STATE OIL AND GAS BOARD GOVERNING SUBMERGED OFFSHORE LANDS OPERATIONS ADMINISTRATIVE CODE

CHAPTER 400-2-4 DRILLING

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400-2-4-.01 Identification Of Wells.

A sign shall be posted and maintained in a legible state in a conspicuous place near the well. Such sign shall be posted before spudding or reentry and shall remain posted until the well is plugged and abandoned and the location restored. The sign shall include the name of the operator, the permit number, the well name and number, and the offshore tract number or the section, township, range, and county in which the well is located.
Author: State Oil and Gas Board
Statutory Authority: Code of Ala. 1975, §§9-17-1, et seq.
History: **New Rule:** Filed April 11, 2000; effective May 16, 2000.

400-2-4-.02 Protection Of Freshwater Resources.

An operator shall conduct all oil and gas operations in a manner so as to prevent the pollution of all freshwater resources. All

fresh waters and waters of present or probable future value for domestic, municipal, commercial, stock, or agricultural purposes shall be confined to their respective strata and shall be adequately protected. Special precautions shall be taken to guard against any loss of artesian water from the strata in which it occurs, and the contamination of fresh water by objectionable water, oil, condensate, gas, or other deleterious substance to such fresh water.
Author: State Oil and Gas Board
Statutory Authority: Code of Ala. 1975, §§9-17-1, et seq.
History: **New Rule:** Filed April 11, 2000; effective May 16, 2000.

400-2-4-.03 Well Record.

(1) During drilling, completing, and workover operations on every permitted well, the owner, operator, contractor, driller, or other person responsible for the conduct of drilling operations, shall notify the Supervisor prior to performing the following activities: setting surface casing, running intermediate or production casing, perforating, drillstem testing (see Rule 400-2-5-.01), wireline logging or surveying, and coring. Such persons shall keep a detailed and accurate record of the well, reduced to writing from day to day, which shall be accessible to the Board and its agents at all times. Pertinent information from such records shall be furnished to the Board within thirty (30) days after completion, or at such time as prescribed by the Supervisor. Said information shall include but not be limited to: drilling contractor; spud date; ground level, derrick floor, and kelly bushing elevations surveyed by a licensed land surveyor; total depth; kick-off point depths and directions of any sidetracks; bottom-hole location; casing and liner record; cement record; squeeze cement record; perforation record; tubing record; the depth and type of any plugs or packers set; well stimulation and treatment record; drillstem test record; and a record of all wireline logging, sampling, and coring operations for said well. This information shall be submitted on the appropriate Form OGB-6, OGB-7, and OGB-8.

(2) One (1) copy of all electrical, mechanical, radioactive, and dipmeter logs or such other surveys performed as a part of drilling, completing, or workover operations shall be submitted to the Board within thirty (30) days after completion. In addition to filing either blue or black line log copies, all available digital log data in a Log ASCII Standard (LAS) format shall be filed with the Board. One (1) copy of all drillstem test results shall be submitted along with Form OGB-7 within thirty (30) days after completion. A complete set of washed (mud-logger) cuttings, if available, correctly labeled and identified as to depth, shall be filed with the Board within thirty (30) days from the time of completion of any well unless otherwise approved by the Supervisor. If cores are taken, a complete set of cores, either

whole or at least quarter slabs, correctly labeled and identified as to depth, shall be filed with the Board within three (3) months from the time of completion of any well unless otherwise approved by the Supervisor; provided, however, that an operator may obtain an exception to this requirement upon submission of an affidavit certifying that the operator:

(a) will store and maintain core from the well at a specified location or facility and provide the name, address and telephone number of the facility where the cores are stored;

(b) will provide the Board access to the core upon request and provide the name, address and telephone number of the person to handle such request;

(c) will provide the core to the Board if the operator should cease maintaining and storing said core; and

(d) will submit the core to the Board within one (1) year from the time of completion of the well. Additionally, the Supervisor may allow the filing of materials representative of the cored interval in lieu of filing whole or slab core if the Supervisor determines there is adequate core coverage in an area or for some other reason. Cores taken from wells drilled in submerged offshore lands shall be exempt from being filed with the Board; however, if the operator should cease maintaining and storing the core, then said core shall be submitted to the Board.

(3) If the operator so requests in writing, all logs, cuttings, cores, core analyses, cored intervals, and formationdepths from a well shall be kept confidential for a period of six (6) months from the completion of such well.
Author: State Oil and Gas Board
Statutory Authority: Code of Ala. 1975, §§9-17-1, et seq.
History: New Rule: Filed April 11, 2000; effective May 16, 2000.
Amended: August 5, 2005; effective September 9, 2005.

400-2-4-.04 Directional Surveys.

A directional survey, which may include logging while drilling (LWD) or measurement while drilling (MWD) logs, shall be run and one (1) copy thereof filed by the operator with the Supervisor within thirty (30) days after completion of a well. Directional surveys shall be run from total depth to base of drive pipe or the kickoff point, whichever is shallowest, unless otherwise approved by the Supervisor. However, directional surveys to total depth shall be unnecessary in cases where the interval below the survey is less than five hundred (500) feet. In such an instance, a projection of the latest survey shall satisfy Board requirements. In the event the proposed or final location of the producing

interval of the directionally controlled well is not in accordance with spacing or other rules of the Board applicable to the reservoir, proper applications shall be made to obtain approval of exceptions to such rules. Such approval shall be granted, or denied, at the discretion of the Board, after notice and hearing.
Author: State Oil and Gas Board
Statutory Authority: Code of Ala. 1975, §§9-17-1, et seq.
History: **New Rule:** Filed April 11, 2000; effective May 16, 2000.
Amended: Filed August 5, 2005; effective September 9, 2005.

