

**Proposed Amendments
to the
California Code of Regulations
Title 23. Waters
Division 3. State Water Resources Control Board
and Regional Water Quality Control Boards
Chapter 16. California Underground Tank
Regulations**

**INITIAL
STATEMENT OF REASONS**

**April 2019
State Water Resources Control Board
Division of Water Quality**

Chapter 16. California Underground Storage Tank Regulations

The State Water Resources Control Board (State Water Board) proposes to amend California Code of Regulations, title 23, division 3, chapter 16 (California Underground Storage Tank (UST) Regulations), article 3, sections 2631 and 2631.2 (proposed amendments). The proposed amendment to section 2631 provides that diesel containing up to 20 percent biodiesel meeting the American Society of Testing and Materials International (ASTM) standard D7467 (B20) shall be recognized as equivalent to diesel for the purpose of complying with existing approval requirements for double-walled USTs unless any material or component of the UST system has been determined to not be compatible with B20. This proposed amendment allows double-walled UST owners and operators that wish to store B20 to comply with the California UST Regulations. The State Water Board also proposes to delete section 2631.2, which provided a temporary variance for biodiesel blends from June 1, 2009 to June 1, 2012, because it is inoperative.

Biodiesel is a renewable fuel that can be manufactured from new and used vegetable oils, animal fat, and recycled restaurant grease. Biodiesel's physical properties are similar to those of diesel, but biodiesel produces fewer greenhouse gas (GHG) emissions and other toxic air pollutants, which pose a threat to human health and welfare and the environment. One hundred percent biodiesel conforms to the voluntary consensus technical standard of the ASTM D6751. Biodiesel can be blended with diesel and used in many different concentrations according to ASTM. For example, ASTM D975 allows diesel to contain up to five percent biodiesel and ASTM D7467 allows diesel to contain up to 20 percent biodiesel. Unfortunately, independent testing and approvals for USTs has not kept up with the introduction of and desire to use B20 in order to reduce GHG emissions and other toxic air pollutants.

California UST Regulations require that the primary and secondary containment, leak detection equipment, and all other UST equipment that comes into contact with the stored substance be approved for the storage of a specific hazardous substance. California UST Regulations require an approval from an independent testing organization for primary containment and any secondary containment that is integral to the primary containment. If the independent testing organization approval for the primary containment does not cover the specific hazardous substance to be stored, the manufacturer of the primary containment may provide an affirmative statement of compatibility. California UST Regulations require secondary containment that is not integral to the primary containment be designed and constructed to prevent structural weakening due to contact with the stored hazardous substance; and be in accordance with a nationally recognized industry code or standard or an engineering specification approved by a California registered professional engineer. California UST Regulations require leak detection equipment be certified by an independent third-party testing laboratory. California UST Regulations require an approval for all other UST components that comes into contact with the stored substance (e.g., spill containers, overfill prevention equipment, and ancillary equipment) from an independent testing organization, manufacturer of the equipment, or California registered professional engineer for the storage of a specific hazardous substance.

Underwriter's Laboratory (UL) is an independent testing organization that has issued approvals for primary and secondary containment for USTs that are used in California. UL approvals do not always cover B20. In 2009, UL began material compatibility testing for biodiesel and biodiesel blends in USTs. On January 7, 2009, UL determined that diesel containing up to five percent biodiesel fell within existing approvals covering diesel. Section 2631.2 of the California UST Regulations provided a temporary variance for UST owners and operators of double-walled USTs to lawfully store B20 from June 1, 2009 to June 1, 2012.

Effective June 1, 2012, sections 2631(j) and (k) of the California UST Regulations provided a permanent option to double-walled UST owners and operators to store any hazardous substance including biodiesel and biodiesel blends containing more than five percent biodiesel USTs. Sections 2631(j) and (k) provide that if the independent testing organization approval does not cover the specific hazardous substance to be stored in a double-walled UST, a manufacturer's affirmative statement of compatibility for that specific hazardous substance may be used. As of April of 2019, UL still has not completed material compatibility testing for biodiesel and biodiesel blends in USTs.

