

Revised Express Terms 6 NYCRR Parts 550 through 556 and 560

6 NYCRR Part 550, Promulgation and Enforcement of Rules and Regulations

The title of Part 550 is revised to read:

[Promulgation and Enforcement of Rules and Regulations] General

Section 550.1 is unchanged.

Section 550.2 is amended to read:

(a) To carry out the functions outlined in section 550.1 of this Part, the Department of Environmental Conservation has created a [Bureau] Division of Mineral Resources.

(b) The [Bureau]Division of Mineral Resources is headed by a [chief]director who is responsible for the administration and enforcement of all rules, regulations, orders and amendments thereof of the Department of Environmental Conservation relating to the exploration and drilling for, and production, transportation, purchase, processing and storage of oil and gas and other wells regulated under Environmental Conservation Law Article 23, and the prevention of any pollution resulting therefrom.

(c) The [chief]director of the [Bureau] Division of Mineral Resources shall be responsible for the directing, supervising and proper performance of the Division of Mineral Resources.

(d) The [chief]director of the [Bureau] Division of Mineral Resources is aided by an assistant [chief]director who acts in the former's absence. At those times, the assistant [chief]director bears both the responsibilities and authorities of the [chief]director.

(e) To carry out field responsibilities, the [Bureau]Division of Mineral Resources is organized into several regions, each headed by a regional supervisor, who acts as the [chief's]director's deputy in all relevant matters.

Subdivisions (a) through (g) of Section 550.3 are unchanged.

Subdivision (h) of Section 550.3 is repealed, subdivisions (i) through (o) are re-lettered subdivisions (h) through (n), and a new subdivision (o) is added to read:

(o) 'Director' shall mean the director of the Division of Mineral Resources of the Department of Environmental Conservation.

Subdivisions (p) through (r) of Section 550.3 are unchanged, subdivisions (s) through (ba) are re-lettered subdivisions (u) through (bc), and new subdivisions (s) and (t) are added to read:

(s) 'Hydraulic Fracturing' or 'Fracturing' shall mean a stimulation technique involving the pumping of hydraulic fracturing fluid, possibly with a proppant, into a formation to create fractures to increase formation permeability and productivity, but shall not include other operations during a workover.

(t) 'Hydraulic fracturing fluid' shall mean fluid used to perform hydraulic fracturing and includes the base fluid and all applicable additives.

Newly re-lettered subdivisions (ay) through (bc) of Section 550.3 are relettered (ba) through (bf), and new subdivisions (ay) and (az) are added to read:

(ay) 'True measured depth' shall mean the total distance from a depth in a planned or existing wellbore or well to a point at the surface measured along the existing or planned wellbore or well.

(az) ‘True vertical depth’ shall mean the vertical distance from a depth in a planned or existing wellbore or well to a point at the surface.

Newly re-lettered subdivision (bf) of Section 550.3 is relettered subdivision (bh), and new subdivisions (bf) and (bg) are added to read:

(bf) ‘Well spud’ shall mean commencement of driving, drilling or other installation method to set the requisite amount of conductor or surface casing.

(bg) ‘Workover’ shall mean any downhole operation in an existing well performed after initial completion that is designed to sustain, restore or increase efficiency, make the well safer, or correct a known or potential environmental hazard.

Sections 550.4 through 550.7 are unchanged.

#### 6 NYCRR Part 551, Reports and Financial Security

Subdivision (a) of Section 551.1 is amended to read:

(a) Each person who is a principal or acts as an agent for another in any of the following activities within the State must file with the department an organizational report on a form the department prescribes:

(1) solution mining;

(2) drilling, deepening, plugging back or converting oil, gas, [or] solution mining, [and] or storage well or wells, or drilling, deepening, plugging back or converting stratigraphic, geothermal or disposal well or wells greater than a true vertical depth of 500 feet;

(3) the production in the State of oil and gas;

(4) the first purchase of oil and gas produced in the State;

- (5) the underground storage in the State of gas;
- (6) the practice of well abandonment[s] and salvage of oil and gas subsurface equipment; or
- (7) the first transportation of oil and gas produced in the State.

Subdivision (b) of Section 551.1 through Section 551.5 are unchanged.

Section 551.6 is amended to read:

The owner of an oil, [and] gas, [or] solution mining, storage, stratigraphic, geothermal or disposal well that exceeds or that is expected to exceed 6,000 feet in true measured depth must file financial security for that well in an amount based upon the anticipated costs of plugging and abandoning that well to the satisfaction of the department in accordance with Part 555 of this Title[, up to \$250,000]. However, the owner is not required to file financial security under this section exceeding [\$2,000,000]an amount specified by the department, regardless of the number of wells described in this section that the owner may have.

Section 551.7 is unchanged.

#### 6 NYCRR Part 552, Permits to Drill, Deepen, Plug Back or Convert Wells

Subdivisions (a) and (b) of Section 552.1 are amended and a new subdivision (c) is added to read:

(a) It shall be unlawful for any owner or operator to commence operations to construct the well pad or access road; drill, deepen, plug back or convert a well for oil and gas exploration, production, input, or storage purposes to any depth; or drill, deepen, plug back or convert a well for disposal, geothermal, or stratigraphic purposes to any depth greater than a true vertical depth of 500 feet until [he] the owner or operator has filed an application with the department and has received a permit as specified below. [This] Except for the drilling of a

new horizontal well exclusively within the producing horizon of a pool, this application shall not be required for deepening or plug back operations to be conducted exclusively within the producing horizon of a pool.

(b) Each copy of the application must be accompanied by a neat, legible plat which has been certified as to correctness by a New York State licensed land surveyor or New York State licensed [civil]professional engineer. The plat must be drawn to scale and show the boundaries of the lease or unit containing the well, the distance in feet from the surface location of the well to the two nearest lease or unit boundaries, the distance in feet from the surface location of the well to the nearest plugged and abandoned well completed in the objective pool (if same is within one mile) and the distance in feet from the surface location of the well to the nearest producing well and nearest non-producing unplugged well (if same are within one mile) completed in the objective pool. Identification of such wells on the plat must include the department-assigned API number and a notation of the well's status. Both of the latter two distances may be obtained by scaling from a map, stadia measurements, pacing, odometer or other reasonably accurate means. However, if the distance between the well and the nearest well completed in the objective pool is such that there is a possibility of violation of the spacing requirements of sections 553.1 or 553.3 of this Title, the distance between the surface location of the well and the nearest well completed in the objective pool shall be measured accurately on the ground. The plat also must have indicated thereon the decimal latitude and decimal longitude of the well[and the scaled distances in feet in east-west and north-south directions from the nearest corner of the United States Geological Survey topographical map upon which the well location is situated, with the topographical map being identified by title, date and as to whether seven and one-half minute or 15 minute coverage] in North American Datum 83.

(c) Any owner or operator who intends to drill, deepen, plug back, or convert a well where high-volume hydraulic fracturing is planned must also comply with the application requirements of section 560.3 of this Title.

Subdivisions (a), (c) and (d) of Section 552.2 are amended, subdivision (e) is re-lettered subdivision (f), and new subdivision (e) is added to read:

(a) Upon determination that the application is in order and that the appropriate plugging bond is in force or proof of financial responsibility has been established as provided in section 551.3 of this Title, the department shall issue as expeditiously as possible a permit to drill, deepen, plug back or convert a well to the owner or operator[ utilizing form OG9].

(c) If the operations for which the permit is granted have not commenced and been pursued in a diligent manner within [180 days] two calendar years from the date of issuance of the permit, said permit shall expire.

(d) If prior to the commencement of operations, a request to modify the spacing unit [are applied for or are] is pending, the department may suspend the permit. After a decision relative to the spacing [units]unit, the suspended permit either will be cancelled by the department and the fee refunded, or will be reinstated with the time while in suspension not charged against the [180-day] two calendar year permit [period] term.

(e) Prior to the commencement of operations, the department may, on its own initiative or at the request of the owner or operator upon good cause shown, suspend the term of a permit. If said permit is reinstated by the department, the time during which the permit was suspended will not be charged against the two calendar year permit term.

Newly re-lettered subdivision (f) of Section 552.2 is amended to read:

(f) Under unusual or emergency circumstances, or for other good cause shown, the department may permit the commencement of operations by verbal authority of the director or director's deputy prior to the issuance of a formal permit if a complete application is on file with the department.

A new subdivision (g) is added to Section 552.2 to read:

(g) Notwithstanding subdivision (c) of this section, when an owner or operator commences operations pursuant to a permit issued pursuant to this Part, the conditions specified under said permit shall continue in full force and effect until the well is plugged and abandoned consistent with Part 555 of this Title and the department has approved final reclamation.

Subdivision (a) of Section 552.3 is amended to read:

(a) A permit shall not be transferable but may be reissued [as a new permit for any other location] to a new owner or operator for the same location if prior to the commencement of operations the owner or operator to whom the permit originally was issued submits[, all in triplicate,] a letter [advising of the location change, another application completely filled out, and the appropriate plat showing the new location] requesting reissuance of the permit which identifies the name and address of the new owner or operator and an application to reissue on a form prescribed by the department. Said application shall be signed by the original owner or operator and the new owner or operator. Reissuance of the permit, without additional fee, shall be made by the department after determination that the new owner or operator has filed an organizational report with the department; the application is in order; and [that]the appropriate plugging bond is in force or proof of financial responsibility has been established as provided in section 551.3 of this Title. Upon reissuance of the permit by the department, the original permit shall be deemed cancelled.

Subdivision (b) of Section 552.3 through Section 552.4 are unchanged.

