CHAPTER 35. WELL DRILLER AND PUMP INSTALLER LICENSING

SUBCHAPTER 1. GENERAL PROVISIONS

785:35-1-2. Definitions

The following words and terms, when used in this Chapter, shall have the following meaning, unless the context clearly indicates otherwise:

"Abandoned well" means a well that has been permanently taken out of use, or is in such a state of disrepair that using it is impracticable or threatens to contaminate the groundwaters of the State.

"APA" means and refers to the Oklahoma Administrative Procedures Act set forth in 75 O.S. 1981, §§250 et seq., as amended.

"Application" means a formal request to the Board and the first step required by law to acquire the right to perform or engage in activities regulated by the Board.

"Board" means the Oklahoma Water Resources Board authorized by law to make final adjudications, execute contracts, adopt rules and carry out other powers and duties set forth by law or, for duties authorized by law to be delegated to the Executive Director, the Executive Director or any employee or agent or staff member thereof as assigned by the Executive Director.

"Beneficial use" means the use of such quantity of stream o groundwater when reasonable intelligence and reasonable diligence are exercised in its application for a lawful purpose and as is economically necessary for that purpose. Beneficial uses include but are are not limited to municipal, industrial, agricultural, irrigation, recreation, fish and wildlife, ect.

"Cathodic protection" means a technique used to reduce the corrosion of a metal surface by making that surface the cathode of an electrochemical cell.

"Commercial drilling" means drilling and installation as a business, trade, or occupation for compensation. [82:1010.1]

"Commercial installation" means installation as a business, trade or occupation for compensation. [82:1020.1]

"Commercial plugging" means plugging wells or borings as a business, trade or occupation for compensation. [82:1020.1]

"Deep anode groundbed" means one or more anodes installed vertically at a depth of fifty (50) feet or more below the earth's surface in a drilled hole for the purpose of providing cathodic protection.

"Direct push geological boring" means a geological boring in which tools and sensors are pushed into the ground using static weight combined with percussion as the energy to remove soil or make a path for the tool to obtain geotechnical, soil, water, and/or vapor information.

"Direct push monitoring well" means a well installed by direct push technology and used to obtain a representative groundwater sample for determining groundwater chemistry or quality; for detecting, recovering, or remediation of actual or potential contamination; or for monitoring the unsaturated zone above a water table or confined aquifer, and includes site assessment observation wells and unsaturated zone monitoring wells.

"Drilling water" means water that is used in the drilling of a well which is of a quality suitable for drinking or is uncontaminated water with a residual chlorine content equal to or greater than one hundred (100) milligrams per liter.

"Domestic use" means the use of water by a natural individual or by a family or household for household purposes, for farm and domestic animals up to the normal grazing capacity of the land whether or not the animals are actually owned by such natural individual or family, and for the irrigation of land not exceeding a total of three (3) acres in area for the growing of gardens, orchards, and lawns [82:1020.1(2)]. Domestic use also includes:(1) the use of water for agriculture purposes by natural individuals, (2) use of water for fire protection, and (3) the use of water by non-household entities for drinking water purposes, restroom use, and the watering of lawns, provided that the amount of groundwater used for any such purposes does not exceed five acre-feet per year.

"Firm" means an individual or any kind of legal entity, such as a sole proprietorship, partnership or corporation that holds a license to conduct any well drilling or pump installation activity.

"Fresh water" means water which has less than five thousand (5000) parts per million total dissolved solids. All other water is salt water. [82:1020.1(7)]

"Fresh water observation well" means any well used to measure the depth to the water table or parameters of fresh water aquifer performance.

"Geotechnical boring" means any excavation deeper than four feet (4'), that is drilled, augured, bored, cored, washed, driven, jetted or otherwise constructed and which is used or capable of being used to obtain soil or geological formation samples or information, or for the determination of groundwater quality or remediation.

"Geothermal well" means heat pump well.

"Groundwater" means fresh water and marginal water under the surface of the earth regardless of the geologic structure in which it is standing or moving outside the cut bank of any definite stream. [82:1020.1(1)]

"Groundwater well" means any excavation that is drilled, cored, bored, washed, driven, dug, jetted or otherwise constructed which is used or is capable of being used for the production of groundwater.

"Heat exchange well" means the same as, and includes, the terms "geothermal well", "heat pump well", and "heat sink well".

"Heat pump well" means a boring or cased hole that uses or is capable of using the thermal characteristics of the geologic formations or groundwater if encountered, and includes but is not limited to an open or closed loop groundwater heat pump system.

"Heat sink well" means a well utilized for heat exchange purposes, including but not limited to, a heat pump well and a geothermal well.

"License" means a certification issued by the Board to qualified persons making application therefor authorizing such persons to engage in weather modification and control operations or the business of drilling or plugging wells or borings and installing water well pumps.

"Marginal water" means water which has at least five thousand (5000) and less than ten thousand (10,000) parts per million total dissolved solids.

"Monitoring well" means a well used to obtain a representative groundwater sample for determining groundwater chemistry or quality; for detecting, recovering, or remediation of actual or potential contamination; or for monitoring the unsaturated zone above a water table or confined aquifer, and includes site assessment observation wells and unsaturated zone monitoring wells.

"Open-loop heat pump water supply well" means a well drilled to supply water for the purpose of heat transfer.

"Operator" means the individual person engaging in the actual operation and use of the well drilling equipment and facilities and who performs and supervises the actual on-site construction, completion and handling of wells or well test holes, and conducts tests, and obtains and records well or well test hole data.

"Piezometer" means cased holes that monitor or are capable of monitoring water pressures or soil moisture tensions, primarily located at dam sites or other man-made water retention structures.

"Pump" means mechanical equipment or device used to remove water from wells and shall include, but is not limited to pumps, seals, tanks, fittings, pipes from wells to pressure tanks, pressure switches, shut off valves for pressure tanks, related equipment and controls.

"Pump installer" means a person who is qualified to engage in the installation, removal, alteration, or repair of water well pumps and pumping equipment used in connection with a water well and breaking of the water well seal.

"Sand point well" means a groundwater well with a borehole constructed by means of driving a small diameter pipe having perforations downward into a loose sandy soil or by means of forcing uncontaminated groundwater through a small diameter pipe having perforations with sufficient pressure to displace loose sandy soil with the pipe.

"Site assessment observation well" means a well used to measure the depth to the water when used for evaluation, classification or determination of the groundwater flow direction at a site that is or might be contaminated.

"Sleeve" means well casing that is installed at the surface surrounding the production casing and used solely for the purpose of attaching a pitless adapter unit and is separate from surface casing and conductor pipe.

"Soil boring" means geotechnical boring.

"Total dissolved solids" (TDS) means a measure, in parts per million, of dissolved combined organic or inorganic substances suspended in water. Total dissolved solids is used as an aggregate indicator of water quality.

"Unsaturated zone monitoring well" means any well used for the characterization, evaluation or monitoring of the unsaturated area above the water table or zone.

"Vertical closed-loop heat pump well" means the borehole perpendicular to the natural grade of the earth surface drilled deeper than ten (10) feet into which a closed-loop pipe is placed for the purpose of heat transfer.

"Water return well" means a well constructed for the purpose of returning water that has passed through the heat pump system to the same aquifer from which the water was produced by the open-loop water supply well.

"Water well test hole" means any excavation that is drilled, cored, bored, washed, driven, dug, jetted or otherwise constructed which is used or is capable of being used to determine the location of fresh groundwater and/or the capacity of the geologic formation to yield groundwater.

"Well" means any type of excavation for the purpose of obtaining groundwater, to monitor, to remediate, or observe conditions under the surface of the earth, but does not include oil and gas wells.

"Well driller" means and refers to the individual owner-proprietor or partnership, firm or corporation engaged in the business of the commercial drilling, plugging or reconstruction and the test drilling of wells in the State of Oklahoma.

785:35-1-4. Violations and penalties

(a) **Misdemeanor violations.** Any person who, after notice from the Board violates or refuses or neglects to comply with any provision of 82 0.S. 1991, §§1020.1 through 1020.22, as amended and the rules of this Chapter, or who commits waste shall be guilty of a misdemeanor, and upon conviction shall be fined not less than Twenty-Five Dollars ($25.00) nor more than Two Hundred Fifty Dollars ($250.00) for each offense. Any person who, after notice that he is in violation thereof continues to violate any provision of this act, and fails to comply therewith within a reasonable length of time, is guilty of a separate offense for each day the violation continues.

(b) **Administrative penalties.** *The Board may, after notice and hearing, impose on any person administrative penalties of up to Five Thousand Dollars ($5000.00) and may revoke, suspend or deny renewal of any license or operator certification for each violation of the rules regarding license or certification requirements, the requirement to obtain a license or certification, or minimum construction or installation standards. Each day a violation continues shall constitute a separate violation. Such administrative penalties shall be deposited in the Well Drillers and Pump Installers Remedial Action Indemnity Fund except as otherwise provided in* 785:35-1-5(c). [82:1020.16(E)]

(1) **Notice of violation and proposed assessment.** In addition to revoking, suspending or not renewing a license or operator certification, the Board may impose administrative penalties against drillers or operators who fail, refuse or neglect to comply with rules or orders of the Board. Such administrative penalties shall be imposed only after notice and

opportunity for hearing on the proposed imposition of such penalties. The notice of the proposed assessment of administrative penalties shall inform the respondent of the provisions of the Board rules or order at issue and the proposed amount of the penalty. A letter, citation, petition, notice of violation, consent order or final order may constitute a notice of proposed assessment for purposes of initiating administrative penalty proceedings if it meets the requirements of this section.