The State Water Board has collected and posted on its website many manufacturer's affirmative statements of compatibility for B20 to assist double-walled UST owners and operators in obtaining these manufacturer's affirmative statements of compatibility so that they may store B20. It is not always possible, however, to identify the manufacturer of all primary containment components of USTs and sometimes the manufacturer is no longer in business. As a result, some UST owner and operators cannot store B20 in their existing USTs. Not only does this result in a delay in reductions in GHG emissions and other toxic air pollutants; it reduces the competitiveness of those UST owners and operators who are unable to comply with existing independent testing and approval requirements to store B20 and hinders the biodiesel industry in California.

Recognizing B20 as equivalent to diesel for the purpose of complying with existing approval requirements, allows double-walled UST owners and operators to store B20 lawfully resulting in expeditious reductions in GHG emissions and other toxic air pollutants, increasing the likelihood of securing and maintaining a permanent source of biodiesel for California in the future. The proposed amendments allow double-walled UST owners and operators to store B20 in a manner that does not create any significant risk of adverse impacts to water quality. The State Water Board believes the proposed amendments are consistent with existing California UST statutes and reduces air quality impacts that are harmful to health, safety and general welfare without posing any additional risk to beneficial uses of California waters.

Part 280.32 of the 40 Code of Federal Regulations (Federal UST Regulations) requires compatibility of USTs be demonstrated only when the hazardous substance to be stored contains greater than 20 percent biodiesel. The proposed amendments to the California UST Regulations are more stringent than the Federal UST Regulations because the proposed amendments limit the storage of B20 to double-walled USTs. The State Water Board believes that allowing the storage of B20 in single-walled USTs is not sufficiently protective of the public health and safety and the environment.

The State Water Board relied upon the technical, theoretical, or empirical studies, reports, and documents discussed herein in proposing these amendments to the California UST Regulations. The State Water Board also relied on an Economic and Fiscal Impact Statement (Form 399) and an Economic Impact Analysis/Assessment prepared pursuant to Government Code section 11346.3, subdivision (b) in proposing these amendments to the California UST Regulations. Form 399 and the technical, theoretical, or empirical studies, reports, and documents relied upon are available on the State Water Board's website at http://www.waterboards.ca.gov/water_issues/programs/ust/adm_notices/bio_regs/. The specific purpose and the basis for the State Water Board's determination of the necessity of each amendment are explained herein.

Consideration of Alternatives

The State Water Board believes that no reasonable alternative to these proposed amendments would be: 1) more effective in carrying out the purpose for which the proposed regulatory action is proposed; 2) more effective and less burdensome to affected private persons, industry, local governments, and state agencies; 3) more cost effective to affected private persons, industry, local governments, and state agencies; or 4) more consistent with California's existing requirements and groundwater protection policies.

The State Water Board has considered the three alternatives discussed below. Interested persons may present statements or arguments with respect to alternatives to the proposed amendments during the written comment period or at a hearing, if a hearing is requested, on this matter.

Alternative 1

The State Water Board considered proposing an amendment to the California UST Regulations to recognize B20 the same as diesel by defining the term diesel to include B20. This alternative would not be more consistent with California's existing requirements and groundwater protection policies. The definition would apply to all USTs, however, existing requirements explicitly requiring single-walled USTs to demonstrate compatibility for storing hazardous substances containing a concentration of more than five percent biodiesel would conflict with the definition. The State Water Board believes that amending the California UST Regulations to allow the storage of B20 in single-walled USTs would not be sufficiently protective of the public health and safety and the environment.

Alternative 2

The State Water Board also considered proposing an amendment to the California UST Regulations identical to Federal UST Regulations which allows any UST to store B20 without demonstrating compatibility. This alternative would not be more consistent with California's existing requirements and groundwater protection policies. This alternative would be in conflict with existing requirements requiring single-walled USTs to demonstrate compatibility for the storage of diesel containing more than five percent biodiesel. The State Water Board believes that amending the California UST Regulations to allow the storage of B20 in single-walled USTs would not be sufficiently protective of the public health and safety and the environment.