#### 6 NYCRR Part 553, Well Spacing

(Statutory authority: Conservation Law, §§ 70, 73, 75, 77, Environmental Conservation Law §§ 23-0501, 23-0503)

Subdivisions (a) through (c) of Section 553.1 are re-lettered subdivision (d) through (f), and new subdivisions (a) through (c) are added to read:

(a) ‘Statewide spacing’ means spacing units for gas or oil wells that are within ten percent of the following sizes, as applicable, unless another percentage is specifically stated:

(1) For Medina gas pools at any depth, 40 acres with the wellbore within the target formation no less than 460 feet from any unit boundary, plus, if applicable, the number of additional acres necessary and sufficient to ensure that any horizontal wellbore within the target formation is not less than 460 feet from any unit boundary;

(2) For Onondaga reef or Oriskany gas pools at any depth, 160 acres with the wellbore within the target formation no less than 660 feet from any unit boundary, plus, if applicable, the number of additional acres necessary and sufficient to ensure that any horizontal wellbore within the target formation is not less than 660 feet from any unit boundary;

(3) For fault-bounded Trenton and/or Black River hydrothermal dolomite gas pools where the majority of the pool is between 4,000 and 8,000 feet deep, 320 acres with the proposed productive section of the wellbore within the target formation no less than one-half mile from any other well in another unit in the same pool and no less than 1,000 feet from any unit boundary that is not defined by a field-bounding fault but in no event less than 660 feet from any unit boundary;

(4) For fault-bounded Trenton and/or Black River hydrothermal dolomite gas pools where the majority of the pool is below 8,000 feet, within five percent of 640 acres with the proposed productive section of the wellbore within the target formation no less than one mile from any other well in another unit in the same pool and no less than 1,500 feet from any unit boundary that is not defined by a field-bounding fault but in no event less than 660 feet from any unit boundary;

(5) For shale gas pools at any depth, for a vertical well outside any existing spacing unit for the same formation, 40 acres with the wellbore within the target formation no less than 460 feet from any unit boundary;

(6) For shale gas pools at any depth, for a horizontal well outside any existing spacing unit for the same formation and with a written commitment from the well operator to drill infill wells pursuant to subdivision (c) of this section, notwithstanding the ten percent tolerance, up to 640 acres with the initial horizontal wellbore or wellbores within the target formation approximately centered in the spacing unit and no wellbore in the target formation less than 330 feet from any unit boundary;

(7) For shale gas pools at any depth, for a horizontal well outside any existing spacing unit for the same formation and in the absence of a written commitment from the well operator to drill infill wells pursuant to subdivision (c) of this section, 40 acres with the wellbore within the target formation no less than 330 feet from any unit boundary plus the number of additional acres necessary and sufficient to ensure that the wellbore within the target formation is not less than 330 feet from any unit boundary;

(8) For all other gas pools where the majority of the pool is above the depth of 4,000 feet, 80 acres with the wellbore within the target formation no less than 460 feet from any unit boundary, plus, if applicable, the number of additional acres necessary and sufficient to ensure that any horizontal wellbore within the target formation is not less than 460 feet from any unit boundary;

(9) For all other gas pools where the majority of the pool is 4,000 to 6,000 feet deep, 160 acres with the wellbore within the target formation no less than 660 feet from any unit boundary, plus, if applicable, the number of additional acres necessary and sufficient to ensure that any horizontal wellbore within the target formation is not less than 660 feet from any unit boundary;

(10) For all other gas pools where the majority of the pool is 6,000 to 8,000 feet deep, 320 acres with the wellbore within the target formation no less than 1,000 feet from any unit boundary, plus, if applicable,

the number of additional acres necessary and sufficient to ensure that any horizontal wellbore within the target formation is not less than 1,000 feet from any unit boundary;

(11) For all other gas pools where the majority of the pool is below 8,000 feet, within five percent of 640 acres with the wellbore within the target formation no less than 1,500 feet from any unit boundary, plus, if applicable, the number of additional acres necessary and sufficient to ensure that any horizontal wellbore within the target formation is not less than 1,500 feet from any unit boundary;

(12) For oil pools in the Bass Island, Trenton, Black River, Onondaga reef or other oil-bearing reefs at any depth, 40 acres with the wellbore within the target formation no less than 460 feet from any unit boundary, plus, if applicable, the number of additional acres necessary and sufficient to ensure that any horizontal wellbore within the target formation is not less than 460 feet from any unit boundary; and

(13) For all other oil pools at any depth, the wellbore within the target formation shall be no less than 165 feet from any lease boundary.

(b) Wells completed under a well permit issued pursuant to paragraph (12) or (13) of subdivision (a) of this section that do not produce oil may not commence production of natural gas prior to modification of the spacing unit pursuant to section 553.3 of this Part.

(c) The department may issue permits to drill infill wells on a reasonably uniform pattern within the spacing unit after an integration order has been issued, if required, and only if it determines that drilling infill wells is necessary to satisfy the policy objectives of Part 550 of this Title. The distances from the unit boundaries set forth in this section shall apply to any infill wells. For purposes of this section, new lateral wellbores drilled from the original wellbore in the unit are not considered infill wells if they are drilled prior to the first product sales from the original surface location. In a spacing unit established pursuant to paragraph (6) of subdivision (a) of this section, infill wells shall be deemed necessary.

Newly re-lettered subdivisions (d) and (e) are amended to read:

(d) Except as provided in subdivisions [(b) and (c)](a) and (e) of this section and absent a department order establishing spacing units, a well drilled, deepened, plugged back, or converted for the production of oil and gas cannot be located less than 660 feet from any boundary line of the lease, integrated leases or unit and cannot be closer than 1,320 feet from any other oil and gas well in the same pool.

(e) Absent a department order establishing spacing units, a well which is on a lease, integrated leases, or unit having as one of its boundary lines the New York[]-Pennsylvania border may not be drilled, deepened, plugged back, or converted for the production of oil and gas within 330 feet of that border.

A new subdivision (g) is added to Section 553.1 to read:

(g) Gas wells drilled, deepened, plugged back or converted in natural gas fields or pools, which were discovered, developed and operated prior to January 1, 1995 and which are not being extended, are not subject to the provisions of subdivision (a) of this section.

Section 553.2 is unchanged.

Subdivisions (d) and (e) of Section 553.3 are repealed, subdivisions (a) though (c) are re-lettered subdivisions (c) through (e), and new subdivisions (a) and (b) are added to read:

(a) The department shall issue a permit to drill, deepen, plug back or convert a well, if all applicable requirements are met and the proposed spacing unit conforms to statewide spacing provided in section 553.1 of this Part.

(b) For wells which meet statewide spacing requirements, issuance of a permit to drill, deepen, plug back or convert a well shall establish the spacing unit for the permitted well.

Newly re-lettered subdivisions (c) through (e) of Section 553.3 are amended to read:

(c) [To]For wells exempt from statewide spacing requirements or wells that do not meet such requirements as provided in section 553.1 of this Part, an order establishing well spacing may be issued by the department to promote effective development, use or conservation of the natural resources of oil and gas[, an order establishing well spacing may be promulgated by the department].

(d) Prior to [promulgation] issuance of any spacing order, a public hearing on the matter will be conducted by the department acting either on its own [motion] initiative or upon receipt of an application therefor from any interested owner or operator.

(e) Any application for a spacing order shall be made in writing and should include any information the applying owner or operator deems relevant to the following factors which the department will consider in deciding upon a spacing order:

- (1) the lease and unit boundaries of the lands underlaid by the pool;
- (2) the plan of well spacing currently being employed and that proposed for the pool;
- (3) the depth at which production from said pool has been found;
- (4) the nature and character of the stratum containing the pool and the fluids contained therein;
- (5) an estimate of the maximum area which may be drained efficiently and economically by one

well; and

(6) any other available information pertaining to said pool which may be of probative value to the department in determining the proper spacing therefor, with due and relative allowance for protection of correlative rights and prevention of waste.

A new subdivision (f) is added to Section 553.3 to read:

(f) The Department may, upon its own initiative or at the request of the owner or operator, upon good cause shown, modify an order establishing a spacing unit or a spacing unit which conforms to statewide spacing without conducting a hearing if a finding has been made that no facts are in dispute after all affected persons have been provided a reasonable opportunity to comment. For spacing units established pursuant to paragraph (6) of subdivision (a) of section 553.1 of this Part, failure to drill infill wells pursuant to subdivision (c) of section 553.1 of this Part shall constitute good cause for the department to initiate a modification of the spacing unit.

Section 553.4 is amended to read:

553.4 [Exceptions]Variances

[Where in its opinion there exists good and sufficient reason to permit an exception to the well spacing provision of sections 553.1, 553.2 and 553.3 of this Part, the] (a) The department may permit reasonable well location [exceptions which will] variances to the well spacing provisions of subdivisions (d) and (e) of section 553.1 and sections 553.2 and 553.3 of this Part, in order to protect correlative rights and prevent waste. Any application for such [an exception]a variance shall be made [in writing in triplicate] on a form prescribed by the department, as a separate attachment to the application for permit as outlined in section 552.1 of this Title and shall set forth in ample detail the reason or reasons for such [exception] variance request. Upon receipt of this [exception]variance request, the department shall [promptly schedule a public hearing to facilitate a decision on the application] publish a notice of intent to issue a permit and spacing variance in the environmental notice bulletin and provide for a public comment period of at least 15 days. The owner or operator shall also, in advance of the 15-day public comment period required by this subdivision, provide notice by publication of the request for a variance, in a manner prescribed by the department. When a location [exception] variance is

granted, the department may adjust the production from such well or take such other action as it may deem necessary for the protection of correlative rights or to prevent waste.

(b) Following the public comment period required by subdivision (a) of this section, the department shall determine whether substantive and significant issues have been raised. If the department receives no comments or if the comments do not raise a substantive and significant issue, the department may issue the variance. If the department determines that substantive and significant issues have been raised in a timely manner, the department shall schedule a hearing to facilitate a decision on the variance application.

#### Part 554, Drilling Practices and Reports

Subdivisions (a) and (b) of Section 554.1 are unchanged.

Paragraph (1) of subdivision (c) of Section 554.1 is amended and a new paragraph (4) is added to read:

(1) Prior to the issuance of a [well-drilling] permit [for any operation in which the probability exists that brine, salt water or other polluting fluids will be produced or obtained during drilling operations in sufficient quantities to be deleterious to the surrounding environment,] to drill, deepen, plug back or convert a well, or for any operation reported to the department on the Sundry Well Notice and Report form that requires pre-approval from the department the owner or operator must submit and receive approval for a plan for the environmentally safe and proper ultimate disposition and/or disposal of [such] used drilling mud, flowback water and production brine. [For purposes of this subdivision, drilling muds are not considered to be polluting fluids.] The owner or operator must state in its plan that it will maximize the reuse and/or recycling of used drilling mud, flowback water and production brine to the maximum extent feasible. Before [requesting] approving a plan for disposition and/or disposal of such fluids, the department will take into consideration the known geology of the area, the sensitivity of the surrounding environment to [the polluting] such fluids, and the history of any other drilling operations in the area. Depending on the method or methods of disposal chosen by

the [applicant] owner or operator, a permit for discharge and/or disposal may be required by the department in addition to the [well-drilling] permit to drill, deepen, plug back or convert a well. An [applicant]owner or operator may also be required at the department's discretion to submit an acceptable contingency plan, the use of which shall be required if the primary plan is unsafe or impracticable at the time of disposition or disposal.

(4) [Prior]If applicable, prior to the issuance of a permit to drill, deepen, plug back or convert a well or for any operation noticed to the department on the Sundry Well Notice and Report form that requires pre-approval from the department, the owner or operator must submit and receive approval of a plan for the environmentally safe and proper disposal or beneficial re-use of drill cuttings on-site or off-site.

