20 AAC 25.005. Permit to drill. (a) Before drilling or redrilling a well or re-entering an abandoned well, a person shall submit and obtain the commission's approval of an application for a Permit to Drill (Form 10-401). If, after drilling a well, a person wishes immediately to redrill below the structural or conductor casing to a new bottom-hole location not requiring a spacing exception under 20 AAC 25.055, the person may request oral approval from the commission to avoid interruption of operations. If oral approval is obtained, the name of the representative of the commission who provided oral approval and the date of the approval must be included on the application for a Permit to Drill, which must be submitted by the commission's next working day for final approval by the commission.

(b) The commission will classify a well as

(1) exploratory;

(2) development, either oil or gas;

(3) service; or

(4) stratigraphic test.

(c) An application for a Permit to Drill must be accompanied by each of the following items, except for an item already on file with the commission and identified in the application:

(1) a fee of $100 payable to the State of Alaska/AOGCC;

(2) a plat identifying the property and the property's owners and showing

(A) the coordinates of the proposed location of the well at the surface, at the top of each objective formation, and at total depth, referenced to governmental section lines;

(B) the coordinates of the proposed location of the well at the surface, referenced to the state plane coordinate system for this state as maintained by the National Geodetic Survey in the National Oceanic and Atmospheric Administration;

(C) the proposed depth of the well at the top of each objective formation and at total depth; and

(D) other information required by 20 AAC 25.050(b);

(3) a diagram and description of the blowout prevention equipment (BOPE) as required by 20 AAC 25.035, 20 AAC 25.036, or 20 AAC 25.037, as applicable;

(4) information on drilling hazards, including

(A) the maximum downhole pressure that may be encountered, criteria used to determine it, and maximum potential surface pressure based on a pressure gradient to surface of 0.1 psi per foot of true vertical depth, unless the commission approves a different pressure gradient that provides a more accurate means of determining the maximum potential surface pressure;

(B) data on potential gas zones; and

(C) data concerning potential causes of hole problems such as abnormally geo-pressured strata, lost circulation zones, and zones that have a propensity for differential sticking;

(5) a description of the procedure for conducting formation integrity tests, as required under 20 AAC 25.030(f);

(6) a complete proposed casing and cementing program as required by 20 AAC 25.030, and a description of any slotted liner, pre-perforated liner, or screen to be installed;

(7) a diagram and description of the diverter system as required by 20 AAC 25.035, unless this requirement is waived by the commission under 20 AAC 25.035(h)(2);

(8) a drilling fluid program, including a diagram and description of the drilling fluid system, as required by 20 AAC 25.033;

(9) for an exploratory or stratigraphic test well, a tabulation setting out the depths of predicted abnormally geo-pressured strata as required by 20 AAC 25.033(f);

(10) for an exploratory or stratigraphic test well, a seismic refraction or reflection analysis as required by 20 AAC 25.061(a);

(11) for a well drilled from an offshore platform, mobile bottom-founded structure, jack-up rig, or floating drilling vessel, an analysis of seabed conditions as required by 20 AAC 25.061(b);

(12) evidence showing that the requirements of 20 AAC 25.025 have been met;

(13) a copy of the proposed drilling program; **for a well proposed for hydraulic fracturing, the drilling program shall so indicate; a request for approval to perform hydraulic fracturing must be separately made by submitting Form 10-403 (Application for Sundry Approvals) with the information specified at 20 AAC 25.280 and 25.283;**

(14) a general description of how the operator plans to dispose of drilling mud and cuttings and a statement of whether the operator intends to request authorization under 20 AAC 25.080 for an annular disposal operation in the well.

(d) For a well that is to be intentionally deviated, the requirements of 20 AAC 25.050(b) must be met.

(e) Each well branch requires a separate Permit to Drill. If a previously drilled well is proposed to be redrilled below the structural or conductor casing to a new bottom-hole location, the application for a Permit to Drill must be accompanied by all items required under (c) of this section. If concurrent multiple well branches are proposed from a single conductor, surface, or production casing,

(1) the applicant shall designate one well branch as the primary wellbore and include all items required under (c) of this section with the application for a Permit to Drill for that well branch; and

(2) for each other well branch, the application for a Permit to Drill need only include information under (c) of this section that is unique to that well branch and need not be accompanied by the $100 fee.

(f) Each well must be identified by a unique name designated by the operator and a unique API number assigned by the commission under 20 AAC 25.040(b). For a well with multiple well branches, each branch must similarly be identified by a unique name and API number by adding a suffix to the name designated for the well by the operator and to the number assigned to the well by the commission.