Alternative 3

The State Water Board also considered proposing an amendment to the California UST Regulations providing a variance similar to the section 2631.2 Biodiesel Blends – Variance from Material Compatibility Certification Requirements that became inoperative June 1, 2012. This alternative would not be: 1) more effective in carrying out the purpose for which the proposed amendments are proposed; 2) more effective and less burdensome to affected private persons, industry, local governments, and state agencies; and 3) more cost effective to affected private persons, industry, local governments, and state agencies. This alternative would not be more effective in carrying out the purpose for which the proposed amendments because it does not recognize diesel the same as B20. This alternative would not be more effective and less burdensome to affected private persons, industry, and local governments because UST owners or operators would be required to collect and submit to the local government documentation demonstrating compatibility with B20. In addition, local government would be required to review

the submitted documentation demonstrating compatibility with B20. This alternative would not be more cost effective to affected private persons, industry, and local governments because there is a cost to affected private persons and industry associated with collecting and submitting to the local government documentation demonstrating compatibility with B20. Local governments also would incur the cost of reviewing the submitted documentation demonstrating compatibility with B20.

ECONOMIC IMPACT ANALYSIS/ ASSESSMENT

The State Water Board has prepared this Economic Impact Analysis/Assessment in accordance with Government Code section 11346.3, subdivision (b).

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The State Water Board is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed regulatory action.

Creation or Elimination of Jobs within the State of California

The State Water Board estimates that the proposed regulatory action will not have an effect on the creation or elimination of jobs within the State of California as a result of the proposed amendments because recognizing B20 as equivalent to diesel does not create or eliminate a significant enough workload to support the creation or elimination of jobs within the State of California.

Creation of New Businesses or the Elimination of Existing Businesses within the State of California

The State Water Board estimates that the proposed regulatory action will not have an effect on the creation of new businesses or elimination of existing businesses within the State of California, because recognizing B20 as equivalent to diesel does not create or eliminate a significant enough workload to support the creation of new businesses.

Benefits of the Regulation to the Health and Welfare of California Residents, Worker Safety, and the State's Environment

The proposed amendments will benefit double-walled UST owners and operators that choose to store B20 by reducing the cost to satisfy existing UST requirements. The proposed amendments will benefit double-walled UST owners and operators by increasing the competitiveness of those UST owners and operators who are unable to comply with existing independent testing and approval requirements to store B20. The proposed amendments may benefit the health and welfare of California residents and the State's environment by reducing GHG emissions and other toxic air pollutants. The proposed amendments also may benefit the biodiesel industry in California by increasing the State's competitiveness of those biodiesel manufacturers within the State.

SPECIFIC PURPOSE AND NECESSITY OF EACH PROPOSED AMENDMENT

ARTICLE 3. NEW UNDERGROUND STORAGE TANK DESIGN, CONSTRUCTION, AND MONITORING REQUIREMENTS

SECTION 2631. DESIGN AND CONSTRUCTION REQUIREMENTS FOR NEW UNDERGROUND STORAGE TANKS.

Specific Purpose and Necessity of the Proposed Regulatory Action

Subdivision (m) – This subdivision is added to allow B20 to be recognized as equivalent to diesel for the purpose of complying with existing approval requirements for double-walled USTs. This subdivision will permit double-walled UST owners and operators to store biodiesel blends up to B20 under existing approvals for diesel, unless any material or component of the UST system has been determined to not be compatible with B20.

California statutes require that the primary containment of a double-walled UST be compatible with the stored hazardous substance. (Health & Saf. Code, div. 20, ch. 6.7, §§ 25290.1(c)(1), 25290.2(c)(1), & 25291(a)(1).) California statutes also require that the secondary containment of a double-walled UST is constructed to prevent structural weakening as a result of contact with the hazardous substance to be stored and be capable of storing the hazardous substance until cleaned up. (Health & Saf. Code, div. 20, ch. 6.7, §§ 25290.1(c)(2), 25290.2(c)(2), & 25291(a)(2).) In addition, California statutes require that double-walled USTs be equipped with leak detection methods. (Health & Saf. Code, div. 20, ch. 6.7, §§ 25290.1(d), 25290.2(d), & 25291(a)(6) and (b).)

