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September 13, 2013

Alexander "Lex" Mitchell
Air Pollution Specialist
California Air Resources Board
Submitted via electronic mail to amitchel@arb.ca.gov

Re: Official written comments from California Biodiesel Alliance and National Biodiesel Board on Proposed Regulation Order regarding Specifications for Alternative Motor Vehicle Fuels and Commercialization of New Alternative Diesel Fuels.

Dear Mr. Mitchell:

On behalf of the California Biodiesel Alliance and the National Biodiesel Board, we are pleased to provide official written comments on the draft Alternative Diesel Fuel regulation. We appreciate the effort staff members at the California Air Resources Board (ARB) have invested over the years to understand this issue and to manage it in a way that protects public health without unduly slowing commercialization of new fuels.

Our comments are divided into two sections. The first section discusses the regulatory framework; the second examines various technical issues.

SECTION I: COMMENTS ON REGULATORY FRAMEWORK.

We would like to begin by noting the industry's belief that NOx mitigation for biodiesel is unnecessary. This view is based on several factors.

First, as discussed at the April 23, 2013 public workshop, any impacts of biodiesel on NOx – either positive or negative – are small, regardless of which laboratory is conducting the testing and whether or not the protocols are prescribed to be conservative, market average, or best case. In fact, the very idea that biodiesel causes increased NOx with CARB diesel is not a settled matter. A representative from a major petroleum company, for example, noted in workshop comments that their testing actually showed NOx decreases with biodiesel.

Second, even if one assumes small NOx increases from biodiesel, these emissions will be eliminated completely through adoption of New Technology Diesel Engines (NTDEs). As you know, NTDEs reduce NOx emissions by more than 90 percent with both biodiesel and ULSD petroleum diesel compared to 2004 model year diesel engines. In addition, since NTDEs adjust

their operations to meet emissions standards for NO_x, testing shows no NO_x increases when biodiesel is used in these engine systems. Ultimately, fleet turnover mandates under California state law that require a steady transition to NTDEs will provide significant NO_x reductions over the course of the next ten years as well as certain NO_x neutrality for biodiesel.

Third, while we do not question the validity of the testing that has been conducted by the ARB, we would like to note that research by other respected institutions, such as West Virginia University and the U.S. Department of Energy's National Renewable Energy Laboratory (NREL), have produced data that show no measurable impacts on NO_x emissions from B10, B20, and lower blends.

Finally, air quality modeling studies conducted by NREL and Environ of sensitive airsheds such as the South Coast Air District have shown no negative public health impacts from biodiesel, even assuming NO_x increases from widespread use of high blends (B20). The primary reason for this finding is that biodiesel offers significantly decreased emissions (approximately 50% or more) of all other pollutants, including those critical to ozone formation such as unburned hydrocarbons.

In the final analysis, while we do not believe regulation of biodiesel for NO_x is necessary, we do support the draft Alternative Diesel Fuel regulation. We believe it is important for all new fuels to have a clear and certain pathway to commercialization so the goals of the low carbon fuel standard can be achieved. We believe it is important to be conservative when managing important public health issues such as air quality. And we believe it is important for citizens to receive assurances that only positive impacts are resulting from increased utilization of biodiesel and other new fuels.

SECTION II: COMMENTS ON TECHNICAL ISSUES.

Section 2293.2. Definitions.

We recommend the definitions in subsections (f) and (g) be clarified in a manner consistent with the rounding employed by ASTM international. Specifically:

- (f) "B5" means a biodiesel blend containing no more than ~~five~~ 5.49 percent biodiesel by volume.
- (g) "B20" means a biodiesel blend containing between ~~six~~ 5.5 and ~~20~~ 20.49 percent biodiesel by volume, inclusive.

Section 2293.7. Specifications for Alternative Diesel Fuels. Subsection (a)(1).

We recommend the following amendments to align the regulation with standards adopted by ASTM International.

