

ILLINOIS POLLUTION CONTROL BOARD

January 5, 2012

IN THE MATTER OF: )  
UIC UPDATE, USEPA AMENDMENTS ) R11-14  
(July 1, 2010 through December 31, 2010) ) (Identical-in-Substance  
) ) Rulemaking - Land)

Adopted Rule. Final Order.

OPINION AND ORDER OF THE BOARD (by J.A. Burke):

**SUMMARY OF TODAY'S ACTION**

This identical-in-substance rulemaking updates the Illinois underground injection control (UIC) regulations to incorporate revisions to the federal regulations. The federal amendments that prompted this action were made by the United States Environmental Protection Agency (USEPA) during the period of July 1, 2010 through December 31, 2010. During this time, USEPA amended the federal UIC rules once, on December 10, 2010. Those amendments instituted new requirements to create a new class of injection well, Class VI injection wells, which includes wells used for underground carbon sequestration.

This rulemaking incorporates the new USEPA carbon sequestration well requirements into the Illinois UIC regulations. This rulemaking also makes a series of non-substantive corrections and stylistic revisions to segments of the text that are not otherwise affected by the covered federal amendments. This proceeding amends 35 Ill. Adm. Code 702, 704, 705, and 730.

This opinion and order adopts identical-in-substance amendments to the Illinois UIC regulations. Sections 7.2 and 13(c) of the Environmental Protection Act (Act) (415 ILCS 5/7.2 and 13(c) (2010)) require the Board to adopt regulations that are "identical in substance" to UIC regulations that the USEPA adopted to implement Section 1421 of the federal Safe Drinking Water Act (SDWA) (42 U.S.C. § 300h (2006)). The federal UIC regulations are found at 40 C.F.R. 144 through 148. Section 13(c) also provides that Title VII of the Act and Section 5 of the Administrative Procedure Act (5 ILCS 100/5-35 and 5-40 (2010)) do not apply to the Board's adoption of identical-in-substance regulations.

The deadline for Board completion of action on the federal UIC amendments involved in this docket is January 26, 2012. The Board previously extended that deadline from December 10, 2011 until January 26, 2012 by the October 6, 2011 opinion and order that proposed amendments.

The Board will cause the adopted amendments to be filed with the Office of the Secretary of State and be published in the *Illinois Register*.

## **FEDERAL ACTIONS CONSIDERED IN THIS RULEMAKING**

The following listing briefly summarizes the federal action considered in this UIC update rulemaking:

### **Docket R11-14: July 1, 2010 through December 31, 2010**

USEPA amended the federal UIC regulations once during the period July 1, 2010 through December 31, 2010, as is summarized below:

#### **December 10, 2010 (75 Fed. Reg. 77230)**

Description of the USEPA action: USEPA designated carbon dioxide injection wells used for geosequestration of carbon as Class VI injection wells and established standards for permitting, design, and operation of Class VI wells.

Prospective necessary Board action in response: The Board must incorporate necessary elements into the Illinois UIC regulations.

### **Later UIC-Related Actions of Interest**

The Board monitors federal actions on an ongoing basis for items of direct interest. As of the date of this opinion and accompanying order, the Board has identified no USEPA action since December 31, 2010, that further directly affects the UIC rules in a way that requires immediate Board attention. Nevertheless, the Board has observed two actions relating to the present subject matter that are worthy of note. Each will have an impact on implementation of a Class VI injection well program in Illinois. The federal actions are described as follows:

#### **76 Fed. Reg. 48073 (August 8, 2011)**

USEPA proposed a conditional exclusion from the definition of hazardous waste for carbon dioxide waste streams. The conditions proposed are as follows: (1) the carbon dioxide stream must have been captured from an emission source; (2) the stream must be injected into a Class VI injection well for the purpose of geologic sequestration and in compliance with the new federal standards considered in the present docket; (3) the transportation of the carbon dioxide stream to the wellhead for injection must comply with applicable U.S. Department of Transportation standards; (4) no other hazardous waste has been commingled or co-injected with the waste stream; and (5) any entity claiming the exclusion (*i.e.*, the carbon dioxide stream generator or the injection well owner or operator) must annually certify that it is claiming the exclusion and that the carbon dioxide stream and management of that stream comply with the exclusion.

#### **76 Fed. Reg. 56982 (September 15, 2011)**

USEPA announced the establishment of the federal Class VI injection well program for geologic sequestration of carbon dioxide. The announcement stated that USEPA will directly implement the new federal standards considered in the present docket until the

state where the Class VI injection well is located gains USEPA authorization to implement a state program.

No Board action is required on the *Federal Register* notice of August 8, 2011. This is a proposed USEPA action in the area of RCRA Subtitle C hazardous waste regulations. When USEPA adopts an exclusion for carbon dioxide waste streams from the definition of hazardous waste, the Board will take action on that exclusion as required by Sections 7.2 and 22.4 of the Act (415 ILCS 7.2 and 22.4 (2010)). The exclusion will remove a potential impediment to collecting, managing, transporting, and injecting carbon dioxide waste in a Class VI injection well. *See, e.g.*, 40 C.F.R. 146.81(d), as added at 75 Fed. Reg. at 77292 (corresponding with 35 Ill. Adm. Code 730.181(d)) (definition of “carbon dioxide stream” that excludes a stream that meets the definition of hazardous waste). The Board presents this item as a potential matter of interest to members of the regulated community.

The Board included the September 15, 2011 *Federal Register* notice for similar reasons. No Board action will be required based on this notice. The notice announces that USEPA will itself directly implement the Class VI carbon sequestration injection well program directly in each state until USEPA has approved the Class VI well program of the individual state.

When the Board observes an action outside the nominal timeframe of a docket that requires expedited consideration, the Board will expedite consideration of those amendments in the pending docket. Federal actions that could warrant expedited consideration include those that directly affect the amendments involved in this docket, those for which compelling reasons would warrant consideration as soon as possible, and those for which the Board has received a request for expedited consideration.

### **Summary Listing of the Federal Actions Forming the Basis of the Board’s Actions in This Docket**

Based on the foregoing, the sole federal action that forms the basis for Board action in this update docket is the following:

December 10, 2010 (75 Fed. Reg. 77230)	New standards for permitting, design, and operation of Class VI injection wells used for geosequestration of carbon.carbon dioxide.
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### **Other Federal Actions Having a Direct Impact on the Illinois UIC and RCRA Subtitle C Regulations**

In addition to the amendments to the federal UIC regulations, amendments to certain other federal regulations occasionally have an effect on the Illinois hazardous waste rules. Most notably, 35 Ill. Adm. Code 720.111 includes several incorporations of federal regulations by reference. The incorporated regulations include segments of various USEPA environmental regulations and United States Department of Transportation hazardous materials transportation regulations that USEPA has incorporated into the federal hazardous waste rules.

The latest available version of the *Code of Federal Regulations* is now the 2011 edition (issued January 1, 2011) for Title 10 (Nuclear Regulatory Commission (NRC)), the 2011 edition (issued July 1, 2011) for Titles 33 (U.S. Coast Guard (Coast Guard)) and 40 (USEPA), and the 2010 edition (issued October 1, 2010) for Title 49 (U.S. Department of Transportation (USDOT)). Each of these is incorporated by reference in Section 720.111 of the hazardous waste regulations.

There is no need to update the incorporations by reference in this proceeding. USEPA did not incorporate new documents by reference on December 10, 2010, which would add urgency to updating the incorporations. Further, the Board updated all of the incorporations by reference in 35 Ill. Adm. Code 720.111 in RCRA Subtitle C Update, USEPA Amendments (January 1, 2010 through June 30, 2010), R11-2 and RCRA Subtitle C Update, USEPA Amendments (July 1, 2010 through December 31, 2010), R11-16 (Aug. 18, 2011) (cons.). Finally, the Board has proposed additional updates to the incorporations by reference in RCRA Subtitle C Update, USEPA Amendments (January 1, 2011 through June 30, 2011), R12-7 (Jan. 5, 2012), which includes USEPA amendments to the federal hazardous waste requirements dated June 13, 2011 (76 Fed. Reg. 34147) and June 22, 2011 (76 Fed. Reg. 36363). The Board presently anticipates completion of the R12-7 amendments during Spring 2012.

### **PUBLIC COMMENTS**

The Board adopted a proposal for public comment in this matter on October 6, 2011. Notices of Proposed Amendments appeared in the October 28, 2011 issue of the Illinois Register, at 35 Ill. Reg. 17190 (part 702), 17215 (part 704), 17256 (part 705), and 17264 (part 730). The Board received public comments on that proposal until December 12, 2011, which was 45 days after its publication in the *Illinois Register*.

The Board has received two public comments on the proposal. The Board received the first before adoption of the proposal for public comment. The Board received the second during the public comment period. Those comments were as follows:

- PC 1 A February 8, 2011 e-mail from Michael McCambridge, Board hearing officer, relating a telephone conversation about the status of Board action on the December 10, 2010 USEPA amendments (received February 8, 2011).
- PC 2 Comments of the Illinois EPA, by Kyle Rominger, Deputy Counsel, Illinois EPA, Division of Legal Counsel (dated and received December 8, 2011).

By PC 1, an e-mail submitted to the Clerk of the Board for the record, the Board hearing officer memorialized a January 31, 2011 telephone conversation with Kyle Rominger of the Agency's Division of Legal Counsel. During that conversation, Mr. Rominger had inquired as to the status of any Board action on the December 10, 2010 USEPA amendments. He stated that the Agency had not determined whether it would pursue USEPA authorization of an Illinois Class VI injection well program.

By PC 2, the Agency stated that the Board should not adopt amendments that incorporate elements of the federal Class VI carbon sequestration well requirements into the Illinois UIC program. The Agency maintained that the Class VI well requirements are beyond the scope of the Board's identical-in-substance mandate. The Agency urged that the Board should delay the effective date of the requirements until USEPA has reviewed and authorized an Illinois Class VI carbon sequestration well program, should the Board adopt the Class VI injection well requirements. Finally, the Agency proposed that the Board amend a segment of the Illinois solid waste facility regulations to refer to regulation of Class VI injection wells by USEPA.

PC 1 does not raise substantive issues. No further discussion of PC 1 will appear in this opinion. PC 2, on the other hand, raises several fundamental substantive issues. Consideration of those issues begins on page 30 of this opinion.

## **DISCUSSION**

The following discussion begins with a discussion of the amendments and actions undertaken in direct response to the federal actions involved in this proceeding. This first series of discussions is organized by federal subject matter, generally appearing in chronological order of the relevant *Federal Register* notices involved. The discussion of federal amendments is followed by a description of the amendments and actions that are not directly derived from the federal actions. Finally, this discussion closes with a description of the types of deviations the Board makes from the literal text of federal regulations in adopting identical-in-substance rules.

### **Discussion of the Particular Federal Actions Involved in This Docket**

#### **Requirements for Class VI Injection Wells Used for Carbon Sequestration--Parts 702, 704, 705, and 730<sup>1</sup>**

On December 10, 2010 (75 Fed. Reg. 77230), USEPA designated a new class of underground injection well: Class VI injection wells that are used for carbon sequestration. New rules added by USEPA established standards for siting, design, construction, operation, inspection and maintenance, plugging, and closure for Class VI injection wells. The new rules included provisions relating to permitting, reporting and records retention, corrective action, emergency and remedial response, financial assurance, and post-injection site care for the Class VI injection wells.

The Board does not review the substance and merits of the underlying federal action in an identical-in-substance proceeding, except to the extent that it may be necessary to do so in order

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<sup>1</sup> The specific Sections involved are 702.101, 702.110, 702.120, 702.123, 702.150, and 702.161; 704.106, 704.122, 704.123, 704.125, 704.162, 704.181, 704.182, 704.184, 704.190, 704.260, 704.262, 704.264, 704.280, 704.300, and 704.301; 705.163 and 730.101, 730.103, 730.104, 730.105, 730.181, 730.182, 730.183, 730.184, 730.185, 730.186, 730.187, 730.188, 730.189, 730.190, 730.191, 730.192, 730.193, 730.194, and 730.195.

to incorporate the federal provisions into the Illinois regulations. Persons interested in the details of the federal amendments should consult the December 10, 2010 *Federal Register* notice. Having stated this, the Board observes for the benefit of the regulated community that discussion of some aspects of the December 10, 2010 amendments will be necessary. The purpose is to explain the issues confronting the Board and the many minor revisions that the Board has made as a result.

**Transition of Class I, Class II, and Class V Injection Wells.** As a result of the December 10, 2010 amendments, the federal rules now divide underground injection into six classes of wells. Those classes are briefly described as follows:

Class I injection well: A well used to inject (1) hazardous waste, (2) industrial or municipal waste, or (3) radioactive waste beneath the lowermost formation that contains an underground source of drinking water (USDW) within one-quarter mile of the well bore.

Class II injection well: A well used to inject (1) fluids that are brought to the surface in connection with conventional oil and gas production, which could include non-hazardous production wastes; (2) fluids that are used for enhanced recovery of oil or natural gas; or (3) fluids that are used for storage of hydrocarbons that are liquid at standard temperature and pressure.

Class III injection well: A well used to inject fluids for extraction of minerals, such as mining of sulfur by the Frasch process, *in situ* mining of uranium and other metals from ore bodies that have not been mined by a conventional process, or solution mining of salts.

Class IV injection well: A well used to inject hazardous waste, industrial or municipal waste, or radioactive waste into or above a formation that contains an underground source of drinking water (USDW) within one-quarter mile of the well bore or a well used to inject hazardous waste into an exempted aquifer.<sup>2</sup>

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<sup>2</sup> An exempted aquifer is one deemed so by an administrative determination. Until the December 10, 2010 amendments, the determination was that the aquifer does not currently serve as a source of drinking water, and that the aquifer either (1) cannot serve as a future source of drinking water for a variety of reasons (including proximity to a Class II or Class III injection well) or (2) the total dissolved solids content of the groundwater exceeds 3,000 milligrams per liter. 40 C.F.R. 146.4(a) through (c) (2010) (corresponding with 35 Ill. Adm. Code 730.104(a) through (c)).

The December 10, 2010 amendments added a provision for expansion of a Class II injection well aquifer exemption for the purposes of conducting Class VI injection well operations. The bases for the expansion are similar to those described above, except that the aquifer must fulfill both the condition relative to limited future use and the condition relative to high dissolved solids content. See 40 C.F.R. 146.4(d) (2010), as added at 75 Fed. Reg. at 77291 (corresponding with

Class V injection well: A well used to inject fluids that is not a Class I, Class II, Class III, Class IV, or Class VI injection well.<sup>3</sup>

Class VI injection well: A well used for carbon sequestration that is any of the following types of wells: (1) a well that is not experimental in nature which injects carbon dioxide beneath the lowermost formation that contains a USDW; (2) a well that injects carbon dioxide above a formation that contains a USDW pursuant to a “waiver” of the Class VI injection well depth requirements; or (3) a well that has received an expansion of the areal extent of an existing Class II enhanced oil or gas recovery aquifer exemption.

The new standards for Class VI injection wells bring into play three of the existing well classes: (1) Class I hazardous waste injection wells; (2) Class II enhanced oil and gas recovery wells; and (3) Class V experimental injection wells that are already injecting carbon dioxide for the purposes of carbon sequestration. The new Class VI injection well standards come into play when the owner or operator of one of these existing wells seeks to gain regulation of the well under the Class VI injection well standards.

A carbon dioxide waste stream could be hazardous waste. A Class I injection well could have been used for injection of carbon dioxide for disposal as hazardous waste or together with hazardous waste. Similarly, if the carbon dioxide stream is not hazardous waste, a Class V experimental injection well could have injected carbon dioxide waste. A Class II well may have injected carbon dioxide to pressurize a formation for enhanced oil or gas recovery. It is possible to convert any one of these types of Class I, Class II, and Class V injection wells for use of carbon sequestration.

The new federal December 10, 2010 Class VI injection well rules will require a permit and regulation as a Class VI injection well for certain of these wells. By December 10, 2011, the federal rules will require that an owner or operator of three types of these existing wells will need to apply to USEPA<sup>4</sup> for a Class VI injection well permit: (1) the owner and operator of a Class I injection well that is to be used exclusively for carbon sequestration; (2) the owner or operator of

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35 Ill. Adm. Code 730.104(d)).

<sup>3</sup> Examples of Class V injection wells given in the regulations are the following: a well used to return water to an aquifer after use for heating or cooling, a cesspool, a drainage well, a dry well used for waste injection, an aquifer recharge well, a backfill well used to inject a mixture of solids and fluid into mined-out subsurface mines, a septic system that serves more than a single household and more than 20 persons per day, a subsidence control well, a radioactive waste injection well that is not a Class IV injection well, a geothermal energy recover well, a well used for solution mining of a conventional mine, a well that returns spent brine to the formation from which the brine originated, and an experimental technology well.

<sup>4</sup> See 76 Fed. Reg. 56982 (Sep. 15, 2011) (announcement of federal direct implementation of the Class VI carbon sequestration injection well program).

a Class II enhanced oil or gas recovery well<sup>5</sup> that wishes to expand the areal extent of its well for carbon sequestration; or (3) the owner or operator of a Class V injection well that is used for carbon sequestration, but which is no longer being used for experimental purposes.

Board regulations govern Class I, Class III, Class IV, Class V, and, with the present amendments, Class VI injection wells. There is no potential for overlapping or conflicting regulatory authority with regard to the provisions relating to these five classes of injection wells. The situation is different with regard to provisions relating to Class II injection wells. Board rules do not regulate Class II injection wells. Instead, Class II injection wells practicing enhanced oil or gas recovery are regulated by the Illinois Department of Natural Resources, Office of Mines and Minerals, Oil and Gas Division (DNR). 35 Ill. Adm. Code 704.102, 704.105(b)(6), and 730.121; *see* 225 ILCS 725/6 and 23.1 (2010) (Illinois Oil and Gas Act); Subpart C of 62 Ill. Adm. Code 240 (DNR Class II injection well regulations).

Since the initial adoption of the Board's UIC rules, the Board has not regulated Class II injection wells by Board rules, but has instead deferred to the Office of Mines and Minerals. *See e.g., Underground Injection Control (UIC)*, R81-32, slip op. at p. 9 (May 13, 1982) (initial adoption of Board UIC rules). Several segments of the Board's UIC rules specifically explain the omission of a federal provision applicable only to Class II injection wells. *See* 35 Ill. Adm. Code 704.142(i); 704.148(b)(1)(A) and (b)(2)(A); 704.150(e), (g)(2), and (h)(2); 730.121; and 730.151 (corresponding with 40 C.F.R. 144.21(c)(9); 144.26(b)(1)(i) and (b)(2)(i); and 144.28(e), (g)(2), and (h)(2); subpart C of 40 C.F.R. 146; and 40 C.F.R. 146.51). On the other hand, the Board has included in the UIC rules those provisions that define Class II injection wells or which use references to Class II injection wells to define something else. *See* 35 Ill. Adm. Code 704.106(b) and 730.105(b) (defining "Class II injection well"); 35 Ill. Adm. Code 704.106(e) and 730.105(e) (defining "Class V injection well"); 35 Ill. Adm. Code 730.104(b)(1) (defining an "exempted aquifer").

The Class VI injection well program amendments include a few provisions relating to Class II injection wells. The following examples are the more salient provisions relating to Class II injection wells:

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<sup>5</sup> USEPA observed that the use of carbon dioxide for enhanced gas recovery is largely experimental, but does not cite the existence of any wells. USEPA stated that 105 wells in the United States inject carbon dioxide for enhanced oil recovery, but none of the cited locations are in Illinois. USEPA, however, does anticipate an expansion of carbon dioxide injection for these purposes as carbon dioxide increases in availability and decreases in cost. 75 Fed. Reg. at 77244. Thus, although it appears unlikely that injection of carbon dioxide into a Class II injection well does currently occur in Illinois, there is a significant possibility that it could in the future.

Added 40 C.F.R. 144.7(d) (corresponding with new 35 Ill. Adm. Code 704.123)	Allows the owner or operator of a Class II injection well to apply for expansion of the areal extent of a Class II aquifer exemption for the purpose of operating the well as a Class VI injection well for carbon sequestration.
Amended 40 C.F.R. 144.22(b) (no corresponding Board provision)	Provides when authorization by rule expires for an existing Class II injection well that injects carbon dioxide.
Added 40 C.F.R. 144.6(f) and 146.5(f) (corresponding with new 35 Ill. Adm. Code 704.106(f) and 730.105(f))	Defines Class VI wells as including existing Class II wells that received an expansion of their areal extent for carbon sequestration. <sup>6</sup>
Added 40 C.F.R. 146.4(d) (corresponding with 35 Ill. Adm. Code 730.104(d))	Defines an “exempted aquifer” as the areal extent of expansion of a Class II injection well for the purposes of carbon sequestration.
Added 40 C.F.R. 146.81(c) (corresponding with 35 Ill. Adm. Code 730.181(c))	Describes the Class VI injection well standards as applicable to Class II injection wells that receive an expansion of their areal extent for the purpose of carbon sequestration.
Added 40 C.F.R. 146.81(d) (corresponding with 35 Ill. Adm. Code 730.81(d))	Defines a “carbon sequestration project” as the areal extent of expansion of a Class II injection well for the purposes of carbon sequestration.

Here, the Board has maintained the past practice and included those references to Class II injection wells that define Class VI injection wells. This includes 35 Ill. Adm. Code 704.106(f), 730.104(d), 730.105(f), and 730.181(d) (corresponding with 40 C.F.R. 144.6(f), 146.4(d), 146.5(f), and 730.81(d)). The Board has further included those provisions relating to expansion of the areal extent of a Class II injection well for the purpose of carbon sequestration, since such an expansion triggers the applicability of Class VI injection well requirements to the Class II injection well. This includes 35 Ill. Adm. Code 704.123 and 730.181(c) (corresponding with 40 C.F.R. 144.7(d) and 146.81(c)).

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<sup>6</sup> Added 40 C.F.R. 144.80(f), which pertains to definition of a Class V injection well, defines a Class II injection well as a Class VI well when used for carbon sequestration in the same terms as are used in 40 C.F.R. 144.6(f) and 146.5(f). The Board used a cross-reference to 35 Ill. Adm. Code 704.106 (corresponding with 40 C.F.R. 144.6) for the definition, and did not include the complete text of the corresponding federal rule.

One provision relating to Class II injection wells, however, does not affect regulation of Class VI injection wells. This is the authorization by rule provision of amended 40 C.F.R. 144.22(b). The federal rules provide that an existing Class II enhanced recovery or hydrocarbon storage injection well is authorized by rule for the life of the well or project if the owner or operator fulfills specified conditions. 40 C.F.R. 144.22(a) (2010). The federal rules further provide that specified events terminate authorization by rule. One of those events is the effective date of a permit issued under specified provisions. 40 C.F.R. 144.22(b) (2010). The December 10, 2010 amendments added that the transition from a Class II injection well to a Class VI injection well is one of those specified provisions. 40 C.F.R. 144.22(b) (2010), as amended at 75 Fed. Reg. at 77288.

The Board never included the federal permit by rule provision for Class II injection wells in the Illinois UIC rules. *See Underground Injection Control (UIC)*, R81-32, slip op. at pp. 9-10 (May 13, 1982) (initial adoption of Board UIC rules). While applicability of the Class VI injection well standards will terminate authorization of a Class II injection well by rule, the reverse is not true. Since the termination of authorization by rule for a Class II injection well does not affect the applicability of the Class VI injection well requirements, the Board has chosen not to add the long-omitted provision with the present amendments.

**Concurrent Regulation by DNR, as a Class II Injection Well, and by the Board Requirements, as a Class VI Injection Well.** The regulations are clear that a Class II enhanced oil and gas recovery well becomes a Class VI injection well when it gains areal expansion for the purpose of carbon sequestration. *See* 40 C.F.R. 144.6(f), 144.7(d), 146.5(f), and 146.81(c) (corresponding with 35 Ill. Adm. Code 704.106(f), 704.123, 730.105(f), and 730.181(c)). Whether a Class VI injection well remains subject to regulation as a Class II injection well is less clear. The Board believes that the shift from regulation as a Class II injection well to regulation as a Class VI injection well may involve a brief period of concurrent regulation under both Class II and Class VI injection well standards, which would involve concurrent regulation by DNR and the Board regulations.

New 40 C.F.R. 144.19 in the federal rules (corresponding with 35 Ill. Adm. Code 704.129 in the Board's rules) provides for a transition from regulation as a Class II injection well to regulation as a Class VI injection well. The provision requires the Class II injection well owner or operator to apply for a Class VI injection well permit "when there is an increased risk to USDWs compared to Class II operations." 40 C.F.R. 144.19, as added at 75 Fed. Reg. at 77288 (corresponding with 35 Ill. Adm. Code 704.129). The rule set forth a series of factors for a State determination that this has occurred. The factors are the following:

- An increase in reservoir pressure within the injection zone;
- An increase in the carbon dioxide injection rate;
- A decrease in reservoir (oil or gas) production rate;
- The distance between the injection zone and any USDW;
- The suitability of the Class II injection well area of review delineation;

- The quality of abandoned well plugs within the area of review;
- The source and properties of the injected carbon dioxide; and
- The any other site-specific factors deemed important by the State. 40 C.F.R. 144.19(b), as added at 75 Fed. Reg. at 77288 (corresponding with 35 Ill. Adm. Code 704.129(b)).

The definitions of a Class VI injection well would subject a Class II injection well to regulation as a Class VI injection well when the owner or operator has “received an expansion to the areal extent of [the] existing Class II oil recovery or enhanced gas recovery aquifer exemption . . . .” 40 C.F.R. 144.6(f) and 146.5(f) (2010), as added at 75 Fed. Reg. at 77287, 291 (corresponding with 35 Ill. Adm. Code 704.106(f) and 730.105(f)). The applicability statement for the Class VI injection well requirements states that they apply to “any wells used to specifically for the purpose of geologic sequestration,” and that they apply to an owner or operator “who seek[s] to apply for a Class VI geologic sequestration permit.” 40 C.F.R. 146.81(b) and (c) (2010), as added at 75 Fed. Reg. at 77291 (corresponding with 35 Ill. Adm. Code 704.181(b) and (c)).

Based on the foregoing, the applicability of the Class VI injection well requirements would appear to initially apply as an obligation on the part of the owner or operator to obtain a Class VI injection well permit when injection of carbon dioxide becomes the primary purpose of continued well operation (40 C.F.R. 146.81(b) (2010), as added at 75 Fed. Reg. at 77291 (corresponding with 35 Ill. Adm. Code 704.181(b))), and the Class II injection well standards would no longer apply when the owner or operator has received a Class VI injection well permit. 40 C.F.R. 144.22(b) (2010), as amended at 75 Fed. Reg. at 77288; *see* 40 C.F.R. 144.6(f) and 146.5(f) (2010), as added at 75 Fed. Reg. at 77287, 291 (corresponding with 35 Ill. Adm. Code 704.106(f) and 730.105(f)).

The Board specifically requests comments on the issue of possible dual regulation by the Agency and DNR. The Board is especially interested in comments from the Agency and DNR (which the Board is serving with a copy of this opinion and order).

**Duration of Permits.** The federal UIC rules provide specified terms for each class of injection well. The December 10, 2010 amendments provide a term of the operating life of the facility and the post-injection site care period for a permit for a Class VI injection well. This provision, however, also provides that the state must “review each issued Class I, II, and VI well UIC permit at least once every 5 years to determined whether it should be modified, revoked and reissued, terminated or a minor modification made . . . .” 40 C.F.R. 144.36(a) (2010), as amended at 75 Fed. Reg. at 77288 (corresponding with 35 Ill. Adm. Code 702.161(a)(2)). This is problematic within the context of the Illinois regulatory scheme. The Board has, however, confronted and resolved the similar problems in the past.

When adopting the initial UIC regulations, the Board confronted the issue of permit revocation or termination. Permits for Class III injection wells had a term of the life of the facility, subject to the five-year review by the state. In this similar context, the Board observed as follows:

As proposed, Section 702.161(b) tracked [40 C.F.R. 144.36(a)]. This provides for life of the facility permits for Class III wells, subject to review for modification or revocation once every five years. This conflicts with Section 33(b) of the Illinois Act [415 ILCS 5/33(b) (2010)], which gives the Board exclusive authority to revoke permits. Periodic enforcement actions would clearly be unworkable and burdensome on the regulated public. The Board has therefore modified Section 702.161(b) to provide five year permits which are renewable by the Agency without reapplication. If the Agency finds a need for modification or revocation, it may require a new application. This is intended to accomplish the same result as the federal rule, without conferring revocation authority on the Agency. Underground Injection Control (UIC), R81-32, slip op. at p. 7 (May 13, 1982)

The Board has decided to follow this approach with regard to Class VI injection well permits. As drafted by the Board, the rule relative to Class VI injection wells provides that the Agency must issue permits for up to a five-year term. The rule requires the Agency to renew the permit for up to another five years without requiring another permit application, to a maximum of the life of the facility, unless the Agency determines that the permit should be modified or reissued. The Agency must require a new permit application if modification is required. 35 Ill. Adm. Code 702.161 (a)(2) (corresponding with 40 C.F.R. 144.36(a) (2010), as amended at 75 Fed. Reg. at 77288.).

**The Injection Depth Requirement.** The federal Class VI carbon sequestration well rule includes a provision for “waiver” of the “injection depth requirements.” *See* 40 C.F.R. 146.95, as added at 75 Fed. Reg. at 77302. This “waiver” provision prompts two segments of discussion. First, the Board explores the nature of the “injection depth requirements” in this discussion segment for the purposes of clarification. The next segment of discussion will consider the Board’s approach to a “waiver” of those requirements.

No provision of the Class VI carbon sequestration well rule includes an express provision for well depth. Rather, the “injection depth requirement” is gained by implication. The several definitions of “Class VI” include the proviso that an injection well in this class is “used for geologic sequestration of carbon dioxide beneath the lowermost formation containing a USDW.” 40 C.F.R. 144.6 (f) and 146.5(f), as added at 75 Fed. Reg. at 77287, 91 (corresponding with 35 Ill. Adm. Code 704.106(f) and 730.105(f)); *see* 40 C.F.R. 144.80(f), as added at 75 Fed. Reg. at 77290 (corresponding with 35 Ill. Adm. Code 704.280, which does not include similar language). The definition of “geologic sequestration project includes the similar language, “used to emplace a carbon dioxide stream beneath the lowermost formation containing a USDW.” 40 C.F.R. 146.81(d), as added at 75 Fed. Reg. at 77292 (corresponding with 35 Ill. Adm. Code 704.181(d)).

The only USEPA provision that refers to “injection depth requirement,” other than provisions relating to “waiver” of that requirement (*see* 40 C.F.R. 146.82(d) and 146.95(a) and (f), as added at 75 Fed. Reg. at 77293, 302-03 (corresponding with 35 Ill. Adm. Code 730.182(d)

and 730.195(a) and (f))) is the provision relating the requirements for the surface casing. That provision requires the following:

Surface casing must extend through the base of the lowermost USDW and be cemented to the surface through the use of a single or multiple strings of casing and cement. 40 C.F.R. 146.89(b)(2), as added at 75 Fed. Reg. at 77296 (corresponding with 35 Ill. Adm. Code 730.186(b)(2)) (emphasis added).

This single provision alone, however, does not expressly require that injection must occur beneath the lowermost formation that contains a USDW. Instead, this provision must be read in the broader context of the well construction requirements to infer this requirement.

The surface casing is the outermost layer of an injection well. It essentially seals the well from the surface down to the lower end of the casing. *See* 40 C.F.R. 146.86(b)(2), as added at 75 Fed. Reg. at 77296; 75 Fed. Reg. at 77231 (definition of “casing”) (corresponding with 35 Ill. Adm. Code 730.186(b)(2)); 75 Fed. Reg. at 77250-51 (discussion of casing and cementing requirements).

Within the surface casing is the second layer, the long-string casing. The long-string casing extends through the surface casing down into the injection zone. The owner or operator must cement the annular space between the surface casing and the long-string casing from the bottom of the long-string casing to the surface along its length, except where this is not possible and the owner or operator can demonstrate that the cement will prevent fluid movement behind the well bore. *See* 40 C.F.R. 146.86(b)(3) and (b)(4), as added at 75 Fed. Reg. at 77296 (corresponding with 35 Ill. Adm. Code 730.186(b)(3) and (b)(4)); 75 Fed. Reg. at 77231 (definition of “casing”); 75 Fed. Reg. at 77250-51 (discussion of casing and cementing requirements).

Within the long-string casing is the third layer, the tubing. Packers are used at intervals to center the tubing within the casing and to seal the annular space between the tubing and the casing against movement of fluids. *See* 40 C.F.R. 146.86(c), as added at 75 Fed. Reg. at 77296-97 (corresponding with 35 Ill. Adm. Code 730.186(c)); 75 Fed. Reg. at 77231, 32 (definitions of “annulus” and “packer”); 75 Fed. Reg. at 77251 (discussion of tubing and packer requirements). Injection occurs through the tubing. *See* 40 C.F.R. 146.86(c)(2) and 146.88(b) and (c), as added at 75 Fed. Reg. at 77296, 97 (corresponding with 35 Ill. Adm. Code 730.186(c)(2) and 730.188(b) and (c)).

Thus, a combination of requirements indirectly imposes an injection depth requirement. The first requirement is that the surface casing must extend through the base of the lowermost formation that contains a USDW. The second requirement is that the long-string casing must extend beneath the lowermost formation that contains a USDW into the injection zone. The third requirement is that cementing the long-string casing must prevent fluid movement upward from the injection zone. The fourth requirement is that injection must occur through tubing that extends down through the length of the long-string casing and which is sealed against the long-string casing along its length down to the injection zone. The result of this combination of

requirements is that injection must occur beneath the lowermost formation that contains a USDW.

**“Waiver” the Injection Depth Requirement.** The federal rules provide a procedure by which the state can “waive” the injection depth requirement, discussed immediately above. The purpose is to allow injection into a deep formation that is above the lowermost formation that contains a USDW. USEPA explained the rationale behind the waiver provision as follows:

Today’s final rule includes requirements at [40 C.F.R.] 146.95 that allow owners or operators to seek a waiver from the Class VI injection depth requirements for [geologic sequestration] to allow injection into non-USDW formations while ensuring that USDWs above and below the injection zone are protected from endangerment. The Agency anticipates that any issuance of waivers will be limited to circumstances where there are deep USDWs . . . and/or where the lack of a waiver of injection depth requirements would result in impractical or technically infeasible well construction, and where USDW protection is demonstrated and maintained through the life of the [geologic sequestration] project. These requirements are designed to ensure that the owner or operator and the [permit issuing authority<sup>7</sup>] consider, on a site-specific basis, the implications, benefits, and challenges associated with [geologic sequestration], water availability, and USDW protection. 75 Fed. Reg. at 77251-52 (citation omitted).

The owner or operator that seeks a “waiver” of the injection depth requirement must submit additional information with its permit application, and additional operational conditions apply to operation of a well that has received a “waiver.” 75 Fed. Reg. at 77254. Two aspects of the “waiver” procedure raise issues relative to incorporating the procedure into the Illinois regulations. This segment of discussion considers both issues.

First, the procedure is complex. The procedure contemplates that the state would transfer the entire record that it accumulates on the request for a “waiver” to the applicable USEPA regional office, and that that office must approve before any grant of an effective “waiver.” Thus, any state rule would need to accommodate finality of a “waiver” only after USEPA has approved the state’s determination to issue the “waiver.”

Second, the regulatory structure in Illinois is such that the Agency cannot “waive” or grant relief from a Board-established standard. The Board’s function is to establish the State’s standards and grant relief from those standards where such is justified. 415 ILCS 5/5(b) through (d) (2010). The Agency’s function is to implement the standards by dissemination of information, granting permits to facilities and operations where required, monitoring compliance, participating in Board proceedings, and recommending standards to the Board. 415 ILCS 5/4(b)

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<sup>7</sup> USEPA used the word “Director,” which refers to the applicable state or Regional Administrator, depending on the USEPA-authorization status in the jurisdiction where the well project is located. See 75 Fed. Reg. at 77231.

through (i) (2010). This means that the Board must either assume the function of granting the “waiver” or determine that a “waiver” is an exercise of engineering judgment that does not confer relief from a State standard.

**The “Waiver” Procedure.** Any request for a “waiver” must accompany the owner’s or operator’s application for a Class VI injection well permit. 40 C.F.R. 146.95(a), as added at 75 Fed. Reg. at 77302 (corresponding with 35 Ill. Adm. Code 730.195(a)). The owner or operator must make certain demonstrations to the state to inform the state’s decision whether to issue the “waiver.” 40 C.F.R. 146.95(a)(1) through (a)(7), as added at 75 Fed. Reg. at 77302 (corresponding with 35 Ill. Adm. Code 730.195(a)(1) through (a)(7)).

The state<sup>8</sup> undertake a number of activities. The state must evaluate the request for a “waiver” and draw on other information at its disposal to process the request. The state must consult with the regulatory agency with supervisory authority over local public water supply systems in the area of the well project.<sup>9</sup> The state must then inform the applicable USEPA regional office’s decision on the “waiver” by submitting the information submitted by the well owner or operator, the state’s evaluation of the information submitted by the owner or operator, any other site characterization information, evaluation of the groundwater and water resources and needs (current, planned, potential, and future) for the area, plans for securing an alternative source of water should operation of the Class VI injection well result in contamination of a USDW, any information submitted to the state by the consulted public water supply supervisory agency. The state must also submit to the USEPA regional office the names of all public water supplies that may be affected by the well project, together with all information that the state receives relative to the request for “waiver.” 40 C.F.R. 146.95(b), as added at 75 Fed. Reg. at 77302 (corresponding with 35 Ill. Adm. Code 730.195(b)).

The state must then, concurrent with the notices required relative to the application for a UIC permit (*see* 40 C.F.R. 124.10 (2010) (corresponding with Subpart D of 35 Ill. Adm. Code 705)) give public notice that it has received a “waiver” request, including specified information about the proposed well project and the area where the well is to be located. 40 C.F.R. 146.95(c), as added at 75 Fed. Reg. at 77302 (corresponding with 35 Ill. Adm. Code 730.195(c)). After the public comment period has run, the state must submit all information relative to the well project to the USEPA regional office, and that office will “provide written concurrence or non-concurrence regarding waiver issuance.” 40 C.F.R. 146.95(d), as added at 75 Fed. Reg. at 77302-03 (corresponding with 35 Ill. Adm. Code 730.195(d)).

At the end of this process, the grant of a “waiver” is wholly at the discretion of USEPA. The federal “waiver” rule includes the following proviso:

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<sup>8</sup> *See supra* note 6. Since the Board is drafting a rule for State implementation, this segment of discussion uses “state,” in a generic sense, in place of “Director.”

<sup>9</sup> In Illinois, this is the Agency’s Division of Public Water Supply. 425 ILCS 5/4(1) and 15 (2010).

In no case shall a Director of a State-approved program issue a waiver without receipt of written concurrence from the Regional Administrator. 40 C.F.R. 146.95(d)(2), as added at 75 Fed. Reg. at 77303 (corresponding with 35 Ill. Adm. Code 730.195(d)(2)).

Thus, no state determination with regard to a “waiver” of the injection depth requirement can be final until after the applicable USEPA regional office has issued “written concurrence” relative to a grant of “waiver.”

The rule drafted by the Board follows the federal procedure. The rule provides that the Agency may not grant a “waiver” without first gaining the written concurrence of USEPA Region 5. The Board does not foresee significant difficulty in requiring this prior written concurrence, even though the procedure leading to the concurrence is long and complex. The changes that the Board has made to the federal text are primarily predicated on the Board’s characterization of the determination that a “waiver” should issue as a permit determination, as is considered in the segment of discussion that immediately follows. The ordinary 90- and 180-day time limits that normally apply to Agency permit determinations do not apply to UIC permits. 415 ILCS 5/39(a)(3) (2010). Thus, the Board does not anticipate difficulty with the Agency submitting a prospective determination to USEPA Region 5 for evaluation and rendering a final determination after USEPA concurrence.

The Board observes, however, that any Agency determination is subject to Board review pursuant to Section 40 of the Act (415 ILCS 5/40 (2010)), as described in the segment of discussion immediately below. As such, the Board is constrained to review the Agency determination based on the record before the Agency. *Id.* Any USEPA determination to either concur or not concur with an Agency grant of a “waiver” must be based on information in the Agency record before the Board can sustain an Agency determination based on USEPA concurrence or non-concurrence with a “waiver.”

**“Waiver” of the Injection Depth Requirement in Illinois.** As discussed above (at page 14 of this opinion and order), the Agency cannot grant relief from a State standard established by Board regulation. If a determination to grant a waiver is a determination to grant relief from a generally applicable State standard, the Board must make that determination. On the other hand, if the determination to grant a “waiver” from the injection depth requirement is an engineering determination made in the context of established Board standards, the Agency may make that determination as a permit determination.

Examination of the federal rules relating to a “waiver” of the injection depth requirement convinces the Board that the determination to grant a “waiver” from that requirement does not grant relief from a generally applicable standard. Rather, the determination to allow an alternative injection depth is more in the nature of an engineering determination based on standards already included in the regulation than a determination to grant relief from a generally applicable standard. The Agency can make the determination as part of the permit process. For these reasons, the Board has substituted “permit that includes alternative injection well depth requirements” for “waiver” at every appearance in the text.

Initially, the Board observes that the federal rule requires the submission of sufficient information to allow an Agency determination whether to allow an alternative injection depth. The permit applicant must submit a supplemental report that includes additional data and analyses to aid the administrative determination whether to permit an alternative injection depth. *See* 40 C.F.R. 146.95(a) (corresponding with 40 C.F.R. 146.95(a)).

Second, the permit applicant must submit its “waiver” request together with its application for a permit. 40 C.F.R. 146.95(a) (corresponding with 40 C.F.R. 146.95(a)). This means that the review necessary whether to allow an alternative injection depth requirement is made as part of the overall permit decision.

Third, the rule recites the standard upon which the administrative determination is to be made. The standard is that “no fluid movement will endanger any USDW above or below the injection zone” is the basis for an Agency determination. 35 Ill. Adm. Code 730.195(a)(3) (corresponding with 40 C.F.R. 146.95(a)(3)).

Fourth, the rule recites the additional and modified requirements that would apply to a well that has a permit that includes alternative injection depth requirements. *See* 40 C.F.R. 146.95(f) (corresponding with 40 C.F.R. 146.95(f3)). Thus, allowing an alternative injection depth requirement is not establishing an alternative standard, but allowing application of an alternative standard that already exists in the rule.

Finally, if the Agency makes a determination to allow an alternative injection depth requirement as a permit determination, the rule includes sufficient details to allow significant Board review of that determination. The requirements for the data and analyses are specific and detailed. *See* 40 C.F.R. 146.95(a) (corresponding with 40 C.F.R. 146.95(a)). The basis for determination is objective and particular. 35 Ill. Adm. Code 730.195(a)(3) (corresponding with 40 C.F.R. 146.95(a)(3)). The requirement that the Agency must submit information and its own analyses to USEPA provides a fairly comprehensive framework for Agency decision-making that would aid Board review. *See* 40 C.F.R. 146.95(b) (corresponding with 40 C.F.R. 146.95(b)).

For the foregoing reasons, the Board makes the following findings with regard to the Agency granting a permit that includes alternative well injection depth requirements (based on the four factors listed on page 42 of this opinion and order):

1. An Agency determination to grant a permit that includes alternative well injection depth requirements pursuant to 35 Ill. Adm. Code 730.195 is “making the decision [to apply] a Board regulation, [and not] taking action contrary to, *i.e.*, ‘waiving,’ a Board regulation.”
2. “[T]here is a clear standard [in 35 Ill. Adm. Code 730.195] for [an Agency determination to grant such a permit] such that the Board can give meaningful review to [the] Agency decision.”

3. An Agency determination to grant a permit that includes alternative well injection depth requirements pursuant to 35 Ill. Adm. Code 730.195 is not an “action [that] would result in exemption from the permit requirement itself.”
4. An Agency determination to grant a permit that includes alternative well injection depth requirements pursuant to 35 Ill. Adm. Code 730.195 is not a “decision [that] amounts to ‘determining, defining or implementing environmental control standards’ within the meaning of Section 5(b) of the Act [(415 ILCS 5/5(b) (2010)].”

The Board has determined that the action that USEPA has typed as granting a “waiver” is actually a determination to allow an existing alternative standard that exists in the rule. The Board has further changed the word “waiver” to “permit that includes alternative injection depth requirements,” in order to avoid confusion as to the nature of the determination that the Agency is making under the rule. There is nothing unusual in these aspects of the rule, once the word “waiver” has been removed.

Two other aspects of the rule require additional discussion. These relate to the review process that USEPA has prescribed for the “waiver” determination. First, the federal rule requires “[c]onsultation with the Public Water System Supervision Directors of all States and Tribes having jurisdiction over lands within the area of review of a well for which a waiver is sought.” 40 C.F.R. 146.95(b)(2) (corresponding with 40 C.F.R. 146.95(b)(2)); *see* 40 C.F.R. 146.95(b)(3) (corresponding with 40 C.F.R. 146.95(b)(3) (requiring submission to USEPA of the information gained through the consultation). Second, the procedure requires submission of all information to USEPA for independent review and “written concurrence or non-concurrence regarding waiver issuance” (40 C.F.R. 146.95(d)(1) (corresponding with 40 C.F.R. 146.95(d)(1))), and prohibits the state from granting a waiver without such concurrence, as follows: “In no case shall a Director of a State-approved program issue a waiver without receipt of written concurrence from the Regional Administrator.” 40 C.F.R. 146.95(d)(2) (corresponding with 40 C.F.R. 146.95(d)(2)).

With regard to consultation with the regulatory entities that have public water supply supervisory jurisdiction over the lands in the area of review, the Board has re-worded the federal language. In Illinois, the Agency itself has that authority in its Division of Public Water Supplies. Thus, the Illinois rule refers to consultation with that entity in Section 730.195(b)(2) and (b)(3) (corresponding with 40 C.F.R. 146.95(b)(2) and (b)(3)). While it may seem redundant for the Agency’s Bureau of Land to consult with the Agency’s Division of Public Water Supplies, expressly stating the requirement preserves the formalism of the USEPA consultation procedure.

Further, the geographic area of review, however, could potentially cross a boundary into a sister state or states. For this reason, the Board changed “Public Water System Supervision Directors of all States . . . having jurisdiction over lands within the area of review” to “all agencies of a sister state that have public water system supervision authority over lands within the area of review” in Section 730.195(b)(2) (corresponding with 40 C.F.R. 146.95(b)(2)).

Similarly, the Board changed “Public Water System Supervision Director(s)” to “all agencies of a sister state that have public water system supervision authority” in Section 730.195(b)(2) (corresponding with 40 C.F.R. 146.95(b)(2)).

Finally, the Board removed the references to consultation with tribal governments from Section 730.195(b)(2) and (b)(3) (corresponding with 40 C.F.R. 146.95(b)(2) and (b)(3)). Illinois has no tribal lands or governments within its borders, and the nearest such lands or governments lie in Wisconsin, Iowa, Michigan, and Indiana.<sup>10</sup> *See* 75 Fed. Reg. 60810 (Oct. 1, 2010) (listing Indian entities recognized by the Bureau of Indian affairs); 75 Fed. Reg. 66124 (Oct. 27, 2010) (supplementing the October 1, 2010 listing); Pokagon Band of Potawatomi <http://www.pokagonband-nsn.gov/> (accessed October 3, 2011).

When the Agency submits the information relative to alternative injection depth requirements to USEPA, the Agency has only decided not to summarily decline those requirements. The Agency has not made a final determination to allow the alternative requirements. The Agency’s formal determination does not occur until after USEPA has completed its review of the information submitted by the Agency. *See* 35 Ill. Adm. Code 730.195(d)(2) (corresponding with 40 C.F.R. 146.95(d)(2)).

The time added by USEPA review is not an issue when the permit sought is for a UIC facility. The 90-day deadline for an Agency decision does not result in a permit by default for UIC permits. *See* 415 ILCS 5/39(a)(3) and (e) (2010).

The Board adds an observation relative to the importance of USEPA concurrence or non-concurrence on alternative injection depth requirements. If USEPA has determined that the Agency should not permit alternative depth requirements, and USEPA issues a written non-concurrence, that decision is definitive. The Agency cannot grant such a permit. The Board has retained the feature of the federal rule which provides that the Agency can grant such a permit only after the Agency has received the written concurrence of USEPA. *See* 35 Ill. Adm. Code 730.195(d)(2) (corresponding with 40 C.F.R. 146.95(d)(2)). No USEPA determination is appealable to the Board pursuant to Section 40 of the Act (415 ILCS 5/40 (2010)). Appeal of a decision of USEPA is a matter of federal law. *See* 42 U.S.C. § 300j-7 (2006); 40 C.F.R. 124.19 (2010). If USEPA issues a written concurrence to the Agency, on the other hand, the Agency is authorized by the rule to make a permit determination, and such an Agency determination is appealable to the Board. *See* 415 ILCS 5/40 (2010).

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<sup>10</sup> The tribal lands nearest to Illinois belong to the Pokagon Band of Potawatomi. Their tribal lands are in LaPorte, St. Joseph, Elkhart, Starke, Marshall, and Kosciusko Counties in northern Indiana and Berrien, Cass, Van Buren, and Allegan counties in southwest Michigan. The most proximate tribal land to Illinois land is about 50 miles east of Chicago, in LaPorte County, Indiana. Tribal land in Berrien County, Michigan is located in a county that actually bounds Cook County, Illinois across the width of Lake Michigan. The Board believes that these tribal areas are sufficiently remote from Illinois that requiring consultation with them is not necessary.

### **Reliance on Indefinite Standards**

USEPA requires that the materials of construction for a Class VI injection well fulfill specific requirements. One requirement is that the materials of construction for the casings, tubing, and packers “must meet or exceed standards developed for such materials by the American Petroleum Institute, ASTM International, or comparable standards acceptable to the [state].” 40 C.F.R. 146.86(b)(1) and (c)(1) (corresponding with 35 Ill. Adm. Code 730.186(b)(1) and (c)(1)). Nowhere does USEPA indicate what such standards might be, and nowhere does USEPA outline any way to determine the adequacy of a standard. USEPA stated the general objectives for these materials as follows:

[US]EPA agrees with commenters that cement additives and degradation resistant materials are crucial to proper construction of Class VI wells. Because of the numerous approaches developed for cement design and due to continually evolving well materials and construction technology (as evidenced by oil and gas industry experience demonstrating the effectiveness of existing cementing materials and procedures), [US]EPA believes it would not be prudent or feasible to specify design standards for cement or cementing procedures, such as wellbore conditioning. Instead, the final rule specifies a performance standard at [40 C.F.R.] 146.86(b)(1) that all casing and cementing or other materials used in the construction of each well have sufficient structural strength, be designed for the life of the GS project, be compatible with the injected fluids, and prevent fluid movement into or between USDWs. 75 Fed. Reg. at 77251.

USEPA nowhere discusses the application of national standards to the materials of construction. *See* 75 Fed. Reg. at 77250-51.

While requiring the use of materials that meet specified standards or that testing of materials must occur using specified methods would constitute a “rule,” as such is defined by the Illinois Administrative Procedure Act (5 ILCS 100/1-70 (2010)), this federal rule does not do that. Instead, USEPA has stated that the materials must meet or exceed established, generally recognized industry standards that are acceptable to the permitting authority. 40 C.F.R. 146.86(b)(1) and (c)(1) (corresponding with 35 Ill. Adm. Code 730.186(b)(1) and (c)(1)). The Board reads the recitation of “the American Petroleum Institute, ASTM International, or comparable standards” as indicating the qualities of the standards used, not a specific source or standard. The federal rule imposes two requirements on the standards applied to the materials: (1) the standard chosen must have been developed for the specific materials; and (2) the standard chosen must have issued from an established standards organization at least comparable to the API and ASTM. Were the rule to require application of specific standards, the Board recognizes that such a requirement would necessitate incorporation of the specified standards by reference. *See* 5 ILCS 100/5-75 (2010).

The Board did alter the federal language relating to the standards to be applied to the materials of construction. The Board removed the words “acceptable to the [state]” from both recitations in Section 730.186(b)(1) and (c)(1) (corresponding with 40 C.F.R. 146.86(b)(1) and

(c)(1). The words come close to appearing to authorize the Agency to specify the use of particular tests without incorporating them by reference in a formal rule. Further, the Board does not believe that these words are necessary. The Agency has the duty to deny the use of materials of construction that it deems unsuitable, subject to Board review in the context of a permit appeal. *See* 415 ILCS 5/39(e) and 40 (2010).

### **Minor Revisions to the Text of the Federal Rules**

The Board has made a number of additional changes in the text of the rules that warrant specific mention and brief explanation. None of these warrants specific discussion. The Board tabulates the changes here:

Provision Citation 35 Ill. Adm. Code/ 40 C.F.R.	Nature of the Changes Made by the Board	Reasons for the Changes
704.123(a)/ 144.7(a)	The Board moved the two conditions under which the Agency may not identify an aquifer as a USDW into two separate subsidiary subsections.	The movement of the conditions enhances readability of when an aquifer exemption is possible and understanding of the two recited instances when it is not.
704.129(b)/ 144.19(b)	Added “from injecting carbon dioxide . . . long-term storage.”	This language clarifies the basis for comparison.
704.129(b)(9)/ 144.19(b)(9)	Changed “as determined by the Director” to “that the Agency determines are necessary to determine whether the injection poses greater risk than usual Class II operations.”	This language clarifies the basis for the determination.
704.189(b)/ 144.52(f)(7)(ii)	Added “necessary for an Agency evaluation of the adequacy of the submitted financial assurance.” The Board moved the sentence citing the financial assurance provisions with which the owner or operator must comply to subsection (c).	This language clarifies the nature of the required documents required. The existing text followed this structure with regard to Class I injection wells. Subsection (b) imposes a duty to comply, and subsection (c) indicated the cross-reference to the provisions that apply.

704.190/ 144.52(a)(8)	Changed “the permittee shows to the satisfaction of the Director” to “the Agency has determined.”	The changed language clarifies that an Agency determination is the object.
704.190/ 144.52(f)(8)	Separated the provisions relative to Class V injection wells from those relative to Class VI injection wells.	Separation of the provisions relative to the two different classes of wells minimizes the possibility for confusion cross-references as to the intended requirements that apply.
704.264(h)/ 144.41(h)	Changed “where the modifications merely clarify or correct the plan, as determined by the Director” to “where the Agency determines that the modifications merely clarify or correct the plan.”	The changed language emphasize that the Agency determination is the determinant.
730.104(d)/ 146.4(d)	Changed “if it meets” to “if the Agency determines that the aquifer meets.”	The changed language clarifies that it is the Agency that makes this determination.
730.105(f)/ 146.5(f)	Separated each type of well that is a Class VI injection well into a separate subsidiary subsection.	Separation distinctly recites each type of well to enhance readability for each.
730.182(a)(14)/ 146.82(a)(14)	Added “which is sufficient to support an Agency determination” after “demonstration.”	The added language clarifies the nature of the demonstration required as justifying an Agency determination.
730.182(a)(20)/ 146.82(a)(20)	Removed the reference to “Territories.” Removed the reference to “Tribes.”	There is no U.S. Territory within a reasonable distance from the boundaries of Illinois. See the discussion that begins on page 19 of this opinion and order with regard to tribal governments relative to Illinois.

