing that injection of fluids into the proposed injection interval will not exceed the injection interval fracture pressure gradient and information showing that injection into the injection interval will not initiate new fractures or propagate existing fractures in the overlying confining interval.

(g) For Class II wells, proposed operating data, including all of the following:

(i) The maximum anticipated daily injection rate expressed as barrels per day or thousand cubic feet per day.

(ii) The types of fluids to be injected. Hydraulic fracturing utilizing diesel fuels in the hydraulic fracturing fluid is subject to Class II regulations. Notwithstanding the provisions of R 324.1406(2), the use of diesel fuels in a proposed hydraulic fracturing

fluid is not protected from disclosure.

(iii) Maximum anticipated injection pressure, expressed as psig at the well head, and calculations used to derive that value.

(iv) A qualitative and quantitative analysis of a representative sample of fluids to be injected. A chemical analysis shall be prepared for each type of fluid to be injected showing specific conductance as an indication of the dissolved solids, specific gravity, and a determination of the concentration of calcium, sodium, magnesium, ~~potassium~~, chloride, sulfate, sulfide, carbonate, total iron, barium, and bicarbonate. However, if the fluid to be injected is fresh water, then an analysis is not required.

(v) The geological name of the injection interval and the vertical distance separating the top of the injection interval from the base of the deepest underground source of drinking water.

(h) For a proposed injection well to dispose of oil or gas field waste, or both, into an interval that would likely constitute a producing oil or gas pool, a list of all offset operators and certification that the person making application for an injection well has notified all offset operators of the person's intention by certified mail. If within 21 days after the mailing date a substantive objection is filed with the supervisor by an offset operator, then the application shall not be granted without a hearing pursuant to part 12 of these rules. The supervisor may schedule a hearing to determine the need or desirability of granting permission for the proposed injection well.

(i) Identification and description of all faults, structural features, karst, mines, and lost circulation zones within the area of review that can influence fluid migration, well competency, or induced seismicity. The applicant shall include a plan for mitigating risks of identifiable features.

(j) A proposed plugging and abandonment plan and schematic.

(k) Information demonstrating that construction of the well will prevent the movement of fluid that causes endangerment to an underground source of drinking water.

R 324.803 ~~Testing before operation of injection wells~~ Class II well notification, public comment, and public hearing.

~~Rule 803. (1) Before injecting fluid into a newly drilled injection well, or into a previously existing well that has been newly converted to an injection well, a permittee of a well shall provide for a test of the annulus between the innermost casing and the tubing above the packer. The test shall be conducted by a qualified person and the test shall be at a pressure of not less than 300 psig. The difference in pressure between the testing pressure and the tubing pressure shall be not less than 100 psig at the time of the test. A satisfactory test shall have a bleed off of not more than 5% over a period of 30 minutes.~~

~~-(2) Before the test, a permittee of a well shall notify the supervisor or authorized representative of the supervisor of the date and time of the test. A certified copy of the test procedure and results shall be filed with the supervisor by the qualified person making the test. The supervisor or authorized representative of the supervisor, after evaluating the test results and determining the mechanical integrity of the packer and casing string immediately outside the tubing, may approve injection operations to begin.~~

~~-(3) Injection wells utilized for gas storage are exempt from this rule. Within 10 days after receipt of a Class II well permit application the supervisor shall mail notice to each surface owner of record and well permittee of each oil, gas, and injection well within~~

1,320 feet of the proposed injection well, to the township supervisor or municipal manager where the well is located, and shall post the notice on the department website concurrently with the weekly permit list publishing which is posted on the department website and available by email list server. All of the following information must be included on the notice:

- (a) Date of notice.
 - (b) Applicant's name and address.
 - (c) Proposed well location, listing the county, township, range, section, and distance from nearest road intersections.
 - (d) Geological formation name and depth of injection interval.
 - (e) Maximum anticipated injection pressure, expressed as psig at the well head.
 - (f) Maximum anticipated daily injection rate expressed as barrels per day or thousand cubic feet per day.
 - (g) Information on how to submit comments on the application to the supervisor.
 - (h) The following statement "Any comments or objections on an application, or a request to obtain additional information about the application, must be received by the supervisor within 30 days after the date of notice set forth herein."
 - (i) If substantial compliance is achieved toward notification requirements, inadvertent mistakes in noticing will not be a bar to processing of the permit.
- (2) The supervisor shall receive public comments for 30 days following the date of the notice and complete review of the application as follows:
- (a) If no objections are received within the 30-day comment period, the supervisor or authorized representative of the supervisor shall consider that no objections exist and shall issue a permit within 10 days if it is determined that the application complies with the law.
 - (b) If a comment or an objection to the application is received, the supervisor or authorized representative of the supervisor shall determine the validity of the comment or objection. If in the opinion of the supervisor or authorized representative of the supervisor it is determined the comment or objection is not relevant to the issues of waste, public health or safety, or is without substance, a permit shall be issued within 10 days if it is determined that the application complies with the law.
 - (c) If the supervisor or authorized representative of the supervisor considers the comment or objection to be relevant to the issues of waste, public health or safety, or is of substance, and the commenter has requested a public hearing, then the supervisor shall hold a public hearing within 30 days after the notice of public hearing. The public hearing will be held in the township or county of the proposed well, is for gathering public comment on a proposed permit, and is not an evidentiary hearing pursuant to R 324.1201 to R 324.1205. The supervisor will provide a minimum of 20 days' notice of the public hearing. Notice will be made by posting the hearing on the department calendar, the department website, and in one local newspaper.
 - (d) If the supervisor or authorized representative of the supervisor determines, after the hearing and upon consideration of comments and the application, that all of the following conditions have been met, the application for a Class II well shall be approved and a permit shall be issued within 30 days:
 - (i) The application complies with the requirements of these rules.
 - (ii) The method of injection proposed in the application complies with the law.