Paragraphs (2) and (3) of subdivision (c) and subdivisions (d) through (f) of Section 554.1 are unchanged.

Section 554.2 is amended to read:

The regional headquarters administering to the county in which the well is located shall be notified [in writing or by telegram] at [or]least 24 hours prior to [the start of actual drilling operations]well spud.

Sections 554.3 through 554.4 are unchanged.

Subdivision (a) of Section 554.5 is amended to read:

(a) [The]Except for wells intentionally drilled directionally, including those drilled horizontally, the maximum point at which a well penetrates a producing formation shall not vary unreasonably from the vertical drawn from the center of the hole at the surface. Minor deviations will be permitted, however, without special permission for short distances, to straighten the hole, to sidetrack junk, or to correct other mechanical difficulties. For wells intentionally drilled directionally, including those drilled horizontally, the well path from

the top of the target interval to the bottom of the target interval and the bottomhole location itself shall not vary unreasonably from the well path and locations specified on the application to drill, deepen, plug back or convert a well, unless the owner or operator requests such variation on the department's Sundry Well Notice and Report form, and department approval is granted to modify the well's path and/or locations including bottomhole location.

Subdivisions (b) and (c) of Section 554.5 are unchanged.

Subdivisions (d) and (e) of Section 554.5 are amended to read:

(d) Controlled directional drilling, [also] including horizontal drilling, shall be permitted upon the approval of the department. Any owner or operator desiring to intentionally deviate a well from the vertical shall [first make written application to] notify the department of such proposed deviation on the application to drill, deepen, plug back or convert a well. The [application, which shall be in addition to the permit application as provided in section 552.1 of this Title,] notice must [contain] include the following information:

- (1) names of the county, field or area, pool and lease and well number; and
- (2) description of the surface location and of the target bottomhole location in feet from the two nearest lease boundaries[;
- (3) reason for the proposed intentional deviation;
- (4) names and addresses of the offsetting owner or operators and a statement that each has been sent a copy of the application by registered mail, and the date of such mailing].

(e) The [application] notice must be accompanied by a neat, legible [plat] plan view drawn to scale which [shows the well, all offsetting leases and the wells located thereon, the pool in which they are completed, and the names of the offsetting operators] identifies the surface location, top of target interval, bottom of target

interval and bottomhole location and the vertical section of the wellbore drawn to scale which shows the kickoff point, top of target interval, bottom of target interval and bottomhole location.

Subdivisions (f) and (g) of Section 554.5 are repealed and subdivision (h) is re-lettered subdivision (f).

Newly re-lettered subdivision (f) is amended to read:

(f) Within 30 days after the completion of an intentionally deviated well, or sooner at the request of the department for good cause, a complete angular deviation and directional survey of the well obtained by an approved well surveying company and certified as to correctness shall be filed [with]in a manner prescribed by the department.

Section 554.6 is unchanged.

Subdivisions (a) through (e) of Section 554.7 are amended and a new subdivision (f) is added to read:

(a) Within 30 days after the completion of any well, a [completion report] Well Drilling and Completion Report utilizing a form [OG10]prescribed by the department shall be filed [in triplicate] by the owner or operator with the department summarizing thereon the completion details. An interim completion report shall be filed upon request of the department at any time and within ninety days of any discontinuance in operations on a well lasting longer than thirty days, with the ninety day timeframe measured from the first day following discontinuance in operations.

(b) [Each copy of the completion report on form OG10]The Well Drilling and Completion Report also shall be accompanied by a well log and such other information as the department may specifically require. The measurement datum for the well log and all other measurements in connection with the well shall be clearly

specified. The well log also must show the elevation in feet of the measurement datum with respect to mean sea level.

(c) In the event a multiple completion has been effected in a well, [each copy of] the [completion report on form OG10]Well Drilling and Completion Report also shall be accompanied by a diagrammatic sketch of the multiple completion installation and a written resume of the procedures and equipment employed in effecting the completion and testing to insure separation of the pools.

(d) The owner or operator also may be required to provide up to two sets of bagged and labeled drill cutting samples upon request of the department. If these are to be required, the owner or operator will be so advised at the time the permit [on form OG9] to drill, deepen, plugback or convert a well is issued. The samples are to be washed unless the well is drilled with rotary tools using air or gas as [to] the drilling fluid.

(e) If so requested by the owner or operator, the information contained in the [completion report and] Well Drilling and Completion Report, a follow-up report to a Sundry Well Notice and Report form, a well log, and [the] drill cutting samples shall be only for the confidential use of the department and the Geological Survey of the State Museum and Science Service of the New York State Department of Education until [one year]six months after the date of commencement of operations for the well so involved. Upon receipt of successive petitions from the owner or operator, [and the demonstration of continued sufficient good cause,] the confidential period may be extended for one or more additional periods [of one year in length] up to a maximum total confidential period of [five] two years.

(f) Within 30 days after completing noticed or approved work under a Sundry Well Notice and Report form, a Well Drilling and Completion Report or a follow-up report to a Sundry Well Notice and Report form, as specified by the department, shall be filed by the owner or operator with the department summarizing the details of such work.

Section 554.8 is unchanged.

#### Part 555, Plugging and Abandonment

Section 555.1 is unchanged.

Subdivision (a) of Section 555.2 is amended to read:

(a) It shall be unlawful for the owner or operator [thereof ]to shut in a well [capable of being produced on a commercial basis] for more than one year without specific permission from the department for an extension of the time period during which shut-in is permitted.

Subdivision (b) of Section 555.2 through Section 555.4 are unchanged.

The opening paragraph and paragraphs (1) through (5) of subdivision (a) of Section 555.5 are amended to read:

(a) The plugging of a well shall be conducted in accordance with the following sequence of operations. The department at its discretion, may require the tagging of all plugs and require casing and/or cement evaluation logs to be run to determine proper plugging procedures. The following are minimum requirements for plugging and the department may impose additional requirements:

(1) The well bore, whether to remain cased or uncased, shall be filled with cement from total depth to at least [15]50 feet above the top of the shallowest formation from which the production of oil or gas has ever been obtained in the vicinity. Alternatively, a bridge topped with at least [15]50 feet of cement shall be placed immediately above each formation from which the production of oil or gas has ever been obtained in the vicinity.

(2) [If]For any casing [is to be ]left in the ground, a cement plug of at least [15]100 feet in length shall be placed [at the bottom of such section of casing] 50 feet below and 50 feet above the casing shoe. Uncemented casing must be cut and pulled as deep as practicable with a plug approximately 50 feet in length placed in and above the stub of the casing. If the uncemented casing is unable to be pulled the casing must be perforated 50 feet below the shoe of the next outer casing and a 100-foot plug placed across that shoe. A [similar]50 foot plug shall be placed at [the top of such section of casing unless it shall extend to]the surface. [In the latter event, the casing shall be capped in any such manner as will prevent the migration of fluids and not interfere with normal soil cultivation.]

(3) If casing extending below the deepest potable fresh water level shall not remain in the ground, a cement plug of at least [15]50 feet in length shall be placed in the open hole at a position approximately 50 feet below the deepest potable fresh water level.

(4) If the conductor casing or surface casing is drawn, a cement plug of at least [15]50 feet in length shall be placed so that the top of the plug is immediately below the point where the lower end of the conductor or surface casing shall previously have rested (i.e., the casing seat). The hole thereabove shall be filled with cement, sand or rock sediment or other suitable material in such a manner as will prevent erosion of the well bore area and not interfere with normal soil cultivation.

(5) [The] Unless otherwise specified in this Part, the interval between all plugs mentioned in paragraphs (1) through (4) of this subdivision shall be filled with [a heavy mud-laden] gelled fluid with a minimum density equal to 8.65 pounds per gallon with a 10 minute gel-shear strength of 15.3 to 23.5 pounds per hundred square feet or other department-approved fluid.

Paragraph (6) of subdivision (a) and subdivision (b) of Section 555.5 are unchanged.

Subdivision (c) of Section 555.5 is amended to read:

(c) As a part of the plugging and abandonment operation, the owner or operator shall fill with earth any pit or other excavation[,including]and fill below plow depth with cement or other grouting material approved by the department any rat hole or mouse hole, which has been created to facilitate the drilling or production of the well. In addition, the owner or operator shall make a reasonable effort to smooth the surface adjacent to the well and filled pit or excavation so as to place the surface in a condition similar to the adjacent terrain and without undue elevation[ shall be made]. If it can be demonstrated to the satisfaction of the department that no hazard will result and the landowner has signed an appropriate release, these surface restoration requirements will be waived.

Subdivision (d) of Section 555.5 and Section 555.6 are unchanged.

#### Part 556, Operating Practices

Section 556.1 is unchanged.

Subdivisions (a) and (b) of Section 556.2 are amended to read:

(a) The operating practice requirements of subdivisions (b) through [(d)] (g) of this section shall be applicable only to gas wells.

(b) No gas from any gas well, except such as is produced in a clean-up period not to exceed 48 hours after any completion or stimulation operation or workover, plus that used for the controlled testing of the well's potential in a period not to exceed 24 hours, plus that used in any operational requirements, shall be permitted to escape into the air. [Extensions of these time periods shall be granted administratively by the department upon application therefor by the owner or operator and the demonstration of sufficient good cause.]

Subdivisions (c) through (e) of Section 556.2 are re-lettered subdivisions (d) through (f) and a new subdivision (c) is added to read:

(c) The release or flaring of gas, to the extent permitted by subdivision (b) of this section, shall be performed in accordance with a flare approval issued by the department. Application to the department for a flare approval, extension of an approved flaring period or for an extension of the time periods specified in subdivision (b) of this section shall be made on the Sundry Well Notice and Report form.

A new subdivision (g) is added to Section 556.2 to read:

(g) Sundry Notice and Report on Wells.

(1) The Sundry Well Notice and Report form shall be used by the owner or operator to notify the department of any permanent change in well bore configuration which does not otherwise require a permit pursuant to Part 552 of this Title. Such notifications do not require department approval. However, notice to the department shall be submitted at least 5 days prior to commencing operations unless otherwise specified.

(2) The Sundry Well Notice and Report form shall be used by the owner or operator to notify the department of operations specified by Parts 550 through 560 of this Title and on the Sundry Well Notice and Report form, such as well repairs and pressure tests, which do not otherwise require a permit pursuant to Part 552 of this Title. Such notifications do not require department approval. However, notice to the department shall be submitted at least 5 days prior to commencing operations unless otherwise specified.

