

CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE

**SUPPLEMENT TO THE REVISED INITIAL STATEMENT OF REASONS  
FOR NATURAL GAS MOTOR VEHICLE FUELS**

The Department is making supplemental additions and changes to the Revised Initial Statement of Reasons that was posted on March 6, 2017.

**1. Additions to Statutes and Recent Legislation** (on page 3)

BPC § 13471 establishes requirements for the placement of required labeling on a motor vehicle fuel dispenser.

BPC § 13473 establishes requirements for the size of letters and figures used for required labeling in BPC, Division 5, Chapter 14, Article 8.

BPC § 13474 requires all letters, figures, or numerals to be plainly legible with a contrasting background.

BPC § 13480(c) requires the Secretary to make reasonable and necessary regulations to define and enforce antiknock index labeling requirements or other labeling requirements of the product sold for all spark-ignition motor vehicle fuels. BPC § 13480(e) specifies the minimum size for characters on labels required by the subsections of § 13480.

BPC § 13590 requires the Department, acting through the Division of Measurement Standards, to enforce the provisions of BPC Div. 5 Chapter 14.

BPC § 13591 authorizes the Department, its inspectors, and its sealers to inspect natural gas motor vehicle fuels and to enter any place where such fuels are kept or stored for sale for the purpose of inspection.

BPC § 13592 authorizes the Department, its inspectors, sealers, and any other persons authorized under law to take samples of natural gas motor vehicle fuels kept or stored for the purpose of sale.

**2. Antiknock Index and Methane Number**

Replace the third sentence of the fourth paragraph on page 10 to read: "The MN is a measure of the tendency of a natural gas fuel to cause engine knock, that is, its antiknock index."

**3. Replace Specific Purpose and Rationale for Each Regulatory Provision** section with the following:

## NECESSITY AND SPECIFIC PURPOSE FOR EACH REGULATORY PROVISION

### Necessity and specific purpose of changes to CCR, Tit. 4, Div. 9, Ch. 1

BPC § 12107 requires the Department to adopt by reference the standards in the latest edition of NIST Handbook 44 except as specifically modified, amended, or rejected by the Secretary through regulation. For consistency with BPC § 13404 as amended by AB 1907, it is necessary for the Department to reject several current requirements of NIST Handbook 44 as exceptions in the CCR. The specific necessity of each of these exceptions is explained below. For easier readability, some periods that follow section headings in NIST Handbook 44 are replaced with commas in the discussion below.

For consistency with BPC § 13404, it is also necessary to replace the rejected requirements from NIST Handbook 44 by adopting corresponding additional requirements in CCR § 4002.10. The specific necessity of each additional requirement is explained below.

Finally, it is necessary to reject and replace two definitions from Appendix D in NIST Handbook 44 because they include conversion factors inconsistent with the BPC § 13404. These are also discussed below.

Changes were made in Section 3.37. Mass Flow Meters in the 2016 edition of NIST Handbook 44 after this rulemaking began. Two of these changes rendered exceptions originally proposed in the 45-day text unnecessary as explained below.

- 1) The Department originally proposed rejecting NIST Handbook 44 Sections S.1.2. Compressed Natural Gas Dispensers. and UR.3.8. Return of Product to Storage, Retail Compressed Natural Gas Dispensers,” because they did not apply to liquefied natural gas (LNG). After this rulemaking began, these sections in NIST Handbook 44 were amended to include LNG. Accordingly, these sections no longer need to be rejected and have been deleted from the list of exceptions in § 4001 in the final proposed regulation.
- 2) The Department originally proposed rejecting the NIST Handbook 44 Appendix D definition of gasoline liter equivalent (GLE) because under AB 1907, GLE is not a legal method of sale for natural gas motor vehicle fuels in California. After this rulemaking began, this definition was removed from Appendix D in NIST Handbook 44. Accordingly, this definition no longer needs to be rejected and has been deleted from the list of exceptions in § 4001 in the final proposed regulation.