(iii) The proposed method of injection will not threaten public health or safety and will not create waste or endanger an underground source of drinking water.

(e) Concurrently with the issuance or denial of a Class II permit application, the supervisor or authorized representative of the supervisor shall post responses to the public comments on the department website.

(3) The provisions of this rule are effective only upon the date of primacy.

~~R 324.804 Maximum injection pressure~~ **Construction and operation of injection wells.**

~~Rule 804. During disposal operations, a permittee shall ensure that the surface injection pressure does not exceed a pressure determined by the following equation:~~

~~$$P_m = (fpg - 0.433 \text{ sg})d$$
 where~~

~~— P_m = surface injection pressure~~

~~— fpg = fracture pressure gradient (if unknown, assume 0.800)~~

~~— sg = specific gravity of the injection liquid (if unknown, assume 1.2)~~

~~— d = injection depth in feet (true vertical depth).~~

(1) Injection of fluid into an injection well shall be through a combination of casing, tubing, cement, and packer placement that isolates the injection interval and prevents the movement of fluids into or between underground sources of drinking water, including through vertical channels adjacent to the well bore, which has mechanical integrity. In addition to cementing requirements in this rule, well casing shall be cemented pursuant to R 324.408, R 324.411, and R 324.413. The supervisor or authorized representative of the supervisor shall review cement details and any logs required for the applicant to demonstrate external mechanical integrity prior to authorization to inject. One or more of the following methods for demonstrating external mechanical integrity and prevention of fluid migration into or between underground sources of drinking water shall be used:

(a) The results of a temperature log, or noise log, or cement bond log.

(b) Cementing records demonstrating the presence of adequate cement to prevent a migration.

(c) Other methods approved by the supervisor or authorized representative of the supervisor.

(2) A permittee of a well shall ensure that the injection of fluid into a well is through adequate tubing and packer. During injection operations, the permittee shall fill the tubing to casing annulus with a noncorrosive liquid. For Class II wells, the packer shall be set within 100 feet of the base of the injection casing or within 100 feet of the top perforation of the injection interval, unless otherwise approved by the supervisor. Injection wells utilized for gas storage are exempt from this subrule.

(3) A permittee of a well shall ensure that surface access to all casing annuli is provided.

(4) A permittee of a well shall ensure that an injection well is constructed and operated so that the injection of fluids is confined to injection interval or intervals approved by the supervisor or authorized representative of the supervisor.

(5) In addition to R 324.408 surface casing requirements, surface casing must be set a minimum of 100 feet below the base of the glacial drift into competent bedrock or 100 feet below all underground sources of drinking water, whichever is deeper, for new Class II wells. To convert a previously drilled well into a Class II well, where existing

surface casing is not 100 feet below underground source of drinking water, a demonstration of the combination of casing and cement must be made to show protection of all underground sources of drinking water.

(6) The injection casing must have a minimum of 250 feet of cement immediately above the injection interval. If less than 250 feet of cement exists, remedial cementing must occur at a point as near to the existing cement top as possible, as determined by the supervisor or authorized representative of the supervisor. Injection wells utilized for gas storage are exempt from this subrule.

(7) Class II wells must have injection casing in addition to the surface casing and any additional casing that may be required under R 324.410.

(8) In addition to other provisions of these rules, the top of the injection interval shall be a minimum of 500 feet below the deepest underground source of drinking water for a new Class II well in an area of karst, unless a lesser separation is approved by the supervisor based on a demonstration of protection of underground sources of drinking water by the permittee. Within an area of karst, in addition to other requirements, all casings except the injection casing shall be circulated to surface with cement. If not possible to circulate cement to surface because of karst features or lost circulation zones, the casing annulus shall have cement from at least 100 feet to the surface.

(9) Subrules R 324.805(1), (2), (5), and (6) do not apply to Existing Class II wells or Rule Authorized wells since they are permitted, constructed or converted prior to the date of primacy.

