

State of California  
California Environmental Protection Agency  
**AIR RESOURCES BOARD**

**Final Statement of Reasons for Rulemaking  
Including Summary of Comments and Agency Response**

PUBLIC HEARING TO CONSIDER FOLLOW-UP AMENDMENTS TO THE  
CALIFORNIA PHASE 3 REFORMULATED GASOLINE REGULATIONS

Public Hearing Date: November 16, 2000  
Agenda Item No: 00-11-4

**I. GENERAL**

In this rulemaking the Air Resources Board (ARB or Board) is adopting follow-up amendments to the California Phase 3 Reformulated Gasoline (CaRFG3) regulations, which were adopted following a December 1999 hearing. One of the most important elements of the CaRFG3 regulations is the prohibition of the oxygenate methyl tertiary-butyl ether (MTBE) used as a gasoline additive starting December 31, 2002. In at least some instances, refiners are expected to replace the MTBE with ethanol, another gasoline oxygenate. Most of the CaRFG3 follow-up amendments were designed to accommodate the use of ethanol, which is typically added at gasoline terminals to a blendstock that has been shipped from the refinery as "California reformulated blendstock for oxygenate blending," or "CARBOB." The amendments establish a CARBOB model that can be used by refiners and importers, set specifications for denatured ethanol intended for blending into gasoline, create a mechanism under which a small refiner could alter its production of diesel fuel to provide offsets of excess emissions from gasoline subject to the small refiner CaRFG3 standards, and make various other changes.

The rulemaking was initiated by the September 29, 2000 publication of a notice for a November 16, 2000 public hearing to consider the CaRFG3 follow-up amendments. A "Staff Report: Initial Statement of Reasons" (referred to as the Staff Report) was also made available for review and comment starting September 29, 2000. The Staff Report, which is incorporated by reference herein, contains an extensive description of the rationale for the proposal. Appendix A to the Staff Report contained the text of the proposed amendments to sections 2260, 2261, 2262.3, 2262.5, 2264, 2266.5, 2270, 2272, 2282, 2296 and 2297, and proposed new section 2262.9, title 13, California Code of Regulations (CCR). Appendix B contained the new "Procedures for Using the California Model for California Reformulated Blendstock for Oxygenate Blending (CARBOB)" (hereafter the CARBOB Model Procedures), which was proposed to be incorporated by reference in section 2266.5(a)(2)(B)1., title 13, CCR. These documents were also posted by September 29, 2000 on the ARB's Internet site for the CaRFG3 follow-up rulemaking: <http://www.arb.ca.gov/regact/carfg300/carfg300.htm>.

At the November 16, 2000 hearing, the Board received written and oral comments. At the conclusion of the hearing, the Board adopted Resolution 00-40, in which it approved the originally proposed amendments with several modifications. All of the modifications had been suggested by staff in a 5-page document entitled "Staff's Suggested Modifications to the Original Proposal" that was distributed at the hearing and was Attachment C to the Resolution. The Resolution directed the Executive Officer to incorporate the modifications into the proposed regulatory text, with such other conforming modifications as may be appropriate, and to make the modified text available for a supplemental comment period. He was then directed either to adopt the amendments with such additional modifications as may be appropriate in light of the comments received, or to present the regulations to the Board for further consideration if warranted in light of the comments.

Subsequent to the hearing, ARB staff has identified a number of additional, primarily technical, conforming modifications that are appropriate to make the amended regulations work as effectively as possible. The most significant post-hearing modifications were: (1) allowing downstream commingling of different CARBOBs that are designated for blending with identical levels or ranges of oxygen, rather than with identical levels or ranges of oxygenate, in order to maximize CARBOB fungibility; (2) establishing single sets of CARBOB cap limits for CaRFG2 and CaRFG3 applicable to all oxygenate levels; and (3) assuring that producers and importers do not have to use the Predictive Model compliance mechanism in order to use the CARBOB model.

The modifications approved by the Board included amendments to two documents that are incorporated by reference in the CaRFG regulations but that were not affected by the original proposal. These were the "California Procedures for Evaluating Alternative Specifications for Phase 3 Reformulated Gasoline Using the California Predictive Model" (hereafter the CaRFG3 Predictive Model Procedures"), which is incorporated by reference in section 2265(a), title 13, CCR, and the "California Test Procedures for Evaluating Alternative Specifications for Gasoline" (proposed to be renamed as the "California Procedures for Evaluating Alternative Specifications for Gasoline Using Vehicle Emissions Testing"), which is incorporated by reference in section 2266(a), title 13, CCR.<sup>1</sup>

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<sup>1</sup> The amendments to these additional documents were sufficiently related to the original text that the public was adequately placed on notice that the change could result from the originally proposed regulatory action, as required by Government Code section 11346.8(c). All of the adopted amendments were designed to make sure the CaRFG3 regulations and the CARBOB provisions work as effectively as possible. The amendments to the CaRFG3 Predictive Model Procedures – which had been adopted in the CaRFG3 rulemaking – made two clarifying changes to make sure the Procedures worked as intended. The first change added language limited use of the "evap" model during the cooler months of the year when gasoline is not subject to the Reid vapor pressure standard designed to reduce evaporative emissions. The second change added language explaining that, for the hot soak evaporative benzene emissions model, it is assumed that the reference fuel contains MTBE since this assumption helps ensure that potency-weighted toxics emissions from CaRFG3 will not be greater than those from CaRFG2.

The texts of the modifications to the originally proposed regulations and to the three affected incorporated documents were made available for a supplemental 15-day comment period by issuance of a "Notice of Public Availability of Modified Text and Supporting Documents and Information."<sup>2</sup> This Notice and its five attachments were mailed by March 30, 2001, to all parties identified in section 44(a), title 1, CCR and to other persons generally interested in the ARB's rulemakings concerning gasoline.<sup>3</sup> The Notice, its five attachments were also posted on the Internet site for the rulemaking on March 23, 2001. Three comments were received during the 15-day comment period. After considering these comments the Executive Officer issued Executive Order G-01-012, in which he adopted amendments to title 13, CCR, adopted the CARBOB Model Procedures, and amended the CaRFG3 Predictive Model Procedures and the California Procedures for Evaluating Alternative Specifications for Gasoline Using Vehicle Emissions Testing.<sup>4</sup>

This Final Statement of Reasons updates the Staff Report by identifying and providing the rationale for the modifications made to the originally proposed amendments. It also summarizes and responds to comments submitted during the rulemaking.

**Documents Incorporated by Reference.** As noted above, this rulemaking adopts or amends three ARB documents that are incorporated by reference in the CaRFG regulations: (1) the newly adopted CARBOB Model Procedures, which is incorporated by reference in section 2266.5(a)(2)(B)1; (2) the amended CaRFG3 Predictive Model Procedures, which are incorporated by reference in section 2265(a)(2), and (3) the

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The amendments to the renamed California Procedures for Evaluating Alternative Specifications for Gasoline Using Vehicle Emissions Testing were designed to allow persons to use the vehicle testing mechanism to identify formulations that are equivalent to the CaRFG3 standards as well as the CaRFG2 standards.

<sup>2</sup> The regulation modifications approved by the Board at the November hearing also included elements specifically applicable to any small refiner operating a small refinery that has been shut down since the start of the CaRFG2 requirements in March 1996. Resolution 00-40 directed the Executive Officer to prepare a supplemental written analysis of the environmental impacts expected to result from the proposed regulatory modifications pertaining to restarting small refineries, and to make the analysis available for a public comment period of at least 45 days. In order to expedite final action on the amendments pertaining to CARBOB, the modifications made available by March 30, 2001 did not include the provisions pertaining to restarting small refiners. The modifications affecting restarting small refiners will be made available for comment at a later date, along with the supporting environmental analysis. After the supplemental comment period, the Executive Officer will take appropriate action.