(g) If drilling operations are not commenced with 24 months after the commission approves an application for a Permit to Drill, the Permit to Drill expires.

(h) A Permit to Drill is not valid at a location where the applicant does not have a right to drill for oil and gas. (Eff. __/__/_____, Register ___; Eff. 4/13/80, Register 74; am 4/2/86, Register 97; am 11/7/99, Register 152; am 6/4/2000, Register 154; am 1/5/2006, Register 177; am 12/28/2006, Register 180)

Authority: AS 31.05.030 AS 31.05.090

20 AAC 25.280. Workover Operations.

(f) an application for Sundry Approvals for a well proposed for stimulation by hydraulic fracturing must also comply with 20 AAC 25.283. History: Eff. 4/2/86, Register 97; am 11/7/99, Register 152; am 12/28/2006, Register 180; Eff. __/__/__, Register ___.

Authority: AS 31.05.030

20 AAC 25.283. Hydraulic Fracturing. (a) Prior to hydraulic fracturing, the operator must submit an Application For Sundry Approvals (Form 10-403) under 20 AAC 25.280. The application shall include;

(1) an affidavit showing that all owners, landowners, surface owners, and operators within one-quarter mile of the wellbore trajectory have been provided a complete copy of the application for hydraulic fracturing;

(2) a plat showing the well location and identifying any water wells located within a one-quarter mile radius of the well's surface location and further identifying any well penetrations (all well types) within one-quarter mile of the proposed wellbore trajectory and fracturing interval and the sources of the information used in identifying such wells;

(3) identification of freshwater aquifers within the one-quarter mile radius;

(4) whether the well is covered by a Freshwater Aquifer Exemption as per 20 AAC 25.440;

(5) water sampling of water wells. Water sampling consists of collection of baseline water data pre-fracture and follow-up water sampling collected at the same location no sooner than 90 days and no later than 120 days after the conclusion of any hydraulic fracturing operations. The sample parameters shall include pH; Alkalinity; Specific conductance; Major cations/anions (bromide, chloride, fluoride, potassium, sulfate, sodium); Total dissolved solids; BTEX/GRO/DRO (Benzene, Toluene, Ethylene, Xylene/Gasoline Range Organics/Diesel Range Organics); TPH (Total Petroleum Hydrocarbons) or Oil and Grease (HEM); PAH's (Polynuclear Aromatic Hydrocarbons including benzo(a)pyrene); Dissolved Methane, Dissolved Ethane, Dissolved Propane; and Metals (arsenic, barium, boron, cadmium, calcium, chromium, iron, magnesium, manganese, selenium). Current applicable EPA-approved sample custody and collection protocols and analytical methods for drinking water must be used and analyses must be performed by laboratories that maintain nationally accredited programs. Copies of all test results, analytical results and sample locations shall be provided to the commission and to the Alaska Department of Environmental Conservation in an electronic data deliverable format within 90 days of collecting the samples;

(6) detailed casing and cementing information;

(7) an assessment of each casing and cementing operation performed to construct or repair the well with sufficient supporting information, including cement evaluation logs and other evaluation logs approved by the commission, to demonstrate that casing is cemented below the base of the lowermost freshwater aquifer and according to 20 AAC 25.030 and that all hydrocarbon zones penetrated by the well are isolated;

(8) pressure test information if available and plans to pressure test the casings and tubing installed in the well;

(9) accurate pressure ratings and schematics for the wellbore, wellhead, BOPE, and treating head;

(10) data for the fracturing zone and confining zones including lithologic description, geological name, thickness and measured depth (MD) and true vertical depth (TVD), and estimated fracture pressures for the fracturing zone and confining zones;

(11) the geologic name and depth (MD and TVD) to the bottom of all freshwater aquifers;

(12) the location, orientation, and a report on the mechanical condition of each well that may transect the confining zones and information sufficient to support a determination that such wells will not interfere with containment of the hydraulic fracturing fluid;

(13) the location, orientation, and geological data of known or suspected faults and fractures that may transect the confining zones, and information sufficient to support a determination that any such faults and fractures will not interfere with containment of the hydraulic fracturing fluid;

(14) a detailed copy of the proposed hydraulic fracturing program by stage including;

(A) the estimated total volumes planned;

(B) the trade name and generic name of the principle fluids to be used;

(C) the estimated amount or volume of the principle fluids to be used including viscosifiers, acids, or gelling agents;

(D) the estimated weight or volume of inert substances, including proppants and other substances injected to aid in well cleanup;

(E) the maximum anticipated treating pressure and information sufficient to support a determination that the well is appropriately constructed for the proposed hydraulic fracturing program; and

(F) the designed height and length of the proposed fracture(s), including the calculated MD and TVD of the top of the fracture(s).