R 324.805 Operational testing requirements **Temporary authority to inject.**

~~Rule 805. (1) A permittee of an injection well, except for an injection well utilized for gas storage, shall provide for a pressure test that meets the requirement of subrule (2) of this rule, by a qualified person, to determine the mechanical integrity of the tubing, casing, and packer.~~
~~(2) The annulus between the innermost casing and the tubing above the packer shall be tested at least once each 5 years at a pressure of not less than 300 psig. A satisfactory test shall have a bleed off of not more than 5% over a 30-minute period. The difference in pressure between the testing pressure and the tubing pressure shall not be less than 100 psig at the time of the test. Before the test, the permittee shall notify the supervisor or authorized representative of the supervisor of the date and time of the test.~~

~~The supervisor or authorized representative of the supervisor may request that a certified copy of the test procedure and results be filed with the supervisor by the qualified person making the test.~~

~~(3) Before injecting fluid into a newly drilled well or previously existing well newly converted to an injection well to be utilized for gas storage, a permittee of an injection well shall provide for a test of the mechanical integrity of the casing, by a qualified person, utilizing either a pressure test at a bottom hole pressure of not less than the maximum expected operating pressure of the gas storage field or an equivalent test approved by the supervisor.~~ **The supervisor may grant a permittee of a well temporary authorization, for a period of not more than 30 days, to inject fluid for the limited purpose of running injectivity tests. Temporary authorization to inject will only be granted if there will be no endangerment of underground sources of drinking water. Injection wells utilized for gas storage are exempt from this rule.**

R 324.806. Monitoring and filing records and reports Testing and authorization to inject before operation of Class II injection wells.

Rule 806. (1) ~~A permittee of a brine disposal injection well shall, on a weekly basis, monitor and record the injection pressure, injection rate, and cumulative volume of the fluid injected. A permittee of a secondary recovery injection well shall, on a monthly basis, monitor and record the injection pressure, injection rate, and cumulative volume of the fluid injected. A permittee of a secondary recovery injection well may conduct the monitoring and recording, required by this rule, on a field or project basis by manifold monitoring, rather than on an individual well basis, if more than 1 secondary recovery injection well operates with a single manifold, and if the permittee demonstrates that manifold monitoring is comparable to individual well monitoring. A permittee of a brine disposal injection well shall report the data monthly to the supervisor, unless the supervisor requires a lesser frequency, on forms prescribed by the supervisor. A permittee of a secondary recovery injection well shall report the data annually to the supervisor, on forms prescribed by the supervisor. Injection wells utilized for gas storage are exempt from this rule.~~

~~(2) A permittee of a injection well shall file an annual monitoring report, on a form provided by the supervisor, summarizing the data of the monitoring required in subrule (1) of this rule. A permittee shall not operate an injection well unless the annual monitoring report is filed by March 1 of each year for the previous calendar year. If the report is not filed by March 1, then a permittee may not continue injection until the required report is submitted and written approval is received from the supervisor or authorized representative of the supervisor.~~

~~(3) All records pertaining to an injection well shall be retained by the permittee for a period of 3 years. Before injecting fluid into a new Class II well, a permittee of a well shall provide for a test of the annulus between the innermost casing and the tubing above the packer. The test shall be conducted by a qualified person and the test shall be at a pressure of not less than 300 psig. The difference in pressure between the testing pressure and the tubing pressure shall be not less than 100 psig at the time of the test. A satisfactory test shall have a pressure change of not more than 5% over a period of 30 minutes.~~

(2) A permittee of a well shall notify the supervisor or authorized representative of the supervisor at least 5 days in advance of the date and time of the test.

(3) Within 14 days of completion of the test, the permittee shall submit, on a form prescribed by the supervisor, a report of each mechanical integrity test to the supervisor or authorized representative of the supervisor. The report shall contain test supporting data, including, but not limited to, gauge calibration data, pressure recordings and charts, tubing size, packer type, and packer depth. Approval of the test results will be based on witnessing by supervisor or authorized representative of the supervisor, or review and evaluation of test data submitted pursuant to this subrule.

(4) Before the commencement of injection, a permittee shall receive an authorization to inject from the supervisor or authorized representative of the supervisor. Prior to issuance of the authorization to inject, the supervisor or authorized representative shall have witnessed the test or received the test data, reviewed the test data, and determined that the permittee has demonstrated that the well has mechanical integrity.

Authorization to inject will be granted only after any applicable well records required

by R 324.418 and have been received and evaluated by the supervisor or authorized representative of the supervisor. Verbal authorization from the supervisor or authorized representative is acceptable to commence injection. Written authorization to inject from the supervisor or authorized representative will be issued within 7 days of verbal authorization.

(5) Injection wells utilized for gas storage are exempt from this rule.