### **Amendments to CCR Title 4, Div. 9, Ch. 1, Art. 1, National Uniformity, Exceptions and Additions. § 4001. Exceptions.**

The Department proposes to amend CCR § 4001 by adding the following rejected sections from NIST Handbook 44 to the list of exceptions:

#### S.1.3.1.1. Compressed Natural Gas Used as an Engine Fuel.

The Department proposes that this requirement be removed. NIST Handbook 44 includes “gasoline gallon equivalent (GGE)” units, “diesel gallon equivalent units (DGE),” and mass as methods of sale for CNG. BPC § 13404(b) includes only “gasoline gallon equivalent (GGE)” units as a method of sale for CNG in California.

#### S.1.3.1.2. Liquefied Natural Gas Used as an Engine Fuel.

The Department proposes that this requirement be rejected. NIST Handbook 44 includes “diesel gallon equivalent units (DGE)” and mass as methods of sale for LNG. BPC § 13404(b) includes only “diesel gallon equivalent (DGE) units” as a method of sale for LNG in California.

#### S.5.2. Marking of Equivalent Conversion Factors for Compressed Natural Gas.

The Department proposes that this requirement be rejected. NIST Handbook 44 lists the conversion factors 5.660 lb and 6.384 lb of CNG to one (1) GGE and one (1) DGE respectively.. The language in BPC § 13404(b) mandates only 5.66 lb of CNG as the conversion factor for one (1) GGE in California. The DGE is not a legal method of sale for CNG motor vehicle fuel in California.

#### S.5.3. Marking of Equivalent Conversion Factor for Liquefied Natural Gas.

The Department proposes that this requirement be rejected. NIST Handbook 44 defines a conversion factor of 6.059 lb of LNG to one (1) DGE, but the language in BPC § 13404(b) mandates 6.06 lb as the conversion factor for one (1) DGE in California.

The Department proposes to add UR.3.1.1. as an exception in § 4001 and an additional requirement in § 4002 for consistency with the conversion factors specified in AB 1907. This user requirement did not appear in the 2015 edition of NIST Handbook 44 on which the original 45-day text was based. The 2016 amendments to Section 3.37. Mass Flow Meters in Handbook 44 did include this user requirement, but specified the conversion factors for GGE and DGE to three decimal places. AB 1907 specifies the conversion factors rounded to two decimal places. Therefore, UR 3.1.1 as added as an additional requirement in § 4002 differs from the proposed exception in § 4001.

The Department proposes to add UR.3.1.2. as an exception in § 4001 and an additional requirement in § 4002 for consistency with the conversion factors specified in AB 1907. This user requirement did not appear in the 2015 edition of NIST Handbook 44 on which the original 45-day text was based. The 2016 amendments to Section 3.37 Mass Flow Meters in Handbook 44 did include this user requirement, but specified the conversion factors for GGE and DGE to three decimal places. AB 1907 specifies the conversion factors rounded to two decimal places. Therefore, UR 3.1.2 as added as an additional requirement in § 4002 differs from the proposed exception in § 4001.

The Department originally proposed adding UR.3.8. as an exception in § 4001 and an additional requirement in § 4002 because in the 2015 edition of NIST Handbook 44, on which the original 45-day text was based, Subsection UR.3.8 did not include LNG. In the 2016 edition of NIST Handbook 44, UR.3.8 was amended to include LNG. With this change, UR.3.8 no longer needs to be an exception and additional requirement. The Department proposes to remove UR.3.8 from the initial 45-day text to reflect this.

Appendix D. Definitions. *diesel gallon equivalent (DGE)*.

The Department proposes that this definition be rejected. NIST Handbook 44 defines conversion factors of 6.384 lb of CNG and 6.059 lb of LNG per one (1) DGE, whereas AB 1907 mandates a conversion factor of 6.06 lb per one (1) DGE for LNG only. AB 1907 does not allow DGE as a method of sale for CNG motor vehicle fuel.

Appendix D. Definitions. *gasoline gallon equivalent (GGE)*. The Department proposes that this definition be rejected. NIST Handbook 44 lists a conversion factor of 5.660 lb of CNG per GGE, whereas AB 1907 mandates a conversion factor of 5.66 lb of CNG per one (1) GGE.

