Western States Petroleum Association
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Catherine H. Reheis-Boyd
President

June 22, 2015

Secretary Matthew Rodriquez, Chair
Environmental Policy Council
1001 I Street, P.O. Box 2815
Sacramento, CA 95812
Via electronic mail: *cepc@calepa.ca.gov*

Dear Secretary Rodriguez:

Re. Western States Petroleum Association Comments for June 23, 2015 CEPC Meeting Consideration of the Multi-Media Working Group staff reports - Multi-Media Evaluation of Biodiesel and Staff Report: Multi-Media Evaluation of Renewable Diesel

The Western States Petroleum Association (WSPA) is a non-profit trade association representing twenty-five companies that explore for, produce, refine, transport and market petroleum, petroleum products, natural gas and other energy supplies in California and 5 western states.

WSPA appreciates the opportunity to provide our comments and requests for CEPC action in the attached set of comments.

If there are any questions or a need for additional clarification of our comments, please contact Gina Grey of my staff (ggrey@wspa.org) to arrange for further dialogue with WSPA.

Sincerely,

c.c. Alex Mitchell, CARB

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Summary

WSPA supports the use of full Multi-Media Evaluations (MME) to assess the environmental impacts of fuels and fuel additives prior to their introduction. However, the current MME for biodiesel blends is not complete since it did not consider:

- The use of di-tertiary butyl peroxide (DTBP), the sole additive proposed for mitigating NOx increases in biodiesel blends, at the concentrations required in the proposed Alternative Diesel Fuel (ADF) regulation, which can be 10 times those envisioned for DTBP use as a diesel cetane improver.
    - Concerns include the fate and transport of DTBP (soil, surface and ground water), potential toxicological impacts, safety (e.g., peroxide stability), and materials compatibility (e.g., metallurgy, engine compatibility).

  The auto manufacturers are normally concerned about any fuel additives and the potential impact on vehicle systems, and in this case fuel stability impacts associated the higher dosage of DTBP. Testing should be completed at the higher concentration levels proposed in the ADF which has not been fully evaluated in the current MME.

- Water demands in biofuel production for the Low Carbon Fuel Standard (LCFS).
    - As Fulton and Cooley[1] state in a 2015 publication: "Although early LCFS policy assessments raised the issue of water demands and impacts from increased biofuel production, any subsequent efforts to track or address those impacts through policy have been lacking."

The allocation of water resource analysis proposed here is not within the traditional scope of California's MME process. However, we feel the scope of the MME segment should be broader given the scarcity of California's water resources to include water use/consumption/allocation consideration and, more particularly, the shifts in those brought about by regulatory action such as LCFS. Thus, we respectfully request that these two items be addressed by the Multimedia Working Group (MMWG) and the California Environmental Policy Council (CEPC) prior to the approval of this MME.

Di-Tertiary Butyl Peroxide

WSPA is concerned that an adequate MME has not been performed with regard to the use of DTBP at the concentrations currently required for mitigation in the proposed Alternative Diesel Fuel (ADF) regulations. A review of the "STAFF REPORT - Multimedia Evaluation of Biodiesel" dated May 2015, only includes an evaluation of combustion air emissions impact (i.e. NOx reduction) due to the use of the DTBP additive.

[1] Cooley, H., Fulton, J. The Water Footprint of California's Energy System, 1990–2012. Environmental Science and Technology. 2015. 49. 3314–3321.

The MMWG recommendations include a provision/condition that fuel formulations and additives that were not included within the scope of this multimedia evaluation must be reviewed by the MMWG for consideration of appropriate action. However, it is not clear the MMWG has adequately considered what the environmental impacts of those additives may be, and whether the types, concentrations, and use specifications differ from those used in conventional diesel.

The significance of these caveats involving the use of additives in the MME reports is particularly noteworthy for WSPA members who have previously pointed out to Air Resources Board (ARB) staff that a thorough assessment of DTBP, the sole additive included as a NOx mitigation measure in the proposed ADF regulation, has yet to be conducted. While air emissions impacts were considered for the use of DTBP, there is no documentation in the MME that other potential impacts of DTBP were evaluated, including, but not limited to:

- Full multimedia evaluation of environmental impacts (e.g. fate and transport including soil, surface water & ground water and non-combustion air emissions),
- Toxicological impacts,
- Safety impacts (e.g. peroxide stability and interactions with other additives such as antioxidants), and,
- Materials compatibility impacts (e.g. OEM approval, metallurgical compatibility in distribution storage, piping, and fueling equipment).