(3) A request from the owner or operator for approval to modify previously approved plans, including a request to modify a well's path and/or bottomhole location, provided the requested modification does not have well spacing, compulsory integration or well setback implications, shall be submitted to the department on the Sundry Well Notice and Report form, and approval of the department must be obtained before the requested modification is commenced.

(4) Except for the drilling of a new horizontal well exclusively within the producing horizon of a pool, a request from the owner or operator for approval to perform deepening or plug back operations to be conducted exclusively within the producing horizon of a pool shall be submitted to the department on the Sundry Well Notice and Report form, and approval of the department must be obtained prior to commencing operations.

(5) A request from the owner or operator for approval to flare during a well completion or re-completion, including well clean-up, stimulation or testing, shall be submitted to the department on the Sundry Well Notice and Report form, and approval of the department must be obtained prior to commencing flaring. Further, a request from the owner or operator for approval to extend an approved flaring period or for an extension of the time periods specified in subdivision (b) of this section shall be submitted on the Sundry Well Notice and Report form, and approval of the department must be obtained prior to commencing operations.

(6) A request from the owner or operator for approval to fracture or re-fracture a well after initial completion or perform a subsequent re-fracturing operation shall be submitted to the department on the Sundry Well Notice and Report form, and approval from the department must be obtained prior to commencing operations. A request shall be submitted at least 15 days before operations are requested to begin. Such operations are subject to the department's approval after:

- (i) review of the planned fracturing or re-fracturing procedures and products, water source, proposed site disturbance and layout, and fluid disposal plan;
- (ii) site inspection by department staff; and
- (iii) determination of whether any other department permits are required.

(7) Under unusual or emergency circumstances, or for other good cause shown, the department may permit the commencement of operations by verbal authority of the director or director's deputy prior to the

issuance of a formal approval if a complete Sundry Well Notice and Report form request is on file with the department.

(8) The department may, for good cause, suspend or terminate any approval to a Sundry Notice and Report form request granted under this section.

Sections 556.3 through 556.7 are unchanged.

A new Part 560 is adopted to read:

## PART 560, OPERATIONS ASSOCIATED WITH HIGH-VOLUME HYDRAULIC FRACTURING

(Statutory Authority: Environmental Conservation Law, §§ 3-0301, 23-0305)

Sec.

560.1 Applicability

560.2 Definitions

560.3 Application Requirements, Procedures and Fees

560.4 Setbacks

560.5 Testing, Recordkeeping and Reporting Requirements

560.6 Well Construction and Operation

560.7 Waste Management and Reclamation

560.1 Applicability

(a) This Part applies to all vertical and directionally drilled wells, including horizontal wells, where high-volume hydraulic fracturing is proposed.

(b) This Part supersedes any conflicting provision in Parts 550 through 558 of this Title and each person who intends to drill, drills, or operates a well subject to this Part shall comply with this Part's requirements and with all requirements contained in Parts 550 through 558, inclusive, of this Title that have not been specifically superseded by provisions of this Part.

## 560.2 Definitions

(a) For the purpose of this Part, the general definitions in section 550.3 of this Title apply to the extent not superseded by this Part.

(b) For the purpose of this Part, the following definitions also apply:

(1) 'access road entrance' shall mean the midpoint of the line defined by the intersection of the well site access road and the edge of the traveled part of any State, county, township, or municipal road or any public street, road or highway.

(2) 'additive' shall mean a substance composed of one or more chemical constituents that is intentionally added to a base fluid.

(3) 'base fluid' shall mean a substance, such as water or recycled flowback water, into which additives are mixed to form the hydraulic fracturing fluid which transports proppant, if used.

(4) 'best management practices' shall mean measures or methods used to prevent or minimize potential impacts on air quality, biological resources, land, and water quality caused by drilling, deepening, plugging back and converting or producing a well subject to this Part.

(5) ‘CAS Number’ shall mean the unique identification number assigned to a chemical by the Chemical Abstracts Service, which is the division of the American Chemical Society that is the globally recognized authority for information on chemical substances.

(6) ‘chemical constituent’ shall mean any element, compound or mixture with its own specific name or identity, such as a CAS Number.

(7) ‘chemical disclosure registry’ shall mean the chemical registry website known as FracFocus.org developed by the Groundwater Protection Council and the Interstate Oil and Gas Compact Commission. If such website becomes permanently inoperable, then chemical disclosure registry shall mean another publically accessible information website that is designated by the Department.

(8) ‘chemical family’ shall mean a group of chemicals that share similar chemical properties and have a common general name.

(9) ‘complete application’ under this Part shall have the same meaning as it does under section 621.2 of this Title.

(10) ‘completion’ shall mean the preparation of a well for production after it has been drilled to the objective formation.

(11) ‘final reclamation’ shall mean the reclamation of a well site following the end of production. This includes the regrading of lands, alleviating compaction, replacement of top soil, and revegetation, to restore and stabilize the site.

(12) ‘flowback’ shall mean phase or period during initial completion and clean-up of the well or clean-up of a well following a re-fracture or workover.

(13) ‘flowback water’ shall mean liquids and solids produced following drilling and initial completion and clean-up of the well or clean-up of a well following a re-fracture or workover.

(14) ‘high-volume hydraulic fracturing’ shall mean the stimulation of a well using 300,000 gallons or more of water as the base fluid in the hydraulic fracturing fluid per well completion. In determining whether the 300,000 gallon threshold has been met, the department will take into account the sum of all water-based fluids, including fresh water and recycled flowback water, used in all high-volume hydraulic fracturing stages.

(15) ‘intermittent stream’ shall mean a stream channel that contains flowing water for only a portion of the year.

(16) ‘material safety data sheet, or MSDS’ shall mean written or printed material concerning a hazardous chemical that is prepared in accordance with 29 CFR 1910.1200(g).

(17) ‘objective formation’ shall mean the reservoir or geologic target specified on an application for a permit to drill, deepen, plug back or convert a well.

(18) ‘partial reclamation’ means the reclamation of a well site following completion of a well, and in the case of a multi-well pad, completion of the last well on the multi-well pad. This includes the reclamation of pits, regrading of lands and the revegetation of lands outside the well pad.

(19) ‘perennial stream’ shall mean a stream channel that has continuous flow in parts of its bed all year round during years of normal rainfall.

(20) ‘primary aquifer’ shall mean a highly productive aquifer presently being utilized as a source of water supply by a major municipal supply system.

(21) ‘principal aquifer’ shall mean an aquifer known to be highly productive or whose geology suggests abundant potential water supply, but which is not intensively used as a source of water supply by a major municipal system at the present time.

(22) ‘product’ shall mean an additive that is manufactured using precise amounts of specific chemical constituents and is assigned a commercial name under which the substance is sold or utilized.

(23) 'production brine' shall mean formation water co-produced from an oil or gas well after the well is connected to a gathering line or stock tank.

(24) 'proppant' shall mean sand or any natural or man-made material that is carried in suspension by the hydraulic fracturing fluid and serves to keep the induced fractures open when hydraulic fracturing fluid is withdrawn after a hydraulic fracturing treatment.

(25) 'public water supply' shall mean either a community or non-community system which provides piped water to the public for human consumption if the system has a minimum of five (5) service connections, or regularly serves a minimum average of 25 individuals per day at least 60 days per year.

(26) 'reservoir' shall mean a ponded or impounded surface waterbody designated for use as a public water supply, any part of which is classified as A or AA in its entirety pursuant to Parts 800 to 941 of this Title.

(27) 'safety data sheet, or SDS' shall mean written or printed material concerning a hazardous chemical that is prepared in accordance with 29 CFR 1910.1200(g).

(28) 'stage' shall mean the isolation and/or stimulation of a specific interval of the objective formation.

(29) 'stage plug' shall mean a device used to mechanically isolate a specific interval of the objective formation for the purpose of well stimulation.

(30) 'well pad' shall mean the area directly disturbed during drilling and operation of a gas well.

(31) 'well site' shall mean the well pad and access roads, equipment storage and staging areas, vehicle turnarounds, and any other areas directly impacted by activities involving a well subject to this Part.

(32) 'wetland' shall mean any area regulated pursuant to Article 24 of the Environmental Conservation Law and any other wetland regulated under Section 404 of 33 U.S.C. 1251, *et seq.*

### 560.3 Application Requirements, Procedures and Fees

(a) Application requirements. In addition to the requirements found in Part 552 of this Title, an application for a permit to drill, deepen, plug back or convert a well subject to this Part shall contain information specified on a department-approved form including:

(1) measured from the ground surface, the minimum depth to the top of the objective formation for the entire proposed length of the wellbore;

(2) the estimated maximum depth and elevation of bottom of potential fresh water, and the basis for such estimate (water well information, other well information, previous drilling on the well pad, published or private reports, or other department-approved source);

(3) the proposed total volume of water-based fluid, including a breakdown of individual volumes of fresh water and other water-based fluids, to be used in hydraulic fracturing and the basis for the estimate of proposed total volume of fluid;

(4) the proposed source or sources of fresh water and other water-based fluids and the status of approvals needed to withdraw any such water;

(5) scaled distance from the proposed surface location of the well and the closest edge of the proposed well pad to any water supply reservoir, intake, water well or domestic supply spring, or water well or spring used for water supply for crops or livestock within 2,640 feet, including any public or private wells, and community or non-community systems;

(6) scaled distance from the proposed surface location of the well and the closest edge of the proposed well pad to any primary or principal aquifer boundary, perennial or intermittent stream, wetland, storm drain, lake, or pond within 500 feet, and any surface water body within 500 feet that is a tributary to a public drinking water supply;

(7) scaled distance from the proposed surface location of the well and the closest edge of the proposed well pad to any inhabited private dwellings or places of assembly within 1,320 feet;

(8) identification of any abandoned wells subject to Parts 550 through 559 of this Title within the proposed spacing unit and within one mile of the proposed surface location of the well, and information on such wells, as specified by the department;

(9) a description of the planned construction and capacity of any reserve pit;

(10) where applicable, a description of the closed-loop tank system;

(11) the number and individual and total capacities of receiving tanks for flowback water ;

(12) a description of the drilling and hydraulic fracturing engines to be used, the type of fuel needed for such engines and a description of any planned air emission control measures;

(13) the status of the availability of a commercial sales line and interconnecting gathering line to the well or multi-well pad and operating compressor station, if applicable;

(14) the fluid and drill cuttings disposal plans, as required by paragraphs 554.1(c)(1) and 554.1(c)(4) of this Title.