(15) a detailed description of the plan for post fracture wellbore cleanup and fluid recovery through to production operations.

(b) When hydraulic fracturing through production casing or through intermediate casing, the casing must be tested to 110% of the maximum anticipated surface treating pressure. If the casing fails the pressure test it must be repaired or the operator must use a temporary casing string (fracturing string).

(c) When hydraulic fracturing through a fracturing string, the fracturing string must be stung into a liner or run on a packer set not less than 100 ft TVD below the cement top of the production or intermediate casing and tested to not less than 110% of the maximum anticipated treating pressure minus the annulus pressure applied between the fracturing string and the production or intermediate casing.

(d) A pressure relief valve(s) must be installed on the treating lines between pumps and wellhead to limit the line pressure to the test pressure determined in (a)13 (E) of this section; the well must be equipped with a remotely controlled shut-in device unless the operator requests and obtains a waiver from the commission.

(e) The placement of all hydraulic fracturing fluids shall be confined to the approved formations during hydraulic fracturing.

(f) The surface casing valve must remain open while hydraulic fracturing operations are in progress; the annular space between the fracturing string and the intermediate or production casing must be continuously monitored; the pressure in such annular space may not exceed the pressure rating of the lowest rated component that would be exposed to pressure should the fracturing string fail.

(g) During hydraulic fracturing operations, all annulus pressures must be continuously monitored and recorded. If at any time during hydraulic fracturing operations the annulus pressure increases more than 500 psig the operator must notify the commission as soon as practicable, but no later than twenty-four (24) hours following the incident and shall implement corrective action or increased surveillance as the commission requires. Within fifteen (15) days after the occurrence, the operator shall submit a Report of Sundry Well Operations Form 10-404 giving all details, including corrective actions taken.

(h) The operator shall file with the commission, within 30 days after completion of hydraulic fracturing operations, on a Report of Sundry Well Operations (Form 10-404), a complete record of the work performed and the tests conducted, and a summary of daily well operations as described in 20 AAC 25.070(3). The operator shall also file with the commission a copy of the daily record required by 20 AAC 25.070(1), for each hydraulic fracturing interval. The information will include;

(1) a description of the actual treated interval including measured and true vertical depth of perforations; and

(2) the amount and types(s) of material pumped during each treatment stage and the total amount and types of material pumped including;

(A) a description of the hydraulic fracturing fluid pumped identified by additive type (e.g. acid, biocide, breaker, brine, corrosion inhibitor, crosslinker, de-emulsifier, friction reducer, gel, iron control, oxygen scavenger, pH adjusting agent, proppant, scale inhibitor, surfactant);

(B) the chemical ingredient name and the Chemical Abstracts Service (CAS) Registry number, as published by the Chemical Abstracts Service, a division of the American Chemical Society (www.cas.org), for each ingredient of the additive used. The rate or concentration for each additive shall be provided in appropriate measurement units (pounds per gallon, gallons per thousand gallons, percent by weight or percent by volume, or parts per million);

(C) each chemical ingredient used in the hydraulic fracturing treatment(s) of the well that is subject to the requirements of 29 Code of Federal Regulations §1910.1200(g)(2), as provided by the chemical supplier or service company or by the operator, if the operator provides its own chemical ingredients; and

(D) a supplemental list of all chemicals and their respective CAS numbers, not subject to the requirements of 29 Code of Federal Regulations §1910.1200(g)(2), that were intentionally included in and used for the purpose of creating the hydraulic fracturing treatments for the well.

(i) Prior to the submission of Form 10-404 under subsection (h), the operator must post the information required by the Interstate Oil and Gas Compact Commission/Groundwater Protection Council hydraulic fracturing web site (http://fracfocus.org/). A hardcopy and electronic copy of this information shall be filed as an attachment with the Form 10-404. (Eff. __/__/__, Register __.)

Authority: AS 31.05.030

20 AAC 25.990. Definitions.

(32) "Hydraulic fracturing" means the treatment of a well by the application of hydraulic fracturing fluid under pressure for the express purpose of initiating or propagating fractures in a target geologic formation to enhance productivity or injectivity.

(33) "Hydraulic fracturing fluid" means the fluid, including the applicable base fluid and all additives, used to perform a particular hydraulic fracturing treatment.