

Texas Commission on Environmental Quality

Interoffice Memorandum

To: Commissioners **Date:** May 11, 2012

Thru: Bridget C. Bohac, Chief Clerk
Zak Covar, Executive Director

From: Susana M. Hildebrand, P.E.
Chief Engineer

Subject: Consideration of a Petition for Rulemaking

Docket No.: 2012-0751-RUL

Project No.: 2012-029-PET-NR

Who Submitted the Petition:

A petition was submitted by Baker Botts L.L.P. on behalf of Halliburton Energy Services, Inc. (Halliburton). The petition was received April 5, 2012.

What the Petitioner Requests:

In 2010, Halliburton installed a stationary, reciprocating internal combustion engine (known as the Drawworks Engine) at its Carrollton Plant North Test Well. The Drawworks Engine is used exclusively to lift and lower casing into the test well for purposes of employee training and down-hole product testing, and is not associated with oil or gas production. The Drawworks Engine is in limited service, operating an average of 1.58 hours per day (576 hours per year) and due to the nature of its use, the Drawworks Engine is in an idle state for more than 85% of its operating hours. At the time it was installed, the Drawworks Engine met the Tier 3 emission standards for non-road engines in 40 Code of Federal Regulations (CFR) §89.112(a), Table 1.

Halliburton is requesting a partial exemption from the rules in 30 Texas Administrative Code Chapter 117, Subchapter D, Division 2 that limit nitrogen oxides (NO_x) emissions from minor sources in the Dallas-Fort Worth 1997 eight-hour ozone nonattainment area (DFW area). The requested exemption is narrowly tailored and applies only to engines that are used exclusively for product testing and personnel training, operate in limited service, and meet applicable federal emission standards. Halliburton is also requesting revisions to the monitoring and recordkeeping requirements to reflect the new category of exempt engines. Additionally, Halliburton is requesting explicit confirmation in the preamble to the proposed rule, or in the rule itself, that "product testing" as used in the new exemption is distinct from engine "testing" as used in §117.2130(c) to ensure that the Halliburton Drawworks Engine is not subject to the use restrictions in §117.2130(c).

Re: Docket No. 2012-0751-RUL

Halliburton's suggested rule revisions are as follows.

§117.2103. Exemptions.

(10) new, modified, reconstructed, or relocated stationary diesel engines placed into service on or after June 1, 2007, that:

(A) are used solely for product testing and personnel training;

(B) operate less than 1,000 hours per year, based on a rolling 12-month average;
and

(C) meet the corresponding emission standard for non-road engines listed in 40 CFR §89.112(a), Table 1 (October 23, 1998) and in effect at the time of installation, modification, reconstruction, or relocation. For the purposes of this subparagraph, the terms "modification" and "reconstruction" have the meanings defined in §116.10 of this title and 40 CFR §60.15 (December 16, 1975), respectively, and the term "relocated" means to newly install at an account, as defined in §101.1 of this title, a used engine from anywhere outside that account.

§117.2135. Monitoring, Notification, and Testing Requirements.

(e) Run time meters. The owner or operator of any stationary diesel engine claimed exempt using the exemption of §117.2103(5), (8), ~~or (9)~~, or (10) of this title shall record the operating time with a non-resettable elapsed run time meter.

§117.2145. Recordkeeping and Reporting Requirements.

(b) Records for exempt engines. Written records of the number of hours of operation for each day's operation must be made for each engine claimed exempt under §117.2103(5), (8), ~~or (9)~~, or (10) of this title or §117.2130(b)(3) of this title.

Recommended Action and Justification:

Staff recommends approval of the petition. The Halliburton Drawworks Engine operates in unique service, for a limited number of hours each year, and meets the Tier 3 emission standards for non-road engines listed in 40 CFR §89.112(a), Table 1 effective at the time of installation. The suggested exemption is narrow in scope and consistent with the similar existing exemptions for stationary diesel engines located at minor sources.