400-2-4-.05 Abandonment Of Radioactive Logging Sources.

(1) The Supervisor shall be notified immediately of the loss of any radioactive logging source in a well.

(2) No radioactive source used for logging may be left in a well without written consent of the Supervisor.

(3) When it is determined by the operator that it may be necessary to leave a radioactive source in a well, the Supervisor must be notified in writing of such and a plan of theabandonment procedure submitted to the Supervisor for approval. This plan must be approved by the Alabama Department of Public Health (Division of Radiation Control), and any other agency that has jurisdiction.

(4) Wells in which radioactive sources are abandoned shall be mechanically equipped so as to prevent the accidental or intentional mechanical disintegration of the radioactive source.

(a) Such sources being abandoned in the bottom of a well shall be covered with a substantial standard color-dyed cement plug on top of which a whipstock or other mechanical device approved by the Supervisor shall be set. Such dye shall be so as to alert a re-entry operator prior to encountering such source.

(b) In wells where a logging source has been cemented in place behind a casing string and above total depth, upon abandonment, a standard color-dyed cement plug shall be placed opposite the abandoned source and a whipstock or other mechanical device approved by the Supervisor placed on top of the plug.

(c) In the event the operator finds that, after expending a reasonable effort, because of hole conditions, it is not possible to abandon the sources as prescribed in (a) or (b) above, prior to ceasing efforts to so abandon, he must obtain Board approval to cease such efforts and obtain approval for an alternate abandonment procedure.

(d) When a logging source must be abandoned in a producing zone, a standard color-dyed cement plug shall be set and a whipstock or other mechanical device approved by the Supervisor placed above to direct the sidetrack at least fifteen (15) feet away from the source.

(5) Any well in which a radioactive source is left in the hole, shall have a visual warning sign posted and maintained in a legible state, in a conspicuous place near the well. The sign shall depict the trefoil radiation symbol with a radioactive warning.

(6) Upon permanent abandonment, any well in which a radioactive source is left in the hole shall have a permanent plaque attached to the top of the casing left in the hole in such a manner that re-entry cannot be accomplished withoutdisturbing the plaque. This plaque shall serve as a visual warning to any person reentering the hole that a radioactive source has been abandoned in-place in the well. The plaque shall depict the trefoil radiation symbol with a radioactive warning and shall be constructed of a long lasting material such as monel, stainless steel, or brass. This marker shall bear the following information: well name, permit number, surface location, name of the operator, the source of material abandoned in the well, the total well depth, depth at which the source is abandoned, plug-back depth, the date of the abandonment of the source, the activity of the source, and a warning not to drill below the plug-back depth.

(7) If an operator desires to reenter, convert, recomplete, or rework a well in which a radioactive source used for logging is present, the applicant operator must have his plan of operation approved by the Supervisor and any other agency that has jurisdiction before such reentry, conversion, recompletion, and reworking application is granted.

(8) Upon permanent abandonment below the mud line of any well in which a radioactive source is left in the hole, the requirements of section (6) above are not applicable upon approval of the Alabama Department of Public Health (Division of Radiation Control).
Author: J. H. Massingill
Statutory Authority: Code of Ala. 1975, §§9-17-1, et seq.
History: New Rule: Filed April 11, 2000; effective May 16, 2000.
Amended: Filed October 17, 200; effective November 21, 2000.

400-2-4-.06 Operations Involving Radioactive Material.

An operator shall obtain approval from the Supervisor, the Alabama Department of Public Health (Division of Radiation Control) and any other agency that has jurisdiction before introducing any radioactive material, exclusive of radioactive logging devices,

into the substrata for the purpose of conducting a tracer survey or for any other reason.
Author: State Oil and Gas Board
Statutory Authority: Code of Ala. 1975, §§9-17-1, et seq.
History: **New Rule:** Filed April 11, 2000; effective May 16, 2000.

400-2-4-.07 **Chemically Treating Or Fracturing A Well.**

Wells shall not be chemically treated or fractured until the approval of the Supervisor is obtained. Each well shall be treated or fractured in such manner as will not cause damage to the formation, result in water encroachment into the oil- or gas-bearing formation, or endanger freshwater-bearing strata. Necessary precautions shall be taken to prevent damage to the casing. Routine chemical treatments for corrosion control shall be excluded from this notice requirement. If chemical treating or fracturing results in irreparable damage to the well, the oil or gas-bearing formation or freshwater-bearing strata, then the well shall be properly plugged and abandoned.
Author: State Oil and Gas Board
Statutory Authority: Code of Ala. 1975, §§9-17-1, et seq.
History: **New Rule:** Filed April 11, 2000; effective May 16, 2000.

400-2-4-.08 **Report Of Well Treatment.**

Within thirty (30) days after the chemical treating or fracturing of a well, a report shall be filed with the Board in triplicate by the operator on Form OGB-6 setting forth in detail the method used in treating the well.
Author: State Oil and Gas Board
Statutory Authority: Code of Ala. 1975, §§9-17-1, et seq.
History: **New Rule:** Filed April 11, 2000; effective May 16, 2000.