(2) **Administrative fine schedule.** The schedule of fines in this Section is based on violation of requirements common to the rules promulgated under authority of the 82 O.S. Section 1085.2; Oklahoma Groundwater Law in 82 O.S. Section 1020.1 and following, particularly Section 1020.16 on well driller and pump installer licensing. The fine schedule for citations issued by the Board for violations of the following requirements is:

(A) Engaged in commercial activity without a license.
- (i) First - $1,000.00
- (ii) Second or subsequent - up to $5,000.00.

(B) Engaged in commercial activity without an operator's certification.
- (i) First - $1,000.00.
- (ii) Second or subsequent - up to $5,000.00.

(C) Failure to have present a certified operator at the drilling, plugging or pump installation site.
- (i) First - $1,000.00.
- (ii) Second or subsequent up to $5,000.00.

(D) Failure to have rig used in drilling or pump installation properly identified
- (i) First - $1,000.00.
- (ii) Second or subsequent up to $5,000.00.

(E) Failure to submit a multi-purpose completion report form or electronic version
- (i) First - $250.00.
- (ii) Second or subsequent $500.00.

(F) Violation of groundwater well, fresh water observation well and water well test holes minimum standard
- (i) First - $1,000.00.
- (ii) Second or subsequent up to $5,000.00.

(G) Violation of heat exchange well minimum standard
- (i) First - $1,000.00.
- (ii) Second or subsequent up to $5,000.00.

(H) Violation of monitoring well and geotechnical boring minimum standard
- (i) First - $1,000.00.
- (ii) Second or subsequent up to $5,000.00.

(I) Violation of pump installation minimum standard.
- (i) First - $1,000.00.
- (ii) Second or subsequent up to $5,000.00.

(J) Violation of minimum standard for plugging and capping wells and test holes.
- (i) First - $1,000.00.
- (ii) Second or subsequent up to $5,000.00.

(K) Violation of minimum standard for plugging site assessment observation well, monitoring well and geotechnical borings.
- (i) First - $1,000.00.
- (ii) Second or subsequent up to $5,000.00.

(L) Failure to submit a notice of intent to drill orior to drilling a well for beneficial use.
- (i) First - $1,000.00.
- (ii) Second or subesquent up to $5,000.00.

(M) Failure to keep the firm's contact information up to date with the Board.
- (i) First- $250.00.
- (ii) Second or subsequent up to $500.00.

(3) **Administrative Citations**

(A) Issuance of a citation. A citation which is issued to a person for violation of one or more of the compliance requirements provided in Section 785:35-1-4(b)(2) shall advise the person of the hearing date at which the person may contest the issuance of the citation and/or the amount of the fine. Such hearings shall be conducted in compliance with the Oklahoma Administrative Procedures Act and the Oklahoma Open Meetings Act.

(B) Orders following hearing. A final order may uphold the citation as issued, reduce the amount of the fine or dismiss the action. A default order may be issued if the person cited has been advised in writing of the hearing date and fails to appear. The fine is due and payable immediately upon issuance of the order unless otherwise provided therein. A final order is appealable to the district court in accordance with the Oklahoma Administrative Procedures Act.

(4) **Payment of fines.** A person who is ordered to pay a fine shall submit the fine to the Oklahoma Water Resources Board, 3800 North Classen Boulevard, Oklahoma City, Oklahoma 73118. A person who decides not to contest the issuance of the citation shall submit payment of the fine to the same address on or before the hearing date indicated on the citation.

785:35-1-5. Indemnity Fund

(a) **Purpose of the Indemnity Fund.** *Monies in the Indemnity Fund shall only be expended for remedial actions necessary without notice and hearing to protect groundwater from pollution or potential pollution from wells or boreholes that do not meet the minimum standards for construction or that have been abandoned.* [82:1020.16(B)(2)] *Expenditures from the indemnity fund...shall not exceed ~~Ten Thousand Dollars ($10,000.00)~~ Twenty-Five Thousand Dollard ($25,000.00) for each well, borehole, or pump for which action is taken.* [82:1020.16(B)(4)] Monies from the Indemnity Fund shall be expended solely for the repair or plugging of improperly constructed wells. Unless otherwise determined by the Board, a finding that a well has been improperly constructed shall be based on the rules and statutes in place at the time the well was constructed.

(b) **Reimbursement.** The establishment of the Indemnity Fund in no way relieves the driller or pump installer from liability incurred or responsibility for wells or boreholes drilled or plugged or pumps installed which are not in compliance with the Board's rules and regulations. If the Board makes an expenditure from the Indemnity Fund to remedy a deficient condition, then any driller or pump installer responsible ~~therefor~~ therefore shall, within a reasonable time specified in a written notification by the Board, reimburse the Indemnity Fund for the full amount of the expenditure. If the driller or pump installer does not make such reimbursement, then the Board shall not renew the license or certification of the driller or pump installer and may pursue other available remedies. *The Board shall seek reimbursement as recommended by the Well Drillers and Pump Installers Advisory Council for any remedial action taken or required by the Board*. Any monies received as reimbursement shall be deposited in the Well Drillers and Pump Installers Remedial Action Indemnity Fund except as otherwise provided in 785:35-1-5(c). [82:1020.16(B)(5)]

(c) **Well Drillers and Pump Installers Regulation Account.** When the Well Drillers and Pump Installers Remedial Action Indemnity Fund reaches ~~Fifty Thousand Dollars ($50,000.00)~~ One Hundred Thousand Dollard ($100,000.00), the annual fees received from well drillers and pump installers, *monies received as reimbursement, and administrative penalties recovered under* 785:35-1-4(b) [82:1020.16(C)] shall be deposited in a separate account in the *Water Resources Board Revolving Fund designated as the Well Drillers and Pump Installers Regulation Account. Monies in said account shall be used by the Board for inspections, licensing, enforcement, and education, reimbursing per diem and travel costs for members of the Well Drillers and Pump Installers Advisory Council pursuant to the State Travel Reimbursement Act, and as otherwise determined to be necessary to implement the provisions of this section* [82:1020.16(C)], including but not limited to the payment for damage or destruction of property caused by activities related to inspections and enforcement by the Board.

SUBCHAPTER 3. LICENSING AND CERTIFICATIONS

785:35-3-1. Licensing procedures

(a) **Who must file and types of certifications.**

(1) All persons engaged in the following categories of activities in this state shall make application for and obtain a license from the Board:

(A) Category 1: commercial drilling or plugging of groundwater wells including test drilling for groundwater, and commercial drilling or plugging of fresh water observation wells;

(B) Category 2: commercial drilling or plugging of monitoring wells and site assessment wells, and drilling or plugging of geotechnical borings;

(C) Category 3: commercial ~~installation of water well pumps~~ installation, removal, alteration, or repair of water well pumps or water well pumping equiptment;

(D) Category 4: commercial drilling or plugging of wells utilized for heat exchange purposes including but not limited to the following:

(i) heat exchange wells; and

(ii) geothermal wells.

(E) Category 5: commercial drilling or plugging of marginal water wells.

(F) Category 6: commercial drilling or plugging of cathjodic protection wells drilled for deep anode groundbeds.

(2) The license issued by the Board shall indicate on its face each category and specific activity or activities as described in (a)(1) of this section for which the licensee is certified to perform and conduct.

(3) Each licensed firm shall have at least one operator who may also be the licensee. Each operator shall be required to obtain a certification from the Board. An operator shall not conduct types of activities not authorized for the licensee under whom the operator works.

(4) To engage in activities for which certification is required, operators shall also have a valid license or shall be certified as an operator for a person having a valid license. An operator's certification by itself shall not constitute proper authority to engage in activities for which licensing is required.

(5) Reconditioning of wells as a trade, business or occupation for compensation shall be considered commercial drilling.

(6) No license shall be required for any person who installs vapor observation wells within the excavation of newly installed underground tank systems, provided that the bottom of the vapor observation well does not intercept the

groundwater table and is above the historic high water table level in the area, and provided further that such vapor wells shall be constructed to meet or exceed the minimum standards for the construction of monitoring wells which are located in the unsaturated zone of aquifer.

(b) **Application requirements for license.**

(1) Any person who intends to conduct any of the activities listed in 785:35-3-1(a)(1) must complete and file a verified application for license and activity certification on forms provided by the Board.

(2) The license applicant shall submit the following with the application:

(A) verification of at least two (2) years qualified experience in the activity or activities for which certification under the license is sought, provided that education related to the activity may be substituted for up to one (1) year of the required qualified experience;

(i) Experience documentation submitted to the Board must include W-2's and/or check stubs verifying qualified experience.

(B) a list of all well rigs and equipment used or to be used in conducting the activities for which certification under license is sought;

(C) the license fee for each activity for which certification under the license is sought;

(D) the indemnity fund fee for each category of activity for which certification under the license is sought;

(E) the examination fee.

(F) applicants for category 5 must also ~~holds~~ hold a category 1 certification for a minimum of 2 years.