(15) the proposed blowout preventer use and test plan for all drilling and completion operations specifying:

(i) the pressure rating of any annular preventer, rams (including a description of type and number of rams), choke manifold and connecting line from the blowout preventer to the choke manifold;

(ii) timing, duration, pressure and frequency of testing and/or visual inspection of the blowout preventer and related equipment including any scheduled retesting of equipment;

(iii) test pressure(s) and timing for any internal pressure testing of surface, intermediate and production casing strings, and duration of tests including an explanation as to how the test pressure was determined;

(iv) test pressure(s) and anticipated depth(s) of any surface and/or intermediate casing seat integrity tests. If a casing seat integrity test will not be conducted on a casing string with a blowout preventer installed on it, an explanation must be provided why such a test is not required and how any flow will be managed;

(v) distance from well to the remote actuator which is powered by a source other than rig hydraulics;

(vi) a system for recording, documenting and retaining the results of all pressure tests and inspections conducted during drilling and/or completion operations;

(vii) a copy of the owner's or operator's well control barrier policy that identifies acceptable barriers to be used during identified operations; and

(viii) any other related information or data required by the department that is necessary to ensure environmental protection and public safety.

(16) a list of invasive species found at the well site and description of the best management practices which will be used for preventing the spread of these invasive species, including measures being used to prevent new invasive species from being transported to the site;

(17) a partial site reclamation plan that describes the methods for partially reclaiming the well site following completion, including a description of best management practices for restoration of native plant cover;

(18) a transportation plan indicating the planned route for delivery of water to the site for hydraulic fracturing, the proposed route for transport of flowback water requiring tracking by means of the

department's Drilling and Production Waste Tracking Form, all other truck trips associated with hydraulic fracturing at the site, and an estimated number of truck trips associated with same. Further, the transportation plan must include a copy of any road use agreement(s) between the owner or operator and any municipalities or documentation of the owner's or operator's efforts to obtain such agreements; and

(19) a Safety Data Sheet or Material Safety Data Sheet, as appropriate, for each additive to be used in the drilling fluid, if not already on file with the department.

(b) Plat requirements. In addition to the well plat requirements contained in subdivision (b) of section 552.1 of this Title, the plat must have indicated thereon the decimal latitude and decimal longitude of the access road entrance in North American Datum 83.

(c) Mapping requirements. With each application for a permit to drill, deepen, plug back or convert a well subject to this Part, the owner or operator shall provide:

(1) a plan view of the wellbore including surface and bottomhole locations and a vertical section of the wellbore showing the land surface elevation and wellbore elevation with an indication of the surface location along the path of the proposed wellbore of the minimum true vertical depth measured from the ground surface to the top of the objective formation.

(2) a topographic map of the area within at least 2,640 feet of the proposed surface location of the well showing the location and orientation of the proposed well pad and a close-up map of the well pad showing the placement of fueling tanks, reserve pit and receiving tanks for flowback water, the location of the access road, type and extent of vegetative cover and the location of any flowback water pipelines or conveyances.

(3) a map at a scale specified by the department showing the location and identity of all occurrences of invasive species within the proposed well site,

(4) a plan view drawing of the well site illustrating where partial reclamation will be accomplished following completion of all wells on the well pad.

(d) Hydraulic Fracturing Fluid Disclosure.

(1) With each application for a permit to drill, deepen, plug back or convert a well subject to this Part, the owner or operator, directly or through a service company and/or chemical supplier(s), shall provide the following information on a department-approved form, except paragraph (vii) which shall be provided as a separate attachment:

(i) proposed volume of each product to be used in hydraulic fracturing;

(ii) identification of each additive proposed for use, listed by product name and a brief description of its function,;

(iii) a Safety Data Sheet or Material Safety Data Sheet, as appropriate, for each product to be used if the current version is not already on file with the department;

(iv) proposed percent by weight of base fluid, each additive and proppants, if used;

(v) identification of all chemical constituents, by chemical names and associated CAS Numbers, to be intentionally added to the base fluid (which may be submitted in a format that does or does not correlate the chemical constituents to the respective products);

(vi) the proposed actual or maximum concentration of each chemical constituent intentionally added to the base fluid, expressed as a percent by mass of the total volume of hydraulic fracturing fluid to be used;

(vii) identification of the proposed hydraulic fracturing service company; and

(viii) documentation, to the department's satisfaction, utilizing existing data and studies, that proposed additives exhibit reduced aquatic toxicity and pose at least as low a potential risk to water resources and the environment as all known available alternatives; or documentation, to the department's

satisfaction, that available alternative products are not effective in achieving the desired results or economically feasible. The owner or operator must use proposed additives that satisfy the foregoing requirement.

(2) The department will disclose to the public the information submitted pursuant to paragraph (1) of this subdivision except that owner or operators or other persons who supply information subject to paragraph (1) of this subdivision may request such records to be exempt from disclosure as trade secret as provided by Part 616 of this Title. Records determined by the department to be exempt from disclosure shall not be considered a well record for purposes of disclosure.

(3) To the extent that information considered trade secret has already been submitted to the department, whether in connection with a prior application for a permit to drill, deepen, plug back or convert, or otherwise, the prior submission may be referenced in the information submitted pursuant to paragraph (1) of this subdivision, in lieu of submitting duplicative trade secret information.

(4) Sharing of information among well owners, operators, service companies and chemical suppliers. Each involved well owner, operator, service company and/or chemical supplier shall supply accurate information to the entity submitting information pursuant to paragraph (1) of this subdivision to facilitate compliance with paragraph (1) of this subdivision. Nothing herein shall preclude agreements between or among the well owner, operator, service company and/or chemical supplier to preserve the confidentiality of information that is required to be submitted to the department. Nothing herein shall require the well owner, operator, service company and/or chemical supplier to disclose trade secret information to one another, as such information can be disclosed directly to the department, on the department-approved form, by any of the entities.

(e) Application procedures. The review process for applications for a permit to drill, deepen, plug back or convert that propose well stimulation using high-volume hydraulic fracturing under this Part is as follows:

(1) An application for a permit under this Part shall be made in a format and on forms prescribed by the department.

(2) The department shall determine whether the application is functionally complete for purposes of department review within 10 business days after it is submitted to the department. The department shall inform the applicant of any deficiencies.

(3) The department shall provide or cause to be provided the applicant's name, well name and number, and location coordinates of the well to the supervisor of the town or the mayor of the village or city, as the case may be, or any other point of contact designated, in a manner prescribed by the department, by the municipal governing board to the department for receipt of applications under this Part.

(4) Where a well pad is proposed within one mile of the territory of an Indian Nation, the department shall provide that nation with the applicant's name, well name and number, and location coordinates of the well for the purpose of initiating consultation.

(5) There shall be a public notice period on the draft permit of fifteen days from the date that the notice of availability of the draft permit is published in the Environmental Notice Bulletin. In conjunction with such notice, the department shall publish or cause to be published a copy of the draft well permit on a publicly available website. The department will only consider comments on local and site-specific issues that have not been addressed in the Final Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program (1992) or in any final supplemental generic environmental impact statement accepted by the Department pursuant to Article 8 of the Environmental Conservation Law and Part 617 of this Title.

(6) The department shall mail or electronically provide to the applicant or its designated agent the decision on an application after the close of the public notice period.

(7) Unless otherwise required by law, applications for the permitting of additional wells on a well pad associated with any well that has already been granted a permit pursuant to this Part shall not be subject to the public notice or comment period provided for under this section.

(8) If the application requires preparation of a supplemental environmental impact statement, timeframes shall be governed by Part 617 of this Title.

(9) If an application under this Part requires more than one permit from the department, the applicant must simultaneously submit all the necessary applications to the department or demonstrate to the department's satisfaction that there is good cause not to do so.

(10) Pursuant to section 621.3(c) of this Title, when an application under this Part also requires an individual permit that is subject to the Uniform Procedures Act (Article 70 of the Environmental Conservation Law and its implementing regulations set out in Part 621 of this Title) the department may process all applications under the procedures of the Uniform Procedures Act.

(f) Application fees. The applicant must pay all permit fees required under the Environmental Conservation Law. The applicant must also pay any costs assessed by the department pursuant to section 8-0109(7) of the Environmental Conservation Law and its implementing regulations set out at sections 617.13 and 618.1 of this Title. The department will not be required to issue a decision on an application, nor will a permit be deemed issued, until the applicant has posted any financial security required and paid all fees or costs assessed by the department.

#### 560.4 Setbacks

(a) No well pad or portion of a well pad may be located:

(1) within 500 feet from a residential water well, domestic supply spring or water well or spring used as a water supply for livestock or crops;

(2) within 500 feet from an inhabited dwelling or place of assembly;

(3) within a primary aquifer and a 500-foot buffer from the boundary of a primary aquifer;

(4) within a 100-year floodplain; and

(5) within 2,000 feet of any public water supply (municipal or otherwise, or the boundaries of any public water supply reservoir, natural lake or man-made impoundment (except engineered impoundments constructed for fresh water storage associated with fracturing operations) .

(b) All distances noted above are measured from the closest edge of the well pad.

(c) The department may permit reasonable well location variances to the setback requirements in sections 560.4(a) (1), 560.4(a) (2) and 750-3.3 (a)(6) of this Title. Any such variance to the setback requirement of section 560.4(a) (1) or Section 750-3.3(a)(6) of this Title shall be subject to the written consent of the landowner or landowners whose residential water well, domestic supply spring, or water well or spring used for livestock or crops is located within 500 feet of the proposed well pad. Any variance to the setback requirement of section 560.4(a) (2) of this Part shall be subject to the written consent of the landowner of the inhabited dwelling or place of assembly within 500 feet of a well pad, and, in the case of an inhabited dwelling, the written consent of all tenant(s), if any. The applicant for a variance must show that there are no reasonable allowable alternative locations within the spacing unit where the well pad could be sited consistent with the setback requirements of this section and the well spacing requirements of Part 553 of this Title. In approving a variance, the department shall maximize the separation distance by granting the minimum variance that it deems necessary and adequate. The department shall have the authority to impose such reasonable and necessary

conditions to minimize any adverse impact on the water supplies, inhabited dwellings or places of assembly within 500 feet of the well pad.

#### 560.5 Testing, Recordkeeping and Reporting Requirements

(a) An emergency response plan containing elements specified by the department must be prepared by the owner or operator and kept on-site during any well operation from well spud through well completion. The well's name and number, its location in decimal latitude and longitude in North American Datum 83, the location of the access road entrance in decimal latitude and longitude in North American Datum 83 and a list of emergency contact numbers for the area in which the well site is located must be included in the emergency response plan, and such information must be prominently displayed on a weatherproof sign at the well site during operations covered by the department-issued permit to drill, deepen, plug back or convert. A copy of the emergency response plan must be provided to the department at least three days prior to well spud.