400-2-4-.09 **Casing, Cementing, Mud, And Blowout Prevention Program.**

The design of the integrated casing, cementing, mud, and blowout prevention control program shall be based upon sound engineering principles, and must take into account the depths at which freshwater, hydrocarbon, and other mineral-bearing formations are expected to be penetrated, the formation fracture gradients and pressures expected to be encountered, and other pertinent geologic and engineering data and information about the area.

(1) **Well Casing and Cementing.**

(a) The operator shall case and cement all wells with a sufficient number of strings in a manner necessary to:

1. prevent release of fluids from any stratum through the wellbore (directly or indirectly) into the waters;

2. prevent communication between separate hydrocarbon-bearing strata (except such strata approved for commingling) and between hydrocarbon and water-bearing strata;

3. prevent contamination of freshwater-bearing strata;

4. support unconsolidated sediments; and

5. otherwise provide a means of controlling formation pressures and fluids.

(b) The operator shall install casing that meets American Petroleum Institute (API) standards. Cement shall meet API standards and shall be mixed with water of adequate quality so as not to degrade the setting properties. Safety factors in casing program design shall be of sufficient magnitude to provide optimum well control while drilling and to assure safe operations for the life of the well.

(c) For the purpose hereof, the several casing strings in order of normal installation are drive or structural casing, conductor casing, surface casing, intermediate casing, and production casing. All wells shall be cased and cemented in accordance with the following requirements, unless a specific exception is granted by the Supervisor following submission by the operator of an affidavit justifying said exception and demonstrating that the proposed exception is in accordance with standard industry practices and safe drilling techniques:

1. **Drive or Structural Casing.** This casing shall be set by drilling, driving, or jetting to a minimum depth of one hundred (100) feet below the waters floor or to such greater depth required to support unconsolidated deposits and to provide hole stability for initial drilling operations. A calculated cement volume sufficient to fill the annular space back to the waters floor shall be used if the drive or structural casing is set by drilling.

2. **Conductor Casing.**

(i) This casing shall be set before drilling into shallow formations known to be abnormally pressured or known to contain oil or gas; or upon encountering such formations. Thiscasing shall be set in accordance with conductor and surface casing setting depths in Table 1 below. A conductor string of casing (the first string run other than any structural or drive casing) shall be cemented with a calculated volume of cement sufficient to fill the annular space back to the waters floor. To facilitate casing removal upon well abandonment, cement may be washed out or displaced to a depth not to exceed forty (40) feet below the waters floor, unless otherwise approved by the Supervisor.

(ii) The Supervisor or Board may approve a request to waive the requirement for setting conductor casing at a specific well location provided at least one well has been drilled near the specified well location and the well logs and mud monitoring procedures from the nearby well demonstrate the absence of shallow hydrocarbons and shallow hazards.

3. **Surface Casing.**

(i) This casing shall be set in accordance with conductor and surface casing setting depths in Table 1 below, and cemented in a manner necessary to protect all freshwater-bearing strata, and provide well control until the next string of casing is set. This casing shall be cemented with a calculated volume of cement sufficient to fill the annular space back to the waters floor.

(ii) Surface casing shall not be used as production casing, unless otherwise approved by the Supervisor.

4. **Conductor and Surface Casing Setting Depths.**

(i) These casing strings shall be properly cemented in place prior to drilling below the minimum setting depths required in Table 1 below. However, if the operator does not set surface or first intermediate casing below the base of the underground source of drinking water (USDW) containing fluids of less than ten thousand (10,000) milligrams per liter total dissolved solids, the operator may not be allowed to dispose of tank fluids in the well. See Rule

400-2-4-.10(1), relating to Disposal of Tank Fluids.

Table 1. Minimum Required Setting Depth Below Waters Floor in True Vertical Depth (TVD)

Proposed TVD from Rotary Table (ft	Minimum Conductor Casing (ft)	Minimum Surface Casing (ft
0 - 6,000	0	750
6,001 - 12,000	750	2,000
Greater than 12,000	750	Into Selma Chalk

(ii) The Supervisor may approve exceptions to the requirements of Table 1 above in order to permit the casing to be set in a competent bed, through formations determined desirable to be isolated from the wellbore, or to protect against abnormally pressured formations or other abnormal well conditions. The Supervisor may recommend setting depths for those casing strings prior to encountering abnormally pressured formations or other abnormal well conditions. The operator may request the approval of an alternative casing program provided that the operator certifies or provides an affidavit to attest in writing that the casing design demonstrates that all normal pressure zones will be isolated from abnormal pressure through the setting of an intermediate casing string and is in accordance with accepted industry practices and safe drilling procedures.

5. **Intermediate Casing.** Intermediate or protective casing shall be set when required by abnormal pressure, mud weights, sediments, and other well conditions. A quantity of cement sufficient to cover and isolate all hydrocarbon zones and to isolate abnormal pressure intervals from normal pressure intervals shall be used. If a liner is used as an intermediate string, the cement shall be tested by a fluid entry or pressure test to determine whether a seal between the liner top and next larger casing string has been achieved. The test shall be recorded in the driller’s log. When such liner is used as production casing, it shall be extended to the surface and cemented to avoid surface casing being used as production casing.

