TITLE 19 NATURAL RESOURCES AND WILDLIFE
CHAPTER 27 UNDERGROUND WATER
PART 4 WELL DRILLER LICENSING; CONSTRUCTION, REPAIR AND PLUGGING OF WELLS

19.27.4.1 ISSUING AGENCY: Office of the State Engineer.
[19.27.4.1 NMAC - Rp, 19.27.4.1 NMAC, 6/30/2017]

19.27.4.2 SCOPE: These regulations apply to well driller licensing, drill rig supervisor registration, and well drilling within the state of New Mexico. These rules do not apply to:

A. work on pumping equipment;

B. oil wells;

C. gas wells;

D. cathodic protection wells;

E. geothermal resources, as defined in the Geothermal Resources Act, currently at Sections 19-13-1 to -28 NMSA 1978 (1967, as amended through 2013);

F. construction boreholes and soil boreholes that encounter water and are less than thirty feet; or

G. mine drill holes that do not encounter water.

[19.27.4.2 NMAC - Rp, 19.27.4.2 NMAC, 6/30/2017]

19.27.4.3 STATUTORY AUTHORITY: Section 72-12-1 NMSA provides that the water of underground streams, channels, artesian basins, reservoirs, or lakes having reasonably ascertainable boundaries are declared to be public waters which belong to the public and are subject to appropriation for beneficial use. Section 72-2-8 NMSA gives the state engineer authority to adopt regulations and codes to implement and enforce any provision of any law administered by the state engineer. Section 72-12-12 NMSA states that it shall be unlawful for any person, firm, or corporation to drill or to begin the drilling of a well for water from an underground source without a valid, existing license for the drilling of such wells issued by the state engineer of New Mexico. Section 72-12-13 NMSA states any person desiring to engage in the drilling of one or more wells for underground water within the boundaries of any underground source shall file an application with the state engineer for a well driller's license. Sections 72-12-14 through 72-12-17 NMSA further detail requirements for well drillers in New Mexico. Sections 72-12-25 through 72-12-28 NMSA provide requirements for deep wells in non-potable aquifers. Sections 72-13-1 through 72-13-12 NMSA detail the requirements for the drilling of artesian wells.
[19.27.4.3 NMAC - Rp, 19.27.4.3 NMAC, 6/30/2017]

19.27.4.4 DURATION: Permanent.
[19.27.4.4 NMAC - Rp, 19.27.4.4 NMAC, 6/30/2017]

19.27.4.5 EFFECTIVE DATE: June 30, 2017, unless a later date is cited at the end of a section.
[19.27.4.5 NMAC - Rp, 19.27.4.5 NMAC, 6/30/2017]

19.27.4.6 OBJECTIVE: To establish requirements for well drilling in order to ensure wells are designed, drilled, constructed, repaired and plugged in a safe manner.
[19.27.4.6 NMAC - Rp, 19.27.4.6 NMAC, 6/30/2017]

19.27.4.7 DEFINITIONS: Unless defined below or in a specific section of these rules, all other words used herein shall be given their customary and accepted meaning.

A. Aquifer: A geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells.

B. Artesian well: A well that penetrates a saturated hydrogeologic unit and allows underground water to rise or move appreciably into another hydrogeologic unit, or allows underground water to rise to freely flow at the ground surface. For regulatory purposes, the determination of whether a well or borehole is artesian shall be made by the state engineer, taking into consideration the potential for loss of water at the ground surface or into another hydrogeologic unit.

C. Drill rig: Any power-driven percussion, rotary, boring, coring, digging, jetting, or augering machine used in the construction of a well or borehole.

D. Drill rig supervisor: A drill rig operator working under the direct supervision of a well driller, to whom the well driller assigns responsible charge of regulated well drilling activities using equipment that is under the direct control of the well driller, and who is registered with the office of the state engineer to perform such responsibilities.

E. Drilling: See definition for well drilling.

F. Ground source heat pump: A heat pump that uses the earth itself as a heat source and heat sink. It is coupled to the ground by means of a closed-loop heat exchanger (ground coil) installed horizontally or vertically underground. Also termed on-site geo-exchange heat pump and earth - or ground - coupled heat pump.

G. Hydrogeologic unit: Any soil or rock unit or zone which by virtue of its porosity or permeability, or lack thereof, has a distinct influence on the storage or movement of groundwater.

H. Inter-aquifer exchange: The movement of groundwater that flows appreciably between hydrogeologic units.

I. Mine drill hole: A borehole to explore for or delineate deposits or accumulations of ore, mineral, or rock resources.

J. Repair: Changing some part of an existing well by deepening, hydrofracturing, re-casing, perforating, re-perforating, installing packers or seals, and any other material change in the existing well design or construction. Material changes include but are not limited to casing installation or modification including casing extensions, installation or modification of liner pipe, reaming or under reaming of the borehole, pitless unit installation on an artesian well that flows (or capable of flowing) at ground surface, or any other work requiring a permit from the state engineer to repair and deepen the well.

K. Well: A borehole, cased, uncased or screened, or other hydraulic structure that is drilled, driven, or dug, vertically, horizontally, or at an angle, that penetrates, is intended to penetrate, or otherwise affects the water stored in a saturated hydrogeologic unit. The intended use may be: water supply; monitoring water levels or water quality; exploratory purposes; water remediation; injection of water, both into saturated and unsaturated zones; dewatering purposes; ground source heat pump purposes, or for other purposes.

L. Well driller: A person subject to the licensing requirements of 72-12-12 through 72-12-17 NMSA 1978 and 19.27.4 NMAC.

M. Well drilling, well drilling activities: The activities associated with the drilling of a well, including, but not limited to, the construction, drilling, completion, repair, deepening, cleaning, and plugging of a well.

[19.27.4.7 NMAC - Rp, 19.27.4.7 NMAC, 6/30/2017]

19.27.4.8 WELL DRILLER'S LICENSE REQUIRED: Any person who engages in well drilling activities shall obtain a well driller's license issued by the state engineer (except, under New Mexico state law, a well driller's license is not required for driven wells that do not require the use of a drill rig and which have an outside casing diameter of two and three-eighths (2⅜) inches or less). A person found engaged in the business of well drilling within the state of New Mexico without a license can be prosecuted in accordance with New Mexico statutes.