~~R 324.807 Loss of mechanical integrity~~ **Maximum injection pressure.**

~~Rule 807. (1) A permittee of an injection well shall verbally notify the supervisor or authorized representative of the supervisor of any pressure test failure, significant pressure changes, or other evidence of a leak in an injection well, within 24 hours of the test failure, pressure change, or evidence of a leak. If there is evidence that indicates an injection well is not, or may not be, directing the injected fluid into the permitted injection strata, a permittee of an injection well shall immediately cease injection.~~

~~(2) A permittee shall submit written notice of the pressure test failure or other evidence of a leak to the supervisor or authorized representative of the supervisor within 5 days of the occurrence. If injection has ceased pursuant to subrule (1) of this rule, then a permittee shall not resume injection until the permittee has tested or repaired the well, or both. If the repair requires a change of well status pursuant to R 324.511, then a plan shall be submitted to, and approved by, the supervisor or authorized representative of the supervisor.~~

During Class II well injection operations, a permittee shall ensure that the surface injection pressure does not exceed a pressure determined by the following equation:

$$P_m = (fpg - 0.433 \text{ sg})d \text{ where}$$

P_m = surface injection pressure

fpg = fracture pressure gradient of the injection interval (if unknown, assume 0.800)

sg = specific gravity of the injection liquid (if unknown, assume 1.2)

d = depth of the top of the injection interval in feet (true vertical depth).

The value for fpg may be determined by an instantaneous shut-in pressure or data derived from step rate testing. Other information to derive fpg values may be used with approval of the supervisor or authorized representative of the supervisor.

~~R 324.808 Cessation of injection wells; request for temporary abandonment status~~ **Class II well operational testing requirements.**

~~Rule 808. If an injection well ceases operating for the purpose for which it was intended for 1 year, then a permittee shall request temporary abandonment status for the well. If temporary abandonment status is not granted, then the permittee of the injection well shall plug the well.~~

(1) A permittee of a Class II well shall provide for a pressure test that meets the requirement of subrule (2) of this rule, by a qualified person, to determine the mechanical integrity of the tubing, casing, and packer.

(2) The annulus between the innermost casing and the tubing above the packer shall be tested at least once each 5 years at a pressure of not less than 300 psig. A satisfactory test shall have a pressure change of not more than 5% over a period of 30 minutes. The difference in pressure between the testing pressure and the tubing pressure shall not be less than 100 psig at the time of the test. At least 5 days before the test, the permittee shall notify the supervisor or authorized representative of the supervisor of the date and time of the test. This subrule applies to all Class II wells, including those with

approved temporary abandonment status.

(3) Within 14 days after the test, the permittee shall, on a form prescribed by the supervisor, submit a report of each mechanical integrity test to the supervisor or authorized representative of the supervisor. The report shall contain supporting data including, but not limited to, gauge calibration data, pressure recordings and charts, tubing size, packer type, and packer depth. Prior to an issuance of an authorization to inject, the supervisor or authorized representative shall have witnessed the test or received the test data, reviewed the test data, and determined that the permittee has demonstrated the the well has mechanical integrity.

(4) For a Class II well that has not been utilized for its intended purpose for a period of greater than 2 years, the permittee shall, prior to resuming injection, demonstrate mechanical integrity for the well and receive authorization to resume injection from the supervisor or authorized representative of the supervisor.

R 324.809 Testing requirements for wells utilized for gas storage.

Rule 809. Before injecting fluid into a newly drilled well or previously existing well newly converted to an injection well to be utilized for gas storage, a permittee of an injection well shall provide for a test of the mechanical integrity of the casing, by a qualified person, utilizing either a pressure test at a bottom hole pressure of not less than the maximum expected operating pressure of the gas storage field or an equivalent test approved by the supervisor. Within 14 days of the test, the permittee shall, on a form prescribed by the supervisor, submit a report of each mechanical integrity test to the supervisor or authorized representative of the supervisor. Prior to issuance of an authorization to inject, the supervisor or authorized representative shall have witnessed the test or received the test data, reviewed the test data, and determined that the permittee has demonstrated that the well has mechanical integrity.

R 324.810. Monitoring and filing records and reports.

Rule 810. (1) A permittee of a Class II well not utilized for secondary recovery shall, on a weekly basis, monitor and record the annulus pressure, injection pressure, injection rate, and weekly cumulative volume of the fluid injected.

(2) A permittee of a Class II well utilized for secondary recovery injection well shall, on a monthly basis, monitor and record the annulus pressure, injection pressure, injection rate, and monthly cumulative volume of the fluid injected. A permittee of a secondary recovery injection well may conduct the monitoring and recording, required by this rule, on a field or project basis by manifold monitoring, rather than on an individual well basis, if more than 1 secondary recovery injection well operates with a single manifold, and if the permittee demonstrates that manifold monitoring is comparable to individual well monitoring.

(3) A permittee of an injection well not utilized for secondary recovery shall report the data monthly to the supervisor, unless the supervisor requires a lesser frequency, on forms prescribed by the supervisor.

(4) A permittee of a secondary recovery injection well shall report the monthly data annually to the supervisor, on forms prescribed by the supervisor by March 1 of each year for the previous year.