<sup>3</sup> The mailout included excerpts of the CARBOB Model Procedures and the CaRFG3 Predictive Model Procedures, showing the instances in which the modified text appeared. As explained in the 15-Day Notice, the complete text of each of these documents was posted on the ARB's Internet site for this rulemaking. Also posted was document containing all of the California reformulated gasoline regulations with the proposed modifications shown; this document included regulations not being amended in this rulemaking.

<sup>4</sup> The adopted amendments contained a few nonsubstantial modifications made after the 15-day comment period, mostly in response to comments submitted to during that period. These modifications are described in Attachment A.

amended and renamed California Procedures for Evaluating Alternative Specifications for Gasoline Using Vehicle Emissions Testing, which are incorporated by reference in section 2266(a). In each instance the regulation identifies the incorporated document by title and date. The incorporated documents are readily available from the ARB upon request, were made available in the context of this rulemaking in the manner specified in Government Code section 11346.5(b), and were posted on the ARB's Internet site for the rulemaking.

The three procedures documents are incorporated by reference because it would be impractical to print them in the CCR. Existing ARB administrative practice has been to have the 62-page CaRFG 3 Predictive Model Procedures incorporated by reference rather than printed in the CCR because these procedures are highly technical and complex, have pages of equations and fourteen tables, include various worksheets, and have a very limited audience. The renamed California Procedures for Evaluating Alternative Specifications for Gasoline Using Vehicle Emissions Testing has been incorporated by referenced since its original adoption in the 1991-1992 CaRFG2 rulemaking. And the new CARBOB Model Procedures contain charts, pages of equations and worksheets. The affected public is accustomed to the incorporation format used for these procedures. It would be both cumbersome and expensive to print these documents in the CCR.

**Fiscal Impacts.** The ARB has determined that this regulatory action will not result in a mandate to any local agency or school district, the costs of which are or are not reimbursable by the state pursuant to part 7 (commencing with section 17500), division 4, title 2 of the Government Code.

**Consideration of Alternatives.** The ARB has further determined that no alternative considered by the agency or that has otherwise been identified and brought to the attention of the agency would be more effective in carrying out the purpose for which the regulatory action was proposed or would be as effective and less burdensome to affected private persons that the action taken by ARB. The general objective of the rulemaking – and particularly the new CARBOB model mechanism – is to make it more practical for refiners to comply with the CaRFG3 standards when they can no longer use MTBE.

## **II. MODIFICATIONS TO THE ORIGINAL PROPOSAL**

As discussed above, the final amendments reflect numerous modifications to the original proposal. In order to make the supplemental 15-day comment process as meaningful as possible, the documents showing the proposed modified text of the regulations and incorporated documents contained numerous “commentaries” explaining the rationale for each substantive modification and specifically noting modifications that had been developed after the November 16, 2000 hearing. Rather than having those commentaries repeated in this section of the Final Statement of Reasons, the modified texts containing the commentaries have been appended as

Attachment B (proposed Modifications to the Proposed Regulation Order), Attachment C (proposed modified text of the CARBOB Model Procedures), Attachment D (proposed modified text of the California Procedures for Evaluating Alternative Specifications for Gasoline Using Vehicle Emissions Testing, and Attachment E (proposed modified text of the CaRFG3 Predictive Model Procedures).

### **III. SUMMARY OF PUBLIC COMMENTS AND AGENCY RESPONSES**

During the 45-day comment period, the Board received written comments from A 2nd Opinion (A2O; copy of slide presentation), the Alliance of Automobile Manufacturers (the Alliance; copy of slide presentation), the California Independent Oil Marketers Association (CIOMA), the California Trade and Commerce Agency (Trade and Commerce), CENCO Refining Company (CENCO), Communities for a Better Environment (CBE), Equilon Enterprises LLC (Equilon), Paramount Petroleum (Paramount), Kern Oil and Refining Co. (Kern Oil, copy of oral comments), and the Western States Petroleum Association (WSPA). At the hearing, oral testimony was presented by A2O, the Alliance, CIOMA, CBE, CENCO, Kern Oil, Paramount, the Renewable Fuels Association (RFA), and WSPA. During the supplemental 15-day comment period, written comments were received from Lew Gibbs, WSPA, and the Oxygenated Fuels Association (OFA), which represents companies engaged in the production and marketing of MTBE.

Set forth below is a summary of each objection or recommendation specifically directed at the proposed amendments or to the procedures followed by the ARB in proposing or adopting the amendments, together with the agency response. The comments have been grouped by topic whenever possible. Comments not involving objections or recommendations specifically directed towards the rulemaking are generally not summarized below.

The representatives of CBE and CENCO addressed issues related to the proposed modifications specifically applicable to any small refiner operating a small refinery that has been shut down since the start of the CaRFG2 requirements in March 1996. As explained in footnote 2, these modifications and associated materials will be made available for comment at a later date, and they are not included in the amendments accompanying this Final Statement of Reasons. The comments pertaining to this issue are accordingly not summarized or addressed in this Final Statement of Reasons, since they will be addressed in the subsequent Final Statement of Reasons covering those particular amendments.

The WSPA representative stated that the organization supports the proposed amendments almost in their entirety, although WSPA disagreed on some matters of enforcement. The RFA representative stated it is fully in support of the proposals brought to the Board. The Kern Oil representative addressed the provisions on offsetting emissions increases from gasoline produced to meet the small refiner CaRFG3 standards and stated the company's support for the staff proposal, with

corrections of a few minor typographical errors. The Paramount representative also stated its support for all of the proposed amendments.

There was also testimony on the expected impacts of the CaRFG3 regulations that had been adopted following the December 1999 hearing. The CIOMA representative raised concerns regarding the effects of the CaRFG3 regulations on the supply and availability of gasoline to independent oil distributors and the economic effects on their constituent companies. The Alliance spokesman expressed its members' concern that the CaRFG3 regulations compromise air quality and did not go far enough in gaining additional emission reductions. The A2O witness urged that the CaRFG3 cap for T50 be raised to the ASTM standard. While the comments and concern of these stakeholders are important, they did not specifically address the proposed CaRFG3 follow-up amendments<sup>5</sup> and accordingly are not summarized or responded to in this Final Statement of Reasons.

In its comments submitted during the supplemental 15-day comment period, OFA took issue with various aspects of the original CaRFG3 rulemaking, asserting that California lacks the authority to ban MTBE in gasoline, that MTBE's use in gasoline does not represent a significant risk to water resources, that the prohibition of MTBE in gasoline will lead to fuel supply instability and significant price escalation, and that the prohibition on the use of all ethers in California gasoline is unjustified. None of these claims pertained to the amendments adopted in the CaRFG3 follow-up rulemaking.