(b) The relevant county emergency management office must be notified by the owner or operator of the well's name and number, its API Number, its location in decimal latitude and longitude in North American Datum 83, and the location of the access road entrance in decimal latitude and decimal longitude in North American Datum 83, prior to spudding the well, at the first occurrence of flaring while drilling, prior to pumping the first stage into the well to conduct high-volume hydraulic fracturing, and prior to the first occurrence of flaring for well clean-up. A record of the type, date and time of any notification provided to the county emergency management office must be maintained by the owner or operator and made available to the department upon request for a period up to and including five years after the well is permanently plugged and abandoned consistent with Part 555 of this Title. For multi-well pads, the five-year term specified in this paragraph shall begin after the last well subject to Part 552 of this Title is permanently plugged and abandoned pursuant to a plugging permit issued by the department.

(c) Any non-routine incident of potential environmental and/or public safety significance during access road and well pad construction, well drilling and stimulation, well production, and well plugging that may affect the health, safety, welfare, or property of any person must be verbally reported to the department within two hours of the incident's known occurrence or discovery, with a written report detailing the non-routine incident to follow within twenty-four hours of the incident's known occurrence or discovery. Non-routine incidents of potential environmental and/or public safety significance may include, but are not limited to: casing, drill pipe or hydraulic fracturing equipment failures, cement failures, fishing jobs, fires, seepages, blowouts, surface chemical spills, observed leaks in surface equipment, observed pit liner failure, surface effects at previously plugged or other wells, observed effects at water wells or at the surface, complaints of water well contamination, anomalous pressure and/or flow conditions indicated or occurring during hydraulic fracturing operations, or other potentially polluting non-routine incident or incident that may affect the health, safety, welfare, or property of any person. Provided the environment and public safety would not be further endangered, any action and/or condition known or suspected of causing and/or contributing to a non-routine incident must cease immediately upon known occurrence or discovery of the incident, and appropriate initial remedial actions commenced. The required written non-routine incident report noted above must provide details of the incident and include, as necessary, a proposed remedial plan for department review and approval. In the case of suspended hydraulic fracturing pumping operations and non-routine incident reporting of such, the owner or operator must receive department approval prior to recommencing hydraulic fracturing activities in the same well. The department may issue an order to take appropriate actions consistent with this subdivision, including an order to cease all activities.

(d) Water well and spring testing:

(1) prior to site disturbance for a new pad or a new well spud for an existing pad, the owner or operator must make all reasonable attempts, with the landowner's permission, to sample and test, at the owner's or

operator's expense, all residential water wells, domestic supply springs, and water wells and springs that are used as water supply for livestock or crops, that are within 1,000 feet of the well pad for the parameters specified by the department, which at a minimum include barium, chloride, conductivity, gross alpha/beta, iron, manganese, dissolved methane and ethane, pH, sodium, static water level (when possible), total dissolved solids (TDS), and volatile organic compounds (VOCs), specifically BTEX. If no wells or springs are available for sampling within 1,000 feet of the well pad, either because there are none of record or because any landowners within 1,000 feet of the well pad deny the owner or operator permission to sample their wells or springs, then the owner or operator must make all reasonable attempts, with the landowner's permission, to sample and test such water wells and springs within 2,000 feet for the parameters specified by the department. The landowner of any water well or spring tested must be provided with a copy of the test results within 30 days of the owner's or operator's receipt of the results.

(2) the owner or operator must sample and test residential water wells and springs in the same manner as provided in paragraph (1) of this subdivision, at other intervals specified by the department after the well reaches total measured depth specified on an application for a permit to drill. Any and all significant deviation(s) from the baseline compositions must be reported to the Department within 5 business days of determining any such deviation.

(3) copies of test results and documentation related to delivery or attempted delivery of test results to the owners of water wells or springs must be submitted to the New York State Department of Health within 45 days of the owner or operator's receipt of the results, and must be made available to the department upon department request. Such records must be maintained and available to the department for a period up to and including five years after the well is permanently plugged and abandoned consistent with Part 555 of this Title. For multi-well pads, the five-year term specified in this paragraph shall begin after the last well subject to

Part 552 of this Title is permanently plugged and abandoned pursuant to a plugging permit issued by the department.

(e) The results of blowout preventer testing required by paragraph 560.3(a)(15) of this Part must be available to the department at the well site during the corresponding operation, and to the department upon request at any time during the period up to and including five years after the well is permanently plugged and abandoned consistent with Part 555 of this Title. For multi-well pads, the five-year term specified in this paragraph shall begin after the last well subject to Part 552 of this Title is permanently plugged and abandoned pursuant to a plugging permit issued by the department. The record for each pressure test, at a minimum, must identify the equipment or casing being tested, the date of the test, the minimum and maximum test pressures in pounds per square inch gage, the test medium (e.g., water, brine, mud, air, nitrogen) and its density, test duration, and the results of the test including any pressure drop;

(f) A Drilling and Production Waste Tracking Form must be completed and such completed forms shall be retained for three years by the owner or operator, transporter and destination facility for any used drilling mud, flowback water, production brine and drill cuttings removed from the well site and must be made available to the department upon request during this period. For any such waste disposed instead of recycled or reused, the owner or operator must make the completed Drilling and Production Waste Tracking Form available to the public on the owner's or operator's publically available website within 30 days of receipt of the waste by the disposal facility. Upon department request, the owner or operator shall be responsible for obtaining and providing to the department a copy of any completed Drilling and Production Waste Tracking Form with the signatures of the transporter and destination facility for any such waste removed from a well site covered by a permit to drill issued to the owner or operator pursuant to Part 552 of this Title.

(g) If any fluid or other waste material is moved off site by pipeline or other piping, the owner or operator must maintain a record of the date and time the fluid or other material left the site, the quantity of fluid or other material, and its intended disposition and use at that destination or receiving facility.

(h) Hydraulic Fracturing Fluid Disclosure Following Well Completion:

(1) Concurrent with the filing of the Well Drilling and Completion Report required under Section 554.7 of this Title or the follow-up report to a Sundry Well Notice and Report form required under section 554.6 of this Title, the well owner or operator, directly or through a service company and/or chemical supplier(s), shall provide the following information to the department on a department-approved form:

(i) owner or operator name;

(ii) well name and number, and API number;

(iii) county in which the well is located;

(iv) the longitude and latitude of the wellhead;

(v) the true vertical depth of the well;

(vi) the date of the hydraulic fracturing treatment;

(vii) the total volume of the water-based fluid used in the hydraulic fracturing treatment of the well;

(viii) identification of each additive, listed by product name, intentionally added to the base fluid and a brief description of its function;

(ix) identification of all chemical constituents, by chemical names and associated CAS Numbers, intentionally added to the base fluid (which may be submitted in a format that does or does not correlate the chemical constituents to the respective products);

(x) the actual or maximum concentration, in percent by mass, of each chemical constituent intentionally added to the base fluid.

(2) The department will disclose to the public the information submitted pursuant to paragraph (1) of this subdivision except that the owner or operator or other persons who supply information subject to paragraphs (ix) and/or (x) may request that the information be exempt from disclosure as trade secret as provided by Part 616 of this Title. Records determined by the department to be exempt from disclosure shall not be considered a well record for the purposes of disclosure.

(3) To the extent that information asserted by the owner or operator or other persons who supply information to be trade secret has already been submitted to the department, whether in connection with a prior application for permit to drill, deepen, plug back or convert, or otherwise, the prior submission may be referenced in the information submitted pursuant to paragraph (1) of this subdivision, in lieu of submitting duplicative trade secret information.

(4) Concurrent with the filing of the hydraulic fracturing fluid information pursuant to paragraph (1) of this subdivision, the well owner or operator, directly or through a service company and/or chemical supplier(s), shall provide to the chemical disclosure registry, on the chemical disclosure registry form, all of the information required pursuant to paragraph (1) of this subdivision, with the exception of information asserted by the owner or operator or other persons who supply information to be trade secret and therefore requested to be exempt from disclosure pursuant to paragraph (2) of this subdivision. Trade secret information is not required to be disclosed to the chemical registry disclosure.

(i) If the specific identity of a chemical constituent and/or the concentration of a chemical constituent are asserted by the owner or operator or other persons who supply information to be trade secret, the owner or operator or other persons who supply information to the chemical disclosure registry must indicate this on the chemical disclosure registry form.

(ii) If the specific identity of a chemical constituent is asserted by the owner or operator or other persons who supply information to be trade secret, the chemical family or other similar descriptor associated with the chemical constituent must be provided on the chemical disclosure registry form.

(5) Sharing of information among well owner, operator, service company and/or chemical suppliers. Each involved well owner, operator, service company and/or chemical supplier shall supply accurate information to the entity submitting information pursuant to paragraph (1) of this subdivision to facilitate compliance with paragraph (1) of this subdivision. Nothing herein shall preclude agreements between or among the well owner, operator, service company and/or chemical supplier to preserve the confidentiality of information that is required to be submitted to the department. Nothing herein shall require the well owner, operator, service company and/or chemical supplier to disclose trade secret information to one another, as such information can be disclosed directly to the department, on the department-approved form, by any of the entities.

## 560.6 Well Construction and Operation

### (a) Site Preparation

(1) Unless otherwise required by private lease agreement and in consideration of avoiding bisection of agricultural fields, any new access road must be located as far as practical from water resources, inhabited private dwellings and places of assembly.

(2) Unless otherwise approved or directed by the department, all topsoil stripped to facilitate the construction of the well pad and access road(s) must be stockpiled, stabilized and remain on site for use in either partial or final reclamation.

(3) Piping, conveyances, valves and tanks in contact with flowback water must be constructed of materials compatible with flowback water.

(4) Any reserve pit, drilling pit or mud pit on the well pad must be maintained in a leak-free condition, and such pits which will be used for more than one well must be constructed as follows:

(i) total pit volume may not exceed 250,000 gallons, or 500,000 gallons for multiple pits on one tract or an adjacent or related tract of land under common ownership or control;

(ii) pit sidewalls and bottoms must be adequately cushioned and free of objects capable of puncturing or ripping the liner;

(iii) pits constructed in unconsolidated sediments must have beveled walls (45 degrees or less);

(iv) the pit liner must be sized and placed with sufficient slack to accommodate stretching;

(v) liner thickness must be at least 30 mils and be compatible with the drilling muds and well fluids;

(vi) seams must be factory installed or field seamed in accordance with the manufacturer's specifications.

(b) Site Maintenance

(1) For any well:

(i) secondary containment is required for all fueling tanks placed on-site;

(ii) fueling tanks must not be placed within 500 feet of a perennial or intermittent stream, storm drain, regulated wetland, lake or pond;

(iii) fueling tank filling operations must be supervised at the fueling truck and at the tank if the tank is not visible to the fueling operator from the truck; and

(iv) troughs, drip pads or drip pans are required beneath the fill port of a fueling tank during filling operations if the fill port is not within the secondary containment required by subparagraph (i) of this subdivision.