(3) Applicants who are partnerships, corporations or other entities that are not individuals shall additionally provide the following with the application:

(A) designation of one contact person who shall be an official properly authorized to act for the partnership, corporation or other entity;

(B) authorized signature of the contact person who shall execute and verify the application;

(C) a list of all persons employed who intend to become duly certified operators for the partnership, corporation or other entity.

(c) **Application requirements for operator certification.**

(1) Any individual who intends to conduct any of the activities listed in 785:35-3-1(a)(1) for any person who obtains a license pursuant to these rules must complete and file an application for an operator certification on forms supplied by the Board, provided however, one operator certification shall be issued with the license to the licensee.

(2) The applicant for an operator certification shall submit the following with the application:

(A) prior to January 1, 2030, verification of at least one (1) year of qualified experience in the activity or activities for which the operator certification is sought, provided that education related to the activity may be substituted for up to six (6) months of the required qualified experience;

(B) the operator certification fee;

(C) the examination fee.

(D) Effective January 1, 2030, verification of completion of a supervised experience program or official documentation verifying an active, valid certification designation in good standing issued by the National Ground Water Association (NGWA), provided, if NGWA certification is submitted towards operator certification:

(i) applicants for Category 1, groundwater wells, Category 2, monitoring wells and geotechnical borings, Category5, marginal qualituy groundwater wells, or Category 6, cathodic protection, must hold an active Certified Well Driller (CWD) or Master Groundwater Contractor (MGWC) designation;

(ii) applicants for Category 3, pump installation must hold an active Certified Pump Installer (CPI) or Master Groundwater Contractor (MGWC) designation;

(iii) applciatnts for Category 4, geothermal and heat exchange wells, must hold a Certified Vertical Closed Loop Driller (CVCLD) designation;

(d) **Completion of application and notification.**

(1) Any application for license or operator certification not completed within six (6) months from the date of receipt shall be cancelled and fees submitted therewith forfeited.

(2) Upon receipt of a properly completed application and all items required to be submitted, the Board shall inform said applicant of the dates, times, and places of the examination for which he is eligible.

(e) **Administration and procedures relating to examination.**

(1) Upon notification of the dates, times, and places of examinations, the applicant shall notify the Board of the date, time, and place the applicant will be present to take the Oklahoma regulations examination relating to the activities listed in 785:35-3-1(a)(1) for which the license or operator certification is sought. There shall be ~~five (5)~~ six (6) kinds of examinations:

(A) an examination relating to groundwater wells and fresh water observation wells,

(B) an examination relating to monitoring wells, site assessment observation wells, and geotechnical boring,

(C) an examination relating to pump installation activities, including but not limited to related electrical work performed from the output side of a fused disconnect or breaker box, and

(D) an examination relating to heat exchange wells.

(E) an examination relating to marginal water wells.

(F) an examination relating to cathodic protection wells.

(2) The applicant shall not be allowed to confer with any other person or refer to outside materials for answers to examination questions.

(3) After completion of the appropriate examination(s) within a reasonable time, the Board shall grade the examinations and pass upon qualifications of applicants for licensing and certification.

(4) An applicant, at any time within 30 days of the date he is notified of the results of an examination, may inspect his or her examination paper in the offices of the Board during the normal business hours for the purpose of challenging the propriety of the questions, the method of grading, and the accuracy of grading.

(5) Any applicant who fails an examination will be promptly notified by the Board. After a minimum time period of thirty (30) days, and if a subsequent examination is scheduled between the date of notification and the six (6) months expiration period of the application, the applicant may request to take the subsequent examination but must pay the appropriate examination fee each time the applicant requests to take the examination.

(f) **Issuance of license.**

(1) Upon acceptance of the applicant's qualifications the Board will issue the license with appropriate category and activity certifications to the applicant along with the required operator certifications.

(2) No license and no operator certificate shall be issued to any person who has not been a resident of the State of Oklahoma for at least ninety (90) days prior to the date of issuance of the license, unless the reciprocity provisions for nonresidents as set forth in (B) of this paragraph apply.

(A) The applicant for a license or operator certificate as the case may be, shall submit written verification of Oklahoma residency as required in this subsection.

(B) The Board may waive the ninety (90) day residency requirement as outlined in this subsection for any nonresident of the State of Oklahoma if the nonresident's particular state, territory, or possession of the United States extends similar privileges to the persons licensed under the provisions herein. If the applicant's state of residency has a licensing requirement, then the nonresident must be licensed and in good standing in that state. ~~The license fees charged to a nonresident applicant shall be at least equal to the fees charged for similar nonresident license by the state, territory, or possession of the United States in which the applicant is a resident, but in no case shall the fee be less than four hundred dollars ($400.00).~~ Effective Januarry 1, 2030, all applicants must complete a supervised experience progran that matches the additional activities for which the license or certification is sought or submit official documentation verifying an active, valid certification in good standing issued by the NGWA appropriate for the respective license or certification.

(C) Upon issuance of the license to a firm, license ownership shall be held and owned by the firm. The Point of contact provided may request changes to the firm's information.

(g) **Changing the designation of license or moving an operator certification.**

(1) Any individual licensee may request modification of the license designation to that of a partnership, corporation or other legal entity. The Board shall approve the request and issue a modified license after the following conditions are met:

(A) the licensee holds an active valid license;

(B) the licensee gives written notice of the request to the Board;

(C) the licensee provides the name of the contact person who is an official properly authorized to act for the partnership, corporation or other entity;

(D) a list of all persons employed by the partnership, corporation or other entity who are or intend to become duly certified operators.

(E) payment of fee(s) required for change of license and any new operator certifications.

(2) An operator who has obtained a certification to drill under the license of a partnership, firm, or corporation can transfer that certification to another partnership, firm, or corporation on the following conditions provided that an operator cannot conduct activities during any period that he is not associated with a licensee, and provided further that an operator certification will not be renewed unless the operator is associated with a licensee:

(A) the transfer fee is submitted to the Board with the transfer request, and

(B) the operator associates with the new licensee within thirty (30) days, or has provided notice to the Board of his current address within thirty (30) days after leaving the previous licensee.

(h) **Adding activities to be certified under license or operator certification.**

(1) A licensee or certified operator may request to add activities to be certified under the license or operator certification.

(2) The Board shall consider approval of request after the following conditions are met:

(A) verification of at least two (2) years qualified experience in the additional activity or activities for which the license is sought, provided that education related to the activity may be substituted for up to one (1) year of the required experience; verification of at least one (1) year qualified experience in the additional activity or activities for which certification is sought, provided that education related to the activity may be substituted for up to six (6) months of the required experience;

(B) submittal of an update of the list of rigs or other equipment to be used in the additional activity or activities;

(C) submittal of the additional license or operator certification fee;

(D) submittal of the additional indemnity fund fee;

(E) submittal of the examination fee;

(F) passing the examination.

(G) Effective january 1, 2030, completeion of a supervised experience program or verificatiopn of an active, valid certification in good standing issued by the NGWA appropriate for the additional activity or activities for which the license of certification is sought.

785:35-3-1.3. Supervised experience program

(a) A person who wishes to participate in the supervised experience program under the supervision of a licensed well driller or licensed pump installer firm must register by submitting a registration form to the Board, provide a detailed description of the training program, including the effective commencement and termination date, and provide proof that the licensed well driller or pump installer has agreed to accept the responsibility of supervising the program, which may be conducted by any certified operator employed by the licensed firm.

(b) To qualify for the supervised experience program, the person must:

(1) Participate in a supervised experience program developed by a licensed well driller or pump installer and conducted by the licensee or any certified operator employed by the licensed firm; and

(2) Submit an application on a Board-approved form.

(c) The application form for a supervised experience program registrant must include:

(1) The name, business address, and permanent mailing address of the registrant;

(2) The name and license number of the licensed well driller or pump installer firm responsible for the program, with the understanding that any certified operator employed by the licensed firm may provide training to the registrant;

(3) A detailed description of the training program including the types of wells to be drilled and/or pumps to be installed, the effective commencement and termination dates of the program, equipment used, safety training and procedures, and experience, knowledge, and qualification benchmarks while under the supervised experience program;

(4) A statement by the licensed driller and/or pump installer accepting full responsibility under this Chapter for the acts and activities of the registrant associated with the supervised experience program, regardless of which certified operator within the firm provides the training; and

(5) The signatures of the registrant and the licensed driller or pump installer and a certification of the licensee and registrant that the information provided is true and correct.

(d) Participation in the supervised experience program counts as qualified experience towards a license or operator certification.

785:35-3-2. Expiration and renewal of licenses and certifications

(a) **Expiration.** All licenses and operator certifications issued by the Board shall expire on June 30 of the first or second year following issuance of the license or ~~operators~~ operator certification. New licenses or operator certifications shall be issued for a one or two year period, so that all odd license numbers and associated ~~operators~~ operator certifications shall expire in odd numbered years and all even numbered licenses and associated operator certifications shall expire in even numbered years.