The unique service of the Drawworks Engine makes ongoing testing to demonstrate compliance with the Chapter 117 NO_x emission limits impractical and comparatively more expensive than the stationary engine testing envisioned at adoption of the rule. To comply with the Chapter 117 testing requirements, Halliburton must arrange for both emissions testing equipment (a normal and expected expense) and for the rental, transport, and use of a dynamometer, which is typically used by engine manufacturers for testing purposes. Preparing the engine for installation of the dynamometer and returning the engine to operational status subsequent to the emissions testing presents significant safety hazards associated with the removal of the drive train and transmission, removal of the torque converter, and the placement and use of non-dedicated hoisting equipment on the rig floor.

Re: Docket No. 2012-0751-RUL

Performing a compliant emissions test of the Drawworks Engine takes three to four days to complete whereas typical testing on stationary engines only requires approximately a half day. Additionally, engines used to raise and lower down-hole equipment in actual oil and gas operations in the field, which the Drawworks Engine is designed to simulate, are typically not subject to similar Chapter 117 testing requirements because those engines are typically not installed at a location long enough to trigger the definition of a stationary internal combustion engine in §117.10 and are exempt from the rule. The Drawworks Engine is subject to Chapter 117, Subchapter D, Division 2 because the equipment has been made stationary to provide testing and training facilities for sources that are actually exempt from the rule.

The requested partial exemption will not adversely impact the DFW area's progress in attaining the 1997 eight-hour ozone National Ambient Air Quality Standard. Based on February 2012 emissions test results and a limit of 1,000 hours of run time per year, the Drawworks Engine has maximum potential annual NO_x emissions of 0.87 tons per year and is well below the emission standards established in the Chapter 117 minor source NO_x rules. Halliburton's suggested exemption criteria require compliance with the same federal standards in 40 CFR Part 89 to ensure that the requested exemption will not result in backsliding. The NO_x emission limits for stationary diesel engines in §117.2110 were derived from the Tier standards in 40 CFR Part 89. Therefore, the suggested exemption should not result in additional NO_x emissions in the DFW area.

If the petition is approved by the commission, staff will initiate a rulemaking project for the commission's consideration to amend the appropriate sections of Chapter 117, Subchapter D, Division 2 as suggested by the petitioner. Additionally, sections not specifically referenced by the petitioner may need to be amended to ensure consistency within the division in providing the requested exemption.

Applicable Law:

Texas Government Code, §2001.021 establishes the procedures by which an interested person may petition a state agency for the adoption of a rule and 30 Texas Administrative Code §20.15 provides such procedures specific to the commission.

Other laws applicable to the rules the petition affects include Texas Water Code (TWC), §5.102, concerning General Powers, §5.103, concerning Rules, and §5.105, concerning General Policy, which authorize the commission to adopt rules necessary to carry out its powers and duties under the TWC; and Texas Health and Safety Code (THSC), §382.017, concerning Rules, which authorizes the commission to adopt rules consistent with the policy and purposes of the Texas Clean Air Act; THSC, §382.002, concerning Policy and Purpose, which establishes the commission's purpose to safeguard the state's air resources, consistent with the protection of public health, general welfare, and physical property; §382.011, concerning General Powers and Duties, which authorizes the commission to control the quality of the state's air; and §382.012, concerning State Air Control Plan,

Commissioners

Page 4

May 11, 2012

Re: Docket No. 2012-0751-RUL

which authorizes the commission to prepare and develop a general, comprehensive plan for the control of the state's air.

Also, Texas Clean Air Act; §382.016, concerning Monitoring Requirements; Examination of Records, authorizes the commission to prescribe requirements for owners or operators of sources to make and maintain records of emissions measurements; and §382.021, concerning Sampling Methods and Procedures, authorizes the commission to prescribe the sampling methods and procedures.

Agency contacts:

Javier Galván, Rule Project Manager, 239-1492, Air Quality Division

Amy Browning, Staff Attorney, 239-0891

Michael Parrish, Texas Register Coordinator, 239-2548

Attachment

Petition

cc: Chief Clerk, 2 copies
Executive Director's Office
Susana M. Hildebrand, P.E.
Anne Idsal
Curtis Seaton
Ashley Morgan
Office of General Counsel
Javier Galván
Michael Parrish