(2) Except for freshwater storage, fluids must be removed from any on-site pit prior to any 45-day gap in use and the pit must be inspected by the department prior to resuming use.

(c) Drilling, Hydraulic Fracturing and Flowback

(1) The owner or operator must provide the drilling company with a well prognosis indicating anticipated formation top depths with appropriate warning comments prior to well spud. The prognosis must be reviewed by all crew members and posted in a prominent location in the doghouse. The owner or operator must revise the prognosis and inform the drilling company in a timely manner if drilling reveals significant variation between the anticipated and actual geology and/or formation pressures.

(2) Individual crew member responsibilities for blowout control must be posted in the doghouse or other appropriate location and each crew member must be made aware of such responsibilities prior to spud of any well being drilled or when another rig is moved on a previously spudded well and prior to the commencement of completion work by any rig, snubbing unit or coiled tubing unit.

(i) During all drilling and completion operations when a blowout preventer is installed, tested or in use, the owner or operator or its designated representative must be present at the well site and such person or personnel must have a current well control certification from an accredited training program that is acceptable to the department. Documentation of such certification must be available at the well site during such operations and provided to the department upon request.

(ii) Appropriate pressure control procedures and equipment in proper working order must be properly installed and employed while conducting drilling and completion operations including tripping, logging, running casing into the well, and drilling out solid-core stage plugs. Unless otherwise

approved by the department, a snubbing unit or coiled tubing unit with a blowout preventer must be used to enter any well with pressure or to drill out one or more solid-core stage plugs.

(3) As specified on a permit to drill, deepen, plug back and convert or approval for the Sundry Well Notice and Report form, the department must be notified prior to testing of the blowout preventer and related equipment. Pressure testing of the blowout preventer and related equipment for any drilling or completion operation must be performed in accordance with the approved blowout preventer use and test plan required by section 560.3 of this Part, and any deviation from the approved plan must be approved by the department. Testing must be conducted in accordance with industry standards or other procedures approved by the department. Unless otherwise approved by the department, the blowout preventer use and test plan must meet the following requirements:

(i) A well control barrier policy shall be developed by the owner or operator that identifies acceptable barriers to be used during identified operations. Such policy must employ, at a minimum, two mechanical barriers capable of being tested when conducting any drilling or completion operation below the surface casing. In no event shall a stripper rubber or a stripper head be considered an acceptable barrier.

(ii) Testing of the blowout preventer shall include testing after the blowout preventer is installed on the well but prior to drilling below the last cemented casing seat. Pressure control equipment, including the blowout preventer, that fails any pressure test must not be used until it is repaired and passes the pressure test.

(iii) A remote blowout preventer actuator, which is powered by a source other than rig hydraulics, shall be located at least 50 feet from the wellhead. All lines, valves and fittings between the blowout preventer and the remote actuator and any other actuator must be flame resistant and have an appropriate rated working pressure.

(4) In accordance with subdivision (b) of section 554.7 of this Title, all freshwater, brine, oil and gas shows must be documented on the department's Well Drilling and Completion Report. This includes all naturally occurring methane shows in the conductor hole, if drilled, and the surface hole. In the event hydrogen sulfide is encountered in any portion of the well, all activities must be conducted by the owner or operator in conformance with industry standards for drilling of wells where hydrogen sulfide is present.

(5) The intentional annular disposal of drill cuttings or fluid is prohibited.

(6) All fluids must be contained on the site until properly removed in compliance with the fluid disposal plan approved in accordance with section 554.1 of this Title.

(7) A closed-loop tank system must be used instead of a reserve pit to manage drilling fluids and cuttings for any of the following:

(i) horizontal drilling in the Marcellus Shale unless an acid rock drainage mitigation plan for on-site burial of such cuttings is approved by the department; and

(ii) any drilling requiring cuttings to be disposed of off-site.

(8) Cuttings may be removed from the site in the primary capture container (e.g., tank or bin) or transferred on-site via a transfer area to a secondary container or truck (or other transport vehicle) for off-site disposal or disposition. If a cuttings transfer area is employed, it must be lined with a material acceptable to the department. Transfer of cuttings to an on-site stock pile is prohibited, regardless of any liner under the stock pile. Offsite transport of all cuttings must be undertaken by a waste transporter pursuant to a permit issued pursuant to Part 364 of this Title.

(9) Only biocides registered for use in New York may be used for any operation at the well site. Products must be properly labeled, and the label must be kept on-site during application and storage.

(10) With respect to all surface, intermediate and production casing run in the well, and in addition to the department's casing and cementing requirements and any approved centralizer plan for intermediate casing, the following shall apply:

(i) all casings must be new and conform to specifications identified in the permit to drill, deepen, plug back or convert;

(ii) welded connections are prohibited;

(iii) casing thread compound and its use must conform to specifications identified in the permit to drill, deepen, plug back or convert;

(iv) in addition to centralizers otherwise required by the department except for production casing, at least two centralizers, one in the middle and one at the top of the first joint of casing run in the hole, must be installed and all bow-spring style centralizers used must conform to the specifications identified in the permit to drill, deepen, plug back or convert;

(v) cement must conform to specifications identified in the permit to drill, deepen, plug back or convert and the cement slurry must be prepared to minimize its free water content in accordance with specifications approved by the department, and contain a gas-block additive or, as approved by the department, be a cement blend that is functionally equivalent;

(vi) prior to cementing any casing string, the borehole must be circulated and conditioned to ensure an adequate cement bond;

(vii) a spacer of adequate volume, makeup and consistency must be pumped ahead of the cement;

(viii) the cement must be pumped at a rate and in a flow regime that inhibits channeling of the cement in the annulus;

(ix) after the cement is pumped, the owner or operator must wait on cement (WOC) until the cement achieves a calculated (e.g., performance chart) compressive strength of at least 500 pounds per square inch gage (psig), and a minimum WOC time of 8 hours before the casing is disturbed in any way, including installation of a blowout preventer or a rig skid. The owner or operator may request a waiver from the department from the required WOC time if the owner or operator has bench tested the actual cement batch and blend using mix water from the actual source for the job, and determined that 8 hours is not required to reach a compressive strength of 500 psig; and

(x) a copy of the cement job log for any cemented casing string in the well must be available to the department at the well site during drilling operations, and thereafter available to the department upon request. The owner or operator must provide such log to the department upon request at any time during the period up to and including five years after the well is permanently plugged and abandoned consistent with Part 555 of this Title. For multi-well pads, the five-year term specified in this paragraph shall begin after the last well subject to Part 552 of this Title is permanently plugged and abandoned pursuant to a plugging permit issued by the department.

(11) The surface casing must be run and cemented as soon as practicable after the hole has been adequately circulated and conditioned. For environmental and/or public safety reasons, the department may require that the owner or operator run a radial cement bond evaluation log or other evaluation approved by the department to verify the cement bond on the surface casing. Surface casing must be set a minimum of 75 feet below the base of potable fresh water, or 75 feet into competent bedrock, whichever is deeper. The base of potable fresh water shall be determined and addressed as follows:

(i) For the first well on the pad or for a single well, the best available information (e.g., oil/gas well records, water well information, and pertinent local studies) must be used. Information gathered

from the first well on the pad or from a single well will be used to confirm and or/refine the drilling, casing and cementing program for subsequent wells on the pad or future nearby wells;

(ii) After the surface casing is run and cemented, the drilled intermediate hole up to and including the surface casing seat will be geophysically logged to determine the possible existence of any potable freshwater zones. Lack of such zones would confirm that all potable freshwater zones are behind the surface casing; and

(iii) For a well where potable fresh water is found below the surface casing seat, an external casing packer must be used on the intermediate string or other means approved by the Department must be used to permanently isolate the potable freshwater zone from deeper, poor-quality water and/or gas-bearing zones.

(iv) In lieu of the procedure set forth in (i) through (iii) above, an owner or operator may propose, for department approval, to geophysically log the uncased surface hole to determine the base of potable fresh water. The proposal must be based on best available information regarding shallow geology including water and gas zones as well as anticipated surface-hole stability.

(12) As specified on a permit to drill, deepen, plug back and convert, the department must be notified prior to surface casing cementing operations. Surface casing must be fully cemented to surface with excess cement as follows. Cementing must be by the pump and plug method with a minimum of 25 percent excess cement with appropriate lost circulation material, unless another amount of excess cement is approved by the department.

(13) Intermediate casing must be installed in the well and run to the surface. The setting depth and design of the casing must be determined by taking into account all applicable drilling, geologic and well control factors. Additionally, the setting depth must consider cementing requirements for the intermediate casing and the production casing. Any request to waive the intermediate casing requirement must be made in

writing with supporting documentation and is subject to the department's approval. Information gathered from operations conducted on any single well or the first well drilled on a multi-well pad may be considered by the department upon a request for a waiver of the intermediate casing requirement on subsequent wells in the vicinity of the single well or subsequent wells on the same multi-well pad.

(14) As specified on a permit to drill, deepen, plug back and convert, the department must be notified prior to intermediate casing cementing operations. Intermediate casing must be fully cemented to surface with excess cement as follows. Cementing must be by the pump and plug method with a minimum of 25 percent excess cement unless a caliper log or other department-approved method is performed, in which case 10 percent excess will suffice.

(15) The owner or operator must run a radial cement bond evaluation log or other evaluation approved by the department to verify the cement bond on the intermediate casing. Remedial cementing is required if the cement bond is not adequate for drilling ahead (i.e., diversion or shut-in for well control).

(16) Production casing must be installed in the well and run to the surface. If installation of the intermediate casing is waived by the department, then production casing must be fully cemented to surface. If intermediate casing is installed, the production casing cement must be tied into the intermediate casing string with at least 500 feet of cement above the intermediate casing seat measured using true vertical depth. Any request to waive any of the cementing requirements of this paragraph must be made in writing with supporting documentation, and must be approved by the department. The department will only consider a request for a waiver if the open-hole wireline logs including a narrative analysis of such and all other information collected during drilling from the same well pad or offsetting wells verify that migration of oil, gas or other fluids from one pool or stratum to another will otherwise be prevented.

(17) The owner or operator must run a radial cement bond evaluation log or other evaluation approved by the department to verify the cement bond on the production casing. Remedial cementing is required if the cement bond is not adequate to effectively isolate hydraulic fracturing operations.

(18) The installation of an additional cemented casing string(s) and/or liner(s), or both, in the well, as deemed necessary by the department for environmental and/or public safety reasons, may be required at any time.