730.182(a)(21)/ 146.82(a)(21)	Added “that would support an Agency determination whether to issue the requested permit” after “requested by the Agency.”	The added language clarifies the nature of the demonstration required as justifying an Agency determination.
730.182(b)/ 146.82(b)	Retained the citation to 40 C.F.R. 145.23(f)(13). Removed the reference to “Territories.” Removed the reference to “Tribes.”	While the Board imposes the obligation to submit notice to sister states, retaining the citation to the federal source of the procedural obligation draws attention to that as the source. There is no U.S. Territory within a reasonable distance from the boundaries of Illinois. See the discussion that begins on page 19 of this opinion and order with regard to tribal governments relative to Illinois.
730.183(a)/ 146.83(a)	Changed “demonstrate to the satisfaction of the Director” to “sufficiently demonstrate to support an Agency determination.”	The language is more objective, emphasizes the object of an Agency determination, and recites a clearer basis for Board review.
730.184(b)/ 146.84(b)	Changed “acceptable to the Director” to “sufficient to support an Agency determination that corrective action is acceptable.”	The language is more objective, emphasizes the object of an Agency determination, and recites a clearer basis for Board review.
730.184(b)(2)(D)/ 146.84(b)(2)(iv)	Separated each information item required in the description into a separate subsidiary subsection.	Separation distinctly recites each information item to enhance readability for each.
730.185(a)/ 146.85(a)	Changed “satisfactory to the Director” to “that the Agency has determined.”	The changed language emphasize that the Agency determination is the determinant.

730.185(a)(1)(G)/ 146.85(a)(1)(vii)	Changed “satisfactory to the Director” to “that the Agency determines are satisfactory.”	The changed language emphasize that the Agency determination is the determinant.
730.185(a)(6)(B)/ 146.85(a)(6)(ii)	The Board subdivided the provision into a preamble statement followed by two subsidiary subsections. The Board added references to subsection (b)(6)(E) (corresponding with paragraph (b)(6)(v) in the federal rule).	The statements “financial strength based on credit ratings” and “ability to pass the bond rating” were ambiguous. Dividing the text and adding the cross-references to the intended thresholds clarify that no different thresholds are intended.
730.185(b)(6)(E)/ 146.85(b)(6)(v)	Separated each requirement for self-insurance into a separate subsidiary subsection.	Separation distinctly recites each requirement to enhance readability for each.
730.186(b)(1)/ 146.86(b)(1)	Changed “must meet or exceed standards” to “the owner or operator must submit sufficient documentation to the Agency to support a determination that the casing, cement, and other materials meet or exceed standards.”	The language is more objective, emphasizes the object of an Agency determination, and recites a clearer basis for Board review.
730.186(b)(4)/ 146.86(b)(4)	Changed “the Director may approve . . . , provided the owner or operator can demonstrate” to “the Agency must approve . . . when it determines that.”	The language is more objective, emphasizes the object of an Agency determination, and recites a clearer basis for Board review.
730.186(c)(1)/ 146.86(c)(1)	Changed “must meet or exceed standards” to “the owner or operator must submit sufficient documentation to the Agency to support a determination that the tubing and packer meet or exceed standards.”	The language is more objective, emphasizes the object of an Agency determination, and recites a clearer basis for Board review.

730.187(b)/ 146.87(b)	Changed “the Director may accept . . . if the owner or operator can demonstrate” to “the Agency must accept . . . if the Agency determines that the owner or operator has demonstrated.” Changed “the Director may require . . . .” to “the Agency may require . . . if the Agency determines that coring those other formations is necessary for evaluation of the well project.”	The language is more objective, emphasizes the object of an Agency determination, and recites a clearer basis for Board review.
730.188(e)(1)/ 146.88(e)(1)	Separated each parameter that a device must monitor into a separate subsidiary subsection. Separated the parameter for pressure on the annulus from the parameter for annulus fluid volume.	Separation distinctly recites each parameter to enhance readability for each. The pressure on the annulus is not the same as the annulus fluid volume.
730.189(b)/ 146.89(b)	Separated each parameter that the owner or operator must monitor into a separate subsidiary subsection.	Separation distinctly recites each parameter to enhance readability for each.
730.189(e) and Board note/ 146.89(e)	Changed “the Director may require . . . . Also, the Director may allow” to “the Agency must require . . . that the Agency has determined is necessary,” combining both provisions relative to alternative tests into one. Moved the material relative to USEPA approval of an alternative test into an appended Board note.	The language is more objective, emphasizes the object of an Agency determination, and recites a clearer basis for Board review. Board rules can explain what USEPA has provided with regard to its own actions, but they cannot impose a requirement on USEPA.
730.189(g)/ 146.89(g)	Changed “the Director may require . . . not satisfactory to the Director” to “the Agency must require . . . if the Agency determines that.”	The language is more objective, emphasizes the object of an Agency determination, and recites a clearer basis for Board review.

730.190(g)/ 146.90(g)	Changed the parenthetical “e.g., the pressure front” to “i.e., the pressure front” after “presence or absence of elevated pressure.”	USEPA defined “pressure front” as “the zone where there is a pressure differential sufficient to cause movement of injected fluids for formation fluids into a USDW.” 75 Fed. Reg. at 77232. Since the presence or absence of elevated pressure defines the pressure front, “i.e.” is more appropriate than “e.g.”
730.190(h)/ 146.90(h)	Changed “the Director may require . . .” to “the Agency must require . . . if the Agency has determined.”	The language is more objective, emphasizes the object of an Agency determination, and recites a clearer basis for Board review.
730.190(h)(3)/ 146.90(h)(3)	Changed “if an owner or operator demonstrates . . . , and meets . . . , a director . . . must approve” to “if the Agency . . . , the Agency has determined . . . , and the owner or operator fulfills . . . , the Agency must approve.”	The language is more objective, emphasizes the object of an Agency determination, and recites a clearer basis for Board review.
730.190(i)/ 146.90(i)	Changed “as required by the Director, necessary” to “that the Agency has determined is necessary.”	The changed language emphasize that the Agency determination is the determinant.
730.191(e)/ 146.191(e)	Changed the requirement for electronic submissions to USEPA to a statement that USEPA requires electronic submissions.	The Board prefers to let USEPA impose its own requirements, but the Board consistently provides guidance as to what those requirements are where USEPA has clearly stated them in a pertinent federal rule.

730.191(f)(5)/ 146.91(f)(5)	Added the statements prescribing how the Agency may require a longer time for retention of records and that any Agency determination is subject to appeal to the Board.	The language recites a clearer basis an Agency determination to require longer retention and for Board review.
730.192(c)/ 146.92(c)	Changed “the Director may allow . . .” to “the Agency must allow . . . if the Agency determines that the shorter notice period is adequate to complete Agency review of the well plugging plan or that well plugging must occur more promptly.”	The language is more objective, emphasizes the object of an Agency determination, and recites a clearer basis for Board review.
730.193(a)/ 146.93(a)	Changed “that meets” to “that the Agency has determined meets.”	The changed language emphasize that the Agency determination is the determinant.
730.193(b)(2)/ 146.93(b)(2)	Changed “if the owner or operator can demonstrate to the satisfaction of the Director . . . , the Director may approve” to “if the Agency determines . . . , the Agency must . . . approve.”	The language is more objective, emphasizes the object of an Agency determination, and recites a clearer basis for Board review.
730.193(b)(4)/ 146.936(b)(4)	Changed “until a demonstration can be made and approved by the Director” to “until the owner or operator has made a demonstration that the Agency can approve.”	The language is more objective, emphasizes the object of an Agency determination, and recites a clearer basis for Board review.

730.193(c)/ 146.936(c)	Changed “at the Director’s discretion, the Director may approve . . . if an owner or operator can demonstrate during the permitting process that . . . . The demonstration must be based . . . , and must contain substantial evidence” to “if the Agency determines . . . during the permitting process that . . . , the Agency must approve . . . . The Agency must base its determination . . . , and the Agency must determine based on substantial evidence.”	The language is more objective, emphasizes the object of an Agency determination, and recites a clearer basis for Board review.
730.193(d)/ 146.93(d)	Changed “the Director may allow” to “the Agency must allow . . . if the Agency determines that the shorter notice period is adequate to complete Agency review of the post-injection site care and site closure plan or that well closure must occur more promptly.”	The language is more objective, emphasizes the object of an Agency determination, and recites a clearer basis for Board review.
730.193(g)(2)/ 146.93(g)(2)	Removed the reference to “Tribes.”	See the discussion that begins on page 19 of this opinion and order with regard to tribal governments relative to Illinois.
730.194(c)/ 146.94(c)	Changed “the Director may allow . . . if the owner or operator demonstrates” to “the Agency must allow . . . if the Agency has determined.”	The language is more objective, emphasizes the object of an Agency determination, and recites a clearer basis for Board review.
730.195(a)(1)/ 146.95(a)(1)	Separated each demonstration that the owner or operator must make into a separate subsidiary subsection.	Separation distinctly recites each required demonstration to enhance readability for each.

730.195(a)(4)/ 146.95(a)(4)	Separated each demonstration that the owner or operator must make into a separate subsidiary subsection.	Separation distinctly recites each required demonstration to enhance readability for each.
730.194(a)(7)/ 146.94(a)(7)	Changed “requested by the Director” to “that the Agency determines is necessary.”	The language is more objective, emphasizes the object of an Agency determination, and recites a clearer basis for Board review.
730.194(b)(1)(I)/ 146.94(b)(1)(ix)	Changed “requested by the Director” to “that the Agency determines is necessary to aid a determination by USEPA Region 5 to grant a waiver that would allow the Agency to issue a permit that includes alternative injection well depth requirements.”	The language is more objective, emphasizes the object of an Agency determination, and recites a clearer basis for Board review.
730.194(f)(2)(C)/ 146.94(f)(2)(iii)	Changed “at the Director’s discretion” to “the Agency must require that the casing extend through . . . if the Agency determines that doing so is necessary to prevent movement of fluids into a USDW.”	The language is more objective, emphasizes the object of an Agency determination, and recites a clearer basis for Board review.
730.194(f)(3)(A)/ 146.94(f)(3)(i)	Changed “at the discretion of the Director” to “the Agency determines is necessary to detect potential movement of fluids into a USDW.”	The language is more objective, emphasizes the object of an Agency determination, and recites a clearer basis for Board review.
730.194(f)(3)(B)/ 146.94(f)(3)(ii)	Changed “unless the Director determines . . . that such methods are not appropriate” to “that the Agency determines is necessary to detect potential movement of fluids into a USDW.”	The language is more objective, emphasizes the object of an Agency determination, and recites a clearer basis for Board review.

730.194(f)(4)(A)/ 146.94(f)(4)(i)	Changed “at the discretion of the Director” to “the Agency determines is necessary to detect potential movement of fluids into a USDW.”	The language is more objective, emphasizes the object of an Agency determination, and recites a clearer basis for Board review.
730.194(f)(4)(B)/ 146.94(f)(4)(ii)	Changed “unless the Director determines . . . that such methods are not appropriate” to “that the Agency determines is necessary to detect potential movement of fluids into a USDW.”	The language is more objective, emphasizes the object of an Agency determination, and recites a clearer basis for Board review.
730.195 Board note/ 146.95	Added explanation of the shift from the word “waiver” to use of “permit that includes alternative injection well depth requirements.”	The explanation clarifies that the Board does not intend a change of meaning while trying to avoid language that would raise the specter or impermissible delegation of Board authority to the Agency.

### **Federal Amendments That the Board Has Not Included in This Docket**

The Board has not included a limited number of federal amendments in this docket. Most of the omissions result from differences between the Illinois and federal regulatory schemes. Some of the omitted amendments are to provisions that the Board has not included in the Illinois rules. Table 1 (beginning on page 46) lists a number of federal amendments that the Board has not included in this docket. Table 1 gives a brief explanation why the Board has declined to make each.

### **Request for Comments**

In the October 6, 2011 proposal for public comment, the Board requested that the Agency, DNR, and the regulated community carefully review the Board’s responses to the December 10, 2010 federal amendments that instituted new Class VI injection well standards for carbon sequestration projects. The Board requested public comments on the many issues presented by the incorporation of the new federal requirements into the Illinois UIC rules.

**Agency Comments.** By PC 2, the Agency commented on the proposed amendments. The Agency requested that the Board not adopt the federal Class VI carbon sequestration well requirements into the Illinois UIC regulations, asserting that these federal standards are outside the scope of the Board’s identical-in-substance mandate. The Agency requested that the Board delay the effective date of the Illinois Class VI injection well standards until the Illinois program is authorized by USEPA, should the Board adopt the rules. The Agency requested that the Board

amend an unrelated solid waste regulation to refer to USEPA implementation of the federal Class VI injection well standards. Discussion of the Agency's comments and Board responses follows.

**Comments re the Scope of the Board's Identical-in-Substance Mandate.** The Agency stated that the Board should not adopt the Class VI injection well rules. The Agency maintained that the rules are beyond the scope of the Board's statutory mandate to adopt federal UIC rules using the identical-in-substance procedures.

The Agency observed that USEPA has made state primacy for Class VI injection wells independent of primacy from Class I, III, IV, and V injection wells, as well as from Class II injection wells.<sup>11</sup> See PC 2 at p. 1 (citing 75 Fed. Reg. at 77242). The Agency continued:

Because primacy for Class VI wells is independent from primacy for other classes of wells, Illinois is not required to obtain primacy for Class VI wells in order to maintain primacy for its current UIC program. PC 2 at p. 1.

The Agency pointed out that the December 10, 2010 rules gave Illinois until September 6, 2011 to seek primacy for Class VI carbon sequestration wells by submitting an application to USEPA. The Agency stated that Illinois did not seek primacy and that USEPA implemented the federal Class VI injection well program in Illinois as of September 7, 2011.<sup>12</sup> PC 2 at p. 2 (citing 76 Fed. Reg. 56982, 83 (Sep. 15, 2011); 75 Fed. Reg. at 77242); see 40 C.F.R. 145.21(h) (2011).

The Agency observed that section 7.2(a) would prohibit Board adoption of these standards:

Section 7.2(a) limits the Board to adopting "such USEPA regulations as are necessary and appropriate for authorization of the program." Section 7.2(a) further prohibits adoption of "the equivalent of USEPA rules . . . that are appropriate only in USEPA-administered programs." PC 2 at p. 2 (quoting SDWA Update (January 1, 2009 through June 30, 2009), R10-1, SDWA Update (July 1, 2009 through December 31, 2009), R10-17, SDWA Update (January 1, 2010 through June 30, 2010), R11-6 (Dec. 2, 2010) (quoting from 415 ILCS

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<sup>11</sup> Federal statutory law makes regulations for Class I, III, IV, V, and now VI injection wells independent from those for Class II injection wells. See 42 U.S.C. §§ 300h and 300h-4 (2006). The statute provides for alternative showings with regard to the sufficiency of a Class II injection well program. See 42 U.S.C. § 300h-4(a) (2006). In Illinois, as has been discussed (beginning on page 10 of this opinion and order), the Board and the Agency have no authority to adopt regulations for Class II injection wells regulated under such an alternative standard. See 415 ILCS 5/4(l) and 13(c) (2010).

<sup>12</sup> USEPA observed that no state had submitted a complete primacy application to USEPA before September 6, 2011, so that the federal Class VI injection well program applies in all states, territories, and tribal lands throughout the United States. 76 Fed. Reg. at 56983.

5/7.2(a) (2008); declining to adopt the federal Aircraft Drinking Water Rule, 40 C.F.R. 141, subpart X (2010)).

The Agency concluded that the identical-in-substance mandate of sections 7.2 and 13(c) of the Act (415 ILCS 5/7.2 and 13(c) (2010)) does not embrace the Class VI injection well standards. PC 2 at p. 2-3. The Agency compared the situation of the Class VI injection well rules as similar to that of the Aircraft Drinking Water Rule, which the Board declined to adopt in SDWA Update (January 1, 2009 through June 30, 2009), R10-1, SDWA Update (July 1, 2009 through December 31, 2009), R10-17, SDWA Update (January 1, 2010 through June 30, 2010), R11-6 (Dec. 2, 2010). PC 2 at pp. 3.

**Board Response re the Scope of the Board's Identical-in-Substance Mandate.** The Board has reviewed the Agency comments and concludes that the federal Class VI carbon sequestration well requirements are within the scope of the Board's identical-in-substance mandate of sections 7.2 and 13(c) of the Act (415 ILCS 5.7.2 and 13(c) (2010)). Thus, the Board must incorporate the new federal requirements into the Illinois UIC program. The Board lacks discretion to do otherwise.

Section 13(c) of the Act (415 ILCS 5/13(c) (2010)) defines the scope of the Board's statutory mandate. That mandate is stated in pertinent part as follows:

(c) In accordance with Section 7.2, and notwithstanding any other provisions of this Act, for purposes of implementing a State UIC program, the Board shall adopt regulations which are identical in substance to federal regulations or amendments thereto promulgated by the Administrator of the United States Environmental Protection Agency in accordance with [s]ection 1421 of the Safe Drinking Water Act (P.L. 93-523), as amended [(42 U.S.C. § 300h (2006))]. . . . 415 ILCS 5/13(c) (2010).

Under section 13(c), the authority that USEPA asserts as its basis for adoption determines whether a rule is within the scope of the mandate to adopt the rule.

USEPA's discussion of the Class VI injection well requirements clearly indicates that USEPA acted under authority of section 1421 of the Safe Drinking Water Act (42 U.S.C. § 300h (2006)). USEPA observed that section 1421 of the Safe Drinking Water Act (SDWA) requires USEPA to establish minimum national requirements for state regulation of subsurface injection of fluids. The standards are intended to prohibit underground injection that endangers USDWs. USEPA stated as follows:

Under the SDWA, the injection of any "fluid" must meet the requirements of the UIC program. A "fluid" is defined under 40 C[.]F[.]R[.] 144.3 as any material or substance which flows or moves whether in a semisolid, liquid, sludge, gas or other form or state, and includes the injection of liquids, gases, and semisolids (*i.e.*, slurries) into the subsurface. . . . 75 Fed. Reg. at 77235.

USEPA found that carbon dioxide which is subsurface injected for carbon sequestration, for enhanced oil and gas recovery, or for waste disposal is a fluid that is subject to regulation under section 1421 of SDWA ((42 U.S.C. § 300h (2006)). *Id*; *see also* 75 Fed. Reg. at 77241-43 (re authorization of state programs, clearly citing section 1421 as authority for the Class VI injection rules).

The Agency does not dispute that USEPA adopted the Class VI injection well requirements pursuant to section 1421 of SDWA. Instead, the Agency focuses on Section 7.2 of the Act (415 ILCS 5/7.2 (2010)), which further defines the scope of the mandate of section 13(c). Including the segment quoted by the Agency in PC 2, section 7.2 more fully provides in pertinent part as follows:

Sec. 7.2. (a) In the context of a mandate that the Board adopt regulations to secure federal authorization for a program, regulations that are “identical in substance” means State regulations which require the same actions with respect to protection of the environment, by the same group of affected persons, as would federal regulations if USEPA administered the subject program in Illinois. . . . [T]he Board shall adopt the verbatim text of such USEPA regulations as are necessary and appropriate for authorization of the program. In adopting “identical in substance” regulations, the only changes that may be made by the Board to the federal regulations are those changes that are necessary for compliance with the Illinois Administrative Code, and technical changes that in no way change the scope or meaning of any portion of the regulations, except as follows:

(1) The Board shall not adopt the equivalent of USEPA rules that are not applicable to persons or facilities in Illinois, that govern the program authorization process, that are appropriate only in USEPA-administered programs, or that govern actions to be taken by USEPA, other federal agencies or other states. 415 ILCS 5/7.2 (2010) (emphasis added).

Contrary to the Agency’s assertions, section 7.2 more fully supports Board adoption of the Class VI carbon sequestration well rules. Section 7.2(a) defines “identical in substance” as requiring that Board rules include all of the requirements that USEPA would impose in Illinois to implement the program. Section 7.2(a) requires adoption of the requirements needed to gain USEPA authorization of the program. Section 7.2(a) requires that the Board make no changes that would alter the substance or scope of the USEPA requirements. *Id.*

The segment of section 7.2 quoted by the Agency limits the range of requirements that the Board may adopt by identical-in-substance rulemaking. Significantly, it prohibits adoption of rules “that are appropriate only in USEPA-administered programs.” 415 ILCS 5/7.2(a)(1) (2010) (emphasis added). This does not apply to the Class VI injection well rules. Even though the lack of a State application for primacy has caused USEPA to implement the federal rules in Illinois, the Class VI injection well requirements are not “appropriate only in [a] USEPA-administered program[.]” *Id.*

Initially, USEPA clearly contemplated that states implement the Class VI carbon sequestration well rules. In fact, USEPA's proposed rule would have required states to incorporate the Class VI injection well requirements in order to maintain state primacy over the existing UIC program elements. USEPA observed as follows:

[US]EPA is aware that some [s]tates with primacy for the UIC program are actively engaged in the process of developing their own regulatory frameworks for the [geologic sequestration] of CO<sub>2</sub>. In some cases, these frameworks include capture, transportation[,] and injection requirements. While [US]EPA encourages [s]tates to move forward with initiatives to protect USDWs and public health, it is important to note that [s]tates wishing to retain UIC primacy will need to promulgate regulations that are at least as stringent as those that will ultimately be finalized following this proposed rulemaking. 73 Fed. Reg. at 43497 (emphasis added); *see* 75 Fed. Reg. at 77242 (“if a [s]tate wanted primacy for Class I wells, the [s]tate would also need to accept primacy for all other well classes . . .”).

The Board observes, however, that USEPA raised the possibility of a final rule that provided for independent primacy. USEPA observed that, aside from the special case of Class II injection wells, USEPA had required the states to assemble all necessary elements of the rules for Class I, III, IV, and V wells to acquire and maintain state primacy. *See* 75 Fed. Reg. at 77242. USEPA proposed the Class VI injection well rules raising the issue whether the final rule should allow state primacy separate from primacy for the other classes of wells. *See* 73 Fed. Reg. 43492, 523 (July 25, 2008). USEPA observed, “Section 1422 [42 U.S.C. § 300h-1] does not explicitly allow for approval of State UIC programs for individual well classes, however there appears to be no express prohibition.” *Id.* USEPA invited comments on separate primacy for Class VI injection wells, stating as follows as to the purpose:

[US]EPA is aware that some [s]tates may wish to obtain primacy for only Class VI wells. . . .

Allowing States . . . to acquire primacy for only Class VI wells may encourage them to assume the responsibility of implementation and provide for a more comprehensive approach to managing [carbon capture and storage] projects (e.g., capture, transportation, and geologic sequestration). *Id.*

[US]EPA believes that this shift in its longstanding policy of discouraging “partial” or “independent” primacy is warranted to encourage [s]tates to seek primacy for Class VI wells and allow [s]tates to address the unique challenges that would otherwise be barriers to comprehensive and seamless management of [geologic sequestration] projects. 75 Fed. Reg. at 77242.

Rather than trying to limit state administration of a Class VI carbon sequestration well program, this segment indicates that USEPA was quite eager to see the states take the initiative and assemble their own programs. USEPA deviated from its longstanding policy to allow states

not having primacy for other UIC classes to obtain primacy for Class VI injection wells independent of the other classes. USEPA made this point again upon final adoption of the rules:

[US]EPA believes that [s]tates are in the best position to implement UIC- [geologic sequestration] programs, and by allowing for independent Class VI primacy, [US]EPA encourages [s]tates to take responsibility for implementation of Class VI regulations. [USEPA] believes that this may, in turn, help provide for a more comprehensive approach to managing [geologic sequestration] projects by promoting the integration of [geologic sequestration] activities under SDWA into a broader framework for [s]tates managing issues related to [carbon capture and storage] that may lie outside the scope of the UIC program or other [US]EPA programs. This would harness the unique efficiencies [s]tates can offer to promote adoption of [geologic sequestration] technology that incorporates issues in the broader scope of CCS, while ensuring that USDWs are protected through the UIC regulatory framework. Allowing [s]tates to apply only for Class VI primacy will also shorten the primacy approval process. 75 Fed. Reg. at 77242.

This is different from the situation that the Board confronted with the Aircraft Drinking Water Rule (ADWR) (40 C.F.R. 141, subpart X (2011)) cited by the Agency. *See* PC 2 at p. 3. The Board proposed incorporating the federal ADWR requirements into the Illinois drinking water regulations in SDWA Update (January 1, 2009 through June 30, 2009), R10-1, SDWA Update (July 1, 2009 through December 31, 2009), R10-17, SDWA Update (January 1, 2010 through June 30, 2010), R11-6 (Aug. 5, 2010). At the time of that proposal, it was not clear that USEPA did not contemplate state implementation of the ADWR. Initial indications were that USEPA would not require Illinois to incorporate the ADWR elements to maintain State primacy over the drinking water program. USEPA clarified in later comments with the pointed statement that the ADWR “is a regulation that is appropriate only in a USEPA-administered program.” SDWA Update (January 1, 2009 through June 30, 2009), R10-1, SDWA Update (July 1, 2009 through December 31, 2009), R10-17, SDWA Update (January 1, 2010 through June 30, 2010), R11-6 (Dec. 2, 2010) (quoting USEPA comments in PC 4). Noting that USEPA had clarified any earlier ambiguity on the point in its final comments, the Board declined to adopt the ADWR amendments.

The Board initially proposed the ADWR amendments even though USEPA stated that it would itself implement the requirements: “[US]EPA will implement the rule, making it unnecessary to allow time for States to obtain enforcement authority . . .” 74 Fed. Reg. 53590, 609 (Oct. 19, 2009); *see also* 74 Fed. Reg. at 53610, 16 (discussions of cost analysis, unfunded mandates, and federalism issues). The Board declined to adopt the ADWR requirements only after USEPA unambiguously stated that the ADWR “is a regulation that is appropriate only in a USEPA-administered program.” SDWA Update (January 1, 2009 through June 30, 2009), R10-1, SDWA Update (July 1, 2009 through December 31, 2009), R10-17, SDWA Update (January 1, 2010 through June 30, 2010), R11-6 (Dec. 2, 2010) (quoting USEPA comments in PC 4); *see* 415 ILCS 5/7.2(a)(1) (2010).

A federal rule that is more analogous to the Class VI injection well rules is the Cross-Media Electronic Reporting Rule (CROMERR), which USEPA adopted in 2005. Effective in 2006, the CROMERR prescribes the minimum requirements for submission of electronic reports needed to demonstrate compliance with all of the federal environmental programs, including the UIC, hazardous waste, wastewater pretreatment, municipal solid waste landfill, and drinking water programs. The CROMERR has three segments. The first segment sets forth the general provisions and definitions. The second segment sets forth the requirements for filing reports with USEPA. The third segment sets forth the requirements for filing with states, requirements for state electronic filing systems, and a procedure for USEPA authorization of state electronic filing systems. The CROMERR expressly provides that states were to have filed for USEPA authorization for electronic submissions pursuant to the CROMERR by October 13, 2007.

The CROMERR does not require states to maintain an electronic filing system. If a state does decide to collect federally required documents and reports electronically, the state document system must comport with specified minimum federal standards, and the state must obtain USEPA authorization before using its electronic filing system.<sup>13</sup> 40 C.F.R. 3.1000(a) and 3.2000 (2011); 70 Fed. Reg. 59848, 50, 64 (Oct. 13, 2005). In fact, Illinois first applied for USEPA authorization of a segment of CROMERR in 2010, which USEPA approved in 2011. *See* 76 Fed. Reg. 24020, 21 (Apr. 29, 2011).

As with the CROMERR, the Agency can apply to USEPA in the future for authorization of an Illinois Class VI carbon sequestration well program. *See* 76 Fed. Reg. at 56983. Rather than prohibit the Board from adopting the Class VI injection well requirements, as asserted by the Agency, the Board finds that sections 7.2 and 13(c) of the Act (415 ILCS 5/7.2 and 13(c) (2010)) mandate that the Board do so.

The Board observes that the General Assembly has committed the State to move forward in this regard by recent legislation. The Board observes that two recent bills passed by the General Assembly require clean coal facilities to obtain a UIC permit before gaining approval by the Illinois Commerce Commission for a carbon sequestration project. *See* P.A. 97-6, § 10, effective July 13, 2011, and P.A. 97-239, § 15, effective August 2, 2011 (adding section 9-220(h-7) to the Public Utilities Act). These bills further added section 13.7 to the Environmental Protection Act, which provides, in significant part, for payment of fees to the Agency for permit review relative to UIC permits for carbon sequestration wells. 415 ILCS 5/13.7, as added by P.A. 97-6, § 20, effective July 13, 2011 and P.A. 97-239, § 25, effective August 2, 2011.

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<sup>13</sup> The Board incorporated the CROMERR into the Illinois regulations in 2006 in several separate identical-in-substance actions for the several IIS program areas. *See* SDWA Update, USEPA Amendments (July 1, 2005 through December 31, 2005), R06-15 (Oct. 5, 2006); Wastewater Pretreatment Update, USEPA Amendments (July 1, 2005 through December 31, 2005), R06-13 (Oct. 19, 2006); UIC Update, USEPA Amendments (July 1, 2005 through December 31, 2005), R06-16, RCRA Subtitle D Update, USEPA Amendments (July 1, 2005 through December 31, 2005), R06-17, RCRA Subtitle C Update, USEPA Amendments (July 1, 2005 through December 31, 2005 and March 23, 2006), R06-18 (Nov. 16, 2006) (consolidated). Elements for CROMERR have not been instituted into any other program areas by Board rule.

Thus, while USEPA has determined to manage state primacy for Class VI injection wells separately from other program elements, that the Board should not adopt the Class VI carbon sequestration rules does not follow. The Board's obligations in this context are not based on how USEPA has decided to manage state primacy; federal law does not define the scope of the Board's identical-in-substance mandate. Illinois law defines the scope of the Board's authority and mandates. Illinois law appears to favor adoption of the federal standards for Class VI carbon sequestration wells into the Illinois UIC regulations.

**Agency-Requested Delay of the Effective Date.** The Agency submitted additional comments on the proposed Class VI injection well rules. The Agency stated that the rules "are unnecessary and may lead to confusion over their intent and application." PC 2 at p. 3. The Agency observed that the rules could be interpreted as independent Illinois requirements that apply in addition to the federal requirements. PC 2 at pp. 3-4. In the event that the Board adopts the Class VI injection well rules, the Agency requested that the Board provide that the Illinois Class VI injection well requirements become effective only after USEPA grants primacy to an Illinois Class VI carbon sequestration well program. PC 2 at p. 4.

**Board Response re Delay of the Effective Date.** USEPA allowed states until September 6, 2011 to continue to implement carbon sequestration projects prior to federal authorization of the state program. 76 Fed. Reg. 56982, 83 (Sep. 15, 2011); 75 Fed. Reg. at 77242; *see* 40 C.F.R. 145.21(h) (2011). Effective September 7, 2011, USEPA has implemented the federal rules in all states. 76 Fed. Reg. at 56983. USEPA stated that states may later seek authorizations of a state Class VI injection well program, but from the January 10, 2011 effective date of the federal rules (*see* 75 Fed. Reg. at 77230) until USEPA has authorized the state to do so, no state may issue permits for a carbon sequestration well.

[A] [s]tate may, at any time in the future, apply for primacy for the new [geologic sequestration] requirements following establishment of a [f]ederal Class VI UIC program. . . .

States with existing UIC primacy for all non-Class VI well classes under section 1422 [of SDWA, 42 U.S.C. 300h-1 (2006)] that receive Class VI permit applications within the first 270 days after promulgation of the final rule may consider using existing authorities (*e.g.*, Class I or Class V), as appropriate, to issue permits for CO<sub>2</sub> injection for GS while [US]EPA is evaluating their Class VI primacy application. . . .

After the 270-day deadline, and until a [s]tate has an approved Class VI program, [US]EPA will establish and implement a Class VI program. Therefore, all permit applications in States without Class VI programs must be directed to the appropriate [US]EPA Region in order for a Class VI permit to be issued. In [s]tates where [US]EPA directly implements the Class VI program, Class I permits for CO<sub>2</sub> injection for [geologic sequestration] may no longer be issued and Class V permits may only be issued to projects eligible for such permits . . . . 75

Fed. Reg. at 77242-43; *see* 75 Fed. Reg. at 77244-45 (discussion of the status of existing Class I, II, and V injection wells used for carbon sequestration).

As of September 9, 2011, no state had submitted a complete application for primacy to USEPA. As a result, USEPA has implemented the federal Class VI carbon sequestration rule in all states. *See* 76 Fed. Reg. 56982, 83 (Sep. 15, 2011). All states are barred from granting Class VI injection well permits until USEPA has authorized a state Class VI carbon sequestration program.

Thus, it is clear that Illinois cannot permit a well for the purpose of carbon sequestration until USEPA has approved an Illinois Class VI injection well program. The regulations that the Board adopts today incorporate the federal requirements into the Illinois UIC rules, and they are an essential element of an Illinois Class VI carbon sequestration well program. *See* 40 C.F.R. 145.22(a)(5) and 145.23(c) (2011). The Agency, however, may not implement these requirements as part of the Illinois UIC program until USEPA has authorized them. There is no confusion on this point.

When adopting the early segments of the federal RCRA Subtitle C hazardous waste requirements, the Board included a provision that delayed the effective date of the Illinois hazardous waste requirements until USEPA had authorized the Illinois program. This was in response to comments expressing concern over the inclusion of past effective dates incorporated from the underlying federal rules, which made it appear that the rules would apply retroactively. *See Proposed Regulations for RCRA*, R81-22 (Feb. 4, 1982), slip op. at p. 14. When proposing the rules, the Board observed as follows with regard to inclusion of those retroactive dates:

Retroactive Effective Dates: Most of the rules go into effect upon Phase I authorization, or as specified in the rules. The rules themselves mostly specify various dates between May 19, 1980 and November 19, 1981. These dates are taken from the federal rules, although descriptions have been changed to actual dates ([*i.e.*,] “Six months after” has been changed to “November 19, 1980”).

The Board intends Parts 700, 722, 723 and 725 to be of no effect until Phase I authorization. At that time the rules will go into effect, these rules will specify dates which appear to be retroactive. These dates are being left in the body of the rules to keep them as nearly identical to the federal rules as possible. However, in the event an enforcement action is filed, violation of federal rules must be alleged up to the date of Phase I authorization.

The present system is not altogether satisfactory. There is however a question as to how far the Board can go in modifying its existing rules and the RCRA rules without resorting to full rulemaking. . . . Proposed Regulations for RCRA, R81-22 (Sep. 16, 1981), slip op. at 6; *see* Phase II RCRA Rules, R82-19 (July 26, 1983).

When adopting the initial Illinois UIC requirements within that same period of time, the Board used the same provision to delay the effective date of the UIC requirements until USEPA authorized the Illinois program. *See* Underground Injection Control (UIC), R81-32 (May 13, 1982), slip op. at p. 2.

Since that early adoption of the Illinois hazardous waste and UIC regulations, the Board has acquired the practice of routinely omitting past effective dates, either upon initial adoption of a federally derived rule, or later, after the federal effective date has passed. *See, e.g., RCRA Subtitle C Update, USEPA Amendments (March 5, 2005, September 8, 2005, January 1, 2006 through June 30, 2006), R07-5, RCRA Subtitle C Update, USEPA Amendments (July 1, 2006 through December 31, 2006), R07-14 (June 5, 2008) (consolidated), slip op. at p. 5.* The Board ultimately repealed the provision which stated that elements of the Illinois RCRA Subtitle C hazardous waste and UIC programs became effective on the date of USEPA approval. *See UIC Update, USEPA Regulations (July 1, 1994 through December 31, 1994), R95-4, RCRA Subtitle C Update, USEPA Regulations (July 1, 1994, through December 31, 1994, January 3, 1995, and May 19, 1995), R95-6 (June 1, 1995), slip op. at pp. 13-14.*

The Board could find no later instance of an effective date contingent on USEPA approval of elements of a program. For example, the initial Illinois regulations providing for hazardous waste delisting by the Board did not include a delayed effective date, despite the fact that the State had no authority to grant delistings until after USEPA authorized the State to do so. *See, e.g., RCRA Update, USEPA Regulations (April 24, 1984, through June 30, 1985), R85-22 (Dec. 20, 1985 and Jan. 9, 1986); 42 U.S.C. 6929 (2006) (constraining State actions); see also 55 Fed. Reg. 7320 (Mar. 1, 1990) (granting delisting authority to Illinois).*

The Board does not believe that adding language to the Class VI injection well rules is necessary. The substantive requirements adopted today mirror those that USEPA is implementing in Illinois at this time. *See* 415 ILCS 5/7.2(a) and 13(c) (2010). The Agency cannot issue a federally effective permit until USEPA has approved the Illinois program. If a regulated entity attempts to apply for such a permit, the Agency may need to refer that entity to USEPA. Further, there are no issues of retroactivity of the Class VI carbon sequestration well rules, which, as discussed above, has justified recitation of a delayed effective date as has occurred in the past.

**Agency-Proposed Ancillary Amendment to a Solid Waste Rule.** The Agency has requested that the Board amend a provision in the solid waste facility standards to avoid double-permitting of Class VI injection wells. The Agency requested as follows:

With respect to the UIC program, [35 Ill. Adm. Code 807.105(a)] currently references only the State UIC requirements that are contained the Board's rules. With the USEPA's administration of the Class VI portion of the UIC program, the UIC program is now split between the State and the USEPA. 35 Ill. Adm. Code 807.105(a) should be amended to reflect this new division of the UIC program. The Illinois EPA proposes that the Board amend 35 Ill. Adm. Code 807.105(a) similar to the following to acknowledge the new division of the UIC program:

Persons and facilities regulated pursuant to 35 Ill. Adm. Code 700 through 749, or pursuant to Underground Injection Control regulations administered by the USEPA, are not subject to the requirements of [Part 807] or of 35 Ill. Adm. Code 811 through 817. However, if such a facility also contains one or more units used solely for the disposal of solid wastes, as defined in 35 Ill. Adm. Code 810.103, such units are subject to requirements of this Part and 35 Ill. Adm. Code 811 through 817. PC 2 at p. 4.

***Board Response re Ancillary Amendment to a Solid Waste Rule.*** Initially, the Board does not read this Agency request as a proposal for general rulemaking filed pursuant to sections 27 and 28 of the Act (415 ILCS 5/27 and 28 (2010)). The Agency request does not comport with the formal requirements for a rulemaking petition. *See* 415 ILCS 5/27 and 28 (2010); 35 Ill. Adm. Code 102.Subpart B. Instead, the Board reads the Agency comments as submitting a request that the Board alter the provision, rather than a proposal for rulemaking action.

Second, the Board adopted the rules of 35 Ill. Adm. Code 807 by the general rulemaking procedure. *See* 35 Ill. Adm. Code 807 authority note. The Board cannot amend 35 Ill. Adm. Code 807 by the identical-in-substance procedure, except to instill a necessary element of a federal rule that falls within an identical-in-substance mandate or to remove an Illinois rule that is inconsistent with a necessary element of a federal rule that falls within an identical-in-substance mandate. 415 ILCS 5/7.2(a) (2010); *see, e.g., Safe Drinking Water Act Update, Phase V Rules (July 1, 1992 through December 31, 1992)*, R93-1 (July 14, 1993), slip op. at pp. 8-11; *Safe Drinking Water Act Update, Phase IIB and Lead and Copper Rules (June 1, 1991 through December 31, 1991)*, R92-3 (May 5, 1993), slip op. at pp. 42-45.

There is no assertion here that 35 Ill. Adm. Code 807.105(a) is either less stringent than or inconsistent with the federal Class VI injection rules involved in this proceeding. The Agency-suggested amendment to 35 Ill. Adm. Code 807.105(a) is beyond the scope of any identical-in-substance mandate. If the Agency desires amendment of 35 Ill. Adm. Code 807.105(a) as requested in PC 2, the Agency should file a formal petition for rulemaking.

Third, the Board cannot see that there is a need to amend 35 Ill. Adm. Code 807.105(a) to list federal implementation of Class VI injection well requirements. USEPA engages in direct implementation of RCRA Subtitle C hazardous waste requirements in this State. The federal primacy requirements for that program generally provide that new federal requirements do not become effective in an authorized state until adopted by the state. Federal law, however, requires direct implementation of provisions adopted pursuant to the Hazardous and Solid Waste Amendments of 1985 (HSWA) (P.L. 98-616, 98 Stat. 3221, eff. Nov. 8, 1984), notwithstanding State primacy. 42 U.S.C. § 6926(b) and (g) (2006). There is no reference to the federal RCRA Subtitle C requirements in 35 Ill. Adm. Code 807.105(a).

Fourth, 35 Ill. Adm. Code 807 was not part of the proposal for public comment. No Notice of Proposed Amendment appeared in the *Illinois Register* that would have opened Part

807 for amendment. Such a Notice would be required before the Board could amend Section 807.105(a). *See* 415 ILCS 5/7.2(b)(1) (2010); 1 Ill. Adm. Code 100.240 and 100.410.

Finally, the adoption of the Class VI carbon sequestration well requirements today removes any impediment in 35 Ill. Adm. Code 807.105(a). The Board has incorporated the amendments to the federal permit requirements of 40 C.F.R. 124 into 35 Ill. Adm. Code 705, and those of 40 C.F.R. 144 into 35 Ill. Adm. Code 702 and 704. The Board incorporated the substantive requirements for Class VI injection wells from 40 C.F.R. 146 into 35 Ill. Adm. Code 730. These provisions are among those referenced in 35 Ill. Adm. Code 807.105(a) as excluded from regulation under those solid waste facility regulations. The adoption of today's amendments clearly excludes Class VI carbon sequestration wells from regulation under 35 Ill. Adm. Code 807.

### **Corrective Amendments to Existing Text**

The Board has traditionally used the occasion of these identical-in-substance updates to correct segments of the base text of the Illinois regulations. These corrections are non-substantive in effect. The Board includes a significant number of non-substantive corrections in each update docket.

Some corrections are prompted by the federal amendments involved, but many more result when flaws in the existing text of particular provisions come to the attention of the Board through Board staff review of text or from outside the Board, from the regulated community, the Agency, or JCAR. When a necessary minor correction comes to the attention of the Board, Board staff makes a note of the correction, and it is set aside until the next opportunity to make the correction.

The Board does not generally discuss particular corrective amendments in the discussion of the federal amendments. The Board, however, does itemize each corrective amendment together with a brief description in a table appended to the opinion. Table 3 sets forth the many corrective amendments to base text that the Board has made. Table 3 begins on page 127 of this opinion and order. There is no further discussion of most of the corrective amendments to the base text elsewhere in the Board's opinion. What follows is a brief tabulation of the more significant changes together with a brief explanation for each.

702.123(e)/ 144.31(e)(5) and 270.13(e)	Replaced the requirement for the site owner information with an explanation that the corresponding federal UIC and RCRA Subtitle C provisions relate exclusively to Indian lands. Section 703.181(b) includes the RCRA Subtitle C-only requirement from 40 C.F.R. 270.13(e) for owner information, so that requiring information not required by 40 C.F.R. 144.31(e) for UIC unnecessary in this rule that applies to both programs.
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702.161(a)(2)/ 144.36(a)	Restored “up to the operating life of the facility” at the latest possible expiration date for a permit allowed under 40 C.F.R. 144.36(a), notwithstanding the maximum five-year renewal term for a permit in Illinois.
704.190/ 144.52(a)(8)	Changed the parenthetical “or for any Class V injection well may include” to a separate sentence relative to a Class V injection well to enhance the readability and clarity of the distinct requirements.
704.264(e)-(g)/ 144.41(e)-(g)	Removed subsection (e) and renumbered subsections (e)(1) through (e)(3) as subsections (e) through (g) to more closely follow the structure of the corresponding federal rule.
730.104 preamble/ 146.4 preamble	Removed the cross-references to Sections 704.103 and 702.105, since the reference to Section 704.123, the principal operative provision, is sufficient.

The Board requests that the Agency, JCAR, and the regulated community review Table 3 and the text of the corrections. The Board requests comment on the corrections. The Board also requests that USEPA, the Agency, JCAR, and the regulated community submit suggestions for correction of any errors of which they are aware. The Board will catalog any suggestions relating to parts and sections not already involved in this proceeding for future use.

### **General Revisions and Deviations from the Federal Text**

In incorporating the federal rules into the Illinois system, some deviation from the federal text is unavoidable. This deviation arises primarily through differences between the federal and state regulatory structure and systems. Some deviation also arises through errors in and problems with the federal text itself. The Board conforms the federal text to the Illinois rules and regulatory scheme and corrects errors found in the text in the course of these routine update rulemakings.

In addition to the amendments derived from federal amendments, the Board often finds it necessary to alter the text of various passages of the existing rules as provisions are opened for update in response to USEPA actions. This involves correcting deficiencies, clarifying provisions, and making other changes that are necessary to establish a clear set of rules that closely parallel the corresponding federal requirements within the codification scheme of the *Illinois Administrative Code*.

### **Whether a Regulatory Provision Involves Agency or Board Action**

Section 7.2(a)(5) of the Act requires the Board to specify those portions of the program over which USEPA will retain decision making authority. Based on the general division of

functions within the Act and other Illinois statutes, the Board is also to specify which State agency is to make decisions.

In situations in which the Board has determined that USEPA will retain decision-making authority, the Board has replaced “Regional Administrator” with USEPA, so as to avoid specifying which office within USEPA is to make a decision.

In some identical-in-substance rules, certain decisions pertaining to a permit application are not appropriate for the Agency to consider. In determining the general division of authority between the Agency and the Board, the following factors should be considered:

1. Whether the entity making the decision is applying a Board regulation, or taking action contrary to, *i.e.*, “waiving,” a Board regulation. It generally takes some form of Board action to “waive” a Board regulation.
2. Whether there is a clear standard for action such that the Board can give meaningful review to an Agency decision.
3. Whether the action would result in exemption from the permit requirement itself. If so, Board action is generally required.
4. Whether the decision amounts to “determining, defining or implementing environmental control standards” within the meaning of Section 5(b) of the Act. If so, it must be made by the Board.

There are four common classes of Board decisions: variance, adjusted standard, site-specific rulemaking, and enforcement. The first three are methods by which a regulation can be temporarily postponed (variance) or adjusted to meet specific situations (adjusted standard or site-specific rulemaking). There often are differences in the nomenclature for these decisions between the USEPA and Board regulations.

The present amendments include a provision for “waiver” of the well depth requirement. The discussion that begins on page 14 of this opinion and order weighs the issues involved and concludes based on the above factors that what USEPA has called a “waiver” is actually a permit determination that allows application of alternative requirements as already provided in the rule.

### **Updating Citations to the *Code of Federal Regulations***

The Board updates the citations to the *Code of Federal Regulations* to the most recent version available. As discussed above, the most recent versions of the *Code of Federal Regulations* available to the Board are the January 1, 2011 edition for NRC regulations (Title 10), the July 1, 2011 edition for Coast Guard (Title 33) and USEPA (Title 40) regulations, and the September 1, 2011 edition for USDOT (Title 49) regulations. As is explained above (at page 3 of this opinion and order), no Board action is required to update the incorporations by reference in this proceeding.

### **Stylistic Revisions to Federal Text**

The Board routinely revises the text of federal rules in certain ways to reflect the Board's preferred stylistic preferences in the text. The following bulleted list explains many of those routine changes:

- The Board routinely changes “who” to “that” and “he” or “she” to “it,” where the person to which the regulation referred is not necessarily a natural person. The Board uses “he or she” where it appears that the text refers to a natural person.
- The Board usually changes “which” to “that” for restrictive relative clauses. The Board always uses “which” preceded by a comma for all non-restrictive relative clauses. The Board uses “which” without a comma for a restrictive relative clause where another restrictive relative clause precedes the restrictive relative clause in the same sentence.
- The Board always substitutes “must” for “shall” for imperative statements. The Board no longer uses “shall” in any sense. The use of “shall” in ordinary language is waning, and “must,” unlike “shall,” has no non-imperative senses.
- The Board always substitutes “must” for “may” for provisions that allow administrative discretion, adding a statement that makes the contingency dependent on an administrative determination, and framing the administrative determination that the Board or Agency must make.
- The Board uses “may” only where the contingency of a provision is optional.
- The Board uses “will” when explaining future action that the Board is to take or action that USEPA has stated that it will take.
- The Board capitalizes the section headings as titles and changes all subpart and section headings that USEPA has stated as a question to an affirmative statement.
- The Board ordinarily changes specific requirements that USEPA has imposed in plural terms to more specific terms in singular.
- The Board ordinarily changes requirements that USEPA has imposed in the passive voice to requirements in active voice imposed on specific persons.
- The Board frequently adds the subject to individual requirements in serial listings of requirements that USEPA has drafted as sentence fragments.
- The Board routinely substitutes “or” for most instances where “/” appears in the federal base text, using “and” where more appropriate.
- Where USEPA creates an alternative plural case by adding a parenthetical “(s)” or “(es)” at the end of a noun, the Board generally uses only the plural, altering the rest of the language in the sentence
- The Board routinely subdivides run-on sentences into two or more shorter sentences that allow easier comprehension.

- The Board routinely corrects punctuation within sentences. Examples include adding a comma immediately before the conjunction before the final element of a series, removing unnecessary commas after the ending conjunction, changing the ending comma at the end of some provisions to a semicolon or a period, ensuring the consistency of the punctuation at the ends of coordinate provisions, etc.
- The Board routinely changes “and/or” to “or” (unless “and” is more appropriate in the context). The Board intends that “or” should mean “one or both,” and the Board will use the construction “either . . . or” where the preferred meaning is “one but not both.”
- The Board routinely changes references to the United States Environmental Protection Agency as “USEPA” or “USEPA Region 5,” as appropriate. The Joint Committee on Administrative Rules has requested that the Board do so.

The Board does not generally discuss particular revisions to the text of federal amendments in the discussion segment of an opinion. The Board, however, does itemize each revision together with a brief description in a table appended to the opinion. Table 2 sets forth the miscellaneous deviations from the federal text of the federal amendments in detail. Table 2 begins on page 48 of this opinion. There is no further discussion of most of the revisions to the federal text elsewhere in the Board’s opinion. Nevertheless, the Board will add discussion where necessary in the opinion for significant revisions.

In the October 6, 2011 proposal for public comment, the Board requested that the Agency, JCAR, and the regulated community review Table 2 and the text of the revisions to the text of the federal amendments. The Board requested comment on the revisions. The Board received no comments in this regard.

### **Tables of Deviations from the Federal text and Corrections to and Clarifications of the Base Text**

The tables below list numerous corrections and amendments that are not based on current federal amendments. Table 1 (beginning immediately below) lists a number of federal amendments that the Board has not included in this docket. Table 1 gives a brief explanation why the Board has declined to make each. Table 2 (beginning immediately after Table 1 on page 48) includes deviations made in this proposal for public comment from the verbatim text of the federal amendments. Table 3 (beginning immediately after Table 2 on page 127) contains corrections and clarifications that the Board made in the base text involved in this proposal. The amendments listed in Table 3 are not directly derived from the current federal amendments. Some of the entries in these tables are discussed further in appropriate segments of the general discussion beginning at page 5 of this opinion. Table 4 (beginning on page 135 below) is a listing of revisions made to the text of the amendments from that proposed and set forth in the Board’s opinion and order of October 6, 2011. Table 4 indicates the changes made, as well as the source that suggested each of the changes. Table 5 (on page 147 below) indicates suggested revisions that the Board has not made in adopting these amendments. Each entry gives a brief explanation why the Board did not incorporate the suggested change.

**Table 1:  
Federal Revisions That Are  
Not Necessary in This Docket**

Provision Citations 40 C.F.R./ 35 Ill. Adm. Code	USEPA Correction/ Explanation Why Not Made in This Docket
144.1(g) preamble/ 704.102	The Board previously changed the capitalized “UIC Permit Program” to the lower-case “UIC permit program.”
144.1(g) preamble/ 704.102	The Board previously changed the plural “underground injections” to the singular “underground injection.”
144.1(g) preamble/ 704.102	The Board previously changed the capitalized “Underground Sources of Drinking Water” to the lower-case “underground sources of drinking water.”
144.1(g) preamble/ 704.102	USEPA changed “remedial action or closure by order (§ 144.12(c))” to “remedial action or closure by order (§ 144.6(c)).”/ Changing the corresponding reference from “remedial action or closure by order (see Section 704.122(c))” to “remedial action or closure by order (see Section 704.106(c))” is inappropriate because 40 C.F.R. 144.6(c) and 35 Ill. Adm. Code 704.106(c) relate to Class III injection wells, while 40 C.F.R. 144.12(c) and 35 Ill. Adm. Code 704.122(c) both relate to an order for remedial action or closure of a Class V injection well.
144.1(g) preamble/ 704.103	The Board previously changed the capitalized “UIC Program” to the lower-case “UIC program.”
704.123(b)(1)/ 144.7(b)(1)	The Board previously translated “40 CFR 146.04” as correlating with 35 Ill. Adm. Code 730.104, which corresponds to “§ 146.4,” as corrected by USEPA.
144.8(b)(2)(iii)	As a programmatic reporting requirement imposed on the State, the Board never adopted a counterpart to 40 C.F.R. 144.8, and the current amendments extending reporting to Class VI injection wells do not require a corresponding Illinois provision.
144.12(b)/ 704.122(b)	The Board continues to omit the entry for Class II injection wells, which are regulated by the Department of Natural Resources, Office of Mines and Minerals.

144.22(b)	The Board continues to omit the entry for Class II injection wells, which are regulated by the Department of Natural Resources, Office of Mines and Minerals.
144.39(a)(3)/ 704.262(a)(3)	The Board continues to omit the entry for Class II injection wells, which are regulated by the Department of Natural Resources, Office of Mines and Minerals.
144.51(q)(1)/ 704.181(h)(1)	The Board continues to omit the entry for Class II injection wells, which are regulated by the Department of Natural Resources, Office of Mines and Minerals.
144.51(q)(2)/ 704.181(h)(2)	The changes from “he” to “he/she” and “his” to “his/her” were not necessary, as the Board previously eliminated the gender-based language with “the Agency.”
144.52(a)(8)/ 704.190	The Board continues to omit the entry for Class II injection wells, which are regulated by the Department of Natural Resources, Office of Mines and Minerals.
144.80(e)/ 704.280	The Board continues to omit the entry for Class II injection wells, which are regulated by the Department of Natural Resources, Office of Mines and Minerals.
144.80(e)/ 704.280	The Board previously did not include this description of Class V wells in the rules, in favor of reliance on essentially identical information in 40 C.F.R. 144.6, defining Class V injection wells, which the Board has rendered at 35 Ill. Adm. Code 704.106.
144.80(f)/ 704.280	The Board previously did not include the descriptions of injection well classes in the rules, in favor of reliance on essentially identical information in 40 C.F.R. 144.6, defining Class V injection wells, which the Board has rendered at 35 Ill. Adm. Code 704.106. The Board prefers to rely on 35 Ill. Adm. Code 704.106 for definition of Class VI injection wells.