[19.27.4.8 NMAC - Rp, 19.27.4.8 NMAC, 6/30/2017]

19.27.4.9 [RESERVED]

19.27.4.10 [RESERVED]

19.27.4.11 [RESERVED]

19.27.4.12 WELL DRILLER REQUIREMENTS:

A. Bond requirements: A well driller shall have a bond in the penal sum of five thousand dollars ($5,000) on a form acceptable to the state engineer. The surety backing the bond shall be acceptable to the state engineer. A well driller's license shall be valid only so long as the bond remains in effect. The bond shall:

(1) be conditioned upon proper compliance with state law and the rules and regulations of the state engineer;

(2) be effective for the period of time for which the well driller's license is issued;

(3) stipulate the obligee as the "office of the state engineer"; and

(4) not be represented to the public as a performance bond.

B. Insurance requirements: A well driller shall have general liability insurance in the minimum amount of three hundred thousand dollars ($300,000) and appropriate insurance under the Workers' Compensation Act. Proof of insurance may be in the name of the well driller or in the name of the company for which the well driller is employed or doing business as (DBA). That insurance must be maintained continuously if the well driller is for hire.

C. National ground water association exams requirements: Required national ground water association exams shall consist of the general drilling exam and the appropriate specialized drilling exam(s) developed and administered by the national ground water association. A well driller engaging in the well drilling activities listed below shall have passed the corresponding national ground water association exams within five years prior to applying for a well driller license.

Well Drilling Activity	National Ground Water Association Exam*
Constructing wells by drilling using the cable tool method	General drilling exam and cable tool drilling exam
Constructing wells by drilling using the air rotary method	General drilling exam and air rotary drilling exam
Constructing wells by drilling using the mud rotary method	General drilling exam and mud rotary drilling exam
Constructing wells by drilling using the reverse circulation method	General drilling exam and reverse circulation drilling exam
Constructing wells using the jetting and driving methods	General drilling exam and jetting and driving wells exam
Constructing wells by augering or constructing monitoring wells	General drilling exam and augering and monitoring exam
All other well drilling activities	General drilling exam

*The state engineer shall make the final determination of the test(s) necessary should a question arise regarding applicability of available test(s) to specialized drilling method(s) of well construction.

D. New Mexico code exam requirements: A well driller shall have obtained a minimum score of seventy percent on the New Mexico code exam prepared and furnished by the state engineer or his authorized representative and self- administered by the applicant.

(1) Exam fee: No fees or advanced scheduling forms are required for the New Mexico code exam.

(2) Test content: The New Mexico code exam may include questions on the following subjects:

(a) New Mexico water law as it pertains to well driller licensing, well drilling and construction, and the administration of underground water, and

(b) the rules and regulations of the state engineer pertaining to well driller licensing, well drilling and construction, and the administration of underground water.

(3) Re-examination: An applicant who fails to obtain the minimum passing score on the exam may retake the exam.

(a) No fees or advanced scheduling forms are required to retake the New Mexico code exam.

(b) Any applicant found cheating on the exam, as determined by the state engineer, will not be permitted to reapply to take the exam for a period of one year.

E. Experience requirements: A well driller shall have at least two years of relevant, on-site experience working under the supervision of a well driller while exhibiting a due regard for the interest of the state in the protection of its public waters.

F. Drill rig requirements: A well driller shall continuously maintain with the state engineer a description of each drill rig the well driller owns or controls. The well driller's license number and the name of the well drilling company shall be clearly displayed on each drill rig.

G. Drill rig supervisor requirements: A well driller may allow a drill rig supervisor to provide onsite supervision of well drilling activities. The well driller is responsible for the actions of each drill rig supervisor while supervising well drilling activities.

[19.27.4.12 NMAC - Rp, 19.27.4.12 NMAC, 6/30/2017]

19.27.4.13 [RESERVED]

19.27.4.14 [RESERVED]

19.27.4.15 WELL DRILLER'S LICENSE APPLICATION AND REVIEW: If the state engineer finds that an applicant has fulfilled the requirements for licensure, the state engineer shall issue a well driller's license and a well driller's identification card to the applicant.

A. Application - form and content: A well driller's license application shall be completed on a form prescribed by the state engineer. The application shall include:

(1) proof of required bonds;

(2) proof of required insurances;

(3) documentation that applicant has passed the required exams listed in Subsection C of 19.27.4.12 NMAC;

(4) the completed New Mexico code exam;

(5) documentation of prior well drilling experience;

(6) three letters of reference (one shall be from a well driller, or a state's licensing authority, attesting to the applicant's well drilling ability);

(7) a separate form prescribed by the state engineer with a description and side-view photograph of each drill rig the applicant owns or controls;

(8) registration forms and letters of reference and listing the name of each drill rig supervisor that the applicant plans to supervise; and

(9) other information required by the state engineer.

B. Filing fee: A fee of fifty dollars ($50) is required to accompany a well driller's license application.

C. Well driller's license duration: A well driller's license issued by the state engineer will be valid for a period of two years.

D. Well driller's license conditions: A well driller's license shall set forth which well drilling activities the well driller may engage in, corresponding to the table in Subsection C of 19.27.4.12 NMAC, and the conditions under which the well driller shall operate well drilling activities within the state of New Mexico.

E. Well driller's identification card: A well driller's identification card shall be made available for inspection upon request whenever a well driller is conducting well drilling activities.

[19.27.4.15 NMAC - Rp, 19.27.4.15 NMAC, 6/30/2017]

19.27.4.16 WELL DRILLER'S LICENSE AMENDMENT: The well driller's license amendment application shall be filed with the state engineer to provide notification of any change to information provided for the current well driller's license or to request to engage in additional well drilling activities. A well driller shall notify the state engineer within 10 days of any change to the current well driller's license.

