January 20, 2020

Mr. Gavin Hoch
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Subject: Proposed ADF Certification Testing Timeline

Dear Gavin:

The proposed changes to the ADF regulations, changing the requirement for NOx Mitigant certification from April 1 to August 1, is a welcome change in the right direction, however, it still fails to account for the time necessary to conduct the research and development required to run a potentially successful ADF certification testing program. There simply is not enough time between the earliest effective date of the proposed ADF (estimated to be April 1, 2021) and the proposed August 1, 2020 deadline. CARB need go no further than to consider its own most recent testing programs to agree with this conclusion. From start to finish, both the NOx Mitigant evaluation and the LED legacy engine program took over one-year. This is consistent with California Fueling's VESTA® 1000 approval effort, which similarly took over one-year. Of course, both testing programs pre-date COVID-19 restrictions, which would understandably further delay any certification program, let alone take into account the limited number of engines available for testing.

With respect to the timeline, in addition to the general challenges faced with completing a testing program, I want to draw your attention to two specific areas of concern with the proposed ADF that pose a significant hurdle. An initial complication to the timeline is the availability of compliant reference fuel. Cal Fueling has contacted reference fuel formulators regarding the components used to blend CARB type reference fuels and asked "are the components used to blend reference fuels 'produced from straight-run California diesel fuel by a hydrodearomatization process'?" The response from reference fuel formulators is they cannot ensure a manufactured reference fuel can meet the CARB requirement as written, let alone within the four-month window of time presented by the proposed ADF. The challenges associated with securing straight-run California CARB compliant diesel is well known by CARB. In fact, when CARB acquired the reference fuel to evaluate NOx Mitigants and most recently the reference fuel for its Low Emissions Diesel (LED) program, CARB knowingly did not use or require fuels "produced from straight-run California diesel fuel by a hydrodearomatization process." It seems disingenuous for CARB to require such fuel generally, let alone under the compressed timeline of the ADF modifications.

If CARB is going to enforce its ADF language, they must consider the additional effort required to secure fuels that meet the ADF's requirements and consider the time associated to do so. While CARB has verbally waived this requirement in the past, it is not only disingenuous for

CARB to leave this language in the ADF if it is just going to be waived, but it would afford Staff with discretion to waive the requirement and the ability to do so in an arbitrary and capricious fashion. To that end, if the ADF regulation is going to require straight-run California diesel, the time frame must be further adjusted to account for the time required for applicants, alone or via fuel formulators, to acquire fuels "produced from straight-run California diesel fuel by a hydrodearomatization process." Obtaining small quantities of fuel from refiners to use in blending a reference fuel is a difficult process and will take additional time. Moreover, while not directly related to the timeline, costs associated with this effort must be taken into account, as the cost of what amounts to bespoke fuel would dramatically increase the costs of any certification program.

Questions:

1. Will CARB be strictly adhering to the currently worded ADF (reference fuels must be "produced from straight-run California diesel fuel by a hydrodearomatization process")?

2. If so, will CARB extend the August deadline to provide fuel formulators and applicants sufficient time to obtain the proper diesel test fuel components?

3. If not, will CARB be amending the language to accommodate waiving the requirement or otherwise providing specific factors for the regulators to consider in waiving the requirement?

4. What consideration, if any, has CARB given to the increased costs associated with securing straight-run California diesel, especially where CARB itself has not used such fuels in its own testing programs?

Next, the timeline fails to take into consideration the availability of two facilities to conduct the required testing. Currently, we are aware of only two facilities that have CARB approved engines for the required testing, CE-CERT and WVU, whereas others have struggled to meet Cummins baseline emissions requirements. Under the best of circumstances, as evidenced by CARB's own testing programs, scheduling and completing testing at one laboratory, never mind two, within four months would be near impossible. We note that CE-CERT is, as far as we know, subject to California's heightened COVID-19 restrictions, such that even if testing were allowed at its facility, COVID-19 protocols could slow any testing. In fact, this very concern delayed CARB's LED test program for at least several months.

Of course, CARB's two facility, two fuel approach, in order to neutralize "reproducibility" concerns, continues to be unsubstantiated, questionable at best, given the variable nature of emissions testing. Repeatability seems to be more the issue; however, CARB need only look at their most recently conducted 2009 John Deere CE-CERT Low Emission Diesel (LED) testing not to mention CARB's previous CE-CERT work to evaluate NOx Mitigants, which we've addressed in a January 2020 public comment. The LED program, as with the NOx Mitigant evaluation,

resulted in repeatability ranging from 2-4% depending on the fuel, reference or candidate. There's no way around emissions testing variability and as opposed to confronting this reality, CARB are penalizing NOx Mitigant stakeholders by proposing an overly burdensome and costly multiple facility certification program.

