Ohio Administrative Code

Rule 1501:9-3-07 Design and operational requirements of a class II disposal well or a surface facility.

Effective: January 13, 2022

(A) On and after the effective date of this rule, any person who operates a class II disposal well or a surface facility shall comply with all of the operational requirements and standards in this rule, unless specifically exempted in this rule. Compliance with this rule does not eliminate the requirement that a person comply with any other applicable laws.

(B) Only brine and other waste substances may be injected into a class II disposal well for which a permit is issued under Chapter 1501:9-3 of the Administrative Code.

(C) Maximum allowable injection pressure for class II disposal well.

(1) The maximum allowable injection pressure will be set using the formula prescribed in paragraph (C)(1)(a) of this rule, unless an alternate pressure is established in a plan accepted pursuant to paragraph (O) of this rule.

(a) The formula Pm = (0.75 - (Pgf x SG))D; where,

Pm = maximum surface injection pressure (pounds/inches squared)

0.75 psi/ft = maximum injection pressure gradient allowed

D = depth to top of shallowest proposed injection formation (feet)

Pgf = 0.433 (psi/ft) = pressure gradient of fresh water

SG = 1.2 = conservative specific gravity of injection fluid

(2) Hydraulic fracturing of a class II disposal well may only occur if the chief approves a request in writing. Hydraulic fracturing may only occur for forty-eight consecutive hours or less. The chief will

not approve more than two hydraulic fracturing requests per operator per well in a calendar year.

(3) The chief may implement graduated maximum allowable injection pressure requirements and any applicable testing requirements not to exceed the maximum allowable injection pressure requirements as established in this rule.

(D) Mechanical integrity demonstration of a class II disposal well.

(1) To demonstrate a class II disposal well has mechanical integrity, annular pressure between the production casing and the injection tubing shall be continuously monitored and recorded using a method acceptable to the chief. Positive pressure sufficient to detect leaks shall be maintained on the annular space between the casing and the injection tubing. On or after the effective date of this rule, the annular pressure data shall be maintained for the life of the well and submitted to the division in a format acceptable to the chief upon the request. For wells permitted after October 1, 2012, any annular pressure data recorded prior to the effective date of this rule shall be maintained for the life of the well and submitted to the division in a format acceptable to the chief upon request. All data from such monitoring shall also be available for review by the division at any time and the chief may require the class II disposal well owner to submit the data to the division. If a well is transferred to another person, any data maintained under this paragraph shall be transferred with the well.

(2) Not less than once every five years or at the request of the chief, a mechanical integrity test part 1 shall be performed.

(a) At least twenty-four hours prior to the commencement of any mechanical integrity test part 1, the class II disposal well owner shall notify the appropriate inspector. A person in a division field office or central office shall be directly notified when the appropriate inspector cannot be contacted. All records of tests shall be retained by the class II disposal well owner for a period of at least five years or until a subsequent mechanical integrity test part 1 is performed. Results of all tests shall be recorded on a form provided by the division and filed with the division within thirty days after the completion of the mechanical integrity test.

(b) During operation of the class II disposal well, the chief, for good cause, may require a person to complete a mechanical integrity test part 2.

(3) The class II disposal well owner shall install, maintain, and annually test an automatic shut-off device set to terminate injection operations if the permitted maximum allowable surface injection pressure at the well head is exceeded. If at any time the maximum allowable injection pressure is exceeded, the class II disposal well owner shall immediately cease operations and notify the appropriate inspector within twenty-four hours. Prior to resuming operations and under the supervision of the chief, the class II disposal well owner shall perform a mechanical integrity test part 1 and test the automatic shut-off device for compliance with this rule.

If an inspection of a class II disposal well determines the automatic shut-off device has been disabled, set above the maximum allowable surface injection pressure, or altered in any other way that prevents the termination of injection operations upon reaching the maximum allowable injection pressure, the owner may be ordered to cease injection operations at the well for thirty consecutive days. The chief may revoke the permit authorizing injection if subsequent violations of this paragraph occur.