A. Application - form and content: A well driller's license amendment application shall be completed on a form prescribed by the state engineer. The application shall include:

(1) any changes in address or any other contact information;

(2) any changes to business or corporation name;

(3) any change in current drill rig supervisors;

(4) any change in current ownership or control of a drill rig;

(5) documentation of passing the required exams listed in Subsection C of 19.27.4.12 NMAC, corresponding to the additional well drilling activities; and

(6) other information required by the state engineer.

B. Filing fee: No fee is required to accompany a well driller's license amendment application.

C. Effect of amendment: An amendment to a well driller's license does not extend the original two year licensure period as set forth in Subsection D of 19.27.4.15 NMAC.

[19.27.4.16 NMAC - Rp, 19.27.4.16 NMAC, 6/30/2017]

19.27.4.17 [RESERVED]

[19.27.4.17 NMAC - Rp, 19.27.4.17 NMAC, 6/30/2017]

19.27.4.18 [RESERVED]

[19.27.4.18 NMAC - Rp, 19.27.4.18 NMAC, 6/30/2017]

19.27.4.19 WELL DRILLER'S LICENSE EXPIRATION: A well driller's license shall expire on the date set out on the well driller's license. A well driller shall file a well driller's license renewal application in accordance with 19.27.4.20 NMAC at least 10 days prior to the expiration date. If a well driller fails to file a well driller's license renewal application prior to the expiration date, the well driller's license shall automatically expire. A well driller allowing their well driller's license to expire must apply for a new well driller's license in accordance with the requirements of 19.27.4.12 NMAC. A well driller failing to renew a well driller license by the expiration date due to circumstances beyond their control may apply for an extension of time in accordance with 19.27.4.37 NMAC, if the state engineer finds the request to be reasonable and just. The state engineer may impose additional conditions of approval.
[19.27.4.19 NMAC - Rp, 19.27.4.19 NMAC, 6/30/2017]

19.27.4.20 WELL DRILLER'S LICENSE RENEWAL: A well driller's license renewal application shall be filed with the state engineer at least 10 days prior to the expiration date.

A. Application - form and content: A well driller's license renewal application shall be completed on a form prescribed by the state engineer. The application shall include:

(1) proof of required bonds;

(2) proof of required insurances;

(3) a list of drill rig supervisors that the well driller supervises;

(4) evidence of meeting the continuing education requirements of both the well driller and all drill rig supervisors; and

(5) other information required by the state engineer.

B. Filing fee: A fee of fifty dollars ($50) is required to accompany the well driller's license renewal application.

C. Continuing education requirements: During each two year licensing period, a well driller shall complete a minimum of eight continuing education hours approved by the state engineer. The continuing education hours shall relate to well drilling. At least two hours of the continuing education shall be specific to regulatory requirements regarding well drilling in the state of New Mexico. The state engineer will publish a list of approved continuing education courses for the current calendar year on the state engineer's website.

D. Incomplete application: If the well driller's license renewal application is deemed incomplete or lacks documentation required by the state engineer, the well driller will be notified in writing to submit missing information. The state engineer will allow 30 days to submit the missing information.

E. Renewal discretion: The state engineer will consider any complaints, reprimands, or compliance orders related to the previous two year license period when reviewing a well driller's license renewal application. Approval will be at the state engineer's discretion and shall set forth the conditions under which the well driller shall operate well drilling activities within the state of New Mexico.
[19.27.4.20 NMAC - Rp, 19.27.4.20 NMAC, 6/30/2017]

19.27.4.21 REPRIMANDS, SUSPENSION OR REVOCATION OF WELL DRILLER'S LICENSE: The state engineer may issue a written reprimand, a compliance order issued pursuant to Section 72-2-18 NMSA, or, after notice and hearing held pursuant to 19.25.2 NMAC, suspend or revoke a well driller's license if it is found that a well driller:

A. made a material misstatement of fact in an application for license;

B. failed to submit or submitted an incomplete well record or well log;

C. made a material misstatement of fact in a well record or well log;

D. drilled a well in any declared underground water basin without a state engineer permit;

E. violated the conditions of the state engineer permit under which the well was being drilled;

F. violated the conditions of a well driller's license;

G. failed to be present or ensure the presence of a drill rig supervisor at the drilling site during well drilling activities;

H. violated the rules and regulations of the state engineer;

I. failed to assure the protection of the public safety, health, welfare, and property in the well construction process; or

J. for other cause as determined by the state engineer.
[19.27.4.21 NMAC - Rp, 19.27.4.21 NMAC, 6/30/2017]

19.27.4.22 WELL DRILLER'S LICENSE REINSTATEMENT AFTER REVOCATION: A well driller with a revoked license is prohibited from engaging in well drilling activities, unless working under the supervision of a licensed well driller. License revocation may also result in the forfeiture of the well driller bond as set forth in Subsection A of 19.27.4.12 NMAC. After the revocation period has run, a well driller may apply for a new well driller's license pursuant to 19.27.4.15 NMAC.
[19.27.4.22 NMAC - N, 19.27.4.22 NMAC, 6/30/2017]

19.27.4.23 [RESERVED]
[19.27.4.23 NMAC - Rp, 19.27.4.23 NMAC, 6/30/2017]

19.27.4.24 [RESERVED]
[19.27.4.24 NMAC - Rp, 19.27.4.24 NMAC, 6/30/2017]

19.27.4.25 APPLICATION FOR REGISTRATION AS A DRILL RIG SUPERVISOR: A drill rig supervisor may provide onsite supervision of well drilling activities. A drill rig supervisor shall work under the direction of a well driller. The well driller is responsible for the actions of each drill rig supervisor that they direct to provide onsite supervision of well drilling activities. An applicant for registration as a drill rig supervisor shall meet the following requirements.

A. Qualified applicant: A qualified applicant for registration as a drill rig supervisor shall:

(1) have at least two years of relevant, on-site experience working under the supervision of a well driller;

(2) be at least 18 years of age; and

(3) have passed the New Mexico code exam.

B. Application - form and content: An application for registration as a drill rig supervisor shall be completed on a form prescribed by the state engineer. The application shall include the name, physical and mailing addresses, and phone number of the applicant, a letter of reference from the well driller for whom the supervisor will work, or a state's licensing authority, attesting to applicant's well drilling ability, the license number and contact information of the well driller the applicant plans to work for, if known, documentation of prior well drilling experience, the completed New Mexico code exam, and other information required by the state engineer.