(b) **Renewal.** All licenses and certifications may be renewed for a period of two years, subject to the rules in this Chapter. On or before May 31 of the year the license or certification is to be renewed, except as specified in this subsection, each licensee and certified operator shall submit the following:

(1) A completed application for renewal on forms furnished by the Board with the affidavit executed by the listed contact person for the licensee, and

(2) The license or operator certification renewal fee as provided for in these rules, provided that renewal fees shall not be due for licenses and certifications issued after January 1 of the year in which the first renewal is due, and

(3) The indemnity fund fee for those activities for which the license or operator certification is valid, and

(4) The late fee if the renewal application is submitted after May 31.

(c) **Grace period.** Any licensee or operator who allows his or her license or certification to lapse will be given until June 30 of the year in which they are scheduled to renew their license or operator certification in which to renew his or her license or certification without an examination; provided however, a late fee shall be due after May 31 as set forth in 785:5-1-11. After the grace period, the application will be treated as a new application. Provided however, any licensee or operator fulfilling a military obligation shall be granted an indefinite grace period as determined by the Board.

(d) **Board action.** The Board may grant the renewal application or deny the application as provided in this subchapter of these rules.

(e) **Continuing education requirement.**

(1) Beginning July 1, 2004, completing annual continuing education shall be required before any license or operator certification will be renewed, unless otherwise specifically determined by the Board or as set forth in paragraph (8) of this subsection. Information concerning the continuing education attended must be submitted with the application for renewal form.

(2) All licensees and all certified operators shall be required to attend at least four (4) units of approved continuing education during each year period (from July 1 through June 30) or a total of eight (8) units for each two-year period of renewal of which one unit must be comprised of an approved Oklahoma Rules and Regulations unit.

(3) Category 5 licensees shall be required to obtain at least two (2) units, of the required eight (8) units, of specialized continuing education related to the marginal water wells for each two-year period.

(4) Continuing education shall be required during the first full year that the license or operator certification is active and during each year the license or operator certification is renewed.
(5) One unit of continuing education shall equal fifty (50) minutes of approved instruction.
(6) Approved trade shows and exhibitions attended shall be counted as one unit.
(7) Continuing education instruction relating to well drilling and plugging and pump installation which are provided by or approved by another state's well drilling program are pre-approved for the Oklahoma continuing education requirement if the other state's well drilling program offers reciprocity by accepting Oklahoma's pre-approved continuing education instruction.
(8) Other continuing education instruction and trade shows and exhibitions will be considered for approval by the Board after information concerning the continuing education or trade show and exhibition is submitted to the Board for review. Pre-approval of continuing education, trade shows and exhibitions may be requested for any licensee or certified operator.
(9) ~~Online continuing education that has been designated as pre-approved by the Board shall be accepted for no more than four (4) units of the required eight (8) units for the two-year renewal period.~~**National Certification CE Resiprocity. Submission of a current NGWA certification card or an official NGWA continuing education transcript demonstrating compliance with NGWA's annual continuing education requirements shall be accepted by the Board as prima facie evidence of meeting the eight (8) units of required continuing education under paragraph (1) of this subsection.**
(10) If a licensee or certified operator fails to attend four (4) or eight (8) units as the case may be during the renewal period, the application for renewal may be approved after payment of $250.00 in penalty and double the continuing education requirements eight (8) or sixteen (16) units as the case may be).

SUBCHAPTER 5. GENERAL REQUIREMENTS TO MAINTAIN LICENSES AND OPERATOR CERTIFICATIONS

785:35-5-1. General requirements for licenses

All licensees shall comply with the following to maintain their license:
(1) Designate in a writing filed with the Board an authorized representative of the licensee who shall be deemed and treated as responsible for the exercise, use, maintenance, modification, renewal and all other respects of, and all reports and correspondence relating to, the license. The licensee representative need not be an operator.
(2) An operator certified for the activity being conducted shall be present at the drilling, plugging or pump installation site at all times when any of the regulated activities are being conducted. The operator must have his certification in his possession anytime he is in charge of the drilling operations or pump installation activities.
(3) Each rig used in drilling or pump installation operations shall be properly identified with letters that are a minimum of two inches (2") inches in height, with the firm name and license number in a location visible to the public.
(4) Complete each well or install each pump as the case may be to meet or exceed the minimum standards adopted by the Board set forth in this Chapter, unless a variance has been requested and approved pursuant to 785:35-7-3 before construction begins.
(5) Submit a multi-purpose completion report acceptable to the Board for each new well constructed, each well plugged and each well reconditioned on the appropriate form provided by the Board within sixty (60) days following the completion of new construction, plugging, or reconditioning of the well. The report shall include all applicable information required in the form. For test holes and geotechnical borings, a multi-purpose completion report for each test hole and boring, or one multiple test hole/boring report on a form provided by the Board listing the required information for each such test hole or boring on a contiguous tract of land, must be submitted to the Board within sixty (60) days after completion and plugging of the test holes or borings. Licensees are responsible for the accuracy of information in all reports submitted by certified operators.
(6) Properly renew said license as required herein, including continuing education attendance.
(7) Post the license issued by the Board in a conspicuous place at the business address of the licensed individual, partnership, firm or corporation.
(8) Construct and complete water wells which are to be used for purposes other than domestic use only when an application has been made to the Board for a permit authorizing the location of the well(s).
(9) All contractors are required to keep the firm's contact information up to date with the Board. If the firm's contact information changes, the firm must notify the Board within 30 days with updated contact information.

SUBCHAPTER 7. MINIMUM STANDARDS FOR CONSTRUCTION OF WELLS

785:35-7-1. Minimum standards for construction of groundwater wells, fresh water observation wells, and water well test holes

(a) **General requirements.**

(1) **Minimum standards.** The minimum standards set forth in this subchapter apply to all groundwater wells, fresh water observation wells and water well test holes whether constructed by a person having a valid license or by any other person. More stringent construction standards may be required for areas of known contamination as identified in ~~Chapter 45~~ OAC 252:730, Appendix H.

(2) **Construction of wells.** Flowing and non-flowing groundwater wells, observation wells and water well test holes are to be constructed in a manner as to prevent waste and to prevent contamination of groundwater by pollution material either entering the ground around the casings or tubing, or entering the fresh groundwater from pollution sources below the ground, or by entering the fresh well water by leaking wells, casing pipe fittings, pumps, or well seals.

(3) **Proper maintenance, plugging and capping.** The well driller and/or the well owner are charged with the responsibility of taking whatever steps are reasonable in a particular situation to guard against waste and contamination of the groundwater resources, and to see that unused wells are properly capped or plugged.

(4) **Minor and small public water supply wells.** Prior to drilling a well that will be used in a minor or small public water supply system, a permit from the Oklahoma Department of Environmental Quality (ODEQ) must be obtained. Minor and small public water supply systems are defined in OAC 252:624-1-2 of the ODEQ regulations.

(b) **Minimum location standards.**

(1) Every new groundwater well, fresh water observation well and water well test hole shall be located a minimum distance from possible pollution sources as prescribed in this subsection or as otherwise authorized by a variance granted by the Executive Director. Possible pollution sources include but are not limited to existing or proposed septic tanks, sewer lines, absorption fields or beds, seepage pits, building foundations, waste pits, lagoons, oil or gas wells, and landfills. The minimum distance between the possible pollution source and the well or test hole shall be as follows, provided that other governmental agencies may require wells to be located at distances greater than the minimum distances set forth in this paragraph:

(A) 10 feet from a closed or tight sanitary sewer line, 25 feet from aerobic (above ground) sprinkler spray, and 50 feet from an aerobic sprinkler head,

(B) 300 feet from the outside perimeter of an existing or proposed waste lagoon for a feedlot or confined animal feeding operation, and

(C) 50 feet from all other pollution sources, provided however, if the well is 50 feet to 75 feet and located down-gradient or level from a possible source of pollution, a twenty foot (20') surface seal shall be installed, and

(D) 75 feet from all other pollution sources if the well is level with the pollution source and 100 feet from all other pollution sources if the well is located down-gradient from the pollution source.

(2) If not prohibited by the owner of the well or other governmental agency requirements, groundwater wells which will not be used for drinking water may be located closer to a possible pollution source than the minimum distances specified in paragraph (1) of this subsection if all of the following conditions are met:

(A) the possible pollution source is not a wastewater lagoon, and not a subsurface septic system,

(B) before the well is drilled, the well driller advises the person wanting the well drilled that the well is subject to contamination,

(C) the owner of the proposed well notifies the Board that the owner will authorize the driller to drill the well closer to the possible pollution source than the minimum location standard,

(D) the outside water-tight casing is properly cement grouted or completed with ten (10) feet bentonite in the lower one-half (1/2) portion and ten (10) feet cement grout in the upper one-half (1/2) portion at least twenty (20) feet down from the land surface or pitless adaptor connection.

(3) If a well driller or other person proposing to drill a well encounters a structure, object or other situation and is unsure whether it may be a possible source of pollution, he shall contact Board staff and obtain approval for location of the well.

(c) **Casing of groundwater and fresh water observation wells.** Except for sand point wells, requirements for casing of groundwater wells and fresh water observation wells shall be as follows:

(1) The casing shall be installed to seal off any groundwater zones containing water which does not meet the groundwater quality standards as set forth in Oklahoma's Water Quality Standards. In no case shall a well be completed in a salt or marginal water zone.

(2) New groundwater and fresh water observation wells shall have:

(A) Outside water-tight production casing cement grouted from land surface to a minimum depth of ten (10) feet below the land surface, and to such further depth as may be necessary, depending upon the character of the underground formations, to extend into an impervious stratum, where such stratum is found above the source aquifer.