(19) Under no circumstances should the annulus between the surface casing and the next casing string be shut-in, except during a pressure test.

(20) If hydraulic fracturing operations are performed down casing, prior to introducing hydraulic fracturing fluid into the well, the casing extending from the surface of the well to the top of the treatment interval must be tested with fresh water, mud or brine to at least the maximum anticipated treatment pressure for at least 30 minutes with less than a 10 percent pressure loss. This pressure test may not commence for at least 7 days after the primary cementing operations are completed on this casing string. A record of the pressure test must be maintained by the owner or operator and made available to the department upon request. The actual hydraulic fracturing treatment pressure must not exceed the test pressure at any time during hydraulic fracturing operations.

(21) Prior to commencing hydraulic fracturing and pumping of hydraulic fracturing fluid, the injection lines and manifold, associated valves, fracture head or tree and any other wellhead component or connection not previously tested must be tested with fresh water, mud or brine to at least the maximum anticipated treatment pressure for at least 30 minutes with less than a 10 percent pressure loss. A record of the pressure test must be maintained by the owner or operator and made available to the department upon request. The actual hydraulic fracturing treatment pressure must not exceed the test pressure at any time during hydraulic fracturing operations.

(22) The owner or operator must record the depths and estimated flow rates where fresh water, brine, oil and/or gas were encountered or circulation was lost during drilling operations. This information and the department's Pre-Frac Checklist and Certification form including a treatment plan, must be submitted to and received by the department at least 3 days prior to commencement of high-volume hydraulic fracturing operations. The treatment plan must include a profile showing anticipated pressures and volumes of fluid for pumping the first stage. It must also include a description of the planned treatment interval for the well (i.e., top and bottom of perforations expressed in both True Vertical Depth and True Measured Depth).

(23) Hydraulic fracturing products other than those identified in the well permit application materials may not be used without specific approval from the department.

(24) Diesel fuel may not be used as the base fluid for hydraulic fracturing operations.

(25) The owner or operator may conduct hydraulic fracturing operations on the applicable well provided that notification to the department has been satisfied by submission of a completed and fully affirmed Pre-Frac Checklist and Certification at least three days prior to the commencement of pumping the first stage into the well to conduct hydraulic fracturing; and the relevant emergency management office is notified prior to the commencement of pumping the first stage into the well to conduct hydraulic fracturing.

(26) Hydraulic fracturing operations must be conducted as follows:

(i) secondary containment for fracturing additive containers and additive staging areas, and flowback tanks is required. Secondary containment measures may include, as deemed appropriate by the department, one or a combination of the following: dikes, liners, pads, impoundments, curbs, sumps or other structures or equipment capable of containing the substance. Any such secondary containment must be watertight and sufficient to contain 110 percent of the total capacity of the single largest container or tank within a common containment area. No more than one hour before initiating any hydraulic fracturing stage, all secondary containment must be visually inspected to ensure all structures and equipment are in place and in

proper working order. The results of this inspection must be recorded and documented by the owner or operator, and available to the department upon request;

(ii) at least two vacuum trucks, each with a capacity identified in the permit to drill, deepen, plug back or convert, must be on standby at the well site during the pumping of hydraulic fracturing fluid and during flowback;

(iii) hydraulic fracturing additives must be removed from the site if the site will be unattended;

(iv) any hydraulic fracturing string, if used, must be either strung into a production liner or run with a packer set at least 100 feet below the deepest cement top. An adequately sized, function-tested relief valve and an adequately sized diversion line must be installed and used to divert flow from the hydraulic fracturing string-casing annulus to a covered watertight steel tank or covered watertight tank made of another material approved by the department in case of hydraulic fracturing string failure. The relief valve must be set to limit the annular pressure to no more than 95 percent of the working pressure rating of the casings forming the annulus. The annulus between the hydraulic fracturing string and casing must be pressurized to at least 250 psig and monitored;

(v) the pressure exerted on treating equipment including valves, lines, manifolds, hydraulic fracturing head or tree, casing and hydraulic fracturing string, if used, must not exceed 95% of the working pressure rating of the weakest component;

(vi) the hydraulic fracturing treatment pressure must not exceed the test pressure of any given component at any time during hydraulic fracturing operations;

(vii) all annuli available at the surface must be continuously monitored in order to detect pressure or flow, and the records of such monitoring maintained by the owner or operator and made available to the department upon request; and

(viii) hydraulic fracturing pumping operations must be immediately suspended if any anomalous pressure and/or flow condition is indicated or occurring which is a significant deviation from either the treatment plan (i.e., profile showing anticipated pressures and volume of fluid for pumping the first stage) provided to the department with the Pre-Frac Checklist and Certification or any other anticipated pressure and/or flow condition. Suspension of operations due to an anomalous pressure and/or flow condition is considered a non-routine incident which must be reported to the department in accordance with section 560.5 of this Part. In the case of suspended hydraulic fracturing pumping operations and non-routine incident reporting of such, the owner or operator must receive department approval prior to recommencing hydraulic fracturing activities in the same well.

(ix) The owner or operator must make and maintain a complete record of its hydraulic fracturing operation, including during flowback, and provide such record to the department upon request at any time during the period up to and including five years after the well is permanently plugged and abandoned consistent with Part 555 of this Title. For multi-well pads, the five-year term specified in this paragraph shall begin after the last well subject to Part 552 of this Title is permanently plugged and abandoned pursuant to a plugging permit issued by the department. The record for each well must include pressure tests of hydraulic fracturing treating equipment, wellhead components and casings, all types and volumes of materials, including additives, listed by product name, pumped into the well, flowback rates, and the daily and total volumes of fluid recovered during the first thirty days of flow from the well, with rates and volumes expressed in units specified by the department. The record must also include a complete description of pressures exhibited throughout the hydraulic fracturing operation and associated pressure recordings, charts and/or pressure profile. A synopsis of the hydraulic fracturing operation must be provided in the appropriate section of the department's Well Drilling and Completion Report, which must be provided to the department within 30 days after completing the well in accordance with section 554.7 of this Title.

(27) Flowback water is prohibited from being directed to or stored in any on-site pit or impoundment. Covered watertight steel tanks or covered watertight tanks constructed of another material approved by the department are required for flowback handling and containment on the well pad. Flowback water tanks, piping and conveyances, including valves, must be of sufficient pressure rating and be maintained in a leak-free condition. Fluid transfer operations from flowback water tanks to tanker trucks must be supervised at the truck and at the tank if the tank is not visible to the truck operator from the truck. Additionally, during transfer operations, all interconnecting piping must be supervised if not visible to transfer personnel at the truck and tank.

(28) The venting of any gas originating from the objective formation during flowback must be through a flare stack at least 30 feet in height, unless the absence of H<sub>2</sub>S has been demonstrated at a previous well on the same pad which was completed in the same producing horizon. Gas vented through the flare stack must be ignited whenever possible. The stack must be equipped with a self-ignition device.

(29) A reduced emissions completion, with minimal venting and flaring (if any), must be performed whenever gas is capable of being transported or marketed by connection of an available commercial sales line, interconnecting gathering line and any necessary compressor station.

#### 560.7 Waste Management and Reclamation

(a) Fluids must be removed from any on-site pit and the pit reclaimed no later than 45 days after completion of drilling and stimulation operations at the last well on the pad, unless the department grants an extension pursuant to paragraph 554.1(c)(3) of this Title. Flowback water must be removed from on-site tanks within the same time frame.

(b) Removed pit fluids including used drilling mud must be disposed, recycled or reused as described in the approved fluid disposal plan submitted pursuant to paragraph 554.1(c)(1) of this Title. Transport off-site of

used drilling mud, flowback water and production brine by vehicle must be undertaken by a waste transporter permitted pursuant to Part 364 of this Title.

(c) Drill cuttings must be disposed as described in the approved drill cuttings disposal plan submitted pursuant to paragraph 554.1(c)(4) of this Title. Cuttings contaminated with oil-based mud or polymer-based mud containing mineral oil lubricant must be contained and managed in a closed-loop tank system and may not be buried on site, and must be removed from the site for disposal in a solid waste disposal facility. Transport off-site of drill cuttings, except cutting samples collected upon the request of the department or for analytical purposes by the owner or operator, and the pit liner by vehicle must be undertaken by a waste transporter permitted pursuant to Part 364 of this Title. Disposal or on-site burial of cuttings associated with other drilling fluids and any associated pit liner must conform to all applicable department regulations.

(d) The pit liner must be ripped and perforated prior to any department-approved burial on-site and to the extent practical, excess pit liner material must be removed and disposed of properly.

(e) Permission of the surface owner is required for any department-approved on-site burial of cuttings and pit liner, regardless of type of drilling proposed for use, listed by fluids used.

(f) Burial of any other solid waste on-site is specifically prohibited and all such waste must be removed from the site and disposed of properly.

(g) A site-specific acid rock drainage mitigation plan must be prepared by the owner or operator, approved by the department and followed for on-site burial of cuttings from any horizontal drilling in the Marcellus if the owner or operator elects to bury these cuttings. The approved plan must be available on-site to a department inspector while activities addressed by the plan are taking place.

(h) Unless otherwise approved by the department, well pads and access roads constructed for drilling and production operations must be scarified or ripped to alleviate compaction prior to replacement of topsoil.

Reclaimed areas must be seeded and mulched after topsoil replacement. Any proposal by the owner or operator to waive these reclamation requirements must be accompanied by documentation of the landowner's consent.

(i) Flowback water recovered after high-volume hydraulic fracturing operations must be tested for naturally occurring radioactive material prior to removal from the site. Fluids recovered during the production phase (i.e., production brine) must also be tested for naturally occurring radioactive material prior to removal. Radiological analyses of flowback water and production brine must include analysis for combined radium (Ra-226 and Ra-228) and other analytes as directed by the department. The soils adjacent to the flowback water and production brine tanks must be measured for radioactivity upon removal of the tanks, and at such other times as the department may require. For soil samples, analyses must at a minimum include gamma spectroscopy for all naturally occurring gamma emitters including Ra-226 and Ra-228 (as determined from the presence of their decay products).

(j) Production brine is prohibited from being directed to or stored in any on-site pit or freshwater impoundment. Covered watertight steel, fiberglass or plastic tanks, or covered watertight tanks constructed of another material approved by the department, are required for production brine handling and containment on the well pad. Production brine tanks, piping and conveyances, including valves, must be constructed of suitable materials, be of sufficient pressure rating and be maintained in a leak-free condition.

(k) Radiation surveys of the well head, piping, and flowback water and production brine tanks must be performed using instrumentation, and on a schedule, prescribed by the department.

(l) Partial reclamation and final reclamation of any well pad and access road must be performed in conformance with plans approved by the department.