The greater than values for Cetane Number and API Gravity should read “greater than *or equal to*.”

The less than value for Sulfur should read “less than *or equal to*.”

The test method for sulfur is D5453.

We recommend removing the FAME content specification from the table in subsection (a)(1). We do not believe it is necessary to provide a fit for purpose fuel to the marketplace. Moreover, significant reproducibility and repeatability problems exist with this test. For example, a real value of 97 percent ester could be analyzed as anywhere from 93 percent to 101 percent. This is a major reason why ASTM International utilizes other protections to indicate contamination such as total/free glycerin, free fatty acids, alcohol content, carbon residue, viscosity, and T-90.

It has been mentioned that material was received that contained high levels of ethanol and this may be a reason for inclusion of FAME content in the neat fuel specification. In this instance, however, it should be noted that this material would not have met the flash point specification for biodiesel (130 C). Therefore, the ASTM International specification was sufficiently protective in this case. As an industry, we have embraced the philosophy of continuous improvement and would recommend that, if additional concerns develop, those be evaluated through the ASTM process, which is ongoing.

If you wish to accept these recommendations, the amended table would read as follows:

Table ____. Fuel Specifications for B100

Property	ASTM Test Method	Value
Cetane n Number	D613 or D6890	>47 ≥47
API Gravity	D287-82	>27 ≥27 degrees API
Sulfur	D2622 D5453	<15 ≤15 ppm
FAME content	EN 14103	>96.5%

Appendix A. Mitigation Measures. Subsection (a)(3)(B)(iii).

We recommend thoroughly reviewing the test method effective dates for both petroleum diesel and biodiesel to ensure they reflect the latest test methods. Safer, more accurate, automated testing methodologies are allowed in the most recent versions.

The D86 test method should not be used for B100. That test method should be changed to the one specified in ASTM D6751, which is D1160 with a report of the T-90 value.

To be consistent with previous comments, the FAME content test should be removed, or should at least be amended to read “report only.”

Test method D5186 may provide falsely high values when used for biodiesel. This should be taken into account when utilizing the method for biodiesel and biodiesel blends.

Appendix A. Mitigation Measures. Subsection (a)(3)(B)(iv).

We recommend the following:

- Modifying the cetane number from 47-50 to 47-52 to reflect the natural analytical variability of the test method.
- Changing the lower limit on viscosity from 2.0 to 1.9 to be consistent with the ASTM International standard.
- Replacing the D86 distillation test method with D1160 to be consistent with the ASTM International standard.
- Deleting the FAME content test consistent with our earlier recommendations.

If you wish to accept these recommendations, the amended table would read as follows:

Additive certification fuel blendstock properties

Property	ASTM Test Method	Fuel Specifications
Sulfur Content	D5453-93	15 ppm maximum
Nitrogen Content	D4629-96	10 ppm maximum
Natural Cetane Number	D613-84	47-50 47-52
API Gravity	D287-82	27-33
Viscosity at 40° C, cSt	D445-83	2.0-4.1 1.9-4.1
Flash Point, °F, minimum	D93-80	266
Distillation, °F,	D86-96 D1160	
90% Recovered		620-680
FAME Content %	EN 14103	96.5 minimum
C,H,O content		

Appendix A. Mitigation Measures. Subsection (a)(3)(E)(i).

We do not believe it is necessary to include PM or SOF in the evaluation. It is well known that biodiesel decreases PM emissions significantly, to the point of being unnecessary to perform testing in this regard. And while testing on biodiesel blends would show increased SOF, this results from unburned biodiesel, which is nontoxic, biodegradable, and completely benign from a public health and environmental standpoint.

Thank you, in advance, for your consideration of our comments. We appreciate your continued efforts on this matter. Please feel free to contact us at any time.

Sincerely,



Shelby Neal
Director, State Government Affairs
National Biodiesel Board



Curtis Wright
Chair
California Biodiesel Alliance