To implement these requirements for double-walled USTs, existing California UST Regulations require that:

- a. The design and construction of primary containment, including any integral secondary containment, must be approved by an independent testing laboratory for the hazardous substance to be stored and an approval from the manufacturer of primary containment where the independent testing approval does not cover the specific hazardous substance to be stored. (Cal. Code Regs., tit. 23, div. 3, ch. 16, § 2631, subds. (b) & (j).)
- b. The design and construction of secondary containment not integral to the primary containment must be approved by a California registered professional engineer or nationally recognized industry code or standard. (Cal. Code Regs., tit. 23, div. 3, ch. 16, § 2631, subd. (d).)
- c. The leak detection equipment must be tested by an independent third-party testing laboratory and function with the hazardous substance to be stored. (Cal. Code Regs., tit. 23, div. 3, ch. 16, § 2643, subd. (f).)
- d. All components not subject to California UST Regulations, sections 2631(b), (d), and 2643(f) that may come into contact with the hazardous substance to be stored must be approved by independent testing laboratory, the manufacturer of the component, or a California registered professional engineer for the hazardous substance to be stored. (Cal. Code Regs., tit. 23, div. 3, ch. 16, § 2631, subd. (l).)

- e. UST owners or operators must use system components made of, or lined with, materials that are compatible with the hazardous substances stored in the tank. (Cal. Code Regs., tit. 23, div. 3, ch. 16, § 2631.1, subd. (a).)
- f. UST owners or operators must submit documentation demonstrating compliance with California UST Regulations, sections 2631(b), (d), and (l), and 2643(f) when changing the substance currently stored in the UST.

Existing California UST Regulations prescribe how to demonstrate compliance with the requirements for UST material compatibility and functionality of leak detection methods – approval from independent testing organizations, manufacturers, or California registered professional engineers. This subdivision allows an alternative from specific approval requirements, by recognizing B20 as equivalent to diesel for the purposes of demonstrating compliance with the requirements for UST material compatibility and functionality of leak detection methods for double-walled USTs, unless any material or component of the UST system has been determined to not be compatible with B20.

Paragraph (2)(a) of the proposed subdivision specifies that double-walled UST owners or operators cannot use paragraph (1) to recognize B20 as equivalent to diesel for the purposes of demonstrating compliance with the requirements for UST material compatibility if the approver required in California UST Regulations, section 2631, subdivisions (b), (d), or (l) or section 2630(d) has determined that a material or component is not compatible with B20. This limitation prevents materials or components that are not compatible with B20 from deteriorating to a point that a failure occurs that could lead to a release of the stored substance. Paragraph (2)(a) is consistent with existing California UST Regulations that require double-walled UST owners and operators to use a UST system made of or lined with materials that are compatible with the substance stored in the UST system.

Paragraph (2)(b) of this subdivision specifies that if the approver required in California UST Regulations, section 2631, subdivisions (b), (d), or (l) or section 2630(d) has determined that a material or component is not compatible with B20, then the UST owner or operator must repair the UST system within 30 days in accordance with existing California UST Regulations that requires double-walled UST owners and operators to use a UST system made of or lined with materials that are compatible with the substance stored in the UST system. California UST Regulations, section 2611, defines “repair” in relevant part as “restoring to proper operating condition a tank, pipe, spill container, overfill prevention equipment, corrosion protection equipment, release detection equipment, or other underground storage tank system component that have ceased to function properly and cause the underground tank system to be out of compliance with this [California UST Regulations].” The required timeframe for completing the repair set forth in paragraph (2)(b) is consistent with existing repair requirements in the California UST Regulations.

The State Water Board relied upon the following technical, theoretical, or empirical studies, reports, and documents discussed herein in proposing these amendments to the California UST Regulations.

The National Work Group on Leak Detection Evaluations (NWGLDE) is a group comprised of 10 employees from various states and 1 employee from the United States Environmental Protection Agency (U.S. EPA) that reviews leak detection system certifications by independent third-party testing laboratories to determine if the testing was performed in accordance with an acceptable leak detection test method protocol. In January 2012, the NWGLDE added to their

disclaimer to its website that a determination that leak detection systems listed for diesel may be used with B20 regardless of whether B20 is included on individual data sheets for the evaluated leak detection systems. This determination is based on a report from the Biodiesel Industrial Advisory Panel titled *Effects of Biodiesel Blends on Leak Detection for Underground Storage Tanks and Lines* dated August 2010, prepared by Ken Wilcox Associates, Incorporated. This report presents the results of an independent third-party review of the effects of various blends of biodiesel on different leak detection technologies for USTs and pipelines. The purpose of the review was to identify any adverse effects that might compromise the capability of these leak detection devices to detect leaks as specified by the U.S. EPA.