C. Filing fee: No fee is required to accompany the application.
[19.27.4.25 NMAC - Rp, 19.27.4.25 NMAC, 6/30/2017]

19.27.4.26 APPLICATION REVIEW AND REGISTRATION REQUIREMENTS FOR DRILL RIG SUPERVISOR: If the state engineer finds that the applicant has fulfilled the requirements for registration as set forth in 19.27.4.25 NMAC, the state engineer shall register the applicant as a drill rig supervisor. The registration shall set forth the conditions under which the drill rig supervisor may provide onsite supervision of well drilling activities within the state of New Mexico.

A. Registration duration: A registration issued by the state engineer will be valid for a period of two years.

B. Identification card: The state engineer will issue a drill rig supervisor identification card with the registration showing the same date upon which the well driller's license expires. Each drill rig supervisor, when providing onsite supervision of well drilling activities within the state of New Mexico shall have their identification card available for inspection upon request.
[19.27.4.26 NMAC - Rp, 19.27.4.26 NMAC, 6/30/2017]

19.27.4.27 RENEWAL OF DRILL RIG SUPERVISOR REGISTRATION: A drill rig supervisor may retain their registration by request on the well driller's license renewal application for whom they are registered.

A. Application - form and content: The application shall be the well driller's license renewal application that includes all drill rig supervisors employed by the well driller, evidence of meeting the continuing education requirements, and other information required by the state engineer.

B. Continuing education requirements: During each two year registration period, a drill rig supervisor shall complete a minimum of eight continuing education hours approved by the state engineer. The continuing education hours shall relate to well drilling. At least two hours of the continuing education shall be specific to regulatory requirements regarding well drilling in the state of New Mexico. The drill rig supervisor shall submit proofs of completion of their completed classes for the well driller to submit upon the renewal of the license in accordance with 19.27.4.19 NMAC.

[19.27.4.27 NMAC - Rp, 19.27.4.27 NMAC, 6/30/2017]

19.27.4.28 [RESERVED]
[19.27.4.28 NMAC - Rp, 19.27.4.28 NMAC, 6/30/2017]

19.27.4.29 WELL DRILLING - GENERAL REQUIREMENTS: All wells shall be constructed in such a manner as to prevent contamination from entering the well or subsurface, to prevent commingling or inter-aquifer exchange of groundwater, to prevent loss of hydraulic head between hydrogeologic units, and to prevent unintended flood waters or surface water from entering the well and contaminating the aquifer. All well plugging shall be accomplished through filling or sealing the well in such a manner as to prevent the well, including the annular space outside the casing, from being a channel allowing the vertical movement of water. A well driller shall ensure that the appropriate permits, approval, or emergency authorization has been granted by the state engineer prior to the well drilling activities, or ensure that the state engineer has been properly notified in accordance with 72-12-22 NMSA 1978. While conducting well drilling activities, the well driller shall have a copy of the approved permit and plan of operations on site and available for inspection upon request. A well driller shall ensure that well drilling activities are conducted in accordance with the appropriate sections of 19.27.4.30 NMAC through 19.27.4.33 NMAC, and the following requirements:

A. On-site supervision of well drilling: A well driller or drill rig supervisor shall be present at the drilling site during well drilling activities.

B. Materials: Materials and processes used in well drilling shall conform to industry standards acceptable to the state engineer. Acceptable standards include, but are not limited to, standards developed by the national ground water association (NGWA), the American water works association (AWWA), the American standard for testing materials (ASTM), the American petroleum institute (API), the American national standards institute (ANSI), and the national sanitation foundation (NSF). The state engineer shall make the final determination of applicability of standards if any of the acceptable standards are different from one another. Materials used in well construction shall be in new or good condition. No materials or substances shall be introduced during the drilling process that may cause water contamination or contamination to the subsurface. Drilling fluids, additives, sealants, treatment chemicals, and materials as applicable must be designated for potable water well use and be NSF/ANSI standard 60 certified.

C. Cleaning of drilling equipment: All equipment used in the borehole shall be maintained in a clean and sanitary condition to prevent contamination and to protect the public health. When drilling multiple boreholes on the same site in areas of known or presumed contamination, the equipment will be sanitized between boreholes.

D. Well setbacks: All wells shall be set back a minimum of 50 feet from an existing well of other ownership, unless a variance has been granted by the state engineer. All wells shall be set back from potential sources of contamination such as, but not limited to, septic tanks and sewage leach fields, cemeteries, livestock lagoons and sewage lines, in accordance with applicable federal, state, or local requirements.

E. Requirement to cover or cap well during construction stoppage: During construction stoppage, a well shall be securely covered or capped unless a well driller or drill rig supervisor is on-site tending to the well and takes all steps to protect public welfare.

F. Casing height: The top of the completed well casing shall extend a minimum of 18 inches above the ground and appropriate steps shall be taken to prevent damage to well casings.

G. Flush mount completion: Flush mount completions, such as monitor wells located within traffic areas or in areas where security risks call for discreet completion, shall be completed in a manner that appropriately seals against entry of foreign material and fluids, and with the well casing extending above bottom of the monitoring well vault, and with a monitoring well vault that incorporates a securely fastened lid designed to withstand traffic.

H. Subsurface vault: If a well is completed within a subsurface vault, the casing shall extend a minimum of 18 inches above the floor of the subsurface vault, and be appropriately sealed against entry of foreign materials and fluids.

I. Surface completion: Surface well completions shall be completed in a manner that appropriately seals against entry of foreign material and fluids.

J. Annular space: The annular space between borehole and casing or between casings shall be dimensioned and sealed in accordance with 19.27.4.30 through 19.27.4.33 NMAC. At well completion, the top of any annular space shall be sealed, or fitted with an appropriate cover, preventing entry of foreign materials and fluids and disallowing the upward escape of groundwater.

