

VENTURA COUNTY AIR POLLUTION CONTROL DISTRICT

RULE 74.16 - OILFIELD DRILLING OPERATIONS

(Adopted 1/8/91)

A. Applicability

The provisions of this rule shall apply to all oilfield drilling operations.

B. Requirements

1. All drilling operations shall be powered by grid power unless exempted by Section C of this rule.

In the event of power outage or other emergency, sufficient power may be generated on-site to ensure safety and to prevent damage to equipment.

2. All drilling operations that are exempt from Subsection B.1 shall meet the following requirements:

- a. NO_x emissions from drilling engines, or any exhaust stack of multiple engines permanently manifolded together, shall not exceed 515 ppm corrected to 15% oxygen. This emission limit may be adjusted as follows:

The STANDARD is 515 ppm NO_x, corrected to 15% oxygen at an engine STANDARD EFFICIENCY of 33%.

$$\text{EMISSION LIMIT} = \frac{(\text{STANDARD}) \times (\text{UNIT EFFICIENCY})}{(\text{STANDARD EFFICIENCY})}$$

UNIT EFFICIENCY = The output from an engine divided by the energy input. Any engine with an efficiency lower than 33% is allowed a 33% UNIT EFFICIENCY for the purpose of this calculation. Any engine model which has been tested by the manufacturer, in the configuration being used, where the manufacturer's test data documents an efficiency greater than 33%, will be allowed to use the greater efficiency as the UNIT EFFICIENCY. The STANDARD EFFICIENCY is 33%.

- b. Compliance with Subsection B.2.a shall be demonstrated annually by source testing. Where permitted equipment subject to this rule is inactive or operating outside Ventura County, source testing may be postponed until no later than 10 days after the date that such equipment resumes operations in Ventura County. A source test conducted in any other California Air District may be used to demonstrate compliance, subject to written approval by the APCO.

- c. Drilling engines certified by the manufacturer to emit 6.9 grams of NO_x per brake horsepower-hour or less based on a California Air Resources Board (ARB) approved heavy duty offroad engine testing procedure shall be deemed in compliance with Subsection B.2.a and shall not be subject to the annual source test requirements in Subsection B.2.b provided that the following additional requirements are met:
 - 1) The emission control configuration of each such engine shall be maintained to manufacturer's specifications.
 - 2) The operator shall submit a maintenance and inspection plan, subject to APCO approval, that ensures each such engine is maintained to manufacturer's specifications.
 - 3) Each such engine shall also be subject to any ARB approved smog check program developed for heavy duty offroad engines.
- d. Notwithstanding Subsection B.2.c, any manufacturer certified engine subsequently found to emit more than 6.9 grams of NO_x per brake horsepower-hour using an ARB approved testing procedure for heavy duty offroad engines shall be in violation of this rule.

C. Exemptions

- 1. An oil company may petition the APCO for exemption from Subsection B.1 by submitting a cost evaluation for grid powered drilling. Best Available Control Technology cost guidelines shall be used to determine cost effectiveness. The most economical location to connect to a sufficient source of grid power shall be identified in the analysis. The cost of control shall be based solely on the installation of sufficient and compatible electric capacity to the drill site to fully power all drilling operations.

The cost analysis shall show that the most economical method of supplying sufficient and compatible electric capacity to the drill site was determined by comparing sources such as, but not limited to: a bid from a drilling contractor fully equipped for electric drilling; renting or leasing electric equipment; or purchasing electric equipment. For the purpose of the cost analysis, capital cost for the purchase of reusable electricity handling and conditioning equipment shall be amortized over its useful life. The potential emission reduction shall be calculated based on an estimate of the total NO_x and ROC emissions from the drilling project as proposed.

- 2. Until June 1, 1995, any drilling operations consuming less than 500 gallons of fuel in any day, drilling a hole with a total measured depth less than 5000 feet from the surface, shall not be subject to Subsection B.2 of this rule. This exemption may be claimed only when Exemption C.1 has been approved based

on emissions from the exempt rig. The operator shall provide the District with sufficient data to develop an average emission factor for the rig expressed in pounds of NO_x and ROC per gallon of fuel burned.

D. Recordkeeping

The operator of any engines subject to this rule shall maintain the following records on site.

1. Daily records of the amount of fuel consumed (in gallons) at each drilling site in Ventura County.
2. Daily records of the equipment's location in Ventura County.
3. For drilling operations powered by grid power, daily records of fuel consumption and hours of operation for any standby engine or power generating equipment.

All records shall be saved for a period of at least two years from the date of each entry and shall be submitted to the APCO upon request.

E. Test Methods

Source tests required by Subsection B.2.b shall be performed utilizing CARB Method 100. The source test period shall be a minimum of 60 minutes for each engine. Engine load shall average at least 40 percent of rated load over the test period or shall follow an ARB approved multiple load testing cycle for heavy duty offroad engines. The average engine load during the test shall be determined by monitoring the engine output or may be based on the amount of fuel consumed during the test and the engine efficiency. Source test plans shall be preapproved in writing by the APCO.

F. Violations

Failure to comply with any provision of this rule shall constitute a violation of this rule.

G. Definitions

1. "Drilling Operations": Activities powered by nonvehicular internal combustion engines for the purpose of drilling or re-drilling oil wells, injection wells, or gas wells. For the purpose of this rule, drilling operations do not include operations at any existing well where the derrick is a part of an oil well production service unit as defined in the California Vehicle Code.
2. "Drilling Engines": Drill rig engines over 50 HP including but not limited to engines supplying power to drawworks, rotary tables, mud pumps, mud mixers and auxiliary generators.

3. "Grid Power": Electricity conveyed by power lines connected physically and contractually to the Southern California Edison System, or any electricity generated by equipment permitted by the District and having permitted emissions commensurate with an emission rate of not more than 1.0 pound of NOx per Megawatt-hour of electricity produced.
4. "Oil Company": The person contracting the drilling rig and/or the person who applies for an Authority to Construct for the well.

H. Compliance Schedule

1. All drilling operations commencing after January 8, 1992, shall be in compliance with the provisions of this rule.
2. After January 8, 1992, no person shall operate or contract the operation of any drilling rig in Ventura County that does not hold a valid APCD Permit to Operate. The owner or operator of the rig should submit permit applications at least three months prior to initial use to allow sufficient time for permit processing.