Mississippi Commission on Environmental Quality

LICENSING

of

WATER WELL CONTRACTORS

REGULATION LW-3

Adopted by the Commission on Environmental Quality

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Licensing of Water Well Contractors Regulation (LW-3)

I. DEFINITIONS

The words and phrases used in this regulation, shall have the following meanings:

A. Annular Space — The space between the borehole wall and the well casing or screen, or the space between a casing pipe and a liner pipe or between two strings of casing.

B. Applicant — Any person who submits an application to obtain a water well contractor's license.

C. Approved Education Provider – An organization that offers many educational courses for continuing education and has demonstrated, to the satisfaction of the Department, its qualifications to offer quality continuing education to water well contractors. Approved education providers are not required to submit every course they offer for Department approval.

D. Aquifer — a geologic formation, hydraulically connected group of formations, or part of a formation that can yield water to a well or spring.

1. Confined Aquifer (Commonly referred to as artesian aquifers) – a permeable geologic layer or zone saturated with groundwater isolated from the atmosphere by impermeable confining layers. The groundwater in confined aquifers is subjected to pressures higher than atmospheric pressure so that water in a well penetrating the aquifer will rise to some level above the actual top of the aquifer.

2. Unconfined Aquifer (Commonly referred to as water table aquifers) – a permeable geologic layer or zone saturated with groundwater at atmospheric pressure. These aquifers are generally not overlain by impermeable confining layers and may be vulnerable to contamination from surface activities or events that discharge pollutants on the ground.

E. Artesian — Groundwater under sufficient hydrostatic pressure to rise above the aquifer containing it.

F. Beneficial use — The application of water, excluding waste of water, to a purpose that produces economic or other tangible or intangible benefits to the state and its citizens. Such uses include, but are not limited to, diversions or withdrawals for public, industrial, or agricultural use.

G. Board or Permit Board – The Mississippi Environmental Quality Permit Board.

H. Certificate of Insurance – Proof of coverage under Contractors Liability Insurance.

I. Commission –The Mississippi Commission on Environmental Quality, or its designee.

J. Committee – The Water Well Driller's Advisory Committee.

K. Continuing Education Course – A course which has been approved by the Department as meeting the requirements of the regulations for continuing education. Only courses approved by the Department are considered applicable to meeting continuing education requirements, unless the course is presented by an approved education provider.

L. Days — Calendar days, unless specifically indicated otherwise in the body of this regulation.

M. Decommissioning — The complete and permanent sealing of a well bore to prevent contamination of the aquifer.

N. Department or MDEQ – The Mississippi Department of Environmental Quality.

O. Dewatering – The temporary lowering of the groundwater level to facilitate installation of underground utilities, construction of foundations, and various other purposes.

P. Domestic use — The use of water for ordinary household purposes, the watering of farm livestock, poultry, and domestic animals, and the irrigation of home gardens and lawns.

Q. Filter Pack — Smooth, uniform, clean sand or gravel placed in the annular space between the borehole wall and well screen to prevent sediments from entering the screen.

R. Fresh water — Water having a Total Dissolved Solids (TDS) concentration of less than 1,000 parts per million (ppm).

S. Geotechnical Boring — A hole constructed for the purpose of sampling, measuring, or testing the strata encountered for scientific, engineering, geological or regulatory purposes.

T. Groundwater — Water occurring beneath the surface of the ground.

U. Grout — A fluid mixture of neat cement and water, with additives such as sand, bentonite, or hydrated lime, or a mixture of bentonite and water, capable of producing a water-tight seal, that can be forced through a pipe or placed in an annular space, as required for sealing a well or an annular space to protect against intrusion of contamination.

V. Halliburton Method---A method of grouting casing in which the slurry is forced down the casing and into the annular space until slurry returns are obtained at the ground surface.

W. Inactive Status – The status assigned to a license by the Commission to indicate that the licensee may not practice well drilling and/or pump installation until the licensee has met the requirements of this regulation regarding renewal or reinstatement of the license.

X. Incompetency – An action or inaction by a licensee which demonstrates a general lack of knowledge or ability to practice water well drilling and/or pump installation.

Y. Landowner — The person, or entity, holding legal title to the surface of the land upon which a withdrawal or diversion of water is located.

Z. Licensee – Any individual who holds a valid Water Well Contractor's License issued by the state, or any company or corporation engaged in the business of water well contracting under a license duly issued to a designated principal, or key employee, in the company or corporation. Licenses will only be issued to individuals, and a company will be deemed to be licensed only if it has a principal or key employee who is licensed.

1. Restricted Licensee – An individual holding a specialty driller's or pump installer's license who is restricted to performance of only such activities as may be specified in the conditions of the license. Typically, restrictions will be placed on the licenses of individuals who:

   a. only engage in specialized well or borehole construction such as drilling geotechnical boreholes, constructing environmental monitoring wells, or constructing geo-thermal systems; or

   b. only engage in limited aspects of the water well construction business such as pump and well equipment installation and service.

2. Unrestricted Licensee – An individual holding a Water Well Contractor's License who is thereby authorized to engage, to the full extent allowed by this regulation, in the business of constructing, maintaining, and repairing water wells; installing and servicing pumps and related water well equipment; drilling special purpose boreholes; constructing monitoring wells; or any other work involving drilling, grouting, plugging, abandoning, or decommissioning water wells and boreholes. Companies, corporations, or other business entities, that are not individuals, will be deemed to have met the licensing requirement if a principal in the firm, or other key employee authorized to act for the firm, holds an unrestricted water well contractor's license.

AA. Misconduct – A willful or intentional action or inaction by a licensee that is contrary to the standard or accepted practice of the industry that would be applied by competent professionals, under the same circumstances.

BB. Municipal use — The use of water by a municipal government to promote the life, safety, health, comfort, and business pursuits of its people. The term does not include irrigation of crops that may be planted within the corporate boundaries.

CC. Office or OLWR--- the Office of Land and Water Resources of MDEQ.

DD. Permitted use —

1. The use of a specific amount of water at a specific time and at a specific place, authorized and allotted by the Board for a designated beneficial use within specific limits as to quantity, time, place, and rate of diversion or withdrawal; or

2. The right to the use of water as specified in the permit, subject to the provisions of Mississippi Code Annotated Section 51-3-5, including the construction of waterworks or other related facilities.

EE. Person — The state or other agency or institution thereof, any municipality, political subdivision, public or private corporation, individual, partnership, association or other entity, and including any officer or governing or managing body of any municipality, political subdivision, or public or private corporation, or the United States or any officer or employee thereof.

FF. Plugging — See "Decommissioning".

GG. Potable Water — Water that is suitable for human consumption and meets all primary drinking water standards (Primary Maximum Contaminant Levels) set by the United States Environmental Protection Agency (EPA).

HH. Potential Sources of Contamination – Sites or facilities that use, store, and/or dispose of substances (on site) that, due to their quantity, toxicity, and/or mobility, could impact the water quality of aquifers used for potable water supply. Examples of such sources include, but are not limited to, failing or inadequate individual sewage treatment and disposal systems, tanks used for bulk storage of petroleum products, Class V injection wells, container and drum storage sites, etc.

II. Public Water System –A system that provides potable water to the public through pipes or, after August 5, 1998, other conveyances, if such system has at least fifteen service connections or regularly serves an average of at least twenty five (25) individuals daily at least 60 days out of the year. **Note: This duplicates a Mississippi State Department of Health definition. It is included in this regulation to serve as a reminder that wells exempted from regulation by MDEQ because the surface casing diameter is less than six (6) inches, may still be regulated by the Mississippi State Department of Health if they are part of a Public Water System.**

JJ. Pump Installation – The installation of pumps or pumping equipment for water wells, including the removal and re-installation of pumps or pumping equipment for service, repairs, or replacement.

KK. Pumps or Pumping Equipment – Any equipment or materials utilized or intended for use in withdrawing or obtaining water from water wells or surface water diversion points.

LL. Repair of Water Wells – Work on any water well involving re-drilling, deepening, changing casing and screen depths, re-screening, cleaning by use of chemicals, and re-development; or removing and re-installing pumps, pumping equipment, or any related equipment intended to draw water from the well.

MM. State Well Report – A report documenting information related to the drilling of a well or borehole and the development and completion of a water well together with any other data or information required by MDEQ, reported on forms provided by the MDEQ.

NN. Surface casing — That string of casing in any water well having the greatest outside diameter, regardless of whether it is located at or below ground level.

OO. Suspended Status – The status assigned to a license by the Commission to indicate that the licensee has willfully violated provisions of State law or of this regulation so as to endanger himself, others, the environment, and/or the public health.

PP. Test Boring and Coring – the removal and collection of soil samples from the earth by means of augers, core-barrels, spoons, wash casing and bailers for the purpose of obtaining geologic and hydrologic information.

QQ. Tremie pipe — a device, usually a small-diameter pipe, that carries grout or other material to the bottom of a borehole or casing and that allows pressure grouting from the bottom up without introduction of air pockets.

RR. Well or "water well" — a hole that is drilled, driven, bored, excavated, or otherwise penetrated into the ground to access, evaluate and/or withdraw groundwater. For purposes of this regulation, this definition does not pertain to wells constructed for the purpose of disposal of fluids or other materials, but does include:

1. Abandoned Well — a well that has not been used within the preceding twelve month period, or one that has had the pump disconnected and/or removed for reasons other than maintenance, repair, or replacement.

2. Dewatering Well — a well used for temporary removal of surface water or groundwater to facilitate construction or mining operations, or for permanent protection of a structure or activity from the effects of surface water or groundwater.

3. Monitoring Well — a well used to obtain data on the quality of water in an aquifer system or at specified depths and locations related to a potential source of pollutant.

4. Observation Well--- a well used primarily for measuring the water level in an aquifer.

5. Recovery Well — a well constructed for the purpose of recovering undesirable groundwater for treatment or removal of contaminants.

6. Relief Well — a well constructed to provide pressure relief from an artesian aquifer or from excessive head differentials in water table aquifers.

7. Replacement Well — a well drilled to replace an existing well that has become unusable, provided the new well meets the requirements set forth in these regulations.

8. Standby Well – a well that can be placed in operation to withdraw water but is only used when water is temporarily unavailable from the primary source or sources because of mechanical failure, maintenance, or power failure.

9. Test Well – a well drilled to explore for groundwater for a water supply well.

10. Underground Discharge Well – a well in which the top of the casing terminates at a discharge head located below the frostline.

SS. Well Completion — term used collectively to refer to both the drilling and developing phases of well construction. For the purpose of reporting requirements established in this regulation, a distinction is made between completion of drilling and completion of well development:

1. Completion of drilling – the date that drilling is completed and the drill rig is no longer required at the site.

2. Completion of well development – the date that the well is fully functional and ready to provide water for its designated beneficial use, including having met any applicable water testing requirements.

II. APPLICABILITY

A. Any person, or any company, corporation, or other business entity engaging in a business or occupation that involves drilling of water wells or drilling boreholes that may penetrate water bearing strata (including constructing water wells, constructing geo-thermal systems, constructing environmental monitoring wells, conducting geotechnical investigations, conducting seismic exploration, or similar activities) or installing pumps or other equipment in water wells must first obtain the appropriate license or license renewal required pursuant to this regulation. A license is not transferable or assignable, and MDEQ will maintain a current register of licensees. If the applicant is a company, corporation, or other business entity that is not an individual, the application shall include the name of the designated individual who will hold the license for the company. A company will be deemed to be licensed only if it has a designated principal or other key employee who is licensed. The application shall be accompanied by a notarized affidavit signed by the applicant certifying that the individual applicant or the company's designee has a minimum of three (3) years qualifying experience in the practice for which the license is being sought.