(B) Casing seated at top of the first impervious stratum suitable for casing point. Where an impervious formation or tight confined bed does not occur at the well site, the casing shall be extended as far as practicable below the water table and wherever possible, at least ten (10) feet below the minimum seasonal stage of the water table.

(C) Casing joints threaded, welded, or glued with water well construction glue so as to be water-tight.

(D) Casing that extends at least twelve (12) inches above the natural ground level or at least eight (8) inches above the floor surface (for a total of 12 inches above natural ground level) for surface pad completions. In areas where known flooding occurs, the casing shall extend twenty-four (24) inches above the maximum level of such flooding.

(E) Casing meeting or exceeding the following:

(i) new or clean and sanitary used carbon or stainless steel, or

(ii) new PVC fresh water well casing which has a S.D.R. rating of twenty-six or stronger and which may be plain end with threaded connector, and with all joints made water-tight by cleaning and cementing, using manufacturer's recommended thinner and cement for use in fresh water wells, or

(iii) fiberglass or other material which meets or exceeds N.S.F. approval for casing which is specially designed for use in a water well.

(d) **Cement grouting and concreting.** Except for sand point wells, cement grouting and concreting requirements for groundwater wells and fresh water observation wells shall be as follows. These requirements must be met before the drilling rig is taken from the site.

(1) All new groundwater wells and fresh water observation wells shall be made water-tight around the outside of the production casing by cement grouting to such depths as may be necessary to exclude pollution, but in no case shall the cement grout seals be less than ten (10) continuous feet in depth, provided that five (5) feet of bentonite may be installed immediately below five (5) feet of cement grout for the total 10 feet continuous seal. If surface pipe and production casing are used, the cement grouting and/or bentonite seal shall be installed outside the surface pipe casing in all instances beginning July 1, 2005, provided the following provisions apply:

(A) a variance may be issued by the Director for an alternative completion design due to site specific conditions, and

(B) if a sleeve is used at the surface for the sole purpose of attaching a pitless adapter, the sleeve shall be installed or embedded within the surface seal, extend a minimum of eight feet (8') below ground level in the borehole, and the surface seal shall be a minimum of one and one-half inch (1½") thick.

(C) If the surface casing does not extend twelve inches (12") above natural ground level and a pitless cap or sanitary seal is not installed, then a ten foot (10') cement grout/bentonite surface seal shall be installed in the area between the surface and production casings terminating within four feet (4') of land surface.

(D) When deemed necessary to utilize conductor or surface casing to control flowing material near surface, an additional cement/bentonite seal shall originate ten feet (10') below the base of the conductor/surface casing and shall terminate ten feet (10') above the base of the conductor/surface casing between the conductor/surface casing and production casing.

(2) The cement or cement/bentonite seal shall originate at a minimum ten (10) foot depth and terminate no deeper than four feet (4') from the natural land surface for a minimum total length of ten feet (10') after all settling of the cement or bentonite/cement has occured, unless a written waiver is first obtained from the Board.

(3) The cement grout shall consist of a mix ratio of one (1) 94 pound sack of cement to a maximum of six (6) U.S. gallons of water. The cement and water must be mixed to the proper consistency as recommended by the cement manufacturer before the mixture is installed around the casing. A maximum of fifty percent (50%) aggregate by dry weight may be added to the portland cement to form the cement grout, provided the aggregate is a size that will not create a potential to cause bridging in the annular space.

(4) A maximum of twenty percent (20%) percent bentonite may be added to the slurry, which bentonite shall be prehydrated to the manufacturer's recommended consistency. Prehydration requires that the bentonite be properly mixed with the recommended amount of water before the mixture is installed.

(5) The well borehole shall be a minimum diameter of at least three (3) inches greater than the outside diameter of the well casing or production tubing adjacent to the borehole utilized in the surface seal.

(6) This annular space shall be filled with cement grout or cement/bentonite to the minimum ten (10) foot depth, or such further depth as may be necessary to exclude pollution.

(7) Where a pitless well adapter or unit is being installed, the grouting shall start below the junction of the pitless well adapter or unit where it attaches to the well casing and shall continue to at least ten (10) feet below this junction.

(8) If a high solids bentonite grout is used for the bentonite seal portion below the cement grout portion of the surface seal, the grout shall contain a minimum, twenty percent (20%) solids by dry weight.

(9) It is not an acceptable installation method to install dry cement around the casing and then add water.

(e) **Well development requirements for groundwater wells except sand point wells or fresh water observation wells.** Upon completion of the groundwater well or fresh water observation wells and before conducting the yield of drawdown tests, the well driller shall clean and develop the well to remove drill cuttings and drilling mud.

(f) **Disinfection of groundwater or fresh water observation wells.** Requirements for disinfection of groundwater or fresh water observation wells shall be as follows:

(1) All water used in the drilling of the well shall be potable water or uncontaminated chlorinated water having not less than 0.5 milligrams per liter (mg/L) chlorine.

(2) A new, repaired, or modified well shall first be thoroughly cleaned and prepared for receiving pumping equipment.

(3) Thereafter, the well and pumping equipment shall be disinfected with chlorine so applied that a concentration of at least one hundred (100) parts per million of chlorine shall be obtained in all parts of the water in the well.

(4) A minimum contact period of two (2) hours shall be provided before pumping the well to flush chlorine solution from the fresh water distribution system.

(g) **Access port or water level measuring device.** Upon completion of a new groundwater or fresh water observation well and before the well is put into service, the well driller will equip the well with either an access port that will allow for the measurement of the depth to static water surface or a static water level measuring device.

(h) **Sand point well construction requirements.** Unless otherwise approved by variance, applicable minimum standards set forth in this section and the following minimum construction requirements apply to sand point wells:

(1) The sand point well shall be drilled to a total depth of no more than thirty feet (30'); and,

(2) A pilot hole shall be constructed first, with cement installed to a depth of three feet (3') around surface casing, then the remaining bore hole can be installed then production casing installed.

785:35-7-1.1. Minimum standards for construction of heat exchange wells

(a) **General requirements.**

(1) **Applicability of minimum standards.** The minimum standards set forth herein apply to all heat exchange wells as defined in 785:35-1-2, whether constructed by a person having a valid license or by any other person. Minimum standards shall include regulation of the drilling of the borehole, installation of casing, installation of heat loop pipe, grouting of the well, and installation of the heat loop pipe up to the connection of the heat loop pipe to the facility circulation equipment.

(2) **Prohibition against other uses.** Heat exchange wells shall not be used for any purpose other than heat exchange. After completion, heat exchange wells shall not be converted to any other type of well unless written approval is obtained from the Board. The licensee shall ensure that the heat exchange well is constructed according to the rules.

(3) **Maximum protection of groundwater required.** Construction of heat exchange wells shall provide maximum protection to the groundwater from surface contaminants and movement and migration of water from one zone or aquifer to another.

(b) **Location of heat exchange wells.**

(1) A vertical heat exchange well shall be located on a site so that surface water will not pool or pond around or within ten (10) feet of the heat exchange well location.

(2) Placement of a heat exchange well must meet or exceed standards as set forth by section 785:35-7-1(b) relating to location requirements for groundwater wells except as set forth in paragraph 3 of this subsection.

(3) If not prohibited by the owner of the well or other federal or state agency requirements, heat exchange wells may be located closer to a possible source of pollution than the minimum distances specified in Section 785:35-7-1(b) if all of the following conditions are met:

(A) The possible pollution source is not a wastewater lagoon, septic tank, absorption field, or aerobic sprinkler system.

(B) The well annulus is completely sealed as described in paragraph 7 of subsection (c) of this section.

(c) **Construction standards for vertical closed-loop exchange wells.** Vertical closed-loop heat exchange wells shall be constructed in accordance with this subsection. Site specific conditions shall be assessed to determine the best method and materials to be used for grouting the well annulus to provide protection of the groundwater per paragraph 3 of subsection (a). In addition, but not as an alternative, to the requirements stated in (1) through (8) of this subsection, methods and materials for construction of heat exchange wells that meet or exceed recommendations specified in "Grouting for Vertical Geothermal Heat Pump Systems Engineering Design and Field Procedures Manual", International Ground Source Heat Pump Association, Oklahoma State University, 2015, and in "ANSI/CSA/IGSHPA C448 Series-16, Design and installation of ground source heat pump systems for commercial and residential buildings", American National Standards Institute, 2016, may be used for construction of vertical closed-loop heat exchange wells.

(1) **Casing material.** If permanent casing is needed in a vertical closed-loop heat exchange well, it must meet standards set out in Section 785:35-7-1 for steel and for plastic.

(2) **Heat exchange loop material.** The material used to construct the heat exchange loop must meet or exceed standards set forth by Clause 5.4 of ANSI/CSA/IGSHPA C448.0.

(3) **Connecting closed-loop pipe.** All pipe joints and fittings installed and buried shall meet or exceed standards set forth by Clause 5.4 of ANSI/CSA/IGSHPA C448.0. Glued or clamped joints shall not be used below ground unless the joint or connection serves as a service outlet and the joint or connection is not covered with earth material. Joints must not leak after assembly. All indoor piping and fittings should meet or exceed standards set forth by Clause 5.5 of ANSI/CSA/IGSHPA C448.0.