## **A. COMMENTS PRESENTED PRIOR TO OR AT THE HEARING**

1. Comment: WSPA remains very concerned about the potential for inconsistency between how refiners certify CARBOB and how ARB's Compliance Division enforces the certification. Section 2266.5(a)(2)(B)2. provides blanket authority for Compliance Division to use the results obtained from a hand-blend of CARBOB and ethanol, in order to take enforcement action against a batch of CARBB that was certified using the CARBOB model. Given that the very purpose of the CARBOB model is to allow certification based on the properties of the CARBOB, we believe ARB's enforcement protocol should mirror the refinery certification work process. In fact, the possibility of enforcement action being based on a different procedure than certification could drive refiners to not use the CARBOB model. The enforcement uncertainty could be greater than the value of the additional flexibility. (WSPA)

It is imperative that refiners continue to have a choice in how they certify gasoline. Thus ARB's enforcement action should be based on the same test procedures or protocols being used for gasoline certification. The possibility of ARB using only ethanol hand-blends for enforcement action would significantly limit blending flexibility since many refiners may elect not to use other certification options. To

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<sup>5</sup> Although the Alliance spokesman stated that the organization was not in support of some of the amendments that had been discussed at the hearing, we have not been able to identify any specific element of the proposed CaRFG3 follow-up amendments that was opposed by the Alliance.

maintain a cost-effective gasoline supply, ARB's enforcement protocol must be similar to the procedures used by refiners in certifying their gasolines and ethanol blendstocks (CARBOBs). (Equilon)

Agency Response: Adoption of the CARBOB model option is premised on the assumption that the model is reasonably accurate in representing the actual effects of blending ethanol into batches of CARBOB. However, it would not be prudent at this time to totally eliminate the ability of ARB inspectors to verify compliance through hand-blending a sample of CARBOB with ethanol, and analyzing the resulting blend of finished gasoline. If subsequent experience were to indicate that the CARBOB model under-predicts the actual properties of the finished gasoline, the ARB needs to have available the use of hand-blending procedures, in addition to the CARBOB model, in order to successfully enforce the regulations.

As indicated on page 14 of the Staff Report, it is staff's intent during initial implementation of the amendments that, where a refiner has elected to use the CARBOB model, violations will only be pursued where tests show that the CARBOB limits have been exceeded. As indicated in the responses to the next two comments, staff intends to work with refiners in gathering additional data that can be used to verify the accuracy and reliability of the CARBOB model. If significant shortcomings of the model become apparent, it could become necessary for the ARB to advise refiners that hand-blending will be used as appropriate to verify compliance.

2. Comment: In cooperation with WSPA, the ARB staff should, as soon as possible, acquire whatever data is necessary to demonstrate the validity of the CARBOB model. (WSPA)

Agency Response: We fully agree. One refiner has indicated that it will be obtaining data that can be used to validate the CARBOB model when the refiner chooses to comply with the CaRFG3 standards under the early opt-in provisions.

3. Comment: Upon validation of the CARBOB model, the Executive Officer should inform refiners that it is ARB's intention to base enforcement actions against product certified using the CARBOB model based only on the properties of the CARBOB. (WSPA)

Agency Response: This is precisely the ARB's intention. However, at this time there is no certainty that the CARBOB model will be validated for all possible blends. The ARB staff will continue to work with the refining industry to address this issue.

4. Comment: The CARBOB caps are not needed to enforce the CaRFG3 regulations. (WSPA)

Agency Response: We believe that the CARBOB caps provide an important tool for downstream enforcement of the CaRFG3 standards before CARBOB is oxygenated,

since the hand-blending step would not be necessary. We believe the modified and simplified CARBOB caps that have been adopted represent a substantially simplified approach that is technically sound.

5. Comment: If the ARB is going to use CARBOB caps to enforce the CaRFG3 regulations, only one cap value for T50 and one cap value for T90 should be used. The T50 cap should be 230 degrees F and the T90 cap should be 334 degrees F. (WSPA)

Agency Response: The table of CARBOB caps in section 2266.5(a)(6)(A) has been modified to identify only one set of CARBOB caps regardless of ethanol content, resulting in one 335 degrees F. cap for T90, based on the originally proposed cap for gasoline with an ethanol range of 7.8-10 volume percent ethanol. Because differences in RVP can have a substantial impact on the T50 of a batch of CARBOB, we believe separate T50 CARBOB caps are appropriate depending on whether the CARBOB is subject to the summertime RVP standards. The result is that the adopted T50 CARBOB cap for RVP-controlled gasoline is three degrees F. more stringent than recommended by WSPA, while the T50 CARBOB cap for gasoline not subject to the RVP standard is 1 degree F. less stringent than WSPA's recommendation.

6. Comment: The ARB should allow as much flexibility as possible when transitioning between gasolines containing different amounts of oxygenates. In particular, the regulations should address transitions from CARBOB to CARB gasoline that occur outside the RVP control season. This is a likely transition since a supplier may elect, in some situations, to use ethanol only in the winter. (Equilon)

Agency Response: The adopted amendments to section 2266.5(f)(1)(C) and (D) identify specific types of storage tank transitions that will be expressly permitted because it has been demonstrated that the transition will not increase emissions. We could not make such a determination for transitions from CARBOB to finished gasoline outside the RVP season. Anyone wishing to make a transition that is not specifically provided for may still contact the ARB about a protocol under section 2266.5(f)(2). The blending of CARB gasoline into tanks containing CARBOB (a transition from CARBOB to CARB gasoline) is not automatically allowed during any time of the year (RVP season or non-RVP season) it would result in an increase in exhaust hydrocarbon emissions.

7. Comment: In the provisions on transitioning tank systems from one type of CaRFG or CARBOB to another type, the requirement that tank "heels" be less than or equal to 10 percent (9 to 1 dilution) may be too restrictive for many systems and may prove impractical. The staff should perform additional analysis to determine if greater tank heels would be possible without increasing emissions. (WSPA)

Agency Response: The staff has performed additional analysis and has found that the tank heel requirement of 10 percent can be changed to 20 percent (4 to 1

dilution) for a transition from a CARBOB formulated for one oxygen content to a CARBOB formulated for another oxygen content, without adverse emissions impacts. Section 2266.5(f)(1)(C)(3) has been modified accordingly. The staff's additional analysis was made available in connection with the 15-day Notice.

8. Comment: The proposed amendments will have a significant economic impact on gasoline marketers. This impact will arise from the fact that marketers will have to add substantial additional gasoline storage capacity necessitated by the fact that both oxygenated and non-oxygenated gasoline will be marketed, and these gasolines will have to be segregated. Also, the requirement that storage tanks contain a 10 percent "heel" before transitioning to a new fuel will add significantly to the cost impact. The costs could include monitoring, recordkeeping, the price impact of having to sell fuels merely to void a tank, cost of extended delivery runs if tanks could not be economically voided, and cost-o-product differentials. (CIOMA)

Agency Response: The CaRFG3 follow-up amendments are designed to provide additional flexibility to the refiners and distributors while ensuring that there is no increase in emissions. Compared to the CaRFG3 regulations before this rulemaking, the amendments add additional options, which should somewhat lessen the economic impact on affected parties. As discussed in the response to the previous comment, the 10 percent "heel" requirement has been increased to 20 percent for transitions in which a person is transitioning from a CARBOB, formulated for one oxygen content, to a CARBOB formulated for another oxygen content. This change will provide additional flexibility and reduce costs.

9. Comment: The ARB should work with WSPA to develop protocol conditions that could be used during an emergency or unusual circumstances – such as a severe shortage of ethanol – to ensure that RVP caps are not exceeded during transitions between non-oxygenated and ethanol-blended gasoline. This should be done in advance of any future immediate need. (WSPA)

Agency Response: The ARB is willing to work with WSPA to see if such a protocol can be developed.

10. Comment: The ARB's allowance of equivalent test methods is key to both providing refinery flexibility and maintaining the continuity of gasoline supply. However the performance standards by which these test methods are declared equivalent must be reasonable. Unreasonably demanding standards will prevent some key on-line test methods from being used in gasoline blending. Without the ability to use these state-of-the-art on-line analyzers to certify gasoline blends and CARBOB, refiners would lose supply flexibility. The loss of supply flexibility could have a significant impact on the industry's ability to continuously and cost-effectively supply complying gasoline. (Equilon)

Agency Response: The regulation authorizing Executive Officer approval of equivalent test methods for determining compliance with the CaRFG standards –

section 2263(c) – is not being amended in this rulemaking. The ARB will continue to administer this program in a fair, reasonable and effective manner.