B. Exemptions – For the purposes of these regulations, a person who owns or leases property in the state; or who otherwise owns a property interest allowing the drilling of a water well on, and the use of water under, property in the state may drill a water well on that property without having a Water Well Contractor's license provided:

1. The well will be used only to supply water for domestic use to a single family dwelling which is the owner's or lessee's permanent residence; and/or to water livestock on the owner's or lessee's farm and/or to supply water for irrigating crops on the owner's or lessee's farm (crop irrigation exemption in effect until July 1, 2011 in accordance with MS Code Annotated Section 51-5-1); and

2. The owner or lessee complies with applicable well construction standards contained in this regulation and the applicable regulations promulgated by the Mississippi State Department of Health.

C. Either a licensed water well contractor or an employee certified by the licensee in accordance with paragraph II. E. of this regulation must be on site and personally supervising operations during all critical stages of the drilling and completion of a potable water well including, but not limited to, collecting sand samples, logging the hole, setting the casing, grouting the well, setting the screen, placing the filter pack, developing and testing the well, and installing the pump.

D. Licensed water well contractors who have the capability to conduct simultaneous operations on multiple construction sites within the state may certify the competency of employees who will be in responsible charge of all on-site operations in the absence of the licensee. Within sixty (60) days after the effective date of this regulation, the licensee shall furnish MDEQ a list of the designated employees and a written certification that the listed employees are competent to perform and supervise all critical stages of drilling and completion of potable water wells. The list shall be updated and recertified by the licensee annually and submitted to MDEQ with the annual request for license renewal.

E. Neither these regulations, nor any permit issued thereunder, creates or includes any property right in favor of the permittee.

III. MINIMUM REQUIREMENTS FOR LICENSING

An applicant for a license, as defined in this regulation, must submit a completed application on the form provided by MDEQ; and meet or comply with the requirements set forth below:

A. Water Well Contractor (Unrestricted License)

1. Be at least twenty-one (21) years of age; and

2. Be of good moral character; and

3. If not previously licensed by the state, or if seeking reinstatement of a license, demonstrate, to the satisfaction of the Commission, a reasonable knowledge of state water laws, regulations, water well and borehole drilling practices, and pump and well equipment installation practices by passing such examinations as may be prescribed by the Commission, or its designee; and

4. Provide proof that the applicant possesses, or has unrestricted access to, the necessary tools and equipment to engage in all aspects of the business of water well contracting;

5. Provide evidence of at least three (3) years qualifying experience, i.e. experience in on-site supervision and being in responsible charge of all aspects of water well and borehole construction gained while working under the personal supervision of a water well contractor holding an unrestricted license, or its equivalent; and

6. If not previously licensed by the state, provide notarized affidavits, as required by statute, from three (3) licensed water well contractors certifying that the applicant

has the necessary qualifications and experience to meet the state's licensing standards at the level for which he is applying.

B. Specialty Driller or Pump Installer (Restricted License)

1. Be at least twenty-one (21) years of age; and

2. Be of good moral character; and

3. Demonstrate, to the satisfaction of the Commission, a reasonable knowledge of state water laws, regulations, and the specific practices for which the restricted license is being sought by passing such examinations as may be prescribed by the Commission, or its designee;

4. Provide written certification that they will only engage in the limited practice for which they are seeking the restricted license, such as constructing irrigation wells in the Mississippi River Valley Alluvial Aquifer (MRVA), constructing domestic wells less than six (6) inches in diameter, drilling geotechnical boreholes, constructing environmental monitoring wells, constructing geo-thermal systems, or installing and servicing pumps and related well equipment;

5. Provide evidence of at least three (3) years of qualifying experience, i.e. experience gained while working under the direct supervision of a licensee engaged in the business or practice for which the license is being sought; and

6. If not previously licensed by the state, provide notarized affidavits, as required by statute, from three (3) licensed water well contractors certifying that the applicant has the necessary qualifications and experience to meet the state's licensing standards at the level for which he is applying.

IV. EXAMINATION

A. A license applicant shall be required to take such examinations as may be prescribed by MDEQ. Examinations will normally be administered to test: (1) general knowledge of groundwater resources and wells, (2) specialized knowledge in equipment, techniques, and practices appropriate to the license being sought, and (3) specific knowledge of state laws, regulations, and construction standards. Upon receipt of a completed application form and supporting documentation as set forth in paragraph III, MDEQ will contact the applicant to schedule the examinations. At that time, MDEQ will advise the applicant as to the types of examinations that will be administered, the general content of the examinations, and the availability of study materials.

B. The examinations will be taken at a time and place designated by MDEQ.

C. If the applicant fails to pass the examination(s), the examination(s) may be taken again upon written request, but not sooner than 30 days after the previous examination. If the applicant does not request re-examination within one (1) year, the application for license will be nullified and discarded.

D. MDEQ may waive a portion of the examination requirement for an applicant with a valid license from another state having license requirements substantially the same as those contained in this regulation. However, all applicants will be required to pass the examination on state laws, regulations and construction standards.

V. FEES

A. License Fee – Upon passing the examination, the annual license fee of one hundred dollars ($100.00) must be paid before the license will be issued. The fee must be paid by check, money order, or electronic payment directed to MDEQ. **Do not send cash.**

B. Renewal Fee — An annual renewal fee of one hundred dollars ($100.00) must be paid to MDEQ with the request for renewal of a license.

C. Late Fees – A late fee of ten dollars ($10.00) per month, or any fraction thereof, will be assessed for renewal or reinstatement requests received after the expiration date of the last valid license.

VI. LICENSE RENEWAL

A. All licenses expire on June 30 and must be renewed annually. The licensee shall submit a completed renewal request form, provided by MDEQ, along with the appropriate fee to MDEQ prior to June 30. Re-examination is not required for timely renewal of a license.

B. Receipt of the renewal form and fee by MDEQ prior to June 30 shall have the effect of extending the old license until the new license and ID is issued, or until the applicant is notified that the request for renewal has been denied. If the request for renewal is not properly filed by June 30, the license will expire and the licensee shall cease all work for which a valid license is required until such time as the license has been reinstated.

C. A licensee may request that an expired license be re-instated by submitting to MDEQ the required renewal form and paying the appropriate fee plus accumulated late fees. Failure to request re-instatement within one (1) year after the expiration date may be deemed a forfeiture of the reinstatement option. Any request for reinstatement submitted thereafter may require submittal of a new application and be subject to the examination requirement.

D. Restricted licensees requesting renewal must submit a written certification that they will continue to work only in accordance with the conditions of the restricted license.

E. A completed continuing education form, provided by MDEQ, shall be submitted with the renewal form to MDEQ.

VII. CONTINUING EDUCATION

A. All licensees are required to complete a minimum of four (4) hours of continuing education annually and submit proof as required by MDEQ. Every two (2) years, one (1) of the hours of continuing education must be on state rules and regulations as presented by MDEQ.

B. A licensee may be exempted from the continuing education requirements for one of the following reasons:

   1. New licensees who have obtained their license less than one (1) year before the June 30th renewal deadline.

   2. Licensees who have experienced physical disability, serious illness, or other extenuating circumstances that prevent work for more than 180 days in a year. Supporting documentation must be furnished to MDEQ upon request.

   3. Licensees serving on temporary active duty in the armed forces of the United States for a period of time exceeding 180 days in a year. Supporting documentation must be furnished to MDEQ upon request.

C. Acceptable continuing education programs shall be designed to improve the license holder's professional skills and knowledge in the ground water industry. Course content shall be related to subjects such as well and pump standards, geologic characteristics of the state, state groundwater laws and related regulations, well construction and pump installation practices and techniques, drilling and job site safety, protection of public health related to drinking water, environmental protection, technological advances, and business management.

D. Continuing education hours may be earned as follows:

   1. Attending conferences or training hosted by regional or national associations of the ground water industry.

   2. Successful completion of correspondence, video, or electronic short courses/tutorials presented by approved education providers.

   3. Instruction of approved continuing education courses.

   4. Successful completion of courses, seminars, workshops, or lectures given by accredited educational institutions

E. Approval of Continuing Education Programs

   1. Continuing education programs must be approved by MDEQ.

   2. Applications to approve continuing education programs must contain the following minimum information:

      a. Description of course(s)

b. Length of course(s) in actual training hours

c. Name and qualifications of instructor(s)

3. Upon receiving approval of a continuing education course or program, the provider is entitled to state that the course has been approved by the Mississippi Department of Environmental Quality – Office of Land and Water Resources for continuing education credit under the Licensing of Water Well Contractors Regulation LW-3; or, if the program is approved then the provider is entitled to state that they are an approved educational provider by the Mississippi Department of Environmental Quality – Office of Land and Water Resources for continuing education under the Licensing of Water Well Contractors Regulation LW-3.

F. Proof of Continuing Education

1. The license holder is responsible for the submission of proof of all approved training. Inability of the applicant to substantiate credit hours submitted is grounds for disallowance of the credits in question.

2. Proof of continuing education will consist of:

a. Official transcripts from an accredited educational institution

b. A certificate of completion signed by the instructor or approved educational provider, containing the license holder's name, date of training, name of course and number of hours of actual training

VIII. EQUIPMENT

All drilling rigs, water trucks, service vehicles and other vehicles used in the normal drilling, construction, completion, or reworking of wells and boreholes, and/or the installation of pumping equipment must have the name of the licensee (person, firm, or corporation), and the letters "MS Lic." with the appropriate license number prominently and legibly displayed on both sides of the vehicle. The letters and numerals shall be not less than two (2) inches in height and be placed on a background of contrasting color. Drill rigs shall be registered with MDEQ, for identification purpose only, by completing and submitting forms provided by MDEQ for that purpose.

IX. STATE WELL REPORTS

The State Well Report will include sections for a driller's log, a well completion report, and a well modification report. The driller's log portion of the report shall be completed by the licensed contractor and submitted to MDEQ for all drilled wells and boreholes that penetrate water bearing strata. Water well contractors drilling irrigation wells into the Mississippi River Valley Alluvial Aquifer (MRVA) shall furnish a copy of the driller's log to the YMD Joint Water Management District (YMD) at the same time the original report is submitted to MDEQ. Driller's logs will not be required for geotechnical boreholes less than twenty-five (25) feet in

depth that do not encounter water bearing strata; environmental monitoring wells less than twenty-five (25) in depth that are regulated under other state and federal environmental programs; or small diameter wells or sampling holes less than fifty (50) feet in depth that are established with direct push (geo-probe) equipment. If a water well is developed and completed by a water well contractor immediately upon completion of drilling, both sections of the form shall be completed by the contractor and the report submitted to MDEQ within thirty (30) days after completion of the well. If for any reason a well is not developed and completed immediately upon completion of drilling, the following procedure shall be followed:

A. The driller's log section of the well report form provided by MDEQ shall be completed by the water well contractor who constructed the well or borehole and submitted to MDEQ within thirty (30) days after completion of drilling. For all water wells and boreholes, the driller's log section of the report must be signed by an appropriately licensed water well contractor. The driller's log entries on the report form shall be true, accurate, and complete. Portions of the form that may not be applicable shall contain an entry to that effect. Incomplete or inaccurate submittals will be returned to the licensee for completion or correction, but the 30-day filing period will not be extended. If the properly-executed form is not on file with MDEQ by the end of the 30-day period, the licensee will be deemed to be in non-compliance and may be subject to penalties as prescribed by statute and this regulation. The water well contractor filing the report shall keep a copy of the submittal and provide a copy to the owner of the well or borehole. For geotechnical investigations, the licensee may submit boring logs generated for a site report in lieu of the MDEQ form, provided the logs include all required information.

B. If a water well is completed by someone other than the water well contractor who constructed the well, the owner of the well shall be responsible for providing a copy of the state well report form containing the previously completed driller's log to the licensee responsible for completion of the well.