BAKER BOTTS LLP

98 SAN JACINTO BLVD.
SUITE 1500
AUSTIN, TEXAS
78701-4078

TEL +1 512.322.2500
FAX +1 512.322.2501
www.bakerbotts.com

ABU DHABI
AUSTIN
BEIJING
DALLAS
DUBAI
HONG KONG
HOUSTON
LONDON
MOSCOW
NEW YORK
PALO ALTO
RIYADH
WASHINGTON

April 5, 2012

BY CERTIFIED MAIL, RETURN RECEIPT REQUESTED
No. 7160 3901 9849 1435 9496

Mr. Mark Vickery, P.G.
Executive Director (MC 109)
Texas Commission on Environmental Quality
P.O. Box 13087
Austin, Texas 78711-3087

Whitney L. Swift
TEL +1 512.322.2672
FAX +1 512.322.8339
whitney.swift@bakerbotts.com

Re: Petition for Adoption of Rules; 30 TEXAS ADMINISTRATIVE CODE Chapter 117;
Exemptions from DFW Minor Source NOx Rules

Dear Mr. Vickery:

Halliburton Energy Services, Inc. (“Halliburton”) submits the enclosed petition for adoption of rules seeking revisions to 30 T.A.C. Chapter 117, *Control of Air Pollution from Nitrogen Compounds*.

Halliburton seeks revisions to the 30 T.A.C. Chapter 117, Subchapter D, Division 2 emission control requirements for stationary diesel engines at minor sources in the Dallas-Fort Worth Eight-Hour Ozone Nonattainment Area (the “DFW Minor Source NOx Rules”). The requested rule revisions would partially exempt engines that meet the applicable federal emissions standards established in 40 C.F.R. Part 89, operate in limited service, and are used solely for product testing and personnel training. The revisions would establish a new category of partially exempt engines that is consistent with the categories of engines that the Commission has previously exempted from the DFW Minor Source NOx Rules, and would not adversely affect attainment of the ozone National Ambient Air Quality Standards (“NAAQS”) while eliminating unreasonably burdensome compliance demonstration requirements for low-emitting engines.

If you or your staff have any questions regarding this petition, please contact me at 512.322.2672.

Sincerely,



Whitney L. Swift

cc: Vince Meiller (*via electronic mail*)
Lindley Anderson (*via electronic mail*)

Enclosure

PETITION FOR RULEMAKING

Halliburton Energy Services, Inc. (“Halliburton”) hereby petitions the agency for rulemaking to amend 30 Texas Administrative Code (“T.A.C.”) Chapter 117, Subchapter D, Division 2, *Combustion Control at Minor Sources in Ozone Nonattainment Areas; Dallas-Fort Worth Eight-Hour Ozone Nonattainment Area Minor Sources*. Specifically, Halliburton petitions the agency to amend 30 T.A.C. § 117.2103, *Exemptions*.

I. Name and Address of the Petitioner

Halliburton Energy Services, Inc.
2601 E Beltline Road
Carrollton, Texas 75006

II. Explanation for Petition

A. The DFW Minor Source NO_x Rules

Texas Commission on Environmental Quality (“TCEQ”) rules in 30 T.A.C. Chapter 117, Subchapter D, Division 2 establish emission control requirements for oxides of nitrogen (“NO_x”) from minor sources in the Dallas-Fort Worth Eight-Hour Ozone Nonattainment Area (the “DFW Minor Source NO_x Rules”). The DFW Minor Source NO_x rules, adopted in 2007, establish emission specifications for stationary engines, including diesel reciprocating internal combustion engines. *See* 30 T.A.C. § 117.2110(a)(3).

The DFW Minor Source NO_x rules partially exempt several categories of engines from the emissions specifications. The exemptions are enumerated in Section 117.2103 and include:

- (1) engines with a horsepower (hp) rating of less than 50 hp;
- (2) engines used in research and testing;
- (3) engines used for purposes of performance verification and testing;
- (4) engines used solely to power other engines or gas turbines during startups;
- (5) engines operated exclusively in emergency situations, except that operation for testing or maintenance purposes is allowed for up to 100 hours per year, based on a rolling 12-month average. . . .
- (6) engines used in response to and during the existence of any officially declared disaster or state of emergency;
- (7) engines used directly and exclusively by the owner or operator for agricultural operations necessary for the growing of crops or raising of fowl or animals;
- (8) diesel engines placed into service before June 1, 2007, that:

- (A) operate less than 100 hours per year, based on a rolling 12-month average; and
 - (B) have not been modified, reconstructed, or relocated on or after June 1, 2007. . . .; and
- (9) new, modified, reconstructed, or relocated stationary diesel engines placed into service on or after June 1, 2007, that:
- (A) operate less than 100 hours per year, based on a rolling 12-month average, in other than emergency situations; and
 - (B) meet the corresponding emission standard for non-road engines listed in 40 CFR §89.112(a), Table 1 (October 23, 1998) and in effect at the time of installation, modification, reconstruction, or relocation. . . .

30 T.A.C. § 117.2103. The exemptions evidence the TCEQ’s intent in limiting engines that are either very small, or operate in limited use. In particular, the exemptions for “research and testing” and “product verification and testing” appear to cover engines that operate intermittently and at highly variable loads.

B. The Carrollton Drawworks Engine

In 2010, Halliburton installed a stationary, reciprocating internal combustion engine that it uses for purposes of employee training and product testing at the North Test Well at its Carrollton Plant. At the time it was installed, the engine (known as the Drawworks Engine) was the lowest-emitting unit available in the market and met the Tier 3 emission standards for non-road engines listed in 40 Code of Federal Regulations (“C.F.R.”) § 89.112(a), Table 1.

Halliburton uses the Drawworks Engine for purposes of lifting and lowering casing into the test well at the Carrollton Plant. The North Test Well is used solely for purposes of (1) employee training and (2) down-hole product testing, and is not associated with oil or gas production. The training performed using the Drawworks Engine involves configuring the well with a casing design by lifting and lowering casing in the well. The testing performed using the Drawworks Engine involves the use of the test well for purposes of testing down-hole equipment or products that may be used in actual oil and gas well completion operations. Approximately 80-85% of the engine’s recent service has been for training, while 15-20% has been for product testing.

The Drawworks Engine is in limited service, and over the past six months has operated an average of 1.58 hours per day, equivalent to 576 hours per year. In addition, due to the nature of its use, the Drawworks Engine is in an idle state for more than 85% of its operating hours. The Drawworks Engine operates under load for such limited periods due to the operating conditions (constraints) associated with configuring and de-configuring the test well. The Drawworks Engine typically raises or lowers casing or other equipment no more than 90 feet at a time in the test well, which results in the Drawworks Engine being under load for short periods of intermittent operation -- approximately 30-40 seconds each time the Drawworks Engine is engaged to raise or lower equipment.

C. Applicability of the DFW Minor Source NOx Rules to the Drawworks Engine

Halliburton believes that the Drawworks Engine qualifies for one of the existing exemptions from the DFW Minor Source NOx Rules, given the engine’s limited service and that Halliburton uses the engine for product testing purposes. In 2011, Halliburton sought a determination from the TCEQ Executive Director that the Drawworks Engine meets the exemptions for “research and testing” or “product verification and testing,” but the Executive Director took the position that these exemptions do not clearly cover the full range of the Drawworks Engine’s operations. The Drawworks Engine is used for testing purposes, but it is not used exclusively for testing purposes. The Drawworks Engine also operates on an intermittent basis and for relatively few hours per year, but the amount of testing and training that Halliburton conducts using the Drawworks Engine is too great for the engine to qualify for the 100-hour exemption. As a result, while both the limited service and the intermittent operation of the Drawworks Engine are consistent with the current list of partial exemptions from the DFW Minor Source NOx Rules, the Executive Director denied Halliburton’s rule non-applicability determination request, on the basis that the Drawworks Engine does not fall squarely within any of the categories of exempt engines.

D. Proposed Change to the DFW Minor Source NOx Rules

Halliburton requests that the TCEQ adopt changes to the DFW Minor Source NOx Rules to establish an additional category of exempt engines that will more clearly cover the Drawworks Engine. The requested rule change has been narrowly tailored and is limited to engines that are used for limited purposes, have low annual hours of operation, and are high-performing engines from an emissions perspective. As stated below, the exemption will relieve Halliburton of expensive and impractical compliance demonstration requirements, while not adversely impacting the DFW area’s strategy for attaining the National Ambient Air Quality Standard for ozone.