11. Comment: The ARB should allow refiners to use standardized codes on pipeline tickets for pipeline transfers of CARBOB from the refinery to the pipeline system. (WSPA)

Agency Response: As long as a document such as a pipeline ticket communicates the necessary information to the pipeline operator, such an approach will be permitted under the regulations.

12. Comment: Sections 2272(b)(2)[D] and 2260(a)(28.5) require that a small refiner, in order to produce gasoline subject to the small refiner CaRFG3 standards, must have produced and supplied CaRFG2 in 1998 and 1999. Only one small refiner meets these criteria. The ARB should amend the definition of small refiner in section 2272(b)(2)[D] to include those refiners that produced or could have produced CaRFG2 in 1998 and 1999. As proposed, the new language would read “[D] a demonstration that the small refiner’s California refinery was capable of producing motor gasoline and could have been used in 1998 and 1999 to produce and supply California gasoline meeting the CaRFG standards.” At least one major has made its intent clear by publicly stating that they want to stop buying intermediate feedstocks from small refiners. The flexibility of an emissions trade opportunity whereby Paramount produces cleaner CARB diesel provided under section 2272 would help Paramount produce gasoline competitively, thereby providing California with additional gasoline supply.

Paramount is here today asking the Board to direct ARB staff to work with Paramount to grant our company additional time and flexibility necessary to create a specific provision in the same vein as that has been created for CENCO or Kern Oil. (Paramount)

Agency Response: The requirement in section 2272(a) that only a “qualifying small refiner” may produce gasoline subject to the small refiner CaRFG3 standards, and the section 2260(a)(28.5) definition of “qualifying small refiner” which requires that the refinery have produced CaRFG2 in 1998 and 1999, were added by the CaRFG3 regulations. In this rulemaking the Board is defining the mechanism in section 2282(e)(5) for offsetting emissions increases associated with gasoline subject to the small refiner CaRFG3 standards. The definition of “qualifying small refiner” assures that the small refiner CaRFG3 standards apply to refiners who in reliance of the CaRFG2 regulations took the steps to enable production of gasoline fully complying with the CaRFG2 standards as evidenced by the production of such gasoline.

Nevertheless, the Board has directed the staff to work with Paramount to try to accommodate Paramount and its concerns with the small refiner provisions without resulting in a increase in emissions. The staff is currently working with Paramount on these matters. If staff determines there is a need to provide an additional

mechanism applicable to Paramount, it can bring the matter back to the Board at a later time.

13. Comment: We are very concerned that the CaFRG3 regulations will cause the gasoline distribution system to move from a fungible fuel system to a nonfungible fuel system. Right now, fuel is fungible within the pipeline system. It is fungible within our delivery system and is pretty much fungible in the retail system. What we see coming down the pipe, and we're very concerned about it, is the possibility of two flavors of fuel for California – oxygenated and non-oxygenated.

Now, what that means to us in the first instance is an immediate capital cost of basically doubling the storage capacity that we have that our members have at their facilities because oxygenated and non-oxygenated fuels will not be able to be mixed. I think that there are also issues related to the transport of various types of CARBOB through the pipeline system. Right now our delivery system is extremely sensitive to any minor malfunctions. Recently, we've just seen a major problem in northern California where a testing device got stuck in a pipeline that was delivering to an air force base. And that has created resonance in terms of diesel delivery that continues to this day for us. And that problem was resolved three or four weeks ago. And it's still creating problems in the delivery of fuels. Now, if we start putting variables into the delivery system where different types of fuels need to be delivered to specific locations at different times of the year, we've just added a whole new dimension of complexity into the delivery system.

So at the first instance we're very concerned about the availability of supply at the rack where we pick these up, because of the additional complexity that may be introduced into the delivery system. (CIOMA)

Agency Response: While we recognize that the move from MTBE to ethanol as a gasoline oxygenate increases the potential for nonfungibility in the distribution system, the amendments adopted in this rulemaking are designed to *improve* product fungibility.

In approving the CaRFG3 regulations in December 1999, the Board recognized the need to provide refiners and the gasoline distribution system with the necessary flexibility to eliminate the use of MTBE as well as to facilitate the import of finished complying gasoline or blendstocks from other states or countries. As part of Resolution 99-39, which approved the CaRFG3 regulations, the Board identified the need to further investigate a number of issues as part of the implementation of the CaRFG3 regulations. Pursuant to the Board's direction, ARB staff has conducted several workshops to work with all of the key stakeholders on remaining CaRFG3 implementation issues. An overriding objective has been to provide the necessary flexibility in the production and distribution of gasoline to protect California's gasoline supply. We will continue to work with CIOMA and other stakeholders to address the difficult issues associated with the implementation of the CaRFG3 program.

In addition, the ARB and the CEC are working together to evaluate longer-term measures that could make California less susceptible to supply disruptions. The ARB is supportive of the CEC's work to not only evaluate the benefits and feasibility of creating a strategic reserve but also to evaluate how to increase imports of fuel to California, either by marine vessels or by pipeline. Further, ARB has petitioned the U.S. Environmental Protection Agency to waive the year-round oxygen requirement in the federal RFG regulations, which would provide California with even greater flexibility in producing gasoline in this state.

14. Comment: On page 31 of the Staff Report, ARB concludes that the CaRFG3 regulations “should not have a negative economic impact” on small businesses. However, you have completely disregarded the issues brought up in our letter of August 18 that will have serious and adverse economic impacts to CIOMA’s members, most of whom are small businesses. Of most concern is the potential to have various types of fuel blends – oxygenated and nonoxygenated – marketed at various locations in the state during different times of the year. This could result in marketers having to develop segregated storage for different types of fuel depending on the location and time of year that the fuel is to be delivered.

I mean, I will quote from the Staff Report. “These regulations should not have a negative economic impact on small businesses.” That’s wrong. It’s not correct. And we need to get that corrected. (CIOMA)

Agency Response: The discussion of the economic effects on small business on page 31 of the Staff Report addressed the potential impacts of the proposed CaRFG3 follow-up amendments being considered in this rulemaking, not the impacts of the CaRFG3 program as a whole. The Staff Report noted that the current prohibitions on mixing CARBOBs designated for different levels of ethanol could result in “a significant burden to the smaller gasoline marketers and fuel distribution system proprietors. Although they may not go as far as the commenter would like, the amendments adopted in this rulemaking are designed to *increase* the flexibility for marketers to make transitions between different types of CARBOB, or between oxygenated and nonoxygenated gasolines. This is why the Staff Report states that “staff does not anticipate there should be any significant additional adverse economic effect upon small businesses associated with the staff proposal.” The Staff Report nowhere states that the CaRFG3 regulations themselves will not have an adverse impact on small businesses. And the commenter has not identified any respect in which the *amendments* being adopted in this rulemaking will adversely affect small businesses.

15. Comment: The staff's analysis does not address the fuel fungibility issue. Unbranded fuels are the lifeblood of the independent marketer. The potential of creating nonfungible fuels will have a drastic and adverse effect on the supply of unbranded fuels, which are currently fungible in the delivery system. (CIOMA)

Agency Response: The amendments adopted in this rulemaking are not expected to increase the potential for nonfungible fuels – in fact they are designed to add flexibility that may reduce the potential for nonfungibility.