(4) **Heat transfer fluid.** Approved fluids for use inside the heat exchange loop include potable water, food-grade or USP-grade propylene glycol, and solutions in which remediation of leaks would occur through dissipation. A release of the fluid to the groundwater must not violate Oklahoma Water Quality Standards set forth in ~~Chapter 45, OAC 785~~Chapter 730,OAC 252.

(5) **Borehole specifications.**

(A) **Borehole diameter.** The borehole for vertical closed-loop heat exchange wells must have a sufficient diameter to accommodate the heat exchange loop u-bend assembly, tremie pipe, and placement of grout to surround all heat exchange loop pipe.

(B) **Exploratory borehole.** The first borehole drilled for the vertical closed-loop heat exchange system shall be considered an exploratory borehole. A subsequent borehole may also be considered an exploratory borehole if the well driller encounters subsurface conditions that include, but are not limited to, lost circulation conditions, hydrocarbons or hazardous gases, and changes in groundwater chemistry.

(C) **Lost circulation conditions.** If caves or large fractures are encountered in drilling the exploratory borehole or any subsequent borehole, grouting may not be possible and the Board must pre-approve completion of the vertical closed-loop heat exchange system in such conditions based on plans to bridge and seal zones of lost circulation.

(D) **Hydrocarbons and hazardous gases.** If hazardous gases or hydrocarbons are observed in drilling the exploratory borehole or any subsequent borehole, the Board must be notified immediately. Completion of the vertical closed-loop heat exchange system shall be prohibited without Board approval.

(E) **Groundwater chemistry.** Chemistry of groundwater encountered in drilling the exploratory borehole, or any subsequent borehole shall be used to inform grout selection. Instructions provided by the grout manufacturer must be followed to provide protection of the groundwater per paragraph 3 of subsection (c) of this section. The grout manufacturer shall be consulted as required.

(6) **Grouting of vertical heat exchange wells.** Grouting and filling the annulus of a heat exchange well must be completed immediately after the well is drilled to avoid cave-in of the uncased hole.

(7) **Grouting methods and materials for vertical closed-loop heat exchange wells.** Grouting methods for vertical closed-loop heat exchange wells shall meet or exceed standards provided by Clause 5.8 of ANSI/CSA/IGSHPA C448.0 and Clause 6.3 of ANSI/CSA/IGSHPA C448.3 except where standards set forth by this Section provide exceptions. The following methods and materials are approved for grouting the annulus of vertical closed-loop heat exchange wells, provided that standards set forth by 785:35-7-1.1(c)(5)(E) shall also apply:

(A) A grout seal shall be installed from the total depth of the borehole up to the connecting trench and must be composed of one of the following materials:

(i) Portland cement;

(ii) Sand-cement mixed at a ratio of not more than 188 pounds of sand to one 94-pound sack of Portland cement and seven (7) gallons of water;

(iii) High solids bentonite grout with a minimum solids content of 20 percent by weight. Clean silica sand may be added to the slurry;

(iv) Bentonite pellets or chips; or

(v) Approved thermally enhanced grouts and non-cement grouts which meet standards set forth by Clause 5.8 of ANSI/CSA/IGSHPA C448.0 and Clause 6.3 of ANSI/CSA/IGSHPA C448.3

(B) Bentonite chip or pellet fill material installed shall be hydrated immediately after installation if installed in the unsaturated zone.

(C) When non-slurry sealing materials are used, only chipped or pelletized sodium bentonite varieties that are designed to fall through standing water are acceptable when sealing the annulus of a well that is below the water level in the saturated zone. The borehole shall be flushed clean of all drilling mud and debris left over from the drilling operation so that the bentonite products designed for this type of installation will gravity feed without obstruction. Material shall be introduced in a manner to prevent bridging of the materials in the borehole annulus. A measuring device such as a tagline shall be used to measure and document placement of the materials installed.

(D) Slurry mixes of bentonite grout or Portland cement shall be installed by pumping through a tremie pipe in a continuous operation using a positive displacement method. Polymer additives designed to retard swelling are acceptable for use with the bentonite grout or Portland cement. The tremie pipe will extend the full depth of the borehole before pumping begins. The borehole diameter shall be of adequate size to allow proper placement of materials using this method. Slurry volume used must equal the annulus volume of the borehole.

(8) **Concentric tube heat exchangers.** Concentric tube heat exchangers that meet or exceed the requirements of this Section are approved.

(d) **Construction standards for open-loop and return heat exchange wells.**

(1) Groundwater wells and water return wells used in open-loop heat exchange must meet the minimum construction standards set forth in Section 785:35-7-1 relating to groundwater.

(2) Groundwater used in the open loop heat exchange system must remain untreated and be returned to the same aquifer from which the groundwater was withdrawn.

(e) **Construction standards for horizontal closed-loop heat exchange systems.** Horizontal closed-loop heat exchange systems constructed by trenching or digging are exempt from grouting requirements, provided that no part of the horizontal loop is constructed at or below the highest anticipated groundwater level. Horizontal closed-loop heat exchange systems constructed by boring or drilling must be grouted according to standards set forth by paragraph 7 of subsection (c) of this Section. All other construction for horizontal closed-loop heat exchange systems shall meet or exceed standards set forth by subsection (c) of this Section.

785:35-7-2. Minimum standards for construction of monitoring wells and geotechnical borings

(a) **General requirements.**

(1) **Applicability of minimum standards.** The minimum standards set forth herein apply to all monitoring wells, including site assessment observation wells and unsaturated zone monitoring wells, and geotechnical borings, whether constructed by a person having a valid license or by any other person.

(2) **Construction.** Monitoring wells and geotechnical borings shall be constructed in such a manner as to prevent waste and contamination of groundwater by pollution material entering the ground around the casing or boring, by entering the

wells or boring, or by entering the fresh groundwater from pollution sources below the ground.

(A) **Drilling equipment.** Drilling equipment shall be decontaminated if contamination is encountered in the well or borehole.

(B) **Drilling procedures.** Drilling procedures shall be carried out in such a manner that will prevent or minimize contamination.

(C) **Construction material.** All construction material shall be in a condition that will prevent or minimize contamination.

(3) **Proper maintenance and plugging.** The driller and the well owner are charged with the responsibility of taking whatever steps are reasonable in a particular situation to guard against waste and contamination of the groundwater resources and to see that unused wells and boring are properly plugged.

(4) **Other regulations.** These rules are minimum standards and other laws and regulations which are more stringent may be applicable.

(b) **Minimum standards for construction of monitoring wells.**

(1) **Diameter of borehole.**

(A) The diameter of boreholes for monitoring wells, with the exception of boreholes for unsaturated zone monitoring wells, shall be at least three inches greater than the nominal diameter of the well casing and screen for the entire length of the casing.

(B) The diameter of boreholes for unsaturated zone monitoring wells shall be at least one and one-half (1 1/2") inches greater than the nominal diameter of the well casing for the entire length of the casing.

(2) **Casing selection and casing joints.**

(A) All wells shall be cased. Casing material shall be selected according to groundwater geochemistry, anticipated lifetime of monitoring program, well depth, parameters to be monitored and other site specific considerations.

(B) When PVC casing is used, the casing shall meet or exceed the standard dimension ratio (SDR) of twenty-one (21).

(C) The minimum diameter for monitoring well casing shall be a nominal two (2) inches, with the exception of casing for unsaturated zone monitoring wells. The minimum diameter for unsaturated zone monitoring well casing shall be a nominal one-half inch. Methane gas probes at solid waste management sites shall be exempt from minimum casing diameter requirements.

(D) The casing shall be connected by flush threaded joints or have the ability to be connected by another mechanical method that does not introduce pollutants into the well. Glued joint casing shall not be used when monitoring organics.

(E) The casing joints shall be made water tight by a method that does not introduce pollutants into the well (e.g. wrapping the casing joint with Teflon tape or placing an o-ring or gasket in the joint).

(3) **Bottom cap required.** A bottom cap shall be installed on each monitoring well.

(4) **Screen selection and setting.**

(A) All wells shall be screened and screen material shall be selected according to groundwater geochemistry, anticipated lifetime of monitoring program, well depth, parameters to be monitored and other site specific considerations, provided that the minimum screen depth shall be two and one-half feet (2 ½') below the land surface, provided further that the minimum screen depth shall be two feet (2') below land surface for tank pit monitoring wells at tank locations regulated by the Oklahoma Corporation Commission.

(B) The well screen shall be factory wire wrapped or factory slotted. Well screens shall not be field slotted.

(C) Slot size shall be selected to prevent or minimize infiltration of the filter pack through the well screen.

(D) Screens shall be of sufficient length to detect, monitor or otherwise describe the contaminant plume according to site specific conditions (e.g. seasonal water level fluctuations). Screen length shall be determined so that commingling of fluids from separate groundwater zones does not occur.

(E) Screen joints shall be placed in the well in such a manner as not to interfere with the accurate investigation of the groundwater quality.

(5) **Filter pack selection and placement.**

(A) All wells shall be have a filter pack and aggregates used for filter pack shall consist of uncontaminated quartz sand, silica or other material that will not affect the groundwater quality.