C. The licensee who develops and completes the well shall fill out the well completion section of the well report on the copy of the form containing the previously submitted driller's log and submit the completed report to MDEQ within thirty (30) days after completion of the well. For all water wells, the well completion section of the report must be signed by an appropriately licensed water well contractor. The entries on the report form relating to well completion shall be true, accurate, and complete. Portions of the form that may not be applicable shall contain an entry to that effect. Incomplete or inaccurate submittals will be returned to the responsible licensee for completion or correction, but the 30-day filing period will not be extended. If the properly-executed form is not on file with MDEQ by the end of the 30-day period, the licensee will be deemed to be in non-compliance and may be subject to penalties as prescribed by statute and this regulation. The water well contractor filing the report shall keep a copy of the submittal and provide a copy to the owner of the well.

D. The well modification report shall be filed with MDEQ by the licensed water well contractor within thirty (30) days after any major modification to, or rehabilitation of, an existing well six (6) inches or greater in diameter. The report shall include the water use permit number associated with the well and a detailed description of the work performed. When a well that does not comply with current construction standards requires major

modifications or rehabilitation, the work shall include items necessary to bring the well up to current minimum standards set forth in paragraphs XI.A.1.(b.), (c.) and (d.)

X. SUSPENSION / REVOCATION OF LICENSE

A. Grounds for the suspension or revocation of a license are as follows:

1. Providing false information in an application for a license or any affidavit required in the licensing process;

2. Violating any provision of Miss. Code Ann. Sections 55-5-1 et seq. or this regulation;

3. Attempting to obtain a license by fraud or misrepresentation;

4. Participating in fraudulent, deceptive, or dishonest business practices;

5. Demonstrated incompetency as a driller and/or pump installer;

6. Failure or refusal to file accurate and timely reports as required by this regulation; or

7. Failure to obey Orders, Rules and Regulations of the Commission, including refusal to accept or receive official correspondence from the Commission or its designee.

XI. HEARINGS AND APPEALS

Procedures for hearings and appeals of Commission decisions are set forth in Miss. Code Annotated, Sections 51-5-7 and 51-5-9.

XII. DESIGN CRITERIA AND CONSTRUCTION STANDARDS

The Licensee shall be responsible for compliance with all applicable state and federal statutes and regulations.

A. Water Wells and Boreholes Penetrating Aquifers In General Use For Domestic and Public Water Supply – The standards contained herein are the minimum construction standards considered necessary for the protection of the state's high-quality groundwater resources. Other regulatory programs may be applicable and additional standards may be required for certain types of facilities, such as Mississippi State Department of Health regulations governing public supply wells. If a water well contractor encounters geologic formations or unusual circumstances that appear to dictate a deviation from the standards, the contractor shall consult with MDEQ staff regarding proposed construction procedures for the water well or borehole in question.

1. Construction Standards – The following construction standards apply to wells and boreholes penetrating water bearing strata including but not limited to, potable water wells, irrigation wells, monitoring wells, observation wells, underground discharge wells, dewatering wells, saline or brackish water withdrawal wells, contaminant recovery wells, heat pump water supply holes and vertical closed-loop system holes, industrial supply wells, cathodic protection wells, rig supply wells and geotechnical boreholes:

   a. All water wells and boreholes covered under this section shall be constructed by a licensed water well contractor unless specifically exempted by statute.

   b. Well casing shall terminate not less than twelve (12) inches above natural ground elevation or, where practicable, above the 100-year flood elevation. However, if flood levels around the well routinely exceed a reasonable height for an extended casing above the twelve (12) inch minimum, then the well shall be fully sealed with a Braden Casing Head, or approved equivalent, to prevent the flow of flood waters into the casing. The casing head shall contain a screw-in plug with a minimum diameter of one-half (1/2) inch to provide access for water level measurements. If the casing is not covered with a recorder box or pump housing, then it must have a locked, overlapping cover or other suitable cover capable of preventing unauthorized access to the casing head and access plug.

   c. Public water supply wells shall have the top of the well casing set at least one (1) foot above the 100-year flood level.

   d. All wells shall have a check valve installed in the discharge line to prevent the intentional or accidental introduction of contaminants into the well. All new unmetered wells larger than six (6) inches in diameter shall have a minimum of four (4) feet of straight pipe installed between the casing head and the check valve, and all other equipment, valves, pressure relief valves, vacuum breakers, and distribution systems shall be connected on the discharge side of the check valve.

   e. All wells, except approved underground discharge wells as specified in paragraph o. below, shall be constructed in such a manner that the finished ground elevations around the casing are sloped to drain away from the casing. Equipment such as engines, pressure tanks, or fuel tanks to be installed shall be placed on pre-cast concrete blocks or pads to prevent differential settlement that could result in damage to the pump and the well.

   f. The annular space on all wells covered by this section of the regulation shall be grouted from a depth of at least ten (10) feet below the surface to the surface, except as specified in paragraphs g, i, j, k, l, m, o, and p below.

g. Wells located within one hundred (100) feet of a potential source of pollution such as sewers, septic tanks, landfills, and waste and raw material piles shall be grouted from a depth of at least fifty (50) feet below the land surface to the surface, except as specified in paragraphs h, i, j, k, l, n, and o below

h. Potable water wells shall not be constructed within 100 feet of any potential source of pollution.

i. Wells located within one-quarter mile of a known existing area of contaminated aquifer shall be grouted from the top of the water bearing stratum to the ground surface, or the top of the casing for underground discharge wells.

j. Outer casing for wells serving public water supply systems shall be grouted from the top of the target water bearing stratum to the ground surface.

k. Monitoring wells shall be grouted from the top of the seal or filter pack to the ground surface, unless a more stringent requirement is mandated by other applicable regulatory programs. Specifics of monitoring well construction shall follow the most stringent requirements of the applicable regulatory programs.

l. Cathodic protection wells shall be grouted from a depth of fifty (50) feet below ground surface to the ground surface. Wells constructed with granular material such as gravel from the top of the anodes to near the surface are prohibited. If wells are no longer used, the vent pipe, casing or other non-grouted openings shall be grouted from a depth of at least ten (10) feet below the ground surface to the ground surface.

m. For continuous lengths of grout not separated by multiple screens, grout shall be introduced in one continuous operation from the top of the water bearing stratum to the ground surface.

n. Grout for all holes covered under this section shall consist of either neat cement, cement grout, cement-bentonite mixture (5-8% bentonite), or bentonite. Bentonite pellets or bentonite chips may be added under free-fall conditions for depths not exceeding twenty-five (25) feet. Free-fall addition of any other type grout from the surface is prohibited. Granulated or pelletized bentonite may be placed to greater depths only if introduced through a tremie pipe.

o. All wells, regardless of size, which are drilled through or into aquifers containing chloride concentrations in excess of 250 milligrams per liter (mg/l) and/or total dissolved solids (TDS) concentrations in excess of 1000 milligrams per liter (mg/l), must be completed using metal casing. Furthermore, all such wells shall be completed using only the casing method of grouting (Halliburton method) to grout thoroughly the annular

space from the bottom of the casing to ground surface or to the top of the casing for underground discharge wells.

p. Outer casing for underground discharge domestic wells shall be grouted from a depth of at least ten (10) feet below the top of the casing at the underground discharge head, or pitless adapter, to the top of the casing.

q. Public water supply wells shall be constructed in such a manner that any column/casing vents and blowoff valves are properly screened.

2. Disinfection

a. All water used in the drilling or construction process and in well development shall be clean and free of impurities that could contaminate water bearing sands penetrated by the well or borehole. For construction and development of a potable water well, water shall be obtained from a groundwater source of proven quality such as a domestic well or a public water supply system. If the water is obtained from a local public water supply distribution system, it need not have additional chlorine added during the drilling and/or construction process; otherwise, the water shall be chlorinated. A residual of free chlorine of not less than 5 parts per million (ppm) shall be maintained in any water used for well development.

b. Gravel to be placed in potable water wells shall be disinfected with a solution of at least 50 mg/l free chlorine. (Clean pre-packaged gravel is exempt from this requirement.)

c. Upon completion of drilling potable water wells, the well and adjacent aquifer shall be disinfected using a solution of at least 50 mg/l free chlorine applied for at least 24 hours. The procedure shall meet or exceed the American Water Works Association (AWWA) Standard current at the time of the activity.

d. After disinfection, the potable water well shall be pumped until a chlorine free sample is collected from the well. The sample also must be free of coliform bacteria. Samples shall be collected, submitted, and analyzed in accordance with applicable Mississippi State Department of Health requirements.

B. Water Wells and Boreholes Constructed in the Mississippi River Valley Alluvial Aquifer (MRVA) – The MRVA is a uniquely situated shallow aquifer used almost exclusively for agricultural irrigation with very little potential of increased demand for domestic or public water supply. Because of the unconsolidated nature of the material and the predominant agricultural water use, the drilling technique in general use for large diameter irrigation wells in the MRVA is reverse circulation rotary drilling. Consequently the standards for construction and disinfection have been modified slightly to reflect the water usage and drilling practices in the MRVA. If a water well contractor encounters geologic formations or unusual circumstances that appear to dictate a

deviation from the standards, the contractor shall consult with MDEQ staff regarding proposed construction procedures for the water well or borehole in question.

1. Construction Standards – The following construction standards apply to irrigation wells screened and completed in the MRVA and to boreholes that do not penetrate the base of the MRVA, including but not limited to, irrigation wells, monitoring wells, observation wells, and geotechnical boreholes:

   a. All water wells and boreholes covered under this section shall be constructed by a licensed water well contractor unless specifically exempted by statute.

   b. Well casing shall terminate not less than twelve (12) inches above natural ground elevation or, where practicable, above the 100-year flood elevation. However, if flood levels around the well routinely exceed a reasonable height for an extended casing above the twelve (12) inch minimum, then the well shall be fully sealed with a Braden Casing Head, or approved equivalent, to prevent the flow of flood waters into the casing. The casing head shall contain a screw-in plug with a minimum diameter of one-half (1/2) inch to provide access for water level measurements. If the casing is not covered with a recorder box or pump housing, then it must have a locked, overlapping cover or other suitable cover capable of preventing unauthorized access to the casing head and access plug.

   c. All wells shall have a check valve installed in the discharge line to prevent the intentional or accidental introduction of contaminants into the well. All new unmetered wells larger than six (6) inches in diameter shall have a minimum of four (4) feet of straight pipe installed between the casing head and the check valve, and all other equipment, valves, pressure relief valves, vacuum breakers, and distribution systems shall be connected on the discharge side of the check valve.

   d. All wells, except approved underground discharge wells, shall be constructed in such a manner that the finished ground elevations around the casing are sloped to drain away from the casing. Equipment such as engines, pressure tanks, or fuel tanks to be installed shall be placed on pre-cast concrete blocks or pads to prevent differential settlement that could result in damage to the pump and the well.

   e. The annular space on all wells covered by this section of the regulation shall be grouted or sealed with bentonite from the lowest level of disturbed earth immediately adjacent to the casing down to a depth of at least ten (10) feet below that level, except as specified in paragraphs f. and g. below.

   f. Wells located within one hundred (100) feet of a potential source of pollution such as sewers, septic tanks, landfills, and waste and raw material piles shall be grouted from the lowest level of disturbed earth

immediately adjacent to the casing down to a depth of at least fifty (50) feet below that level, except as specified in paragraph g. below.

g. Wells located within one-quarter mile of a known existing area of contaminated aquifer shall be grouted from the lowest level of disturbed earth immediately adjacent to the casing to the top of the water bearing stratum.

h. Grout for all holes covered under this section shall consist of either neat cement, cement grout, cement-bentonite mixture (5-8% bentonite), or bentonite. Bentonite pellets or bentonite chips may be added under free-fall conditions for depths not exceeding twenty-five (25) feet. Freefall addition of any other type grout from the surface is prohibited. Granulated or pelletized bentonite may be placed to greater depths only if introduced through a tremie pipe.