(4) If a class II injection well does not meet mechanical integrity, the owner shall immediately suspend injection operations and notify the division within twenty-four hours. The owner shall develop a plan to achieve mechanical integrity and submit to the chief in writing who will accept or reject in writing. Upon implementation of the accepted plan, if the chief determines the class II injection well cannot meet mechanical integrity, the chief may order the well to be plugged.

(5) If the chief determines operations of a class II disposal well may be impacting wells or impacting public health, safety, or the environment outside of the permitted injection zone or the previous area of review, the chief may modify a permit by order and require a new area of review to be conducted as specified in rule 1501:9-3-05 of the Administrative Code at a distance to be determined by the chief. If any new corrective action is necessary based on the new area of review, the person shall immediately suspend injection operations and complete the corrective action before resuming injection operations.

(E) Tubing and packer installation. For a class II disposal well in operation prior to the effective date of this rule, if a person proposes to install a new tubing and packer, the tubing and packer shall be set no more than two hundred feet above the injection zone. Installation of the tubing and packer

shall be witnessed by a representative of the division.

(F) Monitoring and inspection procedure.

(1) The owner shall visually inspect the wellhead daily during active injection operations to ensure compliance with Chapter 1509. of the Revised Code, division 1501:9 of the Administrative Code, and any terms and conditions associated with the permits issued for the well.

(2) The class II disposal well owner shall continuously monitor and record injection pressures and injection volumes for each class II disposal well on a daily operational basis. On or after the effective date of this rule, the data shall be maintained for the life of the well and submitted to the division in a format acceptable to the chief upon the request.

(3) The chief may require the class II disposal well owner to install ground water monitoring wells when contamination of the ground water has been caused by or is reasonably anticipated to be caused by the class II disposal well. All ground water monitoring well installation and sampling shall be conducted in accordance with the U.S. environmental protection agency "RCRA Ground Water Technical Enforcement Guidance Document OSWER-9950.1."

(4) The class II disposal well owner shall develop and implement an inspection procedure and schedule for all equipment, containment systems, pipelines, and other appurtenances at the surface facility. The chief may require a class II disposal well owner to conduct such inspections on a schedule that is different than a permittee's schedule if there is just cause.

(a) The inspection procedure is to ensure all equipment and other appurtenances associated with the surface facility are maintained in a safe and functional manner.

(b) Inspections may include, but not be limited to, containment, tanks, liner systems, pumps, process piping, pipelines, monitoring equipment, monitoring wells, and other inspections recommended by equipment manufacturers or others experienced with the operation and maintenance of the equipment and other appurtenances.

(c) Document on a log all inspections performed, name of the person performing the inspection, date

of the inspection, findings of the inspection, and actions taken as a result of the inspection.

(5) Any pipeline that transports brine or other waste substances must be tested in accordance with the standards of either ANSI/ASME B31.4 "pipeline transportation systems for liquids and slurries" or ASTM F2164 "standard practice for field leak testing of polyethylene piping systems using hydrostatic pressure" during the verification of integrity, at least once every five years, after repair or replacement of the pipe and any connections, or at the request of the chief.

(a) Each surface facility permittee shall give the appropriate inspector forty-eight-hour direct notice in advance of any activity performed under paragraph (F)(5) of this rule. A person in the division field office or central office shall be directly notified within the same time period when the appropriate inspector is unavailable.

(b) Any test of a pipelines used to transport brine to a class II disposal well shall be witnessed by a division representative.

(G) Reporting.

(1) Class II disposal well.

(a) Not more than forty-five days after the end of each calendar quarter, Class II disposal well owners shall submit a report on a form prescribed by the chief containing the following information:

(i) Source, volume in barrels, and delivery date for each shipment of brine or other waste substances;

(ii) Total volume in barrels of brine or other waste substances received for each month in the quarter;

(iii) Summarized volumes of delivered brines or other waste substances separated by those subject to fee(s) pursuant to division (H) of section 1509.22 of the Revised Code; and

(iv) Average and maximum injection pressures compiled for each month of the previous quarter.