We note that the State Water Resources Control Board's (SWRCB) review was limited to the differences between biodiesel and CARB diesel[2]. In addition, the Department of Toxic Substance Control (DTSC) performed fate and transport studies with biodiesel, CARB diesel, and biodiesel blends, and with two additives (a biocide and antioxidant). However, they did not test a biodiesel blend with DTBP. The DTSC also noted:

"If new or different additives from those tested are proposed for use, appropriate evaluation through the MMWG process should occur."

While DTBP is clearly being proposed for use, it does not appear that either a SWRCB or DTSC review of biodiesel blends containing DTBP was performed as part of the MME. Both agencies clearly indicated that newly proposed additives would need further evaluation, but there is no discussion in the MME as to why DTBP was not included in their reviews.

Review of the MMWG response to Peer Review comments, indicates that the SWRCB evaluation assumed that the additives used in biodiesel and biodiesel blends will employ the same additives currently used in CARB diesel, and recommended that other additives used be evaluated separately by the MMWG[3]. However, DTBP, as proposed in the ADF, will be used for a purpose other than the one it was originally intended for (which was cetane enhancement)

[2] 2015 Biodiesel MME (page 12, Section B).
[3] 2015 Biodiesel MME (Appendix J, Page 31, Response to Comment E-9).

and at levels (0.25-1.00 volume percent) substantially higher than the range that it is typically used for cetane enhancement (0.1-0.3 volume percent – Society of Automotive Engineers Technical Series Paper No. 982574). The DTSC's response to Peer Review comments indicate that it is important to understand the real life fate and transport behaviors associated with additive packages relevant to biodiesel/CARB diesel blends[4], which was not done here.

In addition, a review of the MSDS for DTBP from two manufacturers[5,6] indicates there are specific issues regarding DTBP that are not discussed in ARB's MME. We feel the MME should include an evaluation of the DTBP specific issues listed below prior to approving the use of DTBP at the recommended concentrations:

- DTBP decomposes at approximately 80^{o}C; recommended maximum storage temperature 40^{o}C[4,5]
- Flash point of 6^{o}C, highly flammable at room temperature[4,5];
- Precautions are needed to guard against electrostatic discharge[4,5]
- Control of vapor space, such as nitrogen blanketing, may be required or recommended[5]
- Segregation of DTBP from accelerators, stabilizers, acids, bases, and heavy metals is highly recommended[4,5]
- Use only stainless steel 316, polypropylene, polyethylene, or glass lined equipment for storage[5]
- Must avoid contact with rust, iron and copper[5]

We request that the CEPC recommend the MMWG fully re-examine the use of DTBP as proposed, to ensure all potential impacts associated with its use are reviewed and evaluated, and feel this request is consistent with the recommendations included in the MME.

Other Water Impacts

In addition to the DTBP evaluation included above, we have concerns that the MMWG has not sufficiently evaluated potential impacts to water in the US and the State of California.

- In the MME Conclusions of Water Impacts[7], SWRCB staff concludes there are minimal additional risks to use of California waters posed by biodiesel.
- Given the severe drought conditions California currently faces, the MME must take into account the significant water demands associated with the use of biofuels, which are outlined in in the recently published peer-reviewed study by Julian Fulton of the Energy and Resources Group at U.C. Berkeley and Heather Cooley of the Pacific Institute[8].

[4] 2015 Biodiesel MME (Appendix J, Page 23, Response to Comment D-1).
[5] United Initiators MSDS for DTBP from: http://www.united-initiators.com/products/details/di-tert-butyl-peroxide/
[6] Azko Nobel TRIGONOX B MSDS from: https://www.akzonobel.com/polymer/msds/
[7] 2015 Biodiesel MME (III.B, page 17).
[8] Cooley, H., Fulton, J. The Water Footprint of California's Energy System, 1990–2012. Environmental Science and Technology. 2015. 49. 3314–3321.

- We feel the SWCRB MME conclusion of minimal additional risks should be further evaluated relative to the conclusions drawn by Fulton and Cooley: “Although early LCFS policy assessments raised the issue of water demands and impacts from increased biofuel production, any subsequent efforts to track or address those impacts through policy have been lacking.”