**Table 2:  
Deviations from the Text of the Federal Amendments**

Illinois Section	40 C.F.R. Section	Revision(s)
702.101(b)(2) table	144.1(f)(1)(viii)	Changed the paragraph-formatted entry “Subpart H of part 146 sets forth requirements for owners or operators of Class VI injection wells” to the tabular-formatted entry “Requirements Applicable to Class VI Injection Wells . . . J.”
702.110 “geologic sequestration”	144.3 “geologic sequestration”	Added quotation marks before and after the defined term “geologic sequestration”; changed plural “subsurface geologic formations” to singular “a subsurface geologic formation.”
702.123 preamble	144.31 preamble	Omitted the reference to Class II injection wells; Changed plural “applicants” to singular “an applicant”; changed plural “for Class IV permits” to singular “a Class VI injection well permit”; changed “shall” to “must.”
702.150(d)	144.51(j)(4)	Changed the subsection level to a higher level to accommodate the existing structure of the Illinois rules; changed plural “owners and operators of Class VI wells” to singular “the owner or operator of a Class VI injection well”; changed “shall” to “must.”

702.161(a)(2)	144.36(a)	Retained “Class I or Class V” instead of changing to “Class I or V”; changed plural “UIC permits for Class VI wells” to singular “a UIC permit for a Class VI injection well”; changed “shall” to “must”; changed “issued for the operating life of the facility and the post-injection site care period” to “issued for a period not to exceed five years; provided, however, that the Agency must, without requiring a new application, renew such permits for a period not to exceed five years per renewal up to the operating life of the facility and post-injection site care period”; added “unless the Agency determines . . . pursuant to Sections 702.183 through 702.187, in which case . . . a new permit application.” (See the discussion that begins on page 11 of this opinion and order.)
704 table of contents, 704.125 heading	144 table of contents, 144.15 heading	Changed “Prohibition of” to “Prohibition Against”; changed lower-case to capitalized “Non-Experimental”; added “Injection” before “Wells”; changed lower-case to capitalized “Wells for Geologic Sequestration”; removed the ending period.
704 table of contents, 704.128 heading	144 table of contents, 144.18 heading	Added “Injection” before “Wells”; changed lower-case to capitalized “Wells”; removed the ending period.
704 table of contents, 704.129 heading	144 table of contents, 144.19 heading	Changed “from Class II to Class VI” to “from a Class II injection well to a Class VI injection well”; removed the ending period.
704.102	144.1(g) preamble	Changed “four classes of wells” to “five classes of wells” instead of “five classes of wells” to “six classes of wells” in the second appearance, since Class II injection wells are excluded from that statement in Illinois.

704.104	144.1(g) preamble	Added “injection well” after “Class VI” (twice); added “injection well” after “Class II to Class VI”; changed “the Director shall not expand the areal extent . . . for Class VI injection wells” to passive-voice “the areal extent . . . for Class VI injection wells must not be expanded”; added “by USEPA” after “required”; changed “pursuant to the requirements at” to “pursuant to.”
704.106(f)	144.3(f)	Added “injection wells” after “Class VI” for the topical heading; subdivided the three descriptions of Class VI injection wells into separate subordinate subsections.
704.106(f)(1)	144.3(f)	Moved the first description of a type of Class VI a injection well into this separate subsection; changed plural “wells that are . . . that are” to singular “an injection well that is . . . which is” (changing “that” to “which” for the subsequent restrictive relative clause); removed the ending conjunction “or” and the following comma.
704.106(f)(2)	144.3(f)	Moved the second description of a type of Class VI a injection well into this separate subsection; changed plural “wells used . . . that have been granted” to singular “an injection well that is used . . . which has been granted” (adding “that” for a restrictive relative clause and changing “that” to “which” for the subsequent restrictive relative clause); changed “waiver of the injection dept requirements” to “permit that includes alternative injection well dept requirements”; changed “pursuant to requirements at” to “pursuant to”; removed the comma after the ending conjunction “or.”

704.106(f)(3)	144.3(f)	Moved the third description of a type of Class VI a injection well into this separate subsection; changed plural “wells used . . . that have received” to singular “an injection well that is used . . . which has received” (adding “that” for a restrictive relative clause and changing “that” to “which” for the subsequent restrictive relative clause).
704.123(a)	144.7(a)	Retained the singular and the abbreviation in “a USDW, any aquifer or part of an aquifer . . . a USDW” in place of “underground sources of drinking water, all aquifers and parts of aquifers . . . ‘underground source of drinking water’”; moved the two new exceptions into separate subsidiary subsections, adding “as one of the exceptions of subsections (a)(1) and (a)(2) of this Section applies”; changed “EPA granted” to hyphenated “Agency-granted”; changed plural “new aquifer exemptions . . . Class VI injection wells” to singular “a new aquifer exemption . . . a Class VI injection well.”
704.123(a)(1)	144.7(a)	Moved the first new exception into this separate subsidiary subsection, adding “the Agency may not identify . . . a USDW” before “to the extent”; added “that” before “there is” for a restrictive relative clause.
704.123(a)(2)	144.7(a)	Moved the second new exception into this separate subsidiary subsection, adding “the Agency may not identify . . . a USDW to the extent . . . an aquifer is”; added “is subject to an” before “enhanced gas recovery exemption.”

704.123(d)	144.7(d)	Changed plural “owners or operators of Class II . . . wells” to singular “an owner or operator of a Class II . . . wells”; changed “Director” to “Agency”; changed plural “such requests” to singular “such a request”; changed “Federal” to lower-case “federal”; changed “State” to lower-case “state”; changed “EPA” to “USEPA.”
704.123(d)(1)	144.7(d)(1)	Changed “the owner or operator . . . that requests an expansion” to “the request for expansion”; changed “and/or” to “or”; changed “thereof” to “of aquifers.”
704.123(d)(2)	144.7(d)(2)	Changed the introductory clause of the second sentence “in making the determination” to “in making a determination” and moved it to preface the first sentence pertaining to the threshold for determination; changed “Director” to “Agency” (twice); moved the introductory sentence from the first sentence “in evaluating a request” and moved it to the second sentence pertaining to the factors for consideration; changed “shall” to “must.”
704.123(d)(2)(A)	144.7(d)(2)(i)	Added “any” before “current and potential future use”
704.123(d)(2)(B)	144.7(d)(2)(ii)	Changed “GS” to “geologic sequestration.”
704.123(d)(2)(D)	144.7(d)(2)(iv)	Changed “waiver request made by the owner or operator” to “request by the owner or operator for a permit that includes alternative injection well depth requirements.”

704.125 heading	144.15 heading	Changed “Prohibition of” to “Prohibition Against”; changed lower-case to capitalized “Non-Experimental”; added “Injection” before “Wells”; changed lower-case to capitalized “Wells for Geologic Sequestration”; removed the ending period.
704.125	144.15	Added a comma before “or maintenance” to offset the final element of the series.
704.125 Board note	144.15	Added note that explains the federal origin of the provision.
704.128 heading	144.18 heading	Added “Injection” before “Wells”; changed lower-case to capitalized “Wells”; removed the ending period.
704.128	144.18	Changed plural “owners or operators of Class VI wells” to singular “the owner or operator of a Class VI injection well”; changed plural “Class VI wells” to singular “a Class VI injection well.”
704.128 Board note	144.18	Added note that explains the federal origin of the provision.
704.129 heading	144.19 heading	Changed “from Class II to Class VI” to “from a Class II injection well to a Class VI injection well”; removed the ending period.
704.129(a)	144.19(a)	Changed plural “owners of operators that are” to singular “an owner or operator of a Class II injection well that is”; moved “into an oil and gas reservoir” from after “long-term storage” to after “injection carbon dioxide”; added “injection well” after “Class VI”; changed plural “USDWs” to singular “a USDW” (twice); changed “compared to Class II operations” to “compared to usual Class II injection well operations”; added “for Agency consideration” after “specified.”

704.129(b)	144.19(b)	Changed “Director” to “Agency” (twice); changed “shall” to “must”; changed plural “USDWs” to singular “a USDW”; added “from injecting carbon dioxide . . . long-term storage” before “compared to”; changed “compared to Class II operations” to “compared to usual Class II injection well operations”; added “that” before “Class VI” for a restrictive relative clause; added “injection well” after “Class VI”; added “factors” after “following.”
704.129(b)(1)	144.19(b)(1)	Added “any.”
704.129(b)(2)	144.19(b)(2)	Added “any.”
704.129(b)(3)	144.19(b)(3)	Added “any.”
704.129(b)(4)	144.19(b)(4)	Added the definite article “the” before “distance”; changed “zone(s)” to “zones.”
704.129(b)(5)	144.19(b)(5)	Added the definite article “the” before “suitability”; added “injection well” after “Class II.”
704.129(b)(6)	144.19(b)(6)	Added the definite article “the” before “quality.”
704.129(b)(7)	144.19(b)(7)	Changed “at the cessation” to “after the cessation.”
704.129(b)(9)	144.19(b)(9)	Changed “site-specific factors as determined by the Director” to “site-specific factors that the Agency determines are necessary to determine whether the injection poses greater risk that usual Class II operations.”
704.129 Board note	144.19	Added note that explains the federal origin of the provision.
704.162(a)(3)	144.33(a)(3)	Removed the ending conjunction “and.”
704.162(a)(5)	144.33(a)(5)	Added “the injection wells are” before “other”; added “injection” before “wells.”

704.181(f)	144.51(o)	Added “injection well” after “Class VI”; changed “shall” to “must” (twice); changed “which” to “that” for a restrictive relative clause; changed “Director” to “Agency”; changed “it” to “the plan.”
704.181(h)(1)	144.51(q)(1)	Added “Class” before “VI”; changed plural “Class I, II and III wells” to singular “a Class I, Class II, or Class III injection well”; changed plural “Class VI wells” to singular “a Class VI injection well”; changed “as defined in” to “as required by.”
704.181(h)(2)	144.51(q)(2)	Changed “for Class VI” to “for a Class VI injection well” and placed it in parentheses; changed “it” to “the Agency.”
704.182	144.52(a)	Changed plural “permits for owners or operators of Class VI injection wells” to “a permit for the owner or operator of a Class VI injection well”; changed “shall” to “must.”
704.189(b)	144.52(f)(7)(ii)	Changed plural “Class VI wells” to singular “a Class VI injection well”; changed “shall” to “must”; changed “Director” to “Agency”; changed “a qualifying instrument (see § 146.85(a) of . . .)” to “an instrument that fulfills the requirements of . . .”; changed “other material acceptable to the Director” to “other materials necessary for an Agency evaluation of the adequacy of the submitted financial assurance”; moved the sentence imposing the appropriate financial assurance provisions to subsection (c), where a similar sentence appears relative to Class I hazardous waste injection wells.

704.189(c)	144.52(f)(7)(ii)	Moved the sentence imposing the appropriate financial assurance provisions from subsection (b) to this subsection, where a similar sentence appears relative to Class I hazardous waste injection wells.
704.190	144.52(f)(8)	Omitted the addition of material relating to Class VI injection wells from the first sentence, instead creating an independent parallel provision: “A permit for any Class VI injection well . . . that the well has mechanical integrity.”
704.262(a)	144.39(a)	Retained the existing singular case, rendering “Class I hazardous waste injection wells, Class II, Class III or Class VI wells” as “Class I hazardous waste injection well or a Class III or Class IV injection well”
704.262(a)(3)	144.39(a)(3)	Retained the existing singular case, rendering “Class I hazardous waste injection wells, Class II, Class III or Class VI wells” as “Class I hazardous waste injection well or a Class III or Class IV injection well”
704.262(a)(5)	144.39(a)(5)	Added “injection” before “wells”; changed “Director” to “Agency”; added “any of the following.”
704.262(a)(5)(A)	144.39(a)(5)(i)	Changed “area of review reevaluation under” to “a reevaluation of the area of review undertaken pursuant to.”
704.262(a)(5)(B)	144.39(a)(5)(ii)	Changed “under” to “made pursuant to.”
704.262(a)(5)(C)	144.39(a)(5)(iii)	Changed “under” to “made pursuant to.”
704.262(a)(5)(D)	144.39(a)(5)(iv)	Changed “under” to “made pursuant to.”
704.262(a)(5)(E)	144.39(a)(5)(v)	Changed “under” to “made pursuant to.”

704.264(h)	144.41(h)	Changed “amend” to “amending”; added a comma before “where” to offset the parenthetical; changed “as determined by the Director” to “the Agency determines that,” removing the offsetting comma that preceded it; and moved it from after to before “the modifications merely clarify or correct the plan.”
708.280	144.80	Retained the prior omission of material repeated in the definitions in Section 704.106, which required changing only “five” to “six” in this provision; added “Similarly, as carbon sequestration well is a Class VI injection well . . . , not a Class V injection well.”
705.163(a)(7)	124.10(c)(1)(xi)	Changed “State and local oil and gas regulatory agencies and State agencies regulating mineral exploration and recovery, the Director of the Public Water Supply Supervision program in the State, and all agencies that oversee injection wells in the State” to “Illinois Department of Natural Resources, Office of Mines and Minerals, Division of Gas and Oil and to the Agency, Divisions of Public Water Supply and Land Pollution Control”
730 table of contents, 730.181 heading	146 table of contents, 146.81 heading	Removed the ending period.
730 table of contents, 730.182 heading	146 table of contents, 146.82 heading	Added “Injection Well” after “Class VI”; capitalized “Permit Information”; removed the ending period.
730 table of contents, 730.183 heading	146 table of contents, 146.83 heading	Capitalized “Criteria for Siting”; removed the ending period.
730 table of contents, 730.184 heading	146 table of contents, 146.84 heading	Capitalized “Review and Corrective Action”; removed the ending period.
730 table of contents, 730.185 heading	146 table of contents, 146.85 heading	Capitalized “Responsibility”; removed the ending period.

730 table of contents, 730.186 heading	146 table of contents, 146.86 heading	Capitalized “Well Construction Requirements”; removed the ending period.
730 table of contents, 730.187 heading	146 table of contents, 146.87 heading	Capitalized “Sampling, and Testing Prior to Injection Well Operations”; removed the ending period.
730 table of contents, 730.188 heading	146 table of contents, 146.88 heading	Capitalized “Well Operating Requirements”; removed the ending period.
730 table of contents, 730.189 heading	146 table of contents, 146.89 heading	Capitalized “Integrity”; removed the ending period.
730 table of contents, 730.190 heading	146 table of contents, 146.90 heading	Capitalized “Monitoring Requirements”; removed the ending period.
730 table of contents, 730.191 heading	146 table of contents, 146.91 heading	Capitalized “Requirements”; removed the ending period.
730 table of contents, 730.192 heading	146 table of contents, 146.92 heading	Capitalized “Well Plugging”; removed the ending period.
730 table of contents, 730.193 heading	146 table of contents, 146.93 heading	Changed “post-injection site care and site closure” to capitalized “Post-Injection Site Care and Site Closure”; removed the ending period.
730 table of contents, 730.194 heading	146 table of contents, 146.94 heading	Capitalized “Remedial Response”; removed the ending period.
730 table of contents, 730.195 heading	146 table of contents, 146.95 heading	Changed “Class VI injection well depth waiver requirements” to capitalized “Alternative Class VI Injection Well Depth Requirements”; removed the ending period.

730.104 preamble	146.4 preamble	Changed “Class I-V wells” to singular “a Class I, Class III, or Class V injection well”; retained the Board’s structure “criteria of either subsections (a) and (b) or (a) and (c) of this Section”; changed plural “Class VI wells must meet” to “for a Class VI injection well, the Board must determine that the well meets”; changed “criteria under” to “criteria of”; changed the ending colon to a period.
730.104(d)	146.4(d)	Changed passive-voice “may be expanded . . . if it meets” to “is expanded . . . if the Agency determines that the aquifer meets”; changed “under” to “pursuant to.”
730.104(d)(1)	146.4(d)(1)	Changed “it” to “the aquifer”; removed the unnecessary ending conjunction “and.”
730.104(d)(2)	146.4(d)(2)	Added “in the aquifer” after “groundwater”; changed “more than” to “greater than”; changed “mg/l” to “mg/ℓ” (twice).
730.104(d)(3)	146.4(d)(3)	Changed “it” to “the aquifer.”
730.105(e)	146.5(e)	Changed “Class I, II, III, IV, V or VI” to “Class I, Class II, Class III, Class IV, Class V, or Class VI.”
730.105(f)	146.5(f)	Added “injection wells” after “Class VI” in the topical heading; changed plural “wells” to singular “a Class VI injection well”; changed the structure by adding “is any of the following:” and creating three separate subordinate subsections for the different types of Class VI injection wells.

730.105(f)(1)	146.5(f)	Created a separate subsection for the first-described type of Class VI injection well; added “an injection well”; changed plural “are” to singular “is”; changed “that” to “and which” for the subsequent restrictive relative clause; removed the unnecessary ending conjunction “or.”
730.105(f)(2)	146.5(f)	Created a separate subsection for the second-described type of Class VI injection well; added “an injection well”; added “that is” before “used” for a restrictive relative clause; changed “that” to “and which” for the subsequent restrictive relative clause; changed plural “have” to singular “has”; changed “waiver of the injection dept requirements” to “permit that includes alternative injection well dept requirements”; changed “pursuant to requirements at” to “pursuant to”; removed the unnecessary comma after ending conjunction “or.”
730.105(f)(3)	146.5(f)	Created a separate subsection for the third-described type of Class VI injection well; added “an injection well”; added “that is” before “used” for a restrictive relative clause; changed “that” to “and which” for the subsequent restrictive relative clause; changed plural “have” to singular “has.”
730.181 heading	146.81 heading	Removed the ending period.
730.181(a)	146.81(a)	Changed “criteria and standards for underground injection control programs to regulate any Class VI . . . injection wells” to “criteria and standards for Class VI . . . injection wells.”

730.181(b)	146.81(b)	<p>Changed plural “any wells used” to singular “any injection well that is used”; removed the parenthetical definitional language “<i>i.e.</i>, the long-term containment of a gaseous, liquid, or supercritical carbon dioxide stream in subsurface geologic formations,” which merely repeats the definition of “geologic sequestration” that appears nearly verbatim in subsection (d).</p>
730.181(c)	146.81(c)	<p>Changed plural “owners or operators of . . . injection projects who seek . . . their wells” to singular “the owner or operator of . . . injection well that seeks . . . its well”; changed plural “owners or operators seeking to convert existing . . . wells to Class VI geologic sequestration wells must demonstrate . . . that the wells were” to singular “an owner or operator that seeks to convert an existing . . . injection well to a Class VI geologic sequestration well must demonstrate . . . that the well was”; changed “Director” to “Agency”; added “to” before “ensure” to parallel “to meet”; changed plural “owners or operators of wither Class I wells previously permitted . . . or Class V experimental technology wells no longer being used . . . that will continue” to singular “the owner or operator of wither a Class I injection well that was previously permitted . . . or a Class V experimental technology injection well that is no longer being used . . . and which will continue,” adding “that is” for a restrictive relative clause (twice for coordinate clauses) and changing “that” to “and which” for a subsequent restrictive relative clause; changed the undefined abbreviation “GS” to “geologic sequestration”; changed “requirements under” to “requirements of.”</p>

730.181(d) preamble	146.81(d) preamble	Changed “those of” to “those that appear”; changed “these definitions” to “that definitions of this Section.”
730.181(d) “area of review”	146.81(d) “area of review”	Placed the defined term “area of review” in quotation marks; changed plural “USDWs” to singular “a USDW”; added a comma before “as set forth in” to offset the parenthetical.
730.181(d) “carbon dioxide plume”	146.81(d) “carbon dioxide plume”	Placed the defined term “carbon dioxide plume” in quotation marks; changed “extent underground, in three dimensions, of” to “the sub-surface three-dimensional extent of” to agree with the language of the definition of “geologic sequestration project.”
730.181(d) “carbon dioxide stream”	146.81(d) “carbon dioxide stream”	Placed the defined term “carbon dioxide stream” in quotation marks; changed the general citation “definition of hazardous waste under 40 CFR part 261” to more specific “definition of hazardous waste in 35 Ill. Adm. Code 721.103.”

730.181(d) “confining zone”	146.81(d) “confining zone”	Placed the defined term “confining zone” in quotation marks (twice); changed “a geologic formation, group of formations, or part of a formation stratigraphically overlying” to “a geologic formation, a group of formations, or a part of a formation that stratigraphically overlies” for a restrictive relative clause and enhanced clarity; changed “injection zone(s)” to singular “an injection zone”; changed “that” to “and which” for a subsequent restrictive relative clause; changed plural “for Class VI wells operating” to singular “for a Class VI injection well that is operating,” creating a restrictive relative clause; changed “an injection depth waiver” to “a permit that includes alternative injection well dept requirements”; changed “a geologic formation, group of formations, or part of a formation stratigraphically overlying and underlying” to “a geologic formation, a group of formations, or a part of a formation that stratigraphically overlies and underlies” for a restrictive relative clause and enhanced clarity; changed “injection zone(s)” to singular “injection zone.”
730.181(d) “corrective action”	146.81(d) “corrective action”	Placed the defined term “corrective action” in quotation marks; changed “Director-approved” to “Agency-approved”; changed “the area of review” to “an area of review”; changed “underground sources of drinking water (USDW)” to the singular defined abbreviation “a USDW.”
730.181(d) “geologic sequestration”	146.81(d) “geologic sequestration”	Placed the defined term “geologic sequestration” in quotation marks.

730.181(d) “geologic sequestration project”	146.81(d) “geologic sequestration project”	Placed the defined term “geologic sequestration project” in quotation marks; added “any of the following three types of injection wells” followed by a colon and subdivided the three descriptions of injection wells into three separate subsidiary descriptions; changed “used” to “that are used” for a restrictive relative clause (three times); changed “wells” to “an injection well or wells” to correspond with the first description (twice, in the second an third descriptions); changed “that” to “and which” for a subsequent restrictive relative clause (twice, in the second an third descriptions); changed “a waiver of the injection depth requirements” to “a permit that includes alternative injection well depth requirements”; rendered the final descriptive sentence as a paragraph coordinate with the introductory paragraph; changed “it” to “a geologic sequestration project”; added the definite article before “associated area.”
730.181(d) “injection zone”	146.81(d) “injection zone”	Placed the defined term “injection zone” in quotation marks; changed “a geologic formation, group of formations, or part of a formation” to “a geologic formation, a group of formations, or a part of a formation.”
730.181(d) “post-injection care”	146.81(d) “post-injection care”	Placed the defined term “post-injection care” in quotation marks; changed “ensure that USDWs are not endangered” to singular, affirmative “that no USDW is endangered.”
730.181(d) “pressure front”	146.81(d) “pressure front”	Placed the defined term “pressure front” in quotation marks.
730.181(d) “site closure”	146.81(d) “site closure”	Placed the defined term “site closure” in quotation marks; changed “point/time” to “point or time”; changed “following the requirements under” to “pursuant to.”

730.181(d) “transmissive fault or fracture”	146.81(d) “transmissive fault or fracture”	Placed the defined term “transmissive fault or fracture” in quotation marks.
730.181 Board note	146.81	Added note that explains the federal origin of the provision.
730.182 heading	146.82 heading	Added “Injection Well” after “Class VI”; capitalized “Permit Information”; removed the ending period.
730.182 preamble	146.82 preamble	Changed “which” to “that” for a restrictive relative clause; changed passive-voice “must be considered by the Director in authorizing” to “Agency must consider when authorizing”; changed plural “Class VI wells” to singular “a Class VI injection well”; added a comma before “provide they are current” to offset the parenthetical; changed “Director” to “Agency”; added “as” before “to be identified”; changed “EPA” to “USEPA”; changed “Regional Administrator” to “USEPA, Region 5.”
730.182(a)	146.82(a)	Added “injection” before “well” (three times); changed “shall” to “must” (twice); changed “Director” to “Agency”; added a comma after “and the Agency must consider” to complete offset the parenthetical.
730.182(a)(1)	146.82(a)(1)	Added the definite article before “information”; changed “required in” to “required by.”

730.182(a)(2)	146.82(a)(2)	Removed the unnecessary comma after “name”; changed the commas to semicolons after “dry holes,” “boreholes,” “cleanup sites,” and “water wells” to separate elements of a series that includes sub-series; changed “State-” to “Agency-”; changed “EPA-approved” to “USEPA-approved”; added the conjunction “and” before “other pertinent features” as the final element of the series; added a comma before “including” to offset the parenthetical; changed “State, Tribal, and Territorial” to lower-case “state,” since Illinois is a state, and Illinois does not include tribal lands.
730.182(a)(3)	146.82(a)(3)	Added “the following documents and information” after “including.”
730.182(a)(3)(B)	146.82(a)(3)(ii)	Changed “zone(s)” to “zones”; changed “they” to “the faults and fractures.”
730.182(a)(3)(C)	146.82(a)(3)(iii)	Changed “zone(s)” to “zones”; changed “geology/facies” to “geology and facies”; added a comma before “which may” to offset the non-restrictive relative clause.
730.182(a)(3)(D)	146.82(a)(3)(iv)	Changed “in situ fluid pressures” to hyphenated “in-situ fluid pressures”; changed “zone(s)” to “zones.”
730.182(a)(3)(E)	146.82(a)(3)(v)	Changed “including” to “that includes” to create a restrictive relative clause and enhance clarity.
730.182(a)(3)(F)	146.82(a)(3)(vi)	Changed “illustrating” to “that illustrate” to create a restrictive relative clause and enhance clarity; changed the ending period to a semicolon.

730.182(a)(4)	146.82(a)(4)	Changed “all wells . . . which penetrate” to “all wells . . . that penetrate” for a restrictive relative clause; changed “zone(s)” to “zones”; changed “such data” to “the tabulated data”; changed “record of plugging and/or completion” to “applicable records of plugging and completion”; added “that” before “the Agency may require”; changed “Director” to “Agency”; added “to evaluate the request for a permit” after “may require.”
730.182(a)(5)	146.82(a)(5)	Added a comma before “and springs” to offset the final element of a series; changed “zone(s)” to “zones.”
730.182(a)(6)	146.82(a)(6)	Dropped the offsetting comma before and changed “including” to “that includes” to create a restrictive relative clause and enhance clarity.
730.182(a)(7)	146.82(a)(7)	Added “that includes the following items of information” after “site.”
730.182(a)(7)(A)	146.82(a)(7)(i)	Added the definite article before “average”; changed “and/or” to “or” (twice); added the definite article before “total”; added commas before and after “and the total anticipated volume or mass” to offset it as a parenthetical and enhance the clarity of the provision.
730.182(a)(7)(B)	146.82(a)(7)(ii)	Added the definite article before “average”; corrected singular “pressure” to plural “pressures.”
730.182(a)(7)(C)	146.82(a)(7)(iii)	Changed “source(s)” to “sources.”
730.182(a)(7)(D)	146.82(a)(7)(iv)	Changed the ending period to a semicolon.

730.182(a)(8)	146.82(a)(8)	Added the indefinite article before “proposed”; changed “pre-operational formation testing program” to “program for pre-operational formation testing”; changed “meets” to “fulfills” and “at” to “of” and moved “that fulfills the requirements of Section 730.187” from after “confining zones” to after “formation testing”; changed “zone(s)” to “zones” (twice).
730.182(a)(9)	146.82(a)(9)	Added the indefinite article before “proposed”; added a comma before “ans a determination” to offset the final element of a series.
730.182(a)(10)	146.82(a)(10)	Added the indefinite article before “proposed.”
730.182(a)(12)	146.82(a)(12)	Changed “meet the requirements of” to “fulfill the requirements of.”
730.182(a)(13)	146.82(a)(13)	Added the indefinite article before “proposed”; changed “meets the requirements under” to “fulfills the requirements of.”
730.182(a)(14)	146.82(a)(14)	Changed “satisfactory to the Director” to “which is sufficient to support an Agency determination,” removing the offsetting commas from before and after the clause.
730.182(a)(15)	146.82(a)(15)	Added the indefinite article before “proposed”; added a comma and “as” before “required by” to create a parenthetical.
730.182(a)(16)	146.82(a)(16)	Added the indefinite article before “proposed”; added a comma and “as” before “required by” to create a parenthetical.

730.182(a)(17)	146.82(a)(17)	Added the indefinite article before “proposed”; added a comma and “as” before “required by” to create a parenthetical.
730.182(a)(18)	146.82(a)(18)	Changed “Director’s” to “Agency’s”; added a comma and “as” before “required by” to create a parenthetical.
730.182(a)(19)	146.82(a)(19)	Added the indefinite article before “proposed”; added a comma and “as” before “required by” to create a parenthetical.
730.182(a)(20)	146.82(a)(20)	Changed “Director” to “Agency”; changed “States, Tribes, and Territories” to lower-case “states”; changed “in” to “pursuant to.”
730.182(a)(21)	146.82(a)(21)	Changed “Director” to “Agency”; added “that would support an Agency determination whether to issue the requested permit.”
730.182(b)	146.82(b)	Added “pursuant to this Section, and as required by,” moved the citation to 40 C.F.R. 145.23(f)(13) from the end, and added a comma to create an introductory clause; changed “Director” to “Agency”; changed “shall” to “must”; changed “States, Tribes, and Territories” to lower-case “states”; added “that the Agency determines are” before “within the area”; changed “provided in” to “submitted pursuant to”; moved “in writing” from after “notify” to after “in writing,” removing the offsetting commas.
730.182(c)	146.82(c)	Changed “approval” to “a permit”; added “injection” before “well”; changed “Director” to “Agency”; changed “shall” to “must.”

730.182(c)(1)	146.82(c)(1)	Added the definite article before “logging and testing”; changed “as required by” to “required by”; changed “paragraphs (c)(2), (3), (4), (6), (7), and (10)” to “subsections (c)(2), (c)(3), (c)(4), (c)(6), (c)(7), and (c)(10).”
730.182(c)(2)	146.82(c)(2)	Changed “submitted to satisfy the requirements of” to “submitted pursuant to”; added the definite article before “logging and testing,” changed “as required by” to “required by”; changed “paragraphs (c)(3), (4), (6), (7), and (10)” to “subsections (c)(3), (c)(4), (c)(6), (c)(7), and (c)(10),” and moved the parenthetical clause “based on data . . . of this Section” from after “relevant updates” to the end.
730.182(c)(3)	146.82(c)(3)	Changed “zone(s)” to “zone(s).”
730.182(c)(4)	146.82(c)(4)	Changed “required at” to “required by.”
730.182(c)(5)	146.82(c)(5)	Changed “meet” to “fulfill.”
730.182(c)(6)	146.82(c)(6)	Added “any” before “corrective action.”

730.182(c)(9)	146.82(c)(9)	Added the definite article before “testing”; added the definite article before “injection”; added the definite article before “post-injection”; removed “plan submitted under paragraph (a) of this section”; removed the comma from before “which are necessary” for a subsequent restrictive relative clause; added a comma before “as required” to completely offset the parenthetical; added comma before “which are necessary” for a non-restrictive relative clause, so that the change of “which are necessary” to “that are necessary” to make a restrictive relative clause from an apparent non-restrictive relative clause would be possible; changed “under” to “pursuant to”; added a comma before and changed “as required by all paragraphs of this section” to “as required by this Section.”
730.182(c)(10)	146.82(c)(10)	Changed “Director” to “Agency.”
730.182(d)	146.82(d)	Changed plural “owners or operators seeking” to “an owner or operator which seeks”; changed “a waiver of the requirement to inject below the lowermost USDW” to “a permit that includes alternative injection well depth requirements to the generally applicable requirement to inject below the lowermost USDW.”
730.182 Board note	146.82	Added note that explains the federal origin of the provision.
730.183 heading	146.83 heading	Capitalized “Criteria for Siting”; removed the ending period.

730.183(a)	146.82(a)	Changed plural “owners or operators of Class VI wells” to singular “the owner or operator of a Class VI injection well”; changed “must demonstrate to the satisfaction of the Director that” to “must sufficiently demonstrate to support an Agency determination that”; changed plural “the owners or operators” to singular “the owner or operator”; changed “must demonstrate” to “must sufficiently demonstrate.”
730.183(a)(1)	146.82(a)(1)	Changed “an injection zone(s)” to singular “an injection zone”; added the ending conjunction “and.”
730.183(a)(2)	146.82(a)(2)	Changed “zone(s)” to “zones” (twice).
730.183(b)	146.82(b)	Changed “Director” to “Agency”; changed plural “owners or operators of Class VI wells” to singular “the owner or operator of a Class VI injection well”; changed the comma to a semicolon to separate elements of a series that includes a sub-series (three times); added “that” before “are free” for a restrictive relative clause; changed “that” to “which” for a subsequent restrictive relative clause; added “that” before “allow” for a restrictive relative clause; added “that” before “provide” for a restrictive relative clause.
730.183 Board note	146.83	Added note that explains the federal origin of the provision.
730.184 heading	146.84 heading	Capitalized “Review and Corrective Action”; removed the ending period.
730.184(a)	146.84(a)	Changed passive-voice, plural “USDWs may be endangered by the injection activity” to active-voice, singular “the injection activity may endanger a USDW”; added “which” before “is based” for a subsequent restrictive relative clause.

730.184(b)	146.84(b)	Added “injection” before “well”; changed the comma to a semicolon to separate elements of a series that includes a sub-series (twice); added “must” before “periodically”; added “must” before “perform”; added “which” before “is” for a restrictive relative clause; changed “acceptable to the Director” to “sufficient to support an Agency determination that the corrective action is acceptable”; changed application for approval by the Director” to “application to the Agency.”
730.184(b)(1)	146.84(b)(1)	Added “that the owner or operator will use” before “for delineating” for a restrictive relative clause; changed “that” to “which” for a subsequent restrictive relative clause; changed passive-voice “to be used” to active-voice “that the owner or operator will use”; changed passive-voice “will be made” to active-voice “that the owner or operator will make”; changed passive-voice “the model will be based” to active-voice “that the owner or operator will base the model.”
730.184(b)(1)	146.84(b)(1)	Added “each of the following.”
730.184(b)(2)(B)	146.84(b)(2)(ii)	Changed “established in” to “established pursuant to”; changed the ending period to a semicolon.
730.184(b)(2)(C)	146.84(b)(2)(iii)	Changed “e.g., injection rate and pressure” to “e.g., injection rate, pressure, etc.” in the parenthetical, to clarify that the parameters are not limited by recitation.
730.184(b)(2)(C)	146.84(b)(2)(iii)	Changed “how corrective action will be conducted” to “how the owner or operator will conduct corrective action”;

730.184(b)(2)(D)	146.84(b)(2)(iv)	Changed passive-voice “how corrective action will be conducted” to active-voice “how the owner or operator will conduct”; added “the following information” and the ending colon after “including”; separated each of the four elements of the series that follow into four separate subsections.
730.184(b)(2)(D)(i)	146.84(b)(2)(iv)	Moved the first element of the series into a separate subsection; changed passive-voice “corrective action will be performed” to active-voice “the owner or operator will perform corrective action”; changed the comma to an ending semicolon.
730.184(b)(2)(D)(ii)	146.84(b)(2)(iv)	Moved the second element of the series into a separate subsection; changed passive-voice “will have corrective action addressed” to active-voice “the owner or operator will address with corrective action”; changed “the phasing” to “that phasing.”
730.184(b)(2)(D)(iii)	146.84(b)(2)(iv)	Moved the third element of the series into a separate subsection; changed passive-voice “corrective action will be adjusted” to active-voice “the owner or operator will adjust corrective action.”
730.184(b)(2)(D)(iv)	146.84(b)(2)(iv)	Moved the fourth element of the series into a separate subsection; changed passive-voice “site access will be guaranteed” to active-voice “the owner or operator will guarantee site access.”
730.184(c)	146.84(c)	Changed plural “owners or operators of Class VI wells” to singular “the owner or operator of a Class VI injection well.”
730.184(c)(1)	146.84(c)(1)	Added “the owner or operator must” before “predict”; changed “time period as determined” to “time period determined”; added “fulfill the following requirements.”

730.184(c)(1)(A)	146.84(c)(1)(i)	Added “the model must” before “take into account.”
730.184(c)(1)(B)	146.84(c)(1)(ii)	Added “the model must” before “consider.”
730.184(c)(1)(C)	146.84(c)(1)(iii)	Added “the model must” before “identify.”
730.184(c)(2)	146.84(c)(2)	Changed “Director” to “Agency” (twice); added “the owner or operator must” before “identify”; changed “zone(s)” to “zones”; removed the ending period after “zones,” added “must,” and combined the first and second sentences to read “the confining zones and must provide a description” at the juncture.
730.184(c)(3)	146.84(c)(3)	Added “the owner or operator must” before “determine.”
730.184(d)	146.84(d)	Changed plural “owners or operators of Class VI wells” to singular “the owner or operator of a Class VI injection well.
730.184(e)	146.84(e)	Changed plural “owners or operators” to singular “the owner or operator of a Class VI injection well”; added “fulfill each of the following requirements.”
730.184(e)(1)	146.84(e)(1)	Added “the model must” before “reevaluate.”
730.184(e)(2)	146.84(e)(2)	Added “the model must” before “identify.”
730.184(e)(3)	146.84(e)(3)	Added “the model must” before “perform.”

730.184(e)(4)	146.84(e)(4)	Added “the owner or operator must” before “submit”; changed “demonstrate to the Director through monitoring data and modeling results” to “demonstrate through monitoring data and modeling results sufficiently to support an Agency finding”; changed “Director” to “Agency”; changed “requirements at” to “requirements set forth in.”
730.184(f)	146.84(f)	Changed “delineated under” to “delineated pursuant to”; changed “regardless of whether or not” to “regardless of whether.”
730.184(g)	146.84(g)	Changed passive-voice “all modeling inputs and data . . . shall be retained” to active-voice “the owner or operator must retain all modeling inputs . . . .”
730.184 Board note	146.84	Added note that explains the federal origin of the provision.
730.185 heading	146.85 heading	Capitalized “Responsibility”; removed the ending period.
730.185(a)	146.85(a)	Added “of an injection well to which this Subpart H applies”; changed “as determined by the Director that meets”; to “that the Agency has determined fulfills.”
730.185(a)(1)	146.85(a)(1)	Changed “instrument(s)” to “instruments.”
730.185(a)(1)(A)	146.85(a)(1)(i)	Changed plural, capitalized “Trust Funds” to singular, lower-case “a trust fund”; changed the ending period to a semicolon.
730.185(a)(1)(B)	146.85(a)(1)(ii)	Changed plural, capitalized “Surety Bonds” to singular, lower-case “a surety bond”; changed the ending period to a semicolon.

730.185(a)(1)(C)	146.85(a)(1)(iii)	Changed plural, capitalized “Letters of Credit” to singular, lower-case “a letter of credit”; changed the ending period to a semicolon.
730.185(a)(1)(D)	146.85(a)(1)(iv)	Changed the ending period to a semicolon.
730.185(a)(1)(E)	146.85(a)(1)(v)	Changed plural “Self Insurance” to lower-case “self insurance”; changed capitalized “Financial Test and Corporate Guarantee” to lower-case “the financial test and corporate guarantee”; changed the ending period to a semicolon.
730.185(a)(1)(F)	146.85(a)(1)(vi)	Changed plural, capitalized “Escrow Accounts” to singular, lower-case “an escrow account”; changed the ending period to a semicolon; added the ending conjunction “or.”
730.185(a)(1)(G)	146.85(a)(1)(vii)	Changed “instrument(s)” to “instruments”; changed “satisfactory to the Director” to “that the Agency determines are satisfactory.”
730.185(a)(2)	146.85(a)(2)	Changed “instrument(s)” to “instruments”; changed “the cost of” to “the following costs.”
730.185(a)(2)(A)	146.85(a)(2)(i)	Added “the costs of.”
730.185(a)(2)(B)	146.85(a)(2)(ii)	Added “the costs of.”
730.185(a)(2)(C)	146.85(a)(2)(iii)	Added “the costs of”; changed “post injection” to hyphenated “post-injection.”
730.185(a)(2)(D)	146.85(a)(2)(iv)	Added “the costs of.”
730.185(a)(3)	146.85(a)(3)	Changed “instrument(s)” to “instruments.”
730.185(a)(4)	146.85(a)(4)	Changed “instrument(s)” to “instruments.”

730.185(a)(4)(A)	146.85(a)(4)(i)	Added commas before and after “at a minimum” to offset the parenthetical; changed the commas after “provisions” and “instrument” to semicolons to offset elements of a series that includes subseries (twice); added “have the” before “ability.”
730.185(a)(4)(A)(i)	146.85(a)(4)(i)(A)	Changed the em-dash to a period after the topical heading “cancellation” and capitalized “For”; changed “this part” to “this Subpart H”; changed the indefinite article before “owner or operator” to a definite article; changed plural “their” to singular “its”; added commas before and after “or fail to renew” to offset it as the final element of a series and what follows as a parenthetical; changed “failure to pay such financial instrument” to “failure to pay that financial instrument”; changed “Director” to “Agency” (twice); added “by the owner or operator and the Agency” after “receipt of cancellation notice”; changed “alternate financial responsibility” to “alternative financial responsibility”; changed “within 60 days of” to “within 60 days after.”
730.185(a)(4)(A)(ii)	146.85(a)(4)(i)(B)	Changed the em-dash to a period after the topical heading “cancellation” and capitalized “For”; changed “this part” to “this Subpart H”; changed plural “owners of operators” to singular “an owner or operator”; added a comma before “as long as” to offset the parenthetical; changed the definite article before “instrument” to the indefinite article.

730.185(a)(4)(A)(iii)	146.85(a)(4)(i)(C)	Added “any of the following occurs” before “on or before the date of expiration”; changed capitalized “The” to lower-case “the”; changed “Director” to “Agency” (twice); removed the unnecessary conjunction “or” from before “the permit is revoked”; changed “terminated or revoked” to “revoked”; removed the unnecessary conjunction “or” from before “closure is ordered”; changed “a U.S. district court of other court of competent jurisdiction” to “a court of competent jurisdiction”; removed the unnecessary conjunction “or” from before “the owner or operator is named”; changed “voluntary or involuntary proceeding under Title 11 (Bankruptcy), U.S. Code” to “voluntary or involuntary bankruptcy under title 11 of the United States Code”; changed “amount due is paid” to “amount paid on the instrument is fully paid.”
730.185(a)(4)(B)	146.85(a)(4)	The Board added an explanatory statement to maintain structural consistency with the federal rules.
730.185(a)(5)	146.85(a)(5)	Changed “instrument(s)” to “instruments”; changed “Director” to “Agency.”
730.185(a)(5)(A)	146.85(a)(5)(i)	Changed “Director” to “Agency”; changed “shall” to “must”; added “injection well” before “permit”; corrected “prior to issue a Class VI injection well permit” to “prior to issuing a Class VI injection well permit.”
730.185(a)(5)(B)	146.85(a)(5)(ii)	Changed “instrument(s)” to “instruments” (twice); changed “Director” to “Agency”; changed “Director’s” to “Agency’s.”

730.185(a)(5)(C)	146.85(a)(5)(iii)	Changed “the Director may . . . if he determines” to “Agency must . . . if the Agency determines”; changed “Director’s” to “Agency’s.”
730.185(a)(6)(A)	146.85(a)(6)(i)	Changed “which” to “that” for a restrictive relative clause
730.185(a)(6)(B)	146.85(a)(6)(ii)	Changed “third-party providers” to singular “third-party provider” to harmonize with the singular “third-party instrument”; changed “either” to “fulfills either of the following”; added an ending colon and moved the text that states the criteria into two subordinate subsections.
730.185(a)(6)(B)(i)	146.85(a)(6)(ii)	Moved the first alternative into this subordinate subsection; added “the provider must” before “have hassed”; added “of subsection (b)(6)(E) of this Section” after “requirements.”
730.185(a)(6)(B)(ii)	146.85(a)(6)(ii)	Moved the second alternative into this subordinate subsection; changed “has” “must have”; added “the provider” before “must have”; added “set forth in subsection (b)(6)(E) of this Section” after “bond rating”; added a comma before “when applicable” to offset the parenthetical.
730.185(a)(6)(C)	146.85(a)(6)(iii)	Changed “standby trust” to “standby trust fund” to agree with the second appearance; changed “EPA” to “the Agency” (twice).
730.185(a)(6)(D)	146.85(a)(6)(iv)	Changed the semicolon after “requirements” to a period and capitalized the following word “this.”

730.185(a)(6)(E)	146.85(a)(6)(v)	Added “if the owner or operator or its guarantor fulfill the following requirements”; changed the ending period to a colon and removed the introductory clause “in order to satisfy this requirement”; combined the first four conditions with the fifth and moved them all into into five subsidiary subsections.
730.185(a)(6)(E)(i)	146.85(a)(6)(v)	Moved the first condition into a separate subsection; added “or its guarantor” after “owner or operator”; changed “Tangible Net Worth” to lower-case “tangible net worth”; changed “Director” to “Agency”; changed the comma to an ending semicolon.
730.185(a)(6)(E)(ii)	146.85(a)(6)(v)	Moved the second condition into a separate subsection; added “the owner or operator or its guarantor must”; changed “Net” to lower-case “net”; changed “post injection site care” to hyphenated “post-injection site care”; added a comma before “and site closure cost” to separate the final element of a series; changed the comma to an ending semicolon.
730.185(a)(6)(E)(iii)	146.85(a)(6)(v)	Moved the third condition into a separate subsection; added “the owner or operator or its guarantor must”; added a comma before “and site closure cost” to separate the final element of a series; changed the comma to an ending semicolon.
730.185(a)(6)(E)(iv)	146.85(a)(6)(v)	Moved the fourth condition into a separate subsection; removed the conjunction “and” from the beginning of the condition; added “the owner or operator or its guarantor”; changed the ending period to an ending semicolon and added the ending conjunction “and.”

730.185(a)(6)(E)(v)	146.85(a)(6)(v)	Moved the fifth condition into a separate subsection; added “or its guarantor” after “the owner or operator”; added commas before and after “as issued by Standard & Poor’s” to offset the parenthesis; added commas before and after “as issued by Moody’s” to offset the parenthesis; changed capitalized “A ratio” to lower-case “a ratio” (twice).
730.185(a)(6)(F)	146.85(a)(6)(vi)	Changed “who” to “that”; added the definite article before “corporate financial test” and “of subsection (a)(6)(E) of this Section” afterwards; added “corporate” before “parent’s demonstration.”
730.185(a)(6)(G)	146.85(a)(6)(vii)	Changed “requiring” to “that require”; changed “a third party provider” to hyphenated “a third-party provider.”
730.185(b)(1)	146.85(b)(1)	Added “both of the following events have occurred” after “until.”
730.185(b)(1)(A)	146.85(b)(1)(i)	Changed “Director” to “Agency”; changed “receives and approves” to “has received and approved.”
730.185(b)(1)(B)	146.85(b)(1)(ii)	Changed “Director” to “Agency”; changed “approves” to “has approved.”
730.185(b)(2)(A)	146.85(b)(2)(i)	Added a comma before and changed “and has fulfilled” to “and the owner or operator has fulfilled” for an independent clause; added “of” before “its financial obligations”; changed “Director” to “Agency”; added a comma before “as determined by the Agency” to fully offset the parenthesis; changed “GS” to “geologic sequestration.”

730.185(b)(2)(B)	146.85(b)(2)(ii)	Added a comma before and changed “and has received” to “and the owner or operator has received” for an independent clause; changed “Director” to “Agency”; changed “and releasing” to “and which releases” for a subsequent restrictive relative clause; changed “financial instrument” to financial assurance instrument.”
730.185(c)	146.85(c)	Changed “well(s)” to “wells”; changed “site care and site closure” to “site care, site closure.”
730.185(c)(1)	146.85(c)(1)	Added a comma before and changed “and must be based” to “and the cost estimate must be based” for an independent clause; changed “regulatory agency” to “Agency.”
730.185(c)(2)	146.85(c)(2)	Changed “instrument(s)” to “instruments”; added a comma before and changed “and provide” to “and the owner or operator must provide” for an independent clause; changed “Director” to “Agency” (twice); changed within 60 days of” to “within 60 days after.”
730.185(c)(3)	146.85(c)(3)	Changed “Director” to “Agency” (four times); added “any of the following events has occurred” and a colon after “no later than 60 days after”; added “the Agency has approved” before “the injection well plugging plan”; added “the Agency has approved” before “the post-injection site care and site closure plan”; changed the conjunction “and” to “or” before the final element of the series; added “the Agency has approved” before “the emergency and response plan”; changed plural “change to the plans decreases the cost” to singular “change to the plan decreases the cost” to agree with the preceding sentence.

730.185(c)(4)	146.85(c)(4)	Changed the parenthetical “within 60 days after the increase” to “within 60 days after an increase in,” moved this clause to replace “whenever,” and removed the verb “increases” from after “current cost estimate”; changed “evidence of such increase” to “evidence of that increase”; changed “Director” to “Agency” (twice); changed passive-voice “the face amount of the . . . instrument may be reduced” to active-voice “the owner or operator may reduce the face amount of the . . . instrument”; changed “only after the owner or operator has received written approval” to “only in accordance with a written approval.”
730.185(d)	146.85(d)	Changed “Director” to “Agency”; added commas before and after “such as bankruptcy” to offset the parenthetical.
730.185(d)(1)	146.85(d)(1)	Changed “a third party provider” to hyphenated “a third-party provider”; changed “Director” to “Agency”; changed “by certified mail of the commencement of a . . . proceeding under Title !! (Bankruptcy), U.S. Code, naming the owner or operator as debtor, within 10 days after commencement of the proceeding” to “of the proceeding by certified mail within 10 days after commencement of a . . . proceeding under Title 11 of the United States Code that names the owner or operator as debtor.”
730.185(d)(2)	146.85(d)(2)	Changed the indefinite article to a definite article before “guarantor”; changed “such a notification to the Director” to “the notification to the Agency required by this subsection (d)(2)”; changed “he/she” to “the guarantor.”

730.185(d)(3)	146.85(d)(3)	Removed the unnecessary comma that separated a two-element series before “or a suspension or revocation”; changed “trust fund, surety bond, letter of credit, escrow account, or insurance policy” to “pertinent financial assurance instrument.”
730.185(e)	146.85(e)	Changed “Director” to “Agency”; Changed “within 60 days of” to “within 60 days after”; changed “notification by the Director, if the Director determines” to “notification of an Agency determination”; changed “instrument(s)” to “instruments.”
730.185(f)	146.85(f)	Changed “Director” to “Agency.”
730.185 Board note	146.85	Added note that explains the federal origin of the provision.
730.186 heading	146.86 heading	Capitalized “Well Construction Requirements”; removed the ending period.
730.186(a)	146.86(a)	Changed “all Class VI wells” to “its Class VI injection wells”; added “fulfill the following requirements” after “completed to.”
730.186(a)(1)	146.86(a)(1)	Added “the well construction and completion must”; changed plural “zones” to singular “zones.”
730.186(a)(2)	146.86(a)(2)	Added “the well construction and completion must.”
730.186(a)(3)	146.86(a)(3)	Added “the well construction and completion must”; changed “long string” before “casing” to hyphenated “long-string.”
730.186(b)	146.86(b)	Changed capitalized “Cementing” to lower-case “cementing”; changed capitalized “Class VI Wells” to lower-case “Class VI injection wells.”

730.186(b)(1)	146.86(b)(1)	<p>Changed “casing and cement or other materials used” to “the casing, cement, and other materials used”; changed “Class VI well” to “Class VI injection well”; added “to last” after “be designed”; added a comma before and changed passive-voice “and must meet or exceed standards developed for such materials. . . comparable standards acceptable to the Director” to active-voice “and the owner or operator must submit sufficient documentation to the Agency to support a determination that the casing, cement, and other materials meet or exceed standards developed for these materials . . . comparable established industry standards organization”; changed “Director” to “Agency”; added “to the Agency” after “provide the following information.”</p>
730.186(b)(1)(A)	146.86(b)(1)(i)	Added the definite article before “depth”; changed “zone(s)” to “zones.”
730.186(b)(1)(B)	146.86(b)(1)(ii)	Added the definite article before “injection.”
730.186(b)(1)(C)	146.86(b)(1)(iii)	Added the definite article before “hole size.”
730.186(b)(1)(D)	146.86(b)(1)(iv)	Added the definite article before “size and grade”; added the definite article before “wall thickness.”
730.186(b)(1)(E)	146.86(b)(1)(v)	Added the definite article before “corrosiveness.”
730.186(b)(1)(F)	146.86(b)(1)(vi)	Added the definite article before “down-hole temperatures.”
730.186(b)(1)(G)	146.86(b)(1)(vii)	Added the definite article before “lithology”; added the definite article before “injection and confining zones”; changed “zones(s)” to “zones.”

730.186(b)(1)(H)	146.86(b)(1)(viii)	Added the definite article before “type or grade of cement.”
730.186(b)(1)(I)	146.86(b)(1)(ix)	Added the definite article before “quantity.”
730.186(b)(2)	146.86(b)(2)	Added the definite article before “surface casing.”
730.186(b)(3)	146.86(b)(3)	Changed “long string casing” to hyphenated long-string casing.”
730.186(b)(4)	146.86(b)(4)	Added the definite article before “circulation of cement”; changed “Director may” to “Agency must”; changed “in cases where” to “when it determines that”; added commas before and after “by using logs” to offset it as a parenthetical.
730.186(b)(5)	146.86(b)(5)	Added the definite article before “cement”; changed “shall” to “must”; changed “using” to “that uses” for a restrictive relative clause; changed “and identifying” to “which identifies” for a subsequent restrictive relative clause.
730.186(c)(1)	146.86(c)(1)	Added the definite article before “tubing and packer materials”; changed “each Class VI well” to “a Class VI injection well”; added a comma before and changed passive-voice “and must meet or exceed standards developed for such materials . . . comparable standards acceptable to the Director” to active-voice “and the owner or operator must submit sufficient documentation to the Agency to support a determination that the casing, cement, and other materials meet or exceed standards developed for these materials . . . comparable established industry standards organization.”

730.186(c)(2)	146.86(c)(2)	Changed plural “all owners or operators” to singular “the owner or operator”; changed plural “Class VI wells” to singular “a Class VI injection well”; changed “Director” to “Agency”; added “to the Agency” after “provide the following information.”
730.186(c)(3)	146.86(c)(3)	Changed “Director” to “Agency”; added “to the Agency” after “provide the following information.”
730.186(c)(3)(A)	146.86(c)(3)(i)	Added the definite article before “depth.”
730.186(c)(3)(B)	146.86(c)(3)(ii)	Added the definite article before “characteristics”; added the definite article before “chemical content.”
730.186(c)(3)(C)	146.86(c)(3)(iii)	Added the definite article before “maximum proposed.”
730.186(c)(3)(D)	146.86(c)(3)(iv)	Added the definite article before “maximum proposed.”
730.186(c)(3)(E)	146.86(c)(3)(v)	Added the definite article before “propose injection rate”; added the definite article before “volume”; changed “and/or” to “or.”
730.186(c)(3)(F)	146.86(c)(3)(vi)	Added the definite article before “size”; added the definite article before “tubing and casing.”
730.186(c)(3)(G)	146.86(c)(3)(vii)	Added the definite article before “tubing.”
730.186 Board note	146.86	Added note that explains the federal origin of the provision.
730.187 heading	146.87 heading	Capitalized “Sampling, and Testing Prior to Injection Well Operations”; removed the ending period.