(b) An class II disposal well owner well shall submit to the chief, on or before the fifteenth day of February of each calendar year on a form prescribed by the chief, a statement of the volume of brine injected in the well for the immediately preceding calendar year and the amount of the fee required to be collected pursuant to the requirements established in division (H) of section 1509.22 of the Revised Code for the immediately preceding calendar year. At the same time the statement is submitted, the owner shall submit the fee collected pursuant to the requirements established in division (H) of section 1509.22 of the Revised Code. The chief may require the statement, the fee collected, or both to be submitted electronically.

(H) During the operation of a class II disposal well or a surface facility, the chief may require a class II disposal well owner to submit additional information pertaining to the design, construction, or operation of the permitted class II disposal well or surface facility that the chief determines is necessary for the protection of public health or safety or to prevent damage to the environment or is necessary to ensure compliance with the requirements of this rule.

(I) Lawful disposal of waste.

(1) A class II disposal well owner or a surface facility shall lawfully dispose of all wastes and equipment resulting from or used in operations at the class II disposal well or surface facility, including but not limited to all filter media, process piping, fittings, valves, and tubing that comes in contact with brine and other waste substances. The person shall keep all records of disposal for five years and make them available to the chief upon request.

(2) No down-blending, solidification, or stockpiling of solid waste mechanically generated at the surface facility may occur at a surface facility.

(J) Emergency release notification. Provide and maintain in a visible location at a class II disposal well or surface facility a contact list with phone numbers for notification purposes in the event of a release of brine or other waste substances. Include in the contact list the class II disposal well owner designated incident response coordinator, applicable federal, state, and local authorities with responsibilities related to a release, and contractors who could respond to the release. Any release at a class II disposal well shall be managed by the permittee in accordance with Chapter 1501:9-8 of

the Administrative Code.

(K) The division may sample brine or other wastes at any time.

(L) If the total capacity of a primary containment is reduced by thirty per cent due to the accumulation of solid material in the primary containment, the person operating the surface facility shall empty and clean the primary containment. All brine and other waste substances removed during this activity shall be disposed of lawfully. The person must provide direct notification to the division two business days before emptying and cleaning each primary containment.

(M) The requirements of paragraph (M) of this rule do not apply to a surface facility that is already constructed or has an unexpired permit as of the effective date of this rule unless either of the following apply: the operator applies for an amendment for the surface facility or the chief determines that the operation of the surface facility is impacting public health, safety, and the environment. If the chief determines the surface facility is impacting public health safety, and the environment, the chief may require by order the operator to amend the surface facility to meet the following standards. All of the following standards apply to the design, construction, and operation of a surface facility:

(1) Containment standards for a surface facility are as follows:

(a) Design, install, operate, and maintain to prevent a release of brine or other waste substances from the containment.

(b) Install, test, operate, and maintain in accordance with the manufacturer's recommendations and specifications.

(c) Capable of storing brine or other waste substances without collapse, rupture, or failure.

(d) Compatible with the substance that it contains and the physical and climatic conditions to which the containment will be exposed.

(e) Protect all metallic surface containment from corrosion by cathodic protection, appropriately

designed coating systems, or other means approved by the chief.

(f) Protect all above ground metal surface tanks from lightning in accordance with industry standards.

(g) Design, install, test, operate, and maintain geomembrane liner systems in accordance with the manufacturer's recommendations and specifications. Utilize testing methods in accordance with ASTM standards, international association of geosynthetic installers standards, or other standards as approved by the chief.

(h) Provide foundation or base support for the containment that is resistant to pressure gradients above and below the system and capable of preventing failure due to settlement, compression, or uplift.

(i) Design, install, and maintain containment to prevent physical damage from equipment due to excessive stress, settlement, vibration, expansion, or contraction.

(j) Repair or replace any containment or containment component such as liners, gaskets, piping, pumps, valves, rivets, and bolts immediately upon detection of failure or imminent failure.

(k) Inspect and assess by a qualified person containments or containment system components that were utilized previously in a different service or at a different location. At a minimum, investigate and disclose the following in the assessment:

(i) Design standard(s), if available, to which the containment or containment components is constructed;

(ii) Compatibility of substance to be stored in the containment;

(iii) Existing condition of the containment or containment components; and

(iv) Age of the containment or containment components.