2. Drilling Fluids and Disinfection

a. All water used in the drilling or construction process and in well development for non-potable water wells in the MRVA shall be dosed to a minimum concentration of fifty parts per million (50 ppm) of chlorine, i.e., two (2) gallons of sodium hypochlorite (laundry bleach, approximately five percent (5%) available chlorine) per one thousand (1000) gallons of drilling water.

b. The licensee shall denote on the driller's log portion of the State Well Report the location of the source of any surface water used as well as the method of dosing and the volume of chlorine used in the drilling and development of a non-potable water well in the MRVA.

c. Equipment used in the transport, storage, or circulation of surface water during the drilling and development of a non-potable water well in the MRVA shall not be used thereafter in the drilling and development of a potable water well without having first been disinfected with a solution of at least fifty parts per million (50 ppm) free chlorine for a minimum contact time of twenty-four (24) hours.

XIII. MAINTENANCE AND SERVICE CRITERIA FOR PUBLIC WATER WELLS

A. General – Installation of pumps and well equipment shall be in accordance with the manufacturer's recommendation and this regulation. All pumps and well equipment shall be designed and installed so as to prevent contamination of the well.

1. Licensing – Pump installation shall be performed either by a Water Well Contractor holding an unrestricted license or by a restricted licensee who specializes in pump installation and well service.

2. Location of pressure tanks and switches – Pressure tanks and switches located above ground shall be on a concrete slab or preformed pad or blocks. Tanks and switches installed below grade shall be in a concrete pit or basement designed to be adequately drained, unless approved for direct burial. A pressure tank may be buried provided the tank is designed for that type installation. Tanks to be installed inside the bore of a water well must be designed for that purpose and approved by the Commission.

3. Temporary seal – If the pump and well equipment are not installed immediately upon completion of drilling, all openings to the well must be closed to prevent pollution or vandalism. After pump installation, all open spaces must be sealed off to prevent contamination of the ground water.

4. Drop pipe, wire, etc. – All drop pipe, wire, pumps, and other pumping equipment to be installed in the well shall either be new or be disinfected with a solution of at least 50 mg/l free chlorine; and it shall be installed in such a manner as to permit removal and repair of all equipment. If equipment or tools are lost in the well and not recovered, a statement describing the item or items lost shall be attached to the well completion report submitted to MDEQ.

5. Prevention of contamination – Pumping equipment shall be installed in such a manner as to prevent the entrance of contamination into the ground water. Discharge pipes shall be fitted with devices which will prevent the entrance of small animals.

6. Check valves – Pumping equipment installed and used in conjunction with Chemigation, which is the practice of injecting agricultural chemicals into irrigation lines in order to mix and distribute the chemicals with the water flowing through the irrigation system, shall have either two check valves, or other means of backflow prevention as may be approved by MDEQ, installed between the well head and the point of introduction of any chemicals.

B. Submersible pump installation

1. Check valves – Submersible Pumps shall have no less than 2 check valves installed. One check valve must be installed above ground.

2. Wire -- Wire shall be secured to the drop pipe in a manner which will support the weight of the wire and keep the wire close to the pipe.

3. Clamps -- All clamps used shall be all stainless steel.

C. Jet pump installation

1. Check valves -- Jet Pumps shall have a check valve installed on the discharge side of the pressure tank.

2. Clamps -- All clamps used shall be all stainless steel.

D. Turbine pump installation

1. Steel column pipe for line shaft turbine pumps – Steel column pipe for turbine pump irrigation wells shall be standard weight flanged or threaded steel pipe.

2. Plastic column pipe may be used for turbine pump installation provided the pipe is designed and manufactured for that purpose.

E. Pressure systems – All pressure systems will have a pressure relief valve installed between the well seal and pressure switch.

F. Power and control wiring – Licensees may run power and control wiring from a disconnect box to water well equipment. A license issued pursuant to this regulation does not authorize the licensee to alter the existing electrical service to any building or structure or perform any other electrical work covered by the National Electric Code (NEC) or local building codes.

XIV. DECOMMISSIONING OF ABANDONED OR UNUSED WATER WELLS AND BOREHOLES

A. Applicability

1. Except as stated in paragraph B. below, the standards for decommissioning abandoned or unused water wells and boreholes apply to all abandoned water wells and to all boreholes that penetrate water bearing strata or are greater than twenty-five (25) feet in depth including potable water wells, agricultural wells, monitoring wells, observation wells, dewatering wells, relief wells, saline or brackish water withdrawal wells, contaminant recovery wells, heat pump water supply wells and closed loop system holes, industrial supply wells, rig supply wells, geotechnical boreholes, cathodic protection wells and pilot boreholes.

2. All wells and boreholes that penetrate water bearing stratum with a depth of 25 feet, or greater, below land surface must properly be decommissioned by a water well contractor licensed by MDEQ. Water wells less than 25 feet in depth below land surface may be plugged by someone other than a licensed water well contractor. However, the same procedures and reporting requirements apply regardless of who plugs the well.

3. If approved and accepted in writing by MDEQ, properly cased and sealed wells may be provided with a locking cover capable of preventing the entrance of contaminants and used as monitoring wells or observation wells in lieu of abandonment. If the use of an observation or monitoring well is later discontinued by MDEQ, the landowner/permittee shall be responsible for having the well properly decommissioned by a licensed water well contractor.

B. Exemptions

1. Exemption from this regulation does not relieve the owner of the responsibility for identifying and complying with other applicable local, state, and federal regulations. The following types of wells and boreholes are exempt from decommissioning requirements set forth in this regulation:

   a. Saline water wells associated with enhanced oil and gas recovery operation, brine withdrawal wells, and other types of on-site oil and gas well holes, including Class II wells regulated under the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Sections 6901 et seq.;
   b. Class I, III, IV and V injection wells regulated under the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Sections 6901 et seq.; and

   c. Geotechnical boreholes less than twenty-five (25) feet in depth that do not penetrate water bearing strata and boreholes drilled in planned roadbed construction areas where the natural overburden will be removed to within twenty-five (25) feet of the bottom of the hole.

C. Types of Abandoned or Unused Wells – A water well may be considered by MDEQ to have been abandoned if its use has been permanently discontinued; if the well has not been used in the preceding 12 months (except for established rotations of pumping equipment between wells related to crop irrigation and instances where the owner has notified MDEQ of an anticipated longer period of nonuse after which the well will be placed back in service.); if the pumping equipment has been removed (except for established rotations of pumping equipment between wells related to crop irrigation); or if the well cannot be repaired. Rig supply holes, geotechnical boreholes, pilot holes, and dewatering holes are considered abandoned immediately upon completion of the project phase for which they are drilled, unless the well is an integral part of the continued operation of the project, such as a pressure relief well or a permanently used dewatering well.

D. Time allowed for plugging --Rig supply wells, pilot holes, and geotechnical boreholes shall be plugged within 30 days after abandonment or cessation of use. All other holes shall be plugged within 180 days after abandonment or cessation of use.

E. Decommissioning forms -- Abandonment and plugging of water wells and boreholes shall be reported on a decommissioning form approved by and made available from MDEQ. The person or contractor who plugs an abandoned water well or borehole shall submit the decommissioning form to MDEQ within 30 days after completion of the plugging. For irrigation wells located in the MRVA, a copy of the form shall be submitted to YMD at the same time the original is submitted to MDEQ. Reporting the abandonment and plugging of multiple water wells and/or boreholes on one form may be permissible, with prior approval from MDEQ, provided the same decommissioning procedure was used and the location of each water well and/or borehole is clearly identified.

F. Decommissioning Procedures – The following procedures shall be followed in the decommissioning of any water well or borehole for which decommissioning is required under this regulation:

1. Grout for all holes shall consist of neat cement, cement grout, cement bentonite mixture (5-8% bentonite), or bentonite. Bentonite pellets may be added under free-fall conditions for depths not exceeding twenty-five (25) feet, providing pellets are placed in layers not more than five (5) feet deep and tamped into place after addition of each layer. Granulated or palletized bentonite may be placed to greater depths if introduced through a tremie pipe. Free-fall addition of other types of grout from the surface is prohibited;

2. Obstructions shall be removed from the well casing;

3. If there is reason to question the physical integrity of the well casing because of the age of the well or the material used for the casing, or there are no records to indicate that the annular space was grouted properly during construction of the well, the driller shall consult with MDEQ before plugging the well. In such instances, MDEQ may require that the casing be perforated to allow the introduction of grout into cavities or voids that may have formed outside the casing; or may require that the casing be removed from the hole prior to grouting;

4. For abandoned water wells in agricultural fields, the casing shall be cut off and removed down to a minimum depth of three feet below land surface. After grouting, the excavation shall be filled with compacted soil. In other areas, the casing shall be cut off and removed at least down to the ground surface elevation. MDEQ may authorize alternate methods of abandonment and/or abandonment by other than a licensed water well contractor, provided the results will meet the intent of the regulations. Only detailed written requests to utilize an alternate method of abandonment or to abandon a well without utilizing a licensed water well contractor shall be considered for approval. If approved, MDEQ will provide written authorization to the requestor.

5. Abandoned water wells or boreholes shall be sealed from the bottom of the hole to ground surface using a grout as described in paragraph 1 above.

6. MDEQ may authorize alternate methods of abandonment and/or abandonment by other than a licensed water well contractor, provided the results will meet the intent of the regulations. Only detailed written requests to utilize an alternate method of abandonment or to abandon a well without utilizing a licensed water well contractor shall be considered for approval. If approved, MDEQ will provide written authorization to the requestor.

XV. ENFORCEMENT

Enforcement of these regulations shall be governed by Miss. Code Ann. Sections 51-5-7 and 51-5-17, and Sections 49-17-31 through 49-17-43.

XVI. CORRESPONDENCE AND ADEQUACY OF NOTICE

A. General – All permittees and licensees shall inform MDEQ of any address changes within fifteen (15) days of any change of address, and must readily accept all mail sent to them from the Commission, MDEQ, or the Permit Board.

B. Registered or certified mail – Registered or Certified Mail sent with proper postage and to the last address provided to MDEQ by the permittee or licensee shall be considered adequate notification of notice served if MDEQ is notified that the mail was delivered and accepted or if the mail is returned as rejected or unclaimed by the addressee.

C. Refusal to accept mail – Refusal to accept mail from the Commission, the Permit Board, the Department, or its designee, shall be considered a violation of this regulation.

XVII. CONFIDENTIAL INFORMATION

Procedures for declaring submitted information confidential and for agency handling of such information are found in Miss. Code Ann., Section 49-17-39, Section 51-3-44, and the Commission's Regulations Regarding the Review and Reproduction of Public Records (MCEQ-2).

Mississippi Commission on Environmental Quality

LICENSING

of

WATER WELL CONTRACTORS REGULATION

LW-3

Adopted by the Commission on Environmental Quality
~~June 24, 2004~~

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Licensing of Water Well Contractors Regulation (LW-3)

~~I.~~II. DEFINITIONS

The words and phrases used in this regulation, shall have the following meanings:

A. Annular Space — The space between the borehole wall and the well casing or screen, or the space between a casing pipe and a liner pipe or between two strings of casing.

B. Applicant — Any person who submits an application to obtain a water well contractor's license.

C. Approved Education Provider – An organization that offers many educational courses for continuing education and has demonstrated, to the satisfaction of the Department, its qualifications to offer quality continuing education to water well contractors. Approved education providers are not required to submit every course they offer for Department approval.