730.187(a)	146.87(a)	Added a comma before “and tests” to offset the final element of a series; moved “all relevant geologic formation” from after “formation fluids in” to follow “the lithology of,” removed the comma from after “lithology of,” and added “those formations” after “fluids in”; changed “Director” to “Agency”; changed “of such logs and tests” to “of the logs and tests”; changed “such logs and test must include” to “these logs and tests must include”; added “the following information items” after “must include.”
730.187(a)(1)	146.87(a)(1)	Changed “checks during drilling” to “checks made during drilling”; changed “which” to “that” before “is enlarged” for a restrictive relative clause”; changed “such checks” to “these checks;” removed the unnecessary ending conjunction “and.”
730.187(a)(2)	146.87(a)(2)	Added “the following” and an offsetting comma after “surface casing.”
730.187(a)(2)(A)	146.87(a)(2)(i)	Added the definite article before “resistivity.”
730.187(a)(2)(B)	146.87(a)(2)(ii)	Added a comma before “to evaluate” to completely offset the prepositional phrase as a parenthetical for enhanced clarity; changed the ending period to a semicolon to coordinate with subsections (a)(1) and (a)(2).
730.187(a)(3)	146.87(a)(3)	Changed “long string casing” to hyphenated “long-string casing”; added “the following” and an offsetting comma after “string casing.”
730.187(a)(3)(A)	146.87(a)(3)(i)	Added the definite article before “resistivity”; changed “Director” to “Agency.”

730.187(a)(3)(B)	146.87(a)(3)(ii)	Moved the comma from before to after “and temperature log” to enhance clarity; changed the ending period to a semicolon to coordinate with subsections (a)(1) and (a)(2).
730.187(a)(4)	146.87(a)(4)	Added “the following” after “may include.”
730.187(a)(4)(B)	146.87(a)(4)(ii)	Added a comma before “such as oxygen” to offset the parenthetical.
730.187(a)(4)(C)	146.87(a)(4)(iii)	Added the ending conjunction “and”
730.187(a)(5)	146.87(a)(5)	Changed “that” to “which” for a subsequent restrictive relative clause’ changed “and/or” to “or”; changed “Director” to “Agency.”
730.187(b)	146.87(b)	Changed “the injection zone(s)” to “all injection zones”; added “the owner or operator” before “must submit” for an independent clause”; moved “a detailed report prepared by a log analyst” from after “the Director” to follow “must submit”; changed “Director” to “Agency” (twice); added “the following information” after “that includes”; changed capitalized “Well” to lower-case “well”; changed “may accept . . . if the owner or operator can demonstrate” to “must accept . . . if the Agency determines that the owner or operator has demonstrated”; changed “and that such cores are representative” to “and the nearby cores are representative”; changed “the Director may require . . . the borehole” to “the Agency must require . . . the borehole if the Agency determines that coring those other formations is necessary for evaluation of the well project.”
730.187(c)	146.87(c)	Changed “the injection zone(s)” to “each injection zone.”

730.187(d)	146.87(d)	Changed “zone(s)” to “zones.”
730.187(d)(1)	146.87(d)(1)	Added the definite article before “fracture pressure.”
730.187(d)(2)	146.87(d)(2)	Changed “zone(s)” to “zones.”
730.187(d)(3)	146.87(d)(3)	Added the definite article before “physical and chemical characteristics”; changed “the injection zone(s)” to “each injection zone.”
730.187(e)	146.87(e)	Changed “the injection zone(s)” to “each injection zone.”
730.187(e)(1)	146.87(e)(1) and (e)(2)	Combine subsections (e)(1) and (e)(2) and to render “a pressure fall-off test; and,” and “a pump test” as “a pressure fall-off test and a pump test.”
730.187(e)(2)	146.87(e)(1) and (e)(3)	Combine subsections (e)(1) and (e)(3) and to render “a pressure fall-off test; and,” and “injectivity tests” as “a pressure fall-off test and injectivity tests.”
730.187(f)	146.87(f)	Changed “Director” to “Agency” (twice); changed “of such activities” to “of these activities”; added “no later than” before “30 days prior to”; added a comma before and changed “and submit” to “and the owner or operator must submit” for an independent clause; added “to the Agency no later than” before “30 days prior.”
730.187 Board note	146.81	Added note that explains the federal origin of the provision.
730.188 heading	146.88 heading	Capitalized “Well Operating Requirements”; removed the ending period.

730.188(a)	146.88(a)	Added “injection well” before “stimulation”; changed “zone(s)” to “zones” (three times); added a comma before “so as to ensure” to offset the parenthetical; changed “requirements in” to “the requirements of.”
730.188(b)	146.88(b)	Changed “protecting USDWs” to “that protects any USDW.”
730.188(c)	146.88(c)	Changed “long string casing” to hyphenated “long-string casing”; changed “Director” to “Agency” (twice); added the indefinite article before “requirement”; changed “endanger USDWs” to “endanger any USDW.”
730.188(d)	146.88(d)	Changed “Director” to “Agency.”
730.188(e)	146.88(e)	Added “the equipment indicated in subsection (e)(1) . . . and the appropriate of subsection (e)(2) or (e)(3) of this Section” after “install and use.”
730.188(e)(1)	146.88(e)(1)	Changed “devices to monitor” to “devices that monitor”; added “each of the following parameters”; moved the four parameters into four subsidiary subsections.
730.188(e)(1)(A)	146.88(e)(1)	Moved the first parameter into this subsection; added “carbon dioxide” before “injection pressure.”
730.188(e)(1)(B)	146.88(e)(1)	Moved the second set of parameters into this subsection; changed lower-case “the” to capitalized “The”; changed “and/or” to “or.”

730.188(e)(1)(C)	146.88(e)(1)	Separated the third parameter into third and fourth parameters and moved the third into this subsection; changed lower-case “the” to capitalized “The”; changed “long string casing” to hyphenated “long-string casing”; added the ending semicolon after “string casing.”
730.188(e)(1)(D)	146.88(e)(1)	Separated the third parameter into third and fourth parameters and moved the fourth into this subsection; added the definite article before “annulus fluid”; changed “and/or” to “or”; added the definite article “the” before “annulus fluid volume”; changed the ending semicolon to a period and removed the unnecessary ending conjunction “and.”
730.188(e)(2)	146.88(e)(2)	Moved “for onshore wells” from after “down-hole shut-off systems (. . .)” to become an introductory clause offset by a comma; changed “Director” to “Agency”; added “valves” after “automatic shut-off”; added “etc.” offset by a comma after “check valves”; removed the unnecessary comma from before “or other mechanical devices” that separated a two-element series; changed the ending semicolon to a period and removed the unnecessary ending conjunction “and.”
730.188(e)(3)	146.88(e)(3)	Moved “for wells located offshore but within State territorial waters” and the offsetting comma from after “down-hole shut-off systems” to become an introductory clause offset by a comma; added commas before and after “such as annulus pressure, . . . or other parameters” to offset it as a parenthetical; changed “and/or” to “or.”

730.188(f)	146.88(f)	Moved the parenthetical “(down-hole or at the surface)”; from after “a shutdown” to immediately follow “is triggered”; added a comma before and changed “or a loss . . . is discovered” to “or if a loss . . . is discovered” ; changed “upon such investigation” to “upon investigation”; moved “or is monitoring . . . mechanical integrity” and its offsetting comma from after “lacking mechanical integrity” to follow “if such investigation”; added a comma before “the owner or operator must” to offset the introductory clause; added “undertake each of the following actions” after “the oner or operator must.”
730.188(f)(1)	146.88(f)(1)	Added “the owner or operator must.”
730.188(f)(2)	146.88(f)(2)	Added “the owner or operator must.”
730.188(f)(3)	146.88(f)(3)	Added “the owner or operator must”; changed “Director” to “Agency”; added “of the event” after “notify the Agency.”
730.188(f)(4)	146.88(f)(4)	Added “the owner or operator must”; added the definite article before “mechanical integrity”; added “of the well” after “mechanical integrity”; changed “Director” to “Agency.”
730.188(f)(1)	146.88(f)(1)	Added “the owner or operator must”; changed “Director” to “Agency.”
730.188 Board note	146.88	Added note that explains the federal origin of the provision.
730.189 heading	146.89 heading	Capitalized “Integrity”; removed the ending period.
730.189(a)	146.89(a)	Changed “Class VI well” to “Class VI injection well”; added “both of the following conditions exist.”

730.189(b)	146.89(b)	Changed plural “owners or operators” to singular “the owner or operator”; added “each of the following parameters”; moved the three parameters into three subsidiary subsections.
730.189(b)(1)	146.89(b)	Moved the first set of parameters into this subsection; added the definite article before “tubing”; added the definite article before “long-string casing.”
730.189(b)(2)	146.89(b)	Moved the second parameter into this subsection; added the definite article before “injection pressure”; added the conjunction “and” before “injected volumes” as the final element of the series.
730.189(b)(3)	146.89(b)	Moved the third parameter into this subsection; added the definite article before “annulus fluid volume”; added the comma before “as specified in” to offset the parenthetical.
730.189(c)(1)	146.89(c)(1)	Added the comma before “such as an oxygen-activation log” to offset the parenthetical.
730.189(d)	146.89(d)	Changed “Director” to “Agency”; changed “required in” to “required by.”

730.189(e)	146.89(e)	Changed “Director may require any other test to evaluate mechanical integrity” to “Agency must require any requested alternative test that the Agency has determined is necessary to evaluate mechanical integrity”; changed the sentence “Also, the Director may allow . . . with the written approval of the Administrator” to “after obtaining the written approval of USEPA” and moved it to the end of the preceding sentence”; changed “Director” to “Agency”; moved the information relating to USEPA approval of alternative methods to a Board note.
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730.189(e) Board note	146.89(e)	<p>Moved the information relating to USEPA approval of alternative methods to a Board note; added “corresponding 40 CFR 146.89(e) provides that”; changed “Director” to “Agency”; changed “the Administrator” to “USEPA” (twice); moved “to obtain approval for a . . . test” from the introductory clause to follow “supporting its use”; changed “the Administrator may approve . . . if he or she determines that it will reliably demonstrate” to “USEPA stated that it will approve . . . if USEPA determines that the proposed test will reliably demonstrate”; changed “is proposed” to past-tense” was proposed”; changed passive-voice “any alternate method approved by the Administrator will be published” to active-voice “USEPA stated that it will published any alternative method that USEPA has approved”; added a comma before and changed passive-voice “and may be used in all States in accordance with State law” to “and the Agency may use the published method if the Agency has determined that the method is appropriate to evaluate mechanical integrity”; added a comma before “unless” to offset the parenthetical; changed passive-voice “unless its use is restricted” to active-voice “unless USEPA restricts it use.”</p>
730.189(f)	146.89(f)	<p>Changed “others to be allowed by the Director” to “others that the Agency has required by permit”; changed “Director” to “Agency” (three times); changed “he/she” to “the owner or operator”; changed “shall” to “must”; changed “the test(s) and the method(s)” to “the tests and the methods”; changed “his/her” to “its.”</p>

730.189(g)	146.89(g)	Changed “Director may require . . . if the results . . . are not satisfactory to the Director to demonstrate” to “Agency must require . . . if the Agency determines that the results . . . are not satisfactory”; removed the unnecessary comma from after “casing, tubing, or packer” and “to demonstrate” from before “that there is no significant movement” to simplify the two-element series; added a comma before and changed “as stated in” to “as required by.”
730.189 Board note	146.89	Added note that explains the federal origin of the provision.
730.190 heading	146.90 heading	Capitalized “Monitoring Requirements”; removed the ending period.
730.190 preamble	146.90 preamble	Changed “Class VI well” to “Class VI injection well”; changed “plan to verify” to “plan that will verify”; added a comma before and changed “is not endangering” to “and that the project is not endangering”; added a comma before “regardless of whether” to offset the parenthetical; changed passive-voice “the testing and monitoring plan must be submitted with the permit application, for Director approval, with the permit application” to active-voice “the owner or operator must submit the testing and monitoring plan to the Agency with the permit application”; changed “and must include a description of how the owner or operator will” to “and the owner or operator must include a description of how it will”; added “the following parameters and devices” after “include.”
730.190(a)	146.90(a)	Changed singular “analysis” to plural “analyses”; changed “its chemical and physical characteristics” to “the physical and chemical characteristics of the stream.”

730.190(b)	146.90(b)	Removed the unnecessary comma from “installation and use, or continuous recording devices”; changed the parenthetical “except during well workovers as defined in . . .” to “except during well workovers, as such are defined in . . .” and moved it from after “instillation and use” to follow “pressure, rate, and volume”; changed “long string casing” to hyphenated “long-string casing.”
730.190(c)	146.90(c)	Changed “meet the minimum standards” to “fulfill the Agency-approved minimum standards”; changed “set forth in” to “as provided in” preceded by a comma for a parenthetical”; changed “by” to “by performing one of the following tests.”
730.190(c)(1)	146.90(c)(1)	Removed the unnecessary ending conjunction “or.”
730.190(c)(3)	146.90(c)(3)	Changed “Director” to “Agency.”
730.190(d)	146.90(d)	Changed “ground water” to “groundwater”; changed “zone(s)” to “zones” (twice); added a comma before and “the following information” after “including” for a parenthetical.
730.190(d)(2)	146.90(d)(2)	Changed “collected under” to “collected pursuant to.”
730.190(e)	146.90(e)	Changed “a demonstration . . . pursuant to” to “the annual demonstration . . . required by”; changed “Director” to “Agency”; changed “pursuant to requirements at” to “undertaken pursuant to”; added a comma before “at a frequency established” to offset the parenthetical.

730.190(f)	146.90(f)	Added a comma before “unless” to offset the parenthetical; changed passive-voice “more frequent testing is required by the Director” to active-voice “the Agency has required requires more frequent testing.”
730.190(g)	146.90(g)	Changed “e.g., the pressure front” to “i.e., the pressure front”; added “the following types of methods” after “by using.”
730.190(g)(1)	146.90(g)(1)	Changed “zone(s)” to “zones”; removed the unnecessary comma after the ending conjunction “and.”
730.190(g)(2)	146.90(g)(2)	Changed “and/or” to “or”; changed “Director determines” to “Agency has determined”; changed “such methods” to “these methods.”
730.190(h)	146.90(h)	Changed “the Director may require . . . monitoring to detect” to “the Agency must require . . . monitoring if the Agency determines that this monitoring is needed to detect”; changed “and/or” to “or.”
730.190(h)(1)	146.90(h)(1)	Added the definite article before “design”; changed “Class VI surface air and/or soil gas monitoring” to “Class VI injection well surface air or soil gas monitoring.”
730.190(h)(2)	146.90(h)(2)	Changed “and/or” to “or” (twice); changed “standards under” to “the prohibition against movement into a USDW set forth in.”

730.190(h)(3)	146.90(h)(3)	<p>Changed “if an owner or operator demonstrates that monitoring employed under . . . accomplishes the goals . . . , and meets the requirements pursuant to . . . , a Director that requires surface air/soil gas monitoring . . . must approve” to “if the Agency requires surface or soil gas monitoring, the Agency has determined that monitoring undertaken to comply with . . . , and the owner or operator fulfills the carbon dioxide release reporting requirements set forth in . . . , the Agency must approve”; changed citations to “§§ 98-440 to 98.449” to “subpart RR of 40 CFR 98” (three times); added “after approval by the Agency,” offset by a comma, before “compliance”; changed “is considered” to “is deemed”; changed “Class VI permit” to “Class VI injection well permit.”</p>
730.190(i)	146.90(i)	<p>Removed the commas from before and after “as required by the Director” and changed it to “that the Agency determines is”; added the definite article before “computational modeling”; changed “required under” to “that is required by”; changed “standards under” to “the prohibition against movement of fluid into a USDW set forth in.”</p>
730.190(j)	146.90(j)	<p>Changed “shall” to “must” (twice); changed “under” to “pursuant to” (twice); changed “in no case shall the owner or operator review . . . less often than once every five years” to “the owner or operator must review . . . at least once in every five-year period”; changed “Director” to “Agency” (twice); changed “requirements in” to “requirements set forth in”; changed passive-voice “amended plans or demonstrations shall be submitted” to active-voice “the owner or operator must submit amended plans or demonstrations.”</p>

730.190(j)(1)	146.90(j)(1)	Changed “within one year of” to “within one year after.”
730.190(j)(2)	146.90(j)(2)	Changed “Director” to “Agency.”
730.190(j)(3)	146.90(j)(3)	Changed “Director” to “Agency.”
730.1901 Board note	146.90	Added note that explains the federal origin of the provision.
730.191 heading	146.91 heading	Capitalized “Requirements”; removed the ending period.
730.191 preamble	146.91 preamble	Added “of a Class VI injection well” after “the owner or operator”; changed “Director” to “Agency”; removed the unnecessary comma from before “for each permitted Class VI injection well”; changed “Class VI well” to “Class VI injection well”; moved the parenthetical “as specified in . . . this Section” from after “provide” to follow “for each permitted Class VI injection well.”
730.191(a)	146.91(a)	Added “the following information.”
730.191(a)(1)	146.91(a)(1)	Changed “any changes to the . . . characteristics of the carbon dioxide stream from the proposed operating data” to “a description of any deviations in the . . . characteristics of the carbon dioxide stream from the proposed operating data submitted to the Agency pursuant to Sections 730.182(a)(7) and (c)(3) and 730.186(b)(1) and (c)(3).”
730.191(a)(2)	146.91(a)(2)	Added the definite article before “monthly, average, and maximum values.”
730.191(a)(3)	146.91(a)(3)	Added the definite article before “annulus pressure or injection pressure.”

730.191(a)(4)	146.91(a)(4)	Changed “which” to “that” for a restrictive relative clause; changed “response taken” to “response undertaken by the owner or operator.”
730.191(a)(5)	146.91(a)(5)	Changed “and/or” to “or.”
730.191(a)(6)	146.91(a)(6)	Added the definite article before “annulus fluid volume.”
730.191(a)(7)	146.91(a)(7)	Changed “monitoring prescribed under” to “the monitoring required by.”
730.191(b)	146.91(b)	Reworded “report, within 30 days, the results of” to “report the results within 30 days after completion of any of the following”
730.191(b)(1)	146.91(b)(1)	Added “any results of” before “periodic tests.”
730.191(b)(2)	146.91(b)(2)	Removed the unnecessary comma from after the ending conjunction “and.”
730.191(b)(3)	146.91(b)(3)	Added “results of” before “any other test”; changed passive-voice “conducted by the permittee if required” to “that that the owner or operator has conducted as required”; changed “Director” to “Agency.”
730.191(c)	146.91(c)	Reworded “report, within 24 hours” to “report any of the following events within 24 hours after the event.”
730.191(c)(1)	146.91(c)(1)	Added “the owner or operator has discovered” before “any evidence.”
730.191(c)(2)	146.91(c)(2)	Added “the owner or operator has discovered” before “any noncompliance.”
730.191(c)(3)	146.91(c)(3)	Added “the owner or operator has discovered” before “any triggering.”

730.191(c)(4)	146.91(c)(4)	Added “the owner or operator has discovered” before “any failure”; removed the unnecessary comma from after the ending conjunction “or.”
730.191(c)(5)	146.91(c)(5)	Added “the owner or operator has discovered” before “any release”; moved “any release . . . biosphere” from after “the Director” to before “through surface air or soil gas monitoring”; changed “for surface air/soil gas monitoring” to “through surface air or soil gas monitoring”; changed passive-voice if required by the Director” to “that the Agency has required”; changed “pursuant to compliance with the requirement at § 146.90(h)” to “pursuant to Section 730.190(h)” and moved it from before “surface air/soil gas monitoring” to follow “that the Agency has required.”
730.191(d)	146.91(d)	Changed plural “owners or operators” to singular “an owner or operator”; changed “Director” to “Agency”; added “any of the following” after “in advance of.”
730.191(d)(2)	146.91(d)(2)	Changed “under” to “pursuant to.”
730.191(d)(3)	146.91(d)(3)	Changed “permittee” to “owner or operator.”
730.191(e)	146.91(e)	Replaced the introductory clause “regardless of whether . . . primary enforcement authority” and its offsetting comma with “in corresponding 40 CFR 146.91(e), USEPA has stated that; changed “EPA” to “USEPA” (twice).
730.191(f)	146.91(f)	Reworded passive-voice “records shall be retained by the owner or operator” to active-voice “the owner or operator must retain records.”

730.191(f)(1)	146.91(f)(1)	Changed passive-voice “all data . . . shall be retained” to active-voice “the owner or operator must retain all data . . .”; changed “under” to “pursuant to.”
730.191(f)(2)	146.91(f)(2)	Changed passive-voice “data . . . shall be retained” to active-voice “the owner or operator must retain data . . .”; changed “Director” to “Agency” (twice).
730.191(f)(3)	146.91(f)(3)	Changed passive-voice “monitoring data . . . shall be retained” to active-voice “the owner or operator must retain monitoring data . . .”
730.191(f)(4)	146.91(f)(4)	Changed passive-voice “well plugging reports, . . . shall be retained” to active-voice “the owner or operator must retain well plugging reports, . . .”
730.191(f)(5)	146.91(f)(5)	Changed “the Director has authority to require” to “the Agency may require”; changed “records required in” to “records required by”; added “a period that is” before “longer than 10 years”; added “any Agency requirement . . . to require the longer period”; added “an owner or operator may appeal . . . pursuant to Section 40 of the Act [415 ILCS 5/40].”
730.191 Board note	146.91	Added note that explains the federal origin of the provision.
730.192 heading	146.92 heading	Capitalized “Well Plugging”; removed the ending period.
730.192(a)	146.92(a)	Changed “bottomhole” to hyphenated “bottom-hole.”

730.192(b)	146.92(b)	Changed “Class VI well” to “Class VI injection well”; added “well plugging” before “plan” (twice); changed “Director” to “Agency”; changed passive-voice “the well plugging plan must be submitted” to active-voice “the owner or operator must submit the well plugging plan”; added a comma before and changed “and must include” to “and the well plugging plan must include” for an independent clause.
730.192(b)(2)	146.92(b)(2)	Added a comma before “as specified in” to offset the parenthetical.
730.192(c)	146.92(c)	Changed “Director” to “Agency”; added a comma and “and USEPA electronically” before “pursuant to” for a parenthetical; added “beginning the” before “plugging of a well”; moved “the owner or operator must provide the revised well plugging plan” from after “if any changes have been made to the original well plugging plan” to the beginning of the sentence before “at the time of this notice”; changed “at this time” to “at the time of this notice”; changed “the Director may allow for a shorter notice period” to “the Agency must allow for a shorter notice period if the Agency determines that the shorter notice period is adequate to complete Agency review of the well plugging plan or that well plugging must occur more promptly”; changed passive-voice “any amendments to the injection well plugging plan must be approved by the Director, must be incorporated into the permit” to active-voice “the Agency must approve any amendments to the well plugging plan and incorporate the amendments into the permit”; added “the incorporation . . . into the permit” before “are subject to”; changed “requirements at” to “requirements set forth in.”

730.192(d)	146.92(d)	Changed “Director” to “Agency” and moved “a plugging report to the Agency” from the end of the sentence after “§ 146.91(e)” to follow “must submit,” removing the now unnecessary comma from before “pursuant to”; added “and electronically to USEPA” before “pursuant to” in the parenthetical; added “plugging” before “report”; moved the period outside the closing parenthesis mark after “owner or operator”; changed “shall” to “must.”
730.192 Board note	146.92	Added note that explains the federal origin of the provision.
730.193 heading	146.93 heading	Changed “post-injection site care and site closure” to capitalized “Post-Injection Site Care and Site Closure”; removed the ending period.
730.193(a)	146.93(a)	Changed “Class VI well” to “Class VI injection well”; changed “that meets the requirements . . . of this section and is acceptable to the Director” to “that the Agency has determined meets the requirements . . . of this Section”; added a comma before “regardless of” to offset the parenthetical.
730.193(a)(1)	146.93(a)(1)	Changed “to be approved by the Director” to “to the Agency” and moved it from the end of the sentence after “of this section” to follow “post-injection site care plan and site closure.”
730.193(a)(2)(A)	146.93(a)(2)(i)	Changed “zone(s)” to “zones.”
730.193(a)(2)(B)	146.93(a)(2)(ii)	Added a comma before “as demonstrated” to offset the parenthetical; changed “required in” to “required by.”
730.193(a)(2)(C)	146.93(a)(2)(iii)	Added the definite article and moved “proposed” from before “frequency” to before “post-injection monitoring.”

730.193(a)(2)(D)	146.93(a)(2)(iv)	Changed “Director” to “Agency”; removed the unnecessary comma after the ending conjunction “and.”
730.193(a)(2)(E)	146.93(a)(2)(v)	Changed “Director” to “Agency.”
730.193(a)(3)	146.93(a)(3)	Changed plural “owners of operators of Class VI wells” to singular “the owner or operator of a Class VI injection well”; changed “Director” to “Agency”; added a comma and “and USEPA electronically” before “pursuant to” for a parenthetical; changed passive-voice “any amendments to the post-injection site care and site closure plan must be approved by the Director, be incorporated into the permit” to active-voice “the Agency must approve any amendments to the post-injection site care and site closure plan and incorporate the amendments into the permit”; added “the incorporation . . . into the permit” before “are subject to”; changed “requirements at” to “requirements set forth in.”
730.193(a)(4)	146.93(a)(4)	Changed “Director” to “Agency”; added a period after “approval” and added “the owner or operator must resubmit the plan to the Agency” before and “after making any modification” after “within 30 days” to create a second sentence and stress the time-frame for resubmission.
730.193(b)	146.93(b)	Changed plural “USDWs are not” to singular “no USDW is.”
730.193(b)(1)	146.93(b)(1)	Changed “shall” to “must”; changed “Director” to “Agency” (three times); changed “he/she makes a demonstration” to “the owner or operator makes a demonstration.”

730.193(b)(2)	146.93(b)(2)	Changed “if the owner or operator can demonstrate to the satisfaction of the Director before 50 years . . . based on monitoring and other site-specific data, the Director may . . . , where he or she has submitted evidence . . . of endangerment to USDWs” to “if the Agency determines, based on monitoring and other site-specific data, . . . , the Agency must”; changed “approve an amendment . . . or may authorize” to “either approve an amendment . . . or authorize.”
730.193(b)(3)	146.93(b)(3)	Changed “Director” to “Agency”; changed plural “USDWs” to singular “any USDW.”
730.193(b)(4)	146.93(b)(4)	Changed passive-voice “it the demonstration in . . . this section cannot be made” to active-voice “if the owner or operator cannot make the demonstration required by . . . this Section”; added “the Agency has determined that” before “additional monitoring”; changed “or if the Director does not approve the demonstration” to “or the Agency has not approved the demonstration” and moved it from after “alternative timeframe” to follow “endangerment of any USDW” in the parenthetical; changed plural “USDWs” to singular “any USDW”; changed “Director” to “Agency”; changed passive-voice “until a demonstration can be made and approved by the Director” to “until the owner or operator has made a demonstration that the Agency can approve.”

730.193(c)	146.93(c)	Changed “at the Director’s discretion, the Director may approve, in consultation with EPA, an alternative . . . , if an owner or operator can demonstrate during the permitting process that an alternative . . . ensures non-endangerment of USDWs” to “if the Agency determines in consultation with USEPA during the permitting process that an alternative . . . ensures non-endangerment of any USDW, the Agency must approve the alternative . . .”; changed “50 year default” to “50-year default”; changed passive-voice “the demonstration must be based” to active-voice “the Agency must base its determination”; added a comma before “including all data” to offset the parenthetical; changed passive-voice “and must contain substantial evidence that” to “and the Agency must determine based on substantial evidence that”; changed plural “USDWs” to singular “any USDW.”
730.193(c)(1)	146.93(c)(1)	Added “the following.”
730.193(c)(1)(A)	146.93(c)(1)(i)	Changed “under” to “as required by” and added a preceding comma to offset the parenthetical.
730.193(c)(1)(B)	146.93(c)(1)(ii)	Removed the unnecessary comma from before “and any other zones” that separated a two-element series; changes plural “any USDWs” to singular “any USDW”; added a comma after “such that formation fluids may not be forced into any USDW” to completely offset it as a parenthetical; changed “and/or” to “or.”
730.193(c)(1)(C)	146.93(c)(1)(iii)	Removed the unnecessary comma from before “and the predicted timeframe” that separated a two-element series.
730.193(c)(1)(D)	146.93(c)(1)(iv)	Added a comma before “including immobilization” to offset the parenthetical.

730.193(c)(1)(E)	146.93(c)(1)(v)	Changed “and/or” to “and.”
730.193(c)(1)(F)	146.93(c)(1)(vi)	Changed “and/or” to “or”; changed “paragraphs (iv) and (v) of this section” to “subsections (c)(1)(iv) and (c)(1)(v) of this Section.”
730.193(c)(1)(G)	146.93(c)(1)(vii)	Changed “zone(s)” to “zones”; changed “it” to “each confining zone”; added “is” before “of appropriate thickness”; added “etc.” and an offsetting comma at the end the listing in the parenthetical “e.g., carbon dioxide, formation fluids” and moved “movement” from after the parenthetical to immediately follow “impede fluid.”
730.193(c)(1)(H)	146.93(c)(1)(viii)	Added a comma before “including planned injection wells” to offset the parenthetical; changed “and/or” to “or”; removed the unnecessary comma from before “final extent in “predicted or modeled final extent.”
730.193(c)(1)(J)	146.93(c)(1)(x)	Changed “and/or” to “and.”
730.193(c)(1)(K)	146.93(c)(1)(xi)	Changed “Director” to “Agency.”
730.193(c)(2)	146.93(c)(2)	Changed “demonstration in” to “demonstration required by.”
730.193(c)(2)(A)	146.93(c)(2)(i)	Changed “must be accurate, reproducible, and performed in accordance with” to “must be accurate and reproducible, and they must have been performed in accordance with.”
730.193(c)(2)(B)	146.93(c)(2)(ii)	Changed “and EPA-certified test protocols must be used where available” to “and USEPA-certified test protocols must have been used, where available” for an independent clause containing a parenthetical.

730.193(c)(2)(C)	146.93(c)(2)(iii)	Added a comma before “and injection and site conditions” to offset the final element of a series.
730.193(c)(2)(D)	146.93(c)(2)(iv)	Added “injection” before “well sites.”
730.193(c)(2)(E)	146.93(c)(2)(v)	Changed “Director” to “Agency”; removed the comma from after “known” in “known historical information.”
730.193(c)(2)(F)	146.93(c)(2)(vi)	Changed passive-voice “an analysis must be performed” to active-voice “the owner or operator must perform an analysis.”
730.193(c)(2)(G)	146.93(c)(2)(vii)	Removed the unnecessary comma from after the ending conjunction “and.”
730.193(c)(2)(H)	146.93(c)(2)(viii)	Changed “Director” to “Agency”; removed the comma from after “known” in “known historical information.”
730.193(d)	146.93(d)	Changed “at this time” to “at the time of this notice”; changed “Director” to “Agency”; changed “the Director may allow for a shorter notice period” to “the Agency must allow for a shorter notice period if the Agency determines that the shorter notice period is adequate to complete Agency review of the post-injection care and site closure plan or that well closure must occur more promptly.”
730.193(e)	146.93(e)	Changed “Director” to “Agency”; changed “that” to “which” for a restrictive relative clause; changed “that” to “which” for a subsequent restrictive relative clause.
730.193(f)	146.93(f)	Changed “Director” to “Agency” (twice); changed “within 90 days of” to “within 90 days after”; changed “for 10 years” to “for at least 10 years”; added “the following records and documentation.”

730.193(f)(1)	146.93(f)(1)	Changed “appropriate injection and monitoring well plugging as specified” to “the injection and monitoring well plugging as required by”; changed “which” to “that” for a restrictive relative clause; changed passive-voice “has been submitted” to active-voice “the owner or operator has submitted.”; changed “Director” to “Agency”; changed “the Regional Administrator of the appropriate EPA Regional Office” to “USEPA Region 5.”
730.193(f)(2)	146.93(f)(2)	Changed “such State, local and Tribal authorities” to “all State and local authorities” (twice); added “within the area of review” after “authority over drilling activities”; changed “zone(s)” to “zones.”
730.193(f)(2) Board note	146.93(f)(2) and 75 Fed. Reg. 77230, 669 (Dec. 10, 2010)	Added explanation of the agencies known by the Board to regulate well drilling, a statement that other regulatory entities may regulate well drilling within the area of review, and an explanation that the owner or operator bears the responsibility for assuring that all pertinent agencies receive the notification and information.
730.193(g)	146.93(g)	Changed “the following information” to “the following information to” and moved it from after to before “any potential purchaser of the property.”
730.193(g)(2)	146.93(g)(2)	Changed “State agency, local authority, and/or Tribe” to “county”; changed “address of the Environmental Protection Agency Regional Office to which it was submitted” to “addresses of the Agency and USEPA Region 5.”
730.193(g)(3)	146.93(g)(3)	Changed “it” to “the fluid.”

730.193(h)	146.93(h)	Removed the unnecessary comma from before “records collected”; changed “for 10 years following site closure” to “for at least 10 years following site closure” and moved it from after “must retain” to follow “site care period.”
730.193 Board note	146.93	Added note that explains the federal origin of the provision.
730.194 heading	146.94 heading	Capitalized “Remedial Response”; removed the ending period.
730.194(a)	146.94(a)	Changed “Director” to “Agency”; changed “that” to “which” for a subsequent restrictive relative clause; changed “during construction, operation, and post-injection care periods” to “the construction, operation, and post-injection care periods of the well”; added “emergency and remedial response” before “plan.”
730.194(b)	146.94(b)	Added “undertake the following actions” after “must.”
730.194(b)(1)	146.94(b)(1)	Added “the owner or operator must.”
730.194(b)(2)	146.94(b)(2)	Added “the owner or operator must.”
730.194(b)(3)	146.94(b)(3)	Added “the owner or operator must”; changed “Director” to “Agency”; added “after obtaining the evidence” after “within 24 hours.”
730.194(b)(4)	146.94(b)(4)	Added “the owner or operator must”; changed “Director” to “Agency.”
730.194(c)	146.94(c)	Changed “Director may allow . . . if the owner or operator has determined” to “Agency must allow . . . if the Agency has determined”; changed plural “USDWs” to singular “any USDW.”

730.194(d)	146.94(d)	Changed “shall” to “must” (twice); changed “under” to “pursuant to”; changed “in no case shall the owner or operator review . . . less often than once every five years” to “the owner or operator must review . . . at least once in every five year period”; changed “Director” to “Agency”; changed “any amendments . . . must be approved by the Director, must be incorporated” to “the Agency must approve any amendments . . . and incorporate the amendments”; changed “are” to “the incorporation of the amendments into the permit is”; changed “requirements at” to “requirements set forth in”; changed passive-voice “amended plans or demonstrations shall be submitted to the Director” to active-voice “the owner or operator must submit amended plans or demonstrations to the Agency.”
730.194(d)(2)	146.94(d)(2)	Changed “Director” to “Agency.”
730.194(d)(3)	146.94(d)(3)	Changed “Director” to “Agency.”
730.194 Board note	146.94	Added note that explains the federal origin of the provision.
730.195 heading	146.95 heading	Changed “Class VI injection well depth waiver requirements” to capitalized “Alternative Class VI Injection Well Depth Requirements”; removed the ending period.

730.195 preamble	146.95 preamble	<p>Added the sentence “This Section specifies the requirements . . . that meet certain criteria.”; added “that” before an owner or operator . . . must submit” for a restrictive relative clause; changed “a waiver of the Class VI injection depth requirements” to “application of alternative Class VI injection well depth requirements”; changed “Director” to “Agency” (three times); added “that” before and “when determining whether any well is suitable for application of alternative injection well dept requirements” after “the Agency must consider” for a restrictive relative clause; removed “in consultation with all affected Public Water System Supervision Directors”; changed “Regional Administrator” to “USEPA Region 5”; changed “waiver issuance” to “Agency determination whether a well is suitable for application of alternative injection well depth requirements”; changed plural “owners or operators of Class VI wells” to singular “an owner or operator of a Class VI injection well”; added “that has been” before “granted” for a restrictive relative clause; changed “waiver of the depth requirements” to “permit that includes alternative injection well depth requirements.”</p>
730.195(a)	146.95(a)	<p>Changed “in seeking a waiver” to “when seeking a permit that includes alternative injection well depth requirements to”; added the definite article before “permit application”; added “information” after “the following”; changed the ending period to a colon.</p>

730.195(a)(1)	146.95(a)(1)	Changed “a demonstration that the injection zone(s)” to “the following demonstrations with regard to the injection zones”; subdivided the recitation of seven demonstrations into individual subsidiary subsections.
730.195(a)(1)(A)	146.95(a)(1)	Subdivided the first recitation of a required demonstration into this individual subsection; rendered this first element of a sub-series as the first element of a single series; changed “is/are” to “each is”; changed the separating comma to an ending semicolon.
730.195(a)(1)(B)	146.95(a)(1)	Subdivided the second recitation of a required demonstration into this individual subsection; rendered this second element of a sub-series as the second element of a single series; changed “is not a USDW” to “none is a USDW”; changed the separating comma to an ending semicolon.
730.195(a)(1)(C)	146.95(a)(1)	Subdivided the third recitation of a required demonstration into this individual subsection; rendered this third element of a sub-series as the third element of a single series; removed the unnecessary conjunction “and”; changed “is not hydraulically connected” to “none is hydraulically connected”; changed plural “USDWs” to singular “a USDW”; changed the separating comma to an ending semicolon.
730.195(a)(1)(D)	146.95(a)(1)	Subdivided the fourth recitation of a required demonstration into this individual subsection; rendered this second element of a series that includes a sub-series as the fourth element of a single series; changed “does not outcrop” to “none outcrops.”

730.195(a)(1)(E)	146.95(a)(1)	Subdivided the fifth recitation of a required demonstration into this individual subsection; rendered this third element of a series that includes a sub-series as the fifth element of a single series; added “each.”
730.195(a)(1)(F)	146.95(a)(1)	Subdivided the sixth recitation of a required demonstration into this individual subsection; rendered this fourth element of a series that includes a sub-series as the sixth element of a single series; added “each.”
730.195(a)(2)	146.95(a)(2)	Changed “a demonstration that the injection zone(s) is/are” to “a demonstration that each injection zone is”; removed the unnecessary comma after “continuous” in “laterally continuous impermeable confining layer”; changed “confining units above and below the injection zone(s) adequate to prevent” to “confining units above and below the injection zone that are adequate to prevent”; changed “outside of the injection zone(s)” to “outside of the injection zone”; changed “confining unit(s) is/are free” to “confining units are free”; changed “shall” to “must”; changed “that such fractures will not interfere” to “that these fractures will not interfere.”

730.195(a)(3)	146.95(a)(3)	Changed passive-voice “a demonstration . . . that USDWs above and below the injection zone will not be endangered as a result of fluid movement” to “a demonstration . . . that no fluid movement will endanger any USDW above or below the injection zone”; changed “determination, as described in” to “determination required by”; changed “and is subject to requirements, as described in” to “and the modeling is subject to the area of review delineation and well identification requirements set forth in” for an independent clause; changed “and periodic reevaluation, as described in” to “and the periodic reevaluation requirements set forth in” and removed the comma that preceded the clause.
730.195(a)(4)	146.95(a)(4)	Changed “a demonstration that well design and construction” to “the following demonstrations with regard to well design and construction”; changed “waiver” to “alternative injection well depth requirements”; added an ending colon and subdivided the remaining text that recites two requirements into individual subsidiary subsections.
730.195(a)(4)(A)	146.95(a)(4)	Subdivided the first recitation of a requirement into this individual subsection; added “well design and construction”; changed “requirements at” to “the prohibition against movement of fluids set forth in”; added the ending semicolon before the conjunction “and.”
730.195(a)(4)(B)	146.95(a)(4)	Subdivided the first recitation of a requirement into this individual subsection; added “well design and construction”; added the definite article before “well construction requirements”; changed “requirements in” to “requirements set forth in.”

730.195(a)(4)(5)	146.95(a)(5)	Changed passive-voice “how the monitoring and testing and any additional plans will be tailored” to active-voice “how the owner or operator will tailor the monitoring and testing and any additional plans”; changed “the injection zone(s)” to “each injection zone”; removed the unnecessary comma from before and changed the conditional language “if a waiver is granted” to “if the Agency issues a permit that includes alternative well depth requirements.”
730.195(a)(4)(6)	146.95(a)(6)	Changed “public water supplies affected, reasonably likely to be affected, or served by USDWs” to “public water supplies that will be affected, or which are reasonably likely to be affected, by the carbon sequestration project, and all public water supplies that distribute water drawn from any USDW.”
730.195(a)(4)(7)	146.95(a)(7)	Changed “requested by the Director” to “that the Agency determines is necessary”; changed “Regional Administrator’s” to “USEPA Region 5’s”; added “as required by subsection (b) of this Section” as a parenthetical offset by a comma.
730.195(b)	146.95(b)	Changed “Regional Administrator’s” to “USEPA Region 5’s”; changed “at §§ 144.6 of this chapter, 146.5(f), and 146.86(a)(1)” to “pursuant to 40 CFR 146.95”; added the non-restrictive relative clause, “which would allow the Agency to issue a permit that includes alternative . . . requirements” offset by commas; changed “Director” to “Agency”; changed submit, to the Regional Administrator, documentation of the following” to “submit the following documentation to USEPA Region 5.”

730.195(b)(1)	146.95(b)(1)	Changed “with a waiver” to “under a permit that includes alternative . . . requirements.”
730.195(b)(1)(B)	146.95(b)(1)(ii)	Changed “zone(s)” to “zones” (twice); changed the semicolons that separated element of the series “lateral continuity . . . below the injection zone” to commas (twice); added “etc.” at the end of the series.
730.195(b)(1)(C)	146.95(b)(1)(iii)	Changed “formation(s)” to “formations.”
730.195(b)(1)(E)	146.95(b)(1)(v)	Added “an assessment of” before “community needs.”
730.195(b)(1)(F)	146.95(b)(1)(vi)	Added “an assessment of” before “planned needs”; changed the comma in “planned needs, and supply” to the conjunction “and”; changed “area” to “area of review.”
730.195(b)(1)(G)	146.95(b)(1)(vii)	Added “an assessment of” before “planned needs”; changed “formation(s)” to “formations”; changed “zone(s)/formation(s)” to “zones or formations.”
730.195(b)(1)(H)	146.95(b)(1)(viii)	Changed “alternative resources” to “alternative water resources”; changed “Class VI injection activity” to “Class VI injection well activity.”
730.195(b)(1)(I)	146.95(b)(1)(ix)	Changed “requested by the Director” to “that the Agency determines is necessary to aid a determination by USEPA Region 5 to grant a waiver that would allow the Agency to issue a permit that includes alternative injection well depth requirements.”

730.195(b)(2)	146.95(b)(2)	Changed “Public Water System Supervision Directors of all States and Tribes having jurisdiction” to “Agency’s Division of Public Water Supply and all agencies of a sister state that have public water system supervision authority”; changed “a waiver” to “a waiver that would allow the Agency to issue . . . well depth requirements.”
730.195(b)(3)	146.95(b)(3)	Changed “Public Water System Supervision Director(s)” to “Agency’s Division of Public Water Supplies and all agencies of a sister state that have public water system supervision authority”; changed “(UIC) Director” to “Agency.”
730.195(c)	146.95(c)	Changed “Class VI permit application” to “Class VI injection well permit application”; changed “Director shall” to “Agency must”; changed passive-voice “a waiver application has been submitted” to “the owner or operator has sought a permit that includes alternative injection well depth requirements”; changed “shall clearly state” to “must clearly state”; added “the following information.”
730.195(c)(1)	146.95(c)(1)	Changed “zone(s)” to “zones.”
730.195(c)(2)	146.95(c)(2)	Changed “well(s)” to “wells.”
730.195(c)(3)	146.95(c)(3)	Changed “name and depth of all USDWs” to “name and depth of each USDW.”
730.195(c)(5)	146.95(c)(5)	Changed “public water supplies affected, reasonably likely to be affected, or served by USDWs” to “public water supplies that will be affected, or which are reasonably likely to be affected, by the carbon sequestration project, and all public water supplies that distribute water drawn from any USDW.”

730.195(c)(6)	146.95(c)(6)	Changed “Public Water System Supervision Directors of all States and Tribes having jurisdiction” to “Agency’s Division of Public Water Supply and all agencies of a sister state that have public water system supervision authority”; added a comma before and changed “required under” to “as required by.”
730.195(d)	146.95(d)	Added the definite article before and “required by subsection (c) of this Section” after “public notice”; changed “Director shall” to “Agency must”; changed “Regional Administrator” to “USEPA Region 5” (twice); added “USEPA has stated in corresponding 40 CFR 146.95(d) that” as an introductory clause offset by a comma; changed “the information provided” to “this information”; changed “shall” to “must”; changed “waiver issuance” to “the Agency issuing a permit that includes alternative injection well depth requirements.”
730.195(d)(1)	146.95(d)(1)	Changed “Regional Administrator” to “USEPA Region 5” (twice); changed “Director shall” to “Agency must”; changed “the information” to “that information”; changed “at his or her discretion” to “at its discretion.”
730.195(d)(2)	146.95(d)(2)	Changed “in no case shall a Director of a State-approved program issue” to “the Agency must not issue”; changed “a waiver” to “a permit that includes alternative injection well depth requirements”; changed “without receipt of written concurrence from the Regional Administrator” to “without having first received the written concurrence of USEPA Region 5.”

730.195(e)	146.95(e)	Added “USEPA has stated in corresponding 40 CFR 146.95(e) that” before and changed passive-voice “if a waiver is issued” to “the Agency issues a permit that includes alternative injection well depth requirements”; changed “EPA shall” to “USEPA will”; changed “the Office of Water’s Web site” to “its Office of Water website”; changed “within 30 days of waiver issuance” to “within 30 days after permit issuance” and moved it from before to after “USEPA will post . . . website,” removing the unnecessary quotation marks.
730.195(e)(1)	146.95(e)(1)	Changed “zone(s)” to “zones.”
730.195(e)(2)	146.95(e)(2)	Changed “well(s)” to “wells.”
730.195(e)(5)	146.95(e)(5)	Changed “public water supplies affected, reasonably likely to be affected, or served by USDWs” to “public water supplies that will be affected, or which are reasonably likely to be affected, by the carbon sequestration project, and all public water supplies that distribute water drawn from any USDW.”
730.195(e)(6)	146.95(e)(6)	Changed “waiver issuance” to “permit issuance.”
730.195(f)	146.95(f)	Changed “waiver of the requirement to inject below the lowermost USDW” to “permit that includes alternative injection well depth requirements”; changed “class VI well” to “covered Class VI injection well”; added “the following requirements.”
730.195(f)(1)	146.95(f)(1)	Changed “all requirements at” to “all requirements of.”

730.195(f)(2)	146.95(f)(2)	Changed “all requirements at” to “all requirements of”; added a comma before “with the following” to offset the parenthetical.
730.195(f)(2)(A)	146.95(f)(2)(i)	Changed “Class VI wells with a waiver are” to singular “each Class VI injection well operating under the alternative well depth requirements is”; changed plural “any unauthorized zones including USDWs” to singular “any unauthorized zone that includes a USDW”; changed in lieu of requirements at” to “in lieu of the requirements of.”
730.195(f)(2)(B)	146.95(f)(2)(ii)	Changed plural “any unauthorized zones including USDWs” to singular “any unauthorized zone that includes a USDW”; changed in lieu of requirements at” to “in lieu of the requirements of.”
730.195(f)(2)(C)	146.95(f)(2)(iii)	Added a period after “injection zone,” removed the conjunction “and,” and added “the surface casing must” before “be cemented” to make a first division of the run-on sentence; replaced the semicolon after “to the surface,” removed the conjunction “and,” and added “alternatively” to make a second division of a run-on sentence; changed “at the Director’s discretion” and the offsetting comma to “the Agency must require that the casing extend through . . . if the Agency determines that doing so is necessary to prevent movement of fluids into a USDW.”
730.195(f)(3)	146.95(f)(3)	Changed “all requirements at” to “all requirements of.”

730.195(f)(3)(A)	146.95(f)(3)(i)	Changed “shall” to “must”; changed “the injection zone(s)” to “each injection zone”; changed “other formations at the discretion of the Director” to “other formation that the Agency determines is necessary to detect potential movement of fluids into a USDW.”
730.195(f)(3)(B)	146.95(f)(3)(ii)	Added “the owner or operator must conduct” before “testing and monitoring”; changed “e.g., the pressure front” to “i.e., the pressure front”; changed “zone(s)” to “zones”; replaced the semicolon with a period after “injection zones,” removed the conjunction “and” and comma, and added “the owner or operator must use” to make a division in a run-on sentence; changed “and/or” to “or”; changed “unless the Director, based on site-specific geology, that such methods are not appropriate” to “that the Agency determines are necessary based on site-specific geology.”
730.195(f)(4)	146.95(f)(4)	Changed “all requirements at” to “all requirements of.”
730.195(f)(4)(A)	146.95(f)(4)(i)	Changed “shall” to “must”; added a comma before “and pressure” to offset the final element of a series; changed “the injection zone(s)” to “each injection zone”; changed “other formations at the discretion of the Director” to “other formation that the Agency determines is necessary to detect potential movement of fluids into a USDW.”

730.195(f)(4)(B)	146.95(f)(4)(ii)	Added “the owner or operator must conduct” before “testing and monitoring”; changed “e.g., the pressure front” to “i.e., the pressure front”; changed “zone(s)” to “zones”; replaced the semicolon with a period after “injection zones,” removed the conjunction “and” and comma, and added “the owner or operator must use” to make a division in a run-on sentence; changed “and/or” to “or”; changed “unless the Director, based on site-specific geology, that such methods are not appropriate” to “that the Agency determines are necessary based on site-specific geology.”
730.195(f)(5)	146.95(f)(5)	Changed “requested by the Director designed to ensure” to “that the Agency determines are necessary ensure.”
730.195 Board note	146.95	Added note that explains the federal origin of the provision; added explanation of the shift in language from “waiver” to “permit that includes alternative injection well depth requirements.”

**Table 3:  
Board Housekeeping Amendments**

Section	Source	Revision(s)
702.101(b)(2) table	Board	Changed “35 Ill. Adm. Code 702Subpart” to “Subpart of 35 Ill. Adm. Code 702” in the second column heading; changed “35 Ill. Adm. Code 703Subpart” to “Subpart of 35 Ill. Adm. Code 703” in the third column heading; changed “35 Ill. Adm. Code 704Subpart” to “Subpart of 35 Ill. Adm. Code 704” in the fourth column heading; changed the double hyphens to an em-dash (21 times).
702.101 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.

702.110 “approved program or approved state”	JCAR	Changed capitalized “Section 1422 of the SDWA” to lower-case “section 1422 of the SDWA.”
702.110 “final authorization”	JCAR	Changed capitalized “Section 3006(b) of RCRA” to lower-case “section 3006(b) of RCRA.”
702.110 “HWM facility”	JCAR	Changed capitalized “Hazardous waste management facility” to lower-case “hazardous waste management facility.” (Alternative to JCAR suggestion: “Hazardous Waste Management Program.”)
702.110 “interim authorization”	Board, JCAR	Changed capitalized “Hazardous Waste Management program” to lower-case “hazardous waste management program.”
702.110 “new injection well” Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
702.110 “point of injection”	Board	Changed the double hyphens to an em-dash.
702.110 Board note	Board	Added a <i>Federal Register</i> citation for later amendments to the latest available edition of the <i>Code of Federal Regulations</i> .
702.123(e)	Board	Replaced the language of this provision, which also appears at 35 Ill. Adm. Code 704.181(b), with explanation of the omission to maintain structural consistency with the corresponding federal rule.
702.123(f)	Board	Renumbered former subsection (g) as subsection (f).
702.123(g)	Board	Renumbered former subsection (h) as subsection (g).
702.123 Board note	Board	Changed general “40 CFR 144.31(e)” to more specific “40 CFR 144.31(e)(1) through (e)(8)”; changed general “40 CFR 270.13” to more specific “40 CFR 270.13(a) through (e) and (k) through (m)”; updated the <i>Code of Federal Regulations</i> citation to the latest version available.
702.150 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.

702.161(a)(1)	Board	Changed written “ten” to numeric “10.”
702.161(a)(2)	Board	Changed written “ten” to numeric “10”; added “up to the operating life of the facility,” as a parenthetical offset by a comma, to reflect the maximum federal term of a Class III injection well permit.
702.161 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.102	Board	Changed “authorized either by permit or rule” to “authorized either by permit or by rule” (twice); added a commas before “if the presence” to offset two elements of a series; added a comma before and changed “or may adversely” to “or if the presence of that contaminant may adversely affect” to offset the final element of a series.
704.102 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.103 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.104	144.1(g) preamble	Changed “procedures in” to “procedures set forth in,” instead of to “procedures at.”
704.104 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.106(e)	Board	Changed passive-voice of the previously omitted final sentence of 40 C.F.R. 144.6(e) “specific types of Class V injections wells are discussed in § 144.81,” to active-voice “Section 704.106(e) discusses specific types of Class V injection wells” and added it to the text.
704.106 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.107 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including a <i>Federal Register</i> citation for later amendments.
704.122 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.123(a)	Board	Changed “definition in” to “definition set forth in.”

704.123 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.142(i)	Board	Changed “Illinois Department of Mines and Minerals” to “Illinois Department of Natural Resources, Office of Mines and Minerals” to reflect the organizational change.
704.142 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.150(b)(2)	Board	Changed “USDW’s” to “USDWs.”
704.150(c)(2)(D)(ii)	Board	Changed “USDW’s” to “a USDW.”
704.150(e)	Board	Changed “Illinois Department of Mines and Minerals” to “Illinois Department of Natural Resources, Office of Mines and Minerals” to reflect the organizational change.
704.150(g)(2)	Board	Changed “Illinois Department of Mines and Minerals” to “Illinois Department of Natural Resources, Office of Mines and Minerals” to reflect the organizational change.
704.150(h)(2)	Board	Changed “Illinois Department of Mines and Minerals” to “Illinois Department of Natural Resources, Office of Mines and Minerals” to reflect the organizational change.
704.150 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.162(a)	Board	Added “injection” before “well”; changed “the following are true” to “each of the following is true.”
704.162(a)(1)	Board	Added “the injection” before “wells”; added “injection” before “wells.”
704.162(a)(2)	Board	Added “the injection” before “wells.”
704.162(a)(3)	Board	Added “the injection” before “wells.”
704.162(a)(4)	Board	Added “the injection” before “wells.”
704.162 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.181(a)	Board	Corrected “the permittee need not” to singular “the permittee needs not.”

704.181(a) Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.181(b) Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.181(c)	Board	Added “limitation applies” after “following.”
704.181(c) Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.181(d) Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.181(e) Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.181(f)	Board	Added “injection well” after “Class I or Class III.”
704.181(f) Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.181(g) Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.181(h)(1)	Board	Restored the missing word “maintain” before “mechanical integrity”; changed “as defined in” to “as required by” and removed the comma that preceded the clause.
704.181(h) Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.182 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.184 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.189(c)	Board	Changed “well injecting hazardous waste” to “Class I hazardous waste injection well”; changed “requirements of” to “requirements set forth in” to agree with a new sentence added by USEPA and moved to this subsection.
704.189 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.