This is not to say the issue of nonfungibility associated with a transition from MTBE to ethanol is not important. ARB staff will work with the CEC to evaluate potential outcomes and to identify any further steps that can enhance fungibility of gasoline and CARBOB.

16. Comment: The staff analysis does not address the issue of direct delivery. Any analysis that computes the costs to small business must address the potential for independent marketers to experience a loss of supply, and the possibility of the major oil companies enacting "direct delivery as a cost-savings and logistically practical alternative. This is a direct interference with independent marketers' current market, and therefore a potentially significant cost impact to CIOMA members. (CIOMA)

Agency Response: Again, the amendments adopted in this rulemaking are not expected to increase the potential for direct delivery by major oil companies, as the amendments add to rather than reduce the flexibility in the CaRFG3 regulations.

We recognize the potential concerns with the potential increase in direct delivery when ethanol is used as the oxygenate in California gasoline. This is one of the issues we encourage the CEC to evaluate in its work on the impacts of implementation of the CaRFG3 program.

17. Comment: The ARB should make the following changes to the Proposed Regulation Order that is attached as Appendix A of the Staff Report:

- (a) Page A-1, section 2260. Definitions change is labeled (a)(6.7). Should this be (a)(6.8)? The label (6.7) was already used in what was approved by OAL August 30, 2000.
- (b) Page A-2, section 2262.5(a)(2). B and C should be dropped – dates have expired.
- (c) Page A-4, Section 2262.9 Table Title should be based on ASTM 4806-99 to include a limit on pHe.
- (d) Page A-5 (b) Test Methods. In section (1) should be ASTM D 5453-00. In section (3) should delete "sulfur" – it is not measured in denaturant. In (c)(1) – is additive the right terminology for ethanol? How about blend component?
- (e) Page A-7, table 1. Sulfur test method should be ASTM D 5453-00. Olefin test method should be ASTM D 1319-98. Aromatics test should be ASTM D 5580-00.
- (f) Page A-13 – why do we need a 3ppm floor on sulfur?
- (g) Page A-16, under (b)(1)(C) – could not find any "info" under section 2265(a)(2). Is it 2266.5(a)(2)?

- (h) Page A-16, under (b)(1)(E) – not clear whether refiner can specify 5.7 vol.% ethanol and resulting blend can be 1.8 – 2.2 wt.%, or whether we must specify the vol.% ranges that equate to 1.8 – 2.2. Still numerous references to using the minimum amount of oxygen in hand-blends, and for calculating the volume of the “final blend” – 2266.5(a)(3).
- (i) In section 2266.5(c)(4) line 5, the words “or shipment” should be removed for consistency sake. (page A-19, line 1 of the Staff Report)
- (j) Page A-21, under (d)2. – need words to cover gasoline on top of CARBOB.
- (k) Page A-32, repeatability numbers of Grabner instruments should be 0.084.

(WSPA)

Agency Response: We have made the changes and corrections identified in items (a), (b), (c), (i) and (k) above. Our responses to the other items are set forth below.

- (d) We are not updating the designated sulfur test method from ASTM D 5433-93 to ASTM D 5433-00 at this point in the rulemaking because the latter version of the method has a changed reproducibility statement. This would not represent a minor change, and we believe it is appropriate to consult with stakeholders and engage in a workshop process before making the requested amendment. We have made the recommended change of deleting “sulfur” in section 2262.9(b)(3) (renumbered as section 2262.9(b)(2)). We have also made the recommended change in the characterization of ethanol as a blend component in gasoline rather than as an additive in California gasoline.
- (e) We are not updating the designated sulfur test method for the reason described in the previous paragraph. We are not changing the designated test method for olefin content in this rulemaking because it is being amended in a separate rulemaking for which the hearing was also conducted November 16, 2000. We have updated the aromatics method from ASTM D 5580-95 to ASTM D 5580-00 as recommended.
- (f) Section 2266.5(a)(2)(D)2. (as relettered in the Final Regulation Order) identifies the default characteristics of denatured ethanol used on or after December 31, 2002 in hand-blending to determine whether CARBOB complies with the CaRFG3 standards. If the sulfur content of the denatured ethanol used in hand-blending is lower than is expected to be found in the field, then the sulfur content of the hand-blended gasoline will be unrepresentatively low. It is accordingly appropriate to include a 3 parts per million floor on the sulfur content of denatured ethanol used in hand-blending.
- (g) The phrase “along with any information required under section 2265(a)(2)” has been moved to section 2266.5(b)(1) in the Final Regulation Order, and the parenthetical “(for a PM alternative gasoline formulation” ) has been added at the end of the phrase for clarity. Section 2265(a)(2) provides that a refiner supplying a final blend of gasoline as a Predictive Model alternative gasoline formulation

must notify the Executive Officer of several pieces of information, including the PM alternative specifications that will apply to the final blend and whether each specification applies as a PM flat limit or a PM averaging limit. The language in section 2266.5(b)(1) is intended to make clear to the refiner that it must provide *both* the Predictive Model information and the CARBOB information in its notification to the Executive Officer.

- (h) We believe the finally adopted text of section 2266.5(b)(1)(E) is clear. The refiner has the option of designating an amount of oxygenate to be added, or a range of amounts to be added. In either case, the designated amount or range of amounts of oxygen must be such that the oxygen content of the oxygenated blend will fall within the designated range of oxygen. Thus a refiner may designate any single amount of oxygenate to be added as long as it will result in the oxygen content of the resulting blend falling somewhere within the designated range of oxygen.

We believe that all the references in section 2266.5(a)(2)(C) to having to hand-blend using the minimum designated amount of oxygen have been deleted. Section 2266.5(a)(3) pertains not to any hand-blending activities but to how the volume of the oxygenated gasoline will be determined for purposes of averaging and offsetting when a refiner has designated a range of oxygenate to be added to a batch of CARBOB. In that case, it is appropriate to consistently determine the volume of the oxygenated gasoline by assuming that the minimum designated amount of oxygenate has been added. We see no reason to change this provision.

- (j) In the original proposal, section 2266.5(f)(1)(D)2. referred only to adding CARBOB to California gasoline because staff had determined there was no need from an emissions standpoint to impose tank draw-down requirements in that instance. As explained in the commentary in the modified text made available with the 15-day notice, staff ultimately determined that a blanket rule allowing transitions from CARBOB to California gasoline could not be assured to result in no emissions increase, so that part has been deleted.

### **Comments submitted by the Office of Small Business Advocate and the Trade and Commerce Agency**

18. Comment: It appears the proposed regulations would hold California businesses liable for any violations committed by out-of-state businesses. A California company using denatured ethanol must rely on the documentation provided by out-of-state suppliers that the ethanol meets ARB requirements. Many in the industry feel that such documentation provides little protection. California companies may be cited for violations of chemical compound limits resulting from impure ethanol imported from the Midwest. If testing revealed that ARB requirements were not met, a Notice of Violation, along with any fines and penalties would be issued to the California

company. The *Staff Report* does not address these enforcement concerns. (Trade and Commerce Agency)

Agency Response: The standards for denatured ethanol apply to any person selling or supplying it in California. California companies acquiring denatured ethanol and using it as a gasoline blend component may request independent analytical reports on any denaturant and ethanol supplied directly to them from out-of-state companies. They may also condition purchases of denatured ethanol on the supplier indemnifying the purchaser for any fines or penalties caused by noncomplying ethanol.

