

**\*\*\*DRAFT - NOT FOR FILING\*\*\***

**3745-34-15**      **Class I permit to operate applications.**

(A) For a new class I injection well, the owner shall submit all information listed in this rule as part of the permit application except for those items of information which are current, accurate, and available in the existing permit record.

(B) In addition to the information required in accordance with rules 3745-34-12 and 3745-34-13 of the Administrative Code, the owner shall include the following in an application for a permit to operate a class I injection well:

(1) Drilling and completion reports including the following:

(a) Daily reports.

(b) Driller's log or record of strata.

(c) Casting and tubing records, including the pipe tally.

(d) Cement records.

(e) Details of centralizers, scratchers, and other such information.

(f) Engineering drawings of the following:

(i) Well completion.

(ii) Packer assembly and setting.

(iii) Wellhead, including the parts list.

(2) The data from the formation testing program including the analysis of the chemical, physical and radiological characteristics of and other information on the injection formation and confining zone. This includes in situ and laboratory test results and records for the following:

(a) Fluid pressure.

(b) Temperature.

(c) pH.

(d) Specific conductivity.

(e) Fracture pressure.

(f) Other physical and chemical characteristics of the injection matrix.

(g) Physical and chemical characteristics of the formation fluids.

(h) Static fluid level and fluid pressure.

(i) Bottom hole temperature and pressure.

(j) Spinner or tracer surveys.

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- (k) Descriptive core analysis and sieve analysis.
- (3) A report detailing the results of the injectivity testing, including the tests for pressure/time relationships. This should include results for permeability, transmissivity, and reservoir limits and storage.
- (4) A determination accompanied by supporting documentation describing all areas around the well where formation pressures are predicted by the applicant to be increased due to the operation of the well and an evaluation of whether any resulting potential exists for contamination of any underground source of drinking water or migration of substances injected into the well outside the anticipated injection zone. The determination shall be made through the use of an hydraulic model acceptable to the director.
- (5) A descriptive report interpreting the results of all logs and tests including casing tests performed during the drilling and construction of the injection well shall be submitted. This report shall be prepared by a knowledgeable log analyst. This report shall include the final prints of all logs run on the well and the results of the directional and inclinational survey.
- (6) A report demonstrating that the well siting conforms to the following:
- (a) The injection zone has sufficient permeability, porosity, thickness and areal extent to prevent migration of fluids into USDWs.
  - (b) The confining zone conforms to the following:
    - (i) Is laterally continuous and free of transecting, transmissive faults or fractures over an area sufficient to prevent the movement of fluids into USDWs.
    - (ii) Contains at least one formation of sufficient thickness and with lithologic and stress characteristics capable of preventing vertical propagation of fractures.
- (7) A report demonstrating any one of the following:
- (a) The confining zone is separated from the base of the lowermost USDW by at least one sequence of permeable and less permeable strata that will provide an added layer of protection for the USDW in the event of fluid movement in an unlocated bore hole or transmissive fault.
  - (b) Within the area of review, the piezometric surface of the fluid in the injection zone is less than the piezometric surface of the lowermost USDW, considering density effects, injection pressures and any significant pumping in the overlying USDW.
  - (c) There is no USDW present.
- (8) A description of the following:
- (a) The chemical composition and physical properties of any substance to be injected. This should include the source and an analysis of the chemical (including corrosiveness), physical (including density and temperature), radiological and biological characteristics of the injection fluid.
  - (b) The compatibility of substance(s) to be injected with the fluids in the injection zone and minerals in both the injection zone and confining zone and the materials used to construct the well.
- (9) A plan for conducting a passive seismic monitoring program if the director determines that the operation of the class I injection well may cause seismic disturbances.

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- (10) Proposed injection procedure including the proposed operating data including the following:
- (a) Average and maximum daily rate and volume of any substance to be injected.
  - (b) Average and maximum injection pressure and calculation of proposed maximum injection pressure.
- (11) Contingency plans to cope with all shut-ins or well failures so as to prevent migration of fluids into any USDW.
- (12) A plan for ensuring the annual review and testing of the integrity of the well casing and associated well features. This plan shall comply with the requirements of rule 3745-34-34 of the Administrative Code. Permit applications for new wells shall include data demonstrating that the well has mechanical integrity. Renewal permit applications shall include results of all mechanical integrity tests performed on the injection well since the issuance of the previous permit. If the results of the mechanical integrity tests have already been submitted to Ohio EPA they may be included in the permit application by reference.
- (13) A plan for monitoring the lowermost underground source of drinking water near the injection well.
- (14) A plan for plugging and abandonment pursuant to the applicable provisions of paragraph (B)(5) of rule 3745-34-27, rule 3745-34-36, paragraph (C) of rule 3745-34-39, rule 3745-34-60, and rule 3745-34-61 of the Administrative Code. The plugging and abandonment plan shall including the following information:
- (a) The type and number of plugs to be used.
  - (b) The placement of each plug including the elevation of the top and bottom.
  - (c) The type and grade and quantity of cement to be use.
  - (d) The method for placement of the plugs.
  - (e) The procedure to be used to meet the applicable requirements of paragraph (B)(5) of rule 3745-34-27, rule 3745-34-36, paragraph (C) of rule 3745-34-39, rule 3745-34-60, and rule 3745-34-61 of the Administrative Code.
- (15) Plans (including maps) for meeting the applicable testing and monitoring requirements of rules 3745-34-38 and 3745-34-57 of the Administrative Code.
- (16) If hazardous waste is to be injected and is generated at the same facility where the injection well will be placed, provide a certification of the following:
- (a) The generator of the hazardous waste has a program to reduce the volume or quantity and toxicity of such waste to the degree determined by the generator to be economically practicable.
  - (b) Injection of the waste is that practicable method of disposal currently available to the generator which minimizes the present and future threat to human health and the environment.
- (17) Procedures and forms for collecting and submitting the information required by rule 3745-34-58 of the Administrative Code.
- (18) The means of disposing of any sludges, solid wastes, or semi-solids or liquids generated in the treatment of any wastes received.