704.190	Board	Replaced the parenthetical “or for any Class V injection well may include” in the otherwise mandatory first sentence with the permissive second sentence: “A permit for any Class V injection well must include such a condition if the Agency determines that the condition is necessary to prevent a violation of the Act of Board regulations”; Changed “prohibiting” to “that prohibits”; changed “until the permittee shows to the satisfaction of the Agency under . . .” to “until the Agency has determined pursuant to . . . .”
704.190 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.260 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.262(a)(3)(B)(iii)	JCAR	Corrected “afterthe” to “after the.”
704.262 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.264(e)	Board	Removed the topical heading that was the former subsection (e) and renumbered former subsection (e)(1) as subsection (e) to more closely follow the structure of the corresponding federal rule; changed “and, in the judgment of the Agency, would not interfere” to “and which the Agency has determined would not interfere.”
704.264(f)	Board	Renumbered former subsection (e)(2) as subsection (f) to more closely follow the structure of the corresponding federal rule.
704.264(g)	Board	Renumbered former subsection (e)(3) as subsection (g) to more closely follow the structure of the corresponding federal rule.
704.264 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.280	Board	Changed “five classes” to “six classes” to reflect the USEPA addition of a new class.
704.280 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.

705 table of contents, 705.Appendix A heading	JCAR	Changed “705.Appendix A” to upper-case “705.APPENDIX A.”
705 table of contents, 705.Appendix B heading	JCAR	Changed “705.Appendix B” to upper-case “705.APPENDIX B.”
705 table of contents, 705.Appendix C heading	JCAR	Changed “705.Appendix C” to upper-case “705.APPENDIX C.”
705 table of contents, 705.Appendix D heading	JCAR	Changed “705.Appendix D” to upper-case “705.APPENDIX D.”
705 table of contents, 705.Appendix E heading	JCAR	Changed “705.Appendix E” to upper-case “705.APPENDIX E.”
705 table of contents, 705.Appendix F heading	JCAR	Changed “705.Appendix F” to upper-case “705.APPENDIX F.”
705.163(a)(6)	Board	Changed “Illinois Department of Mines and Minerals” to “Illinois Department of Natural Resources, Office of Mines and Minerals” to reflect the organizational change.
705.163 Board note	JCAR, Board	Changed “see 40 CFR 124.10(c)” to “derived from 40 CFR 124.10(c)”; updated the <i>Code of Federal Regulations</i> citation to the latest version available, including a <i>Federal Register</i> citation for later amendments.
730 table of contents, 730.121 heading	Board	Changed “Illinois Department of Mines and Minerals” to “Illinois Department of Natural Resources, Office of Mines and Minerals” to reflect the organizational change.
730.101(a)	Board	Corrected “theAgency” to “the Agency.”
730.101 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
730.103 “point of injection”	Board	Changed the doubled hyphens to an em-dash.

730.103 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
730.104 preamble	Board	Changed “a portion thereof” to “a portion of an aquifer”; changed “may be determined by the Board pursuant to . . . 704.103, 704.123, and 702.105 to be an ‘exempted aquifer’ . . . if it meets” to “is an ‘exempted aquifer’ . . . if the Board determined pursuant to . . . 704.123 that the aquifer meets.”
730.104(a)	Board	Changed “it” to “the aquifer.”
730.104(b)	Board	Changed “it” to “the aquifer.”
730.104(b)(1)	Board	Changed “it” to “the aquifer.”
730.104(b)(2)	Board	Changed “it” to “the aquifer.”
730.104(b)(3)	Board	Changed “it” to “the aquifer.”
730.104(b)(4)	Board	Changed “it” to “the aquifer.”
730.104(c)	Board	Added “in the aquifer” after “groundwater.”
730.104 Board note	Board	Added the citation to the latest version of the <i>Code of Federal Regulations</i> available.
730.105 Board note	Board	Added the citation to the latest version of the <i>Code of Federal Regulations</i> available.
730.121 heading	Board	Changed “Illinois Department of Mines and Minerals” to “Illinois Department of Natural Resources, Office of Mines and Minerals” to reflect the organizational change.
730.121	Board	Changed “Illinois Department of Mines and Minerals” to “Illinois Department of Natural Resources, Office of Mines and Minerals” to reflect the organizational change.
730.121 Board note	Board	Added the citation to the latest version of the <i>Code of Federal Regulations</i> available.
730.172(c)(2)	Board	Changed “Illinois Department of Mines and Minerals” to “Illinois Department of Natural Resources, Office of Mines and Minerals” to reflect the organizational change.

730.172 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
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**Table 4:**  
**Revisions to the Text of the Proposed Amendments in Final Adoption**

Section	Source	Revision(s)
702 Source note	Board	Added the complete citation information for the amendments in R11-2/R11-16.
702.Subpart A heading	JCAR	Added the missing Subpart heading.
702.101 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
702.110 “approved program or approved state”	JCAR	Changed capitalized “Section 1422 of the SDWA” to lower-case “section 1422 of the SDWA.”
702.110 “final authorization”	JCAR	Changed capitalized “Section 3006(b) of RCRA” to lower-case “section 3006(b) of RCRA.”
702.110 “HWM facility”	JCAR	Changed capitalized “Hazardous waste management facility” to lower-case “hazardous waste management facility.” (Alternative to JCAR suggestion: “Hazardous Waste Management Program.”)
702.110 “interim authorization”	Board, JCAR	Changed capitalized “Hazardous Waste Management program” to lower-case “hazardous waste management program.”
702.110 “new injection well” Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
702.110 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.

702.123(e)	JCAR	Corrected “40 C.F.R. 144.31(e)(5) and 270.13(f)” to “40 CFR 144.31(e)(5) and 270.13(f).”
702.123 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
702.150 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
702.161(a)(2)	JCAR, Board	Changed plural “such permits” to singular “a Class VI injection well permit.” (Alternative to JCAR suggestion: “the permits.”)
702.161 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
704.102 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
704.103 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
704.104 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
704.106(d)(3)	JCAR	Removed the unnecessary comma before “that cannot be classified,” which improperly offset a restrictive relative clause.
704.106 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.

704.122 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
704.123(d)	JCAR, Board	Changed “such a request” to “a request for areal expansion.” (Alternative to JCAR suggestion: “this request.”)
704.123 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
704.125 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
704.128 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
704.129(b)	JCAR	Added a comma after the introductory clause “in order to make this determination.”
704.129(b)(9)	JCAR	Corrected “greater that usual” to “greater than usual.”
704.129 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
704.142 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
704.150 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.162 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.

704.181(a) Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.181(b) Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.181(c) Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.181(d) Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.181(e) Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.181(f) Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
704.181(g) Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.181(h) Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
704.182 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
704.184 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
704.189(b)	JCAR	Changed “evidence of such financial responsibility” to “evidence of financial responsibility.”
704.189 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.

704.190	Board	Changed “may include such a condition” to “must include such a condition if the Agency determines that the condition is necessary to prevent a violation of the Act of Board regulations.”
704.190 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
704.260 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
704.262(a)(3)-(B)(iii)	JCAR	Corrected “afterthe” to “after the.”
704.262(a)(5)-(D)	Board	Corrected “postinjection” to hyphenated “post-injection.”
704.262 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
704.264 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
704.280 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
705 table of contents, 705.Appendix A heading	JCAR	Changed “705.Appendix A” to upper-case “705.APPENDIX A.”
705 table of contents, 705.Appendix B heading	JCAR	Changed “705.Appendix B” to upper-case “705.APPENDIX B.”

705 table of contents, 705.Appendix C heading	JCAR	Changed “705.Appendix C” to upper-case “705.APPENDIX C.”
705 table of contents, 705.Appendix D heading	JCAR	Changed “705.Appendix D” to upper-case “705.APPENDIX D.”
705 table of contents, 705.Appendix E heading	JCAR	Changed “705.Appendix E” to upper-case “705.APPENDIX E.”
705 table of contents, 705.Appendix F heading	JCAR	Changed “705.Appendix F” to upper-case “705.APPENDIX F.”
705.163(a)(7)	JCAR	Changed “to the Illinois Department of Natural Resources . . . and the Agency” to “to the Illinois Department of Natural Resources . . . and to the Agency.”
705.163 Board note	JCAR, Board	Changed “see 40 CFR 124.10(c)” to “derived from 40 CFR 124.10(c)”; updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
730 table of contents, 730.195 heading	JCAR	Corrected “Class VI Injection Well Depth Waiver Requirements” to “Alternative Class VI Injection Well Depth Requirements” to agree with the heading in the text.
730.101 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
730.103 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available.
730.104 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.

730.105(c)	JCAR	Corrected “one that that injects fluid” to “one that injects fluid.”
730.105(c) Board note	Board, JCAR	Changed “include a well used . . . to produce electric power but does not include a well used in heating or aquaculture” to “include a well that is used . . . to produce electric power, but would not include a well that is used in heating or aquaculture.” (Alternative to JCAR suggestion: add a comma before “but does not include a well.”)
730.105 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
730.121 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
730.172 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
730.181(c)	JCAR	Corrected “a Class VI geologic sequestration wells” to singular “a Class VI geologic sequestration well.”
730.181 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
730.182 preamble	Board	Added a comma before “provide they are current” to offset the parenthetical.
730.182(a)	JCAR	Added a comma after “and the Agency must consider” to complete offset the parenthetical.
730.182(a)(3)-(D)	Board	Changed “in situ fluid pressures” to hyphenated “in-situ fluid pressures.”
730.182(a)(3)(F)	JCAR	Changed the ending period to a semicolon.

730.182(a)(4)	JCAR, Board	Changed “all wells . . . which penetrate” to “all wells . . . that penetrate” for a restrictive relative clause; changed “such data” to “the tabulated data.”
730.182(a)(7)-(D)	JCAR	Changed the ending period to a semicolon.
730.182(a)(18)	JCAR	Corrected “as by Section 730.193(c)” to “as required by Section 730.193(c).”
730.182(c)(9)	Board, JCAR	Removed “that the applicant has submitted . . . as required by this Section” from after “the emergency and remedial response plan” as duplicative of nearly identical language after “post-injection site care timeframe demonstration”; added commas before and after “and any updates to the post-injection site care timeframe demonstration,” to enhance that this clause is coordinate to “any updates to . . . the emergency remedial response plan”; changed “that the applicant has submitted” to “which the applicant has submitted” to make a non-restrictive relative clause from a restrictive relative clause, so that the change of “which are necessary” to “that are necessary” to make a restrictive relative clause from an apparent non-restrictive relative clause would be possible; added a comma before “as required by this Section” to offset it as a parenthetical.
730.182(d)	JCAR, Board	Changed “an owner or operator that seeks a permit which includes” to “an owner or operator which seeks a permit that includes” for a restrictive relative clause that includes a predicate restrictive relative clause. (Alternative to JCAR suggestion: “an owner or operator that seeks a permit that includes.”)
730.182 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
730.183(a)(1)	JCAR	Corrected “an injection zones” to “an injection zone.”
730.183 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.

730.184(b)(2)-(B)	JCAR	Changed the ending period to a semicolon.
730.184(c)(2)	JCAR	Changed “zone(s)” to “zones”; removed the ending period after “zones,” added “must,” and combined the first and second sentences to read “the confining zones and must provide a description” at the juncture.
730.184(f)	JCAR	Changed “regardless of whether or not” to “regardless of whether.”
730.184 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
730.185(a)(1)-(A)	JCAR	Changed the ending period to a semicolon.
730.185(a)(1)(B)	JCAR	Changed the ending period to a semicolon.
730.185(a)(1)(C)	JCAR	Changed the ending period to a semicolon.
730.185(a)(1)-(D)	JCAR	Changed the ending period to a semicolon.
730.185(a)(1)(E)	JCAR	Changed the ending period to a semicolon.
730.185(a)(1)(F)	JCAR, Board	Changed the ending period to a semicolon; added the ending conjunction “or.”
730.185(a)(1)-(G)	JCAR	Added the definite article before “Agency.”
730.185(a)(4)-(A)	JCAR	Added commas before and after “at a minimum” to offset the parenthetical.
730.185(a)(4)-(A)(i)	Board, JCAR	Changed “failure to pay such financial instrument” to “failure to pay that financial instrument”; changed “within 60 days of” to “within 60 days after.” (Alternative to JCAR suggestion: “failure to pay the financial instrument.”)
730.185(a)(5)-(A)	JCAR	Corrected “prior to issue a Class VI injection well permit” to “prior to issuing a Class VI injection well permit.”

730.185(a)(6)-(B)(ii)	JCAR	Added a comma before “when applicable” to offset the parenthetical.
730.185(a)(6)(C)	JCAR	Added the definite article before “Agency” (twice).
730.185(a)(6)-(E)(ii)	JCAR	Changed “post injection site care” to hyphenated “post-injection site care.”
730.185(a)(6)-(G)	JCAR	Changed “a third party provider” to hyphenated “a third-party provider.”
730.185(c)(2)	JCAR	Corrected “owner or operator provide” to “owner or operator must provide.”
730.185(c)(4)	JCAR	Changed “evidence of such increase” to “evidence of that increase.”
730.185(d)(1)	JCAR	Changed “a third party provider” to hyphenated “a third-party provider.”
730.185(d)(2)	JCAR	Corrected “subsection (d)(2) of this Section” to “this subsection “(d)(2).”
730.185 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
730.186(b)(1)	JCAR	Changed “developed for such materials” to “developed for these materials.”
730.186(c)(1)	JCAR	Changed “developed for such materials” to “developed for these materials.”
730.186 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
730.187(a)	JCAR, Board	Changed “of such logs and tests” to “of the logs and tests”; changed “such logs and test must include” to “these logs and tests must include.” (Alternative to JCAR suggestion: “the logs and tests must include.”)
730.187(a)(1)	JCAR, Board	Changed “such checks” to “these checks.”

730.187(a)(3)	JCAR	Changed “long string casing” to hyphenated “long-string casing.”
730.187(b)	JCAR, Board	Changed “and such cores” to “and the nearby cores.” (Alternative to JCAR suggestion: “and the cores.”)
730.187(f)	JCAR	Changed “of such activities” to “of these activities.”
730.187 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
730.188(c)	JCAR	Changed “long string casing” to hyphenated “long-string casing.”
730.188(e)(1)(C)	JCAR	Changed “long string casing” to hyphenated “long-string casing.”
730.188(f)	Board, JCAR	Changed “upon such investigation” to “upon investigation”; added a comma before “the owner or operator must” to offset the introductory clause. (Alternative to JCAR suggestion: “upon that investigation.”)
730.188 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
730.189(g)	JCAR	Changed “as such are required” to “as required.”
730.189 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
730.190(b)	JCAR	Removed the unnecessary comma from “installation and use, or continuous recording devices”; changed “long string casing” to hyphenated “long-string casing.”
730.190(d)	JCAR	Changed “ground water” to “groundwater.”
730.190(g)(2)	JCAR	Changed “such methods” to “these methods.”
730.190(h)	JCAR	Changed “such monitoring” to “this monitoring.”

730.190 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
730.191 preamble	JCAR	Removed the unnecessary comma from before “for each permitted Class VI injection well.”
730.191(f)(4)	JCAR	Corrected “postinjection” to hyphenated “post-injection”; corrected plural “Sections 730.193(f) and (h)” to singular “Section 730.193(f) and (h).”
730.191(f)(5)	JCAR	Changed “section 40 of the Act” to capitalized “Section 40 of the Act.”
730.191 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
730.192(a)	Board	Changed “bottomhole” to hyphenated “bottom-hole.”
730.192(d)	JCAR	Changed the comma in “report to the Agency, electronically to USEPA” to the conjunction “and.”
730.192 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
730.193(b)(1)	Board, JCAR	Changed “he/she” to “the owner or operator makes a demonstration”; corrected “under (b)(2) of this Section” to “under subsection (b)(2) of this Section” (twice).
730.193(b)(2)	JCAR	Added commas before and after “based on monitoring and other site-specific data” to offset the parenthetical.
730.193(c)(2)-(G)	Board	Removed the unnecessary comma from after the ending conjunction “and.”
730.193(h)	JCAR	Corrected “for 10 at least years” to “for at least 10 years.”
730.193 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.

730.194 Board note	Board	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version.
730.195(a)(2)	JCAR	Corrected “each injection zones is bounded” to singular “each injection zone is bounded”; changed “that such fractures will not interfere” to “that these fractures will not interfere.”
730.195(b)(1)(F)	JCAR	Changed the comma in “planned needs, and supply” to the conjunction “and.”
730.195(b)(2)	JCAR	Corrected “Division of Public Water Supplies” to “Division of Public Water Supply.”
730.195(d)(1)	JCAR	Changed “at his or her discretion” to “at its discretion.”
730.195(f)(4)(B)	JCAR	Corrected “surveys or down-hole carbon dioxide detection tools) that the Agency determines is necessary” to plural “surveys or down-hole carbon dioxide detection tools) that the Agency determines are necessary.”
730.195 Board note	Board, JCAR	Updated the <i>Code of Federal Regulations</i> citation to the latest version available, including deletion of a now obsolete <i>Federal Register</i> citation to amendments now included in that version; removed the unnecessary conjunction “but” from “while the Agency cannot ‘waive’ standards embodied in Board regulations, but the Agency can issue a permit”.

**Table 5:**  
**Requested Revisions to the Text of the Proposed Amendments Not Made in Final Adoption**

Section Affected	Source of Request: Requested Revision	Explanation
702 Source note	JCAR: Delete the reference to the amendments in R11-2/R11-16.	The Board adopted amendments in R11-2/R11-16 effective October 14, 2011, which appeared in the November 4, 2011 issue of the <i>Illinois Register</i> .
702.110 “geologic sequestration”	JCAR: Remove the comma before “or supercritical.”	The Board consistently separates the final elements of series with a comma.

702.150(d)	JCAR: Remove the comma before “and 730.193(h).”	The Board consistently separates the final elements of series with a comma.
704.106(a)(3)	JCAR: Change “(one-quarter mile)” to “(one quarter-mile).”	The hyphen joins the adjective phrase “one-quarter,” rather than create the compound noun “quarter-mile.”
704.106(f)(1)	JCAR: Change “that is experimental in nature which is used” to “that is experimental in nature that is used” for a restrictive relative clause.	The Board prefers the use of “which” to offset subsequent restrictive relative clauses to avoid repetition.
704.106(f)(2)	JCAR: Change “that is used for geologic sequestration which has been granted” to “that is used for geologic sequestration that has been granted” for a restrictive relative clause.	The Board prefers the use of “which” to offset subsequent restrictive relative clauses to avoid repetition.
704.122 Board note	JCAR: Correct “75 Fed. Reg. 77303” to “75 Fed. Reg. 77230.”	The Board updated the <i>Code of Federal Regulations</i> citation to the latest version available, which allowed deletion of now obsolete <i>Federal Register</i> citation.
704.162(b)(2)	JCAR: Remove the comma before “and abandonment.”	The Board consistently separates the final elements of series with a comma.
704.181(f)	JCAR: Change “where the plan meets the requirements” to “when the plan meets the requirements.”	The use of “where” follows that in corresponding 40 C.F.R. 144.51(o). The clause intends “meets the requirements” in a situational sense, and not as an occurrence or point in time.

704.264(e)	JCAR: Change “that are within the capacity of the facility as permitted and which the Agency has determined” to “that are within the capacity of the facility as permitted and that the Agency has determined” for a restrictive relative clause.	The Board prefers the use of “which” to offset subsequent restrictive relative clauses to avoid repetition.
704.264(h)	JCAR: Change “where the Agency determines that the modifications merely clarify of correct the plan” to “when the Agency determines that the modifications merely clarify of correct the plan.”	The use of “where” follows that in corresponding 40 C.F.R. 144.41(h). The clause intends “meets the requirements” in a situational sense, and not as an occurrence or point in time.
730 table of contents, 730.187 heading	JCAR: Omit the comma before “and Testing.”	The Board consistently separates the final elements of series with a comma.
730 source note	JCAR: Omit “in R11-14.”	The Board consistently adds the docket number of each rulemaking in the main source note.
730.104 preamble	JCAR: Omit the comma before “or Class V.”	The Board consistently separates the final elements of series with a comma.
730.105(f)(1)	JCAR: Change “well that is not experimental in nature and which is used for geologic sequestration” to “well that is not experimental in nature and that is used for geologic sequestration” for a restrictive relative clause.	The Board prefers the use of “which” to offset subsequent restrictive relative clauses to avoid repetition.
730.105(f)(2)	JCAR: Change “well that is not experimental in nature and which has been granted a permit that includes” to “well that is not experimental in nature and that has been granted a permit that includes” for a restrictive relative clause.	The Board prefers the use of “which” to offset subsequent restrictive relative clauses to avoid repetition.

730.105(f)(3)	JCAR: Change “well that is not experimental in nature and which has received an expansion to the areal extent” to “well that is not experimental in nature and that has received an expansion to the areal extent” for a restrictive relative clause.	The Board prefers the use of “which” to offset subsequent restrictive relative clauses to avoid repetition.
730.181(c)	JCAR: Omit the comma before “or Class V” (twice); change “injection well that is no longer being used . . . and which will continue injection” to “injection well that is no longer being used . . . and that will continue injection.”	The Board consistently separates the final elements of series with a comma. The Board prefers the use of “which” to offset subsequent restrictive relative clauses to avoid repetition.
730.181(d) “area of review”	JCAR: Omit the comma before “and operational data.”	The Board consistently separates the final elements of series with a comma.
730.181(d) “confining zone”	JCAR: Change “a formation that . . . overlies an injection zone and which acts as barrier” to “a formation that . . . overlies an injection zone and that acts as barrier”; omit the comma before “and operational data.”	The Board prefers the use of “which” to offset subsequent restrictive relative clauses to avoid repetition. The Board consistently separates the final elements of series with a comma.
730.181(d) “geologic sequestration”	JCAR: Omit the comma before “or supercritical carbon dioxide.”	The Board consistently separates the final elements of series with a comma.
730.181(d) “geologic sequestration project,” sub-¶ 2	JCAR: Change “well or wells that are used for geologic sequestration . . . and which have been granted a permit” to “well or wells that are used for geologic sequestration . . . and that have been granted a permit” for a restrictive relative clause.	The Board prefers the use of “which” to offset subsequent restrictive relative clauses to avoid repetition. The Board consistently separates the final elements of series with a comma.

730.181(d) “geologic sequestration project,” sub-¶ 3	JCAR: Change “well or wells that are used for geologic sequestration . . . and which have received an expansion to the areal extent” to “well or wells that are used for geologic sequestration . . . and that have received an expansion to the areal extent” for a restrictive relative clause.	The Board prefers the use of “which” to offset subsequent restrictive relative clauses to avoid repetition. The Board consistently separates the final elements of series with a comma.
730.181(d) “injection zone”	JCAR: Omit the comma before “or a part of a formation”; omit the comma before “and permeability.”	The Board consistently separates the final elements of series with a comma.
730.182 preamble	JCAR: Omit the comma before “or Class V”; change “certain maps, cross-sections, tabulations of wells . . . , and other data” to “certain maps, cross-sections, tabulations of wells . . . , and other data”; omit the comma before “and sufficiently identified.”	The Board consistently separates the final elements of series with a comma. “Cross-sections” and “tabulations” are two separate elements of the series, as they appear in corresponding 40 C.F.R. 146.82 preamble.
730.182(a)	JCAR: Omit the comma before “or Class V.”	The Board consistently separates the final elements of series with a comma.
730.182(a)(2)	JCAR: Omit the comma before “or dry holes”; change “quarries, water wells, and . . . surface features” to “quarries and water wells, and . . . surface features”; omit the comma before “and roads.”	The Board consistently separates the final elements of series with a comma. “quarries” and “water wells” are two separate elements of the series, as they appear in corresponding 40 C.F.R. 146.82(a)(2).
730.182(a)(3)(B)	JCAR: Omit the comma before “and properties.”	The Board consistently separates the final elements of series with a comma.
730.182(a)(3)(C)	JCAR: Omit the comma before “and capillary pressure”; omit the comma before “and names and lithologic descriptions.”	The Board consistently separates the final elements of series with a comma.

730.182(a)(3)-(D)	JCAR: Omit the comma before “and in-situ fluid pressures.”	The Board consistently separates the final elements of series with a comma.
730.182(a)(3)(F)	JCAR: Omit the comma before “and the geologic structure.”	The Board consistently separates the final elements of series with a comma.
730.182(a)(5)	JCAR: Omit the comma before “and springs.”	The Board consistently separates the final elements of series with a comma.
730.182(a)(5)	JCAR: Omit the comma after “the average and maximum daily rate and volume or mass, and the total anticipated volume or mass.”	The comma enhances that the clause, “the total anticipated volume or mass” is coordinate to “the average and maximum daily rate and volume or mass.”
730.182(a)(14)	JCAR: Change “a demonstration which is sufficient to support an Agency determination that the applicant has met” to “a demonstration that is sufficient to support an Agency determination that the applicant has met” for a restrictive relative clause.	The Board prefers the use of “which” to offset a restrictive relative clause that includes a predicate restrictive relative clause.
730.182(c)(1)	JCAR: Omit the comma before “using data”; omit the comma before “and (c)(10).”	The comma before “using data,” which appears in corresponding 40 C.F.R. 146.82(c)(1), offsets the parenthetical. The Board consistently separates the final elements of series with a comma.
730.182(c)(2)	JCAR: Omit the comma before “and (c)(10).”	The Board consistently separates the final elements of series with a comma.
730.183(b)	JCAR: Change “that are free of faults and fractures which may interfere” to “that are free of faults and fractures that may interfere.”	The Board prefers to use “which” for the subsequent restrictive relative clause, especially because the multiple elements of the series of restrictive relative clauses begin with “that.”

730.184(a)	<p>JCAR: Change “where the injection activity may endanger a USDW” to “when the injection activity may endanger a USDW”; change “computational modeling that accounts for . . . and which is based on” to “computational modeling that accounts for . . . and that is based on.”</p>	<p>The use of “where” follows that in corresponding 40 C.F.R. 146.84(a). The clause intends “activity may endanger” in a situational sense and not as an occurrence or point in time. The Board prefers the use of “which” for a subsequent restrictive relative clause.</p>
730.184(b)	<p>JCAR: Change “corrective action that meets the requirements of this Section and which is sufficient” to “corrective action that meets the requirements of this Section and that is sufficient.”</p>	<p>The use of “where” follows that in corresponding 40 C.F.R. 146.84(a). The clause intends “activity may endanger” in a situational sense and not as an occurrence or point in time. The Board prefers the use of “which” for a subsequent restrictive relative clause.</p>
730.184(b)(1)	<p>JCAR: Change “method that the owner or operator will use for delineating the area of review which meets” to “method that the owner or operator will use for delineating the area of review that meets.”</p>	<p>The Board prefers the use of “which” for a subsequent restrictive relative clause.</p>
730.184(c)(1)-(A)	<p>JCAR: Omit the comma before “and total volumes.”</p>	<p>The Board consistently separates the final elements of series with a comma.</p>
730.184(c)(1)(B)	<p>JCAR: Omit the comma before “and their possible impact.”</p>	<p>The Board consistently separates the final elements of series with a comma.</p>
730.184(c)(1)(C)	<p>JCAR: Omit the comma before “and artificial penetrations.”</p>	<p>The Board consistently separates the final elements of series with a comma.</p>
730.185(a)(4)-(A)(iii)	<p>JCAR: Omit the comma before “or failure.”</p>	<p>The Board consistently separates the final elements of series with a comma.</p>

730.185(a)(6)-(A)	JCAR: Omit the comma before “and insurance.”	The Board consistently separates the final elements of series with a comma.
730.185(a)(6)-(E)(ii)	JCAR: Omit the comma before “and site closure cost.”	The Board consistently separates the final elements of series with a comma.
730.185(a)(6)-(E)(iii)	JCAR: Omit the comma before “and site closure cost.”	The Board consistently separates the final elements of series with a comma.
730.185(a)(6)-(E)(v)	JCAR: Omit the comma before “and amortization.”	The Board consistently separates the final elements of series with a comma.
730.185(b)(2)-(B)	JCAR: Change “that accepts the new financial instrument and which releases” to “that accepts the new financial instrument and that releases.”	The Board prefers the use of “which” for a subsequent restrictive relative clause.
730.185(c)	JCAR: Omit the comma before “and emergency and remedial response.”	The Board consistently separates the final elements of series with a comma.
730.185(c)(1)	JCAR: Change “a third party” to hyphenated “a third-party” (twice).	The use here is not an adjectival phrase, but an adjective-noun combination, for which hyphenation is inappropriate.
730.185(d)(3)	JCAR: Omit the comma before “or insurance policy.”	The Board consistently separates the final elements of series with a comma.
730.186(b)(1)	JCAR: Omit the comma before “and other materials.”	The Board consistently separates the final elements of series with a comma.
730.186(b)(1)-(B)	JCAR: Omit the comma before “and axial loading.”	The Board consistently separates the final elements of series with a comma.
730.186(b)(1)(I)	JCAR: Omit the comma before “and temperature.”	The Board consistently separates the final elements of series with a comma.

730.186(c)(3)(B)	JCAR: Omit the comma before “and density.”	The Board consistently separates the final elements of series with a comma.
730.186(c)(3)-(G)	JCAR: Omit the comma before “and collapse.”	The Board consistently separates the final elements of series with a comma.
730.187 heading	JCAR: Omit the comma before “and Testing.”	The Board consistently separates the final elements of series with a comma.
730.187(a)(2)-(A)	JCAR: Omit the comma before “and caliper logs.”	The Board consistently separates the final elements of series with a comma.
730.187(a)(3)-(A)	JCAR: Omit the comma before “and any other logs.”	The Board consistently separates the final elements of series with a comma.
730.184(a)(5)	JCAR: Change “that provide equivalent or better information and which are required” to “that provide equivalent or better information and that are required.”	The Board prefers the use of “which” for a subsequent restrictive relative clause.
730.187(c)	JCAR: Omit the comma before “and static fluid level.”	The Board consistently separates the final elements of series with a comma.
730.188(e)(3)	JCAR: Omit the comma before “or other parameters.”	The Board consistently separates the final elements of series with a comma.
730.189(a)(1)	JCAR: Omit the comma before “or packer.”	The Board consistently separates the final elements of series with a comma.
730.189(b)(1)	JCAR: Omit the comma before “and injected volumes.”	The Board consistently separates the final elements of series with a comma.

730.190 preamble	JCAR: Change “monitoring plan which will verify that the geologic sequestration project” to “monitoring plan that will verify that the geologic sequestration project” for a restrictive relative clause.	The Board prefers the use of “which” to offset a restrictive relative clause that includes a predicate restrictive relative clause.
730.190(b)	JCAR: Omit the comma before “and volume.”	The Board consistently separates the final elements of series with a comma.
730.190(c)	JCAR: Omit the comma before “and other signs.”	The Board consistently separates the final elements of series with a comma.
730.190(d)(1)	JCAR: Omit the comma before “and other factors.”	The Board consistently separates the final elements of series with a comma.
730.190(g)(2)	JCAR: Omit the comma before “or electromagnetic surveys.”	The Board consistently separates the final elements of series with a comma.
730.190(i)	JCAR: Omit the comma before “and improve.”	The Board consistently separates the final elements of series with a comma.
730.190(j)	JCAR: Omit the comma before “and are subject to.”	The Board consistently separates the final elements of series with a comma.
730.191(a)(1)	JCAR: Omit the comma before “and other relevant characteristics.”	The Board consistently separates the final elements of series with a comma.
730.191(a)(2)	JCAR: Omit the comma before “and minimum values for injection pressure.”	The Board consistently separates the final elements of series with a comma.
730.191(e)	JCAR: Omit the comma before “and notifications under this Subpart H.”	The Board consistently separates the final elements of series with a comma.

730.192(a)	JCAR: Omit the comma before “and perform a final external integrity test.”	The Board consistently separates the final elements of series with a comma.
730.192(b)	JCAR: Omit the comma before “and comply with.”	The Board consistently separates the final elements of series with a comma.
730.192(b)(5)	JCAR: Omit the comma before “and quantity of material to be used in plugging.”	The Board consistently separates the final elements of series with a comma.
730.193(a)	JCAR: Omit the comma before “and comply with.”	The Board consistently separates the final elements of series with a comma.
730.193(a)(2)(C)	JCAR: Omit the comma before “and frequency.”	The Board consistently separates the final elements of series with a comma.
730.193(c)(1)-(D)	JCAR: Omit the comma before “and mineralization.”	The Board consistently separates the final elements of series with a comma.
730.193(c)(1)(E)	JCAR: Omit the comma before “and mineral phase.”	The Board consistently separates the final elements of series with a comma.
730.193(c)(1)(F)	JCAR: Omit the comma before “of field or site-specific studies.”	The Board consistently separates the final elements of series with a comma.
730.193(c)(1)-(G)	JCAR: Omit the comma before “and micro-fractures”; omit the comma before “and integrity to impede fluid movement.”	The Board consistently separates the final elements of series with a comma.
730.193(e)	JCAR: Change “a manner that will not allow movement of injection or formation fluids which endangers a USDW” to “a manner that will not allow movement of injection or formation fluids that endangers a USDW” for a restrictive relative clause.	The Board prefers the use of “which” to offset a restrictive relative clause that includes a predicate restrictive relative clause.

730.193(f)(3)	JCAR: Omit the comma before “and volume.”	The Board consistently separates the final elements of series with a comma.
730.194(a)	JCAR: Change “an emergency and remedial response plan that describes actions the owner or operator must take to address movement of the injection or formation fluids which may cause an endangerment to a USDW” to “an emergency and remedial response plan that describes actions the owner or operator must take to address movement of the injection or formation fluids which may cause an endangerment to a USDW” for a restrictive relative clause.	The Board prefers the use of “which” to offset a subsequent restrictive relative clause.
730.195(a)(1)(E)	JCAR: Omit the comma before “and sufficient porosity.”	The Board consistently separates the final elements of series with a comma.
730.195(b)(1)-(D)	JCAR: Omit the comma before “and a demonstration of financial responsibility.”	The Board consistently separates the final elements of series with a comma.
730.195(b)(1)(E)	JCAR: Omit the comma before “and supply.”	The Board consistently separates the final elements of series with a comma.
730.195(b)(1)-(G)	JCAR: Omit the comma before “or mineral.”	The Board consistently separates the final elements of series with a comma.
730.195(f)(3)(A)	JCAR: Omit the comma before “and pressure.”	The Board consistently separates the final elements of series with a comma.
730.195(f)(3)(B)	JCAR: Omit the comma before “or electromagnetic.”	The Board consistently separates the final elements of series with a comma.

730.195 Board note	JCAR: Place the ending period outside the closing quotation mark to change “waiver.” to “waiver’.” Place the ending period outside the closing quotation mark to change “permit that includes alternative injection well depth requirements.” to “permit that includes alternative injection well depth requirements’.”	The Board places commas and ending periods inside closing quotation marks according to the “American rule” for quotation punctuation.
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**Removal of the Historical Summary of the  
RCRA Subtitle C and UIC Regulations  
from the Board Opinion**

The Board has included a recitation of a historical summary of the Illinois RCRA Subtitle C (hazardous waste) and UIC regulations and programs in the opinion segment of every update to these regulations. The Board conducted the review of recent actions that is needed to include the summary in this opinion and order. The Board encountered a number of issues during the course of this review. As a result, the Board has done as follows with regard to the historical summary:

1. The Board has integrated the historical summary into a single summary.
2. The Board has removed the historical summary from this opinion relating to the RCRA Subtitle C and UIC programs.

In the early years of these programs, the historical recitation that the Board included in every opinion was quite short. *See, e.g., RCRA and UIC Update, R84-9 (June 13, 1985 and June 27, 1985), slip op. at pp. 2-4.* By 2000, however, the list became several pages long. *See, e.g., RCRA Subtitle C Update, USEPA Amendments (July 1, 1999 through December 31, 1999), R00-13 (May 18, 2000), slip op. at pp. 50-63.* As a result, the Board opted to shorten the historical recitation and present only those amendments that occurred after May 18, 2000 in subsequent opinions and reference back to a May 18, 2000 opinion for prior actions. *See RCRA Subtitle C Update, USEPA Amendments (January 1, 2000 through June 30, 2000), R01-3 (Dec. 7, 2000), slip op. at pp. 13-14.*

Reviewing the complete historical summary of the programs has required integrating the latest listing with the listing in an opinion of the Board that is more than 10 years old. The historical summary spanning the period since May 18, 2000 has grown to several pages in length. *See RCRA Subtitle C Update, USEPA Amendments (January 1, 2010 through June 30, 2010), R11-2 and RCRA Subtitle C Update, USEPA Regulations (July 1, 2010 through December 31, 2010), R11-16 (Aug. 18, 2011) (cons), slip op. at pp. 163-70.* The fact that the summary appears in two segments, combined with the growing length of the post-2000 summary, has made

discerning the complete summary difficult.

The Board has integrated the pre-2000 and post-2000 summaries into a single summary. That integrated document now spans 32 pages. In a break from past tradition, the Board has determined to stop reciting the lengthy histories of the RCRA Subtitle C and UIC programs. The Board will post a document to the Board's website that presents the entire summary as a cohesive document.

As a result, no historical summary appears as a segment of this opinion and order. Persons wishing to review the historical summary of the Illinois RCRA Subtitle C and UIC regulations and programs as it stood on December 31, 2011 must consult the Board's website at [www.ipcb.state.il.us](http://www.ipcb.state.il.us) to do so.

### **ORDER**

The Board directs the Clerk to file the following adopted amendments to the Illinois UIC regulations at 35 Ill. Adm. Code 702, 704, 705, and 730 with the Office of the Secretary of State that they become effective and that notice of them appears in the *Illinois Register*:

TITLE 35: ENVIRONMENTAL PROTECTION  
SUBTITLE G: WASTE DISPOSAL  
CHAPTER I: POLLUTION CONTROL BOARD  
SUBCHAPTER b: PERMITS

PART 702  
RCRA AND UIC PERMIT PROGRAMS

SUBPART A: GENERAL PROVISIONS

Section	
702.101	Purpose, Scope, and Applicability
702.102	Electronic Reporting
702.103	Trade Secret or Non-Disclosable Information Submitted to the Agency or Board
702.104	References
702.105	Rulemaking
702.106	Adoption of Agency Criteria
702.107	Permit Appeals and Review of Agency Determinations
702.108	Variances and Adjusted Standards
702.109	Enforcement Actions
702.110	Definitions

SUBPART B: PERMIT APPLICATIONS

Section	
702.120	Permit Application
702.121	Who Applies
702.122	Completeness

702.123	Information Requirements
702.124	Recordkeeping
702.125	Continuation of Expiring Permits
702.126	Signatories to Permit Applications and Reports

#### SUBPART C: PERMIT CONDITIONS

Section	
702.140	Conditions Applicable to all Permits
702.141	Duty to Comply
702.142	Duty to Reapply
702.143	Need to Halt or Reduce Activity Not a Defense
702.144	Duty to Mitigate
702.145	Proper Operation and Maintenance
702.146	Permit Actions
702.147	Property Rights
702.148	Duty to Provide Information
702.149	Inspection and Entry
702.150	Monitoring and Records
702.151	Signature Requirements
702.152	Reporting Requirements
702.160	Establishing Permit Conditions
702.161	Duration of Permits
702.162	Schedules of Compliance
702.163	Alternative Schedules of Compliance
702.164	Recording and Reporting

#### SUBPART D: ISSUED PERMITS

Section	
702.181	Effect of a Permit
702.182	Transfer
702.183	Modification
702.184	Causes for Modification
702.185	Facility Siting
702.186	Revocation
702.187	Minor Modifications

**AUTHORITY:** Implementing Sections 7.2, 13, and 22.4 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/7.2, 13, 22.4, and 27].

**SOURCE:** Adopted in R81-32 at 6 Ill. Reg. 12479, effective May 17, 1982; amended in R82-19 at 7 Ill. Reg. 14352, effective May 17, 1982; amended in R84-9 at 9 Ill. Reg. 11926, effective July 24, 1985; amended in R85-23 at 10 Ill. Reg. 13274, effective July 29, 1986; amended in R86-1 at 10 Ill. Reg. 14083, effective August 12, 1986; amended in R86-28 at 11 Ill. Reg. 6131, effective March 24, 1987; amended in R87-5 at 11 Ill. Reg. 19376, effective November 12, 1987; amended in R87-26 at 12 Ill. Reg. 2579, effective January 15, 1988; amended in R87-29 at 12 Ill.

Reg. 6673, effective March 28, 1988; amended in R87-39 at 12 Ill. Reg. 13083, effective July 29, 1988; amended in R89-1 at 13 Ill. Reg. 18452, effective November 13, 1989; amended in R89-2 at 14 Ill. Reg. 3089, effective February 20, 1990; amended in R89-9 at 14 Ill. Reg. 6273, effective April 16, 1990; amended in R92-10 at 17 Ill. Reg. 5769, effective March 26, 1993; amended in R93-16 at 18 Ill. Reg. 6918, effective April 26, 1994; amended in R94-5 at 18 Ill. Reg. 18284, effective December 20, 1994; amended in R95-6 at 19 Ill. Reg. 9913, effective June 27, 1995; amended in R95-20 at 20 Ill. Reg. 11210, effective August 1, 1996; amended in R96-10/R97-3/R97-5 at 22 Ill. Reg. 532, effective December 16, 1997; amended in R99-15 at 23 Ill. Reg. 9359, effective July 26, 1999; amended in R00-11/R01-1 at 24 Ill. Reg. 18585, effective December 7, 2000; amended in R06-16/R06-17/R06-18 at 31 Ill. Reg. 438, effective December 20, 2006; amended in R11-2/R11-16 at 35 Ill. Reg. 35 Ill. Reg. 17647, effective October 14, 2011; amended in R11-14 at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_.

## SUBPART A: GENERAL PROVISIONS

### Section 702.101 Purpose, Scope, and Applicability

- a) Coverage.
  - 1) The permit regulations of 35 Ill. Adm. Code 702 through 705 include provisions for the following two permit programs:
    - A) The RCRA (Resource Conservation and Recovery Act) permit program pursuant to Title V and Title X of the Environmental Protection Act [415 ILCS 5/Title V and Title X].
    - B) The UIC (Underground Injection Control) permit program pursuant to Title III and Title X of the Environmental Protection Act [415 ILCS 5/Title III and Title X].
  - 2) The regulations of 35 Ill. Adm. Code 702 through 705 cover basic permitting requirements (35 Ill. Adm. Code 702 through 704) and procedures for processing of permit applications (35 Ill. Adm. Code 705) for the RCRA and UIC permit programs.
  - 3) The regulations of 35 Ill. Adm. Code 702 through 705 are derived from 40 CFR 124, 144, and 270.
- b) Structure.
  - 1) The regulations of 35 Ill. Adm. Code 702 through 705 comprise the following four Parts:
    - A) This Part contains definitions applicable to 35 Ill. Adm. Code 702 through 705. It also contains basic permitting requirements for the

RCRA and UIC programs.

- B) The regulations of 35 Ill. Adm. Code 703 contain requirements specific to RCRA permits. In case of inconsistency between 35 Ill. Adm. Code 702 and 703, 35 Ill. Adm. Code 703 will control.
- C) The regulations of 35 Ill. Adm. Code 704 contain requirements specific to UIC permits. In case of inconsistency between 35 Ill. Adm. Code 702 and 704, 35 Ill. Adm. Code 704 will control.
- D) The regulations of 35 Ill. Adm. Code 705 establish procedures for issuance of RCRA and UIC permits by the Agency.
- 2) The structure and coverage of 35 Ill. Adm. Code 702 through 704 are indicated in the following table:

	RCRA AND UIC <u>Subpart of</u> 35 Ill. Adm. Code 702 <u>Subpart</u>	RCRA <u>Subpart of</u> 35 Ill. Adm. Code 703 <u>Subpart</u>	UIC <u>Subpart of</u> 35 Ill. Adm. Code 704 <u>Subpart</u>
General	A	A	A
Prohibitions	---	B	B
Authorization by Rule	---	C	C
Permit Application	B	D	D
Special Forms of Permits	---	E	---
Permit Conditions	C	F	E
Issued Permits	D	---	H
Permit Modification	---	G	---
Remedial Action Plans	---	H	---
Integration with MACT Standards	---	I	---
RCRA Standardized Permits	---	J	---
Requirements Applicable to Hazardous Waste Injection Wells	---	---	F
Financial Responsibility for Class I Hazardous Waste Injection Wells	---	---	G
Requirements	---	---	I

Applicable to Class V Injection Wells Requirements	---	---	I
Applicable to Class V Injection Wells <u>Requirements</u>	=	=	<u>J</u>
<u>Applicable to Class VI Injection Wells</u>			

c) Relation to other requirements.

- 1) Permit application forms. An applicant for a RCRA or UIC permit or a person seeking interim status under RCRA must submit its application on an Agency permit application form when such is available.
- 2) Technical regulations. Each of the two permit programs that are covered in these permit regulations has separate additional regulations that contain technical requirements for that program. These separate regulations are used by the Agency to determine the requirements that must be placed in any permit that it issues. These separate regulations are located as follows:

RCRA	35 Ill. Adm. Code 720 through 728, 733, and 739
UIC	35 Ill. Adm. Code 730 and 738

BOARD NOTE: Derived in significant part from 40 CFR 144.1 and 270.1-(2005) (2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

SUBPART A: GENERAL PROVISIONS

**Section 702.110 Definitions**

The following definitions apply to 35 Ill. Adm. Code 702, 703, 704, and 705. Terms not defined in this Section have the meaning given by the appropriate act and regulations, as such are defined in this Section. When a definition applies primarily to one or more programs, those programs appear in parentheses after the defined terms.

“Act” or “Environmental Protection Act” means the Environmental Protection Act [415 ILCS 5].

“Administrator” means the Administrator of the United States Environmental Protection Agency or an authorized representative.

“Agency” means the Illinois Environmental Protection Agency.

“Application” means the Agency forms for applying for a permit. For RCRA, application also includes the information required by the Agency pursuant to 35 Ill. Adm. Code 703.182 through 703.212 (contents of Part B of the RCRA application).

“Appropriate act and regulations” means the federal Resource Conservation and Recovery Act (42 USC 6901 et seq.) (RCRA), the federal Safe Drinking Water Act (42 USC 300f et seq.) (SDWA), or the Environmental Protection Act, whichever is applicable, and the applicable regulations promulgated under those statutes.

“Approved program or approved state” means a state or interstate program that has been approved or authorized by USEPA pursuant to 40 CFR 271 (RCRA) or ~~Section~~ section 1422 of the SDWA (42 USC 300h-1) (UIC).

“Aquifer” (RCRA and UIC) means a geologic formation, group of formations, or part of a formation that is capable of yielding a significant amount of water to a well or spring.

“Area of review” (UIC) means the area surrounding an injection well described according to the criteria set forth in 35 Ill. Adm. Code 730.106, or in the case of an area permit, the project area plus a circumscribing area the width of which is either 402 meters (one-quarter of a mile) or a number calculated according to the criteria set forth in 35 Ill. Adm. Code 730.106.

“Board” (RCRA and UIC) means the Illinois Pollution Control Board.

“Cesspool” (UIC) means a drywell that receives untreated sanitary waste containing human excreta and which sometimes has an open bottom or perforated sides.

“Closure” (RCRA) means the act of securing a Hazardous waste management facility pursuant to 35 Ill. Adm. Code 724.

“Component” (RCRA) means any constituent part of a unit or any group of constituent parts of a unit that are assembled to perform a specific function (e.g., a pump seal, pump, kiln liner, or kiln thermocouple).

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

“Corrective action management unit” or “CAMU” (RCRA) means an area within a facility that is designated by the Agency pursuant to Subpart S of 35 Ill. Adm. Code 724 for the purpose of implementing corrective action requirements pursuant to 35 Ill. Adm. Code 724.201 and RCRA section 3008(h) (42 USC

6928(h)). A CAMU must only be used for the management of remediation wastes pursuant to implementing such corrective action requirements at the facility.

BOARD NOTE: USEPA must also designate a CAMU until it grants this authority to the Agency. See the note following 35 Ill. Adm. Code 724.652.

“CWA” (RCRA and UIC) means the Clean Water Act (33 USC 1251 et seq.), as amended.

“Date of approval by USEPA of the Illinois UIC program” (UIC) means March 3, 1984.

“Director” (RCRA and UIC) means the Director of the Illinois Environmental Protection Agency or the Director’s designee.

“Disposal” (RCRA) means the discharge, deposit, injection, dumping, spilling, leaking, or placing of any hazardous waste into or on any land or water so that such hazardous waste or any constituent of the waste may enter the environment or be emitted into the air or discharged into any waters, including groundwater.

“Disposal facility” (RCRA) means a facility or part of a facility at which hazardous waste is intentionally placed into or on the land or water, and at which hazardous waste will remain after closure. The term disposal facility does not include a corrective action management unit into which remediation wastes are placed.

“Draft permit” (RCRA and UIC) means a document prepared pursuant to 35 Ill. Adm. Code 705.141 indicating the Agency’s tentative decision to issue, deny, modify, terminate, or reissue a permit. A notice of intent to deny a permit, as discussed in 35 Ill. Adm. Code 705.141, is a type of draft permit. A denial of a request for modification, as discussed in 35 Ill. Adm. Code 705.128, is not a draft permit. A proposed permit is not a draft permit.

“Drywell” (UIC) means a well, other than an improved sinkhole or subsurface fluid distribution system, that is completed above the water table so that its bottom and sides are typically dry, except when receiving fluids.

“Drilling mud” (UIC) means a heavy suspension used in drilling an injection well, introduced down the drill pipe and through the drill bit.

“Elementary neutralization unit” (RCRA) means a device of which the following is true:

It is used for neutralizing wastes that are hazardous wastes only because they exhibit the corrosivity characteristics defined in 35 Ill. Adm. Code 721.122, or are listed in Subpart D of 35 Ill. Adm. Code 721 only for this

reason; and

It meets the definition of tank, tank system, container, transport vehicle, or vessel in 35 Ill. Adm. Code 720.110.

“Emergency permit” (RCRA and UIC) means a RCRA or UIC permit issued in accordance with 35 Ill. Adm. Code 703.221 or 704.163, respectively.

“Environmental Protection Agency” or “EPA” or “USEPA” (RCRA and UIC) means the United States Environmental Protection Agency.

“Exempted aquifer” (UIC) means an aquifer or its portion that meets the criteria in the definition of “underground source of drinking water” but which has been exempted according to the procedures in 35 Ill. Adm. Code 702.105, 704.104, and 704.123(b).

“Existing hazardous waste management (HWM) facility” or “existing facility” (RCRA) means a facility that was in operation or for which construction commenced on or before November 19, 1980. A facility has commenced construction if the following occurs:

The owner or operator has obtained the federal, State, and local approvals or permits necessary to begin physical construction; and

Either of the following has transpired:

A continuous on-site, physical construction program has begun; or

The owner or operator has entered into contractual obligations for physical construction of the facility that cannot be canceled or modified without substantial loss and which are to be completed within a reasonable time.

“Existing injection well” (UIC) means an injection well that is not a new injection well.

“Facility mailing list” (RCRA) means the mailing list for a facility maintained by the Agency in accordance with 35 Ill. Adm. Code 705.163(a).

“Facility or activity” (RCRA and UIC) means any HWM facility, UIC injection well, or any other facility or activity (including land or appurtenances thereto) that is subject to regulations under the Illinois RCRA or UIC program.

“Federal, State, and local approvals or permits necessary to begin physical construction” (RCRA) means permits and approvals required under federal, State,

or local hazardous waste control statutes, regulations, or ordinances.

“Final authorization” (RCRA) means January 31, 1986, the date of approval by USEPA of the Illinois Hazardous Waste Management Program that has met the requirements of ~~Section~~section 3006(b) of RCRA (42 USC 6926(b)) and the applicable requirements of subpart A of 40 CFR 271.

“Fluid” (UIC) means any material or substance that flows or moves, whether in a semisolid, liquid, sludge, gas, or any other form or state.

“Formation” (UIC) means a body of rock characterized by a degree of lithologic homogeneity that is prevailing, but not necessarily, tabular and is mappable on the earth’s surface or traceable in the subsurface.

“Formation fluid” (UIC) means fluid present in a formation under natural conditions, as opposed to introduced fluids, such as drilling mud.

“Functionally equivalent component” (RCRA) means a component that performs the same function or measurement and which meets or exceeds the performance specifications of another component.

“Generator” (RCRA) means any person, by site location, whose act or process produces hazardous waste.

“Geologic sequestration” means the long-term containment of a gaseous, liquid, or supercritical carbon dioxide stream in a subsurface geologic formation. This term does not apply to carbon dioxide capture or transport.

“Groundwater” (RCRA and UIC) means a water below the land surface in a zone of saturation.

“Hazardous waste” (RCRA and UIC) means a hazardous waste as defined in 35 Ill. Adm. Code 721.103.

“Hazardous waste management facility” or “HWM facility” (RCRA) means all contiguous land and structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units (for example, one or more landfills, surface impoundments, or combinations of them).

“HWM facility” (RCRA) means ~~Hazardous~~hazardous waste management facility.

“Improved sinkhole” (UIC) means a naturally occurring karst depression or other natural crevice that is found in volcanic terrain and other geologic settings that have been modified by man for the purpose of directing and emplacing fluids into

the subsurface.

“Injection well” (RCRA and UIC) means a well into which fluids are being injected.

“Injection zone” (UIC) means a geologic formation, group of formations, or part of a formation receiving fluids through a well.

“In operation” (RCRA) means a facility that is treating, storing, or disposing of hazardous waste.

“Interim authorization” (RCRA) means May 17, 1982, the date of approval by USEPA of the Illinois ~~Hazardous Waste Management~~ hazardous waste management program that has met the requirements of section 3006(g)(2) of RCRA (42 USC 6926(g)(2)) and applicable requirements of 40 CFR 271.

“Interstate agency” means an agency of two or more states established by or under an agreement or compact approved by the Congress, or any other agency of two or more states having substantial powers or duties pertaining to the control of pollution as determined and approved by the Administrator under the appropriate act and regulations.

“Major facility” means any RCRA or UIC facility or activity classified as such by the Regional Administrator or the Agency.

“Manifest” (RCRA and UIC) means the shipping document originated and signed by the generator that contains the information required by Subpart B of 35 Ill. Adm. Code 722.

“National Pollutant Discharge Elimination System” means the program for issuing, modifying, revoking and reissuing, terminating, monitoring, and enforcing permits and imposing and enforcing pretreatment requirements pursuant to Section 12(f) of the Environmental Protection Act and Subpart A of 35 Ill. Adm. Code 309 and 35 Ill. Adm. Code 310. The term includes an approved program.

“New HWM facility” (RCRA) means a hazardous waste management facility that began operation or for which construction commenced after November 19, 1980.

“New injection well” (UIC) means a well that began injection after March 3, 1984, the date of USEPA approval of the UIC program for the State of Illinois. BOARD NOTE: See 40 CFR 147.700 ~~(1998)~~ (2011) and 49 Fed. Reg. 3991 (Feb. 1, 1984).

“Off-site” (RCRA) means any site that is not on-site.

“On-site” (RCRA) means on the same or geographically contiguous property that may be divided by public or private rights-of-way, provided the entrance and exit between the properties is at a cross-roads intersection, and access is by crossing as opposed to going along, the rights-of-way. Non-contiguous properties owned by the same person, but connected by a right-of-way that the person controls and to which the public does not have access, is also considered on-site property.

“Owner or operator” means the owner or operator of any facility or activity subject to regulation under the RCRA or UIC program.