19. Comment: The California ethanol producers must use denaturants that contain the exact chemical properties set by the proposed amendments. The ARB has no enforcement authority over Midwest ethanol suppliers. This appears to put California ethanol producers at a competitive disadvantage by reducing the options available. The *Staff Report* does not address this competitive issue. (Trade and Commerce)

Agency Response: We do not believe that the denaturant requirements will put California ethanol producers at a competitive disadvantage. The denaturant specifications in section 2262.9(a)(3)(A) consist of the CaRFG3 cap limits for benzene, olefins, and aromatic hydrocarbons, and become applicable December 31, 2002. Thus all gasoline sold in California that complies with the applicable CaRFG3 limits will be lawful for use as a denaturant. In comparison, Midwest ethanol producers may not have as abundant supplies of gasoline meeting the CaRFG3 cap limits. Further, denatured ethanol supplied from the import facility that first received the product from out-of-state will be subject to the same standards as ethanol supplied from a California facility.

20. Comment: If Midwest producers have to meet ARB specified limits for benzene, olefins and aromatics, excessive costs and/or facility limitations could reduce the number of producers making CaRFG3 ethanol. This could result in less supply and higher prices in California. These out-of-state producers contend that even if they cannot meet the proposed specifications for denaturants, the final gasoline and ethanol blend will meet ARB requirements. And even though some denaturant products may not meet the ARB specifications, the amount added to the ethanol could be adjusted to meet the final blend specifications. Neither the *Staff Report* nor the *Notice* addressed the potential economic impacts of the prescriptive requirements on ethanol producers and gasoline consumers. (Trade and Commerce)

Agency Response: As explained in the Staff Report, the reason for the specifications for denatured ethanol and ethanol denaturants is to assure that the ethanol added to CARBOB at terminals is of a predictable quality and will not hinder the ability of refiners to produce gasoline that meets the CaRFG3 standards. We believe we have balanced the need for good blending quality and the need for

adequate and consistent ethanol supplies. The final requirements incorporate elements that afford greater flexibility to ethanol suppliers. First, section 2262.9(a)(3)(B) has been added to allow a denaturant to exceed the denaturant limits if a smaller percentage of the denaturant will be added to the ethanol. Second, sections 2266.5(a)(2)(D)3., 2266.5(b)(1)(D), 2266.5(d)(1)(C) and 2266.5(g)(2) allow the use in gasoline of denatured ethanol that exceeds the otherwise applicable standards if the ethanol is matched with a cleaner CARBOB designed to be blended with such ethanol. It is notable that the trade association of ethanol producers in the U.S. – the RFA – supported the standards for denatured ethanol and denaturants.

21. Comment: To lessen any possibly adverse economic impacts, the ARB should incorporate language to consider whether fines should be levied, or the severity of the violation reduced, if a California company has an enforceable contract that legally requires the ethanol supplier to meet all of the proposed CaRFG3 requirements (including those for denaturants). (Trade and Commerce)

Agency Response: The ARB's enforcement of regulations is based on strict liability in which the party selling the product is responsible for the quality of the product. If a California company has an enforceable contract with an ethanol supplier, then the company should have a right of indemnification against the ethanol supplier due to the supplier's breach of its contractual obligations. This should provide ethanol suppliers with a powerful incentive to make sure the ethanol they are supplying fully complies with applicable requirements.

22. Comment: If possible, by regulation or other means, the ARB should consider restricting future sales of ethanol in California by any company that sells impure ethanol in this state. This provision may provide a market-based incentive for accurate testing and processing of ethanol products. (Trade and Commerce)

Agency Response: We doubt that the ARB has the authority to restrict future sales of ethanol as recommended. The remedies described in the response to the previous comment should be sufficient to assure that complying ethanol is being marketed.

23. Comment: To lessen potential supply problems and impacts on ethanol producers in California and out-of-state, the ARB should consider only requiring that the final ethanol blends and/or ethanol-gasoline blends meet all required CaRFG3 limits. Such a requirement would be instead of prescribing the specific type and amount of chemical compounds used in the denaturant. (Trade and Commerce)

Agency Response: Both the California refining industry and RFA, representing ethanol producers, was supportive of the denatured ethanol specifications. The ethanol specifications for denatured ethanol is intended to be a balance between ensuring the cleanest ethanol possible is supplied for use in CaRFG3 without significantly limiting the supply of ethanol.

## B. COMMENTS RECEIVED DURING THE 15-DAY COMMENT PERIOD

24. Comment: During the workshops on establishing specifications for denatured ethanol, I represented ASTM Subcommittee D02.A. A recent problem has been called to our attention, which relates to the copper test method specified in ASTM D 4806. This problem appears in the CARB table showing ASTM ethanol specifications and in Note 2 of that table. The problem is that the copper test method, D 1688-95, doesn't have a Procedure D. On learning this, we investigated and found the copper test method should be specified as D 1688-95 Test Method A, not Procedure D. The last version of D 1688 with D was D 1688-84. Test Method A in the current version is the same as the old D procedure. We discovered that when D 1688 was revised shortly after D 4806 was first approved in 1988, three procedures (A, B, and C) were deleted, and the remaining ones relettered A, B, and C thus making the former D into A. Footnote 2 should have Procedure B changed to Test Method A to be correct and later in the note referenced section 38.1 should be changed to 11.1 to follow the numbering of the current version of D 1688. These changes are currently being balloting by ASTM Subcommittee D02.A to bring D 4806 into line. CARB should either change the table and footnote or change to a new version of D 4806 as soon as it is approved. If this isn't done, compliance with the copper limit is not possible. (Lew Gibbs)

Agency Response: As indicated in Attachment A, in response to this comment the test method designated in the section 2262/9(a)(1)(B) table for determining copper content has been modified to refer to "Modification of ASTM D 1688-95. Test Method A.<sup>2</sup>" Similarly, footnote 2 to the table to refer to "Test Method A (atomic absorption)" and to "38.1 of ASTM D 1688." The modifications are nonsubstantial because they refer to the method intended to be identified in the text made available with the 15-day notice, as understood by interested parties.

25. Comment: During my review I noticed a change that I hadn't paid much attention to earlier (the change was in the November package). CARB changed the olefins limit for ethanol in section 2262.9(a)(1)(A) from 0.50 volume percent maximum to 0.5 volume percent maximum. Perhaps this was done because ASTM D 1319 is reported to the nearest 0.1. Later for compliance blending under section 2266.5(a)(2)(D)3.a., an olefins limit is specified as 0.10 volume percent olefins. Shouldn't the same level of testing precision be specified for all olefins limits? (Lew Gibbs)

Agency Response: We agree that the same level of testing precision be specified for all olefin limits. As indicated in Attachment A, we have changed the olefin content reference in section 2266.5(a)(2)(D)3. from "0.10 volume percent" to "0.1 volume percent." We have also made similar changes to the references to aromatic hydrocarbon content. These modifications are nonsubstantial as they reflect the results that will be given by the applicable test methods.

26. Comment: WSPA would like to offer a minor change in the wording of section 2266.5 to reduce paperwork and to streamline the introduction of CaRFG3 to the marketplace. We do not believe this change will affect air quality at all; rather it will simply eliminate unnecessary documentation and recordkeeping. Specifically, we suggest that the words "custody or" be deleted in section 2266.5(d)(1). The effect of this action would be to eliminate the recordkeeping and documentation requirements in the case where product custody changes, but title does not transfer. This occurs commonly at exchange and third party terminalling locations. WSPA believes the streamlining benefits of this change to be significant. (WSPA)

Agency Response: We believe it is appropriate to maintain the requirement for documentation regarding the needed oxygenate when custody changes as well as when title changes. Since the documentation says how much oxygenate is to be added – and, in some circumstances, the required specifications of the oxygenate – it is important for the person receiving custody to know that information. The commenter has not indicated why an entity receiving custody of the CARBOB will under all circumstances know this information without the required documentation. We also note that the “transfers custody or title” language is identical to U.S. EPA's requirements in 40 CFR sec. 80.77 regarding transfers of federal RBOB.