K. Requirement to cover or cap completed wells and for measurement ports: A permanent well cap or cover shall be securely affixed to the well casing upon completion, unless an installed pump assembly provides secure coverage of or a secure cover for the wellhead. All wellheads shall have a securable opening of at least a 1/2" diameter that allows convenient access for water level measurement. An artesian well that flows (or capable of flowing) at ground surface shall be equipped with a valve to which a pressure gauge may be connected for hydrostatic pressure measurement.

L. Wellhead venting: Vents installed in the wellhead shall be protected against the entrance of foreign materials or fluids by installation of down-turned and screened fittings. All other openings in wellheads shall be sealed to prevent entrance of foreign material and flood waters.

M. Well identification tag: Any well constructed to divert water shall be tagged with a well identification tag in plain view. For above-grade wells, the well identification tag shall be affixed to the exterior of the well casing or cap using an aluminum or stainless steel band or other method approved by the state engineer. For wells finished below-grade, the well identification tag shall be clearly placed inside the well vault next to the well riser or on the first exposed discharge pipe from the well. The state engineer will provide a well identification tag when a permit is issued. The permit holder is responsible for maintaining the well identification tag and replacing missing, damaged, or illegible well identification tags with a duplicate well identification tag.

N. Well record: The well driller shall keep a record of each well drilling activity as the work progresses.

(1) Time for filing: The well driller shall file a complete well record with the state engineer and the permit holder no later than 30 days after completion of the drilling project or well repair.

(2) Form - content: The well record shall be on a form prescribed by the state engineer and shall include the name and address of the permittee, the well driller's name and license number, the state engineer file number, the name of each drill rig supervisor that supervised well drilling activities, the location of the well (reported in latitude and longitude using a global positioning system (gps) receiver capable of five meters accuracy), the date when drilling or other work began, the date when drilling or other work concluded, the depth of the well, the depth to water first encountered, the depth to water upon completion of the well (measured by a method approved by the state engineer), the estimated well yield, the method used to estimate well yield, the size and type of casing, the location of perforations, the location of the annular seal, the location of centralizers, the intervals and types of all annular fill and sealant material, and any other information required by the state engineer. The well record shall include a completed lithologic log. The lithologic log shall include detailed information on the depth, thickness, and lithology of all strata penetrated, including whether each stratum was water bearing.

(3) Forms - Incomplete: Well records deemed incomplete by the state engineer may be returned to the well driller for proper completion and shall be refiled within 30 days of the date of notification.

O. Lithologic samples: When requested by the state engineer, the well driller shall furnish lithologic samples ("drill cuttings") of the hydrogeologic units penetrated during drilling operations. The method of sampling, interval of sampling, and the quantities required will be specified by the state engineer.

P. Removal of drilling materials:

(1) In constructing a well, the well driller shall take all reasonable precautions to protect the producing aquifer from final retention of drilling solids, including cuttings, drilling mud, and drilling fluid additives. Prior to setting of filter pack, or upon completion of well, the well driller shall to the extent possible remove additives and drilling solids introduced into or accumulated in the wellbore during well drilling.

(2) Drilling fluids and cuttings shall be contained on the drilling site or on property under the control of the well owner, and not be allowed to migrate or be discharged off that property except for authorized disposal. Drilling fluids and cuttings shall not be discharged into any waters of the state.

Q. Repair of existing wells:

(1) If a well that is to be repaired or deepened is not in conformance with these rules, the application for permit shall describe the methods and materials by which the well will be brought into conformance with these rules. In the absence of a well log for the existing well it must be demonstrated to the satisfaction of the state engineer that the well is in conformance.

(2) If an inner casing is installed to prevent leakage of undesirable water into a well, the annular space between the casings shall be completely sealed by packers, casing swedging, pressure grouting or other methods which will prevent the movement of water between the casings.

[19.27.4.29 NMAC - Rp, 19.27.4.29 NMAC, 6/30/2017]

19.27.4.30 WELL DRILLING - NON-ARTESIAN (UNCONFINED) WELL REQUIREMENTS: A well driller shall ensure that the well drilling activities associated with the drilling of non-artesian wells are made in accordance with 19.27.4.29 NMAC and the following requirements:

A. Annular seal: All wells shall be constructed to prevent contaminants from entering the borehole from the ground surface by sealing the annular space around the outermost casing. If surface casing (outer casing) is used then there must be a seal between the surface casing and the production casing at the ground surface. When necessary, annular seals will be required to prevent inter-aquifer exchange of water, to prevent the loss of hydraulic head between hydrogeologic zones, and to prevent the flow of contaminated or low quality water. Sealing operations shall be made with an office of the state engineer approved sealant. Casings shall be centralized within the interval to be sealed so grout or sealing materials may be placed evenly around the casing.

(1) Annular space: The diameter of the borehole in which the annular seal is to be placed shall be at least four inches greater than the outside diameter of the outermost casing. The diameter of the borehole in which the annular seal is to be placed may be reduced to three inches greater than the outside diameter of the outermost casing if pressure grouting from the bottom up is used for grout placement and the well casing is centralized in the borehole. If surface casing is used, the inside diameter of the surface casing shall be at least three inches greater than the outside diameter of the production casing.

(2) Annular seal completed to ground surface: Annular seals shall extend from ground surface to at least 20 feet below ground surface.

(a) If a well is completed less than 20 feet below ground surface, the seal shall be placed from ground surface to the bottom of the blank casing used. However, if a monitoring well is completed less than 20 feet below ground surface, the seal shall be placed for the maximum length practical in order that the well is constructed to prevent contamination, to prevent inter-aquifer exchange of water, to prevent flood waters from contaminating the aquifer, and to prevent infiltration of surface water.

(b) The annular seal shall extend to ground surface unless a pitless adapter is installed. For wells completed with a pitless adapter, the top of the seal shall extend to one foot below the pitless adapter connection.

(c) All sealing materials placed deeper than 20 feet below ground surface shall be placed by tremie pipe or by pressure-grouting through the well casing and up the annulus.

(d) If in the event the water level in the annular space is less than 20 feet from surface, all sealing material shall be filled from the bottom upwards to ground surface using a tremie pipe. Time release bentonite pellets maybe used without a tremie pipe where standing water is above 20 feet.