“Permit” means an authorization, license, or equivalent control document issued to implement this Part and 35 Ill. Adm. Code 703, 704, and 705. “Permit” includes RCRA permit by rule (35 Ill. Adm. Code 703.141), RCRA standardized permit (35 Ill. Adm. Code 703.238), UIC area permit (35 Ill. Adm. Code 704.162), and RCRA or UIC “Emergency Permit” (35 Ill. Adm. Code 703.221 and 704.163). “Permit” does not include RCRA interim status (35 Ill. Adm. Code 703.153 through 703.157), UIC authorization by rule (Subpart C of 35 Ill. Adm. Code 704), or any permit that has not yet been the subject of final Agency action, such as a draft permit or a proposed permit.

“Person” means any individual, partnership, co-partnership, firm, company, corporation, association, joint stock company, trust, estate, political subdivision, state agency, or any other legal entity, or their legal representative, agency, or assigns.

“Physical construction” (RCRA) means excavation, movement of earth, erection of forms or structures, or similar activity to prepare an HWM facility to accept hazardous waste.

“Plugging” (UIC) means the act or process of stopping the flow of water, oil, or gas into or out of a formation through a borehole or well penetrating that formation.

“Point of injection” means the last accessible sampling point prior to waste fluids being released into the subsurface environment through a Class V injection well. For example, the point of injection of a Class V septic system might be the distribution box—the last accessible sampling point before the waste fluids drain into the underlying soils. For a dry well, it is likely to be the well bore itself.

“POTW” means publicly owned treatment works.

“Project” (UIC) means a group of wells in a single operation.

“Publicly owned treatment works” or “POTW” is as defined in 35 Ill. Adm. Code

310.

“Radioactive waste” (UIC) means any waste that contains radioactive material in concentrations that exceed those listed in table II, column 2 in appendix B to 10 CFR 20, incorporated by reference in 35 Ill. Adm. Code 720.111.

“RCRA” (RCRA) means the Resource Conservation and Recovery Act of 1976 (42 USC 6901 et seq.). For the purposes of regulation pursuant to 35 Ill. Adm. Code 700 through 705, 720 through 728, 733, 738, and 739, “RCRA” refers only to RCRA Subtitle C. This does not include the RCRA Subtitle D (municipal solid waste landfill) regulations, found in 35 Ill. Adm. Code 810 through 815, and the RCRA Subtitle I (underground storage tank) regulations found in 35 Ill. Adm. Code 731 and 732.

“RCRA permit” (RCRA) means a permit required pursuant to Section 21(f) of the Act [415 ILCS 5/21(f)].

“RCRA standardized permit” (RCRA) means a RCRA permit issued pursuant to Subpart J of 35 Ill. Adm. Code 703 and Subpart G of 35 Ill. Adm. Code 705 that authorizes management of hazardous waste. The RCRA standardized permit may have two parts: a uniform portion issued for all RCRA standardized permits and a supplemental portion issued at the discretion of the Agency.

“Regional Administrator” (RCRA and UIC) means the Regional Administrator of the USEPA Region in which the facility is located or the Regional Administrator’s designee.

BOARD NOTE: Illinois is in USEPA Region 5.

“Remedial action plan” or “RAP” (RCRA) means a special form of RCRA permit that a facility owner or operator may obtain pursuant to Subpart H of 35 Ill. Adm. Code 703, instead of a RCRA permit issued pursuant to this Part and 35 Ill. Adm. Code 703, to authorize the treatment, storage, or disposal of hazardous remediation waste (as defined in 35 Ill. Adm. Code 720.110) at a remediation waste management site.

“Sanitary waste” (UIC) means liquid or solid wastes originating solely from humans and human activities, such as wastes collected from toilets, showers, wash basins, sinks used for cleaning domestic areas, sinks used for food preparation, clothes washing operations, and sinks or washing machines where food and beverage serving dishes, glasses, and utensils are cleaned. Sources of these wastes may include single or multiple residences, hotels and motels, restaurants, bunkhouses, schools, ranger stations, crew quarters, guard stations, campgrounds, picnic grounds, day-use recreation areas, other commercial facilities, and industrial facilities, provided the waste is not mixed with industrial waste.

“Schedule of compliance” (RCRA and UIC) means a schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with the appropriate act and regulations.

“SDWA” (UIC) means the Safe Drinking Water Act (42 USC 300f et seq.).

“Septic system” (UIC) means a well, as defined in this Section, that is used to emplace sanitary waste below the surface and which is typically comprised of a septic tank and subsurface fluid distribution system or disposal system.

“Site” (RCRA and UIC) means the land or water area where any facility or activity is physically located or conducted, including adjacent land used in connection with the facility or activity.

“SIC code” (RCRA and UIC) means “Standard Industrial Classification code.” This is the code assigned to a site by the United States Department of Transportation, Federal Highway Administration, based on the particular activities that occur on the site, as set forth in its publication, “Standard Industrial Classification Manual,” incorporated by reference in 35 Ill. Adm. Code 720.111.

“State” (RCRA and UIC) means the State of Illinois.

“State Director” (RCRA and UIC) means the Director of the Illinois Environmental Protection Agency.

“State/USEPA agreement” (RCRA and UIC) means an agreement between the Regional Administrator and the State that coordinates USEPA and State activities, responsibilities, and programs, including those under the RCRA and SDWA.

“Storage” (RCRA) means the holding of hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of, or stored elsewhere.

“Stratum” (plural “strata”) (UIC) means a single sedimentary bed or layer, regardless of thickness, that consists of generally the same kind of rock material.

“Subsurface fluid distribution system” (UIC) means an assemblage of perforated pipes, drain tiles, or other similar mechanisms intended to distribute fluids below the surface of the ground.

“Total dissolved solids” (UIC) means the total dissolved (filterable) solids as determined by use of the method specified in 40 CFR 136.3 (Identification of Test Procedures; the method for filterable residue), incorporated by reference in 35 Ill.

Adm. Code 720.111.

“Transfer facility” (RCRA) means any transportation related facility, including loading docks, parking areas, storage areas, and other similar areas where shipments of hazardous wastes are held during the normal course of transportation.

“Transferee” (UIC) means the owner or operator receiving ownership or operational control of the well.

“Transferor” (UIC) means the owner or operator transferring ownership or operational control of the well.

“Transporter” (RCRA) means a person engaged in the off-site transportation of “hazardous waste” by air, rail, highway, or water.

“Treatment” (RCRA) means any method, technique, process, including neutralization, designed to change the physical, chemical, or biological character or composition of any “hazardous waste” so as to neutralize such wastes, or so as to recover energy or material resources from the waste, or so as to render such wastes non-hazardous or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.

“UIC” (UIC) means the Underground Injection Control program.

“Underground injection” (UIC) means a well injection.

“Underground source of drinking water” or “USDW” (RCRA and UIC) means an aquifer or its portion that is not an exempted aquifer and of which either of the following is true:

It supplies any public water system; or

It contains a sufficient quantity of groundwater to supply a public water system; and

It currently supplies drinking water for human consumption; or

It contains less than 10,000 mg/ℓ total dissolved solids.

“USDW” (RCRA and UIC) means an underground source of drinking water.

“Wastewater treatment unit” (RCRA) means a device of which the following is true:

It is part of a wastewater treatment facility that is subject to regulation pursuant to Subpart A of 35 Ill. Adm. Code 309 or 35 Ill. Adm. Code 310; and

It receives and treats or stores an influent wastewater that is a hazardous waste as defined in 35 Ill. Adm. Code 721.103, or generates and accumulates a wastewater treatment sludge that is a hazardous waste as defined in 35 Ill. Adm. Code 721.103, or treats or stores a wastewater treatment sludge that is a hazardous waste as defined in 35 Ill. Adm. Code 721.103; and

It meets the definition of tank or tank system in 35 Ill. Adm. Code 720.110.

“Well” (UIC) means a bored, drilled, or driven shaft, or a dug hole, whose depth is greater than the largest surface dimension; a dug hole whose depth is greater than the largest surface dimension; or an improved sinkhole; or, a subsurface fluid distribution system.

“Well injection” (UIC) means the subsurface emplacement of fluids through a well.

BOARD NOTE: Derived from 40 CFR 124.2, 144.3 and 270.2-(2005) (2011), as amended at 70 Fed. Reg. 53420 (Sep. 8, 2005).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

## SUBPART B: PERMIT APPLICATIONS

### Section 702.123 Information Requirements

An applicant for a RCRA or UIC Class I, III, or V permit must provide the following information to the Agency, using the application form provided by the Agency (additional information required of applicants is set forth in Subpart D of 35 Ill. Adm. Code 703 (RCRA) and 35 Ill. Adm. Code 704.161 (UIC)). An applicant for a Class VI injection well permit must follow the criteria provided in 35 Ill. Adm. Code 730.182.

- a) The activities conducted by the applicant that require it to obtain a permit under RCRA or UIC.
- b) The name, mailing address, and location of the facility for which the application is submitted.
- c) Up to four SIC codes that best reflect the principal products or services provided by the facility.

- d) The operator's name, address, telephone number, ownership status, and status as Federal, State, private, public, or other entity.
- e) ~~The name, address, and phone number of the owner of the facility.~~ This subsection (e) corresponds with 40 CFR 144.31(e)(5) and 270.13(f), relating to facilities on Indian lands. The Board has replaced the corresponding federal text with this statement to maintain structural parity with the corresponding federal rules.
- f) A listing of all permits or construction approvals received or applied for under any of the following programs:
  - 1) The hazardous waste management program under RCRA, this Part, and 35 Ill. Adm. Code 703;
  - 2) The UIC program under SDWA, this Part, and 35 Ill. Adm. Code 704;
  - 3) The National Pollutant Discharge Elimination System (NPDES) program under the federal CWA (33 USC 1251 et seq.) and 35 Ill. Adm. Code 309;
  - 4) The Prevention of Significant Deterioration (PSD) program under the federal Clean Air Act (42 USC 7401 et seq.);
  - 5) The nonattainment program under the federal Clean Air Act;
  - 6) The National Emission Standards for Hazardous Pollutants (NESHAPs) preconstruction approval under the federal Clean Air Act;
  - 7) Any ocean dumping permits under the federal Marine Protection Research and Sanctuaries Act (33 UCS 1401 et seq.);
  - 8) Any dredge or fill permits under Section 404 of CWA (33 USC 1344); and
  - 9) Any other relevant environmental permits, including any State-issued permits.
- g) A topographic map (or other map if a topographic map is unavailable) extending 1609 meters (one mile) beyond the property boundaries of the source, depicting the facility and each of its intake and discharge structures; each of its hazardous waste treatment, storage, or disposal facilities; each well where fluids from the facility are injected underground; and those wells, springs, other surface water bodies, and drinking water wells listed in public records or which are otherwise known to the applicant within 402 meters (one-quarter mile) of the facility property boundary.

- h) A brief description of the nature of the business.

BOARD NOTE: Derived from 40 CFR ~~144.31(e)~~ 144.31(e)(1) through (e)(8), 270.10(d), and ~~270.13 (2005)~~ 270.13(a) through (f) and (k) through (m) (2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### SUBPART C: PERMIT CONDITIONS

#### Section 702.150 Monitoring and Records

- a) Samples and measurements taken for the purpose of monitoring must be representative of the monitored activity.
- b) The permittee must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation; copies of all reports required by its permit; and records of all data used to complete the application for its permit for a period of at least three years from the date of the sample, measurement, report, or application. This period may be extended by request of the Agency at any time.
- c) Records of monitoring information must include all of the following information:
- 1) The date, exact place, and time of sampling or measurements;
  - 2) The individuals who performed the sampling or measurements;
  - 3) The dates analyses were performed;
  - 4) The individuals who performed the analyses;
  - 5) The analytical techniques or methods used; and
  - 6) The results of such analyses.
- d) The owner or operator of a Class VI injection well must retain records as specified in Subpart H of 35 Ill. Adm. Code 730, including Sections 730.184(g), 730.191(f), 730.192(d), 730.193(f), and 730.193(h).

BOARD NOTE: Derived from 40 CFR 144.51(j) and 270.30(j) ~~(2005)~~ (2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

## Section 702.161 Duration of Permits

- a) Permit duration.
- 1) RCRA. A RCRA permit must be effective for a fixed term to be determined by the Agency on a case-by-case basis, but not to exceed ~~ten~~ 10 years.
  - 2) UIC. A UIC permit for a Class I or Class V injection well must be effective for a fixed term to be determined by the Agency on a case-by-case basis, but not to exceed ~~ten~~ 10 years. A UIC permit for a Class III injection well must be issued for a period not to exceed five years; provided, however, that the Agency must, without requiring a new application, renew such permits for a period not to exceed five years per renewal, up to the operating life of the facility, unless the Agency determines that the permit should be modified, reissued, or a minor modification made, as provided in Sections 702.183 through 702.187, in which case the permittee must file a new permit application. A UIC permit for a Class VI injection well must be issued for a period not to exceed five years; provided, however, that the Agency must, without requiring a new application, renew a Class VI injection well permit for a period not to exceed five years per renewal, up to the operating life of the facility and the post-injection site care period, unless the Agency determines that the permit should be modified, reissued, or a minor modification made, as provided in Sections 702.183 through 702.187, in which case the permittee must file a new permit application.
- b) Except as provided in Section 702.125, the term of a permit must not be extended by modification beyond the maximum duration specified in this Section.
- c) The Agency may issue any permit for a duration that is less than the full allowable term pursuant to this Section.
- d) The Agency must review each RCRA permit for a land disposal facility no later than five years after the date of permit issuance or reissuance, and the Agency must modify the permit as necessary, as provided in Section 702.183 and 702.184.

BOARD NOTE: Derived from 40 CFR 144.36 and 270.50-(2005) (2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

TITLE 35: ENVIRONMENTAL PROTECTION  
 SUBTITLE G: WASTE DISPOSAL  
 CHAPTER I: POLLUTION CONTROL BOARD  
 SUBCHAPTER b: PERMITS

PART 704  
 UIC PERMIT PROGRAM

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704.106	Classification of Injection Wells
704.107	Definitions
704.108	Electronic Reporting

SUBPART B: PROHIBITIONS

Section	Content
704.121	Prohibition Against Unauthorized Injection
704.122	Prohibition Against Movement of Fluid into USDW
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704.124	Prohibition Against Class IV Injection Wells
<u>704.125</u>	<u>Prohibition Against Non-Experimental Class V Injection Wells for Geologic Sequestration</u>
<u>704.128</u>	<u>Requirements for Class VI Injection Wells</u>
<u>704.129</u>	<u>Transitioning from a Class II Injection Well to a Class VI Injection Well</u>

SUBPART C: AUTHORIZATION OF UNDERGROUND INJECTION BY  
 RULE

Section	Content
704.141	Existing Class I and III Injection Wells
704.142	Prohibitions Against Injection into Wells Authorized by Rule
704.143	Expiration of Authorization
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704.147	Requiring a Permit
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704.149	Requiring other Information
704.150	Requirements for Class I and III Injection Wells Authorized by Rule
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SUBPART D: APPLICATION FOR PERMIT

Section	
704.161	Application for Permit; Authorization by Permit
704.162	Area Permits
704.163	Emergency Permits
704.164	Signatories to Permit Applications

SUBPART E: PERMIT CONDITIONS

Section	
704.181	Additional Conditions
704.182	Establishing UIC Permit Conditions
704.183	Construction Requirements
704.184	Corrective Action
704.185	Operation Requirements
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**AUTHORITY:** Implementing Sections 7.2, 13, and 22.4 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/7.2, 13, 22.4, and 27].

**SOURCE:** Adopted in R81-32 at 6 Ill. Reg. 12479, effective March 3, 1984; amended in R82-19, at 7 Ill. Reg. 14402, effective March 3, 1984; amended in R83-39, at 55 PCB 319, at 7 Ill. Reg. 17338, effective December 19, 1983; amended in R85-23 at 10 Ill. Reg. 13290, effective July 29, 1986; amended in R87-29 at 12 Ill. Reg. 6687, effective March 28, 1988; amended in R88-2 at 12 Ill. Reg. 13700, effective August 16, 1988; amended in R88-17 at 13 Ill. Reg. 478, effective December 30, 1988; amended in R89-2 at 14 Ill. Reg. 3116, effective February 20, 1990; amended in R94-17 at 18 Ill. Reg. 17641, effective November 23, 1994; amended in R94-5 at 18 Ill. Reg. 18351, effective December 20, 1994; amended in R00-11/R01-1 at 24 Ill. Reg. 18612, effective December 7, 2000; amended in R01-30 at 25 Ill. Reg. 11139, effective August 14, 2001; amended in R06-16/R06-17/R06-18 at 31 Ill. Reg. 605, effective December 20, 2006; amended in R11-14 at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_.

## SUBPART A: GENERAL PROVISIONS

**Section 704.102 Scope of the Permit or Rule Requirement**

Although ~~five~~six classes of wells are set forth in Section 704.106, the UIC (Underground Injection Control) permit program described in 35 Ill. Adm. Code 702, 704, 705, and 730 regulates underground injection for only ~~four~~five classes of wells (see definition of “well injection,” 35 Ill. Adm. Code 702.110). Class II wells (Section 704.106(b)) are not subject to the requirements found in 35 Ill. Adm. Code 702, 704, 705, and 730. The UIC permit program for Class II wells is regulated by the Illinois Department of Natural Resources, Office of Mines and Minerals, Oil and Gas Division, pursuant to the Illinois Oil and Gas Act [225 ILCS 725] (see 62 Ill. Adm. Code 240). The owner or operator of a Class I, Class III, Class IV, or Class V injection well must be authorized either by permit or by rule. In carrying out the mandate of the SDWA, this Part provides that no injection may be authorized by permit or by rule if it results in movement of fluid containing any contaminant into underground sources of drinking water (USDWs) (Section 704.122), if the presence of that contaminant may adversely affect the health of persons (Section 704.122). Section 704.124 prohibits the construction, operation, or maintenance of a Class IV injection well. A Class V injection well is regulated under Subpart I of this Part. If remedial action appears necessary for a Class V injection well, an individual permit may be required (Subpart C of this Part) or the Agency must require remedial action or closure by order (see Section 704.122(c)).

BOARD NOTE: Derived from 40 CFR 144.1(g) preamble ~~(2005)~~ (2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 704.103 Identification of Aquifers**

During UIC program development, the Agency may identify aquifers and portions of aquifers that are actual or potential sources of drinking water. This identification will provide an aid to the Agency in carrying out its duty to protect all USDWs. An aquifer is a USDW if it fits the definition in 35 Ill. Adm. Code 702.110, even if it has not been identified by the Agency.

BOARD NOTE: See 35 Ill. Adm. Code 702.106. Derived from 40 CFR 144.1(g) ~~(2005)~~ (2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 704.104 Exempted Aquifers**

The Board may designate “exempted aquifers” using criteria in 35 Ill. Adm. Code 730. Such an aquifer is one that would otherwise qualify as a USDW to be protected, but which has no real potential to be used as a source of drinking water. Therefore they are not USDWs. No aquifer is an “exempted aquifer” until it has been affirmatively designated under the procedures set forth in Section 704.123. An aquifer that does not fit the definition of a USDW is not an exempted

aquifer. It is simply not subject to the special protection afforded a USDW. During initial Class VI injection well program development, the areal extent of an existing Class II enhanced oil recovery or enhanced gas recovery aquifer exemption for Class VI injection wells must not be expanded. All Class II to Class VI injection well aquifer exemption expansions previously issued must be incorporated into the Class VI injection well program descriptions required by USEPA pursuant to 40 CFR 145.23(f)(9).

BOARD NOTE: See 35 Ill. Adm. Code 702.105. Derived from 40 CFR 144.1(g)-(2005) (2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 704.106 Classification of Injection Wells**

Injection wells are classified as follows:

- a) Class I injection wells. Any of the following is a Class I injection well:
  - 1) A well used by a generator of hazardous waste or the owner or operator of a hazardous waste management facility to inject hazardous waste beneath the lowermost formation containing a USDW within 402 meters (one-quarter mile) of the well bore.
  - 2) Any other industrial and municipal disposal well that injects fluids beneath the lowermost formation containing a USDW within 402 meters (one-quarter mile) of the well bore.
  - 3) A radioactive waste disposal well that injects fluids below the lowermost formation containing a USDW within 402 meters (one-quarter mile) of the well bore.
- b) Class II injection wells. Any well that injects any of the following fluids is a Class II injection well:
  - 1) Fluids that are brought to the surface in connection with natural gas storage operations, or conventional oil or natural gas production, and which may be commingled with waste waters from gas plants that are an integral part of production operations, unless those waters are classified as a hazardous waste at the time of injection;
  - 2) Fluids injected for enhanced recovery of oil or natural gas; and
  - 3) Fluids injected for storage of hydrocarbons that are liquid at standard temperature and pressure.
- c) Class III injection wells. Any well that injects fluids for the extraction of

minerals, including the following:

- 1) The mining of sulfur by the Frasch process;
  - 2) The in-situ production of uranium or other metals. This category includes only in-situ production from ore bodies that have not been conventionally mined. Solution mining of conventional mines, such as stopes leaching, is included as a Class V injection well; and
  - 3) Solution mining of salts or potash.
- d) Class IV injection wells. Any of the following is a Class IV injection well:
- 1) A well used by a generator of hazardous waste or of radioactive waste, by the owner or operator of a hazardous waste management facility or by the owner or operator of a radioactive waste disposal site to dispose of hazardous wastes or radioactive wastes into a formation that contains a USDW within 402 meters (one-quarter mile) of the well.
  - 2) A well used by a generator of hazardous waste or of radioactive waste, by the owner or operator of a hazardous waste management facility, or by the owner or operator of a radioactive waste disposal site to dispose of hazardous waste or radioactive waste above a formation that contains a USDW within 402 meters (one-quarter mile) of the well.
  - 3) A well used by a generator of hazardous waste or the owner or operator of a hazardous waste management facility to dispose of hazardous waste; that cannot be classified under any of subsections (a)(1), (d)(1), or (d)(2) of this Section (e.g., a well that is used to dispose of hazardous waste into or above a formation that contains an aquifer that has been exempted pursuant to 35 Ill. Adm. Code 730.104).
- e) Class V injection wells. Any injection well that is not classified as a Class I, II, III, ~~or IV~~, or VI injection well. Section 704.281 describes specific types of Class V injection wells.
- f) Class VI injection wells.
- 1) An injection well that is not experimental in nature which is used for geologic sequestration of carbon dioxide beneath the lowermost formation containing a USDW;
  - 2) An injection well that is used for geologic sequestration of carbon dioxide which has been granted a permit that includes alternative injection well depth requirements pursuant to Section 730.195; or

- 3) An injection well that is used for geologic sequestration of carbon dioxide which has received an expansion to the areal extent of an existing Class II enhanced oil recovery or enhanced gas recovery aquifer exemption pursuant to Section 704.123(d) and 35 Ill. Adm. Code 730.104.

BOARD NOTE: Derived from 40 CFR 144.6-(2005)(2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

#### SUBPART B: PROHIBITIONS

##### **Section 704.122 Prohibition Against Movement of Fluid into USDW**

- a) No owner or operator may construct, operate, maintain, convert, plug, abandon, or conduct any other injection activity in a manner that allows the movement of fluid containing any contaminant into a USDW, if the presence of that contaminant could cause a violation of any national primary drinking water regulation under 35 Ill. Adm. Code 611 (derived from 40 CFR 141) or could otherwise adversely affect the health of persons. The applicant for a permit has the burden of showing that the requirement of this subsection (a) is met.
- b) For a Class I, ~~or III,~~ or VI injection well, if any water quality monitoring of a USDW indicates the movement of any contaminant into the USDW, except as authorized under 35 Ill. Adm. Code 730, the Agency must prescribe such additional requirements for construction, corrective action, operation, monitoring or reporting (including closure of the injection well) as are necessary to prevent such movement. In the case of a well authorized by permit, these additional requirements must be imposed by modifying the permit in accordance with 35 Ill. Adm. Code 702.183 through 702.185, or appropriate enforcement action may be taken if the permit has been violated, and the permit may be subject to revocation under 35 Ill. Adm. Code 702.186 if cause exists. In the case of wells authorized by rule, see Section 704.141 through 704.146.
- c) For a Class V injection well, if at any time the Agency learns that a Class V injection well could cause a violation of any national primary drinking water regulation under 35 Ill. Adm. Code 611 (derived from 40 CFR 141), it must undertake one of the following actions:
- 1) It must require the injector to obtain an individual permit;
  - 2) It must issue a permit that requires the injector to take such actions (including, where necessary, closure of the injection well) as may be necessary to prevent the violation; or

- 3) It may initiate enforcement action.
- d) Whenever the Agency learns that a Class V injection well may be otherwise adversely affecting the health of persons, it may prescribe such actions as may be necessary to prevent the adverse effect, including any action authorized under subsection (c) of this Section.
- e) Notwithstanding any other provision of this Section, the Agency may take emergency action upon receipt of information that a contaminant that is present in or is likely to enter a public water system or a USDW may present an imminent and substantial endangerment to the health of persons. The Agency may declare an emergency and affix a seal pursuant to Section 34 of the Act [415 ILCS 5/34].

BOARD NOTE: Derived from 40 CFR 144.12-(2005)-(2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 704.123 Identification of USDWs and Exempted Aquifers**

- a) The Agency may identify (by narrative description, illustrations, maps, or other means) and must protect, ~~except where exempted under subsection (b) of this Section,~~ as a USDW, any aquifer or part of an aquifer that meets the definition of a USDW set forth in 35 Ill. Adm. Code 702.110, except as one of the exceptions of subsections (a)(1) and (a)(2) of this Section applies. Other than Agency-approved aquifer exemption expansions that meet the criteria set forth in 35 Ill. Adm. Code 730.104, a new aquifer exemption must not be issued for a Class VI injection well. Even if an aquifer has not been specifically identified by the Agency, it is a USDW if it meets the definition in 35 Ill. Adm. Code 702.110. Identification of USDWs must be made according to criteria adopted by the Agency pursuant to 35 Ill. Adm. Code 702.106.
  - 1) The Agency may not identify an aquifer or part of an aquifer as a USDW to the extent that there is an applicable aquifer exemption under subsection (b) of this Section.
  - 2) The Agency may not identify an aquifer or part of an aquifer as a USDW to the extent that the aquifer or part of an aquifer is an expansion to the areal extent of an existing Class II enhanced oil recovery or is subject to an enhanced gas recovery aquifer exemption for the exclusive purpose of Class VI injection for geologic sequestration under subsection (d) of this Section.
- b) Identification of an exempted aquifer.
  - 1) The Agency may identify (by narrative description, illustrations, maps, or

other means) and describe in geographic or geometric terms (such as vertical and lateral limits and gradient) that are clear and definite, any aquifer or part of an aquifer that the Agency desires the Board to designate as an exempted aquifer using the criteria in 35 Ill. Adm. Code 730.104, as described in this subsection (b).

- 2) No designation of an exempted aquifer may be final until approved by USEPA as part of the State program.
  - 3) Subsequent to program approval, the Board may identify additional exempted aquifers.
  - 4) Identification of exempted aquifers must be by rulemaking pursuant to 35 Ill. Adm. Code 102 and 702.105 and Sections 27 and 28 of the Act [415 ILCS 5/27 and 28], considering the criteria set forth in 35 Ill. Adm. Code 730.104.
- c) For a Class III injection well, an applicant for a permit that necessitates an aquifer exemption under 35 Ill. Adm. Code 730.104(b)(1) must furnish the data necessary to demonstrate that the aquifer is expected to be mineral or hydrocarbon producing. Information contained in the mining plan for the proposed project, such as a map and general description of the mining zone, general information on the mineralogy and geochemistry of the mining zone, analysis of the amenability of the mining zone to the proposed mining method, and a timetable of planned development of the mining zone must be considered by the Board in addition to the information required by Section 704.161(c). Approval of the exempted aquifer must be by rulemaking pursuant to 35 Ill. Adm. Code 102 and 702.105 and Sections 27 and 28 of the Act [415 ILCS 5/27 and 28]. Rules will not become final until approved by USEPA as a program revision.
- d) Expansion to the Areal Extent of Existing Class II Aquifer Exemptions for Class VI Wells. The owner or operator of a Class II enhanced oil recovery or enhanced gas recovery well may request that the Agency approve an expansion to the areal extent of an aquifer exemption already in place for a Class II enhanced oil recovery or enhanced gas recovery well for the exclusive purpose of Class VI injection for geologic sequestration. A request for areal expansion must be treated as a revision to the applicable federal UIC program under 40 CFR 147 or as a substantial program revision to an approved state UIC program under 40 CFR 145.32 and will not be final until approved by USEPA.
- 1) The request for an expansion of the areal extent of an existing aquifer exemption for the exclusive purpose of Class VI injection for geologic sequestration must define (by narrative description, illustrations, maps, or other means) and describe in geographic or geometric terms (such as vertical and lateral limits and gradient) that are clear and definite, all

aquifers or parts of aquifers that are requested to be designated as exempted using the criteria in 35 Ill. Adm. Code 730.104.

- 2) In making a determination to expand the areal extent of an aquifer exemption of a Class II enhanced oil recovery or enhanced gas recovery well for the purpose of Class VI injection, the Agency must determine that the request meets the criteria for exemptions in 35 Ill. Adm. Code 730.104. In evaluating a request, the Agency must consider:
- A) Any current and potential future use of the USDWs to be exempted as drinking water resources;
  - B) The predicted extent of the injected carbon dioxide plume, and any mobilized fluids that may result in degradation of water quality, over the lifetime of the geologic sequestration project, as informed by computational modeling performed pursuant to 35 Ill. Adm. Code 730.184(c)(1), in order to ensure that the proposed injection operation will not at any time endanger USDWs including non-exempted portions of the injection formation;
  - C) Whether the areal extent of the expanded aquifer exemption is of sufficient size to account for any possible revisions to the computational model during reevaluation of the area of review, pursuant to 35 Ill. Adm. Code 730.184(e); and
  - D) Any information submitted to support a request by the owner or operator for a permit that includes alternative injection well depth requirements pursuant to 35 Ill. Adm. Code 730.195, if appropriate.

BOARD NOTE: Derived from 40 CFR 144.7-(2005) (2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 704.125 Prohibition Against Non-Experimental Class V Injection Wells for Geologic Sequestration**

The construction, operation, or maintenance of any non-experimental Class V geologic sequestration well is prohibited.

BOARD NOTE: Derived from 40 CFR 144.15 (2011).

(Source: Added at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 704.128 Requirements for Class VI Injection Wells**

The owner or operator of a Class VI injection well must obtain a permit. A Class VI well cannot be authorized by rule to inject carbon dioxide.

BOARD NOTE: Derived from 40 CFR 144.18 (2011).

(Source: Added at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 704.129 Transitioning from a Class II Injection Well to a Class VI Injection Well**

- a) The owner or operator of a Class II injection well that is injecting carbon dioxide into an oil and gas reservoir for the primary purpose of long-term storage must apply for and obtain a Class VI injection well geologic sequestration permit when there is an increased risk to a USDW compared to usual Class II injection well operations. In determining if there is an increased risk to a USDW, the owner or operator must consider the factors specified for Agency consideration in subsection (b) of this Section.
- b) The Agency must determine when there is an increased risk to a USDW from injecting carbon dioxide into an oil and gas reservoir for the primary purpose of long-term storage compared to usual Class II injection well operations and that a Class VI injection well permit is required. In order to make this determination, the Agency must consider the following factors:
- 1) Any increase in reservoir pressure within the injection zones;
  - 2) Any increase in carbon dioxide injection rates;
  - 3) Any decrease in reservoir production rates;
  - 4) The distance between the injection zones and USDWs;
  - 5) The suitability of the Class II injection well area of review delineation;
  - 6) The quality of abandoned well plugs within the area of review;
  - 7) The owner's or operator's plan for recovery of carbon dioxide after the cessation of injection;
  - 8) The source and properties of injected carbon dioxide; and
  - 9) Any additional site-specific factors that the Agency determines are necessary to determine whether the injection poses greater risk than usual Class II operations.

BOARD NOTE: Derived from 40 CFR 144.19 (2011).

(Source: Added at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

SUBPART C: AUTHORIZATION OF UNDERGROUND INJECTION BY  
RULE

**Section 704.142 Prohibitions Against Injection into Wells Authorized by Rule**

An owner or operator of a well authorized by rule pursuant to this Subpart C is prohibited from injecting into the well on the occurrence of any of the following:

- a) Upon the effective date of an applicable permit denial;
- b) Upon a failure to submit a permit application in a timely manner pursuant to Section 704.147 or 704.161;
- c) Upon a failure to submit inventory information in a timely manner pursuant to Section 704.148;
- d) Upon a failure to comply with a request for information in a timely manner pursuant to Section 704.149;
- e) Upon a failure to provide alternative financial assurance pursuant to Section 704.150(d)(6);
- f) 48 hours after receipt of a determination by the Agency pursuant to Section 704.150(f)(3) that the well lacks mechanical integrity, unless the Agency orders immediate cessation pursuant to Section 34 of the Act or as ordered by a court pursuant to Section 43 of the Act [415 ILCS 5/43];
- g) Upon receipt of notification from the Agency that the transferee has not demonstrated financial assurance pursuant to Section 704.150(d);
- h) For Class I and Class III injection wells: after March 3, 1989, unless a timely and complete permit application for a permit was pending the Agency's decision; or
- i) This subsection (i) corresponds with 40 CFR 144.21(c)(9), a provision related to Class II injection wells, which are regulated by the Illinois Department of Natural Resources, Office of Mines and Minerals, and not by the Board. This statement maintains structural consistency with USEPA rules.

BOARD NOTE: Derived from 40 CFR 144.21(c)-(2005) (2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 704.150 Requirements for Class I and III Injection Wells Authorized by Rule**

The following requirements apply to the owner or operator of a Class I or Class III well authorized by rule under this Subpart C, as provided by Section 704.144.

- a) The owner or operator must comply with all applicable requirements of this Subpart C and with Sections 704.121, 704.122, 704.124, 704.201, 704.202, and 704.203. Any noncompliance with these requirements constitutes a violation of the Act and SDWA and is grounds for enforcement action, except that the owner or operator need not comply with these requirements to the extent and for the duration such noncompliance is authorized by an emergency permit under Section 704.163.
- b) Twenty-four hour reporting. The owner or operator must report any noncompliance that may endanger health or the environment, including either of the events described in subsection (b)(1) or (b)(2) of this Section, subject to the conditions of subsection (b)(3) of this Section:
  - 1) Any monitoring or other information that indicates that any contaminant may cause an endangerment to a USDW; or
  - 2) Any noncompliance or malfunction of the injection system that may cause fluid migration into or between ~~USDW's~~ USDWs.
  - 3) Any information must be provided orally within 24 hours from the time the owner or operator becomes aware of the circumstances. A written submission must also be provided within five days of the time the owner or operator becomes aware of the circumstances. The written submission must contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
- c) Plugging and abandonment plan.
  - 1) The owner or operator must prepare, maintain, and comply with a plan for plugging and abandonment of the wells or project that meets the requirements of 35 Ill. Adm. Code 730.110. For purposes of this subsection (c), temporary intermittent cessation of injection operations is not abandonment.
  - 2) Submission of plan.

- A) The owner or operator must submit the plan on any forms prescribed by the Agency.
- B) The owner or operator must submit any proposed significant revision to the method of plugging reflected in the plan no later than the notice of plugging required by subsection (i) of this Section (i.e., 45 days prior to plugging, unless shorter notice is approved).
- C) The plan must include the following information:
  - i) The nature and quantity and material to be used in plugging;
  - ii) The location and extent (by depth) of the plugs;
  - iii) Any proposed test or measurement to be made;
  - iv) The amount, size, and location (by depth) of casing to be left in the well;
  - v) The method and location where casing is to be parted; and
  - vi) The estimated cost of plugging the well.
- D) After a cessation of operations of two years, the owner or operator must plug and abandon the well in accordance with the plan, unless the owner or operator performs both of the following actions:
  - i) It provides written notice to the Agency; and
  - ii) It describes actions or procedures, satisfactory to the Agency that the owner or operator will take to ensure that the well will not endanger ~~USDW's~~ a USDW during the period of temporary abandonment. These actions and procedures must include compliance with the technical requirements applicable to active injection wells, unless the operator obtains regulatory relief in the form of a variance or adjusted standard from the technical requirements pursuant to 35 Ill. Adm. Code 104 and Title IX of the Act [415 ILCS 5/Title IX].
- E) The owner or operator of any well that has been temporarily abandoned (ceased operations for more than two years and which

has met the requirements of subsections (c)(2)(D)(i) and (c)(2)(D)(ii) of this Section must notify the Agency in writing prior to resuming operation of the well.

- d) Financial responsibility.
- 1) The owner or operator or transferor of a Class I or Class III injection well is required to demonstrate and maintain financial responsibility and resources to close, plug, and abandon the underground injection operation in a manner acceptable to the Agency until one of the following has occurred:
    - A) The well has been plugged and abandoned in accordance with an approved plugging and abandonment plan pursuant to subsection (c) of this Section and 35 Ill. Adm. Code 730.110 and submission of a plugging and abandonment report has been made pursuant to subsection (k) of this Section;
    - B) The well has been converted in compliance with subsection (j) of this Section; or
    - C) The transferor has received notice from the Agency that the transferee has demonstrated financial responsibility for the well. The owner or operator must show evidence of such financial responsibility to the Agency by the submission of a surety bond or other adequate assurance, such as a financial statement.
  - 2) The owner or operator was to have submitted such evidence no later than March 3, 1985. Where the ownership or operational control of the well was transferred later than March 3, 1985, the transferee must submit such evidence no later than the date specified in the notice required pursuant to subsection (1)(2) of this Section.
  - 3) The Agency may require the owner or operator to submit a revised demonstration of financial responsibility if the Agency has reason to believe that the original demonstration is no longer adequate to cover the cost of closing, plugging, and abandoning the well.
  - 4) The owner or operator of a well injecting hazardous waste must comply with the financial responsibility requirements of Subpart G of this Part.
  - 5) An owner or operator must notify the Agency by certified mail of the commencement of any voluntary or involuntary proceeding under Title 11 (Bankruptcy) of the United States Code that names the owner or operator as debtor, within 10 business days after the commencement of the

proceeding. Any party acting as guarantor for the owner or operator for the purpose of financial responsibility must so notify the Agency if the guarantor is named as debtor in any such proceeding.

- 6) In the event of commencement of a proceeding specified in subsection (d)(5) of this Section, an owner or operator that has furnished a financial statement for the purpose of demonstrating financial responsibility pursuant to this Section will be deemed to be in violation of this subsection (d) until an alternative financial assurance demonstration acceptable to the Agency is provided either by the owner or operator or by its trustee in bankruptcy, receiver, or other authorized party. All parties must be prohibited from injecting into the well until such alternative financial assurance is provided.
- e) This subsection (e) corresponds with 40 CFR 144.28(e), which pertains exclusively to enhanced recovery and hydrocarbon storage wells (Class II wells). Those wells are regulated by the Illinois Department of Natural Resources, Office of Mines and Minerals, rather than by the Board and the Agency. This statement maintains structural consistency with USEPA rules.
  - f) Operating requirements.
    - 1) No person must cause or allow injection between the outermost casing protecting USDWs and the well bore.
    - 2) Maintenance of mechanical integrity.
      - A) The owner or operator of a Class I or Class III injection well authorized by rule under this Subpart C must establish and maintain mechanical integrity, as defined in 35 Ill. Adm. Code 730.106, until either of the following has occurred:
        - i) The well is properly plugged and abandoned in accordance with an approved plugging and abandonment plan pursuant to subsection (c) of this Section and 35 Ill. Adm. Code 730.110 and a plugging and abandonment report is submitted pursuant to subsection (k); or
        - ii) The well is converted in compliance with subsection (j) of this Section.
      - B) The Agency may require by permit condition that the owner or operator comply with a schedule describing when mechanical integrity demonstrations must be made.

- 3) Cessation upon Lack of Mechanical Integrity.
  - A) When the Agency determines that a Class I (non-hazardous) or Class III injection well lacks mechanical integrity pursuant to 35 Ill. Adm. Code 730.108, the Agency must give written notice of its determination to the owner or operator.
  - B) Unless the Agency requires immediate cessation, the owner or operator must cease injection into the well within 48 hours of receipt of the Agency's determination.
  - C) The Agency may allow plugging of the well in accordance with 35 Ill. Adm. Code 730.110, or require the owner or operator to perform such additional construction, operation, monitoring, reporting, and corrective action as is necessary to prevent the movement of fluid into or between USDWs caused by the lack of mechanical integrity.
  - D) The owner or operator may resume injection upon receipt of written notification from the Agency that the owner or operator has demonstrated mechanical integrity pursuant to 35 Ill. Adm. Code 730.108.
- 4) The Agency may allow the owner or operator of a well that lacks mechanical integrity pursuant to 35 Ill. Adm. Code 730.108(a)(1) to continue or resume injection if the owner or operator has made a satisfactory demonstration that there is no movement of fluid into or between USDWs.
- 5) For a Class I injection well, unless an alternative to a packer has been approved under 35 Ill. Adm. Code 730.112(c), the owner or operator must fill the annulus between the tubing and the long string of casings with a fluid approved by the Agency and maintain a pressure, also approved by the Agency, on the annulus. The owner or operator of a Class I well completed with tubing and packer must fill the annulus between tubing and casing with a non-corrosive fluid and maintain a positive pressure on the annulus. For any other Class I injection well, the owner or operator must insure that the alternative completion method will reliably provide a comparable level of protection of USDWs.
- 6) Injection pressure for Class I and III injection wells.
  - A) Except during stimulation, the owner or operator must not exceed an injection pressure at the wellhead that must be calculated so as to assure that the pressure during injection does not initiate new

fractures or propagate existing fractures in the injection zone; and

- B) The owner or operator must not inject at a pressure that will initiate fractures in the confining zone or cause the movement of injection or formation fluids into a USDW.
- g) **Monitoring Requirements.** The owner or operator must perform the monitoring as described in this subsection (g). Monitoring of the nature of the injected fluids must comply with applicable analytical methods cited in tables IA (List of Approved Biological Methods), IB (List of Approved Inorganic Test Procedures), IC (List of Approved Test Procedures for Non-Pesticide Organic Compounds), ID (List of Approved Test Procedures for Pesticides), IE (List of Approved Radiologic Test Procedures), and IF (List of Approved Methods for Pharmaceutical Pollutants) of 40 CFR 136.3 (Identification of Test Procedures) (1993) or in appendix III of 40 CFR 261 (Chemical Analysis Test Methods) (1992), each incorporated by reference in 35 Ill. Adm. Code 720.111(b), or with other methods that have been approved by the Agency.
- 1) The owner or operator of a Class I injection well must undertake the following actions:
    - A) It must analyze the nature of the injected fluids with sufficient frequency to yield data representative of their characteristics;
    - B) It must install and use continuous recording devices to monitor injection pressure, flow rate and volume, and the pressure on the annulus between the tubing and the long string of casing; and
    - C) It must install and use monitoring wells within the area of review, if required by the Agency, to monitor any migration of fluids into and pressure in the USDWs. The type, number, and location of the wells; the parameters to be measured; and the frequency of monitoring must be approved by the Agency.
  - 2) This subsection (g)(2) corresponds with 40 CFR 144.28(g)(2), a provision related to Class II injection wells, which are regulated by the Illinois Department of Natural Resources, Office of Mines and Minerals, and not by the Board. This statement maintains structural consistency with USEPA rules.
  - 3) The owner or operator of a Class III injection well must undertake the following actions:
    - A) It must provide to the Agency a qualitative analysis and ranges in concentrations of all constituents of injected fluids at least once

within the first year of authorization and thereafter whenever the injection fluid is modified to the extent that the initial data are incorrect or incomplete.

- i) The owner or operator may request confidentiality pursuant to Sections 7 and 7.1 of the Act and 35 Ill. Adm. Code 130.
  - ii) If the information is proprietary the owner or operator may in lieu of the ranges in concentrations choose to submit maximum concentrations that must not be exceeded.
  - iii) In such a case the owner or operator must retain records of the undisclosed concentration and provide them upon request to the Agency as part of any enforcement investigation;
- B) It must monitor injection pressure and either flow rate or volume semi-monthly, or meter and record daily injected and produced fluid volumes as appropriate;
  - C) It must monitor the fluid level in the injection zone semi-monthly, where appropriate; and
  - D) All Class III injection wells may be monitored on a field or project basis rather than an individual well basis by manifold monitoring. Manifold monitoring may be used in cases of facilities consisting of more than one injection well, operating with a common manifold. Separate monitoring systems for each well are not required provided the owner or operator demonstrates to the Agency that manifold monitoring is comparable to individual well monitoring.
- h) Reporting requirements. The owner or operator must submit reports to the Agency as follows:
- 1) For a Class I injection well, quarterly reports on all of the following:
    - A) The physical, chemical, and other relevant characteristics of the injection fluids;
    - B) Monthly average, maximum and minimum values for injection pressure, flow rate and volume, and annular pressure;
    - C) The results from groundwater monitoring wells prescribed in subsection (f)(1)(C) of this Section;

- D) The results of any test of the injection well conducted by the owner or operator during the reported quarter if required by the Agency; and
  - E) Any well work over performed during the reported quarter.
- 2) This subsection (h)(2) corresponds with 40 CFR 144.28(h)(2), a provision related to Class II injection wells, which are regulated by the Illinois Department of Natural Resources, Office of Mines and Minerals, and not by the Board. This statement maintains structural consistency with USEPA rules.
- 3) For a Class III injection well, all of the following:
- A) Quarterly reporting on all monitoring, as required in subsections (f)(2)(A), (f)(2)(B), and (f)(2)(C) of this Section;
  - B) Quarterly reporting of the results of any periodic tests required by the Agency that are performed during the reported quarter; and
  - C) Monitoring may be reported on a project or field basis rather than an individual well basis where manifold monitoring is used.
- i) Retention of records. The owner or operator must retain records of all monitoring information, including the following:
- 1) Calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, and copies of all reports required by this section, for a period of at least three years from the date of the sample, measurement or report. This period may be extended by request of the Agency at any time; and
  - 2) The nature and composition of all injected fluids until three years after the completion of any plugging and abandonment procedures specified under Section 704.188. The owner or operator must retain the records after the three year retention period unless it delivers the records to the Agency or obtains written approval from the Agency to discard the records.
- j) Notice of abandonment. The owner or operator must notify the Agency at least 45 days before conversion or abandonment of the well.
- k) Plugging and abandonment report. Within 60 days after plugging a well or at the time of the next quarterly report (whichever is less) the owner or operator must submit a report to the Agency. If the quarterly report is due less than 15 days

before completion of plugging, then the report must be submitted within 60 days. The report must be certified as accurate by the person who performed the plugging operation. Such report must consist of either:

- 1) A statement that the well was plugged in accordance with the plan previously submitted to the Agency; or
  - 2) Where actual plugging differed from the plan previously submitted, an updated version of the plan, on any form supplied by the Agency, specifying the different procedures used.
- l) Change of ownership.
- 1) The owner or operator must notify the Agency of a transfer of ownership or operational control of the well at least 30 days in advance of the proposed transfer.
  - 2) The notice must include a written agreement between the transferor and the transferee containing a specific date when the financial responsibility demonstration of subsection (d) of this Section will be met by the transferee.
  - 3) The transferee is authorized to inject unless it receives notification from the Agency that the transferee has not demonstrated financial responsibility pursuant to subsection (d) of this Section.
- m) Requirements for a Class I hazardous waste injection well. The owner or operator of any Class I injection well injecting hazardous waste must comply with Section 704.203. In addition the owner or operator must properly dispose of, or decontaminate by removing all hazardous waste residues, all injection well equipment.

BOARD NOTE: Derived from 40 CFR 144.28-(2005)-(2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

#### SUBPART D: APPLICATION FOR PERMIT

##### **Section 704.162 Area Permits**

- a) The Agency may issue a permit on an area basis, rather than for each injection well individually, provided that the permit is for injection wells for which each of the following are following is true:
  - 1) ~~They~~ The injection wells are described and identified by location in permit

applications, if they are existing injection wells, except that the Agency may accept a single description of multiple injection wells with substantially the same characteristics;

- 2) ~~They~~The injection wells are within the same well field, facility site, reservoir, project, or similar unit in the same state;
  - 3) ~~They~~The injection wells are operated by a single owner or operator;~~and~~
  - 4) ~~They~~The injection wells are used to inject other than hazardous waste;  
and
  - 5) The injection wells are other than Class VI injection wells.
- b) Area permits must specify both of the following:
- 1) The area within which underground injections are authorized; and
  - 2) The requirements for construction, monitoring, reporting, operation, and abandonment for all wells authorized by the permit.
- c) The area permit may authorize the permittee to construct and operate, convert, or plug and abandon new injection wells within the permit area provided the following conditions are fulfilled:
- 1) The permittee notifies the Agency at such time as the permit requires;
  - 2) The additional well satisfies the criteria in subsection (a) of this Section and meets the requirements specified in the permit under subsection (b) of this Section; and
  - 3) The cumulative effects of drilling and operation of additional injection wells are considered by the Agency during evaluation of the area permit application and are acceptable to the Agency.
- d) If the Agency determines that any well constructed pursuant to subsection (c) of this Section does not satisfy the requirements of subsections (c)(1) and (c)(2) of this Section, the Agency may modify the permit under 35 Ill. Adm. Code 702.183 through 702.185, seek revocation under 35 Ill. Adm. Code 702.186, or take enforcement action. If the Agency determines that cumulative effects are unacceptable, the permit may be modified under 35 Ill. Adm. Code 702.183 through 702.185.

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

## SUBPART E: PERMIT CONDITIONS

### Section 704.181 Additional Conditions

The following conditions apply to all UIC permits, in addition to those set forth in 35 Ill. Adm. Code 702.140 through 702.152, and these conditions must be incorporated into all permits either expressly or by reference. If incorporated by reference, a specific citation to these regulations must be given in the permit.

- a) In addition to 35 Ill. Adm. Code 702.141 (duty to comply): the permittee ~~need~~ needs not comply with the provisions of this permit to the extent and for the duration such noncompliance is authorized in a temporary emergency permit under Section 704.163.

BOARD NOTE: Subsection (a) of this Section is derived from 40 CFR 144.51(a) (~~2005~~) (2011).

- b) In addition to 35 Ill. Adm. Code 702.150(b) (monitoring and records): the permittee must retain records concerning the nature and composition of all injected fluids until three years after the completion of any plugging and abandonment procedures specified under Section 704.188 or under Subpart G of 35 Ill. Adm. Code 730, as appropriate. The owner or operator must continue to retain the records after the three-year retention period, unless the owner or operator delivers the records to the Agency or obtains written approval from the Agency to discard the records.

BOARD NOTE: Subsection (b) of this Section is derived from 40 CFR 144.51(j)(2)(ii) ~~(2005)~~ (2011).

- c) In addition to 35 Ill. Adm. Code 702.152(a) (notice of planned changes), the following limitation applies: except for all new wells authorized by an area permit under Section 704.162(c), a new injection well may not commence injection until construction is complete, and both of the following must occur:
- 1) The permittee must have submitted notice of completion of construction to the Agency; and
  - 2) Inspection review must have occurred, as follows:
    - A) The Agency has inspected or otherwise reviewed the new injection well and finds it is in compliance with the conditions of the permit; or

- B) The permittee has not received notice from the Agency of its intent to inspect or otherwise review the new injection well within 13 days of the date of the notice in subsection (c)(1) of this Section, in which case prior inspection or review is waived, and the permittee may commence injection. The Agency must include in its notice a reasonable time period in which it will inspect the well.

BOARD NOTE: Subsection (c) of this Section is derived from 40 CFR 144.51(m)~~(2005)~~(2011).

- d) Reporting noncompliance.
  - 1) Twenty-four hour reporting. The permittee must report any noncompliance that may endanger health or the environment, including the following:
    - A) Any monitoring or other information that indicates that any contaminant may cause an endangerment to a USDW; and
    - B) Any noncompliance with a permit condition or malfunction of the injection system that may cause fluid migration into or between USDWs.
  - 2) Any information must be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission must also be provided within five days after the time the permittee becomes aware of the circumstances. The written submission must contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates, times, and, if the noncompliance has not been corrected, the anticipated time is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance of the noncompliance.

BOARD NOTE: Subsection (d) of this Section is derived from 40 CFR 144.51(l)(6)~~(2005)~~(2011).

- e) The permittee must notify the Agency at such times as the permit requires before conversion or abandonment of the well or, in the case of area permits, before closure of the project.

BOARD NOTE: Subsection (e) of this Section is derived from 40 CFR 144.51(n)~~(2005)~~(2011).

- f) A Class I or Class III injection well permit must include, and a Class V permit may include, conditions that meet the applicable requirements of 35 Ill. Adm.

Code 730.110 to ~~insure~~ ensure that plugging and abandonment of the well will not allow the movement of fluids into or between USDWs. Where the plan meets the requirements of 35 Ill. Adm. Code 730.110, the Agency must incorporate the plan into the permit as a permit condition. Where the Agency's review of an application indicates that the permittee's plan is inadequate, the Agency may require the applicant to revise the plan, prescribe conditions meeting the requirements of this subsection (f), or deny the permit. A Class VI injection well permit must include conditions that meet the requirements set forth in 35 Ill. Adm. Code 730.192. Where the plan meets the requirements of 35 Ill. Adm. Code 730.192, the Agency must incorporate the plan into the permit as a permit condition. For purposes of this subsection (f), temporary or intermittent cessation of injection operations is not abandonment.

BOARD NOTE: Subsection (f) of this Section is derived from 40 CFR 144.51(o) ~~(2005)~~ (2011).

- g) Plugging and abandonment report. Within 60 days after plugging a well or at the time of the next quarterly report (whichever is less) the owner or operator must submit a report to the Agency. If the quarterly report is due less than 15 days before completion of plugging, then the report must be submitted within 60 days. The report must be certified as accurate by the person who performed the plugging operation. Such report must consist of either of the following:
- 1) A statement that the well was plugged in accordance with the plan previously submitted to the Agency;
  - 2) Where actual plugging differed from the plan previously submitted, an updated version of the plan on the form supplied by the Agency specifying the differences.

BOARD NOTE: Subsection (g) of this Section is derived from 40 CFR 144.51(p) ~~(2005)~~ (2011).

- h) Duty to establish and maintain mechanical integrity.
- 1) The owner or operator of a Class I ~~or Class III, or Class VI~~ injection well permitted under this Part and 35 Ill. Adm. Code 702 must establish mechanical integrity prior to commencing injection or on a schedule determined by the Agency, ~~and thereafter.~~ Thereafter the owner or operator of a Class I, Class II, or Class III injection well must maintain mechanical integrity, as defined in required by 35 Ill. Adm. Code 730.108, and the owner or operator of a Class VI injection well must maintain mechanical integrity as required by Section 730.189. The Agency may require by permit condition that the owner or operator comply with a schedule describing when mechanical integrity demonstrations must be

made.