6. **Production Casing.** Production casing shall be set before completing the well for production. It shall be cemented in a manner necessary to cover or isolate all zones which contain hydrocarbons. A calculated

volume of cement sufficient to fill the annular space at least five hundred (500) feet above the top of the uppermost hydrocarbon zone shall be used. When a liner is used as production casing, the testing of the seal between the liner top and next larger string shall be conducted as in the case of intermediate liners.

(d) If there are indications of inadequate primary cementing (such as lost returns, cement channeling, or mechanical failure of equipment) of the surface, intermediate,or production casing strings, the operator shall evaluate the adequacy of the cementing operations by pressure testing the casing shoe, running a cement bond log or a cement evaluation tool log, running a temperature survey, or a combination thereof before continuing operations. If the evaluation indicates inadequate cementing, the operator shall re-cement or take other actions as approved by the Supervisor. The operator shall verify the adequacy of the remedial cementing operations as described above.

(e) **Pressure Testing.** An operator shall give notice to the Supervisor prior to pressure testing.

1. After primary cementing any of the above strings, drilling shall not be resumed until a time lapse of eight (8) hours under pressure for the conductor casing string and twelve (12) hours under pressure for all other strings. Cement is considered under pressure if one or more float valves are employed and are shown to be holding the cement in place or when other means of holding pressure are used.

2. After cementing and prior to drilling the plug, all casing strings, except the drive or structural casing, shall be pressure tested. The conductor casing shall be tested to a minimum pressure of two hundred fifty (250) pounds per square inch (psi). All other casing strings shall be pressure tested to fifty percent (50%) of the specified minimum internal yield strength of the weakest section of the casing string. Test pressure may be limited by hydrostatic pressures based on internal and external mud weights. All pressure tests are to be held for thirty (30) minutes. If during this test period the pressure declines more than ten percent (10%) of the initial test pressure or if any other indications of a leak are found, the casing shall be re-cemented, repaired, or an additional casing string run. The casing shall then be tested again in the same manner as prescribed herein. The above procedures shall be repeated until

a satisfactory test is obtained. All casing pressure tests shall be recorded in the driller's log.

3. In the event of prolonged drill-pipe rotation within a casing string run to surface or of extended operations such as milling, fishing, jarring, washing over, working over, or other operations which could damage the casing, such casing string shall be pressure tested, and if required by the Supervisor, evaluated by a logging technique such as a caliper or casing inspection log every thirty (30) days. The evaluation results shall be submitted to the Supervisor with adetermination of the integrity of casing for continued service during both drilling and workover operations, and over the producing life of the well. If the integrity of the casing in the well is deteriorated to a potentially unsafe level, remedial operations shall be conducted with a plan approved by the Supervisor prior to continuing operations.

4. Production casing shall be tested during completion operations to the estimated surface shut in tubing pressure for thirty (30) minutes using a fluid, approved by the Supervisor, with a pressure loss of ten percent (10%) or less. If a failure of the test occurs, remedial operations shall be conducted with a plan approved by the Supervisor prior to continuing operations.

(f) **Recording Test Pressures.**

1. Proper documentation of pressure tests, including beginning and ending pressures and the duration of each test, shall be recorded in a daily drilling report.

2. Unless witnessed by an agent of the Board, all pressure tests and re-tests shall be documented with a properly calibrated continuous pressure recorder or other pressure-recording device acceptable to the Supervisor. A representative of the operator shall sign the pressure test record(s) following completion of each pressure test.

3. The operator shall maintain all pressure test records at the well site during drilling operations. Such records shall be made available for inspection upon request.

4. The operator shall maintain all pressure test records for a minimum of three (3) years from the date such pressure tests were conducted.

(g) **Reporting Test Pressures.** The operator shall report pressure tests on Form OGB-7.

(2) **Drilling Mud Tanks.** All tanks utilized to contain fluids during drilling, completion, and workover of a well shall be constructed and maintained so as to prevent pollution.

(3) **Drilling Mud.**

(a) The operator shall maintain readily usable quantities of mud sufficient to insure well control. The testing procedures, characteristics, and use of drilling mud and the conduct of related drilling procedures shall be such as are necessary to prevent blowouts.

(b) **Mud Control.**

1. Before starting out of the hole with drill pipe, the mud shall be circulated and conditioned on or near bottom. When coming out of the hole with drill pipe, the annulus shall be filled with mud before the change in mud level decreases the hydrostatic pressure seventy-five (75) pounds per square inch (psi) or every five (5) stands of drill pipe, whichever gives a lower decrease in hydrostatic pressure. A device for measuring the amount of mud required to fill the hole shall be utilized. The volume of mud required to fill the hole shall be watched, and any time there is an indication of swabbing, or influx of formation fluids, the necessary safety devices and actions shall be employed to control the well. The mud shall be circulated and conditioned on or near bottom, unless well or mud conditions prevent running the drill pipe back to bottom. The mud in the hole shall be circulated or reverse circulated prior to pulling drillstem test tools from the hole.

2. An operable gas separator shall be installed in the mud system prior to commencement of drilling operations. The separator shall be maintained for use throughout the drilling and completion of the well.

(c) **Mud Testing Equipment.** Mud testing equipment shall be maintained on the drilling facility at all times, and mud tests shall be performed daily, or more frequently as conditions warrant. Suitable mud test records shall be kept and made available to the Supervisor’s representative upon request.