~~C~~D. Aquifer — a geologic formation, hydraulically connected group of formations, or part of a formation that can yield water to a well or spring.

1. Confined Aquifer (Commonly referred to as artesian aquifers) – a permeable geologic layer or zone saturated with groundwater isolated from the atmosphere by impermeable confining layers. The groundwater in confined aquifers is subjected to pressures higher than atmospheric pressure so that water in a well penetrating the aquifer will rise to some level above the actual top of the aquifer.

2. Unconfined Aquifer (Commonly referred to as water table aquifers) – a permeable geologic layer or zone saturated with groundwater at atmospheric pressure. These aquifers are generally not overlain by impermeable confining layers and may be vulnerable to contamination from surface activities or events that discharge pollutants on the ground.

~~D~~E. Artesian — Groundwater under sufficient hydrostatic pressure to rise above the aquifer containing it.

~~E~~F. Beneficial use — The application of water, excluding waste of water, to a purpose that produces economic or other tangible or intangible benefits to the state and its citizens. Such uses include, but are not limited to, diversions or withdrawals for public, industrial, or agricultural use.

~~F~~G. Board or Permit Board – The Mississippi Environmental Quality Permit Board.

~~G~~H. Certificate of Insurance – Proof of coverage under Contractors Liability Insurance.

~~H~~I. Commission –The Mississippi Commission on Environmental Quality, or its designee.

~~I~~J. Committee – The Water Well Driller's Advisory Committee.

K. Continuing Education Course – A course which has been approved by the Department as meeting the requirements of the regulations for continuing education. Only courses approved by the Department are considered applicable to meeting continuing education requirements, unless the course is presented by an approved education provider.

~~J~~L. Days — Calendar days, unless specifically indicated otherwise in the body of this regulation.

~~K~~M. Decommissioning — The complete and permanent sealing of a well bore to prevent contamination of the aquifer.

~~L~~N. Department or MDEQ – The Mississippi Department of Environmental Quality.

~~M~~O. Dewatering – The temporary lowering of the groundwater level to facilitate installation of underground utilities, construction of foundations, and various other purposes.

~~N~~P. Domestic use — The use of water for ordinary household purposes, the watering of farm livestock, poultry, and domestic animals, and the irrigation of home gardens and lawns.

~~O~~Q. Filter Pack — Smooth, uniform, clean sand or gravel placed in the annular space between the borehole wall and well screen to prevent sediments from entering the screen.

~~P~~R. Fresh water — Water having a Total Dissolved Solids (TDS) concentration of less than 1,000 parts per million (ppm).

~~Q~~S. Geotechnical Boring — A hole constructed for the purpose of sampling, measuring, or testing the strata encountered for scientific, engineering, geological or regulatory purposes.

~~R~~T. Groundwater — Water occurring beneath the surface of the ground.

~~S~~U. Grout — A fluid mixture of neat cement and water, with additives such as sand, bentonite, or hydrated lime, or a mixture of bentonite and water, capable of producing a water-tight seal, that can be forced through a pipe or placed in an annular space, as required for sealing a well or an annular space to protect against intrusion of contamination.

~~T~~V. Halliburton Method---A method of grouting casing in which the slurry is forced down the casing and into the annular space until slurry returns are obtained at the ground surface.

~~U~~W. Inactive Status – The status assigned to a license by the Commission to indicate that the licensee may not practice well drilling and/or pump installation until the licensee has met the requirements of this regulation regarding renewal or reinstatement of the license.

~~V~~X. Incompetency – An action or inaction by a licensee which demonstrates a general lack of knowledge or ability to practice water well drilling and/or pump installation.

~~W~~Y. Landowner — The person, or entity, holding legal title to the surface of the land upon which a withdrawal or diversion of water is located.

~~X~~Z. Licensee – Any individual who holds a valid Water Well Contractor's License issued by the state, or any company or corporation engaged in the business of water well contracting under a license duly issued to a designated principal, or key employee, in the company or corporation. Licenses will only be issued to individuals, and a company will be deemed to be licensed only if it has a principal or key employee who is licensed.

1. Restricted Licensee – An individual holding a ~~Water Well Contractor's License~~specialty driller's or pump installer's license who is restricted to performance of only such activities as may be specified in the conditions of the license. Typically, restrictions will be placed on the licenses of individuals who:

   a. only engage in specialized well or borehole construction such as drilling geotechnical boreholes, constructing environmental monitoring wells, or constructing geo-thermal systems; or

   b. only engage in limited aspects of the water well construction business such as pump and well equipment installation and service.

2. Unrestricted Licensee – An individual holding a Water Well Contractor's License who is thereby authorized to engage, to the full extent allowed by this regulation, in the business of constructing, maintaining, and repairing water wells; installing and servicing pumps and related water well equipment; drilling special purpose boreholes; constructing monitoring wells; or any other work involving drilling, grouting, plugging, abandoning, or decommissioning water wells and boreholes. Companies, corporations, or other business entities, that are not individuals, will be deemed to have met the licensing requirement if a principal in the firm, or other key employee authorized to act for the firm, holds an unrestricted water well contractor's license.

~~Y~~AA. Misconduct – A willful or intentional action or inaction by a licensee that is contrary to the standard or accepted practice of the industry that would be applied by competent professionals, under the same circumstances.

~~Z.~~BB. Municipal use — The use of water by a municipal government to promote the life, safety, health, comfort, and business pursuits of its people. The term does not include irrigation of crops that may be planted within the corporate boundaries.

~~AA~~CC. Office or OLWR--- the Office of Land and Water Resources of MDEQ.

~~BB~~DD. Permitted use —

1. The use of a specific amount of water at a specific time and at a specific place, authorized and allotted by the Board for a designated beneficial use within specific limits as to quantity, time, place, and rate of diversion or withdrawal; or

2. The right to the use of water as specified in the permit, subject to the provisions of Mississippi Code Annotated Section 51-3-5, including the construction of waterworks or other related facilities.

~~CC.~~EE. Person — The state or other agency or institution thereof, any municipality, political subdivision, public or private corporation, individual, partnership, association or other entity, and including any officer or governing or managing body of any municipality, political subdivision, or public or private corporation, or the United States or any officer or employee thereof.

~~DD~~FF. Plugging — See "Decommissioning".

~~EE~~GG. Potable Water — Water that is suitable for human consumption and meets all primary drinking water standards (Primary Maximum Contaminant Levels) set by the United States Environmental Protection Agency (EPA).

~~FF~~HH. Potential Sources of Contamination – Sites or facilities that use, store, and/or dispose of substances (on site) that, due to their quantity, toxicity, and/or mobility, could impact the water quality of aquifers used for potable water supply. Examples of such sources include, but are not limited to, failing or inadequate individual sewage treatment and disposal systems, tanks used for bulk storage of petroleum products, Class V injection wells, container and drum storage sites, etc.

~~GG~~II. Public Water System –A system that provides potable water to the public through pipes or, after August 5, 1998, other conveyances if such system has at least fifteen service connections or regularly serves an average of at least twenty five (25) individuals daily at least 60 days out of the year. **Note: This duplicates a Mississippi State Department of Health definition. It is included in this regulation to serve as a reminder that wells exempted from regulation by MDEQ because the surface casing diameter is less than six (6) inches, may still be regulated by the Mississippi State Department of Health if they are part of a Public Water System.**

~~HH~~JJ. Pump Installation – The installation of pumps or pumping equipment for water wells, including the removal and re-installation of pumps or pumping equipment for service, repairs, or replacement.

~~II~~KK. Pumps or Pumping Equipment – Any equipment or materials utilized or intended for use in withdrawing or obtaining water from water wells or surface water diversion points.

~~JJ~~LL. Repair of Water Wells – Work on any water well involving re-drilling, deepening, changing casing and screen depths, re-screening, cleaning by use of chemicals, and re-development; or removing and re-installing pumps, pumping equipment, or any related equipment intended to draw water from the well.

~~KK~~MM. State Well Report – A report documenting information related to the drilling of a well or borehole and the development and completion of a water well together with any other data or information required by MDEQ, reported on forms provided by the MDEQ.

~~LL~~NN. Surface casing — That string of casing in any water well having the greatest outside diameter, regardless of whether it is located at or below ground level.

~~MM~~OO. Suspended Status – The status assigned to a license by the Commission to indicate that the licensee has willfully violated provisions of State law or of this regulation so as to endanger himself, others, the environment, and/or the public health.

~~NN~~PP. Test Boring and Coring – the removal and collection of soil samples from the earth by means of augers, core-barrels, spoons, wash casing and bailers for the purpose of obtaining geologic and hydrologic information.

~~OO~~QQ. Tremie pipe — a device, usually a small-diameter pipe, that carries grout or other material to the bottom of a borehole or casing and that allows pressure grouting from the bottom up without introduction of air pockets.

~~PP~~RR. Well or "water well" — a hole that is drilled, driven, bored, excavated, or otherwise penetrated into the ground to access, evaluate and/or withdraw groundwater. For purposes of this regulation, this definition does not pertain to wells constructed for the purpose of disposal of fluids or other materials, but does include:

1. Abandoned Well — a well that has not been used within the preceding twelve month period, or one that has had the pump disconnected and/or removed for reasons other than maintenance, repair, or replacement.

2. Dewatering Well — a well used for temporary removal of surface water or groundwater to facilitate construction or mining operations, or for permanent protection of a structure or activity from the effects of surface water or groundwater.

3. Monitoring Well — a well used to obtain data on the quality of water in an aquifer system or at specified depths and locations related to a potential source of pollutant.

4. Observation Well--- a well used primarily for measuring the water level in an aquifer.

5. Recovery Well — a well constructed for the purpose of recovering undesirable groundwater for treatment or removal of contaminants.

6. Relief Well — a well constructed to provide pressure relief from an artesian aquifer or from excessive head differentials in water table aquifers.

7. Replacement Well — a well drilled to replace an existing well that has become unusable, provided the new well meets the requirements set forth in these regulations.

8. Standby Well – a well that can be placed in operation to withdraw water but is only used when water is temporarily unavailable from the primary source or sources because of mechanical failure, maintenance, or power failure.

9. Test Well – a well drilled to explore for groundwater for a water supply well.

10. Underground Discharge Well – a well in which the top of the casing terminates at a discharge head located below the frostline.

~~QQ~~SS. Well Completion — term used collectively to refer to both the drilling and developing phases of well construction. For the purpose of reporting requirements established in this regulation, a distinction is made between completion of drilling and completion of well development:

1. Completion of drilling – the date that drilling is completed and the drill rig is no longer required at the site.

2. Completion of well development – the date that the well is fully functional and ready to provide water for its designated beneficial use, including having met any applicable water testing requirements.

II. APPLICABILITY

A. Any person, or any company, corporation, or other business entity engaging in a business or occupation that involves drilling of water wells or drilling boreholes that may penetrate water bearing strata (including constructing water wells, constructing geothermal systems, constructing environmental monitoring wells, conducting geotechnical investigations, conducting seismic exploration, or similar activities) or installing pumps or other equipment in water wells must first obtain the appropriate license or license renewal required pursuant to this regulation. A license is not transferrable or assignable, and MDEQ will maintain a current register of licensees.