- 2) When the Agency determines that a Class I or Class III injection well lacks mechanical integrity pursuant to 35 Ill. Adm. Code 730.108 or 730.189 (for a Class VI injection well), ~~it~~ the Agency must give written notice of its determination to the owner or operator. Unless the Agency requires immediate cessation, the owner or operator must cease injection into the well within 48 hours of receipt of the Agency determination. The Agency may allow plugging of the well pursuant to 35 Ill. Adm. Code 730.110 or require the permittee to perform such additional construction, operation, monitoring, reporting, and corrective action as is necessary to prevent the movement of fluid into or between USDWs caused by the lack of mechanical integrity. The owner or operator may resume injection upon written notification from the Agency that the owner or operator has demonstrated mechanical integrity pursuant to 35 Ill. Adm. Code 730.108.
  
- 3) The Agency may allow the owner or operator of a well that lacks mechanical integrity pursuant to 35 Ill. Adm. Code 730.108(a)(1) to continue or resume injection, if the owner or operator has made a satisfactory showing that there is no movement of fluid into or between USDWs.

BOARD NOTE: Subsection (h) of this Section is derived from 40 CFR 144.51(q) ~~(2005)~~ (2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 704.182 Establishing UIC Permit Conditions**

In addition to the conditions established under 35 Ill. Adm. Code 702.160 and Section 704.181, each UIC permit must include conditions meeting the requirements of the following Sections, when applicable. A permit for the owner or operator of a Class VI injection well must include conditions meeting the requirements of Subpart H of 35 Ill. Adm. Code 730.

BOARD NOTE: Derived from 40 CFR 144.52(a) preamble ~~(2005)~~ (2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 704.184 Corrective Action**

UIC permits must require by condition corrective action as set forth in Section 704.193 and 35 Ill. Adm. Code 730.107 and 730.184.

BOARD NOTE: Derived from 40 CFR 144.52(a)(2) ~~(2005)~~ (2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 704.189 Financial Responsibility**

- a) The permittee, including the transferor of a permit, is required to demonstrate and maintain financial responsibility and resources to close, plug, and abandon the underground injection operation in a manner prescribed by the Agency until one of the following occurs:
- 1) The well has been plugged and abandoned in accordance with an approved plugging and abandonment plan pursuant to Section 704.181(f) and 35 Ill. Adm. Code 730.110 and 730.192, and the permittee has submitted a plugging and abandonment report pursuant to Section 704.181(g);
  - 2) The well has been converted in compliance with Section 704.181(e); or
  - 3) The transferor of a permit has received notice from the Agency that the owner or operator receiving transfer of the permit (the new permittee) has demonstrated financial responsibility for the well.
- b) The permittee must show evidence of financial responsibility to the Agency by the submission of a surety bond or other adequate assurance, such as financial statements or other materials acceptable to the Agency. The Agency may on a periodic basis require the holder of a life-time permit to submit an estimate of the resources needed to plug and abandon the well revised to reflect inflation of such costs, and a revised demonstration of financial responsibility if necessary. For a Class VI injection well, the permittee must show evidence of financial responsibility to the Agency by the submission of an instrument that fulfills the requirements of 35 Ill. Adm. Code 730.185(a), such as a financial statement or other materials necessary for an Agency evaluation of the adequacy of the submitted financial assurance.
- c) The owner or operator of a ~~well injecting Class I hazardous waste injection well~~ must comply with the financial responsibility requirements ~~of set forth in Subpart G of this Part.~~ The owner or operator of a Class VI injection well must comply with the financial responsibility requirements set forth in 35 Ill. Adm. Code 730.185.

BOARD NOTE: Derived from 40 CFR 144.52(a)(7)-(2005) (2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 704.190 Mechanical Integrity**

A permit for any Class I or Class III injection well or injection project that lacks mechanical

integrity must include, ~~or for any Class V injection well may include,~~ a condition ~~prohibiting that prohibits~~ injection operations until the permittee shows to the satisfaction of the Agency ~~under 35 Ill. Adm. Code 730.108 has determined pursuant to 35 Ill. Adm. Code 730.108~~ that the well has mechanical integrity. A permit for any Class V injection well must include such a condition if the Agency determines that the condition is necessary to prevent a violation of the Act or Board regulations. A permit for any Class VI injection well must include a provision that prohibits injection operations until the Agency determines pursuant to 35 Ill. Adm. Code 730.189 that the well has mechanical integrity.

BOARD NOTE: Derived from 40 CFR 144.52(a)(8) ~~(2005)~~ (2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

## SUBPART H: ISSUED PERMITS

### Section 704.260 Transfer

- a) Transfer by modification. Except as provided in subsection (b) of this Section, a permit may be transferred by the permittee to a new owner or operator only if the permit has been modified or reissued (under Sections 704.261 through 704.264) to identify the new permittee and incorporate such other requirements as may be necessary under the appropriate Act. The new owner or operator to whom the permit is transferred must comply with all the terms and conditions specified in such permit.
- b) Automatic transfers. As an alternative to transfers under subsection (a) of this Section, any UIC permit for a well not injecting hazardous or injecting carbon dioxide for geologic sequestration waste may be automatically transferred to a new permittee if each of the following conditions are fulfilled:
  - 1) The current permittee notifies the Agency at least 30 days in advance of the proposed transfer date in subsection (b)(2) of this Section;
  - 2) The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage and liability between them and the notice demonstrates that the financial responsibility requirements of Section 704.189 will be met by the new permittee and that the new permittee agrees to comply with all the terms and conditions specified in the permit to be transferred under subsection (b) of this Section; and
  - 3) The Agency does not notify the existing permittee and the proposed new permittee of its intent to modify or reissue the permit. A modification under this subsection (b) may also be a minor modification under Section 704.264. If this notice is not received, the transfer is effective on the date

specified in the agreement mentioned in subsection (b)(2) of this Section.

BOARD NOTE: Derived from 40 CFR 144.38-~~(2005)~~ (2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 704.262 Causes for Modification**

- a) The following are causes for modification of a permit. For a Class I hazardous waste injection well or a Class III or Class IV injection well, any of the following may be cause for reissuance of the permit, as well as for permit modification. For all other injection wells, the following may be cause for reissuance of the permit, as well as for permit modification, when the permittee requests or agrees:
- 1) Alterations. There are material and substantial alterations or additions to the permitted facility or activity that occurred after permit issuance that justify the application of permit conditions that are different or absent in the existing permit.
  - 2) Information. Permits other than for a Class III injection well may be modified during their terms for this cause only if the information was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and would have justified the application of different permit conditions at the time of issuance. For an area permit, this cause must include any information indicating that cumulative effects on the environment are unacceptable.
  - 3) New statutory requirements or regulations. The standards or regulations on which the permit was based have been changed by statute, through promulgation of new or amended standards or regulations, or by judicial decision after the permit was issued. A permit other than for a Class I hazardous waste injection well or a Class III or Class VI injection well may be modified during their terms for this cause only as follows:
    - A) The Agency may modify the permit when standards or regulations on which the permit was based have been changed by statute or amended standards or regulations.
    - B) The permittee may request modification when all of the following occur:
      - i) The permit condition requested to be modified was based on a provision of 35 Ill. Adm. Code 730;
      - ii) The Board has revised, withdrawn, or modified that

provision on which the permit condition was based; and

- iii) The permittee requests modification in accordance with 35 Ill. Adm. Code 705.128 within 90 days ~~after the~~ after the effective date of the changed statute or amended standards or regulations on which the request is based.
  - C) For judicial decisions, a court of competent jurisdiction has remanded and stayed Board promulgated regulations, if the remand and stay concern that portion of the regulations on which the permit condition was based or if a request is filed by the permittee in accordance with 35 Ill. Adm. Code 705.128 within 90 days after judicial remand.
- 4) Compliance schedules. The Agency determines good cause exists for modification of a compliance schedule, such as an act of God, strike, flood, materials shortage, or other events over which the permittee has little or no control and for which there is no reasonably available remedy.
- 5) Basis for modification of Class VI permits. Additionally, for Class VI injection wells, whenever the Agency determines that permit changes are necessary based on any of the following:
  - A) A reevaluation of the area of review undertaken pursuant to Section 730.184(e)(1);
  - B) Any amendments to the testing and monitoring plan made pursuant to Section 730.190(j);
  - C) Any amendments to the injection well plugging plan made pursuant to Section 730.192(c);
  - D) Any amendments to the post-injection site care and site closure plan made pursuant to Section 730.193(a)(3);
  - E) Any amendments to the emergency and remedial response plan made pursuant to Section 730.194(d); or
  - F) A review of monitoring or testing results conducted in accordance with permit requirements.
- b) The following are causes to modify or, alternatively, to reissue a permit:
  - 1) The Agency has received notification (as required in the permit, see 35 Ill. Adm. Code 702.152(c)) of a proposed transfer of the permit. A permit

also may be modified to reflect a transfer after the effective date of an automatic transfer (35 Ill. Adm. Code 702.182(b)), but it must not be reissued after the effective date of the transfer, except upon the request of the new permittee.

- 2) A determination that the waste being injected is a hazardous waste, as defined in 35 Ill. Adm. Code 721.103, either because the definition has been revised, or because a previous determination has been changed.

BOARD NOTE: Derived from 40 CFR 144.39-(2005)-(2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 704.264 Minor Modifications**

Upon the consent of the permittee, the Agency may modify a permit to make the corrections or allowances for changes in the permitted activity listed in this Section, without following the procedures of 35 Ill. Adm. Code 705. Any permit modification not processed as a minor modification under this Section must be made for cause and with a 35 Ill. Adm. Code 705 draft permit and public notice, as required in Sections 704.261 through 704.263. Minor modifications may only involve the following changes:

- 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; or
- d) Allowing for a change in ownership or operational control of a facility where the Agency determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittees has been submitted to the Agency; or
- ~~e) Making other limited changes, as follows:~~
- 1e) Changing quantities or types of fluids injected that are within the capacity of the facility as permitted and, in the judgment of which the Agency, has determined 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.
- 2f) Changing construction requirements approved by the Agency pursuant to 35 Ill. Adm. Code 704.182 (establishing UIC permit conditions), provided that any such

alteration must comply with this Part and 35 Ill. Adm. Code 702 and 730.

- 3g) Amending a plugging and abandonment plan that has been updated under Section 704.181(e).
- h) Amending a Class VI injection well testing and monitoring plan, plugging plan, post-injection site care and site closure plan, or emergency and remedial response plan, where the Agency determines that the modifications merely clarify or correct the plan.

BOARD NOTE: Derived from 40 CFR 144.41-(2005)-(2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

## SUBPART I: REQUIREMENTS FOR CLASS V INJECTION WELLS

### Section 704.280 Definition of a Class V Injection Well

Section 704.106 defines the ~~five~~-six classes of injection wells, including a Class V injection well, as regulated under this Subpart I. Typically, Class V injection wells are shallow wells used to place a variety of fluids directly below the land surface. However, if the fluids placed in the ground qualify as a hazardous waste under RCRA, the well is either a Class I or Class IV injection well, not a Class V injection well. Similarly, a carbon sequestration well is a Class VI injection well (or a Class II injection well under specified circumstances), not a Class V injection well. Examples of Class V injection wells are described in Section 704.281.

BOARD NOTE: Derived from 40 CFR 144.80-(2005)-(2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

TITLE 35: ENVIRONMENTAL PROTECTION  
SUBTITLE G: WASTE DISPOSAL  
CHAPTER I: POLLUTION CONTROL BOARD  
SUBCHAPTER b: PERMITS

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PROCEDURES FOR PERMIT ISSUANCE

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705. <del>Appendix</del> <u>APPENDIX</u> E	Public Comment Process
705. <del>Appendix</del> <u>APPENDIX</u> F	Permit Issuance or Denial

AUTHORITY: Implementing Sections 7.2, 13, and 22.4 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/7.2, 13, 22.4 and 27].

SOURCE: Adopted in R81-32 at 6 Ill. Reg. 12479, effective May 17, 1982; amended in R82-19, at 7 Ill. Reg. 14352, effective May 17, 1982; amended in R84-9, at 9 Ill. Reg. 11894, effective July 24, 1985; amended in R89-2 at 14 Ill. Reg. 3082, effective February 20, 1990; amended in R94-5 at 18 Ill. Reg. 18265, effective December 20, 1994; amended in R95-6 at 19 Ill. Reg. 9906, effective June 27, 1995; amended in R03-7 at 27 Ill. Reg. 3675, effective February 14, 2003; amended in R06-16/R06-17/R06-18 at 31 Ill. Reg. 706, effective December 20, 2006; amended in R11-14 at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_.

#### SUBPART D: PUBLIC NOTICE

##### **Section 705.163 Methods of Public Notice**

Public notice of activities described in Section 705.161(a) must be given by the following methods:

- a) By mailing a copy of a notice to the following persons (any person otherwise entitled to receive notice under this paragraph may waive his or her rights to receive notice for any classes and categories of permits):
  - 1) The applicant.
  - 2) Any other agency or entity that the Agency knows is required by State or federal law to review or approve issuance of a RCRA or UIC permit for the same facility or activity (including USEPA, other Federal and State agencies with jurisdiction over waterways, wildlife or other natural resources, and other appropriate government authorities, including other affected States and units of local government).
  - 3) Federal and State agencies with jurisdiction over fish, shellfish and wildlife

resources and over coastal zone management plans, the Advisory Council on Historical Preservation, State Historic Preservation Officers, and other appropriate government authorities, including any affected States.

- 4) Persons on a mailing list developed by doing as follows:
  - A) Including those who request in writing to be on the list;
  - B) Including participants in past permit proceedings in that area; and
  - C) Notifying the public of the opportunity to be put on the mailing list through periodic publication in the public press and in governmental publications.
  - D) The Agency may update the mailing list from time to time by requesting written indication of continued interest from those listed. The Agency may delete from the list the name of any person who fails to respond to such a request.
  
- 5) For RCRA permits only to the following entities:
  - A) To any unit of local government having jurisdiction over the area where the facility is proposed to be located; and
  - B) To each State agency having any authority under State law with respect to the construction or operation of such facility.
  
- 6) For Class I injection well UIC permits only, to the Illinois Department of Natural Resources, Office of Mines and Minerals.
  
- 7) For a Class VI injection well, mailing or e-mailing a notice to the Illinois Department of Natural Resources, Office of Mines and Minerals, Division of Gas and Oil and to the Agency, Divisions of Public Water Supply and Land Pollution Control.
  
- 78) Any other person or entity that the Agency has reason to believe would be particularly interested in or affected by the proposed action.
  
- b) Publication of notice must be made as follows:
  - 1) For major UIC permits, publication of a notice in a daily or weekly newspaper of general circulation within the area affected by the facility or activity.
  - 2) For RCRA permits, publication of a notice in a daily or weekly major local

newspaper of general circulation and broadcast over local radio stations.

- c) Any other method reasonably calculated to give actual notice of the action in question to the persons potentially affected by it.

BOARD NOTE: ~~See~~ Derived from 40 CFR 124.10(c)-(2002) (2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

TITLE 35: ENVIRONMENTAL PROTECTION  
SUBTITLE G: WASTE DISPOSAL  
CHAPTER I: POLLUTION CONTROL BOARD  
SUBCHAPTER d: UNDERGROUND INJECTION CONTROL AND  
UNDERGROUND STORAGE TANK PROGRAMS

PART 730  
UNDERGROUND INJECTION CONTROL OPERATING REQUIREMENTS

SUBPART A: GENERAL

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730.101	Applicability, Scope, and Effective Date
730.102	Laws Authorizing Regulations
730.103	Definitions
730.104	Criteria for Exempted Aquifers
730.105	Classification of Injection Wells
730.106	Area of Review
730.107	Corrective Action
730.108	Mechanical Integrity
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730.110	Plugging and Abandoning Wells

SUBPART B: CRITERIA AND STANDARDS APPLICABLE TO CLASS I  
NON-HAZARDOUS WASTE INJECTION WELLS

Section	
730.111	Applicability
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SUBPART C: CRITERIA AND STANDARDS APPLICABLE TO CLASS II  
INJECTION WELLS

Section	
730.121	Adoption of Criteria and Standards Applicable to Class II Injection Wells by the Illinois Department of <u>Natural Resources, Office of Mines and Minerals</u>

**SUBPART D: CRITERIA AND STANDARDS APPLICABLE TO CLASS III  
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730.131	Applicability
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**SUBPART F: CRITERIA AND STANDARDS APPLICABLE TO CLASS V  
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730.151	Applicability
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**SUBPART G: CRITERIA AND STANDARDS APPLICABLE TO CLASS I  
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Section	
730.161	Applicability and Definitions
730.162	Minimum Criteria for Siting
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730.164	Corrective Action for Wells in the Area of Review
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730.166	Logging, Sampling, and Testing Prior to New Well Operation
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<u>730.193</u>	<u>Post-Injection Site Care and Site Closure</u>
<u>730.194</u>	<u>Emergency and Remedial Response</u>
<u>730.195</u>	<u>Alternative Class VI Injection Well Depth Requirements</u>

AUTHORITY: Implementing Sections 7.2, 13, and 22.4 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/7.2, 13, 22.4, and 27].

SOURCE: Adopted in R81-32 at 6 Ill. Reg. 12479, effective March 3, 1984; amended in R82-19 at 7 Ill. Reg. 14426, effective March 3, 1984; recodified at 10 Ill. Reg. 14174; amended in R89-2 at 14 Ill. Reg. 3130, effective February 20, 1990; amended in R89-11 at 14 Ill. Reg. 11959, effective July 9, 1990; amended in R93-6 at 17 Ill. Reg. 15646, effective September 14, 1993; amended in R94-5 at 18 Ill. Reg. 18391, effective December 20, 1994; amended in R95-4 at 19 Ill. Reg. 10047, effective June 27, 1995; amended in R00-11/R01-1 at 24 Ill. Reg. 18680, effective December 7, 2000; amended in R06-16/R06-17/R06-18 at 31 Ill. Reg. 1281, effective December 20, 2006; amended in R11-14 at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_.

#### SUBPART A: GENERAL

##### **Section 730.101 Applicability, Scope, and Effective Date**

- a) This Part sets forth technical criteria and standards for the Underground Injection Control (UIC) Program. This Part must be read in conjunction with 35 Ill. Adm. Code 702, 704, and 705, which also apply to the UIC program. 35 Ill. Adm. Code 702 and 704 prescribe the regulatory requirements for the UIC permit program. 35 Ill. Adm. Code 704 further outlines hazardous waste management requirements and sets forth the financial assurance requirements applicable to Class I hazardous waste injection wells and requirements applicable to certain types of Class V injection wells. 35 Ill. Adm. Code 705 describes the procedures ~~the Agency~~ the Agency must use for issuing UIC permits.
- b) On and after February 1, 1984, any underground injection that is not authorized by rule or by permit is unlawful.
- c) Electronic reporting. The filing of any document pursuant to any provision of this Part as an electronic document is subject to 35 Ill. Adm. Code 720.104.

BOARD NOTE: Subsection (c) of this Section is derived from 40 CFR 3 and 145.11(a)(33), as added at 70 Fed. Reg. 59848 (Oct. 13, 2005) (2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

##### **Section 730.103 Definitions**

The following definitions apply to the underground injection control program.

“Abandoned well” means a well whose use has been permanently discontinued or that is in a state of disrepair such that it cannot be used for its intended purpose or for observation purposes.

“Act” means the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (P.L. 94-580, as amended by P.L. 95-609, 42 USC 6901).

“Administrator” means the Administrator of the U.S. Environmental Protection Agency or the Administrator’s designee.

“Agency” means the Illinois Environmental Protection Agency.

“Application” means the Agency forms for applying for a permit, including any additions, revisions, or modifications to the forms. For RCRA, application also includes the information required by the Agency pursuant to 35 Ill. Adm. Code 703.182-703.188 and 703.200 (contents of Part B of the RCRA application).

“Aquifer” means a geologic formation, group of formations or part of a formation that is capable of yielding a significant amount of water to a well or spring.

“Area of review” means the area surrounding an “injection well” described according to the criteria set forth in Section 730.106 or, in the case of an area permit, the project area plus a circumscribing area the width of which is either 402 meters (one-quarter mile) or a number calculated according to the criteria set forth in Section 730.106.

“Casing” means a pipe or tubing of appropriate material, of varying diameter and weight, lowered into a borehole during or after drilling in order to support the sides of the hole and thus prevent the walls from caving, to prevent loss of drilling mud into porous ground or to prevent water, gas, or other fluid from entering or leaving the hole.

“Catastrophic collapse” means the sudden and utter failure of overlying “strata” caused by removal of underlying materials.

“Cementing” means the operation whereby a cement slurry is pumped into a drilled hole or forced behind the casing.

“Cesspool” means a “drywell” that receives untreated sanitary waste containing human excreta and which sometimes has an open bottom or perforated sides.

“Confining bed” means a body of impermeable or distinctly less permeable material stratigraphically adjacent to one or more aquifers.

“Confining zone” means a geologic formation, group of formations, or part of a formation that is capable of limiting fluid movement above an injection zone.

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

“Conventional mine” means an open pit or underground excavation for the production of minerals.

“Date of approval by USEPA of the Illinois UIC program” means February 1, 1984.

“Director” means the Director of the Illinois Environmental Protection Agency or the Administrator’s designee.

“Disposal well” means a well used for the disposal of waste into a subsurface stratum.

“Drywell” means a well, other than an improved sinkhole or subsurface fluid distribution system, that is completed above the water table so that its bottom and sides are typically dry except when receiving fluids.

“Effective date of the UIC program” means February 1, 1984.

“Environmental Protection Act” means the Environmental Protection Act [415 ILCS 5].

“EPA” or “USEPA” means the United States Environmental Protection Agency.

“Exempted aquifer” means an “aquifer” or its portion that meets the criteria in the definition of “underground source of drinking water” but which has been exempted according to the procedures of 35 Ill. Adm. Code 704.123, 704.104, and 702.105.

“Existing injection well” means an “injection well” other than a “new injection well.”

“Experimental technology” means a technology that has not been proven feasible under the conditions in which it is being tested.

“Facility or activity” means any HWM facility, UIC injection well, or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the “State” RCRA or UIC program.

“Fault” means a surface or zone of rock fracture along which there has been displacement.

“Flow rate” means the volume per unit time of the flow of a gas or other fluid substance that emerges from an orifice, pump or turbine or which passes along a conduit or channel.

“Fluid” means material or substance that flows or moves, whether in a semisolid, liquid sludge, gas, or any other form or state.

“Formation” means a body of rock characterized by a degree of lithologic homogeneity that is prevailing, but not necessarily, tabular and is mappable on the earth’s surface or traceable in the subsurface.

“Formation fluid” means fluid present in a formation under natural conditions as opposed to introduced fluids, such as drilling mud.

“Generator” means any person, by site location, whose act or process produces hazardous waste identified or listed in 35 Ill. Adm. Code 721.

“Groundwater” means water below the land surface in a zone of saturation.

“Hazardous waste” means a hazardous waste as defined in 35 Ill. Adm. Code 721.103.

“Hazardous waste management facility” or “HWM facility” means all contiguous land, and structures, other appurtenances and improvements on the land used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units (for example, one or more landfills, surface impoundments, or combination of them).

“HWM facility” means Hazardous waste management facility.

“Illinois” means the State of Illinois.

“Improved sinkhole” means a naturally occurring karst depression or other natural crevice that is found in volcanic terrain and other geologic settings that have been modified by man for the purpose of directing and emplacing fluids into the subsurface.

“Injection well” means a well into which fluids are being injected.

“Injection zone” means a geologic formation, group of formations, or part of a formation receiving fluids through a well.

“Lithology” means the description of rocks on the basis of their physical and chemical characteristics.

“Owner or operator” means the owner or operator of any facility or activity subject to regulation under RCRA, UIC, or the Environmental Protection Act.

“Packer” means a device lowered into a well that can be expanded to produce a fluid-tight seal.

“Permit” means an authorization, license, or equivalent control document issued by the Agency to implement the requirements of this Part and 35 Ill. Adm. Code 702 through 705. Permit does not include RCRA interim status (Subpart C of 35 Ill. Adm. Code 703), UIC authorization by rule (Subpart C of 35 Ill. Adm. Code 704), or any permit that has not yet been the subject of final Agency action, such as a draft permit or a proposed permit.

“Plugging” means the act or process of stopping the flow of water, oil, or gas into or out of a formation through a borehole or well penetrating that formation.

“Plugging record” means a systematic listing of permanent or temporary abandonment of water, oil, gas, test, exploration, and waste injection wells, and may contain a well log, description of amounts and types of plugging material used, the method employed for plugging, a description of formations that are sealed and a graphic log of the well showing formation location, formation thickness, and location of plugging structures.

“Point of injection,” for a Class V injection well, means the last accessible sampling point prior to waste fluids being released into the subsurface environment through the well. For example, the point of injection of a Class V septic system might be the distribution box—the last accessible sampling point before the waste fluids drain into the underlying soils. For a dry well, it is likely to be the well bore itself.

“Pressure” means the total load or force per unit area acting on a surface.

“Project” means a group of wells in a single operation.

“Radioactive Waste” means any waste that contains radioactive material in concentrations that exceed those listed in Table II, column 2 in appendix B to 10 CFR 20 (Water Effluent Concentrations), incorporated by reference in 35 Ill. Adm. Code 720.111.

“RCRA” means the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (42 USC 6901 et seq.).

“Sanitary waste” means liquid or solid wastes originating solely from humans and human activities, such as wastes collected from toilets, showers, wash basins,

sinks used for cleaning domestic areas, sinks used for food preparation, clothes washing operations, and sinks or washing machines where food and beverage serving dishes, glasses, and utensils are cleaned. Sources of these wastes may include single or multiple residences, hotels and motels, restaurants, bunkhouses, schools, ranger stations, crew quarters, guard stations, campgrounds, picnic grounds, day-use recreation areas, other commercial facilities, and industrial facilities, provided the waste is not mixed with industrial waste.

“SDWA” means the Safe Drinking Water Act (42 USC 300(f) et seq.).

“Septic system” means a well that is used to emplace sanitary waste below the surface and which is typically comprised of a septic tank and subsurface fluid distribution system or disposal system.

“Site” means the land or water area where any facility or activity is physically located or conducted, including adjacent land used in connection with the facility or activity.

“Sole or principal source aquifer” means an aquifer that has been designated by the Administrator pursuant to Section 1424(a) or (e) of SDWA (42 USC 300h-3(a) or (e)).

“State” means the State of Illinois.

“Stratum” (plural strata) means a single sedimentary bed or layer, regardless of thickness, that consists of generally the same kind of rock material.

“Subsidence” means the lowering of the natural land surface in response to: earth movements; lowering of fluid pressure, removal of underlying supporting material by mining or solution of solids, either artificially or from natural causes; compaction due to wetting (hydrocompaction); oxidation of organic matter in soils; or added load on the land surface.

“Subsurface fluid distribution system” means an assemblage of perforated pipes, drain tiles, or other similar mechanisms intended to distribute fluids below the surface of the ground.

“Surface casing” means the first string of well casing to be installed in the well.

“Total dissolved solids” or “TDS” means the total dissolved (filterable) solids, as determined by use of the method specified in 40 CFR 136.3 (Identification of Test Procedures; the method for filterable residue), incorporated by reference in 35 Ill. Adm. Code 720.111.

“UIC” means the Underground Injection Control program under Part C of the Safe

Drinking Water Act (42 USC 300h through 300h-8), including the approved Illinois program.

“Underground injection” means a “well injection.”

“Underground source of drinking water” or “USDW” means an aquifer or its portion of which the following is true:

It supplies any public water system; or

It contains a sufficient quantity of groundwater to supply a public water system; and

It currently supplies drinking water for human consumption; or

It contains less than 10,000 mg/ℓ total dissolved solids; and

It is not an exempted “aquifer.”

“USDW” means underground source of drinking water.

“Well” means a bored, drilled, or driven shaft whose depth is greater than the largest surface dimension; a dug hole whose depth is greater than the largest surface dimension; an improved sinkhole; or a subsurface fluid distribution system.

“Well injection” means the subsurface emplacement of fluids through a well.

“Well monitoring” means the measurement, by on-site instruments or laboratory methods, of the quality of water in a well.

“Well plug” means a watertight and gastight seal installed in a borehole or well to prevent movement of fluids.

“Well stimulation” means several processes used to clean the well bore, enlarge channels, and increase pore space in the interval to be injected, thus making it possible for wastewater to move more readily into the formation, and includes surging, jetting, blasting, acidizing, and hydraulic fracturing.

BOARD NOTE: Derived from 40 CFR 146.3-(2005) (2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 730.104 Criteria for Exempted Aquifers**

An aquifer or a portion ~~thereof~~ thereof of an aquifer that meets the criteria for an “underground source of

drinking water” in Section 730.103 ~~may be determined by the Board pursuant to 35 Ill. Adm. Code 704.103, 704.123, and 702.105 to be~~ is an “exempted aquifer” for a Class I, Class III, or Class V injection well if ~~it~~ the Board determines pursuant to 35 Ill. Adm. Code 704.123 that the aquifer meets the criteria of either subsections (a) and (b) or (a) and (c) of this Section. For a Class VI injection well, the Board must determine that the well meets the criteria of subsection (d) of this Section.

- a) ~~The aquifer~~ does not currently serve as a source of drinking water; and
- b) ~~The aquifer~~ cannot now and will not in the future serve as a source of drinking water because one or more of the following is true of the aquifer:
  - 1) ~~The aquifer~~ is mineral, hydrocarbon, or geothermal energy producing, or a permit applicant can demonstrate, as part of a permit application for a Class II or III injection well, that the aquifer contains minerals or hydrocarbons that are expected to be commercially producible considering their quantity and location;
  - 2) ~~The aquifer~~ is situated at a depth or location that makes recovery of water for drinking water purposes economically or technologically impractical;
  - 3) ~~The aquifer~~ is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption; or
  - 4) ~~The aquifer~~ is located over a Class III injection well mining area subject to subsidence or catastrophic collapse; or
- c) The total dissolved solids content of the groundwater in the aquifer is more than 3,000 and less than 10,000 mg/ℓ, and the aquifer is not reasonably expected to supply a public water system.
- d) The areal extent of an aquifer exemption for a Class II enhanced oil recovery or enhanced gas recovery well is expanded for the exclusive purpose of Class VI injection for geologic sequestration pursuant to 35 Ill. Adm. Code 704.123(d) if the Agency determines that the aquifer meets the following criteria:
  - 1) The aquifer does not currently serve as a source of drinking water;
  - 2) The total dissolved solids content of the ground water in the aquifer is greater than 3,000 mg/ℓ and less than 10,000 mg/ℓ; and
  - 3) The aquifer is not reasonably expected to supply a public water system.

BOARD NOTE: Derived from 40 CFR 146.4 (2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 730.105 Classification of Injection Wells**

Injection wells are classified as follows:

- a) Class I injection wells. A Class I injection well is any of the following:
  - 1) A Class I hazardous waste injection well that is used by a generator of hazardous waste or an owner or operator of a hazardous waste management facility to inject hazardous waste beneath the lowermost formation containing an underground source of drinking water within 402 meters (one-quarter mile) of the well bore.
  - 2) An industrial or municipal disposal well that injects fluids beneath the lowermost formation containing an underground source of drinking water within 402 meters (one-quarter mile) of the well bore.
  - 3) A radioactive waste disposal well that injects fluids below the lowermost formation containing an underground source of drinking water within 402 meters (one-quarter mile) of the well bore.
  
- b) Class II injection wells. A Class II injection well is one that injects any of the following types of fluids:
  - 1) Fluids that are brought to the surface in connection with conventional oil or natural gas production and which may be commingled with wastewaters from gas plants that are an integral part of production operations, unless those waters are classified as a hazardous waste at the time of injection;
  - 2) Fluids that are used for enhanced recovery of oil or natural gas; and
  - 3) Fluids that are used for storage of hydrocarbons that are liquid at standard temperature and pressure.
  
- c) Class III injection wells. A Class III injection well is one that ~~that~~ injects fluid for extraction of minerals, including one used in any of the following activities:
  - 1) Mining of sulfur by the Frasch process;
  - 2) In situ production of uranium or other metals. This category includes only in situ production from ore bodies that have not been conventionally mined. Solution mining of conventional mines, such as stopes leaching, is included in Class V; or

- 3) Solution mining of salts or potash.

BOARD NOTE: Class III injection well would include a well that is used for the recovery of geothermal energy to produce electric power, but ~~does~~ would not include a well that is used in heating or aquaculture that falls under Class V.

- d) Class IV injection wells. A Class IV injection well is any of the following:
  - 1) A well used by a generator of hazardous waste or of radioactive waste, by an owner or operator of a hazardous waste management facility, or by an owner or operator of a radioactive waste disposal site to dispose of hazardous waste or radioactive waste into a formation that contains an underground source of drinking water within 402 meters (one-quarter mile) of the well.
  - 2) A well used by a generator of hazardous waste or of radioactive waste, by an owner or operator of a hazardous waste management facility, or by an owner or operator of a radioactive waste disposal site to dispose of hazardous waste or radioactive waste above a formation that contains an underground source of drinking water within 402 meters (one-quarter mile) of the well.
  - 3) A well used by a generator of hazardous waste or an owner or operator of a hazardous waste management facility to dispose of hazardous waste that cannot be classified pursuant to subsection (a)(1), (d)(1), or (d)(2) of this Section (e.g., wells used to dispose of hazardous wastes into or above a formation that contains an aquifer that has been exempted pursuant to Section 730.104).
- e) Class V injection wells. A Class V injection well is any not included in Class I, Class II, Class III, ~~or~~ Class IV, or Class VI. Specific types of Class V injection wells include the following:
  - 1) Air conditioning return flow wells used to return the water used in a heat pump for heating or cooling to the supply aquifer;
  - 2) Cesspools, including multiple dwelling, community, or regional cesspools, or other devices that receive wastes that have an open bottom and sometimes have perforated sides. The UIC requirements do not apply to single family residential cesspools or to non-residential cesspools that receive solely sanitary wastes and have the capacity to serve fewer than 20 persons a day;
  - 3) Cooling water return flow wells used to inject water previously used for cooling;

- 4) Drainage wells used to drain surface fluid, primarily storm runoff, into a subsurface formation;
  - 5) Dry wells used for the injection of wastes into a subsurface formation;
  - 6) Recharge wells used to replenish the water in an aquifer;
  - 7) Salt water intrusion barrier wells used to inject water into a fresh water aquifer to prevent the intrusion of salt water into the fresh water;
  - 8) Sand backfill and other backfill wells used to inject a mixture of water and sand, mill tailings, or other solids into mined out portions of subsurface mines whether what is injected is a radioactive waste or not;
  - 9) Septic system wells used to inject the waste or effluent from a multiple dwelling, business establishment, community, or regional business establishment septic tank. The UIC requirements do not apply to single family residential septic system wells, or to nonresidential septic system wells that are used solely for the disposal of sanitary waste and which have the capacity to serve fewer than 20 persons a day;
  - 10) Subsidence control wells (not used for the purpose of oil or natural gas production) used to inject fluids into a non-oil or gas producing zone to reduce or eliminate subsidence associated with the overdraft of fresh water;
  - 11) Radioactive waste disposal wells other than Class IV injection wells;
  - 12) Injection wells associated with the recovery of geothermal energy for heating, aquaculture, or production of electric power;
  - 13) Wells used for solution mining of conventional mines such as stopes leaching;
  - 14) Wells used to inject spent brine into the same formation from which it was withdrawn after extraction of halogens or their salts; and
  - 15) Injection wells used in experimental technologies.
- f) Class VI injection wells. A Class VI injection well is any of the following:
- 1) An injection well that is not experimental in nature and which is used for geologic sequestration of carbon dioxide beneath the lowermost formation containing a USDW;

- 2) An injection well that is used for geologic sequestration of carbon dioxide and which has been granted a permit that includes alternative injection well depth requirements pursuant to Section 730.195; or
- 3) An injection well that is used for geologic sequestration of carbon dioxide and which has received an expansion to the areal extent of an existing Class II enhanced oil recovery or enhanced gas recovery aquifer exemption pursuant to Section 730.104 and 35 Ill. Adm. Code 704.123(d).

BOARD NOTE: Derived from 40 CFR 146.5 (2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

#### SUBPART C: CRITERIA AND STANDARDS APPLICABLE TO CLASS II INJECTION WELLS

##### **Section 730.121 Adoption of Criteria and Standards Applicable to Class II Injection Wells by the Illinois Department of Natural Resources, Office of Mines and Minerals**

The criteria and standards for Class II injection wells will be adopted by the Illinois Department of Natural Resources, Office of Mines and Minerals pursuant to Section 1425 of the SDWA (42 USC 300h-4).

BOARD NOTE: This Section corresponds with subpart C of 40 CFR 146 (2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

#### SUBPART G: CRITERIA AND STANDARDS APPLICABLE TO CLASS I HAZARDOUS WASTE INJECTION WELLS

##### **Section 730.172 Post-Closure Care**

- a) The owner or operator of a Class I hazardous waste injection well must prepare, maintain, and comply with a plan for post-closure care that meets the requirements of subsection (b) of this Section and is specified by permit condition. The obligation to implement the post-closure plan survives the termination of a permit or the cessation of injection activities. The requirement to maintain an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit.
  - 1) The owner or operator must submit the plan as a part of the permit application and, upon approval by the Agency, such plan must be a condition of any permit issued.
  - 2) The owner or operator must submit any proposed significant revision to the

plan as appropriate over the life of the well, but no later than the date of the closure report required pursuant to Section 730.171(c).

- 3) The plan must assure financial responsibility, as required in Section 730.173.
  - 4) The plan must include the following information:
    - A) The pressure in the injection zone before injection began;
    - B) The anticipated pressure in the injection zone at the time of closure;
    - C) The predicted time until pressure in the injection zone decays to the point that the well's cone of influence no longer intersects the base of the lowermost USDW;
    - D) The predicted position of the waste front at closure;
    - E) The status of any cleanups required pursuant to Section 730.164; and
    - F) The estimated cost of proposed post-closure care.
  - 5) At the request of the owner or operator, or on its own initiative, the Agency may modify the post-closure plan after submission of the closure report following the procedures in 35 Ill. Adm. Code 705.128.
- b) The owner or operator must undertake each of the following activities:
- 1) It must continue and complete any cleanup action required pursuant to Section 730.164, if applicable;
  - 2) It must continue to conduct any groundwater monitoring required under the permit until pressure in the injection zone decays to the point that the well's cone of influence no longer intersects the base of the lowermost USDW. The Agency must extend the period of post-closure monitoring if it determines in writing that the well may endanger a USDW;
  - 3) It must submit a survey plat to the local zoning authority designated by permit condition. The plat must indicate the location of the well relative to permanently surveyed benchmarks. A copy of the plat must be submitted to USEPA, Region 5;
  - 4) It must notify the Illinois Department of Natural Resources, Office of Mines and Minerals, the State Department of Public Health, and any unit of

local government authorized to grant permits under the Water Well Construction Code [415 ILCS 30] in the area where the well is located as to the depth and location of the well and the confining zone; and

- 5) It must retain, for a period of three years following well closure, records reflecting the nature, composition, and volume of all injected fluids. Owners or operators must deliver the records to the Agency at the conclusion of the retention period.
- c) Each owner of a Class I hazardous waste injection well, and the owner of the surface or subsurface property on or in which a Class I hazardous waste injection well is located, must record a notation on the deed to the facility property or on some other instrument that is normally examined during title search that will in perpetuity provide any potential purchaser of the property the following information:
- 1) The fact that land has been used to manage hazardous waste;
  - 2) The names of the Illinois Department of Natural Resources, Office of Mines and Minerals and the local zoning authority with which the plat was filed, as well as the address of USEPA Region 5; and
  - 3) The type and volume of waste injected, the injection interval or intervals into which it was injected, and the period over which injection occurred.
- d) In addition to the requirements stated in this Section, each owner of a Class I hazardous waste injection well must comply with any other State or federal law or local ordinance that requires the reporting of any potential environmental or physical impairment of real property to subsequent or prospective owners.

BOARD NOTE: The Responsible Property Transfer Act of 1988 [765 ILCS 90] (RPTA) formerly required the disclosure and recordation of any environmental impairment of real property in Illinois. The General Assembly repealed that statute in P.A. 92-299, Section 5, effective August 9, 2001. Section 10 of that repeal provided for continued maintenance of documents prepared and recorded under RPTA prior to its repeal.

BOARD NOTE: Derived from 40 CFR 146.72-~~(2005)~~ (2011).

(Source: Amended at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

SUBPART H: CRITERIA AND STANDARDS APPLICABLE TO  
CLASS VI WELLS

**Section 730.181 Applicability**

- a) This Subpart H establishes criteria and standards for Class VI carbon dioxide geologic sequestration injection wells.
- b) This Subpart H applies to any injection well that is used to inject carbon dioxide specifically for the purpose of geologic sequestration.
- c) This Subpart H also applies to the owner or operator of a permit- or rule-authorized Class I, Class II, or Class V experimental carbon dioxide injection well that seeks to apply for a Class VI geologic sequestration permit for its well. An owner or operator that seeks to convert an existing Class I, Class II, or Class V experimental injection well to a Class VI geologic sequestration well must demonstrate to the Agency that the well was engineered and constructed to meet the requirements of Section 146.86(a) and to ensure protection of USDWs, in lieu of requirements at Sections 146.86(b) and 146.87(a). By December 10, 2011, the owner or operator of either a Class I injection well that was previously permitted for the purpose of geologic sequestration or a Class V experimental technology injection well that is no longer being used for experimental purposes and which will continue injection of carbon dioxide for the purpose of geologic sequestration must apply for a Class VI permit. A converted well must still meet all other requirements of this Part.
- d) Definitions. The following definitions apply to this Subpart H. To the extent that these definitions conflict with those that appear in 35 Ill. Adm. Code 702.110 or Section 730.103, the definitions of this Section govern for Class VI wells:

“Area of review” means the region surrounding the geologic sequestration project where a USDW may be endangered by the injection activity. The area of review is delineated using computational modeling that accounts for the physical and chemical properties of all phases of the injected carbon dioxide stream and displaced fluids, and is based on available site characterization, monitoring, and operational data, as set forth in Section 730.184.

“Carbon dioxide plume” means the sub-surface three-dimensional extent underground of an injected carbon dioxide stream.

“Carbon dioxide stream” means carbon dioxide that has been captured from an emission source (e.g., a power plant), plus incidental associated substances derived from the source materials and the capture process, and any substances added to the stream to enable or improve the injection

process. This Subpart H does not apply to any carbon dioxide stream that meets the definition of a hazardous waste in 35 Ill. Adm. Code 721.103.

“Confining zone” means a geologic formation, a group of formations, or a part of a formation that stratigraphically overlies an injection zone and which acts as barrier to fluid movement. For a Class VI injection well that is operating under a permit that includes alternative injection well depth requirements, “confining zone” means a geologic formation, a group of formations, or a part of a formation that stratigraphically overlies and underlies the injection zone.

“Corrective action” means the use of Agency-approved methods to ensure that wells within an area of review do not serve as conduits for the movement of fluids into a USDW.

“Geologic sequestration” means the long-term containment of a gaseous, liquid, or supercritical carbon dioxide stream in subsurface geologic formations. This term does not apply to carbon dioxide capture or transport.

“Geologic sequestration project” means any of the following three types of injection wells:

An injection well or wells that are used to emplace a carbon dioxide stream beneath the lowermost formation containing a USDW;

An injection well or wells that are used for geologic sequestration of carbon dioxide and which have been granted a permit that includes alternative injection well depth requirements pursuant to requirements at Section 730.195; or

An injection well or wells that are used for geologic sequestration of carbon dioxide and which have received an expansion to the areal extent of an existing Class II enhanced oil recovery or enhanced gas recovery aquifer exemption pursuant to Section 730.104 and 35 Ill. Adm. Code 704.123(d).

A geologic sequestration project includes the subsurface three-dimensional extent of the carbon dioxide plume, the associated area of elevated pressure, and displaced fluids, as well as the surface area above that delineated region.

“Injection zone” means a geologic formation, a group of formations, or a part of a formation that is of sufficient areal extent, thickness, porosity,

and permeability to receive carbon dioxide through a well or wells associated with a geologic sequestration project.

“Post-injection site care” means appropriate monitoring and other actions (including corrective action) needed following cessation of injection to ensure that no USDW is endangered, as required under Section 730.193.

“Pressure front” means the zone of elevated pressure that is created by the injection of carbon dioxide into the subsurface. For the purposes of this Subpart H, the pressure front of a carbon dioxide plume refers to a zone where there is a pressure differential sufficient to cause the movement of injected fluids or formation fluids into a USDW.

“Site closure” means the point or time, as determined by the Agency pursuant to Section 730.193, at which the owner or operator of a geologic sequestration site is released from post-injection site care responsibilities.

“Transmissive fault or fracture” means a fault or fracture that has sufficient permeability and vertical extent to allow fluids to move between formations.

BOARD NOTE: This Section corresponds with 40 CFR 146.81 (2011).

(Source: Added at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 730.182 Required Class VI Injection Well Permit Information**

This Section sets forth the information that the Agency must consider when authorizing a Class VI injection well. For a converted Class I, Class II, or Class V experimental injection well, certain maps, cross-sections, tabulations of wells within the area of review, and other data may be included in the application by reference, provided they are current, readily available to the Agency, and sufficiently identified as to be retrieved. In cases where USEPA issues the permit, all the information in this Section must be submitted to the USEPA, Region 5.

- a) Prior to the issuance of a permit for the construction of a new Class VI injection well or the conversion of an existing Class I, Class II, or Class V injection well to a Class VI injection well, the owner or operator must submit, pursuant to Section 730.191(e), and the Agency must consider, the following:
  - 1) The information required by 35 Ill. Adm. Code 702.123(a) through (f);
  - 2) A map showing the injection well for which a permit is sought and the applicable area of review consistent with Section 730.184. Within the area of review, the map must show the number or name and location of all injection wells, producing wells, abandoned wells, plugged wells, or dry

holes; deep stratigraphic boreholes; Agency- or USEPA-approved subsurface cleanup sites; surface bodies of water, springs, mines (surface and subsurface), quarries, water wells; and other pertinent surface features, including structures intended for human occupancy, state boundaries, and roads. The map should also show faults, if known or suspected. Only information of public record is required to be included on this map;

- 3) Information on the geologic structure and hydrogeologic properties of the proposed storage site and overlying formations, including the following documents and information:
  - A) Maps and cross sections of the area of review;
  - B) The location, orientation, and properties of known or suspected faults and fractures that may transect the confining zones in the area of review and a determination that the faults and fractures would not interfere with containment;
  - C) Data on the depth, areal extent, thickness, mineralogy, porosity, permeability, and capillary pressure of the injection and confining zones; including geology and facies changes based on field data, which may include geologic cores, outcrop data, seismic surveys, well logs, and names and lithologic descriptions;
  - D) Geomechanical information on fractures, stress, ductility, rock strength, and in-situ fluid pressures within the confining zones;
  - E) Information on the seismic history that includes the presence and depth of seismic sources and a determination that the seismicity would not interfere with containment; and
  - F) Geologic and topographic maps and cross sections that illustrate regional geology, hydrogeology, and the geologic structure of the local area;
- 4) A tabulation of all wells within the area of review that penetrate the injection or confining zones. The tabulated data must include a description of each well's type, construction, date drilled, location, depth, applicable records of plugging and completion, and any additional information that the Agency may require to evaluate the request for a permit;
- 5) Maps and stratigraphic cross sections indicating the general vertical and lateral limits of all USDWs, water wells, and springs within the area of review, their positions relative to the injection zones, and the direction of

water movement, where known;

- 6) Baseline geochemical data on subsurface formations that includes all USDWs in the area of review;
- 7) Proposed operating data for the proposed geologic sequestration site that includes that following items of information:
  - A) The average and maximum daily rate and volume or mass, and the total anticipated volume or mass, of the carbon dioxide stream;
  - B) The average and maximum injection pressures;
  - C) The sources of the carbon dioxide stream; and
  - D) An analysis of the chemical and physical characteristics of the carbon dioxide stream;
- 8) A proposed program for pre-operational formation testing that fulfills the requirements of Section 730.187 to obtain an analysis of the chemical and physical characteristics of the injection zones and confining zones;
- 9) A proposed stimulation program, a description of stimulation fluids to be used, and a determination that stimulation will not interfere with containment;
- 10) A proposed procedure to outline steps necessary to conduct injection operation;
- 11) Schematics or other appropriate drawings of the surface and subsurface construction details of the well;
- 12) Injection well construction procedures that fulfill the requirements of Section 730.186;
- 13) A proposed area of review and corrective action plan that fulfills the requirements of Section 730.184;
- 14) A demonstration which is sufficient to support an Agency determination that the applicant has met the financial responsibility requirements under Section 730.185;
- 15) A proposed testing and monitoring plan, as required by Section 730.190;
- 16) A proposed injection well plugging plan, as required by Section

730.192(b);

- 17) A proposed post-injection site care and site closure plan, as required by Section 730.193(a);
  - 18) At the Agency's discretion, a demonstration of an alternative post-injection site care timeframe required, as required by Section 730.193(c);
  - 19) A proposed emergency and remedial response plan, as required by Section 730.194(a);
  - 20) A list of contacts, submitted to the Agency, for those states identified to be within the area of review of the Class VI project based on information provided pursuant to subsection (a)(2) of this Section; and
  - 21) Any other information requested by the Agency that would support an Agency determination whether to issue the requested permit.
- b) Pursuant to this Section, and as required by 40 CFR 145.23(f)(13), the Agency must notify any states that the Agency determines are within the area of review of the Class VI project based on information submitted pursuant to subsections (a)(2) and (a)(20) of this Section of the permit application in writing.
- c) Prior to granting a permit for the operation of a Class VI injection well, the Agency must consider the following information:
- 1) The final area of review based on modeling, using data obtained during the logging and testing of the well and the formation required by subsections (c)(2), (c)(3), (c)(4), (c)(6), (c)(7), and (c)(10) of this Section;
  - 2) Any relevant updates to the information on the geologic structure and hydrogeologic properties of the proposed storage site and overlying formations, submitted pursuant to subsection (a)(3) of this Section, based on data obtained during the logging and testing of the well and the formation required by subsections (c)(3), (c)(4), (c)(6), (c)(7), and (c)(10) of this Section;
  - 3) Information on the compatibility of the carbon dioxide stream with fluids in the injection zones and minerals in both the injection and the confining zones, based on the results of the formation testing program, and with the materials used to construct the well;
  - 4) The results of the formation testing program required by subsection (a)(8) of this Section;

- 5) Final injection well construction procedures that fulfill the requirements of Section 730.186;
  - 6) The status of any corrective action on wells in the area of review;
  - 7) All available logging and testing program data on the well required by Section 730.187;
  - 8) A demonstration of mechanical integrity pursuant to Section 730.189;
  - 9) Any updates to the proposed area of review and corrective action plan, the testing and monitoring plan, the injection well plugging plan, the post-injection site care and site closure plan, or the emergency and remedial response plan, and any updates to the alternative post-injection site care timeframe demonstration, which the applicant has submitted pursuant to subsection (a) of this Section, that are necessary to address new information collected during logging and testing of the well and the formation, as required by this Section; and
  - 10) Any other information requested by the Agency.
- d) An owner or operator which seeks a permit that includes alternative injection well depth requirements to the generally applicable requirement to inject below the lowermost USDW must also refer to Section 730.195 and submit a supplemental report, as required at Section 730.195(a). The supplemental report is not part of the permit application.

BOARD NOTE: This Section corresponds with 40 CFR 146.82 (2011).

(Source: Added at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 730.183 Minimum Criteria for Siting**

- a) The owner or operator of a Class VI injection well must sufficiently demonstrate to support an Agency determination that the wells will be sited in areas with a suitable geologic system. The owner or operator must sufficiently demonstrate that the geologic system comprises both of the following elements:
  - 1) An injection zone of sufficient areal extent, thickness, porosity, and permeability to receive the total anticipated volume of the carbon dioxide stream; and
  - 2) Confining zones free of transmissive faults or fractures and of sufficient areal extent and integrity to contain the injected carbon dioxide stream and displaced formation fluids and allow injection at proposed maximum

pressures and volumes without initiating or propagating fractures in the confining zones.

- b) The Agency may require the owner or operator of a Class VI injection well to identify and characterize additional zones that will impede vertical fluid movement; that are free of faults and fractures which may interfere with containment; that allow for pressure dissipation; and that provide additional opportunities for monitoring, mitigation, and remediation.

BOARD NOTE: This Section corresponds with 40 CFR 146.83 (2011).

(Source: Added at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 730.184 Area of Review and Corrective Action**

- a) The area of review is the region surrounding the geologic sequestration project where the injection activity may endanger a USDW. The area of review is delineated using computational modeling that accounts for the physical and chemical properties of all phases of the injected carbon dioxide stream and which is based on available site characterization, monitoring, and operational data.
- b) The owner or operator of a Class VI injection well must prepare, maintain, and comply with a plan to delineate the area of review for a proposed geologic sequestration project; must periodically reevaluate the delineation; and must perform corrective action that meets the requirements of this Section and which is sufficient to support an Agency determination that the corrective action is acceptable. The requirement to maintain and implement an approved plan is directly enforceable regardless of whether the requirement is a condition of the permit. As a part of the permit application to the Agency, the owner or operator must submit an area of review and corrective action plan that includes the following information:
- 1) The method that the owner or operator will use for delineating the area of review which meets the requirements of subsection (c) of this Section, including the model that the owner or operator will use, assumptions that the owner or operator will make, and the site characterization data on which the owner or operator will base the model;
  - 2) A description of each of the following:
    - A) The minimum fixed frequency, not to exceed five years, at which the owner or operator proposes to reevaluate the area of review;
    - B) The monitoring and operational conditions that would warrant a reevaluation of the area of review prior to the next scheduled

reevaluation as determined by the minimum fixed frequency established pursuant to subsection (b)(2)(A) of this Section;

- C) How monitoring and operational data (e.g., injection rate, pressure, etc.) will be used to inform an area of review reevaluation; and
  - D) How the owner or operator will conduct corrective action to meet the requirements of subsection (d) of this Section, including the following information:
    - i) What corrective action the owner or operator will perform prior to injection;
    - ii) What, if any, portions of the area of review the owner or operator will address with corrective action on a phased basis and how that phasing will be determined;
    - iii) How the owner or operator will adjust corrective action if there are changes in the area of review; and
    - iv) How the owner or operator will guarantee site access for future corrective action.
- c) The owner or operator of a Class VI injection well must perform the following actions to delineate the area of review and identify all wells that require corrective action:
- 1) The owner or operator must predict, using existing site characterization, monitoring and operational data, and computational modeling, the projected lateral and vertical migration of the carbon dioxide plume and formation fluids in the subsurface from the commencement of injection activities until the plume movement ceases, until pressure differentials sufficient to cause the movement of injected fluids or formation fluids into a USDW are no longer present, or until the end of a fixed time period determined by the Agency. The model must fulfill the following requirements:
    - A) The model must be based on detailed geologic data collected to characterize the injection zones, confining zones and any additional zones; and anticipated operating data, including injection pressures, rates, and total volumes over the proposed life of the geologic sequestration project;
    - B) The model must take into account any geologic heterogeneities, other discontinuities, data quality, and their possible impact on

model predictions; and

- C) The model must consider potential migration through faults, fractures, and artificial penetrations.
- 2) Using methods approved by the Agency, the owner or operator must identify all penetrations, including active and abandoned wells and underground mines, in the area of review that may penetrate the confining zones and must provide a description of each well's type, construction, date drilled, location, depth, record of plugging and/ or completion, and any additional information the Agency may require; and
- 3) The owner or operator must determine which abandoned wells in the area of review have been plugged in a manner that prevents the movement of carbon dioxide or other fluids that may endanger USDWs, including use of materials compatible with the carbon dioxide stream.
- d) The owner or operator of a Class VI injection well must perform corrective action on all wells in the area of review that are determined to need corrective action, using methods designed to prevent the movement of fluid into or between USDWs, including use of materials compatible with the carbon dioxide stream, where appropriate.
- e) At the minimum fixed frequency, not to exceed five years, as specified in the area of review and corrective action plan, or when monitoring and operational conditions warrant, the owner or operator of a Class VI injection well must fulfill each of the following requirements:
- 1) The owner or operator must reevaluate the area of review in the same manner specified in subsection (c)(1) of this Section;
- 2) The owner or operator must identify all wells in the reevaluated area of review that require corrective action in the same manner specified in subsection (c) of this Section;
- 3) The owner or operator must perform corrective action on wells requiring corrective action in the reevaluated area of review in the same manner specified in subsection (d) of this Section; and
- 4) The owner or operator must submit an amended area of review and corrective action plan or demonstrate through monitoring data and modeling results sufficiently to support an Agency finding that no amendment to the area of review and corrective action plan is needed. Any amendments to the area of review and corrective action plan must be approved by the Agency, must be incorporated into the permit, and are

subject to the permit modification requirements set forth in 35 Ill. Adm. Code 704.262 or 704.264, as appropriate.