(3) Annular seals to prevent inter-aquifer exchange of water or loss of hydraulic head between hydrogeologic units: Sufficient annular seal shall be placed to prevent inter-aquifer exchange of water and to prevent loss of hydraulic head between hydrogeologic units. Sufficient annular seal shall be placed to prevent loss of hydraulic head through the well annulus, through perforated or screened casing, or through an open bore interval.

(4) Annular seals to prevent the contamination of potable water: Wells which encounter non-potable, contaminated, or polluted water at any depth shall have the well annulus sealed and the well properly screened to prevent the commingling of the undesirable water with any potable or uncontaminated water. The use of salt-tolerant sealing materials may be required by the state engineer in wells that encounter highly mineralized water.

(5) Annular seal requirements for community water supply wells: Community water supply wells shall also be completed with annular seals in accordance with other regulatory agencies' applicable ordinances or rules. Well drillers may be subject to other applicable federal, state, or local regulations.

B. Well casing: The well casing shall have sufficient wall thickness to withstand formation and hydrostatic pressures placed on the casing during installation, well development, and well use.

C. Well plugging: A non-artesian well that is a permanently discontinued well or a well in a state of disrepair, a failed well drilling attempt, an improperly constructed or completed well, or a replaced well with a permit condition to plug shall be plugged. A well plugging plan of operations shall be approved by the state engineer prior to plugging unless the well is a replaced well with a permit condition to plug. The state engineer may require that the plugging process be witnessed by an authorized representative.

(1) Methods and materials: To plug a well, the entire well shall be filled from the bottom upwards to ground surface using a tremie pipe. The bottom of the tremie shall remain submerged in the sealant throughout the entire sealing process; other placement methods may be acceptable and approved by the state engineer. The well shall be plugged with an office of the state engineer approved sealant for use in the plugging of non-artesian wells. Wells that do not encounter a water bearing stratum shall at a minimum be plugged by filling the

well with drill cuttings or clean native fill to within 10 feet of ground surface and by plugging the remaining 10 feet of the well to ground surface with a plug of the office of the state engineer approved sealant.

(2) Contamination indicated: Wells encountering contaminated water or soil may require coordination between the office of the state engineer and the New Mexico environment department (or other authorized agency or department) prior to the plugging of the well. Specialty plugging materials and plugging methods may be required.

(3) Plugging record: A well driller shall keep a record of each plugging activity as the work progresses. The well driller shall file a complete plugging record with the state engineer and the permit holder no later than 30 days after completion of the plugging. The plugging record shall be on a form prescribed by the state engineer and shall include the name and address of the well owner, the well driller's name and license number, the name of each drill rig supervisor that supervised the well plugging, the state engineer file number for the well, the location of the well (reported in latitude and longitude using a global positioning system (gps) receiver capable of five meters accuracy), the date when plugging began, the date when plugging concluded, the plugging material(s) used, the interval in which each plugging material was installed, the amount of plugging material installed, the depth of the well, the size and type of casing, the location of perforations, and any other information required by the state engineer.

[19.27.4.30 NMAC - Rp, 19.27.4.30 NMAC, 6/30/2017]

19.27.4.31 WELL DRILLING – ARTESIAN (CONFINED) WELL REQUIREMENTS: Artesian wells shall be constructed such that groundwater does not move appreciably between hydrogeologic units nor flow uncontrolled to the ground surface. For regulatory purposes, the final determination of whether a well is artesian shall be based upon evaluations made by the state engineer. A well driller shall ensure that well drilling activities associated with the drilling of artesian wells are made in accordance with 19.27.4.29 NMAC and the following requirements:

A. Plan of operations: Before conducting any well drilling activities for an artesian well, prior approval from the owner of the land upon which the well drilling activity is planned must be granted, the permittee, well owner, or the owner's agent or attorney, shall provide a plan of operations describing the proposed work on a form prescribed by the state engineer, and the plan of operations shall be approved by the state engineer. The plan of operations shall provide information on the well design and materials to be used in the well construction, including the cementing and testing procedures. If the materials or cementing and testing procedures are not provided for in these rules and regulations, then the plan of operations must provide documentation to support their use. The plan of operations shall be signed by a well driller. Well drilling activities of an artesian well shall be conducted in accordance with the plan of operations as approved and conditioned by the state engineer. While conducting well drilling activities the well driller shall have a copy of the approved permit and plan of operations on site and available for inspection upon request.

B. Construction inspection: The casing, cementing, plugging, and testing of an artesian well shall be witnessed by an authorized representative of the state engineer. Alternatives to onsite witnessing may be utilized at the discretion of the state engineer.

C. Artesian wells - no prior knowledge of artesian condition: In the course of drilling a well, if a previously unidentified artesian stratum is encountered, the state engineer shall be immediately notified that an artesian stratum was encountered, any flowing groundwater to ground surface shall be controlled immediately, and a plan of operations shall be submitted for approval in accordance with Subsection A of 19.27.4.31 NMAC.

D. Casing and coupling material requirements: Casing and coupling material used in the construction of an artesian well shall meet specifications approved by the state engineer prior to well drilling. The casing for artesian wells shall be inspected by an authorized representative of the state engineer prior to well construction.

E. Casing installation requirements: The casing shall be centralized in the borehole throughout the casing string hole and centered at the top so grout may be evenly placed around the casing. A commercially made float shoe shall be installed on the lowermost joint of the casing to be landed unless an alternate method for cementing has been approved by the state engineer. The casing shall be un-perforated and the well shall be designed in a manner to prevent the commingling of water from the artesian stratum with water in an overlying or underlying hydrogeologic unit. All threaded casing joints must be tightened to manufacturer's designated torque specifications during installation. Casing shall be set at or near the base of the confining formation or the top of the artesian stratum.

F. Annular space: The diameter of the borehole in which the seal shall be placed shall be at least four inches greater than the outside diameter of the casing set to include the coupling diameter. If pressure grouting

from the bottom up is used for sealant placement then the diameter of the borehole in which the seal shall be placed may be reduced to three inches greater than the outside diameter of the casing set. If surface casing is used, the inside diameter of the surface casing shall be at least three inches greater than the outside diameter of the production casing including the diameter of the coupling on the casing.