(B) Filter pack shall be selected to prevent or minimize infiltration of the geologic formation (e.g. fines migration or sand buildup).

(C) Filter pack shall extend two (2) feet above the top of the screen unless such extension would allow vertical communication of pollution through the filter pack.

(D) Filter pack shall be placed in the annulus of the well in such a manner that bridging of the filter pack material will not occur.

(E) When water or vapor levels being monitored are encountered within five (5) feet of the land surface, the filter pack shall extend a minimum of 0.5 feet above the top of the screen.

(6) **Sealing requirements.** Requirements for proper filter pack sealing, annular sealing and surface sealing for monitoring wells shall be as follows:

(A) **Sealing material.** All sealing materials shall be compatible with ambient geological, hydrogeological and climatic conditions, as well as any man-induced conditions anticipated to occur during the life of the monitoring well. Any cement used as a sealant shall be equivalent to or have the same properties as ASTM C-150 cement types I-V (commonly known as Portland cement).

(B) **Filter pack seal.** A minimum of two (2) feet of sodium bentonite pellets, chips or granules of no less than 0.25 inches and no more than 0.75 inches in size shall be placed immediately over the filter pack in each site assessment observation well or monitoring well and properly hydrated.

(C) **Annular seal.** The annular space above the filter pack seal shall be filled with a cement grout, bentonite grout, bentonite chips or a cement/bentonite grout mixture to within two (2) feet of the surface. The cement grout shall have a mix ratio of one 94 pound sack of cement to a maximum of six U.S. gallons of water. The cement and water must be mixed to the proper consistency as recommended by the cement manufacturer before the mixture is installed around the casing. A maximum of twenty percent (20%) bentonite by dry weight may be added to the cement grout to form the cement/bentonite grout mixture. The bentonite shall be prehydrated to the manufacturer's recommended consistency. The bentonite grout shall be a high solids bentonite grout with at least twenty percent (20%) bentonite by dry weight. The bentonite shall be mixed according to the manufacturer's recommended consistency.

(D) **Surface seal.** A concrete or cement grout surface seal shall be placed around the casing immediately above the annular seal from a depth of two (2) feet to land surface.

(E) **Tremie requirements for grout.** When the placement of grout will exceed twenty (20) feet, the grout shall be placed in the annulus of the well through a tremie pipe and filled or pumped from the bottom upward.

(F) **Multiple cased or screened wells.** No adjacent or collinear casings in the same borehole shall be allowed. No multiple screened intervals in the same casing shall be allowed. Wells shall be drilled with sufficient distances between them so as to prevent the commingling of aquifer zones.

(G) **Special annular, filter pack, and surface seal conditions.** When water or vapor levels being monitored are encountered within five (5) feet of the land surface, the required depths set forth in ~~C and D~~ B and C above for the filter pack and annular seals shall be reduced to fill the annular space from the top of the filter pack materials to the bottom of the cement surface seal, provided that the minimum screen depth shall be two and one-half feet (2 ½') below the land surface, provided further that the minimum screen depth shall be two feet (2') below land surface for tank pit monitoring wells at tank locations regulated by the Oklahoma Corporation Commission. The surface seal shall extend a minimum of one (1) foot below land surface.

(7) **Surface pad requirements.**

(A) A concrete or cement surface pad shall be installed around the casing at the surface with minimum dimensions of 3 feet in diameter by 3.5 inches thick.

(B) The surface pad shall be sloped so to ~~insure~~ ensure that all surface water flows away from the well.

(C) The surface pad is not required if the well is completed in competent concrete or asphalt paving, or if the well is an unsaturated zone monitoring well or a site assessment well that is located in a proposed solid waste disposal site and neither is used for a period exceeding one (1) year.

(8) **Top cap requirements.**

(A) A threaded or flange cap or compression seal shall be installed upon completion of the well to prevent unauthorized use of the well (e.g. tampering with the well or the entrance of foreign material into the well).

(B) The cap or seal shall have the capability of being locked if the well is flush mounted and the well protector is not capable of being locked.

(9) **Monitoring well and site assessment observation well protection.** Protection shall be provided for the casing of monitoring wells or site assessment observation wells by either of the following methods:

(A) An aluminum or steel surface casing shall be set a minimum of 12 inches through the cement or concrete surface pad and shall extend a minimum of 24 inches above the pad or ground. The top of the protective casing shall be fitted with a locking cap and shall be marked to clearly identify the well as a monitoring well or site assessment observation well; or

(B) If flush mounting is required, then the well shall be completed with a well protector that is capable of supporting vehicular traffic, provided that flush mounting of the casing of monitoring wells installed at concentrated animal feeding operations after July 1, 2006, shall be prohibited. The well protector shall be raised a minimum of one-half (1/2) inch above the surface pad or paving and shall be clearly marked to identify the well as a monitoring well or site assessment observation well. The surface seal shall be sloped so that surface water flows away from the well protector and the bond between the well protector and the removable cover shall be made watertight.

(10) **Direct Push (DP) Monitoring Wells and Piezometers.**

(A) Monitoring wells and piezometers that are installed using direct push (DP) technology shall comply with the applicable standards in 785:35-7-2 for reporting, casing, screening, filter pack, filter pack placement, filter pack seal, development, decontamination, surface seal, cleaning, protection, marking, and completion.

(B) DP monitoring wells and piezometers shall be authorized as applicable at the discretion of the state or federal agency having jurisdiction over a specific site.

(C) DP monitoring wells and piezometers shall also comply with the following additional standards:

(i) DP monitoring wells and piezometers shall only be authorized for a one (1) year term; and

(ii) The outside diameter of the borehole shall be at least three inches (3") greater than the nominal diameter of the well casing and screen; and

(iii) Granular bentonite shall not be used in the sealed interval below the static water level; and

(iv) Casing diameter shall be a minimum one inch (1") and shall meet or exceed schedule 40 standards; and

(v) Wells and piezometers shall not be constructed through more than one water bearing formation and shall not be greater than 50 feet in depth unless a variance is obtained.

SUBCHAPTER 11. PLUGGING AND CAPPING REQUIREMENTS FOR WELLS AND TEST HOLES

785:35-11-1. Plugging and capping requirements for groundwater wells, fresh water observation wells, heat exchange wells and water well test holes

(a) **Temporary capping.** When a groundwater well or fresh water observation well is temporarily removed from service, the top of the well casing will be properly sealed with a pitless adapter cap, sanitary well seal, or well casing cap that cannot easily be removed. A new well shall be properly capped before the well driller leaves the drilling site.

(b) **Time for plugging or completing water well test holes.** Water well test holes shall be properly plugged as provided in this section by the well driller prior to removal of drilling equipment unless the test hole is completed as an observation well for aquifer testing, including the installation of surface casing and cement seals. In the alternative and prior to drilling equipment being removed from site, water well test holes may be temporarily cased with SDR 26 water well casing a minimum of 10 feet below ground and 12 inches above ground. Bentonite shall be installed from 10 feet to 2 feet below land surface and cement grout installed from 2 feet to land surface. The top of casing shall be properly sealed or capped. Permanent completion or plugging shall become the responsibility of the landowner and shall be completed within 60 days of drilling equipment being removed from the site. A written statement from the landowner acknowledging such responsibility shall be obtained and submitted to the Board with the multipurpose completion report. The multi-purpose completion report shall be submitted to the Board within sixty (60) days after plugging or temporary completion of each water well test hole.

(c) **Permanent abandonment.** The following plugging requirements apply if a groundwater well, fresh water observation well, heat exchange well or water well test hole is permanently abandoned, was drilled by a person not holding a valid license or operator certification from the Board, or if the Board determines that the well or test hole was not drilled or completed in compliance with the applicable minimum standards set forth in this Chapter or may otherwise allow pollution to groundwater.

(1) The well driller shall be responsible for plugging the well or test hole if the well drilling equipment is on the drilling site. If a well is abandoned after the well drilling equipment has been removed from the drilling site, the owner of the land where the well or test hole is located shall be responsible for plugging.

(2) If the well or test hole is uncontaminated and unless paragraph 3 or paragraph 5 below applies, fill such well or water well test hole with uncontaminated, compacted drill cuttings and/or uncontaminated surface clay, cement, bentonite pellets or granules, or high solids (a minimum of twenty percent (20%) solids by dry weight) bentonite grout to within fourteen (14) feet of the land surface, and a minimum of ten (10) feet of the annular space and interior of the well casing shall be filled with cement grout to at least four (4) feet below the land surface.

(3) To plug uncontaminated groundwater wells, fresh water observation wells, or heat exchange wells in the alluvium and terrace deposits of the Arkansas, Cimarron, Salt Fork of the Arkansas, North Canadian, Canadian, Washita, North Fork of the Red, Salt Fork of the Red River, Red River, and other streams or rivers authorized by the Board, fill the well with clean, uncontaminated silica sand to within sixteen (16) feet of the land surface, then two (2) feet of bentonite pellets or granules shall be placed on the uncontaminated silica sand, and finally, a minimum of ten (10) feet of cement grout shall be installed in the annular space and interior of the well casing to at least four (4) feet below the land surface.

(4) Hand dug water wells shall be filled with uncontaminated surface clay or grout to within six (6) feet of land surface. The lining of the well shall be removed from the top five (5) feet and a minimum of two (2) feet of cement grout shall be installed. The top four (4) feet shall be filled with compacted uncontaminated native soil, unless otherwise directed by the Board.