The Department proposes to remove the definition of (GLE) from the 45-day text. This definition appeared in the 2015 edition of NIST Handbook 44 on which the original 45-day text was based. At that time, it was necessary to add this definition as an exception in CCR § 4001 because AB 1907 does not include GLE as a method of sale for natural gas motor vehicle fuels. The definition of GLE was subsequently removed from NIST Handbook 44 as part of the 2016 amendments to Section 3.37. Mass Flow Meters. Therefore, there is no longer a need to include this definition as an exception in CCR § 4001.

#### **Amendments to CCR Title 4, Div. 9, Ch. 1, Art. 1, National Uniformity, Exceptions and Additions. § 4002. Additional Requirements**

The Department proposes to adopt § 4002.10. Mass Flow Meters (3.37.) for consistency with the requirements of BPC § 13404 as amended by AB 1907. The specific purpose and necessity for each subpart of 4002.10 is given below.

##### § 4002.10. Mass Flow Meters. (3.37.)

###### S.1.3.1.1 Compressed Natural Gas Used as an Engine Fuel.

The Department proposes to add this additional requirement to comply with AB 1907, which mandates “gasoline gallon equivalent (GGE)” units only as the method of sale for CNG motor vehicle fuel.

#### S.1.3.1.2 Liquefied Natural Gas Used as an Engine Fuel.

The Department proposes to add this additional requirement to comply with AB 1907, which mandates “diesel gallon equivalent (DGE)” units only as the method of sale for LNG motor vehicle fuel.

#### S.5.2. Marking of Gasoline Volume Equivalent Conversion Factor for Compressed Natural Gas.

The Department proposes to add this additional requirement to specify the GGE conversion factor of 5.66 pounds of CNG as required by AB 1907.

#### S.5.3. Marking of Diesel Volume Equivalent Conversion Factor for Liquefied Natural Gas.

The Department proposes to add this additional requirement to specify that the statement required by UR.3.1.1 include the DGE conversion factor of 6.06 pounds of LNG required by AB 1907.

#### UR.3.1.1. Marking of Equivalent Conversion Factors for Compressed Natural Gas.

The Department proposes to add this additional requirement to specify the GGE conversion factor of 5.66 pounds of CNG as required by AB 1907 marked on the dispenser.

#### UR.3.1.2. Marking of Equivalent Conversion Factors for Liquefied Natural Gas.

The Department proposes to add this additional requirement to specify the DGE conversion factor of 6.06 pounds of CNG marked on the dispenser as required by AB 1907.

The Department originally proposed adding UR.3.8 as an exception in §4001 and an additional requirement in § 4002 because in the 2015 edition of NIST Handbook 44 on which the original 45-day text was based, subsection UR.3.8 did not include LNG. In the 2016 edition of NIST Handbook 44, UR.3.8 was amended to include LNG. With this change, UR.3.8 no longer needs to be an exception and additional requirement. The Department proposes to remove UR.3.8 from the initial 45-day text to reflect this.

#### Appendix D. Definitions. *diesel gallon equivalent (DGE)*.

The Department proposes that this definition be adopted to replace the conflicting definition in NIST Handbook 44. This new definition is necessary because AB 1907 mandates a conversion factor of 6.06 lb of LNG per one (1) DGE. The current definition in NIST Handbook 44 uses a conversion factor of 6.059 lb per one (1) DGE and also gives a conversion factor for CNG. AB 1907 does not include the DGE as an allowed method of sale of CNG in California.

#### Appendix D. Definitions. *gasoline gallon equivalent (GGE)*.

The Department proposes that this definition be adopted to replace the conflicting definition in NIST Handbook 44. This new definition is necessary because AB 1907 mandates a conversion factor of 5.66 lb of CNG per one (1)

GGE, instead of the 5.660 lbs. per one (1) GGE currently specified in NIST Handbook 44.

**Necessity and specific purpose of changes to CCR, Title 4, Div. 9, Ch. 7, Advertising and Labeling of Gasoline and Other Motor Vehicle Fuels.**

BPC § 12107 requires the Secretary to establish technical requirements for commercial weighing and measuring devices. In doing so, the Secretary must adopt by reference the latest standards recommended by the National Conference on Weights and Measures (NCWM) and published in NIST Handbook 44 *“Specifications, Tolerances, and other Technical Requirements for Weighing and Measuring Devices.”* The Secretary may specifically modify, amend, or reject sections of NIST Handbook 44 through regulatory action. The current language in NIST Handbook 44 S.1.3.1.1 and S.1.3.1.2 specifies units of measurement for natural gas motor vehicle fuels that include mass. AB 1907 established GGE and DGE as the sole methods of sale for CNG and LNG, respectively, in California. AB 1907 does not include mass as an allowed method of sale for either CNG or LNG in California. Regulatory action is needed to implement the methods of sale for natural gas motor vehicle fuels specified by AB 1907.