G. Annular space sealing requirements: The annular seal shall consist of an office of the state engineer approved sealant. The seal shall originate at or near the base of the confining unit and shall be continuously placed to ground surface. The sealing process shall be witnessed by an authorized representative of the state engineer. When necessary, sufficient annular seal shall be placed to prevent inter-aquifer exchange of water and to prevent loss of hydraulic head between hydrogeologic units.

H. Annular space - seal placement: The office of the state engineer approved sealant shall be placed in the annular space by one of the following methods:

(1) Tremie method: The office of the state engineer approved sealant shall be pumped using a tremie pipe to fill the annular space of the well from the bottom of the seal to ground surface. Flow of undiluted sealant out of the top of the annular space shall be established with the tremie pipe suspended in the annulus. The lower end of the tremie shall remain immersed in the sealant for the duration of pumping. The tremie pipe may be gradually removed as sealant level in the annulus rises.

(2) Pressure grout method: The office of the state engineer approved sealant shall be pumped down the inside of the casing, through the float shoe, and up the annular space until undiluted sealant circulates out of the annulus at ground surface. Excess sealant will be displaced out of the casing from behind by pumping an industry approved drillable plug in front of the drilling fluid until it has bumped up sufficiently at the float shoe. The fluid volume pumped into the casing to displace the sealant shall equal the inside volume of the casing string itself to assure total displacement. Should undiluted sealant not be displaced out the top of the annulus in a continuous pressure grouting operation, the sealing job may be completed by the use of the tremie method. If the tremie method is employed, then a tremie pipe shall be suspended in the annulus to the approximate level of the competent sealing material. The office of the state engineer approved sealant shall be pumped to fill the annular space of the well from the top of the competent sealing material to ground surface.

I. Sealing off formations: The compressive strength of office of the state engineer approved sealant shall be 500 psi or more before well drilling is resumed. Cement must be allowed to set a minimum of 48 hours before well drilling is resumed. Shorter set times may be requested if approved alternate sealants or accelerants are used. Sealing off of the formations shall be checked by a method acceptable to the state engineer. In the case of remediation of artesian boreholes, the compressive strength of office of the state engineer approved sealant shall be 1,000 psi or more before artesian head is shut-in at the wellhead.

J. Repair requirements: When an artesian well is in need of repair, the permittee, well owner, or the owner's agent or attorney with prior approval from the owner of the land upon which the well is located, shall provide a plan of operations to the state engineer for approval. The plan of operations shall be prepared in accordance with Subsection A of 19.27.4.31 NMAC. When required in the approved plan of operations, before repairs are made to an artesian well, the well shall first be inspected by an authorized representative of the state engineer to determine if the condition of the well is such that it may be repaired. When a leak in the casing is found and the casing and well are otherwise in good condition, the state engineer may allow the well to be repaired. A packer or bridge plug may be required to complete necessary well repairs. The use of a lead packer is prohibited. An inspection shall be made at the completion of the work to determine if the repair is satisfactory. During an inspection, the well shall be open to allow for the entrance of equipment for testing and inspection.

K. Plugging requirements: An artesian well that is a permanently discontinued well or a well in a state of disrepair, a failed well drilling attempt, or an improperly constructed or completed well shall be plugged. In accordance with Subsection A of 19.27.4.31 NMAC, a well plugging plan of operations shall be approved by the state engineer prior to plugging. The well shall be plugged from the bottom upwards with an office of the state engineer approved sealant. The well plugging shall be witnessed by an authorized representative of the state engineer.

(1) Contamination indicated: Wells encountering contaminated water or soil may require coordination between the office of the state engineer and the New Mexico environment department (or other authorized agency or department) prior to the plugging of the well. Specialty plugging materials and plugging methods may be required.

(2) Plugging record: A well driller shall keep a record of each plugging activity as the work progresses. A plugging record shall be filed in accordance with Paragraph (3) of Subsection C of 19.27.4.30 NMAC.

[19.27.4.31 NMAC - Rp, 19.27.4.31 NMAC, 6/30/2017]

19.27.4.32 [RESERVED]
[19.27.4.32 NMAC - Rp, 19.27.4.32 NMAC, 6/30/2017]

19.27.4.33 WELL DRILLING REQUIREMENTS FOR DEEP WELLS IN NON-POTABLE AQUIFERS: Deep non-potable wells are wells administered under Article 12, Chapter 72-12-25 through Chapter 72-12-28 NMSA, and are defined as wells drilled or recompleted into an aquifer, the top of which aquifer is at a depth of 2500 feet or more below the ground surface at any location at which a well is drilled and which aquifer contains only non-potable water. Non-potable water means water containing greater than or equal to 1,000 part per million (or milligrams per liter) total dissolved solids (TDS $\geq$ 1,000 mg/L). A well driller shall ensure that well drilling activities associated with the drilling of deep non-potable wells are made in accordance with 19.27.4.29 NMAC and 19.27.4.31 NMAC and the following:

A. Deep non-potable well plan of operations: Before conducting the drilling of a deep non-potable well, a deep non-potable well plan of operations describing the proposed work shall be provided on a form prescribed by the state engineer. The deep non-potable well plan of operations shall provide information on the well design and materials to be used in the well construction, including the cementing and testing procedures, and any other pertinent data required by the state engineer. If the materials or cementing and testing procedures are not provided for in these rules and regulations, then the deep non-potable well plan of operations must provide documentation to support their use. The deep non-potable well plan of operations shall be signed by the well driller conducting the well drilling activities. A deep non-potable well plan of operations must be approved by the state engineer before the drilling of any deep non-potable well. Drilling of a deep non-potable well shall be conducted in accordance with the deep non-potable well plan of operations as approved and conditioned by the state engineer. While conducting well drilling activities the well driller shall have a copy of the approved permit and deep non-potable well plan of operations on site and available for inspection upon request.

B. Longevity of casing: The deep non-potable well plan of operations required under subsection A must provide information that supports the longevity of the selected casing in response to potentially corrosive salt concentrations. Deep non-potable wells must use centralizers and H-55, J-55 grade casing equivalent or better.