(d) **Mud System Monitoring Equipment.** The following equipment shall be installed and used throughout drilling operations below the conductor casing (unless noted

otherwise, such equipment shall have derrick floor indicators):

1. Recording mud pit level indicator to determine mud pit volume gains and losses. This indicator shall include a visual or audio warning device.

2. Mud volume measuring device for accurately determining mud volumes required to fill the hole on trips.

3. Mud return indicator to determine that returns essentially equal the pump discharge rate.

4. Gas-detecting equipment to monitor the drilling mud returns, with indicators located in the mud-logging compartment or the derrick floor. If the indicators are in the mud-logging compartment, there shall be a means of immediate communication with the derrick floor, and the equipment shall be continually manned.

(4) **Blowout Prevention Equipment.**

(a) The operator shall install, use, and test blowout preventers and related well-control equipment in a manner necessary to prevent blowouts. Drilling shall not be conducted below the conductor string of casing until equipment for circulating drilling fluid to the drilling facility and at least one remotely controlled blowout preventer are installed. Accumulators or accumulators and pumps shall maintain a pressure capacity reserve at all times to provide for repeated operation of hydraulic preventers. Blowout preventers and related well-control equipment shall be pressure-tested when installed, after each string of casing is cemented, and at such other times as prescribed by the Supervisor.

(b) The working pressure of the annular preventer need not exceed five thousand (5,000) pounds per square inch (psi), unless a higher working pressure is required by the Supervisor. When the anticipated surface pressure exceeds the rated working pressure of the annular preventer, the operator shall include in the application for a drilling permit a well control procedure which indicates how the annular preventer will be utilized and the pressure limitations that will be applied during each mode of pressure control.

(c) Blowout prevention equipment shall be installed, used, and tested in accordance with the following requirements:

1. **Conductor Casing.** Before drilling below this string, at least one remotely controlled annular-type blowout preventer and equipment for circulating the drilling fluid to the drilling facility shall be installed. To avoid formation fracturing from complete shut-in of the well, a large diameter pipe with control valves shall be installed on the conductor casing below the blowout preventer so as to permit the diversion of hydrocarbons and other fluids; except that, when the blowoutpreventer assembly is on the waters floor, the choke and kill lines shall be equipped to permit the diversion of hydrocarbons and other fluids.

2. **Surface and Intermediate Casings.** Before drilling below these casing strings, the blowout prevention equipment shall include a minimum of four (4) remotely controlled, hydraulically operated, blowout preventers with a working pressure which equals or exceeds the maximum anticipated surface pressure, including two equipped with pipe rams, one with blind rams, and one annular-type; a drilling spool with side outlets, if side outlets are not provided in the blowout preventer body; a choke manifold; a kill line; and a fill-up line.

3. **Auxiliary Equipment.** The following auxiliary equipment shall be provided and maintained in operable condition at all times:

(i) A kelly cock shall be installed below the swivel, and an essentially full-opening valve of such design that it can be run through blowout preventers shall be installed at the bottom of the kelly. A wrench to fit each valve shall be stored in a conspicuous location readily accessible to the drilling crew.

(ii) An inside blowout preventer and an essentially full-opening drill string safety valve in the open position shall be maintained on the derrick floor at all times while drilling operations are being conducted. These valves shall be maintained on the derrick floor to fit all connections that are in the drill string.

(iii) A safety valve shall be available on the derrick floor assembled with the proper connection to fit the casing string that is being run in the hole at the time.

4. **Testing Frequency.** Ram-type and annular-type blowout preventers and related control equipment

shall be tested when installed; before drilling out after each casing string has been set; except for blind and blind shear rams, at least once each week, but not exceeding seven (7) days between tests; and following repairs that required disconnecting a pressure seal in the assembly. A period of more than seven (7) days between blowout preventer tests may be allowed, with the Supervisor's approval when well operations prevent testing, provided the tests will be conducted as soon as possible before normaloperations resume and the reason for postponing testing is entered in the driller’s log, or when written justification has been submitted to and approved by the Supervisor justifying an extension between blowout preventer pressure tests. Auxiliary well control equipment such as choke manifold valves, kelly cocks, drill string safety valves, and inside blowout preventers shall also be pressure tested weekly. Casing safety valves shall be actuated prior to running casing. All blowout preventer tests shall be recorded in the driller’s log. Testing shall be at staggered intervals to allow each drilling crew an opportunity to operate the equipment.

5. **Testing Limits.** Ram-type and related control equipment shall be tested at the anticipated surface pressure or at seventy percent (70%) of the minimum internal yield pressure of the casing, whichever is lesser. The annular-type preventer shall be tested initially at seventy percent (70%) of its rated working pressure, at seventy percent (70%) of the minimum internal yield pressure of the casing, or at the anticipated surface pressure, whichever is less. Subsequent tests of the annular-type preventer may be at lesser pressures.

6. **Blowout Preventer Drills.** All drilling personnel shall be trained in blowout preventer drills and be familiar with the equipment before starting work on the well. A blowout preventer drill shall be conducted for each drilling crew to insure that crews are properly trained to carry out emergency duties. A blowout preventer drill may be required by the Supervisor at any time during the drilling operations after notifying and consulting with the operator. All blowout preventer crew drills shall be recorded in the driller’s log.

