**Section 730.188 Injection Well Operating Requirements**

a) Except during injection well stimulation, the owner or operator must ensure that injection pressure does not exceed 90 percent of the fracture pressure of the injection zones, so as to ensure that the injection does not initiate new fractures or propagate existing fractures in the injection zones. In no case may injection pressure initiate fractures in the confining zones or cause the movement of injection or formation fluids that endangers a USDW. Pursuant to the requirements of Section 730.182(a)(9), all stimulation programs must be approved by the Agency as part of the permit application and incorporated into the permit.

b) Injection between the outermost casing that protects any USDW and the well bore is prohibited.

c) The owner or operator must fill the annulus between the tubing and the long-string casing with a non-corrosive fluid approved by the Agency. The owner or operator must maintain on the annulus a pressure that exceeds the operating injection pressure, unless the Agency determines that such a requirement might harm the integrity of the well or endanger any USDW.

d) Other than during periods of well workover (maintenance) approved by the Agency in which the sealed tubing-casing annulus is disassembled for maintenance or corrective procedures, the owner or operator must maintain mechanical integrity of the injection well at all times.

e) The owner or operator must install and use the equipment indicated in subsection (e)(1) and the appropriate of subsection (e)(2) or (e)(3):

1) Continuous recording devices that monitor each of the following parameters:

A) The carbon dioxide injection pressure;

B) The rate, volume or mass, and temperature of the carbon dioxide stream;

C) The pressure on the annulus between the tubing and the long-string casing; and

D) The annulus fluid volume.

2) For onshore wells, alarms and automatic surface shut-off systems or, at the discretion of the Agency, down-hole shut-off systems (e.g., automatic shut-off valves, check valves, etc.) or other mechanical devices that provide equivalent protection.

3) For wells located offshore but within State territorial waters, alarms and automatic down-hole shut-off systems designed to alert the operator and shut-in the well when operating parameters, such as annulus pressure, injection rate, or other parameters, diverge beyond permitted ranges or gradients specified in the permit.

f) If a shutdown is triggered (down-hole or at the surface), or if a loss of mechanical integrity is discovered, the owner or operator must immediately investigate and identify the cause of the shutoff as expeditiously as possible. If, upon investigation, or if monitoring required under subsection (e) otherwise indicates that the well may be lacking mechanical integrity, the well appears to be lacking mechanical integrity, the owner or operator must undertake each of the following actions:

1) The owner or operator must immediately cease injection;

2) The owner or operator must take all steps reasonably necessary to determine whether there may have been a release of the injected carbon dioxide stream or formation fluids into any unauthorized zone;

3) The owner or operator must notify the Agency of the event within 24 hours;

4) The owner or operator must restore and demonstrate the mechanical integrity of the well to the satisfaction of the Agency prior to resuming injection; and

5) The owner or operator must notify the Agency when injection can be expected to resume.

BOARD NOTE: This Section corresponds with 40 CFR 146.88 (2017).

(Source: Amended at 42 Ill. Reg. 24145, effective November 19, 2018)