27. Comment: WSPA agrees with the ARB's modification in section 2266.5(a)(2)(C) allowing the designation of a 0.4 wt.% oxygen range for CARBOB certification using blending/testing. However, we need to better understand the pros/cons of using a calculated amount of denatured ethanol (using the specified equation) in the CARBOB/ethanol hand-blend. This equation targets the theoretical midpoint of the selected 0.4 wt.% oxygen range. We would appreciate ARB's consideration of the points below:

- Although ARB states the equation assumes the denaturant concentration of the ethanol is 4.76 vol.% (the maximum allowed), could there be theoretical CARBOB/ethanol hand-blend scenarios where the forced use of this equation would yield a hand-blend outside of the desired 0.4 wt.% oxygen range? If so, can the refiner call this a complying hand-blend? WSPA would like to work with ARB to determine if such possibilities exist.
- A possible solution would be to eliminate the use of this equation. The regulation would simply require that producers use whatever amount of denatured ethanol is necessary for the hand-blend to fall within the 0.4 wt.% oxygen range. We understand this provides more flexibility than the "mid-point" proposal, but the practical advantages of this option should be considered. (WSPA)

Agency Response: We believe the adopted approach of requiring addition of the volume of oxygenate that results in an oxygen content at the midpoint of the specified oxygen range is adequate to avoid situations where the actual oxygen content of the hand-blend does not fall within the 0.4 wt.% oxygen range. If the

denaturant content were to be reduced from 4.76 vol.% to 2.76 vol.% for denatured ethanol being added to CARBOB to achieve a 5.7 vol.% ethanol blend, the amount of pure ethanol would only increase by 0.1 vol.%. This would cause the oxygen content to increase by less than 0.5 wt.%. The advantage of the adopted approach over the suggested alternative is that the adopted approach avoids the possibility of “gaming” the system to achieve an artificially elevated level of dilution. Although WSPA has not at this time identified a situation in which the oxygen content of the hand-blend will fall outside the designated range, we are certainly willing to cooperate with any efforts to see if such possibilities exist.

28. Comment: Section 2266.5(b)(1) probably needs modifications to be consistent with the changes to section 2266.5(a)(2). Specifically, section (b)(1)(E) now seems inconsistent with (a)(2)(C). Changes may be needed regarding the designation/notification of wt.% oxygen instead of vol.% oxygenate. The references in this section 2266.5(a)(2)(C) to (b)(1)(C) may be in error, and may more appropriately refer to (b)(1)(E). WSPA does not see a need to specify the vol.% of oxygenate in notifications. (WSPA)

Agency Response: We have corrected the references in 2266.5(a)(2)(C) from (b)(1)(C) to (b)(1)(E) (twice, both above and below the equation). We believe it is appropriate for the refiner or importer to specify the volume percent of oxygenate in notifications to the Executive Officer, so that the ARB can confirm that the amount of oxygenate to be added is consistent with the specified oxygen range. Since section 2266.5(d) requires that the documentation provided in any transfer of ownership or custody of CARBOB identify the volume percent oxygenate to be added, the refiner or importer will in any case need to know this information.

29. Comment: Refiners will no longer need to physically check (through a hand-blend) the properties of the finished gasoline that will result upon the addition of ethanol to CARBOB. The implementation of a CARBOB model will allow them to skip this step, if they choose. We are particularly concerned that the non-linear nature of ethanol blending and considerable variation in its response depending on the properties of the base gasoline that it is introduced to. The only way to be certain that the finished blend complies with specifications is to actually measure it and that is the very step that will not be required. (OFA)

Agency Response: We believe there is a substantial basis for the CARBOB model. Although the commenter indicates that the results of the CARBOB model may at times vary from the results from analyzing a hand-blended sample, OFA does not provide any information showing the CARBOB model on average would result in characterizing a refiner’s final blend as “cleaner” than would be the case with hand-blending. In addition, as discussed in Comments 1-3 and the accompanying responses, section 2266.5(a)(2)(B)2. provides the option for ARB inspectors to use the hand-blending method for determining compliance even though the refiner has chosen to use the CARBOB Model. As indicated above, during initial implementation inspectors will be rely on the CARBOB model when a refiner has

chosen to use that approach. However, if confirmatory testing indicates that reliance on the CARBOB model may increase emissions, we will take appropriate steps to assure effective compliance with the underlying CaRFG3 standards.

30. Comment: The regulation will provide a way to employ the Predictive Model in conjunction with CARBOB and will also offer a mechanism for averaging to be used. To accomplish this, the CARBOB would be translated into a finished oxygenated gasoline for the purpose of emissions calculation and, more importantly, emissions offset requirements. As a result, refiners will have the opportunity to certify their CARBOB production based on a model, and it appears that they will be able to use this model's output as input for yet another modeled calculation. It is unclear how we can hope to capture the real world emissions performance of the finished oxygenated gasoline blend through this series of simulations. (OFA)

Agency Response: The amendments adopted in this rulemaking do not make any changes to the Predictive Model. The difference is that the CARBOB model will be used to determine the properties of gasoline to be entered into the Predictive Model. The provisions in section 2266.5(a)(5) on the use of averaging when the CARBOB model is being used do not add to a series of simulations. The designated alternative limit will be enforced directly against the final blend of CARBOB, and the designated alternative limit for the oxygenated final blend would be determined using the CARBOB model. The "averaging limit," which is used in the Predictive model analysis when a refiner is using averaging, is not directly enforced against the particular final blend and accordingly is not affected by use of the CARBOB model option. Thus when averaging is being used, the CARBOB model is still only applied once.

31. Comment: Refiners are allowed to indicate that they will use ethanol that is "dirtier" than the basic ethanol standards as long as they designate it for use in an appropriately cleaner CARBOB. Conversely ethanol "cleaner" than the standard can be used to offset dirtier CARBOB emissions characteristics. There is no benefit from the standpoint of facilitating ethanol blending in providing this flexibility; the only impact that we can be certain of is that any overcompliance benefits will be lost as refiners will seek to "manage" the emission reductions as close as possible to the specified minimum. (OFA)

Agency Response: These modifications are designed to provide refiners the maximum amount flexibility in blending ethanol to gasoline while assuring that emissions objectives are met. Allowing refiners to use ethanols that are "dirtier" than the basic proposed specifications may give refiner a greater selection of ethanol. Because a refiner using this mechanism will have to be sure that the appropriate denatured ethanol will be available to and used by the downstream oxygen blender, we do not expect that it would be used to manage emission reductions on a batch-to-batch basis.

32. Comment: Product segregation requirements will be relaxed. In addition to maintaining multiple averaging "banks" (i.e., as many as six different ones), refiners will no longer be required to do their best to reduce product mixing when they transfer tanks for one type of service to another. Instead of reducing tank levels to 10 percent or less prior to a service change, refiners will be allowed to leave as much as 20% of the old material in the tank as part of the transition. Once again, the multiple averaging banks and easier tank transition guidelines will result in minimizing environmental performance above the standards. (OFA)

Agency Response: Increasing the maximum allowable amount of product from 10 percent to 20 percent is based on our analyses showing that such a change would increase the flexibility for refiners, blenders, and marketers without losing the air quality benefits associated with the CaRFG3 regulations. Allowing multiple averaging banks increases the flexibility for refiners to manage their product streams. This is only a refinement to the accounting requirements, since all batches of gasoline exceeding the averaging limits will still have to be fully offset by batches of gasoline cleaner than the averaging limits. We accordingly do not expect it to increase emissions.