~~B. Any person, or any company, corporation, or other business entity engaged in the practice of water well service and pump installation as of the effective date of this regulation may be issued a Restricted License, without examination, provided a properly completed license application is submitted to MDEQ, with the license fee, within sixty (60) days after the effective date of this regulation.~~ If the applicant is a company, corporation, or other business entity that is not an individual, the application shall include the name of the designated individual who will hold the license for the company. A company will be deemed to be licensed only if it has a designated principal or other key employee who is licensed. The application shall be accompanied by a notarized affidavit signed by the applicant certifying that the individual applicant or the company's

designee has a minimum of three (3) years qualifying experience in the practice for which the license is being sought. ~~Any application received after the sixty (60) day time limit will be subject to the examination requirement of this regulation before any license will be issued; and the application will have to be accompanied by notarized affidavits from three (3) licensed water well contractors, as required by statute, certifying that the applicant has a minimum of three (3) years qualifying experience in the limited practice for which the license is being sought.~~

~~C~~B. Exemptions – For the purposes of these regulations, a person who owns or leases property in the state; or who otherwise owns a property interest allowing the drilling of a water well on, and the use of water under, property in the state may drill a water well on that property without having a Water Well Contractor's license provided:

1. The well will be used only to supply water for domestic use to a single family dwelling which is the owner's or lessee's permanent residence; and/or to water livestock on the owner's or lessee's farm and/or to supply water for irrigating crops on the owner's or lessee's farm (crop irrigation exemption in effect until July 1, 2011); and

2. The owner or lessee complies with applicable well construction standards contained in this regulation and the applicable regulations promulgated by the Mississippi State Department of Health.

~~D~~C. Either a licensed water well contractor or an employee certified by the licensee in accordance with paragraph II. E. of this regulation must be on site and personally supervising operations during all critical stages of the drilling and completion of a potable water well including, but not limited to, collecting sand samples, logging the hole, setting the casing, grouting the well, setting the screen, placing the filter pack, developing and testing the well, and installing the pump.

~~E~~D. Licensed water well contractors who have the capability to conduct simultaneous operations on multiple construction sites within the state may certify the competency of employees who will be in responsible charge of all on-site operations in the absence of the licensee. Within sixty (60) days after the effective date of this regulation, the licensee shall furnish MDEQ a list of the designated employees and a written certification that the listed employees are competent to perform and supervise all critical stages of drilling and completion of potable water wells. The list shall be updated and recertified by the licensee annually and submitted to MDEQ with the annual request for license renewal.

~~F~~E. Neither these regulations, nor any permit issued thereunder, creates or includes any property right in favor of the permittee.

III. MINIMUM REQUIREMENTS FOR LICENSING

An applicant for a license, as defined in this regulation, must submit a completed application on the form provided by MDEQ; and meet or comply with the requirements set forth below:

A. Water Well Contractor (Unrestricted License)

1. Be at least twenty-one (21) years of age; and

2. Be of good moral character; and

3. If not previously licensed by the state, or if seeking reinstatement of a license, demonstrate, to the satisfaction of the Commission, a reasonable knowledge of state water laws, regulations, water well and borehole drilling practices, and pump and well equipment installation practices by passing such examinations as may be prescribed by the Commission, or its designee; and

4. Provide proof that the applicant possesses, or has unrestricted access to, the necessary tools and equipment to engage in all aspects of the business of water well contracting;

5. Provide evidence of at least three (3) years qualifying experience, i.e. experience in on-site supervision and being in responsible charge of all aspects of water well and borehole construction gained while working under the personal supervision of a water well contractor holding an unrestricted license, or its equivalent; and

6. If not previously licensed by the state, provide notarized affidavits, as required by statute, from three (3) licensed water well contractors certifying that the applicant has the necessary qualifications and experience to meet the state's licensing standards at the level for which he is applying.

B. ~~Water Well Contractor~~Specialty Driller or Pump Installer (Restricted License)

1. Be at least twenty-one (21) years of age; and

2. Be of good moral character; and

3. Demonstrate, to the satisfaction of the Commission, a reasonable knowledge of state water laws, regulations, and the specific practices for which the restricted license is being sought by passing such examinations as may be prescribed by the Commission, or its designee;

4. Provide written certification that they will only engage in the limited practice for which they are seeking the restricted license, such as constructing irrigation wells in the Mississippi River Valley Alluvial Aquifer (MRVA), constructing domestic wells less than six (6) inches in diameter, drilling geotechnical boreholes, constructing environmental monitoring wells, constructing geo-thermal systems, or installing and servicing pumps and related well equipment;

5. Provide evidence of at least three (3) years of qualifying experience, i.e. experience gained while working under the direct supervision of a licensee engaged in the business or practice for which the license is being sought; and

6. If not previously licensed by the state, provide notarized affidavits, as

required by statute, from three (3) licensed water well contractors certifying that the applicant has the necessary qualifications and experience to meet the state's licensing standards at the level for which he is applying.

IV. EXAMINATION

A. A license applicant shall be required to take such examinations as may be prescribed by MDEQ. ~~Three e~~Examinations will normally be administered to test: (1) general knowledge of groundwater resources and wells, (2) specialized knowledge in equipment, techniques, and practices appropriate to the license being sought, and (3) specific knowledge of state laws, regulations, and construction standards. Upon receipt of a completed application form and supporting documentation as set forth in paragraph III., MDEQ will contact the applicant to schedule the examinations. At that time, MDEQ will advise the applicant as to the types of examinations that will be administered, the general content of the examinations, and the availability of study materials.

B. The examinations will be taken at a time and place designated by MDEQ.

C. If the applicant fails to pass the examination(s), the examination(s) may be taken again upon written request, but not sooner than 30 days after the previous examination. If the applicant does not request re-examination within one (1) year, the application for license will be nullified and discarded.

D. MDEQ may waive a portion of the examination requirement for an applicant with a valid license from another state having license requirements substantially the same as those contained in this regulation. However, all applicants will be required to pass the examination on state laws, regulations and construction standards.

V. FEES

A. License Fee – Upon passing the examination, the annual license fee of one hundred dollars ($100.00) must be paid before the license will be issued. The fee must be paid by check, money order, or electronic payment directed to MDEQ. **Do not send cash.**

B. Renewal Fee — An annual renewal fee of one hundred dollars ($100.00) must be paid to MDEQ with the request for renewal of a license.

C. Late Fees – A late fee of ten dollars ($10.00) per month, or any fraction thereof, will be assessed for renewal or reinstatement requests received after the expiration date of the last valid license.

VI. LICENSE RENEWAL

A. All licenses expire on June 30 and must be renewed annually. The licensee shall submit a completed renewal request form, provided by MDEQ, along with the appropriate fee to MDEQ prior to June 30. Re-examination is not required for timely renewal of a license.

B. Receipt of the renewal form and fee by MDEQ prior to June 30 shall have the effect of extending the old license until the new license and ID is issued, or until the applicant is notified that the request for renewal has been denied. If the request for renewal is not properly filed by June 30, the license will expire and the licensee shall cease all work for which a valid license is required until such time as the license has been reinstated.

C. A licensee may request that an expired license be re-instated by submitting to MDEQ the required renewal form and paying the appropriate fee plus accumulated late fees. Failure to request re-instatement within one (1) year after the expiration date may be deemed a forfeiture of the reinstatement option. Any request for reinstatement submitted thereafter may require submittal of a new application and be subject to the examination requirement.

F. ~~D.~~ Restricted licensees requesting renewal must submit a written certification that they will continue to work only in accordance with the conditions of the restricted license.

G. A completed continuing education form, provided by MDEQ, shall be submitted with the renewal form to MDEQ.

VIII. CONTINUING EDUCATION

G. All licensees are required to complete a minimum of four (4) hours of continuing education annually and submit proof as required by MDEQ. Every two (2) years, one (1) of the hours of continuing education must be on state rules and regulations as presented by MDEQ.

H. A licensee may be exempted from the continuing education requirements for one of the following reasons:

1. New licensees who have obtained their license less than one (1) year before the June 30th renewal deadline.
2. Licensees who have experienced physical disability, serious illness, or other extenuating circumstances that prevent work for more than 180 days in a year. Supporting documentation must be furnished to MDEQ upon request.
3. Licensees serving on temporary active duty in the armed forces of the United States for a period of time exceeding 180 days in a year. Supporting documentation must be furnished to MDEQ upon request.

I. Acceptable continuing education programs shall be designed to improve the license holder's professional skills and knowledge in the ground water industry. Course content shall be related to subjects such as well and pump standards, geologic characteristics of the state, state groundwater laws and related regulations, well construction and pump installation practices and techniques, drilling and job site safety, protection of public health related to drinking water, environmental protection, technological advances, and business management.

J. Continuing education hours may be earned as follows:

1. Attending conferences or training hosted by regional or national associations of the ground water industry.

2. Successful completion of correspondence, video, or electronic short courses/tutorials presented by approved education providers.
3. Instruction of approved continuing education courses.
4. Successful completion of courses, seminars, workshops, or lectures given by accredited educational institutions

K. Approval of Continuing Education Programs

1. Continuing education programs must be approved by MDEQ.
2. Applications to approve continuing education programs must contain the following minimum information:
    a. Description of course(s)
    b. Length of course(s) in actual training hours
    c. Name and qualifications of instructor(s)
3. Upon receiving approval of a continuing education course or program, the provider is entitled to state that the course has been approved by the Mississippi Department of Environmental Quality – Office of Land and Water Resources for continuing education credit under the Licensing of Water Well Contractors Regulation LW-3; or, if the program is approved then the provider is entitled to state that they are an approved educational provider by the Mississippi Department of Environmental Quality – Office of Land and Water Resources for continuing education under the Licensing of Water Well Contractors Regulation LW-3.

L. Proof of Continuing Education

1. The license holder is responsible for the submission of proof of all approved training. Inability of the applicant to substantiate credit hours submitted is grounds for disallowance of the credits in question.
2. Proof of continuing education will consist of:
    a. Official transcripts from an accredited educational institution
    b. A certificate of completion signed by the instructor or approved educational provider, containing the license holder's name, date of training, name of course and number of hours of actual training

VII~~I~~. EQUIPMENT

All drilling rigs, water trucks, service vehicles and other vehicles used in the normal drilling, construction, completion, or reworking of wells and boreholes, and/or the installation of pumping equipment must have the name of the licensee (person, firm, or corporation), and the letters "MS Lic." with the appropriate license number prominently and legibly displayed on both sides of the vehicle. The letters and numerals shall be not less than two (2) inches in height and be placed on a background of contrasting color. Drill rigs shall be registered with MDEQ, for identification purpose only, by completing and submitting forms provided by MDEQ for that purpose.

~~VIII~~IX. STATE WELL REPORTS

The State Well Report will include sections for a driller's log, a well completion report, and a well modification report. The driller's log portion of the report shall be completed by the licensed contractor and submitted to MDEQ for all drilled wells and boreholes that penetrate

water bearing strata. Water well contractors drilling irrigation wells into the Mississippi River Valley Alluvial Aquifer (MRVA) shall furnish a copy of the driller's log to the YMD Joint Water Management District (YMD) at the same time the original report is submitted to MDEQ. Driller's logs will not be required for geotechnical boreholes less than twenty-five (25) feet in depth that do not encounter water bearing strata; environmental monitoring wells less than twenty-five (25) in depth that are regulated under other state and federal environmental programs; or small diameter wells or sampling holes less than fifty (50) feet in depth that are established with direct push (geo-probe) equipment. If a water well is developed and completed by a water well contractor immediately upon completion of drilling, both sections of the form shall be completed by the contractor and the report submitted to MDEQ within thirty (30) days after completion of the well. If for any reason a well is not developed and completed immediately upon completion of drilling, the following procedure shall be followed:

A. The driller's log section of the well report form provided by MDEQ shall be completed by the water well contractor who constructed the well or borehole and submitted to MDEQ within thirty (30) days after completion of drilling. For all water wells and boreholes, the driller's log section of the report must be signed by an appropriately licensed water well contractor. The driller's log entries on the report form shall be true, accurate, and complete. Portions of the form that may not be applicable shall contain an entry to that effect. Incomplete or inaccurate submittals will be returned to the licensee for completion or correction, but the 30-day filing period will not be extended. If the properly-executed form is not on file with MDEQ by the end of the 30-day period, the licensee will be deemed to be in non-compliance and may be subject to penalties as prescribed by statute and this regulation. The water well contractor filing the report shall keep a copy of the submittal and provide a copy to the owner of the well or borehole. For geotechnical investigations, the licensee may submit boring logs generated for a site report in lieu of the MDEQ form, provided the logs include all required information.