- f) The emergency and remedial response plan (as required by Section 730.194) and the demonstration of financial responsibility (as described by Section 730.185) must account for the area of review delineated as specified in subsection (c)(1) of this Section or the most recently evaluated area of review delineated pursuant to subsection (e) of this Section, regardless of whether corrective action in the area of review is phased.
- g) The owner or operator must retain all modeling inputs and data used to support area of review reevaluations under subsection (e) of this Section for 10 years.

BOARD NOTE: This Section corresponds with 40 CFR 146.84 (2011).

(Source: Added at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 730.185 Financial Responsibility**

- a) The owner or operator of an injection well to which this Subpart H applies must demonstrate and maintain financial responsibility that the Agency has determined fulfills the following conditions:
  - 1) The financial responsibility instruments used must be from the following list of qualifying instruments:
    - A) A trust fund;
    - B) A surety bond;
    - C) A letter of credit;
    - D) Insurance;
    - E) Self insurance (i.e., the financial test and corporate guarantee);
    - F) An escrow account; or
    - G) Any other instruments that the Agency determines are satisfactory.
  - 2) The qualifying instruments must be sufficient to cover the following costs:
    - A) The costs of corrective action (that meets the requirements of Section 730.184);

- B) The costs of injection well plugging (that meets the requirements of Section 730.192);
  - C) The costs of post-injection site care and site closure (that meets the requirements of Section 730.193); and
  - D) The costs of emergency and remedial response (that meets the requirements of Section 730.194).
- 3) The financial responsibility instruments must be sufficient to address endangerment of underground sources of drinking water.
- 4) The qualifying financial responsibility instruments must comprise protective conditions of coverage.
- A) Protective conditions of coverage must include, at a minimum, cancellation, renewal, and continuation provisions; specifications on when the provider becomes liable following a notice of cancellation if there is a failure to renew with a new qualifying financial instrument, and requirements for the provider to meet a minimum rating, minimum capitalization, and have the ability to pass the bond rating when applicable.
    - i) Cancellation. For purposes of this Subpart H, the owner or operator must provide that its financial mechanism may not cancel, terminate, or fail to renew, except for failure to pay that financial instrument. If there is a failure to pay the financial instrument, the financial institution may elect to cancel, terminate, or fail to renew the instrument by sending notice by certified mail to the owner or operator and the Agency. The cancellation must not be final for 120 days after receipt of cancellation notice by the owner or operator and the Agency. The owner or operator must provide an alternative financial responsibility demonstration within 60 days after notice of cancellation, and if an alternate financial responsibility demonstration is not acceptable (or possible), any funds from the instrument being cancelled must be released within 60 days of notification by the Agency.
    - ii) Renewal. For purposes of this Subpart H, an owner or operator must renew all financial instruments, if an instrument expires, for the entire term of the geologic sequestration project. The instrument may be automatically renewed, as long as the owner or operator has the option of

renewal at the face amount of the expiring instrument. The automatic renewal of an instrument must, at a minimum, provide the holder with the option of renewal at the face amount of the expiring financial instrument.

iii) Cancellation, termination, or failure to renew may not occur and the financial instrument will remain in full force and effect in the event that any of the following occurs on or before the date of expiration: the Agency deems the facility abandoned; or the permit is revoked or a new permit is denied; closure is ordered by the Agency or a court of competent jurisdiction; the owner or operator is named as debtor in a voluntary or involuntary bankruptcy proceeding under Title 11 of the United States Code; or the amount due on the instrument is fully paid.

B) This subsection (a)(4)(B) would correspond with 40 CFR 706.85(a)(4)(ii) if such existed. USEPA codified a paragraph (a)(4)(i) without a paragraph (a)(4)(ii). Illinois codification requirements do not allow codification of a subsection level unless multiple subsections exist at that level. This statement maintains structural consistency with the corresponding federal rules.

5) The qualifying financial responsibility instruments must be approved by the Agency.

A) The Agency must consider and approve the financial responsibility demonstration for all the phases of the geologic sequestration project prior to issuing a Class VI injection well permit (Section 730.182).

B) The owner or operator must provide any updated information related to their financial responsibility instruments on an annual basis and if there are any changes, the Agency must evaluate, within a reasonable time, the financial responsibility demonstration to confirm that the instruments used remain adequate for use. The owner or operator must maintain financial responsibility requirements regardless of the status of the Agency's review of the financial responsibility demonstration.

C) The Agency must disapprove the use of a financial instrument if the Agency determines that it is not sufficient to meet the requirements of this Section.

6) The owner or operator may demonstrate financial responsibility by using

one or multiple qualifying financial instruments for specific phases of the geologic sequestration project.

- A) In the event that the owner or operator combines more than one instrument for a specific geologic sequestration phase (e.g., well plugging), such combination must be limited to instruments that are not based on financial strength or performance (i.e., self insurance or performance bond), for example trust funds, surety bonds guaranteeing payment into a trust fund, letters of credit, escrow account, and insurance. In this case, it is the combination of mechanisms, rather than the single mechanism, that must provide financial responsibility for an amount at least equal to the current cost estimate.
- B) When using a third-party instrument to demonstrate financial responsibility, the owner or operator must provide a proof that the third-party provider fulfills either of the following:
- i) The provider must have passed financial strength requirements of subsection (b)(6)(E) of this Section based on credit ratings; or
  - ii) The provider must have met a minimum rating, minimum capitalization, and have the ability to pass the bond rating set forth in subsection (b)(6)(E) of this Section, when applicable.
- C) An owner or operator using certain types of third-party instruments must establish a standby trust fund to enable the Agency to be party to the financial responsibility agreement without the Agency being the beneficiary of any funds. The standby trust fund must be used along with other financial responsibility instruments (e.g., surety bonds, letters of credit, or escrow accounts) to provide a location to place funds if needed.
- D) An owner or operator may deposit money to an escrow account to cover financial responsibility requirements. This account must segregate funds sufficient to cover estimated costs for Class VI (geologic sequestration) financial responsibility from other accounts and uses.
- E) An owner or operator or its guarantor may use self insurance to demonstrate financial responsibility for geologic sequestration projects if the owner or operator or its guarantor fulfill the following requirements:

- i) The owner or operator or its guarantor must meet a tangible net worth of an amount approved by the Agency;
  - ii) The owner or operator or its guarantor must have a net working capital and tangible net worth each at least six times the sum of the current well plugging, post-injection site care, and site closure cost;
  - iii) The owner or operator or its guarantor must have assets located in the United States amounting to at least 90 percent of total assets or at least six times the sum of the current well plugging, post injection site care, and site closure cost;
  - iv) The owner or operator or its guarantor must submit a report of its bond rating and financial information annually; and
  - v) The owner or operator or its guarantor must either have a bond rating test of AAA, AA, A, or BBB, as issued by Standard & Poor's, or Aaa, Aa, A, or Baa, as issued by Moody's, or meet all of the following five financial ratio thresholds: a ratio of total liabilities to net worth less than 2.0; a ratio of current assets to current liabilities greater than 1.5; a ratio of the sum of net income plus depreciation, depletion, and amortization to total liabilities greater than 0.1; a ratio of current assets minus current liabilities to total assets greater than -0.1; and a net profit (revenues minus expenses) greater than 0.
- F) An owner or operator that is not able to meet the corporate financial test criteria of subsection (a)(6)(E) of this Section may arrange a corporate guarantee by demonstrating that its corporate parent meets the financial test requirements on its behalf. The corporate parent's demonstration that it meets the financial test requirement is insufficient if it has not also guaranteed to fulfill the obligations for the owner or operator.
- G) An owner or operator may obtain an insurance policy to cover the estimated costs of geologic sequestration activities that require financial responsibility. This insurance policy must be obtained from a third-party provider.
- b) The requirement to maintain adequate financial responsibility and resources is directly enforceable regardless of whether the requirement is a condition of the

permit.

- 1) The owner or operator must maintain financial responsibility and resources until both of the following events have occurred:
  - A) The Agency has received and approved the completed post-injection site care and site closure plan; and
  - B) The Agency has approved site closure.
- 2) The owner or operator may be released from a financial instrument in the following circumstances:
  - A) The owner or operator has completed the phase of the geologic sequestration project for which the financial instrument was required, and the owner or operator has fulfilled all of its financial obligations, as determined by the Agency, including obtaining financial responsibility for the next phase of the geologic sequestration project, if required; or
  - B) The owner or operator has submitted a replacement financial instrument, and the owner or operator has received written approval from the Agency that accepts the new financial instrument and which releases the owner or operator from the previous financial assurance instrument.
- c) The owner or operator must have a detailed written estimate, in current dollars, of the cost of performing corrective action on wells in the area of review, plugging the injection wells, post-injection site care, site closure, and emergency and remedial response.
  - 1) The cost estimate must be performed for each phase separately, and the cost estimate must be based on the costs to the Agency of hiring a third party to perform the required activities. A third party is a party who is not within the corporate structure of the owner or operator.
  - 2) During the active life of the geologic sequestration project, the owner or operator must adjust the cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instruments used to comply with subsection (a) of this Section, and the owner or operator must provide this adjustment to the Agency. The owner or operator must also provide to the Agency written updates of adjustments to the cost estimate within 60 days after any amendments to the area of review and corrective action plan (Section 730.184), the injection well plugging plan (Section 730.192), the post-injection site care and site closure plan

(Section 730.193), and the emergency and remedial response plan (Section 730.194).

- 3) The Agency must approve any decrease or increase to the initial cost estimate. During the active life of the geologic sequestration project, the owner or operator must revise the cost estimate no later than 60 days after any of the following events has occurred: the Agency has approved the request to modify the area of review and corrective action plan (Section 730.184), the Agency has approved the injection well plugging plan (Section 730.192), the Agency has approved the post-injection site care and site closure plan (Section 730.193), or the Agency has approved the emergency and response plan (Section 730.194), if the change in the plan increases the cost. If the change to the plan decreases the cost, any withdrawal of funds must be approved by the Agency. Any decrease to the value of the financial assurance instrument must first be approved by the Agency. The revised cost estimate must be adjusted for inflation as specified at subsection (c)(2) of this Section.
- 4) Within 60 days after an increase in the current cost estimate to an amount greater than the face amount of a financial instrument currently in use, the owner or operator must either cause the face amount to be increased to an amount at least equal to the current cost estimate and submit evidence of that increase to the Agency, or obtain other financial responsibility instruments to cover the increase. Whenever the current cost estimate decreases, the owner or operator may reduce the face amount of the financial assurance instrument to the amount of the current cost estimate only in accordance with a written approval from the Agency.
- d) The owner or operator must notify the Agency by certified mail of adverse financial conditions, such as bankruptcy, that may affect the ability to carry out injection well plugging and post-injection site care and site closure.
  - 1) In the event that the owner or operator or the third-party provider of a financial responsibility instrument is going through a bankruptcy, the owner or operator must notify the Agency of the proceeding by certified mail within 10 days after commencement of a voluntary or involuntary proceeding under Title 11 of the United States Code that names the owner or operator as debtor.
  - 2) The guarantor of a corporate guarantee must make the notification to the Agency required by this subsection (d)(2) if the guarantor is named as debtor, as required under the terms of the corporate guarantee.
  - 3) An owner or operator who fulfills the requirements of subsection (a) of this Section by obtaining a trust fund, surety bond, letter of credit, escrow

account, or insurance policy will be deemed to be without the required financial assurance in the event of bankruptcy of the trustee or issuing institution or a suspension or revocation of the authority of the trustee institution to act as trustee of the institution issuing the pertinent financial assurance instrument. The owner or operator must establish other financial assurance within 60 days after such an event.

- e) The owner or operator must provide an adjustment of the cost estimate to the Agency within 60 days after notification of an Agency determination during the annual evaluation of the qualifying financial responsibility instruments that the most recent demonstration is no longer adequate to cover the cost of corrective action (as required by Section 730.184), injection well plugging (as required by Section 730.192), post-injection site care and site closure (as required by Section 730.193), and emergency and remedial response (as required by Section 730.194).
- f) The Agency must approve the use and length of pay-in-periods for trust funds or escrow accounts.

BOARD NOTE: This Section corresponds with 40 CFR 146.85 (2011).

(Source: Added at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 730.186 Injection Well Construction Requirements**

- a) General. The owner or operator must ensure that its Class VI injection wells are constructed and completed to fulfill the following requirements:
  - 1) The well construction and completion must prevent the movement of fluids into or between USDWs or into any unauthorized zone;
  - 2) The well construction and completion must permit the use of appropriate testing devices and workover tools; and
  - 3) The well construction and completion must permit continuous monitoring of the annulus space between the injection tubing and long-string casing.
- b) Casing and cementing of Class VI injection wells.
  - 1) The casing, cement, and other materials used in the construction of each Class VI injection well must have sufficient structural strength and be designed to last for the life of the geologic sequestration project. All well materials must be compatible with fluids with which the materials may be expected to come into contact, and the owner or operator must submit sufficient documentation to the Agency to support a determination that the casing, cement, and other materials meet or exceed standards developed

for these materials by the American Petroleum Institute, ASTM International, or a comparable industry standards organization. The casing and cementing program must be designed to prevent the movement of fluids into or between USDWs. In order to allow the Agency to determine and specify casing and cementing requirements, the owner or operator must provide the following information to the Agency:

- A) The depth to the injection zones;
  - B) The injection pressure, external pressure, internal pressure, and axial loading;
  - C) The hole size;
  - D) The size and grade of all casing strings (the wall thickness, external diameter, nominal weight, length, joint specification, and construction material);
  - E) The corrosiveness of the carbon dioxide stream and formation fluids;
  - F) The down-hole temperatures;
  - G) The lithology of the injection and confining zones;
  - H) The type or grade of cement and cement additives; and
  - D) The quantity, chemical composition, and temperature of the carbon dioxide stream.
- 2) The surface casing must extend through the base of the lowermost USDW and be cemented to the surface through the use of a single or multiple strings of casing and cement.
  - 3) At least one long-string casing, using a sufficient number of centralizers, must extend to the injection zone and must be cemented by circulating cement to the surface in one or more stages.
  - 4) The circulation of cement may be accomplished by staging. The Agency must approve an alternative method of cementing when it determines that the cement cannot be recirculated to the surface, provided the owner or operator can demonstrate, by using logs, that the cement does not allow fluid movement behind the well bore.
  - 5) The cement and cement additives must be compatible with the carbon

dioxide stream and formation fluids and of sufficient quality and quantity to maintain integrity over the design life of the geologic sequestration project. The integrity and location of the cement must be verified that uses technology capable of evaluating cement quality radially and which identifies the location of channels to ensure that USDWs are not endangered.

c) Tubing and packer.

- 1) The tubing and packer materials used in the construction of a Class VI injection well must be compatible with fluids with which the materials may be expected to come into contact, and the owner or operator must submit sufficient documentation to the Agency to support a determination that the tubing and packer meet or exceed standards developed for these materials by the American Petroleum Institute, ASTM International, or a comparable industry standards organization.
- 2) The owner or operator of a Class VI injection well must inject fluids through tubing with a packer set at a depth opposite a cemented interval at the location approved by the Agency.
- 3) In order for the Agency to determine and specify requirements for tubing and packer, the owner or operator must submit the following information to the Agency:
  - A) The depth of setting;
  - B) The characteristics of the carbon dioxide stream (the chemical content, corrosiveness, temperature, and density) and formation fluids;
  - C) The maximum proposed injection pressure;
  - D) The maximum proposed annular pressure;
  - E) The proposed injection rate (intermittent or continuous) and the volume or mass of the carbon dioxide stream;
  - F) The size of the tubing and casing; and
  - G) The tubing tensile, burst, and collapse strengths.

BOARD NOTE: This Section corresponds with 40 CFR 146.86 (2011).

(Source: Added at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**Section 730.187 Logging, Sampling, and Testing Prior to Injection Well Operation**

- a) During the drilling and construction of a Class VI injection well, the owner or operator must run appropriate logs, surveys, and tests to determine or verify the depth, thickness, porosity, permeability, and lithology of all relevant geologic formations and the salinity of any formation fluids in those formations, to ensure conformance with the injection well construction requirements under Section 730.186 and to establish accurate baseline data against which future measurements may be compared. The owner or operator must submit to the Agency a descriptive report prepared by a knowledgeable log analyst that includes an interpretation of the results of the logs and tests. At a minimum, these logs and tests must include the following information items:
- 1) Deviation checks made during drilling on all holes constructed by drilling a pilot hole that is enlarged by reaming or another method. These checks must be at sufficiently frequent intervals to determine the location of the borehole and to ensure that vertical avenues for fluid movement in the form of diverging holes are not created during drilling;
  - 2) Before and upon installation of the surface casing, the following:
    - A) The resistivity, spontaneous potential, and caliper logs before the casing is installed; and
    - B) A cement bond and variable density log, to evaluate cement quality radially, and a temperature log after the casing is set and cemented;
  - 3) Before and upon installation of the long-string casing, the following:
    - A) The resistivity, spontaneous potential, porosity, caliper, gamma ray, fracture finder logs, and any other logs the Agency requires for the given geology before the casing is installed; and
    - B) A cement bond and variable density log and a temperature log, after the casing is set and cemented;
  - 4) A series of tests designed to demonstrate the internal and external mechanical integrity of injection wells, which may include the following:
    - A) A pressure test with liquid or gas;
    - B) A tracer survey, such as oxygen-activation logging;
    - C) A temperature or noise log; and

- D) A casing inspection log; and
- 5) Any alternative methods that provide equivalent or better information and which are required by or approved of by the Agency.
- b) The owner or operator must take whole cores or sidewall cores of the injection zone and confining system and formation fluid samples from all injection zones, and the owner or operator must submit a detailed report prepared by a log analyst to the Agency that includes the following information: well log analyses (including well logs), core analyses, and formation fluid sample information. The Agency must accept information on cores from nearby wells if the Agency determines that the owner or operator has demonstrated that core retrieval is not possible and the nearby cores are representative of conditions at the well. The Agency must require the owner or operator to core other formations in the borehole if the Agency determines that coring those other formations is necessary for evaluation of the well project.
- c) The owner or operator must record the fluid temperature, pH, conductivity, reservoir pressure, and static fluid level of each injection zone.
- d) At a minimum, the owner or operator must determine or calculate the following information concerning the injection and confining zones:
- 1) The fracture pressure;
  - 2) Other physical and chemical characteristics of the injection and confining zones; and
  - 3) The physical and chemical characteristics of the formation fluids in each injection zone.
- e) Upon completion, but prior to operation, the owner or operator must conduct the following tests to verify hydrogeologic characteristics of each injection zone:
- 1) A pressure fall-off test and a pump test; or
  - 2) A pressure fall-off test and injectivity tests.
- f) The owner or operator must provide the Agency with the opportunity to witness all logging and testing by this Subpart H. The owner or operator must submit a schedule of these activities to the Agency no later than 30 days prior to conducting the first test, and the owner or operator must submit any changes to the schedule to the Agency no later than 30 days prior to the next scheduled test.

BOARD NOTE: This Section corresponds with 40 CFR 146.87 (2011).

(Source: Added at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

**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) of this Section and the appropriate of subsection (e)(2) or (e)(3) of this Section:
  - 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) of this Section 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 (2011).

(Source: Added at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 730.189 Mechanical Integrity**

- a) A Class VI injection well has mechanical integrity if both of the following conditions exist:

- 1) There is no significant leak in the casing, tubing, or packer; and
  - 2) There is no significant fluid movement into a USDW through channels adjacent to the injection well bore.
- b) To evaluate the absence of significant leaks under subsection (a)(1) of this Section, the owner or operator must, following an initial annulus pressure test, continuously monitor each of the following parameters:
- 1) The injection pressure, rate, and injected volumes;
  - 2) The pressure on the annulus between the tubing and the long-string casing; and
  - 3) The annulus fluid volume, as specified in Section 730.188 (e);
- c) At least once per year, the owner or operator must use one of the following methods to determine the absence of significant fluid movement under subsection (a)(2) of this Section:
- 1) An approved tracer survey, such as an oxygen-activation log; or
  - 2) A temperature or noise log.
- d) If required by the Agency, at a frequency specified in the testing and monitoring plan required by Section 730.190, the owner or operator must run a casing inspection log to determine the presence or absence of corrosion in the long-string casing.
- e) The Agency must require any requested alternative test that the Agency has determined is necessary to evaluate mechanical integrity under subsections (a)(1) or (a)(2) of this Section after obtaining the written approval of USEPA.

BOARD NOTE: Corresponding 40 CFR 146.89(e) provides that the Agency must submit a written request to USEPA setting forth the proposed test and all technical data supporting its use to obtain approval for a new mechanical integrity test. USEPA stated that it will approve the request if USEPA determines that the proposed test will reliably demonstrate the mechanical integrity of wells for which its use was proposed. USEPA stated that it will publish any alternative method that USEPA has approved in the Federal Register, and the Agency must approve use of the published method if the Agency has determined that the method is appropriate to evaluate mechanical integrity, unless USEPA restricts its use at the time of approval by USEPA.

- f) In conducting and evaluating the tests enumerated in this Section or others that the

Agency has required by permit, the owner or operator and the Agency must apply methods and standards generally accepted in the industry. When the owner or operator reports the results of mechanical integrity tests to the Agency, the owner or operator must include a description of the tests and the methods used. In making its evaluation, the Agency must review monitoring and other test data submitted since the previous evaluation.

- g) The Agency must require additional or alternative tests if the Agency determines that the results presented by the owner or operator pursuant to subsections (a) through (d) of this Section are not satisfactory to demonstrate that there is no significant leak in the casing, tubing, or packer or that there is no significant movement of fluid into a USDW resulting from the injection activity, as required by subsections (a)(1) and (a)(2) of this Section.

BOARD NOTE: This Section corresponds with 40 CFR 146.89 (2011).

(Source: Added at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 730.190 Testing and Monitoring Requirements**

The owner or operator of a Class VI injection well must prepare, maintain, and comply with a testing and monitoring plan which will verify that the geologic sequestration project is operating as permitted, and that the project is not endangering USDWs. The requirement to maintain and implement an approved testing and monitoring plan is directly enforceable, regardless of whether the requirement is a condition of the permit. The owner or operator must submit the testing and monitoring plan to the Agency with the permit application, and the owner or operator must include a description of how it will meet the requirements of this Section, including accessing sites for all necessary monitoring and testing during the life of the project. Testing and monitoring associated with geologic sequestration projects must, at a minimum, include the following parameters and devices:

- a) Analyses of the carbon dioxide stream with sufficient frequency to yield data representative of the chemical and physical characteristics of the stream;
- b) Installation and use of continuous recording devices to monitor injection pressure, rate, and volume, except during well workovers, as such are defined in Section 730.188(d); the pressure on the annulus between the tubing and the long-string casing; and the annulus fluid volume added;
- c) Corrosion monitoring of the well materials for loss of mass, thickness, cracking, pitting, and other signs of corrosion, which must be performed on a quarterly basis to ensure that the well components fulfill the Agency-approved minimum standards for material strength and performance, as provided in Section 730.186(b), by performing one of the following tests:

- 1) Analyzing coupons of the well construction materials placed in contact with the carbon dioxide stream;
  - 2) Routing the carbon dioxide stream through a loop constructed with the material used in the well and inspecting the materials in the loop; or
  - 3) Using an alternative method approved by the Agency;
- d) Periodic monitoring of the groundwater quality and geochemical changes above the confining zones that may be a result of carbon dioxide movement through the confining zones or additional identified zones, including the following information:
- 1) The location and number of monitoring wells based on specific information about the geologic sequestration project, including injection rate and volume, geology, the presence of artificial penetrations, and other factors; and
  - 2) The monitoring frequency and spatial distribution of monitoring wells based on baseline geochemical data that has been collected pursuant to Section 730.182(a)(6) and on any modeling results in the area of review evaluation required by Section 730.184(c).
- e) The annual demonstration of external mechanical integrity required by Section 730.189(c) at least once per year until the injection well is plugged; and, if required by the Agency, a casing inspection log undertaken pursuant to Section 730.189(d), at a frequency established in the testing and monitoring plan;
- f) A pressure fall-off test at least once every five years, unless the Agency has required more frequent testing based on site-specific information;
- g) Testing and monitoring to track the extent of the carbon dioxide plume and the presence or absence of elevated pressure (i.e., the pressure front) by using the following types of methods:
- 1) Direct methods in the injection zones; and
  - 2) Indirect methods (e.g., seismic, electrical, gravity, or electromagnetic surveys or down-hole carbon dioxide detection tools), unless the Agency has determined, based on site-specific geology, that these methods are not appropriate;
- h) The Agency must require surface air monitoring or soil gas monitoring if the Agency determines that this monitoring is needed to detect movement of carbon dioxide that could endanger a USDW.

- 1) The design of Class VI injection well surface air or soil gas monitoring must be based on potential risks to USDWs within the area of review;
- 2) The monitoring frequency and spatial distribution of surface air monitoring or soil gas monitoring must be decided using baseline data, and the monitoring plan must describe how the proposed monitoring will yield useful information on the area of review delineation or compliance with the prohibition against movement of fluid into a USDW set forth in 35 Ill. Adm. Code 704.122;
- 3) If the Agency requires surface air or soil gas monitoring, the Agency has determined that monitoring undertaken to comply with subpart RR of 40 CFR 98 accomplishes the goals of subsections (h)(1) and (h)(2) of this Section, and the owner or operator fulfills the carbon dioxide release reporting requirements set forth in Section 730.191(c)(5), the Agency must approve the use of monitoring undertaken to comply with subpart RR of 40 CFR 98. After approval by the Agency, compliance with subpart RR of 40 CFR 98 pursuant to this subsection (h)(3) is deemed a condition of the Class VI injection well permit;
  - i) Any additional monitoring that the Agency has determined is necessary to support, upgrade, and improve the computational modeling of the area of review evaluation that is required by Section 730.184(c) and to determine compliance with the prohibition against movement of fluid into a USDW set forth in 35 Ill. Adm. Code 704.122;
  - j) The owner or operator must periodically review the testing and monitoring plan to incorporate monitoring data collected under this Subpart H, operational data collected pursuant to Section 730.188, and the most recent area of review reevaluation performed pursuant to Section 730.184(e). The owner or operator must review the testing and monitoring plan at least once in every five-year period. Based on this review, the owner or operator must submit an amended testing and monitoring plan or demonstrate to the Agency that no amendment to the testing and monitoring plan is needed. Any amendments to the testing and monitoring plan must be approved by the Agency, must be incorporated into the permit, and are subject to the permit modification requirements set forth in 35 Ill. Adm. Code 704.261 or 704.264, as appropriate. The owner or operator must submit amended plans or demonstrations to the Agency as follows:
    - 1) Within one year after an area of review reevaluation;
    - 2) Following any significant changes to the facility, such as addition of monitoring wells or newly permitted injection wells within the area of review, on a schedule determined by the Agency; or

- 3) When required by the Agency.
- k) A quality assurance and surveillance plan for all testing and monitoring requirements.

BOARD NOTE: This Section corresponds with 40 CFR 146.90 (2011).

(Source: Added at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 730.191 Reporting Requirements**

The owner or operator of a Class VI injection well must, at a minimum, provide the following reports to the Agency for each permitted Class VI injection well, as specified in subsection (e) of this Section:

- a) Semi-annual reports containing the following information:
  - 1) A description of any deviations in the physical, chemical, and other relevant characteristics of the carbon dioxide stream from the proposed operating data submitted to the Agency pursuant to Sections 730.182(a)(7) and (c)(3) and 730.186(b)(1) and (c)(3);
  - 2) The monthly average, maximum, and minimum values for injection pressure, flow rate and volume, and annular pressure;
  - 3) A description of any event that exceeds operating parameters for the annulus pressure or injection pressure specified in the permit;
  - 4) A description of any event that triggers a shut-off device required pursuant to Section 730.188(e) and the response undertaken by the owner or operator;
  - 5) The monthly volume or mass of the carbon dioxide stream injected over the reporting period and the volume injected cumulatively over the life of the project;
  - 6) The monthly annulus fluid volume added; and
  - 7) The results of the monitoring required by Section 730.190.
- b) Report the results within 30 days after completion of any of the following:
  - 1) Any results of periodic tests of mechanical integrity;

- 2) Any well workover; and
  - 3) Results of any other test of the injection well that the owner or operator has conducted as required by the Agency.
- c) Report any of the following events within 24 hours after the event:
- 1) The owner or operator has discovered any evidence that the injected carbon dioxide stream or associated pressure front may cause an endangerment to a USDW;
  - 2) The owner or operator has discovered any noncompliance with a permit condition, or malfunction of the injection system, which may cause fluid migration into or between USDWs;
  - 3) The owner or operator has discovered any triggering of a shut-off system (i.e., down-hole or at the surface);
  - 4) The owner or operator has discovered any failure to maintain mechanical integrity; or
  - 5) The owner or operator has discovered any release of carbon dioxide to the atmosphere or biosphere through surface air or soil gas monitoring or other monitoring technologies that the Agency has required pursuant to Section 730.190(h).
- d) An owner or operator must notify the Agency in writing 30 days in advance of any of the following:
- 1) Any planned well workover;
  - 2) Any planned stimulation activities, other than stimulation for formation testing conducted pursuant to Section 730.182; and
  - 3) Any other planned test of the injection well conducted by the owner or operator.
- e) In corresponding 40 CFR 146.91(e), USEPA has stated that owners or operators must submit all required reports, submittals, and notifications under this Subpart H to USEPA in an electronic format approved by USEPA.
- f) The owner or operator must retain records as follows:
- 1) The owner or operator must retain all data collected pursuant to Section 730.182 for Class VI permit applications throughout the life of the

geologic sequestration project and for 10 years following site closure.

- 2) The owner or operator must retain data on the nature and composition of all injected fluids collected pursuant to Section 730.190(a) until 10 years after site closure. The Agency may require the owner or operator to deliver the records to the Agency at the conclusion of the retention period.
- 3) The owner or operator must retain monitoring data collected pursuant to Section 730.190(b) through (i) for 10 years after it is collected.
- 4) The owner or operator must retain well plugging reports, post-injection site care data, including, if appropriate, data and information used to develop the demonstration of the alternative post-injection site care timeframe, and the site closure report collected pursuant to requirements at Section 730.193(f) and (h) for 10 years following site closure.
- 5) The Agency may require the owner or operator to retain any records required by this Subpart H for a period that is longer than 10 years after site closure. Any Agency requirement that the owner or operator retain records for a longer period must be made in writing, the writing must recite a definite longer period, and the Agency must state the reasons for the determination to require the longer period. An owner or operator may appeal any Agency determination made pursuant to this subsection (f)(5) to the Board pursuant to Section 40 of the Act [415 ILCS 5/40].

BOARD NOTE: This Section corresponds with 40 CFR 146.91 (2011).

(Source: Added at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 730.192 Injection Well Plugging**

- a) Prior to the well plugging, the owner or operator must flush each Class VI injection well with a buffer fluid, determine bottom-hole reservoir pressure, and perform a final external mechanical integrity test.
- b) Well plugging plan. The owner or operator of a Class VI injection well must prepare, maintain, and comply with a well plugging plan that is acceptable to the Agency. The requirement to maintain and implement an approved well plugging plan is directly enforceable regardless of whether the requirement is a condition of the permit. The owner or operator must submit the well plugging plan as part of the permit application, and the well plugging plan must include the following information:
  - 1) Appropriate tests or measures for determining bottomhole reservoir pressure;

- 2) Appropriate testing methods to ensure external mechanical integrity, as specified in Section 730.189;
  - 3) The type and number of plugs to be used;
  - 4) The placement of each plug, including the elevation of the top and bottom of each plug;
  - 5) The type, grade, and quantity of material to be used in plugging. The material must be compatible with the carbon dioxide stream; and
  - 6) The method of placement of the plugs.
- c) Notice of intent to plug. The owner or operator must notify the Agency in writing, and USEPA electronically pursuant to Section 730.191(e), at least 60 days before beginning the plugging of a well. The owner or operator must also provide the revised well plugging plan at the time of this notice if any changes have been made to the original well plugging plan. The Agency must allow for a shorter notice period if the Agency determines that the shorter notice period is adequate to complete Agency review of the well plugging plan or that well plugging must occur more promptly. The Agency must approve any amendments to the injection well plugging plan and incorporate the amendments into the permit, and the incorporation of the amendments into the permit is subject to the permit modification requirements set forth in 35 Ill. Adm. Code 704.262 or 704.264, as appropriate.
- d) Plugging report. Within 60 days after plugging, the owner or operator must submit a plugging report to the Agency and electronically to USEPA pursuant to Section 730.191(e). The plugging report must be certified as accurate by the owner or operator and by the person who performed the plugging operation (if other than the owner or operator). The owner or operator must retain the well plugging report for 10 years following site closure.

BOARD NOTE: This Section corresponds with 40 CFR 146.92 (2011).

(Source: Added at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 730.193 Post-Injection Site Care and Site Closure**

- a) The owner or operator of a Class VI injection well must prepare, maintain, and comply with a plan for post-injection site care and site closure that the Agency has determined meets the requirements of subsection (a)(2) of this Section. The requirement to maintain and implement an approved plan is directly enforceable, regardless of whether the requirement is a condition of the permit.

- 1) The owner or operator must submit the post-injection site care and site closure plan to the Agency as a part of the permit application.
  - 2) The post-injection site care and site closure plan must include the following information:
    - A) The pressure differential between pre-injection and predicted post-injection pressures in the injection zones;
    - B) The predicted position of the carbon dioxide plume and associated pressure front at site closure, as demonstrated in the area of review evaluation required by Section 730.184(c)(1);
    - C) A description of the proposed post-injection monitoring location, methods, and frequency;
    - D) A proposed schedule for submitting post-injection site care monitoring results to the Agency pursuant to Section 730.191(e); and
    - E) The duration of the post-injection site care timeframe and, if approved by the Agency, the demonstration of the alternative post-injection site care timeframe that ensures non-endangerment of USDWs.
  - 3) Upon cessation of injection, the owner or operator of a Class VI injection well must either submit an amended post-injection site care and site closure plan or demonstrate to the Agency through monitoring data and modeling results that no amendment to the plan is needed. The Agency must approve any amendments to the post-injection site care and site closure plan and incorporate the amendments into the permit, and the incorporation of the amendments into the permit is subject to the permit modification requirements set forth in 35 Ill. Adm. Code 704.262 or 704.264, as appropriate.
  - 4) At any time during the life of the geologic sequestration project, the owner or operator may modify and resubmit the post-injection site care and site closure plan for Agency approval. The owner or operator must resubmit the plan to the Agency within 30 days after making any modification.
- b) The owner or operator must monitor the site following the cessation of injection to show the position of the carbon dioxide plume and pressure front and demonstrate that no USDW is being endangered.

- 1) Following the cessation of injection, the owner or operator must continue to conduct monitoring as specified in the Agency-approved post-injection site care and site closure plan for at least 50 years or for the duration of the alternative timeframe approved by the Agency pursuant to requirements in subsection (c) of this Section, unless the owner or operator makes a demonstration under subsection (b)(2) of this Section. The monitoring must continue until the geologic sequestration project no longer poses an endangerment to USDWs and the demonstration under subsection (b)(2) of this Section is submitted and approved by the Agency.
  - 2) If the Agency determines, based on monitoring and other site-specific data, that the geologic sequestration project no longer poses an endangerment to any USDW before 50 years or prior to the end of the approved alternative timeframe, the Agency must either approve an amendment to the post-injection site care and site closure plan to reduce the frequency of monitoring or authorize site closure before the end of the 50-year period or prior to the end of the approved alternative timeframe.
  - 3) Prior to authorization for site closure, the owner or operator must submit to the Agency for review and approval a demonstration, based on monitoring and other site-specific data, that no additional monitoring is needed to ensure that the geologic sequestration project does not pose an endangerment to any USDW.
  - 4) If the owner or operator cannot make the demonstration required by subsection (b)(3) of this Section (i.e., the Agency has determined that additional monitoring is needed to ensure that the geologic sequestration project does not pose an endangerment to any USDW or the Agency has not approved the demonstration) at the end of the 50-year period or at the end of the approved alternative timeframe, the owner or operator must submit to the Agency a plan to continue post-injection site care until the owner or operator has made a demonstration that the Agency can approve.
- c) Demonstration of alternative post-injection site care timeframe. If the Agency determines in consultation with USEPA during the permitting process that an alternative post-injection site care timeframe other than the 50-year default is appropriate and ensures non-endangerment of any USDW, the Agency must approve the alternative post-injection site care timeframe. The Agency must base its determination on significant, site-specific data and information, including all data and information collected pursuant to Sections 730.182 and 730.183, and the Agency must determine based on substantial evidence that the geologic sequestration project will no longer pose a risk of endangerment to any USDW at the end of the alternative post-injection site care timeframe.
- 1) A demonstration of an alternative post-injection site care timeframe must

include consideration and documentation of the following:

- A) The results of computational modeling performed pursuant to delineation of the area of review, as required by Section 730.184;
- B) The predicted timeframe for pressure decline within the injection zone and any other zones, such that formation fluids may not be forced into any USDW, or the timeframe for pressure decline to pre-injection pressures;
- C) The predicted rate of carbon dioxide plume migration within the injection zone and the predicted timeframe for the cessation of migration;
- D) A description of the site-specific processes that will result in carbon dioxide trapping, including immobilization by capillary trapping, dissolution, and mineralization at the site;
- E) The predicted rate of carbon dioxide trapping in the immobile capillary phase, dissolved phase, and mineral phase;
- F) The results of laboratory analyses, research studies, or field or site-specific studies to verify the information required in subsections (c)(1)(D) and (c)(1)(E) of this Section;
- G) A characterization of the confining zones, including a demonstration that each confining zone is free of transmissive faults, fractures, and micro-fractures and is of appropriate thickness, permeability, and integrity to impede fluid movement (e.g., carbon dioxide, formation fluids, etc.);
- H) The presence of potential conduits for fluid movement, including planned injection wells and project monitoring wells associated with the proposed geologic sequestration project or any other projects in proximity to the predicted or modeled final extent of the carbon dioxide plume and area of elevated pressure;
- I) A description of the well construction and an assessment of the quality of plugs of all abandoned wells within the area of review;
- J) The distance between the injection zone and the nearest USDWs above and below the injection zone; and
- K) Any additional site-specific factors required by the Agency.

- 2) Information submitted to support the demonstration required by subsection (c)(1) of this Section must meet the following criteria:
- A) All analyses and tests performed to support the demonstration must be accurate and reproducible, and they must have been performed in accordance with the established quality assurance standards;
  - B) Estimation techniques must be appropriate, and USEPA-certified test protocols must have been used where available;
  - C) Predictive models must be appropriate and tailored to the site conditions, composition of the carbon dioxide stream, and injection and site conditions over the life of the geologic sequestration project;
  - D) Predictive models must be calibrated using existing information (e.g., at Class I, Class II, or Class V experimental technology injection well sites) where sufficient data are available;
  - E) Reasonably conservative values and modeling assumptions must be used and disclosed to the Agency whenever values are estimated on the basis of known historical information instead of site-specific measurements;
  - F) The owner or operator must perform an analysis to identify and assess aspects of the alternative post-injection site care timeframe demonstration that contribute significantly to uncertainty. The owner or operator must conduct sensitivity analyses to determine the effect that significant uncertainty may contribute to the modeling demonstration.
  - G) An approved quality assurance and quality control plan must address all aspects of the demonstration; and
  - H) Any additional criteria required by the Agency.
- d) Notice of intent for site closure. The owner or operator must notify the Agency in writing at least 120 days before site closure. At the time of this notice, if any changes have been made to the original post-injection site care and site closure plan, the owner or operator must also provide the revised plan. The Agency may allow for a shorter notice period. The Agency must allow for a shorter notice period if the Agency determines that the shorter notice period is adequate to complete Agency review of the post-injection site care and site closure plan or that well closure must occur more promptly.

- e) After the Agency has authorized site closure, the owner or operator must plug all monitoring wells in a manner that will not allow movement of injection or formation fluids which endangers a USDW.
- f) The owner or operator must submit a site closure report to the Agency within 90 days after site closure, which must thereafter be retained at a location designated by the Agency for at least 10 years. The report must include the following records and documentation:
- 1) Documentation of the injection and monitoring well plugging as required by Section 730.192 and subsection (e) of this Section. The owner or operator must provide a copy of a survey plat that the owner or operator has submitted to the local zoning authority designated by the Agency. The plat must indicate the location of the injection well relative to permanently surveyed benchmarks. The owner or operator must also submit a copy of the plat to USEPA Region 5;
  - 2) Documentation of appropriate notification and information to all State and local authorities that have authority over drilling activities within the area of review, to enable those State and local authorities to impose appropriate conditions on subsequent drilling activities that may penetrate the injection and confining zones; and  
  
BOARD NOTE: The Illinois Department of Natural Resources, Office of Mines and Minerals, Oil and Gas Division and the Illinois Department of Public Health each have some role in regulating well drilling, depending on the type of well. Other State agencies may also have a role. Further, units of local government and agencies of a sister state may regulate well drilling if a portion of the area of review lies within their jurisdiction. The owner or operator must assure that all applicable regulatory entities receive the required notification and information.
  - 3) Records reflecting the nature, composition, and volume of the carbon dioxide stream.
- g) Each owner or operator of a Class VI injection well must record a notation on the deed to the facility property or any other document that is normally examined during title search that will in perpetuity provide the following information to any potential purchaser of the property:
- 1) The fact that land has been used to sequester carbon dioxide;
  - 2) The name of the county with which the survey plat was filed, as well as the addresses of the Agency and USEPA Region 5; and

- 3) The volume of fluid injected, the injection zone or zones into which the fluid was injected, and the period over which injection occurred.
- h) The owner or operator must retain records collected during the post-injection site care period for at least 10 years following site closure. The owner or operator must deliver the records to the Agency at the conclusion of the retention period, and the records must thereafter be retained at a location designated by the Agency for that purpose.

BOARD NOTE: This Section corresponds with 40 CFR 146.93 (2011).

(Source: Added at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 730.194 Emergency and Remedial Response**

- a) As part of the permit application, the owner or operator must provide the Agency with an emergency and remedial response plan that describes actions the owner or operator must take to address movement of the injection or formation fluids which may cause an endangerment to a USDW during the construction, operation, and post-injection site care periods of the injection well. The requirement to maintain and implement an approved emergency and remedial response plan is directly enforceable regardless of whether the requirement is a condition of the permit.
- b) If the owner or operator obtains evidence that the injected carbon dioxide stream and associated pressure front may cause an endangerment to a USDW, the owner or operator must undertake the following actions:
  - 1) The owner or operator must immediately cease injection;
  - 2) The owner or operator must take all steps reasonably necessary to identify and characterize any release;
  - 3) The owner or operator must notify the Agency within 24 hours after obtaining the evidence; and
  - 4) The owner or operator must implement the emergency and remedial response plan approved by the Agency.
- c) The Agency must allow the operator to resume injection prior to remediation if the Agency has determined that the injection operation will not endanger any USDW.
- d) The owner or operator must periodically review the emergency and remedial response plan developed pursuant to subsection (a) of this Section. The owner or operator must review the emergency and remedial response plan at least once in

every five year period. Based on this review, the owner or operator must submit an amended emergency and remedial response plan or demonstrate to the Agency that no amendment to the emergency and remedial response plan is needed. The Agency must approve any amendments to the emergency and remedial response plan and incorporate the amendments into the permit, and the incorporation of the amendments into the permit is subject to the permit modification requirements set forth in 35 Ill. Adm. Code 704.262 or 704.264, as appropriate. The owner or operator must submit any amended plans or demonstrations to the Agency as follows:

- 1) Within one year of an area of review reevaluation;
- 2) Following any significant changes to the facility, such as addition of injection or monitoring wells, on a schedule determined by the Agency; or
- 3) When required by the Agency.

BOARD NOTE: This Section corresponds with 40 CFR 146.94 (2011).

(Source: Added at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

### **Section 730.195 Alternative Class VI Injection Well Depth Requirements**

This Section specifies the requirements for application of alternative injection well depth requirements for Class VI injection wells that meet certain criteria. This Section sets forth information that an owner or operator seeking application of alternative Class VI injection well depth requirements must submit to the Agency; the information that the Agency must consider when determining whether any well is suitable for application of alternative injection well depth requirements; the procedure for Agency-USEPA Region 5 communication and Agency determination whether a well is suitable for application of alternative injection well depth requirements; and the additional requirements that apply to an owner or operator of a Class VI injection well that has been granted a permit that includes alternative injection well depth requirements.

- a) When seeking a permit that includes alternative injection well depth requirements to the requirement to inject below the lowermost USDW, the owner or operator must submit a supplemental report concurrent with the permit application. The supplemental report must include the following information:
  - 1) The following demonstrations with regard to the injection zones:
    - A) Each is laterally continuous;
    - B) None is a USDW;

- C) None is hydraulically connected to a USDW;
  - D) None outcrops;
  - E) Each has adequate injectivity, volume, and sufficient porosity to safely contain the injected carbon dioxide and formation fluids; and
  - F) Each has appropriate geochemistry.
- 2) A demonstration that each injection zone is bounded by laterally continuous impermeable confining units above and below the injection zone that are adequate to prevent fluid movement and pressure buildup outside of the injection zone and that the confining units are free of transmissive faults and fractures. The report must further characterize the regional fracture properties and contain a demonstration that these fractures will not interfere with injection, serve as conduits, or endanger USDWs.
- 3) A demonstration, using computational modeling, that no fluid movement will endanger any USDW above or below the injection zone. This modeling should be conducted in conjunction with the area of review determination required by Section 730.184, and the modeling is subject to the area of review delineation and well identification requirements set forth in Section 730.184(c) and the periodic reevaluation requirements set forth in Section 730.184(e).
- 4) The following demonstrations with regard to well design and construction, in conjunction with the alternative injection well depth requirements:
- A) Well design and construction will ensure isolation of the injectate in lieu of the prohibition against movement of fluids set forth in 730.186(a)(1); and
  - B) Well design and construction will meet the well construction requirements set forth in subsection (f) of this Section.
- 5) A description of how the owner or operator will tailor the monitoring and testing and any additional plans to the geologic sequestration project to ensure protection of USDWs above and below each injection zone if the Agency issues a permit that includes alternative injection well depth requirements.
- 6) Information on the location of all the public water supplies that will be affected, or which are reasonably likely to be affected, by the carbon

sequestration project, and all public water supplies that distribute water drawn from any USDW in the area of review.

7) Any other information that the Agency determines is necessary to inform the USEPA Region 5's decision to issue a waiver, as required by subsection (b) of this Section.

b) To inform the USEPA Region 5's decision on whether to grant a waiver of the injection depth requirements pursuant to 40 CFR 146.95, which would allow the Agency to issue a permit that includes alternative injection well depth requirements, the Agency must submit the following documentation to USEPA Region 5:

- 1) An evaluation of the following information as it relates to siting, construction, and operation of a geologic sequestration project under a permit that includes alternative injection well depth requirements:
  - A) The integrity of the upper and lower confining units;
  - B) The suitability of the injection zones (e.g., lateral continuity, lack of transmissive faults and fractures, known current or planned artificial penetrations into the injection zones or formations below the injection zone, etc.);
  - C) The potential capacity of the geologic formations to sequester carbon dioxide, accounting for the availability of alternative injection sites;
  - D) All other site characterization data, the proposed emergency and remedial response plan, and a demonstration of financial responsibility;
  - E) An assessment of community needs, demands, and supply from drinking water resources;
  - F) An assessment of planned needs and potential or future use of USDWs and non-USDWs in the area of review;
  - G) An assessment of planned or permitted water, hydrocarbon, or mineral resource exploitation potential of the proposed injection formations and other formations both above and below the injection zone to determine if there are any plans to drill through the formation to access resources in or beneath the proposed injection zones or formations;

- H) The proposed plan for securing alternative water resources or treating USDW formation waters in the event of contamination related to the Class VI injection well activity; and,
  - D) Any other applicable considerations or information that the Agency determines is necessary to aid a determination by USEPA Region 5 to grant a waiver that would allow the Agency to issue a permit that includes alternative injection well depth requirements.
- 2) Consultation with the Agency's Division of Public Water Supply and all agencies of a sister state that have public water system supervision authority over lands within the area of review of a well for which a waiver that would allow the Agency to issue a permit that includes alternative injection well depth requirements is sought.
  - 3) Any written waiver-related information submitted by the Agency's Division of Public Water Supply and all agencies of a sister state that have public water system supervision authority to the Agency.
- c) Pursuant to 35 Ill. Adm. Code 705.163 and concurrent with the Class VI injection well permit application notice process, the Agency must give public notice that the owner or operator has sought a permit that includes alternative injection well depth requirements. The notice must clearly state the following information:
- 1) The depth of the proposed injection zones;
  - 2) The location of the injection wells;
  - 3) The name and depth of each USDW within the area of review;
  - 4) A map of the area of review;
  - 5) The names of any public water supplies that will be affected, or which are reasonably likely to be affected, by the carbon sequestration project, and all public water supplies that distribute water drawn from any USDW in the area of review; and
  - 6) The results of consultation with the Agency's Division of Public Water Supply and all agencies of a sister state that have public water system supervision authority, as required by subsection (b)(2) of this Section.
- d) Following the public notice required by subsection (c) of this Section, the Agency must provide all information received through the waiver application process to USEPA Region 5. USEPA has stated in corresponding 40 CFR 146.95(d) that, based on this information, the USEPA Region 5 must provide written concurrence

or non-concurrence regarding the Agency issuing a permit that includes alternative injection well depth requirements.

- 1) If USEPA Region 5 determines that additional information is required to support a decision, the Agency must provide that information. At its discretion, USEPA Region 5 may require that public notice of the new information be initiated.
  - 2) The Agency must not issue a permit that includes alternative injection well depth requirements without having first received the written concurrence of USEPA Region 5.
- e) USEPA has stated in corresponding 40 CFR 146.95(e) that if the Agency issues a permit that includes alternative injection well depth requirements, USEPA will post the following information on its Office of Water website within 30 days after permit issuance:
- 1) The depth of the proposed injection zones;
  - 2) The location of the injection wells;
  - 3) The name and depth of all USDWs within the area of review;
  - 4) A map of the area of review;
  - 5) The names of any public water supplies that will be affected, or which are reasonably likely to be affected, by the carbon sequestration project, and all public water supplies that distribute water drawn from any USDW in the area of review; and
  - 6) The date of permit issuance.
- f) Upon receipt of a permit that includes alternative injection well depth requirements for geologic sequestration, the owner or operator of the covered Class VI injection well must comply with the following requirements:
- 1) All requirements of Sections 730.184, 730.185, 730.187, 730.188, 730.189, 730.191, 730.192, and 730.194;
  - 2) All requirements of Section 730.186, with the following modified requirements:
    - A) The owner or operator must ensure that each Class VI injection well operating under the alternative injection well depth requirements is constructed and completed to prevent movement of

fluids into any unauthorized zone that includes a USDW, in lieu of the requirements of Section 730.186(a)(1).

B) The casing and cementing program must be designed to prevent the movement of fluids into any unauthorized zone that includes a USDW in lieu of the requirements of Section 730.186(b)(1).

C) The surface casing must extend through the base of the nearest USDW directly above the injection zone. The surface casing must be cemented to the surface. Alternatively, the Agency must require that the casing extend through another formation above the injection zone and below the nearest USDW above the injection zone if the Agency determines that doing so is necessary to prevent movement of fluids into a USDW.

3) All requirements of Section 730.190, with the following modified requirements:

A) The owner or operator must monitor the groundwater quality, geochemical changes, and pressure in the first USDWs immediately above and below each injection zone; and in any other formation that the Agency determines is necessary to detect potential movement of fluids into a USDW.

B) The owner or operator must conduct testing and monitoring to track the extent of the carbon dioxide plume and the presence or absence of elevated pressure (i.e., the pressure front) by using direct methods to monitor for pressure changes in the injection zones. The owner or operator must use indirect methods (e.g., seismic, electrical, gravity, or electromagnetic surveys or down-hole carbon dioxide detection tools) that the Agency determines are necessary based on site-specific geology.

4) All requirements of Section 730.193, with the following, modified post-injection site care monitoring requirements:

A) The owner or operator must monitor the groundwater quality, geochemical changes, and pressure in the first USDWs immediately above and below each injection zone; and in any other formation that the Agency determines is necessary to detect potential movement of fluids into a USDW.

B) The owner or operator must conduct testing and monitoring to track the extent of the carbon dioxide plume and the presence or absence of elevated pressure (i.e., the pressure front) by using

direct methods in the injection zones. The owner or operator must use indirect methods (e.g., seismic, electrical, gravity, or electromagnetic surveys or down-hole carbon dioxide detection tools) that the Agency determines are necessary to detect potential movement of fluids into a USDW;

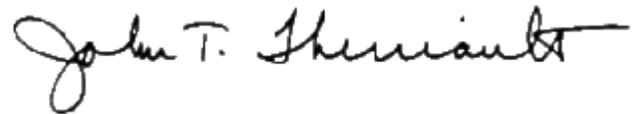
- 5) Any additional requirements that the Agency determines are necessary to ensure protection of USDWs above and below the injection zones.

BOARD NOTE: This Section corresponds with 40 CFR 146.95 (2011). The corresponding federal rule calls the administrative permission to allow a well to inject at an alternative depth (i.e., above the lowermost USDW) a “waiver.” While the Board has retained the use of “waiver” with regard to USEPA review of alternative depth requirements, the Board has changed this to some variant of “permit that includes alternative injection well depth requirements.” While the Agency cannot “waive” standards embodied in Board regulations, the Agency can issue a permit that applies alternative standards that are contained in the regulations. The Board believes that this rule includes standards sufficient to guide an Agency permit determination.

(Source: Added at 36 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

IT IS SO ORDERED.

I, John T. Therriault, Assistant Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above opinion and order on January 5, 2012, by a vote of 5-0.



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John T. Therriault, Assistant Clerk  
Illinois Pollution Control Board