(5) In addition to other requirements within this rule, a permittee of a Class II

commercial disposal well shall submit a complete list of sources of disposed fluids on a quarterly basis on a form prescribed by the supervisor within 45 days of the end of each quarter. The provisions of this subrule are effective only upon the date of primacy.

(6) In addition to other requirements within this rule, a permittee of a Class II commercial disposal well shall submit information on any new source to the supervisor, and shall obtain approval of the source from the supervisor or authorized representative of the supervisor, prior to injection of fluids from that source. The provisions of this subrule are effective only upon the date of primacy.

(7) A permittee of a Class II well shall file on a quarterly basis the fluid loss or gain in the tubing-casing annulus on a form prescribed by the supervisor within 45 days of the end of each quarter. Rule authorized wells are exempt from this requirement. The provisions of this subrule are effective only upon the date of primacy.

(8) The permittee of a Class II well shall submit an annual chemical analysis of the injectate using same analytes as R 324.802(g)(iv) by March 1 of the following year, or more frequently if there has been a change in sources or characteristics of the injectate.

(9) The permittee shall retain all records pertaining to an Class II injection well for a period of 5 years.

(10) The permittee of any Class II well shall indicate on any submitted report observed noteworthy anomalies or problems identified related to that data. The permittee shall report exceedance of the Maximum Injection Pressure on injection monitoring reports. The provisions of this subrule are effective only upon the date of primacy.

R 324.811 Loss of mechanical integrity.

Rule 811. (1) A permittee of an injection well ~~Class II well~~ shall notify the supervisor or authorized representative of the supervisor of any pressure test failure, significant pressure changes, or other evidence of a leak in an injection well, within 24 hours of the pressure test failure, significant pressure change, or other evidence of a leak. If there is evidence that indicates an injection well is not, or may not be, directing the injected fluid into the permitted injection interval, a permittee of an injection well shall immediately cease injection.

(2) A permittee shall submit written notice of the pressure test failure, significant pressure change, or other evidence of a leak to the supervisor or authorized representative of the supervisor within 5 days of the occurrence, on a form prescribed by the supervisor. If injection has ceased pursuant to subrule (1) of this rule, then a permittee shall not resume injection until the permittee has tested or repaired the well, or both. If the repair requires a change of well status pursuant to R 324.511, or a permit modification, then a plan shall be submitted to, and approved by, the supervisor or authorized representative of the supervisor. The repair or modification plan must demonstrate protection of any underground sources of drinking water.

(3) Before resuming injection, a permittee must demonstrate the well has mechanical integrity and receive an authorization to inject. Verbal authorization from the supervisor or authorized representative of the supervisor is acceptable to commence injection. Written authorization to inject from the supervisor or authorized representative will be issued within 7 days of verbal authorization. Prior to issuance of an authorization to inject, the supervisor or authorized representative shall have

witnessed the test or received the test data, reviewed the test data, and determined the permittee has demonstrated that the well has mechanical integrity.

R 324.812 Cessation of injection wells; request for temporary abandonment status.

Rule 812. If an injection well ceases operating for the purpose for which it was intended for 1 year, then a permittee shall plug the well or request temporary abandonment status for the well in writing. The request for temporary abandonment status shall be pursuant to R 324.511. The temporary abandonment status may be granted by the supervisor if, after application and justification by the permittee, the supervisor determines that waste will be prevented. When approving the temporary abandonment status or subsequent extensions, the supervisor may require special actions and monitoring by the permittee to ensure the prevention of waste and endangerment of underground sources of drinking water. If temporary abandonment status is not granted, then the permittee of the injection well shall plug the well. This rule supersedes R 324.209 for injection wells.

R 324.813 Suspension of Class II well operations due to threat to public health and safety or underground sources of drinking water.

Rule 813. (1) The supervisor or authorized representative of the supervisor may immediately require corrective action at a Class II well, including suspending any or all components of the injection or disposal operations, if the supervisor determines either of the following:

(a) The injection operations are in violation of the provisions of the act, these rules, permit conditions, instructions, or orders of the supervisor.

(b) The injection operations threaten the public health and safety or underground sources of drinking water.

(2) A suspension of injection or disposal operations shall be in effect for not more than 5 days or until the operation is in compliance and protection of the public health and safety and underground sources of drinking water is ensured.

(3) Unless the permittee brings the operations into compliance as required pursuant to subrule (1), the supervisor may issue an emergency order to continue the suspension of injection or disposal operations beyond 5 days, and may schedule a hearing under part 12 of these rules. The total duration of the suspension of injection or disposal operations under this provision shall not be more than 21 days, as provided in section 61516 of Part 615, MCL 324.61516.

(4) Unless the permittee brings the operations into compliance as required pursuant to subrule (1) or (2) of this rule, the supervisor shall issue a new order following a minimum of 10 day notice and public hearing as provided in section 61516 of Part 615, MCL 324.61516(1) and R 324.1211, enter into an administrative consent agreement, or enter other binding instrument to extend the suspension of injection or disposal operations under this provision beyond 21 days. The order, administrative consent agreement, or other binding instrument shall require corrective actions within specific time limits to achieve compliance and protection of the public health and safety and underground sources of drinking water, and shall remain in force until the operation is brought into compliance.