(5) If the well or water well test hole is contaminated, or if the well or test hole is located at or being plugged in conjuction with an underground tank site or within 300 feet of the outside perimeter of an existing wastewater lagoon or is located on a tract of land where a wastewater lagoon is proposed, the casing shall be removed or perforated from the bottom of the casing to twenty (20) feet below land surface. The well or test hole shall be plugged with cement grout from the bottom to within four (4) feet of the land surface. If the total depth of the well is in excess of twenty feet (20') below land surface, the cement grout shall be placed by pumping from the bottom of the hole to within four (4) feet of the land surface. If the well does not meet current minimum construction standards for grouting and sealing the annulus, the casing shall be removed from twenty (20) feet below land surface to the surface.

(6) Vertical closed loop heat exchange wells shall be plugged according to standards set forth by Clause 10.9 of ANSI/CSA/IGSHPA C448.3.

785:35-11-2. Plugging requirements for site assessment observation wells, monitoring wells and geotechnical borings

(a) **Monitoring wells, direct push monitoring wells and site assessment observation wells.** Monitoring wells, direct push monitoring wells and site assessment observation wells shall be plugged to prevent pollution of groundwater within three (3) days after completion of use or immediately if drilled by an unlicensed or uncertified person or if the Board determines that the well does not meet the minimum construction standards set forth in this Chapter. The following are minimum requirements for plugging monitoring wells and site assessment observation wells, and the owner of such wells or other federal or state agency may specify more stringent requirements:

(1) If no contaminated soil or contaminated groundwater is present in the well, cement grout shall be placed in the well through a tremie pipe and filled or pumped from the bottom of the well to an elevation four (4) feet below the land surface. In the alternative, bentonite pellets, granules or high solids (a minimum of twenty percent (20%) solids by dry weight) bentonite grout shall be placed from the bottom of the well to an elevation fourteen (14) feet below land surface and a minimum of ten (10) feet shall be filled with cement grout to an elevation four (4) feet below land surface, unless contaminated soil or contaminated groundwater is present in the well. The remaining four (4) feet to land surface shall be backfilled with compacted uncontaminated soil. If the depth of the well is fourteen (14) feet or less, cement grout shall be placed from the bottom of well to land surface.

(2) If contaminated soil or contaminated groundwater is present or was previously present in the well and the top of the screen is less than 20 feet below land surface, overdrilling of the well is required. The casing shall be removed or drilled out and the same size auger used to drill the borehole or larger shall be used to drill out the casing and associated seals, annular space and filter pack. Cement grout shall be placed from the bottom of the well to an elevation four (4) feet below land surface effectively grouting a minimum of 95% of the original drilled borehole depth. If the total depth of the well is in excess of twenty feet (20') below land surface, the cement grout shall be placed by pumping from the bottom of the hole to within four (4) feet of the land surface. If the top of the well screen is 20 feet or more below land surface and the well meets current minimum construction standards, then the casing need not be removed and cement grout shall be placed in the well through a tremie pipe and filled or pumped from the bottom upward to within four (4) feet of land surface. The remaining four (4) feet to land surface shall be backfilled with compacted uncontaminated soil.

(b) **Geotechnical borings except direct push geotechnical borings.** Geotechnical borings shall be plugged to prevent pollution of groundwater within thirty (30) days after completion of drilling or immediately if drilled by an unlicensed or uncertified person or if the Board determines that the well does not meet the minimum construction standards set forth in this Chapter. The following are minimum requirements for plugging geotechnical borings, and the owner of the boring or other federal or state agency may specify more stringent requirements:

(1) If no contaminated soil and groundwater is encountered in the boring, uncontaminated drill cuttings, uncontaminated surface clay, cement, and/or high solids (a minimum of twenty percent (20%) solids by dry weight) bentonite grout, pellets, or granules shall be placed from the bottom of the boring to an elevation fourteen (14) feet below land surface and a minimum of ten (10) feet shall be filled with cement grout to an elevation four (4) feet below land surface. The remaining four (4) feet to land surface shall be backfilled with compacted uncontaminated soil.

(2) If contaminated soil or contaminated groundwater is encountered in the boring, or if the boring is located at an underground storage tank site, or is located within 300 feet of the outside perimeter of an existing wastewater lagoon, or is located on a tract of land where a wastewater lagoon is proposed, cement grout shall be placed from the bottom of the borehole to an elevation four (4) feet below land surface. Cement grout shall be placed in the borehole through a tremie pipe and filled or pumped from the bottom upward. The remaining four (4) feet to land surface shall be backfilled with compacted uncontaminated soil.

(3) If the boring is twenty (20) feet or less in total depth and groundwater has not been encountered, the boring shall, at a minimum, be filled with compacted uncontaminated cuttings from the bottom of the boring to land surface.

(c) **Direct push geotechnical borings.** Direct push geotechnical borings shall be plugged to prevent pollution of groundwater within thirty (30) days after completion of drilling or immediately if drilled by an unlicensed or uncertified person or if the Board determines that the well does not meet the minimum construction standards set forth in this Chapter as follows:

(1) Bentonite chips shall be placed and effectively compressed within the annulus space from the bottom of the borehole to within ~~ten (10)~~ fourteen (14) feet of the land surface.

(2) Cement grout shall be installed through a tremie pipe in the remaining annulus space from ~~ten (10)~~ fourteen (14) feet to within four (4) feet of the land surface, provided that no cement grout shall be required if the boring is less than ten feet (10') in total depth and no groundwater and no contaminated soil was encountered.

(d) **Cement grout requirements.** If cement grout is used, the grout shall have a mix ratio of one 94 pound sack of cement to a maximum of six U.S. gallons of water.

(e) **Abandonment after equipment removed.** If a site assessment observation well, monitoring well or geotechnical boring is abandoned after the drilling equipment has been removed from the site, responsibility for proper plugging within the applicable time period specified in this section shall lie with the owner of the land where the well or boring is located

SUBCHAPTER 13. AUTHORIZATION TO DRILL GROUNDWATER WELLS

785:35-13-1. Authorization to drill groundwater wells

(a) Any person who intends to construct any new or replacement groundwater well(s) subject to the provisions of this Chapter shall, before commencing such activity, apply for authorization from the Board on forms provided by the Board, and receive approval from Board staff. Authorizations are not required for groundwater wells completed for domestic use, test holes that will not be ~~cased~~completed for beneficial use, geotechnical borings, heat exchange wells, monitoring wells, recharge wells, and temporary dewatering wells.

(b) Drilling authorizations will not be issued for construction of a well that requires another separate approval from the Board, such as a water right authorization, transfer, amendment or recharge well authorization, until the other separate permitting requirements have been satisfied. A drilling authorization does not constitute a water right, injection well authorization, or other authorization that may be required.

(c) Any person who has failed or in the future fails to obtain an authorization as required by this section shall make application for a late authorization on forms provided by the Board. The late authorization application shall contain the same information as required by subsection (d). ~~The application for a late authorization shall be accompanied by an additional fee payable to the Board. Failure~~ Submitting an application for a late authorization or failure to make an application for an intent to drill for a well requiring a water right shall be subject to administrative fines.

(d) The application shall be accompanied by a non-refundable fee payable to the Board and shall contain:

(1) the name and post office address of the applicant or applicants,

(2) the name and post address of the well owner,

(3) the intended use,

(4) the intended latitude/longitude location of the proposed groundwater well (within 10 feet),

(5) the intended borehole diameter, casing diameter, casing type, estimated depth of well, and screened/perforated if known,

(6) the estimated or desired capacity in gallons per minute,

(7) the groundwater well identification number of the water well being replaced if applicable,

(8) the water right application number if applicable, and

(9) such other information as the Board requires.

(e) Applications for an authorization to drill a groundwater well will be given a timestamp upon their arrival at the Board offices and will be reviewed according to the time they were received. Applications meeting all the criteria set forth in this section shall be approved by Board staff and those failing to meet the criteria shall be denied or approved with conditions within five (5) business days of receipt by the Board. Expedited, same-day applications that meet the above criteria may be approved for an additional filing fee.

(f) If the application is incomplete or needs corrections, Board staff shall return the application to the applicant for any necessary corrections. Corrections must be made within sixty (60) days or the application will be cancelled. No refund of any application fees shall be made regardless of whether the application is approved, cancelled, or denied.

(g) An application for an authorization or late authorization for a groundwater well shall be denied only if Board staff finds:

(1) Applications failing to meet the criteria set forth in Chapter 35,

(2) That the location or operation of the proposed groundwater well would conflict with any regulations adopted by the Board or of other applicable laws of the State of Oklahoma,

(3) The applicant refuses to agree to the conditions set forth in the approval,

(4) That the application includes any intentionally misleading or falsified data.

(h) When an application for authorization to drill a groundwater well is approved the applicant shall commence construction of the water well as soon as possible after the date of approval. A drilling authorization may not be assigned from one owner to another or from one driller to another. For wells requiring a water right application, the applicant shall have one (1) year after the approval of the water right application by the Board to complete construction of the groundwater well. If the applicant fails to complete the well under the terms of the authorization, the Board will cancel the authorization. The applicant can request, in writing, a 1-year continuance of the authorization.