B. If a water well is completed by someone other than the water well contractor who constructed the well, the owner of the well shall be responsible for providing a copy of the state well report form containing the previously completed driller's log to the licensee responsible for completion of the well.

C. The licensee who develops and completes the well shall fill out the well completion section of the well report on the copy of the form containing the previously submitted driller's log and submit the completed report to MDEQ within thirty (30) days after completion of the well. For all water wells, the well completion section of the report must be signed by an appropriately licensed water well contractor. The entries on the report form relating to well completion shall be true, accurate, and complete. Portions of the form that may not be applicable shall contain an entry to that effect. Incomplete or inaccurate submittals will be returned to the responsible licensee for completion or correction, but the 30-day filing period will not be extended. If the properly-executed form is not on file with MDEQ by the end of the 30-day period, the licensee will be deemed to be in non-compliance and may be subject to penalties as prescribed by statute and this regulation. The water well contractor filing the report shall keep a copy of the submittal and provide a copy to the owner of the well.

D. The well modification report shall be filed with MDEQ by the licensed water well contractor within thirty (30) days after any major modification to, or rehabilitation of, an

existing well six (6) inches or greater in diameter. The report shall include the water use permit number associated with the well and a detailed description of the work performed. When a well that does not comply with current construction standards requires major modifications or rehabilitation, the work shall include items necessary to bring the well up to current minimum standards set forth in paragraphs XI.A.1.(b.), (c.) and (d.)

IX. SUSPENSION / REVOCATION OF LICENSE

A. Grounds for the suspension or revocation of a license are as follows:

1. Providing false information in an application for a license or any affidavit required in the licensing process;

2. Violating any provision of Miss. Code Ann. Sections 55-5-1 et seq. or this regulation;

3. Attempting to obtain a license by fraud or misrepresentation;

4. Participating in fraudulent, deceptive, or dishonest business practices;

5. Demonstrated incompetency as a driller and/or pump installer;

6. Failure or refusal to file accurate and timely reports as required by this regulation; or

7. Failure to obey Orders, Rules and Regulations of the Commission, including refusal to accept or receive official correspondence from the Commission or its designee.

XI. HEARINGS AND APPEALS

Procedures for hearings and appeals of Commission decisions are set forth in Miss. Code Annotated, Sections 51-5-7 and 51-5-9.

XII. DESIGN CRITERIA AND CONSTRUCTION STANDARDS

The Licensee shall be responsible for compliance with all applicable state and federal statutes and regulations.

A. Water Wells and Boreholes Penetrating Aquifers In General Use For Domestic and Public Water Supply – The standards contained herein are the minimum construction standards considered necessary for the protection of the state's high-quality groundwater resources. Other regulatory programs may be applicable and additional standards may be required for certain types of facilities, such as Mississippi State Department of Health regulations governing public supply wells. If a water well contractor encounters geologic formations or unusual circumstances that appear to dictate a deviation from the standards,

the contractor shall consult with MDEQ staff regarding proposed construction procedures for the water well or borehole in question.

1. Construction Standards – The following construction standards apply to wells and boreholes penetrating water bearing strata including but not limited to, potable water wells, irrigation wells, monitoring wells, observation wells, underground discharge wells, dewatering wells, saline or brackish water withdrawal wells, contaminant recovery wells, heat pump water supply holes and vertical closed-loop system holes, industrial supply wells, cathodic protection wells, rig supply wells and geotechnical boreholes:

   a. All water wells and boreholes covered under this section shall be constructed by a licensed water well contractor unless specifically exempted by statute.

   b. Well casing shall terminate not less than twelve (12) inches above natural ground elevation or, where practicable, above the 100-year flood elevation. However, if flood levels around the well routinely exceed a reasonable height for an extended casing above the twelve (12) inch minimum, then the well shall be fully sealed with a Braden Casing Head, or approved equivalent, to prevent the flow of flood waters into the casing. The casing head shall contain a screw-in plug with a minimum diameter of one-half (1/2) inch to provide access for water level measurements. If the casing is not covered with a recorder box or pump housing, then it must have a locked, overlapping cover or other suitable cover capable of preventing unauthorized access to the casing head and access plug.

   c. Public water supply wells shall have the top of the well casing set at least one (1) foot above the 100-year flood level.

   ~~c~~d. All wells shall have a check valve installed in the discharge line to prevent the intentional or accidental introduction of contaminants into the well. All new unmetered wells larger than six (6) inches in diameter shall have a minimum of four (4) feet of straight pipe installed between the casing head and the check valve, and all other equipment, valves, pressure relief valves, vacuum breakers, and distribution systems shall be connected on the discharge side of the check valve.

   ~~d~~e. All wells, except approved underground discharge wells as specified in paragraph o. below, shall be constructed in such a manner that the finished ground elevations around the casing are sloped to drain away from the casing. Equipment such as engines, pressure tanks, or fuel tanks to be installed shall be placed on pre-cast concrete blocks or pads to prevent differential settlement that could result in damage to the pump and the well.

   ~~e~~f. The annular space on all wells covered by this section of the regulation shall be grouted from a depth of at least ten (10) feet below the surface to

the surface, except as specified in paragraphs ~~f~~g, ~~h~~i, ~~i~~j, ~~j~~k, ~~k~~l, ~~l~~m, ~~n~~o, and ~~o~~ p below.

~~f~~g. Wells located within one hundred (100) feet of a potential source of pollution such as sewers, septic tanks, landfills, and waste and raw material piles shall be grouted from a depth of at least fifty (50) feet below the land surface to the surface, except as specified in paragraphs h, i, j, k, l, n, and o below

~~g~~h. Potable water wells shall not be constructed within 100 feet of any potential source of pollution.

~~h~~i. Wells located within one-quarter mile of a known existing area of contaminated aquifer shall be grouted from the top of the water bearing stratum to the ground surface, or the top of the casing for underground discharge wells.

~~i~~j. Outer casing for wells serving public water supply systems shall be grouted from the top of the target water bearing stratum to the ground surface.

~~j~~k. Monitoring wells shall be grouted from the top of the seal or filter pack to the ground surface, unless a more stringent requirement is mandated by other applicable regulatory programs. Specifics of monitoring well construction shall follow the most stringent requirements of the applicable regulatory programs.

~~k~~l. Cathodic protection wells shall be grouted from a depth of fifty (50) feet below ground surface to the ground surface. Wells constructed with granular material such as gravel from the top of the anodes to near the surface are prohibited. If wells are no longer used, the vent pipe, casing or other non-grouted openings shall be grouted from a depth of at least ten (10) feet below the ground surface to the ground surface.

~~l~~m. For continuous lengths of grout not separated by multiple screens, grout shall be introduced in one continuous operation from the top of the water bearing stratum to the ground surface.

~~m~~n. Grout for all holes covered under this section shall consist of either neat cement, cement grout, cement-bentonite mixture (5-8% bentonite), or bentonite. Bentonite pellets or bentonite chips may be added under free-fall conditions for depths not exceeding twenty-five (25) feet. Free-fall addition of any other type grout from the surface is prohibited. Granulated or pelletized bentonite may be placed to greater depths only if introduced through a tremie pipe.

~~n~~o. All wells, regardless of size, which are drilled through or into aquifers containing chloride concentrations in excess of 250 milligrams per liter (mg/l) and/or total dissolved solids (TDS) concentrations in excess of

1000 milligrams per liter (mg/l), must be completed using metal casing. Furthermore, all such wells shall be completed using only the casing method of grouting (Halliburton method) to grout thoroughly the annular space from the bottom of the casing to ground surface or to the top of the casing for underground discharge wells.

~~o~~p. Outer casing for underground discharge domestic wells shall be grouted from a depth of at least ten (10) feet below the top of the casing at the underground discharge head, or pitless adapter, to the top of the casing.

q. Public water supply wells shall be constructed in such a manner that any column/casing vents and blowoff valves are properly screened.

2. Disinfection

a. All water used in the drilling or construction process and in well development shall be clean and free of impurities that could contaminate water bearing sands penetrated by the well or borehole. For construction and development of a potable water well, water shall be obtained from a groundwater source of proven quality such as a domestic well or a public water supply system. If the water is obtained from a local public water supply distribution system, it need not have additional chlorine added during the drilling and/or construction process; otherwise, the water shall be chlorinated. A residual of free chlorine of not less than 5 parts per million (ppm) shall be maintained in any water used for well development.

b. Gravel to be placed in potable water wells shall be disinfected with a solution of at least 50 mg/l free chlorine. (Clean pre-packaged gravel is exempt from this requirement.)

c. Upon completion of drilling potable water wells, the well and adjacent aquifer shall be disinfected using a solution of at least 50 mg/l free chlorine applied for at least 24 hours. The procedure shall meet or exceed the American Water Works Association (AWWA) Standard current at the time of the activity.

d. After disinfection, the potable water well shall be pumped until a chlorine free sample is collected from the well. The sample also must be free of coliform bacteria. Samples shall be collected, submitted, and analyzed in accordance with applicable Mississippi State Department of Health requirements.

B. Water Wells and Boreholes Constructed in the Mississippi River Valley Alluvial Aquifer (MRVA) – The MRVA is a uniquely situated shallow aquifer used almost exclusively for agricultural irrigation with very little potential of increased demand for domestic or public water supply. Because of the unconsolidated nature of the material and the predominant agricultural water use, the drilling technique in general use for large diameter irrigation wells in the MRVA is reverse circulation rotary drilling. Consequently the standards for construction and disinfection have been modified slightly

to reflect the water usage and drilling practices in the MRVA. If a water well contractor encounters geologic formations or unusual circumstances that appear to dictate a deviation from the standards, the contractor shall consult with MDEQ staff regarding proposed construction procedures for the water well or borehole in question.

1. Construction Standards – The following construction standards apply to irrigation wells screened and completed in the MRVA and to boreholes that do not penetrate the base of the MRVA, including but not limited to, irrigation wells, monitoring wells, observation wells, and geotechnical boreholes:

   a. All water wells and boreholes covered under this section shall be constructed by a licensed water well contractor unless specifically exempted by statute.

   b. Well casing shall terminate not less than twelve (12) inches above natural ground elevation or, where practicable, above the 100-year flood elevation. However, if flood levels around the well routinely exceed a reasonable height for an extended casing above the twelve (12) inch minimum, then the well shall be fully sealed with a Braden Casing Head, or approved equivalent, to prevent the flow of flood waters into the casing. The casing head shall contain a screw-in plug with a minimum diameter of one-half (1/2) inch to provide access for water level measurements. If the casing is not covered with a recorder box or pump housing, then it must have a locked, overlapping cover or other suitable cover capable of preventing unauthorized access to the casing head and access plug.

   c. All wells shall have a check valve installed in the discharge line to prevent the intentional or accidental introduction of contaminants into the well. All new unmetered wells larger than six (6) inches in diameter shall have a minimum of four (4) feet of straight pipe installed between the casing head and the check valve, and all other equipment, valves, pressure relief valves, vacuum breakers, and distribution systems shall be connected on the discharge side of the check valve.

   d. All wells, except approved underground discharge wells, shall be constructed in such a manner that the finished ground elevations around the casing are sloped to drain away from the casing. Equipment such as engines, pressure tanks, or fuel tanks to be installed shall be placed on pre-cast concrete blocks or pads to prevent differential settlement that could result in damage to the pump and the well.

   e. The annular space on all wells covered by this section of the regulation shall be grouted or sealed with bentonite from the lowest level of disturbed earth immediately adjacent to the casing down to a depth of at least ten (10) feet below that level, except as specified in paragraphs f. and g. below.

   f. Wells located within one hundred (100) feet of a potential source of pollution such as sewers, septic tanks, landfills, and waste and rawmaterial

piles shall be grouted from the lowest level of disturbed earth immediately adjacent to the casing down to a depth of at least fifty (50) feet below that level, except as specified in paragraph g. below.

g. Wells located within one-quarter mile of a known existing area of contaminated aquifer shall be grouted from the lowest level of disturbed earth immediately adjacent to the casing to the top of the water bearing stratum.

h. Grout for all holes covered under this section shall consist of either neat cement, cement grout, cement-bentonite mixture (5-8% bentonite), or bentonite. Bentonite pellets or bentonite chips may be added under free-fall conditions for depths not exceeding twenty-five (25) feet. Freefall addition of any other type grout from the surface is prohibited. Granulated or pelletized bentonite may be placed to greater depths only if introduced through a tremie pipe.