(5) Authorization to resume injection shall not be given by the supervisor or

authorized representative of the supervisor until compliance and protection of the public health and safety and underground sources of drinking water is achieved. The authorization to inject will only be given when mechanical integrity is also demonstrated, if applicable.

(6) This rule supersedes R 324.1014 for Class II wells.

R 324.814 Class II primacy transitional requirements for supervisor and owner-operators.

Rule 814. (1) Transitional requirements for the supervisor include all of the following:

(a) Upon the date of primacy, the supervisor shall do the following:

(i) Accept all Class II well permits, including rule authorized wells, issued under the authority of the USEPA administered underground injection control program. These wells are currently permitted under Part 615, and are deemed to meet the requirements of Part 615. Existing permit terms under Part 615 remain in effect.

(ii) Accept records from the USEPA of all Class II wells, including rule authorized wells.

(iii) Accept maximum injection pressures established by permits issued by USEPA including maximum injection pressures issued for rule authorized wells,

(iv) Accept mechanical integrity test data and test schedules for all existing Class II wells and rule authorized wells.

(b) Within 30 days following the date of primacy, an owner or operator shall do the following:

(i) Transfer pending applications submitted for Class II wells under the USEPA underground injection control program to the Michigan Department of Environmental Quality, Oil, Gas, and Minerals Division, P.O. Box 30256, Lansing, Michigan 48909, for final review and permitting decisions.

(ii) File or transfer a conformance bond pursuant to R 324.212.

R 324.815 Class II permit modifications.

Rule 815. (1) Modifications to a Class II permit issued pursuant to R 324.206 may be considered major modifications and subject to requirements of R 324.802 and R 324.803. Minor modifications are not subject to requirements of R 324.802 and R 324.803.

(2) Minor modifications include activities such as the following:

(a) Correcting typographical errors.

(b) Requiring more frequent monitoring or reporting by the permittee.

(c) Changing an interim compliance date in a schedule of compliance, provided the new date is not more than 120 days after the date specified in the existing permit and does not interfere with attainment of the final compliance date requirement.

(d) Change in ownership or operational control of a facility where the supervisor determines that no other change in the permit is necessary.

(e) Changing quantities or types of fluids injected which are within the capacity of the facility as permitted and, in the judgment of the supervisor, would not interfere with the operation of the facility or its ability to meet conditions described in the permit and would not change its classification.

(f) Changes in construction requirements approved by the supervisor or authorized

representative of the supervisor, including remedial cementing or adding perforations to the approved injection interval.

(g) Amendment of a plugging and abandonment plan when approved by the supervisor or authorized representative of the supervisor.

(3) The provisions of this rule are effective only upon the date of primacy.

R 324.816 Class II Cross Reference

Rule 816. For Class II wells, the following rules are applicable: R 324.101 to 324.199, R 324.201 to 324.208, R 324.210 to 324.216, R 324.401 to 324.422, R 324.501 to 324.504, R 324.507, R 324.508, R 324.510, R 324.511, R 324.701 to 324.705, R 324.801 to 324.808, R 324.810 to 324.816, R 324.901 to 324.904, R 324.1001 to 324.1013, R 324.1015, R 324.1101 to 324.1130, R 324.1201 to 324.1212, R 324.1301, and R 324.1401 to 324.1406.

PART 10. WELL SITES AND SURFACE FACILITIES; PREVENTION OF FIRES, POLLUTION, AND DANGER TO, OR DESTRUCTION OF, PROPERTY OR LIFE

R 324.1002 Secondary containment requirements and construction standards.

Rule 1002. (1) All wellheads and pump jacks installed after the effective date of these rules and surface facilities constructed for hydrocarbon, gas, brine injection, or brine handling or surface facilities converted to brine injection or handling after November 15, 1989, shall provide for secondary containment pursuant to the requirements of this rule. A permittee of a well shall maintain all existing dikes or fire walls approved before November 15, 1989, in a manner to form a reservoir that has a capacity of 1 1/2 times the capacity of the enclosed tank or tank battery and shall keep the reservoir free of oil, emulsions, tank bottoms, brine, water, vegetation, debris, or any flammable or combustible material. The supervisor or authorized representative may require surface facilities for hydrocarbon, gas, brine injection, or brine handling constructed before November 15, 1989, to be upgraded to meet the requirements of this rule if the facility is substantially reconstructed.

(2) A permittee of a well shall submit secondary containment plans to the supervisor or authorized representative of the supervisor for approval before construction of the facility. The secondary containment plans shall consist of a plot plan of the proposed facility and cross sections showing construction details of the sidewalls and floor or floors of all secondary containment areas, including the proposed overall dimensions of the facility. The supervisor or authorized representative of the supervisor shall approve or disapprove the secondary containment plans within 30 days of receipt of the plans.