Previously, adverse effects from biodiesel had been identified on UST components made of elastomers. According to the National Renewable Energy Laboratory's (NREL), the cause of the adverse effects on elastomers of diesel containing more than five percent biodiesel on UST component materials were identified as oxidation leading to high acidity. Oxidation occurs due to a lack of oxidation stability. In 2008, ASTM D7467 was revised to include requirements for oxidation reserve (i.e., fuel stability) and for lowering acidity. NREL's *Biodiesel Handling and Use Guide, Fifth Edition*, dated November 2016 concluded from stability testing of B20 meeting the revised ASTM D7467 standard that B20 has stability for up to one year and possibly longer. Therefore, the effects on elastomers has been greatly reduced under the revised ASTM D7467 standard.

The Multimedia Work Group (MMWG) reviews multimedia environmental evaluations including contamination of surface water, groundwater, and soil, of new motor vehicle fuels. In January 2015, the MMWG, based on the best available scientific information and public comments received, conducted a full multimedia study on pure biodiesel and certain blends of biodiesel with diesel, including B20. The study titled *Staff Report Multimedia Evaluation of Biodiesel* dated May 2015 was submitted to the and California Environmental Policy Council (CEPC), a council comprised of multiple California environmental agencies, for the results of the study to be considered. In June 2015, the CEPC concluded in the *State of California Environmental Policy Council Resolution* dated June 23, 2015 that, the use of biodiesel in California consistent with the Alternative Diesel Fuels regulation – regulation intended to create a framework for low carbon, and often times lower polluting, diesel fuel substitutes to enter the commercial market in California – will not pose a significant adverse impact on public health and safety or the environment compared to diesel.

Based upon the technical, theoretical, and empirical studies, reports, and documents cited above, and positive operational experience in the field over the past 10 years with B20 and lower blends in existing USTs around the country – combined with improvements in the ASTM standards – indicate that today's B20 and lower blends may be stored in double-walled USTs with no additional risk to beneficial uses of California waters than posed by diesel. Dispensing equipment, which requires secondary containment beneath it to capture any leaks from the dispensing equipment, does not need to be modified for B20 or lower, unless there is an issue with specific elastomers that are not compatible with B20. Periodic testing and inspections of the secondary containment, leak detection equipment, spill containers, and overfill prevention equipment will detect any affected equipment before the stored substance enters the environment. The limitation and repair requirements in paragraph (2) provide an added layer of protection in the event that if the approver required in California UST Regulations, section 2631, subdivisions (b), (d), or (l) or section 2630(d) has determined that a material or component is not compatible with B20. Therefore, the State Water Board believes there will be no additional risk to beneficial uses of California waters from storing B20 in double-walled USTs than that posed by diesel stored in double-walled USTs.

This subdivision is not in conflict with Federal UST Regulations, part 280.32(b) that requires compatibility to be demonstrated with an independent testing laboratory approval for any UST only when the hazardous substance to be stored contains greater than 20 percent biodiesel. This subdivision is more stringent than the Federal UST Regulations by limiting the storage of B20 to double-walled USTs.

Additionally, this subdivision is consistent with existing California UST Regulations and the State Water Board's commitment to support alternative fuels wherever they are environmentally appropriate, by facilitating and expediting the use of B20, while minimizing the risk of any harm to the environment. It should be noted, however, that in addition to the limitation in paragraph (2) of this subdivision, UST owners and operators still must comply with the requirement in section 2631.1(a) of the California UST Regulations that the UST owner or operator use a UST system made of or lined with materials that are compatible with the hazardous substance stored in the UST system.

SECTION 2631.2 BIODIESEL BLENDS – VARIANCE FROM MATERIAL COMPATIBILITY CERTIFICATION REQUIREMENTS

Specific Purpose and Necessity of the Proposed Regulatory Action

This section is deleted because it is no longer operative. In accordance with subdivisions (g) and (h), the temporary variances provided by this section only were effective for 36 months from the effective date of the section. This section became effective on June 1, 2009 and became inoperative on June 1, 2012.