(2) Primary containment structures for a surface facility shall not overflow. Primary containment

standards are as follows:

(a) Provide failsafe mechanisms, such as overfill protection, shut-off valves, and leak detection systems.

(b) Affix and maintain an outward visible label or provide signage for all primary containment, as applicable, which identifies the contents. If the primary containment is a tank, the label or sign will also identify the maximum volume.

(c) Maintain a minimum of six inches of freeboard within all primary containment that is exposed to precipitation. A larger freeboard may be required by the chief.

(d) Provide appropriate air release and vacuum release on all primary containment, as applicable, and install filters on any air release system to control odors when necessary.

(e) In addition to all other remedies provided by law, the chief may prohibit the use or require the repair of any pit or tank which fails to conform to any of the requirements of this rule.

(f) Burial of any tank is prohibited.

(g) A liner is not primary containment.

(3) Secondary containment shall not be used as primary containment at a surface facility. Secondary containment standards are as follows:

(a) Provide one hundred ten per cent of the capacity of the largest single primary containment or the total capacity of multiple primary containments that are piped together to function as a single containment, whichever is greater. Provide an additional six-inch freeboard if the secondary containment is exposed to precipitation.

(b) Design and maintain as a means to capture an incidental spill or release from a primary containment and a catastrophic failure of a primary containment.

(c) Remove any accumulation of storm water in the secondary containment within thirty-six hours after the accumulation. For surface facilities connected to a class II disposal well, the chief may require the installation of a pumping system to keep the secondary containment free of storm water.

(d) Provide secondary containment for all pumps and other appurtenances that are associated with the storage, processing, or conveyance of brine or other waste substances.

(e) Disclose allowable leak rates for geomembrane systems.

(4) Conveyance systems standards are as follows:

(a) Process piping.

(i) Design, install, operate, and maintain dedicated process piping and any supporting structures for flow of all brine, other waste substances, and other materials used in the storing of the brine or other waste substances.

(ii) Design and install process piping systems in a manner that minimizes abrasion and corrosion in the piping system and allows for expansion and contraction of the conveyance system.

(iii) Design process piping systems to be compatible with the substance that they carry and the physical and climatic conditions to which the piping system will be exposed.

(iv) Design, install, and maintain a secondary containment system for all process piping systems.

(v) Affix and maintain a label on all process piping to identify the contents and flow direction of the pipe contents.

(b) Pipeline standards are as follows:

(i) Design, install, operate, and maintain pipelines and any supporting structures to prevent a release of brine or other waste substances and to have a working pressure rating equal to or greater than the highest anticipated operating pressure to which the pipeline might be exposed to. Pipelines used to

transport brine to a class II disposal well shall have a working pressure rating equal to or greater than the maximum allowable injection pressure prescribed in rule 1501:9-3-07 of the Administrative Code.

(ii) Design, install, operate, and maintain dedicated and controlled pipelines for flow of all brine and other waste substances.

(iii) Design and install pipelines in a manner that minimizes abrasion and corrosion in the pipeline and allows for expansion and contraction of the pipeline.

(iv) Design pipelines to be compatible with the substance that they carry and the physical and climatic conditions to which the pipeline will be exposed.

(v) Design, install, and maintain a means to detect, and capture a leak from the pipeline.

(vi) Design, install, and maintain a means to detect and locate a pipeline.

(vii) Design, install, operate, and maintain pipelines in a manner to protect public water intakes, ponds, developed springs, water wells, wetlands, or any water of the state as defined in section 1509.01 of the Revised Code and the chief may require a means to isolate pipeline segments near these areas.

(viii) Design, install, operate and maintain pipelines with fittings that are accessible from ground level, approved by the chief that allow for installation of gauges or other equipment for monitoring by the division.

(ix) The chief may require a means to isolate pipeline segments for protection of human health and safety and the environment.