Author: State Oil and Gas Board
Statutory Authority: Code of Ala. 1975, §§9-17-1, et seq.
History: **New Rule:** Filed April 11, 2000; effective May 16, 2000.

400-2-4-.10 Recycling Or Disposal Of Tank Fluids.

(1) After a well is drilled, completed, or worked over, all fluids that remain in tanks shall be recycled or disposed of in accordance with this rule within thirty (30) days of completion, unless otherwise approved by the Supervisor. Prior to the subsurface disposal of tank fluids down the surface casing or first intermediate casing/production casing annulus,any oil that is present in the tank must be skimmed immediately after drilling operations cease and recycled or disposed of in accordance with appropriate permit(s) and regulations. If tank fluids are transported off location, except for disposal in an acceptable well, then these fluids should be disposed in a lawfully approved disposal facility, or recycled or disposed of in accordance with appropriate permit(s) and regulations.

(2) The following procedures shall be implemented regarding the subsurface disposal of tank fluids down the surface casing or first intermediate casing/production casing annulus. These procedures are applicable for subsurface disposal into the well on location or to an approved well.

(a) Approval must be obtained from the Supervisor prior to implementing subsurface disposal operations.

(b) Pressure testing for subsurface disposal of tank fluids shall be conducted and recorded in accordance with applicable requirements of Rule 400-2-4-.09(1)(e), relating to Pressure Testing, and Rule 400-2-4-.09(1)(f), relating to Recording Test Pressures.

(c) During disposal operations the injection pressure shall not exceed ninety percent (90%) of the mechanical integrity test pressure of the casing. A pressure relief valve, set to the authorized maximum disposal pressure, shall be installed. Verification of the pressure setting of the relief valve may be requested by the Supervisor.

(d) If surface or first intermediate casing is not set below the base of the underground source of drinking water (USDW) containing fluids of less than ten thousand (10,000) milligrams per liter total dissolved solids in the well to be used for subsurface disposal of tank fluids, then in addition to section (2)(a), (2)(b), (2)(c), and (2)(d) the following may apply:

1. The operator shall submit a schematic showing the downhole construction of such well and the approximate location and construction of all known water wells, core

holes and oil and gas wells within a one-quarter (1/4) mile radius; and

2. The operator shall submit an affidavit certifying that the disposal fluids contain only materials that are exempt under the Resource Conservation and Recovery Act, that the chloride concentration of the disposal fluids does not exceedtwo thousand (2,000) parts per million (ppm), and that the pH of the disposal fluids ranges between 6.0 and 9.0 standard units.

Author: State Oil and Gas Board
Statutory Authority: Code of Ala. 1975, §§9-17-1, et seq.
History: New Rule: Filed April 11, 2000; effective May 16, 2000.

400-2-4-.11 Plugging And Abandonment Of Wells.

(1) Any nonproductive well shall be plugged within thirty (30) days of completion unless said well has been classified as temporarily abandoned or shut in pursuant to Rule 400-2-4-.14. Any productive well that has not produced in six (6) months or any Class II injection well or underground reservoir storage well that has ceased operation for six (6) months shall be plugged within thirty (30) days unless said well has been classified as temporarily abandoned or shut in pursuant to Rule 400-2-4-.14. Before any work is commenced to plug and abandon any well drilled in search of oil and gas or utilized as a Class II injection well or utilized as an underground reservoir storage well the operator shall provide the Supervisor with the proposed method and procedure to plug and abandon such well. Such method and procedure may be required in writing by the Supervisor. Also, the Supervisor may require that well records, including logs, be made available to determine if the proposed depths and lengths of plugs are adequate. Operations to plug and abandon a well shall not begin until approval of procedures has been obtained from the Supervisor. Unless otherwise allowed by the Supervisor, the operator shall notify the Supervisor at least twenty-four (24) hours prior to the commencement of plugging operations so that said operation may be witnessed by an agent of the Board. The cement in all plugs shall meet American Petroleum Institute (API) standards and shall be mixed with water of adequate quality so as not to degrade the setting properties. Unless specified otherwise by the Supervisor, the operator shall comply with the following requirements which apply to all wells drilled in search of oil and gas or utilized as Class II injection wells or underground reservoir storage wells.

(2) **Permanent Abandonment.**

(a) **Isolation in Uncased Hole.**

1. A cement plug shall be placed across each hydrocarbon-bearing, abnormally pressured, or injection zone or a permanent-type bridge plug shall be place at the top of each hydrocarbon-bearing or injection zone, but in either event a cement plug at least two hundred (200) feet in length shall be placed above the uppermost hydrocarbon-bearing or injection zone.

2. When the base of fresh water is penetrated, a cement plug at least two hundred (200) feet in length shall be placed fifty (50) feet below and shall extend to at least one hundred fifty (150) feet above the base of fresh water. A cement plug may be required in the casing-borehole annulus if fresh water is not adequately protected by casing and cement.

(b) **Isolation of Open Hole.** Where there is open hole below casing, a cement plug shall be placed in the deepest casing string in accordance with 1. or 2. below, or in the event lost circulation conditions exist or are anticipated, the plug may be placed in accordance with 3. below:

1. A cement plug at least two hundred (200) feet in length shall be placed by the displacement method at least fifty (50) feet below and shall extend to at least one hundred fifty (150) feet above the casing shoe.