(3) A permittee of a well shall comply with all of the following minimum construction standards to meet the secondary containment requirements of this rule:

(a) A permittee shall be required to prepare a hydrogeological investigation of the facility area to establish local background groundwater quality. The hydrogeological investigation shall include all of the following:

(i) Water quality sampling pursuant to the parameters established in R 324.201(2)(k)(vi).

(ii) A determination of the direction of groundwater flow and depth to the groundwater in the uppermost aquifer.

(iii) A chemical analysis showing the concentrations of benzene, ethylbenzene, toluene, and xylene.

(iv) A geologic description of earth materials, both horizontally and vertically, in the immediate vicinity of the proposed facility.

(b) Each facility shall be required to have 1 of the following monitoring systems to detect leakage from hydrocarbon or brine storage secondary containment areas:

(i) A minimum of 1 groundwater monitoring well downgradient which is in close proximity to all hydrocarbon or brine storage secondary containment areas.

(ii) Tertiary containment underlying the secondary containment, which shall be constructed and sealed in a manner to capture any hydrocarbons or brine that may leak or seep through the secondary containment. A layer of permeable material and a monitoring tube shall be placed between the secondary and tertiary containment to allow monitoring to determine the presence of any leakage or seepage through the secondary containment.

(c) A vessel that contains hydrocarbons or brine, or both, shall be elevated and placed on impervious pads or constructed so that any leakage can be easily detected. A vessel that is to be used on-site for 30 days or less shall, at a minimum, be placed on leak-resistant material.

(d) A hydrocarbon and brine storage vessel, including oil heating and treating equipment, shall be located in a secondary containment area and the containment volume shall be in compliance with the following minimum requirements, as applicable:

(i) Containment areas that have only brine storage vessels shall be constructed to contain 150% of the largest storage vessel.

(ii) Containment areas with only hydrocarbon storage vessels shall be constructed pursuant to R 29.2301 et seq.

(iii) Containment areas where both hydrocarbon and brine storage vessels are located shall be in compliance with the volume requirements for the largest storage vessels.

(iv) Precipitation shall be taken into consideration in the design of the secondary containment area.

(e) The sidewalls and floor of the secondary containment and spill containment areas shall be constructed and sealed in a manner to prevent the seepage of hydrocarbons or brine, or both, into the surrounding soils, surface waters, or groundwater.

(f) A hydrocarbon and brine storage vessel shall not be erected, enclosed, or maintained closer than 200 feet from any drilling or producing well.

(g) Oil heating or treating equipment shall not be erected, enclosed, or maintained closer than 75 feet from any drilling or producing well or oil storage tank or tank battery.

(h) Dikes shall be maintained and the enclosure kept free of all of the following:

(i) Oil.

(ii) Emulsions.

(iii) Tank bottoms.

(iv) Brine.

(v) Water.

(vi) Vegetation.

(vii) Debris.

(viii) Any flammable or combustible material.

(i) The hydrocarbon and brine truck loading and unloading areas located outside of hydrocarbon or brine storage secondary containment areas shall have a spill containment capacity equal to double the volume of the hoses used to connect the truck to the tanks, but not less than a capacity of 5 barrels. The spill containment shall be constructed and sealed in a manner that prevents the seepage of hydrocarbons or brine, or both, into the surrounding

soils, surface waters, or groundwater.

(j) Brine disposal well truck unloading areas and commercial brine truck loading and unloading areas located outside of hydrocarbon or brine storage secondary containment areas shall be constructed and sealed in a manner that prevents the seepage of hydrocarbons or brine, or both, into the surrounding soils, surface waters, or groundwater. In addition, a ramp shall be constructed to contain the unloading vehicle, its hoses, and connections within the ramp area. The ramp area shall contain a sump and be connected to a secondary containment area so that any spillage drains into the sump and into the secondary containment area. The spill containment ramp and sump shall have a combined capacity of not less than 20 barrels.

(k) Sumps shall be constructed of materials impervious to hydrocarbons and brines and resistant to damage and deterioration during use. Sumps shall be connected to the ramp area and the secondary containment area in a manner that prevents leakage.

(l) Surface facilities for hydrocarbon and brine handling shall be constructed to meet all of the following minimum requirements:

(i) All transfer and injection pumps shall have leak containment.

(ii) All brine and hydrocarbon flow lines to a facility are considered part of that facility and are subject to the following requirements:

(A) All flow lines shall be pressure tested pursuant to the provisions of paragraph (iii)(A),(B),(C),(E), and (G) of this subdivision.

(B) A permittee may elect to not perform the pressure testing of the flow lines, except flow lines that transport brine only, if the permittee performs visual inspections of the entire flow line corridor every 3 months, except when impractical due to snow cover, and reports the results of the inspections to the supervisor or authorized representative of the supervisor annually by January 31 of each year for the previous calendar year.

(iii) All buried facility piping for the transport of liquids shall be pressure-tested pursuant to the following provisions, as applicable:

(A) Piping made of noncorrodible or corrosion-protected material shall be pressure-tested every 3 years.