2. Drilling Fluids and Disinfection

a. All water used in the drilling or construction process and in well development for non-potable water wells in the MRVA shall be dosed to a minimum concentration of fifty parts per million (50 ppm) of chlorine, i.e., two (2) gallons of sodium hypochlorite (laundry bleach, approximately five percent (5%) available chlorine) per one thousand (1000) gallons of drilling water.

b. The licensee shall denote on the driller's log portion of the State Well Report the location of the source of any surface water used as well as the method of dosing and the volume of chlorine used in the drilling and development of a non-potable water well in the MRVA.

c. Equipment used in the transport, storage, or circulation of surface water during the drilling and development of a non-potable water well in the MRVA shall not be used thereafter in the drilling and development of a potable water well without having first been disinfected with a solution of at least fifty parts per million (50 ppm) free chlorine for a minimum contact time of twenty-four (24) hours.

XIII. MAINTENACNCE AND SERVICE CRITERIA FOR PUBLIC WATER WELLS

A. General – Installation of pumps and well equipment shall be in accordance with the manufacturer's recommendation and this regulation. All pumps and well equipment shall be designed and installed so as to prevent contamination of the well.

1. Licensing – Pump installation shall be performed either by a Water Well Contractor holding an unrestricted license or by a restricted licensee who specializes in pump installation and well service.

2. Location of pressure tanks and switches – Pressure tanks and switches located above ground shall be on a concrete slab or preformed pad or blocks. Tanks and switches installed below grade shall be in a concrete pit or basement designed to be adequately drained, unless approved for direct burial. A pressure tank may be buried provided the tank is designed for that type installation. Tanks to be installed inside the bore of a water well must be designed for that purpose and approved by the Commission.

3. Temporary seal – If the pump and well equipment are not installed immediately upon completion of drilling, all openings to the well must be closed to prevent pollution or vandalism. After pump installation, all open spaces must be sealed off to prevent contamination of the ground water.

4. Drop pipe, wire, etc. – All drop pipe, wire, pumps, and other pumping equipment to be installed in the well shall either be new or be disinfected with a solution of at least 50 mg/l free chlorine; and it shall be installed in such a manner as to permit removal and repair of all equipment. If equipment or tools are lost in the well and not recovered, a statement describing the item or items lost shall be attached to the well completion report submitted to MDEQ.

5. Prevention of contamination – Pumping equipment shall be installed in such a manner as to prevent the entrance of contamination into the ground water. Discharge pipes shall be fitted with devices which will prevent the entrance of small animals.

6. Check valves – Pumping equipment installed and used in conjunction with Chemigation, which is the practice of injecting agricultural chemicals into irrigation lines in order to mix and distribute the chemicals with the water flowing through the irrigation system, shall have either two check valves, or other means of backflow prevention as may be approved by MDEQ, installed between the well head and the point of introduction of any chemicals.

B. Submersible pump installation

1. Check valves – Submersible Pumps shall have no less than 2 check valves installed. One check valve must be installed above ground.

2. Wire -- Wire shall be secured to the drop pipe in a manner which will support the weight of the wire and keep the wire close to the pipe.

3. Clamps -- All clamps used shall be all stainless steel.

C. Jet pump installation

1. Check valves -- Jet Pumps shall have a check valve installed on the discharge side of the pressure tank.

2. Clamps -- All clamps used shall be all stainless steel.

D. Turbine pump installation

1. Steel column pipe for line shaft turbine pumps – Steel column pipe for turbine pump irrigation wells shall be standard weight flanged or threaded steel pipe.

2. Plastic column pipe may be used for turbine pump installation provided the pipe is designed and manufactured for that purpose.

E. Pressure systems – All pressure systems will have a pressure relief valve installed between the well seal and pressure switch.

F. Power and control wiring – Licensees may run power and control wiring from a disconnect box to water well equipment. A license issued pursuant to this regulation does not authorize the licensee to alter the existing electrical service to any building or structure or perform any other electrical work covered by the National Electric Code (NEC) or local building codes.

XIHV. DECOMMISSIONING OF ABANDONED OR UNUSED WATER WELLS AND BOREHOLES

A. Applicability

1. Except as stated in paragraph B. below, the standards for decommissioning abandoned or unused water wells and boreholes apply to all abandoned water wells and to all boreholes that penetrate water bearing strata or are greater than twenty-five (25) feet in depth including potable water wells, agricultural wells, monitoring wells, observation wells, dewatering wells, relief wells, saline or brackish water withdrawal wells, contaminant recovery wells, heat pump water supply wells and closedloop system holes, industrial supply wells, rig supply wells, geotechnical boreholes, cathodic protection wells and pilot boreholes.

2. All wells and boreholes that penetrate water bearing stratum with a depth of 25 feet, or greater, below land surface must properly be decommissioned by a water well contractor licensed by MDEQ. Water wells less than 25 feet in depth below land surface may be plugged by someone other than a licensed water well contractor. However, the same procedures and reporting requirements apply regardless of who plugs the well.

3. If approved and accepted in writing by MDEQ, properly cased and sealed wells may be provided with a locking cover capable of preventing the entrance of contaminants and used as monitoring wells or observation wells in lieu of abandonment. If the use of an observation or monitoring well is later discontinued by MDEQ, the landowner/permittee shall be responsible for having the well properly decommissioned by a licensed water well contractor.

B. Exemptions

1. Exemption from this regulation does not relieve the owner of the responsibility for identifying and complying with other applicable local, state, and federal regulations. The following types of wells and boreholes are exempt from decommissioning requirements set forth in this regulation:

   a. Saline water wells associated with enhanced oil and gas recovery operation, brine withdrawal wells, and other types of on-site oil and gas well holes, including Class II wells regulated under the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Sections 6901 et seq.;

   b. Class I, III, IV and V injection wells regulated under the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. Sections 6901 et seq.; and

   c. Geotechnical boreholes less than twenty-five (25) feet in depth that do not penetrate water bearing strata and boreholes drilled in planned roadbed construction areas where the natural overburden will be removed to within twenty-five (25) feet of the bottom of the hole.

C. Types of Abandoned or Unused Wells – A water well may be considered by MDEQ to have been abandoned if its use has been permanently discontinued; if the well has not been used in the preceding 12 months (except for established rotations of pumping equipment between wells related to crop irrigation and instances where the owner has notified MDEQ of an anticipated longer period of nonuse after which the well will be placed back in service.); if the pumping equipment has been removed (except for established rotations of pumping equipment between wells related to crop irrigation); or if the well cannot be repaired. Rig supply holes, geotechnical boreholes, pilot holes, and dewatering holes are considered abandoned immediately upon completion of the project phase for which they are drilled, unless the well is an integral part of the continued operation of the project, such as a pressure relief well or a permanently used dewatering well.

D. Time allowed for plugging --Rig supply wells, pilot holes, and geotechnical boreholes shall be plugged within 30 days after abandonment or cessation of use. All other holes shall be plugged within 180 days after abandonment or cessation of use.

E. Decommissioning forms -- Abandonment and plugging of water wells and boreholes shall be reported on a decommissioning form approved by and made available from MDEQ. The person or contractor who plugs an abandoned water well or borehole shall submit the decommissioning form to MDEQ within 30 days after completion of the plugging. For irrigation wells located in the MRVA, a copy of the form shall be submitted to YMD at the same time the original is submitted to MDEQ. Reporting the abandonment and plugging of multiple water wells and/or boreholes on one form may be permissable, with prior approval from MDEQ, provided the same decommissioning procedure was used and the location of each water well and/or borehole is clearly identified.

F. Decommissioning Procedures – The following procedures shall be followed in the decommissioning of any water well or borehole for which decommissioning is required under this regulation:

1. Grout for all holes shall consist of neat cement, cement grout, cement bentonite mixture (5-8% bentonite), or bentonite. Bentonite pellets may be added under free-fall conditions for depths not exceeding twenty-five (25) feet, providing pellets are placed in layers not more than five (5) feet deep and tamped into place after addition of each layer. Granulated or palletized bentonite may be placed to greater depths if introduced through a tremie pipe. Free-fall addition of other types of grout from the surface is prohibited;

2. Obstructions shall be removed from the well casing;

3. If there is reason to question the physical integrity of the well casing because of the age of the well or the material used for the casing, or there are no records to indicate that the annular space was grouted properly during construction of the well, the driller shall consult with MDEQ before plugging the well. In such instances, MDEQ may require that the casing be perforated to allow the introduction of grout into cavities or voids that may have formed outside the casing; or may require that the casing be removed from the hole prior to grouting;

4. For abandoned water wells in agricultural fields, the casing shall be cut off and removed down to a minimum depth of three feet below land surface. After grouting, the excavation shall be filled with compacted soil. In other areas, the casing shall be cut off and removed at least down to the ground surface elevation. MDEQ may authorize alternate methods of abandonment and/or abandonment by other than a licensed water well contractor, provided the results will meet the intent of the regulations. Only detailed written requests to utilize an alternate method of abandonment or to abandon a well without utilizing a licensed water well contractor shall be considered for approval. If approved, MDEQ will provide written authorization to the requestor.

5. Abandoned water wells or boreholes shall be sealed from the bottom of the hole to ground surface using a grout as described in paragraph 1 above.

6. MDEQ may authorize alternate methods of abandonment and/or abandonment by other than a licensed water well contractor, provided the results will meet the intent of the regulations. Only detailed written requests to utilize an alternate method of abandonment or to abandon a well without utilizing a licensed water well contractor shall be considered for approval. If approved, MDEQ will provide written authorization to the requestor.

XIV. ENFORCEMENT

Enforcement of these regulations shall be governed by Miss. Code Ann. Sections 51-5-7 and 51-5-17, and Sections 49-17-31 through 49-17-43.

XVI. CORRESPONDENCE AND ADEQUACY OF NOTICE

A. General – All permittees and licensees shall inform MDEQ of any address changes within fifteen (15) days of any change of address, and must readily accept all mail sent to them from the Commission, MDEQ, or the Permit Board.

B. Registered or certified mail – Registered or Certified Mail sent with proper postage and to the last address provided to MDEQ by the permittee or licensee shall be considered adequate notification of notice served if MDEQ is notified that the mail was delivered and accepted or if the mail is returned as rejected or unclaimed by the addressee.

C. Refusal to accept mail – Refusal to accept mail from the Commission, the Permit Board, the Department, or its designee, shall be considered a violation of this regulation.

XVII. CONFIDENTIAL INFORMATION

Procedures for declaring submitted information confidential and for agency handling of such information are found in Miss. Code Ann., Section 49-17-39, Section 51-3-44, and the Commission's Regulations Regarding the Review and Reproduction of Public Records (MCEQ-2).