

is separated from any USDW by a confining zone free of known open faults or fractures within the area of review.

(b) All Class II wells shall be cased and cemented to prevent movement of fluids into or between USDWs. Requirements shall be based on the depth to base of fresh water, and the depth to the injection zone. Newly drilled Class II wells must have surface casing set and cemented to at least 50 feet below the base of fresh water, or the equivalent (e.g., long string cemented to surface). At the Regional Administrator's discretion, the casing and cementing of wells to be converted may be considered adequate if they meet the BIA requirements that were in effect at the time of construction (completion), and will not result in movement of fluid into a USDW.

(c) Owner/operators shall provide a standard female fitting with cut-off valves, connected to the tubing and the tubing/casing annulus so that the injection pressure and annulus pressure may be measured by an EPA representative by attaching a gauge having a standard male fitting.

(d) No owner or operator may begin construction of a new well until a permit authorizing such construction has been issued, unless such construction is otherwise authorized by an area permit.

**§ 147.2920 Operating requirements for wells authorized by permit.**

(a) For new Class II wells, injection shall be through adequate tubing and packer. Packer shall be run on the tubing and set inside the casing within 75 feet of the top of the injection interval. For existing Class II, wells, injection shall be through adequate tubing and packer, or according to alternative operating requirements approved by the Regional Administrator, as necessary to prevent the movement of fluid into a USDW.

(b) Each well must have mechanical integrity. Mechanical integrity of the injection well must be shown prior to operation. The owner/operator must notify the Osage UIC office at least five days prior to mechanical integrity testing. Conditions of both paragraphs (b) (1) and (2) of this section must be met.

(1) There is no significant leak in the casing, tubing or packer. This may be shown by the following:

(i) Performance of a pressure test of the casing/tubing annulus to at least 200 psi, or the pressure specified by the Regional Administrator, to be repeated thereafter, at five year intervals, for the life of the well (Pressure tests conducted during well operation shall maintain an injection/annulus pressure differential of at least 100 psi throughout the tubing length); or

(ii) Maintaining a positive gauge pressure on the casing/tubing annulus (filled with liquid) and monitoring the pressure monthly and reporting of the pressure information annually; or

(iii) Radioactive tracer survey; or

(iv) For enhanced recovery wells, record of monitoring showing the absence of significant changes in the relationship between injection pressure and injection flow rate at the wellhead, following an initial pressure test as described by paragraph (b)(1) (i) or (v) of this section; or

(v) Testing or monitoring programs approved by the Administrator on a case-by-case basis, and

(2) There is no significant fluid movement into a USDW through vertical channels adjacent to the well bore. This may be shown by any of the following:

(i) Cementing records (need not be reviewed every five years);

(ii) Tracer survey (in appropriate hydrogeologic settings; must be used in conjunction with at least one of the other alternatives);

(iii) Temperature log;

(iv) Noise log; or

(v) Other tests deemed acceptable by the Administrator.

(c) Injection pressure at the wellhead shall be limited so that it does not initiate new fractures or propagate existing fractures in the confining zone adjacent to any USDW.

(d) Injection wells or projects which have exhibited failure to confine injected fluids to the authorized injection zone or zones may be subject to restriction of injected volume and pressure or shut-in, until the failure has been identified and corrected.

(e) Operation shall not commence until proof has been submitted to the

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Regional Administrator, or an EPA representative has witnessed that any corrective action specified in the permit has been completed.

### § 147.2921 Schedule of compliance.

The permit may, when appropriate, specify a schedule of compliance leading to compliance with the Safe Drinking Water Act and the Osage UIC regulations.

(a) Any schedule of compliance shall require compliance as soon as possible, and in no case later than three years after the effective date of the permit.

(b) If a permit establishes a schedule of compliance which exceeds one year from the date of permit issuance, the schedule shall set forth interim requirements and the dates for their achievement.

(1) The time between interim dates shall not exceed one year.

(2) If the time necessary for completion of any interim requirement is more than 1 year and is not readily divisible into stages for completion, the permit shall specify interim dates for the submission of reports of progress toward completion of the interim requirements and indicate a projected completion date.

(c) The permit shall be written to require that if a schedule of compliance is applicable, progress reports be submitted no later than 30 days following each interim date and the final date of compliance.

### § 147.2922 Monitoring and reporting requirements for wells authorized by permit.

(a) The owner/operator shall notify the Osage UIC office within 30 days of the date on which injection commenced.

(b) The operator shall monitor the injection pressure (psi) and rate (bbl/day) at least monthly, with the results reported annually. The annual reports shall specify the types or methods used to generate the monitoring data.

(c) The owner/operator shall notify the Osage UIC office within 30 days of any mechanical failure or down-hole problems involving well integrity, well workovers, or any noncompliance. Operators should note the obligation to apply for and obtain a workover permit

from the Bureau of Indian Affairs Osage Agency before reentering an injection well.) If the condition may endanger an USDW, the owner/operator shall notify the Osage UIC officer orally within 24 hours, with written notice including plans for testing and/or repair to be submitted within five days. If all the information is not available within five days, a followup report must be submitted within 30 days.

(d) The owner/operator shall retain all monitoring records for three years, unless an enforcement action is pending, and then until three years after the enforcement action has been resolved.

(e) The owner/operator shall notify the Osage UIC office in writing of a transfer of ownership at least 10 days prior to such transfer.

(Approved by the Office of Management and Budget under control number 2040-0042)

### § 147.2923 Corrective action for wells authorized by permit.

All improperly sealed, completed or abandoned wells (*i.e.*, wells or well bores which may provide an avenue for movement of fluid into an UDSW) within the zone of endangering influence (as defined in §147.2904, Area of Review) that penetrate the injection zone of a Class II well, must have corrective action taken to prevent movement of fluid into a USDW.

(a) EPA will review completion and plugging records of wells within the zone of endangering influence that penetrate the injection zone and will notify the operator when corrective action is required. Corrective action may include:

(1) Well modifications, including:

(i) Recementing;

(ii) Workover;

(iii) Reconditioning; and/or

(iv) Plugging or replugging;

(2) Permit conditions to limit injection pressure so as to prevent movement of fluid into a USDW;

(3) A more stringent monitoring program; and/or

(4) Periodic testing of other wells within the area of review to determine if significant movement of fluid has occurred. If the monitoring discussed in paragraph (a)(3) or (a)(4) of this section indicates the potential endangerment