(B) All piping other than piping specified in subparagraph (A) of this paragraph shall be pressure-tested every 12 months.

(C) If buried piping is excavated for repair or relocation, then the disturbed portion shall be pressure-tested immediately pursuant to subparagraphs (D) and (E) of this paragraph.

(D) The pressure test shall be 100% of the normal oil and gas separator operating pressure. The pressure shall be stabilized at 90% of test pressure, at a minimum, and shall hold for a period of 15 minutes.

(E) A permittee shall provide certification to the supervisor or authorized representative of the supervisor, within 30 days of a pressure test, that a pressure test was conducted and the facility piping passed the pressure test. If a facility's piping does not pass the pressure test, the supervisor or authorized representative of the supervisor shall be notified by the permittee within 48 hours after the test. If the pressure test indicated that the facility's piping leaked, then the piping shall be repaired and retested before putting the piping back in service. After the repair of the piping, the permittee shall report the repair to the supervisor or authorized representative of the supervisor and provide certification that the piping has been retested and is not leaking.

(F) Single-phase gas lines are not subject to the pressure test requirements if the lines are protected by a liquid phase trap.

(G) The supervisor may approve or require other pressure testing or leak detection methods in place of the pressure testing required in this paragraph.

(iv) At production or injection well facilities, all piping shall be routed above the ground and kept within the secondary containment area where practical. Piping that cannot be routed above the ground shall have its location marked with posts or with other location-identifying markers approved by the supervisor or authorized representative of the supervisor so that the buried piping can be easily located.

(v) Brine injection wells shall have a working check valve on the flow line at or near the wellhead to avoid backflow.

(vi) All hydrocarbon and brine loading and unloading facility transfer lines that are not in use shall be secured to prevent spillage. A shutoff valve shall be installed at the truck connect point and at the storage vessels. At connect points, impermeable drip containment vessels shall be used and shall be an adequate size to contain all spillage and precipitation to avoid overflow.

(m) Wellheads, flare pits, vents, and flare stacks shall have secondary containment and spill containment areas constructed in a manner to prevent the seepage of hydrocarbons or brine, or both, into the surrounding soils, surface waters, or groundwater. Secondary containment at the wellhead shall be constructed in a manner to capture any leakage of liquid that may occur. In addition, if the wellhead is provided with a pump jack or is converted to a pump jack equipped with a gasoline or diesel-powered engine, then the engine shall also have secondary containment that is sufficient to prevent the seepage of any machine oils or fuels into the surrounding soils, surface waters, or groundwater. Injection wells utilized for gas storage are exempt from this subrule.

(4) Upon completion of the construction of the facility, but before its use, a permittee of a well shall certify, to the supervisor or authorized representative of the supervisor, that the secondary containment area was constructed according to the approved plan. A permittee shall ensure that an approved spill or loss response and remedial action plan is also on file with the supervisor or authorized representative of the supervisor before a facility is used.

(5) Before any significant modification of the secondary containment area occurs, a permittee of a well shall notify the supervisor or authorized representative of the supervisor and receive approval before making the modification. The supervisor or authorized representative of the supervisor shall approve or deny the request within 10 days of receipt of the request.

(6) A permittee of a well shall perform inspections at the facility at a frequency that is sufficient to ensure that the throughput of fluids in the system does not exceed the primary and secondary containment capacity between inspections. The permittee shall perform at least 1 inspection per week.

(7) The supervisor shall require the installation of an automatic facility shutdown system if the facility has a throughput of liquids in a 24-hour period that exceeds the containment volume of the secondary containment area. The automatic shutdown system shall be designed to prevent liquids from overflowing the secondary containment area. A facility shall be exempt from the requirement of an automatic shutdown system if the facility has staff present 24 hours per day and is equipped with alarm systems on the tank or tanks of the tank battery.

(8) The monitoring system required by R 324.1002(3)(b) shall be kept in a functional condition so that water samples can be collected and water level measurements can be taken

every 6 months. The water samples shall be tested for specific conductance as an indicator of dissolved solids, concentrations of chloride, and a chemical analysis pursuant to subrule (3)(a)(iii) of this rule, except the chemical analysis provided by subrule (3)(a)(iii) of this rule shall not be required at monitoring systems at surface facilities where liquid hydrocarbons are not handled. If sampling indicates a possible problem, then additional sampling for the water quality parameters established in ~~R 324.201(2)(j)(vi)~~ **R 324.802(g)(iv)** may be required. The results of the sample analysis shall be provided to the supervisor or authorized representative of the supervisor as soon as the results are available. If the samples taken by the permittee show substantial increases above background water quality, then the permittee shall, at a minimum, increase monitoring. If the samples confirm that hydrocarbons are present at levels above background, then the permittee shall immediately take remedial action in the form of containment and removal.

(9) A permittee of a well shall provide a right of entry to the facility for monitoring at all times to the supervisor or authorized representative of the supervisor.