III. Proposed Rule Language

§ 117.2103. Exemptions.

This division (relating to Dallas-Fort Worth Eight-Hour Ozone Nonattainment Area Minor Sources) does not apply to the following stationary engines, except as specified in §§117.2130(c), 117.2135(e), and 117.2145(b) and (c) of this title (relating to Operating Requirements; Monitoring, Notification, and Testing Requirements; and Recordkeeping and Reporting Requirements):

* * *

(10) new, modified, reconstructed or relocated stationary diesel engines placed into service on or after June 1, 2007, that:

(A) are used solely for product testing and personnel training;

(B) operate less than 1000 hours per year, based on a rolling 12-month average; and

(C) meet the corresponding emission standard for non-road engines listed in 40 CFR §89.112(a), Table 1 (October 23, 1998) and in effect at the time of installation, modification, reconstruction, or relocation. For the purposes of this subparagraph, the terms “modification” and “reconstruction” have the meanings defined in §116.10 of this title and 40 CFR §60.15 (December 16, 1975), respectively, and the term “relocated” means to newly install at an account, as defined in §101.1 of this title, a used engine from anywhere outside that account.

§ 117.2135. Monitoring, Notification, and Testing Requirements.

* * *

(e) Run time meters. The owner or operator of any stationary diesel engine claimed exempt using the exemption of §117.2103(5), (8), ~~or (9)~~, or (10) of this title shall record the operating time with a non-resettable elapsed run time meter.

§ 117.2145. Recordkeeping and Reporting Requirements.

* * *

(b) Records for exempt engines. Written records of the number of hours of operation for each day's operation must be made for each engine claimed exempt under §117.2103(5), (8), ~~or (9)~~, or (10) of this title or §117.2130(b)(3) of this title.

IV. Statement of the Authority for the Proposed Rule

Section 382.017 of the Texas Clean Air Act authorizes the TCEQ to adopt rules consistent with the policy and purposes of the Texas Clean Air Act. That authority extends to the amendment and/or revocation of rules adopted by the Commission.

V. Injury or Inequity that Could Result from the Failure to Add the Proposed Exemption

A. The Drawworks Engine is High-Performing

The Drawworks Engine is a high-performing engine with respect to NOx emissions. Halliburton has conducted the performance testing necessary to demonstrate compliance with the emissions standards set forth in Section 117.2110, and the test results demonstrated that emissions from the Drawworks Engine fall well below the 2.8 g/hp-hr NOx standard and the 3.0 g/hp-hr CO standard established by the DFW Minor Source NOx Rules.

However, given the nature of the engine and its service, it would be unreasonable to subject the Drawworks Engine to ongoing testing that is both impractical and unreasonably expensive.

The Drawworks Engine is used to raise and lower equipment in the shallow North Test Well at the Carrollton Plant. As stated above, in this operation, the engine operates under load for brief periods of approximately 30-40 seconds. It cannot operate under load for longer periods due to design constraints of the rig. The nature of the engine's operation means that substantial additional equipment must be brought in to the Carrollton Plant in order to conduct performance testing on the Drawworks Engine, and that the test conditions required to run a performance test that complies with Chapter 117 requirements are not representative of the engine's actual operation.

B. The Required Test Conditions are Impractical

Under Section 117.8000, for purposes of stack testing to demonstrate compliance with the DFW Minor Source NO_x Rules, “[t]he unit must be operating at the maximum rated capacity, or as near as practicable. Compliance must be determined by the average of three one-hour emission test runs. Shorter test times may be used if approved by the executive director.” 30 T.A.C. § 117.8000(b). It is not possible for Halliburton to conduct compliant performance testing of the Drawworks Engine during its normal operations. Testing performed while the engine is in idle does not meet Chapter 117 requirements. And Halliburton cannot construct a compliant set of three one-hour test runs out of hundreds of 30-second periods of intermittent operation.