(5) Provide and maintain site security controls at a surface facility that prevent accidental or unauthorized entry into the facility or areas of the facility not intended for access by the public, wildlife, and domestic animals. The site security controls may include any or all of the following:

(a) A sign that is legible from the public right-of-way and includes: surface facility name, oil and gas waste facility permit number, twenty-four-hour emergency contact telephone number, and 911 address of the oil and gas waste facility;

(b) Signs or other means that clearly identify portions of the surface facility that are intended to be accessible only to authorized personnel;

(c) Lighting that illuminates the surface facility sufficiently to discourage acts of vandalism;

(d) Signs or other means that clearly identify ingress, egress, and traffic flow patterns;

(e) Mesh, screening or other controls to prevent access by migratory birds on open top containments, as necessary; and

(f) A wind-sock for wind direction determination.

(N) Enforcement.

(1) The chief may immediately suspend, by order, operations of a class II disposal well or surface facility under any of the following circumstances:

(a) A class II disposal well is causing or is likely to cause contamination of the land, surface waters, or subsurface waters;

(b) A class II disposal well cannot demonstrate mechanical integrity;

(c) The failure of mechanical integrity test part 1 or mechanical integrity test part 2;

(d) A seismic event(s) originating underground that occurs within three miles of the class II disposal well;

(e) A class II disposal well is operated without authorization as required by section 1509.22 of the Revised Code and paragraph (G) of rule 1501:9-3-06 of the Administrative Code;

(f) The chief determines that operation or continued operation of the well or surface facility is likely to endanger public health or safety;

(g) The chief determines that brine or other waste substances from class II disposal well injection operations may be outside of the permitted injection zone or area of review;

(h) The shut-in pressure of a well exceeds the maximum allowable injection pressure;

(i) Exceedance of the determined maximum allowable injection pressure may be suspended in accordance with the following:

(i) First offense: suspension of injection operations for twenty-four hours;

(ii) Second offense within three hundred sixty-five calendar days: suspension of injection operations for fourteen days;

(iii) Third offense within three hundred sixty-five calendar days: suspension of injection operations for thirty days;

(iv) Fourth offense within three hundred sixty-five calendar days: revocation of permit by order.

(j) Operations at an associated oil and gas waste facility or surface facility associated with the class II disposal well are suspended by order of the chief; and

(k) Any violation of Chapter 1509. of the Revised Code or division 1501:9 of the Administrative Code.

(O) Resuming operations after suspension

(1) If the chief suspends operations for a class II disposal well, the class II disposal well owner shall develop a written plan that describes any testing to be performed, any actions to correct the conditions that caused the suspension, and estimated length of time to complete the plan. Within ten

business days of receipt, the chief will review the plan and either accept it, require modifications, or reject the plan and order necessary corrective action.

(2) If the chief determines a class II disposal well has caused or contributed to seismic activity, the chief will require the owner to submit a plan for acceptance or rejection established in paragraph (O) of this rule which may include, but is not limited to, all of the following:

(a) Performing a geological investigation;

(b) Seismic monitoring;

(c) Surface motion (ground shaking) monitoring;

(d) Submission of data collected;

(e) Operational parameters of the class II disposal well;

(f) Soil depth to bedrock determination; and

(g) Identification of areas of potential concern.

(P) Required plugging of a class II disposal well

(1) If no injection has occurred in a class II disposal well for five consecutive years, the class II disposal well owner shall plug the class II disposal well in accordance with section 1509.13 of the Revised Code, section 1509.15 of the Revised Code, and Chapter 1501:9-11 of the Administrative Code.

(2) If corrective actions identified under paragraph (D)(5) of this rule are not completed within ninety calendar days from notification from the division, the class II disposal well owner shall plug the class II disposal well in accordance with section 1509.13 of the Revised Code, section 1509.15 of the Revised Code, and Chapter 1501:9-11 of the Administrative Code.

(3) If an accepted plan developed under paragraph (O) of this rule is not completed in the time frame established in the accepted plan, the class II disposal well owner shall plug the class II disposal well in accordance with section 1509.13 of the Revised Code, section 1509.15 of the Revised Code, and Chapter 1501:9-11 of the Administrative Code.

(4) If a plan required under paragraph (O) of this rule is not submitted within one hundred twenty calendar days of the suspension of activity, the class II disposal well owner shall plug the class II disposal well in accordance with section 1509.13 of the Revised Code, section 1509.15 of the Revised Code, and Chapter 1501:9-11 of the Administrative Code.