C. Annular seals to prevent the contamination of potable water: Wells where non-potable, contaminated, or polluted water is anticipated or encountered at any depth shall have the well annulus sealed and the well properly screened to prevent the commingling of the undesirable water with any potable or uncontaminated water. The use of salt-tolerant sealing materials may be required by the state engineer in wells where highly mineralized water is anticipated or encountered.

D. Well schematic: The deep non-potable well plan of operations required under subsection A must provide a well schematic illustrating proposed construction depths, dimensions, materials, and methods as well as the target aquifer, stratigraphy and hydrogeology to be encountered during drilling.

E. Sealing off formations: Cement must be allowed to set a minimum of 48 hours before well drilling is resumed. Shorter set times may be requested if approved alternate sealants or accelerants are used. If shorter set times are requested, documentation shall be provided in the deep non-potable well plan of operations substantiating the appropriate cement curing time to meet the compressive strengths necessary, consistent with anticipated shut-in pressures. Shorter set times shall not be permitted unless prior approval is granted by the state engineer. Sealing off of the formations shall be checked by a method acceptable to the state engineer.

F. Cementing service reports: The well driller shall provide any cementing service reports with the submission of the well log within 30 days. The state engineer may require preliminary information as it becomes available.

G. Cement bond logging: The well driller shall provide the results of any cement bond logging conducted with the submission of the well log within 30 days. The state engineer may require results of cement bond logging within 24 hours of completion.

H. Mud logging and Geophysical logging: The well driller shall provide any mud logging and geophysical logging reports created with the submission of the well log within 30 days. The state engineer may require results of geophysical logging within 24 hours of completion. The state engineer may require periodic mud logging or lithologic logging during the course of the project.

I. Drill cuttings or core: The well driller shall submit copies of the well record and geophysical logs, and representative samples of drill cuttings or core collected during drilling of any deep non-potable well to the New Mexico bureau of geology and mineral resources for archiving in the bureau's library of subsurface data.

J. Specialized Drilling Equipment: The deep non-potable well plan of operations required under Subsection A of 19.27.4.33 NMAC must contain a request from the well driller to use of any specialized drilling

equipment for the well construction. Specialized drilling equipment may not be used for well construction unless prior approval is granted by the state engineer.
[19.27.4.33 NMAC - N, 19.27.4.33 NMAC, 6/30/2017]

19.27.4.34 [RESERVED]
[19.27.4.34 NMAC - Rp, 19.27.4.34 NMAC, 6/30/2017]

19.27.4.35 [RESERVED]
[19.27.4.35 NMAC - Rp, 19.27.4.35 NMAC, 6/30/2017]

19.27.4.36 REQUIREMENTS FOR MINE DRILL HOLES THAT PENETRATE A WATER-BEARING STRATUM: Any person, firm, or corporation drilling a mine drill hole that penetrates a water-bearing stratum, whether confined or unconfined, shall immediately notify the state engineer by filing an application for permit to drill an exploratory well. The person, firm, or corporation shall file a well plugging plan of operations in accordance with Subsection C of 19.27.4.30 NMAC or Subsection K of 19.27.4.31 NMAC concurrently with the application for permit. Upon the state engineer's approval of the well plugging plan of operations, the person, firm, or corporation shall have the mine drill hole plugged within the timeframe stated on the conditions of approval.
[19.27.4.36 NMAC - Rp, 19.27.4.36 NMAC, 6/30/2017]

19.27.4.37 REQUEST FOR VARIANCE: The rules in 19.27.4.29, 19.27.4.30, 19.27.4.31 and 19.27.4.33 NMAC are not intended to cover every situation encountered during well drilling. Hydrogeologic conditions vary across the state, and may warrant the need to deviate from the rules contained in 19.27.4.29, 19.27.4.30, 19.27.4.31, or 19.27.4.33 NMAC. A request for a variance to a rule in this part shall be submitted in writing. The request shall contain a detailed justification that demonstrates that such a variance is necessary to preclude unreasonable hardship, or that application of a rule in this part would not be practicable. The state engineer may grant the variance if the state engineer finds the request to be reasonable and just. The state engineer shall respond in writing to the request for variance and, if the variance if granted, the state engineer may impose conditions of approval.
[19.27.4.37 NMAC - Rp, 19.27.4.37 NMAC, 6/30/2017]

19.27.4.38 LIBERAL CONSTRUCTION: This part shall be liberally construed to carry out its purpose.
[19.27.4.38 NMAC - Rp, 19.27.4.38 NMAC, 6/30/2017]

19.27.4.39 SEVERABILITY: If any section, paragraph, sentence, clause, word or provision of this rule shall be held invalid, the invalidity of such section, paragraph, sentence, clause, word or provision shall not affect any of the remaining provisions of this rule.
[19.27.4.39 NMAC - Rp, 19.27.4.39 NMAC, 6/30/2017]

HISTORY OF 19.27.4 NMAC:
Pre NMAC History: The material in this part was derived from that previously filed with the State Records Center and Archives.
SE-66-1, Rules and Regulations Governing Drilling of Wells and Appropriation and Use of Ground Water in New Mexico, Article 4, Well Drillers Licensing, Construction, Repair and Plugging Of Wells, originally filed with the Supreme Court Law Library 11/1/1966. Filed with the State Records Center 6/27/1991.

History of Repealed Material:
SE-66-1, Rules and Regulations Governing Drilling of Wells and Appropriation and Use of Ground Water in New Mexico, Article 4, Well Drillers Licensing, Construction, Repair and Plugging of Wells - Repealed 8/31/2005.
19.27.4 NMAC, Well Driller Licensing, Construction, Repair and Plugging of Wells filed 6/30/2017 - Repealed effective 6/30/2017.

NMAC History:
19.27.4 NMAC, Well Driller Licensing, Construction, Repair and Plugging of Wells (filed 8/16/2005) was replaced by 19.27.4 NMAC, Well Driller Licensing, Construction, Repair and Plugging of Wells, effective 6/30/2017.