2. A cement retainer with effective back-pressure control shall be placed at least seventy-five (75) feet above the casing shoe with a cement plug calculated to extend at least one hundred (100) feet below the casing shoe and at least fifty (50) feet above the retainer.

3. A permanent-type bridge plug shall be placed within one hundred fifty (150) feet above the casing shoe with fifty (50) feet of cement on top of the bridge plug. This plug shall be tested prior to placing subsequent plugs.

(c) **Plugging or Isolating Perforated Intervals.** A cement plug shall be placed by the displacement method across all open perforations (perforations not squeezed with cement) extending a minimum of at least one hundred (100) feet above the top of the perforated interval and at least one hundred (100) feet below the base of the perforated interval or down to a casing plug, whichever is less. In lieu of setting a cement plug by the displacement method, the following two methods may be acceptable, provided the perforations are isolated from the hole below:

1. A cement retainer with effective back-pressure control shall be place at least fifty (50) feet above the top of the perforated interval with a cement plug calculated to extend at least one hundred (100) feet below the base of

the perforated interval and at least fifty (50) feet above the retainer.

2. A permanent-type bridge plug shall be placed within one hundred fifty (150) feet above the top of the perforated interval with fifty (50) feet of cement on top of the bridge plug.

(d) **Plugging of Casing Stubs.** If casing is cut and recovered leaving a stub, one of the following methods shall be used to plug the casing stub.

1. **Stub Termination Inside Casing String.** A stub terminating inside a casing string shall be plugged by one of the following methods:

(i) A cement plug at least two hundred (200) feet in length shall be place at least one hundred (100) feet below and extend to at least one hundred (100) feet above the stub.

(ii) A cement retainer with effective back-pressure control shall be placed at least fifty (50) feet above the stub with a volume of cement equivalent to one hundred fifty (150) feet squeezed below the retainer and with an additional fifty (50) feet of cement placed above the retainer.

(iii) A permanent-type bridge plug shall be placed at least fifty (50) feet above the stub and capped with at least fifty (50) feet of cement.

2. **Stub Termination Below Casing String.** If the stub is below the next larger string, a cement plug at least two hundred (200) feet in length shall be placed to extend at least one hundred (100) feet above to at least one hundred (100) feet below the stub.

(e) **Plugging of Annular Space.** No annular space that extends to the waters floor shall be left open to drilled hole below. If this condition exists, cement shall be used to plug the annulus to prevent the upward migration of fluids to the waters floor.

(f) **Surface Plug Requirement.** A cement plug at least one hundred fifty (150) feet in length shall be place with the top of the plug one hundred fifty (150) feet or less below the waters floor, and shall be placed in the smallest string of casing which extends to, or nearest to, the waters floor.

(g) **Testing of Plugs.** The setting and location of the first plug below the surface plug required in (f) above shall be verified by one of the following methods:

1. By placing a minimum pipe weight of fifteen thousand (15,000) pounds on the cement plug, cement retainer, or bridge plug. The cement placed above the bridge plug or retainer need not be tested.

2. By testing the plug with a minimum pump pressure of one thousand (1,000) pounds per square inch (psi) with no more than a ten percent (10%) pressure drop during a fifteen-(15) minute period.

(h) **Fluid Between Plugs.** Each of the respective intervals of the hole between the various plugs shall be filled with a fluid of sufficient density to maintain well control while plugging and abandonment operations are in progress.

(i) Other plugging and permanent abandonment procedures may be required by the Supervisor.

(j) Clearance of location shall be done in accordance with Rule 400-2-4-.13.

Author: State Oil and Gas Board
Statutory Authority: Code of Ala. 1975, §§9-17-1, et seq.
History: New Rule: Filed April 11, 2000; effective May 16, 2000.

400-2-4-.12 Report Of Well Plugging.

Within thirty (30) days after the plugging of any well, an operator shall file Form OGB-11, Report of Well Plugging, with the Supervisor setting forth in detail the method used in plugging such well. A schematic showing the down-hole construction of the well, including the depths and lengths of plugs, shall accompany Form OGB-11.

Author: State Oil and Gas Board
Statutory Authority: Code of Ala. 1975, §§9-17-1, et seq.
History: New Rule: Filed April 11, 2000; effective May 16, 2000.

400-2-4-.13 Clearance Of Location.

(1) All casing, wellhead equipment, platforms, fixed structures, and pilings shall be removed to a depth of at least fifteen (15) feet below the waters floor. The operator shall verify site clearance after abandonment by one or more of the following methods as approved by the Supervisor.

(a) Drag a trawl in two (2) directions across the location with one hundred percent (100%) coverage within a one-quarter-(1/4-) mile radius.

(b) Conduct a diver search around the wellbore.

(c) Scan across the location with a side-scan or on-bottom scanning sonar.

(d) Use other methods based on particular site conditions.

(2) Certification that the area within a one-quarter- (1/4-) mile radius of the wellbore was cleared of all obstructions, the date the work was performed, the extent of the area searched around the location, and the search method utilized shall be submitted in writing to the Supervisor.
Author: State Oil and Gas Board
Statutory Authority: Code of Ala. 1975, §§9-17-1, et seq.
History: New Rule: Filed April 11, 2000; effective May 16, 2000.

400-2-4-.14 Request To Classify Wells As Temporarily Abandoned Or Shut-In.