BPC § 13480(c) requires the Department to “make rules and regulations as are reasonably necessary to define and enforce the octane number, antiknock index labeling requirements, or other labeling requirements of the product sold.” CNG and LNG are spark-ignition fuels. To comply with the mandate in BPC § 13480(c), the Department must adopt regulations for labeling the MN, which is the antiknock index for CNG and LNG.

To conform to the requirements of BPC §12107, §13480(c), and AB 1907, the Department proposes to amend Chapter 7 as follows:

The Department is adding the words “and Labeling” to the heading of Chapter 7 to better reflect the requirements for labeling of dispensers and storage tanks included in the subsections of Chapter 7.

§ 4200. Advertising Medium.

The Department proposes to amend this section to correct incorrect authority and references to the BPC in the “Reference cited” section. This proposed change has no regulatory effect.

§ 4201. Price Sign Display on Dispensing Apparatus.

The Department proposes to amend subsection § 4201(a) to include (GGE) or diesel gallon equivalent (DGE). This change is necessary to comply with AB 1907, which requires that GGE and DGE units of measure be displayed on retail dispensers for the sale of natural gas motor vehicle fuels to the public.

## § 4206. Dispenser Labeling Requirements for Compressed Natural Gas and Liquefied Natural Gas.

The Department proposes to add this section to: 1) require the display on natural gas fuel dispensers of the minimum MN (antiknock index) of the fuel offered for sale to comply with § BPC 13480(c), and 2) require labeling of natural gas fuel dispensers that comply with the requirements of AB1907 and BPC §§ 13470, 13473, and 13474. The specific purpose and necessity for each subsection of § 4206 is given below.

### § 4206(a)

The Department proposes to adopt the definitions in subsections (1), (2), (6), and (7) of § 4206(a) to clarify which persons are responsible for compliance with §§ 4206(b) – 4206(e) and the specific requirements for dispenser labeling.

The definitions of “Methane Number,” “MWM Method,” and “Minimum MWM Methane Number” in subsections (3), (4), and (5) of § 4206(a) are necessary to clarify and make specific: 1) how the “methane number (MN)” must be determined and 2) the requirements in § 4206(c) for posting the label of the minimum MN. In § 4206(a)(4), the Department proposes to incorporate by reference pages 9 through 30 of European Standard EN 16726 Gas infrastructure – Quality of gas – Group H, Annex A for the algorithm to determine the MN of natural gas fuels.

### § 4206(b)

The Department proposes to adopt this subsection to specify the requirements necessary for compliance with BPC § 13480. The addition of the words “if any” following “grade designation” is necessary for clarity because natural gas motor vehicle fuels are currently sold with no grade designation. BPC § 13440(i) will adopt by reference any future specification from ASTM International or SAE International for natural gas motor vehicle fuels. The Department expects that such a specification will include one or more grades for CNG or LNG. The addition of the words “if any” to § 4206(b) makes clear and specific the labeling requirements now and in the future so that a new rulemaking will not be required if either ASTM International or SAE International adopts a specification for natural gas motor vehicle fuels.

### § 4206(c)(1)

The Department proposes to adopt this subsection to fulfill the requirement of BPC § 13480(c) for the labeling of the antiknock index of natural gas motor vehicle fuels. The specifications of conspicuousness and font size are required for consistency with BPC §§ 13470 and 13480(e). The antiknock properties of a spark-ignition engine fuel are critical to the performance and durability of engines. Manufacturers of natural gas engines may specify a minimum MN for fueling to ensure that vehicles will perform as expected. When a minimum MN is specified by a manufacturer, use of a compliant fuel is required to maintain the vehicle warranty. When a minimum MN is not specified by engine manufacturers, fuel buyers may

use the label statement required by § 4206(c) for making value comparisons in the marketplace.