CARB'S proposed ADF states "[t]he NOx emission criterion for acceptability of single-engine testing is as follows:

$$(100\%)[(xB20/xD)\text{Engine 1} - (xB20/xD)\text{Engine k}] \leq 1.00\%"$$

The current ADF proposed wording penalizes test facilities that have the required "[r]easonably adequate quality assurance and quality control procedures" resulting in good repeatability. Third-party test facility's with good repeatability may be precluded from conducting certification testing as a result of CARB's current ADF proposal. The requirement to compare engine to engine emissions test results on a percentage basis has no technical justification and has seemingly been inserted to give the impression CARB is offering a single facility alternative, which it is, but the proposed ADF as written doesn't make sense. In order to run certification testing at one-facility you must first test at three facilities to determine the one facility that meets CARB's criteria. It would be impossible to conduct this type of effort in the time allotted by CARB. CARB should consider an additional approach, whereby if a testing facility's repeatability is within a certain range for <u>all</u> fuels tested, then those single facility results are acceptable to CARB without having to perform verification testing at any additional testing facilities. Such an approach can meet CARB's repeatability concerns while also offering a true one facility approach.

Question:

1. What's CARB's justification behind the "(100%)[(xB20/xD)Engine 1 - (xB20/xD)Engine k] ≤ 1.00%" proposed ADF requirement?

2. Has CARB considered the availability of testing facilities, generally and in light of COVID-19, in determining that four (4) months is sufficient time to conduct the certification testing?

3. Can CARB identify all testing facilities that they are aware that can conduct the required ADF certification testing?

Based on the proposed ADF's timeline and the required CARB interaction related activities, <u>excluding COVID-19 related restrictions and</u> impact, the proposed ADF timeline, based on each step's allotted time, will take approximately one hundred and thirty-seven (137) [over six (6) months!] business days as outlined following:

- Test Protocol
  - 20 business days – deem the protocol complete or require more information

    - 15 business days – additional information
    - 20 business days – protocol approval
    - 7 business days' notice required before initiating engine testing
- Sample Shipment – Receipt and Verification
    - Estimated at 10 business days
- Verification Reports from Independent Observer
    - Estimated at 10 business days
- Certification Application
    - 20 business days – deem the protocol complete or require more information
    - 15 business days – additional information
    - 20 business days – protocol approval
- Total: 137 business days or 6.5 months

The above does not take into account the time leading up to certification testing such as reference fuel acquisition and formulation work, biodiesel acquisition, reference, unadditized candidate fuel and additive screening. These items alone can take as long as six (6) months and depending on CARB's response to reference fuel formulation requests, they may take longer. CARB should allow more time for NOx Mitigant stakeholders to conduct a proper certification program. Any other response would be unreasonable.

Question:

4. Will CARB allow more time to complete the proposed certification testing?

5. If not, why?

6. What is the basis for an August 1, 2021 deadline considering CARB's proposed ADF activities, as written, could take as long as one hundred and thirty-seven (137) days?

CARB's "Second Notice of Public Availability of Modified Text states "[t]he amendments will reinforce the emissions certification testing requirements and require biodiesel additives and alternative diesel fuel (ADF) formulations to be certified uniformly according to new certification procedures … consistent with rigorous and appropriate protocols." While we agree with CARB's statement(s), they've swung the pendulum too far in an opposite direction regarding engine testing. As we've noted, engine testing is variable. Increasing the number of engines used for emissions testing will not change that. As it pertains to the ADF, CARB has done all its testing at one facility, CE-CERT, and never on multiple engines of the same type either at the same or different facilities. Lastly, all public comments call into question CARB's engine testing proposal, approach, timing, etc. This issue is clearly one that has not been resolved nor will be in this rulemaking process. CARB should consider removing the multiple engine requirement until further discussions with stakeholders.

Questions:

1. Why is CARB requiring a multiple engine and facility approach?

2. Will CARB follow the same requirements for any testing it conducts in the future?

3. Will CARB remove the multiple engine requirement?

Taking these additional factors into account, as well as likely delays due to COVID-19, Cal Fueling respectfully submits that the proposed ADF should be modified such that the deadline be changed from August 1, 2020 to no less than twelve (12) months after the proposed ADF effective date. Further, that upon a showing of good cause, CARB be afforded the right to issue an extension of the deadline in three (3) month increments. Such a revised timeline is necessary to provide stakeholders the minimum necessary time to develop NOx Mitigant solutions that are palatable to the market while also providing stability and confidence in extending existing certifications until new certifications can be approved. Thank you in advance for your consideration.

Respectfully,

Patrick J McDuff

Patrick J. McDuff
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