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**Michael D. Wang**

Director, Legal, California Climate Policy, and State Air Issues

March 10, 2014

Dr. Steve Cliff  
Assistant Chief, Stationary Source Division  
Air Resources Board  
1001 I Street,  
Sacramento, CA 95814

Dear Steve:

WSPA appreciates the opportunity to comment on the proposed benchmarks for the Refining and Hydrogen sectors. We support ARB's decision to include both onsite and offsite hydrogen plants in the hydrogen benchmark calculation.

We have a few comments regarding the current proposal for establishing refinery benchmarks:

1. Total emissions in the ARB background paper do not match total reported emissions on the ARB website.
2. Independent calculations by Solomon suggest that the ARB proposed refining benchmark may be too low.
3. Abnormal refinery emissions and production data should not be excluded from the calculation of the benchmark except in isolated cases involving a very significantly reduced operation where the data are clearly not representative of normal operations.

Comparison of Emissions Data:

During the March 6 call with ARB, we noted a possible discrepancy in the emission numbers in the Draft ARB Benchmarking document as compared to the emission numbers in ARB facility reports. Attached is an excel file that documents what we have found.

In trying to understand the possible causes of these differences, we considered how the ARB approached their calculations. As we understand it, ARB adjusted the emission numbers for energy imports/exports (added thermal energy imports, subtracted thermal energy sales and electricity sales) consistent with their benchmarking policy. We were informed back in 2011 that the magnitude of this adjustment was between 800,000 and 900,000 tonnes/yr. We ask that ARB share details of any changes in utility calculations, as long as such disclosure does not reveal confidential data. We would like to understand what role these adjustments may play in the observed discrepancy.

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We understand that the benchmarks were calculated based on 2008 and 2010 data. We support this approach for calculating benchmarks for typical refineries. However, ARB's February 26 document states that "a refinery with anomalous data" was excluded from the benchmark calculation and benchmark curves. It is unclear what operations ARB considered abnormal. On average, several refineries will have one or more process units out of service in any given time period. If these reduced operations were associated with benchmarking, removal of that data might have an impact on the benchmark.

We note that, generally speaking, refineries are less efficient when operating below design capacity. Thus, excluding a year of abnormal operations would most likely also lead to exclusion of a period of relatively higher emissions per unit throughput and would bias the benchmark downward. We therefore recommend that any complete exclusion of a refinery from a benchmark calculation should be due to a highly unusual and significantly reduced operation.

### Solomon Data

In response to a previous request, Solomon has given Chevron permission to share the following numbers with WSPA and ARB.

- 2008 California Peer group average CO<sub>2</sub>(e) per CWB **4.60 kg CO<sub>2</sub>(e)/CWB**
- 2010 California Peer group average CO<sub>2</sub>(e) per CWB **4.68 kg CO<sub>2</sub>(e)/CWB**

Please note that these averages were calculated as total emissions divided by total CWB, (*i.e.*, **weighted average, consistent with ARB policy**) rather than the arithmetic average of all California refineries' benchmarks. The numbers are provided as a rough comparison with values that ARB is calculating. There are some differences between the boundaries set by Solomon and those used by ARB, including:

- Emissions numbers used by Solomon include "Direct-only" emissions, including onsite hydrogen plants and excluding emissions associated with purchased hydrogen, power and steam.
- The CWB denominator includes hydrogen plants inside refinery boundaries and excludes offsite hydrogen plants, consistent with the emissions numbers.
- The CWB denominator includes adjustments for "offsites and non-energy utilities" and "non-crude sensible heat", since these parameters are part of the Solomon CWB calculation.
- The California peer group averages are not adjusted for a stringency factor

WSPA appreciates the opportunity to address these issues in advance of ARB's formal 15-day comment period on proposed amendments to the Cap and Trade regulation. We look forward to your response. Should you have any questions, feel free to contact me (cell: 626-590-4905); [mike@wspa.org](mailto:mike@wspa.org)).

Regards,

A handwritten signature in black ink, appearing to read "Michael D. G.", with a horizontal line underneath the name.