The Department proposes that calculated MN be rounded down to a whole number to reflect the standard practice in the natural gas motor vehicle fuels industry.

§ 4206(c)(2)

The Department proposes to adopt this subsection to clarify and specify that natural gas fuel producers are responsible for the determination of the minimum MN of their fuel. Because the natural gas fuel producers are the ones who process raw pipeline gas into CNG and LNG, they control the final composition of their natural gas fuels. Accordingly, they are in the best position to make the determination of the minimum MN.

§ 4206(d)(1)

The Department proposes to adopt this subsection to comply with the requirements of AB 1907 for labeling of CNG motor vehicle fuel dispensers with this statement of the method of sale and its conversion factor.

§ 4206(d)(2)

The Department proposes to adopt this subsection to comply with the requirements of BPC §§ 13473 and 13474 for the size of lettering and figures and contrasting background to be used in the labeling of natural gas motor vehicle fuel dispensers.

§ 4206(e)(1)

The Department proposes to adopt this subsection to comply with the requirements of AB 1907 for labeling of LNG motor vehicle fuel dispensers with this statement of the method of sale and its conversion factor.

§ 4206(e)(2)

The Department proposes to adopt this subsection to comply with the requirements of BPC §§ 13473 and 13474 for the size of lettering, figures, and contrasting background to be used in the labeling of natural gas motor vehicle fuel dispensers.

§ 4207. Additional Dispenser Labeling Requirements for Liquefied Natural Gas and Compressed Natural Gas.

The Department proposes to add this section to require the display on natural gas fuel dispensers to comply with applicable requirements of the Federal Trade Commission (FTC) in 16 CFR Part 306 and Part 309 for posting the fuel rating (percent methane) for LNG and CNG by the retailer. This section is intended to ensure consistency with federal regulations and with the regulations for other alternative fuels in §§ 4202-4205.

In a pre-rulemaking survey of CNG dispensers throughout the state, the Department found that a significant number did not have the fuel rating label



required by the FTC. The Department assumes that some retailers may be unaware of these applicable federal regulations. The proposed duplication of 16 CFR Part 306 and Part 309 is intended to ensure that all California retailers of natural gas motor vehicle fuels have adequate notice of these federal requirements and that the Department will enforce them along with the required labeling in CCR Title 4, §§ 4201 and 4206. This section does not create any new regulatory requirement, but is intended in part to clarify the existing regulations for retailers of natural gas motor vehicle fuels.

#### **4. Duplication of Regulation**

BPC § 12107 requires the Department to adopt by reference the latest specifications and technical requirements in NIST Handbook 44 for commercial weighing and measuring devices except as specifically modified, amended or rejected in regulation.

Section 3.37. Mass Flow Meters in Handbook 44 contains the specifications and requirements applying to CNG and LNG dispensers. In Section 3.37, specification S.5.2 and user requirement UR.3.1.1 contain the following identical language:

***Marking of Equivalent Conversion Factors for Compressed Natural Gas. - A device dispensing compressed natural gas shall have either the statement “1 Gasoline Gallon Equivalent (GGE) means 5.660 lb of Compressed Natural Gas” or “1 Diesel Gallon Equivalent (DGE) means 6.384 lb of Compressed Natural Gas” permanently and conspicuously marked on the face of the dispenser according to the method of sale used.***  
*(Added 1994) (Amended 2016)*

Similarly, specification S.5.3 and user requirement UR.3.1.2 contain corresponding identical language for liquefied natural gas:

***Marking of Equivalent Conversion Factor for Liquefied Natural Gas. – A device dispensing liquefied natural gas shall have the statement “1 Diesel Gallon Equivalent (DGE) means 6.059 lb of Liquefied Natural Gas” permanently and conspicuously marked on the face of the dispenser according to the method of sale used.***  
*(Added 2016)*

As discussed above, these four provisions must be rejected because they are not consistent with the amendments to BPC § 13404 made by AB 1907 for method of sale for natural gas motor vehicle fuels. AB 1907 specifies the conversion factors rounded to two decimal places; that is, 5.66 lb per GGE for CNG and 6.06 lb per DGE for LNG. Therefore, these specifications and user requirements are included in the list of exceptions to Handbook 44 in CCR Title 4 Chapter 1 § 4001. Corresponding provisions with method for sale consistent with AB 1907 are included as additional requirements in CCR Title 4 Chapter 1 § 4002.10.