Conducting an emissions test of the Drawworks Engine that satisfies Chapter 117 requirements requires that Halliburton arrange for both emissions testing equipment (a normal and expected expense) and for the rental, transport and use of a device known as a dynamometer. Halliburton recently went through a time-consuming process to secure approval from the TCEQ Executive Director of its use of a dynamometer for purposes of testing emissions from the Drawworks Engine. The dynamometer used for testing is the same equipment that is used by engine manufacturers for testing purposes. To perform the testing with a dynamometer, Halliburton must disconnect the engine's existing torque converter and connect the dynamometer directly to the flywheel of the Drawworks Engine with a bolt-on adapter. Once connected to the dynamometer, Halliburton can run the engine near enough to maximum rated capacity for the time periods necessary to demonstrate compliance under Chapter 117.

Performing a compliant emissions test of the Drawworks Engine results in 3-4 days of lost productivity, as the engine is unavailable for its normal, intended use during the time that it is taken out of its normal service and attached to the dynamometer. Additionally, preparing the engine for installation of the dynamometer and returning the engine to operational status subsequent to the emissions testing presents significant safety hazards associated with the removal of the drive train and transmission, removal of the torque converter, and the placement and use of non-dedicated hoisting equipment on the rig floor.

Engines in similar service to the Drawworks Engine are not typically subject to similar Chapter 117 testing requirements, because the engines used to raise and lower down-hole

equipment in oil or gas operations are typically not stationary sources like the Drawworks Engine. The Drawworks Engine is unique due to its fixed location, and thus different from engines in similar service with respect to the current applicability of the emissions standards in Chapter 117.

Halliburton requests that the TCEQ add an exemption to Section 117.2103 to relieve it of the ongoing burden and expense of performing emissions testing to demonstrate that the Drawworks Engine is in compliance with the emissions standards of Chapter 117. The engine operates in unique service, for limited hours of operation, and was installed as a high-performing engine from an emissions perspective. Adding an exemption to Section 117.2103 that would capture the Drawworks Engine would be consistent with the other, existing exemptions to the DFW Minor Source NOx Rules and would relieve Halliburton of the unnecessary burden and expense of conducting future emissions testing of the Drawworks Engine.

C. There is No Emissions Impact of the Requested Exemption

The requested partial exemption will not adversely impact the DFW area's progress in attaining the ozone National Ambient Air Quality Standard ("NAAQS"). Based on February 2012 emissions test results and a limit of 1,000 hours of run time per year, the Drawworks Engine has a maximum potential annual NOx emissions of 0.87 tons per year. The requested exemption will capture only high-performing engines that operate in limited service. By making compliance with the federal Part 89 standards part of the exemption criteria, the TCEQ will ensure that the requested exemption does not result in backsliding. Nothing in the requested rule change would exempt or in any way affect Halliburton's obligation to ensure that the Drawworks Engine complies with Part 89 emissions standards.

D. Distinction Between "Product Testing and Personnel Training" and Operation "for Testing and Maintenance"

This petition requests a partial exemption from the DFW Minor Source NOx Rules. Like the other categories of exempt engines identified in Section 117.2103, an engine that qualifies for the proposed new exemption remains subject to (1) a requirement to record operating time with a run-time meter under Section 117.2135(e), (2) a requirement to maintain written records of operating hours under Section 117.2145(b), and (3) a prohibition on operation "for testing or maintenance" between the hours of 6:00 a.m. and noon, with limited exception, under Section 117.2130(c).

Halliburton requests that, in any rulemaking initiated by TCEQ in response to this petition, the TCEQ recognize that there is a difference between (A) operation for "product testing and personnel training" as used in the proposed new exemption, and (B) operation for "testing or maintenance" as used in Section 117.2130(c). Absent that distinction, the restriction in Section 117.2130(c) could be misinterpreted to prevent Halliburton from operating the Drawworks Engine between 6:00 a.m. and noon, because the product testing service of the engine is one form of "testing." Explicit confirmation in the preamble to the proposed rule, or in the rule itself, that "product testing" as used in the new exemption is distinct from engine "testing" as used in Section 117.2130(c) will ensure that Halliburton only operates the

Drawworks Engine for purposes of testing or maintenance of the engine in accordance with Section 117.2130(c), while preventing Section 117.2130(c) from making the proposed new exemption worthless by unnecessarily restricting the use of qualifying engines engaged in product testing or personnel training.