(1) **Temporary Abandonment Status.**

(a) An operator may request that a well be placed in a temporarily abandoned status by submitting a written statement to the Supervisor describing the future utility and including the proposed temporary plugging procedures. A well may be classified as a temporarily abandoned well upon a showing thatthe well has future utility. Upon approval of a request by the Supervisor, the well will be placed in a temporarily abandoned status for a period of not more than one (1) year, or for a period which shall be concurrent with the term on any suspension of obligation to produce (SOP) which may have been granted by the Alabama Department of Conservation and Natural Resources as lessor. The operator must submit a subsequent request to the Supervisor prior to the end of such period in order to extend the temporarily abandoned status for an additional period of time of not more than one (1) year. Such request for an extension must be justified in writing, stating the reasons for the request, which should include the future utility of the well, the formations and intervals to be utilized, and a proposed schedule for future operations. Upon approval of the request by the Supervisor, the temporarily abandoned status will be extended for a period of not more than one (1) year. Thereafter, the Board may, after notice and hearing, extend further the temporarily abandoned status for a well.

(b) Any well which is approved for temporary abandonment shall utilize fluids of sufficient density to contain the formation pressure between the plugs and shall be cemented as required for permanent abandonment in Rule 400-2-4-.11(2) except for sections (f) and (j). When casing extends above the waters floor, a mechanical bridge plug (retrievable or permanent) shall be placed between fifteen (15) and two hundred (200)

feet below the waters floor or a cement plug of at least one hundred (100) feet in length shall be placed between fifteen (15) and two hundred (200) feet below the waters floor. The cement plug shall be verified by tagging and pressure testing.

(c) Other plugging and temporary abandonment procedures may be required by the Supervisor or Board. Additional safeguards and requirements may be imposed on the operator by the Supervisor or Board.

(d) The well location shall be maintained in accordance with Rule 400-2-4-.01, relating to Identification of Wells.

(2) **Shut-in Status.**

(a) An operator may request that a well be placed in a shut-in status by submitting a written statement to the Supervisor stating that the well is capable of producing hydrocarbons but must remain shut in until connected to agathering system, pipeline or processing facility, or for some other reason. A request to classify a well as shut-in will not be considered until the official test results have been received by the Board on Form OGB-9, First Production or Retest Report. Such request must be submitted in writing to the Supervisor stating why the well is shut in and the date when production is expected to commence. Upon approval of the request by the Supervisor, the well will be placed in a shut-in status for a period of not more than one (1) year, or for a period which shall be concurrent with the term on any suspension of obligation to produce (SOP) which may have been granted by the Alabama Department of Conservation and Natural Resources as lessor. The operator must submit a subsequent request to the Supervisor prior to the end of such period in order to extend the shut-in status for an additional period of time of not more than one (1) year. Such request for an extension must describe the progress that has been made toward placing the well on production and when production is expected to commence. Upon approval of the request by the Supervisor, the shut-in status will be extended for a period of not more than one (1) year. Thereafter, the Board may, after notice and hearing, extend further the shut-in status for a well.

(b) Any well which is approved for shut-in status shall utilize fluids of sufficient density to contain the formation pressure between the plugs and shall be cemented as required for permanent abandonment in Rule 400-2-4-.11(2) except for subsections (f) and (j). When casing extends above the waters floor, a mechanical bridge plug (retrievable or permanent) shall be placed between fifteen (15) and two hundred (200) feet below the waters floor or a cement plug of at least one hundred (100) feet in length shall be placed between fifteen (15) and two hundred (200) feet below the waters

floor. The cement plug shall be verified by tagging and pressure testing.

(c) Other plugging and shut-in procedures may be required by the Supervisor or Board. Additional safeguards and requirements may be imposed on the operator by the Supervisor or Board.

(d) The well location shall be maintained in accordance with Rule 400-2-3-.01, relating to Identification of Wells.

Author: Kirk McQuillan
Statutory Authority: Code of Ala. 1975, §§9-17-1, et seq.
History: **New Rule:** Filed April 11, 2000; effective May 16, 2000.
Amended: Filed September 22, 2009; effective October 27, 2009.

400-2-4-.15 Abandoned Wells.

A well is considered abandoned when it has not been used for six (6) consecutive months, and has not been classified as temporarily abandoned or shut in pursuant to Rule 400-2-4-.14, and cannot be operated, whether because it was drilled as a dry hole or has ceased to produce, or operations have not been conducted thereon, or for some other reason.

Author: State Oil and Gas Board
Statutory Authority: Code of Ala. 1975, §§9-17-1, et seq.
History: **New Rule:** Filed April 11, 2000; effective May 16, 2000.

400-2-4-.16 Seismic, Core, And Other Exploratory Holes To Be Plugged.

Before any hole is abandoned which is drilled for seismic, core, or other exploratory purposes, it shall be the duty of the owner or driller of any such hole to plug the same in such manner as to properly protect all freshwater-bearing strata.

Author: State Oil and Gas Board
Statutory Authority: Code of Ala. 1975, §§9-17-1, et seq.
History: **New Rule:** Filed April 11, 2000; effective May 16, 2000.

Previous Chapter 400-2 (Rules 400-2-X-.01 through 400-2-X-.09) Repealed and New Chapters 400-2-1 through 400-2-9 adopted in lieu thereof: Filed April 11, 2000.