Handbook 44 does not offer a specific explanation of why duplicate provisions are included in Section 3.37. Mass Flow Meters. However, the Introduction to Handbook 44 states that the letters used in designations have specific meanings. The letter 'S' denotes "specifications relate[d] to the design of equipment. Specification paragraphs are directed particularly to manufacturers of devices." The designation 'UR' is used for user requirements that "are directed particularly to the owner and operator of a device. User requirements apply to the selection, installation, use, and maintenance of devices."

It is clearly the intent of Handbook 44 that the same requirement be directed at both manufacturers and owner/operators of natural gas motor vehicle fuel dispensers. Accordingly, the Department feels that the duplication of these provisions (with corrected method of sale) in CCR Title 4 § 4002.10. is necessary to address both groups. To not include both sets of provisions would change the meaning of the requirements in Handbook 44. The omission of S.5.2 and S.5.3 would mean that manufacturers could leave the required statements off dispensers they sell while UR.3.1.1 and UR.3.1.2 would require that owners of these dispensers attach the statement. Conversely, the omission of UR.3.1.1 and UR.3.1.2 would appear to allow dispenser owners to remove the method of sale statements. Both of these possibilities are inconsistent with the amendment made by AB 1907 to BPC § 13470.

Because of the necessity for clarity and specificity in the proposed regulations, the Department believes that the standard for "nonduplication" in Government Code § 11349.1 is satisfied according to CCR Title 1 §12(b)(1) for the duplicate language in Chapter 1 § 4002.10.

The requirements of this language for fuel dispenser labeling in § 4002.10 is repeated in Chapter 7 §§ 4206(d)(1) and 4206(e)(1). This duplication serves the same purpose as that found in Chapter 1, namely, to require a specific statement to be displayed on natural gas fuel dispensers. This duplication in Chapter 7 § 4206 is necessary for clarity and specificity so that the parties directly affected by these requirements will understand what they must do to comply with the proposed regulations.

It is likely that many of those directly affected are not aware that there are requirements in CCR Chapter 1 that apply to them. The online CCR at westlaw.com includes only Part 1: §§ 4000. – 4002.8. from Handbook 44. The complete text of the latest version of Handbook 44 is available on the Department's website. However, there is not a clear or specific link for the code applying to natural gas fuel dispensers, which is contained Section 3.37 Mass Flow Meters. It would not be obvious to many stakeholders that CNG and LNG dispensers are classified as mass flow meters. In addition, Section 3.37 is contained in Part 3 of Handbook 44, which includes Measuring Devices Sections 3.30. (Liquid-Measuring Devices) through 3.40 Electric Vehicle Fueling Systems. The link on the Department's website is to the whole of Part 3, so without specific independent knowledge about Section 3.37, an affected party might easily be unaware of its existence.

The Department believes that the duplication from Chapter 1 in Chapter 7 §§ 4206(d)(1) and 4206(e)(1) is necessary for clarity to affected parties and that it therefore satisfies the standard for “nonduplication” in Government Code § 11349.1 is satisfied according to CCR Title 1 §12(b)(1).

## **5. Duplication of Statute**

The proposed §§ 4206(d)(2) and 4206(e)(2) include requirements found in BPC § 13473 for font size to be used for the dispenser labeling required by §§ 4206(d)(1) and 4206(e)(1). This duplication of BPC § 13473 is necessary for clarity and specificity so that the parties directly affected by the dispenser labeling requirements will understand what they must do to comply with the proposed regulations. It is likely that many of those directly affected are not aware of BPC § 13473 or that it would apply to the proposed regulations in CCR §§ 4206(d)(1) and 4206(e)(1). Without the clarifying specific information in the proposed regulations, a natural gas fuel dispenser label might not comply with BPC § 13473.

Because of the necessity for clarity and specificity in the proposed regulations, the Department believes that the standard for “nonduplication” in Government Code § 11349.1 is satisfied according to CCR Title 1 §12(b)(1).