33. Comment: The proposed cap limits for CARBOB represent an effective relaxation of the overall CaRFG3 gasoline standards, particularly since the originally proposed separate set of caps for each of the three ethanol blending levels have been combined into a single set of caps reflecting the highest level of ethanol addition. Refiners are permitted cap levels as high as 232 deg. F for T50 and 335 deg. F for T90 in summer gasoline. The CARBOB aromatics cap is 38.7 volume percent and vapor pressure is as high as 5.99 psi are permitted. This means, not only were the base CaRFG3 properties relaxed to comprehend ethanol blending, the CaRFG3 caps are being further comprised in setting corresponding CARBOB limits. (OFA)

Agency Response: The CaRFG3 standards are not relaxed by this rulemaking. The CARBOB caps provide an *additional* tool that ARB inspectors can use to verify the compliance of CARBOB that is downstream from the refinery. The amendments do not eliminate any authority the inspectors have already had to determine whether downstream CARBOB complies with the CaRFG3 standards by sampling and hand-blending in the appropriate amount of ethanol. Further, the CARBOB cap limits have no effects on the cap limits for the finished blends of CaRFG3 gasoline.

## Attachment A

### NONSUBSTANTIAL MODIFICATIONS TO THE REGULATIONS MADE AFTER THE 15-DAY COMMENT PERIOD

#### Final Regulation Order, Title 13, California Code of Regulations

Page 11, title of section 2262.9, p. 12; title of section 2262.9(a)(3); p. 13, title of section 2262.9(c); text of section 2262.9(c)(1)(A) (twice); and section 2262.9(c)(2): change “denatured ethanol intended for use as an additive in California gasoline” to “denatured ethanol intended for use as an blend component in California gasoline”. This modification has no substantive effect, but it uses more accurate and appropriate terminology as recommended by WSPA in Comment 17(d).

Page 11, section 2262.9(a)(1)(B) Table, the test method for copper content is changed from “Modification of ASTM D1688-95, Procedure D<sup>2</sup>” is changed “Modification of ASTM D 1688-95, Test Method A<sup>2</sup>”. In Note 2 of the Table, “The modification of ASTM D 1688, Procedures D (atomic absorption) . . .” is changed to “The modification of ASTM D 1688, Test Method A (atomic absorption) . . .”, and “. . . described in 11.1 of ASTM D 1688.” is changed to “. . . described in 38.1 of ASTM D 1688.” See Comment 24 and the response thereto. The modified text refers to the method that ARB was intending to identify; it had been renamed by subsequent ASTM actions.

Pages 14-16, section 2263, the erroneous failure to italicize the subsection headings in Barclays California Code of Regulations is corrected.

Page 15, section 2263(b)(1) Table, the test method for benzene is changed from “ASTM D 5580-95<sup>en</sup>” to “ASTM D 5580-95<sup>00en</sup>”. The test methods for benzene content and aromatic hydrocarbon content are identical. The test method reference for aromatic hydrocarbon content was updated from the “-95” version to the “-00” version in the text made available for a supplemental 15-day comment period. The updated method contains one clarification and makes no substantive change compared to the 1995 version. The modification to the benzene method aligns it with the aromatics method, without having any substantive effect.

Page 15, section 2263(b)(1) Table, footnote c, misspellings in Barclays California Code of Regulations are corrected in three instances.

Page 24, section 2266.5(a)(2)(C), second sentence, “Where the producer or importer has in accordance with section (b)(1)(C) designated . . .” is changed to “Where the producer or importer has in accordance with section (b)(1)(E) designated . . .” to correctly refer to the relettered subsection (b)(1)(E).

Page 25. section 2266.5(a)(2)(D)1., "Aromatic hydrocarbon content: 1.70 volume percent" is changed to "Aromatic hydrocarbon content: 1.7 volume percent". This is because test results using the test method – ASTM D 5580-00 – are reported to the nearest 0.1 percent. The modification makes this reference consistent with the 1.7 volume percent aromatic hydrocarbon content standard for denatured ethanol in section 2262.9(a)(1)(A)4.

Page 25. section 2266.5(a)(2)(D)2, "Aromatic hydrocarbon content: 0 - 1.70 volume percent" is changed to "Aromatic hydrocarbon content: 0 - 1.7 volume percent". See the discussion in the previous paragraph.

Page 26. section 2266.5(a)(2)(D)3,

"Olefin content: 0.10 volume percent  
Aromatic hydrocarbon content: 1.00 volume percent"

is changed to:

"Olefin content: 0.1 volume percent  
Aromatic hydrocarbon content: 1.0 volume percent"

See Comment No. 25 and the discussion in the preceding paragraphs. Test results using the olefin test method – ASTM D 1319-95a – are also reported to the nearest 0.1 percent.

Page 30, section 2266.5(b)(1)(E), first sentence, "The designation of each oxygenate type or types and amount or range of amounts to be added to the CARBOB." is changed to "The designation of each oxygenate type or types and amount or range of amounts to be added to the CARBOB, and the applicable flat limit, PM alternative specification, or TC alternative specification for oxygen." This information is needed so that ARB inspectors will know how much oxygenate to add, using the formula in section 2266.5(a)(2)(B). This information is already required for any Predictive Model or Test-Certified alternative formulation; in other cases the default flat limit range in section 2262 is 1.8 – 2.2 wt.% oxygen.

Page 31, section 2266.5(b)(2), last three lines, "producer or importer designates a final blend at that facility as either (a) California gasoline rather than CARBOB, or (b) CARBOB subject to a new notification made pursuant to section (b)(1)." is changed to: "producer or importer designates a final blend at that facility as either (i) California gasoline rather than CARBOB, or (ii) CARBOB subject to a new notification made pursuant to section (b)(1)." The use of "(i)" and "(ii)" avoids possible confusion from use of letters also used to identify subsections.

Page 32, section 2266.5(c)(3), lines 6-7, ". . . regarding a final blend or shipment of CARBOB . . ." is changed to ". . . regarding a final blend ~~or shipment~~ of CARBOB . . ." to make the terminology consistent with the rest of section 2266.5(c). Since it is each final

blend of CARBOB that is subject to the refiner/importer standards, the term “or shipment” has added nothing to the meaning of the provisions.

Page 38, section 2272(b)(3), “Within 60 30 days of receipt . . .” is changed to “Within 30 days of receipt . . .” to correctly reflect the existing regulation text.

p. 47, section 2282(e)(B)4., fourth line from end, “. . . content that is 0.02 percentage higher . . .” is changed to “. . . content that is 0.02 percentage points higher . . .” to correct the editorial error of omitting the word “points.”

### **Procedures for Using the California Model for California Reformulated Blendstock for Oxygenate Blending (CARBOB)**

Pages 4-5, sections 3.B.i and 3Bii,

“T50<sub>CARBOB</sub> is the T50 of the CARBOB, in psi,  
T90<sub>CARBOB</sub> is the T90 of the CARBOB, in psi.”

is changed to

“T50<sub>CARBOB</sub> is the T50 of the CARBOB, in degrees F,  
T90<sub>CARBOB</sub> is the T90 of the CARBOB, in degrees F.”

This corrects a clerical error, in which the units for measuring Reid vapor pressure – pounds per square inch – were incorrectly entered as the units for expressing distillation temperatures. The same correction is made on page 5, section 3.C.