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ATTACHMENT I

State of Hawaii Designation Recommendation of the 1-Hour Sulfur Dioxide (SO₂) National Ambient Air Quality Standard (NAAQS)

I. Recommendation

As detailed in this document, it is recommended that all counties in the State of Hawaii be initially designated as unclassifiable for the 1-hour SO₂ NAAQS. Without the modeled SO₂ component, the state cannot make a definitive determination of attainment or non-attainment.

During the most recent complete data years of 2008 to 2010, there were seven SO₂ monitoring stations in the state. Three SO₂ monitors were located in the City and County of Honolulu, which encompasses the island of Oahu and is the only Metropolitan Statistical Area (MSA) in the state. Four SO₂ monitors were located in Hawaii County for the monitoring of volcanic emissions. No SO₂ monitoring was conducted in the rest of the state which includes the Counties of Kauai (islands of Kauai and Niihau), Kalawao (Kalaupapa), and Maui (islands of Maui, Molokai, Lanai and Kahoolawe).

II. Basis for the Recommendation

The U.S. Environmental Protection Agency (EPA) revised the primary health-based SO₂ NAAQS by establishing a new 1-hour SO₂ standard effective June 2, 2010.

Pursuant to the Federal Clean Air Act 107(d) (1), states are required to make attainment, nonattainment, or unclassifiable recommendations one year after promulgation of a new standard.

To determine compliance with the new 1-hour SO₂ NAAQS, EPA is requiring a hybrid approach using both monitored and modeled data. However, timely guidance in conducting large-scaled refined modeling for SO₂ was not provided and in absence of modeled data the state can only recommend an unclassifiable designation.

Using monitoring data, the 1-hour SO₂ standard is attained when the three year average of the 99th percentile of the daily maximum 1-hour average at each monitor does not exceed 75 parts per billion (ppb). In 2008 to 2010, all three monitors in the Honolulu MSA showed no violations of the standard. The ambient air stations on the island of Hawaii were established to monitor the impact of SO₂ emissions from the Kilauea volcano. Although the four monitors showed exceedances of the 1-hour standard, the data from these stations were flagged as being due to a natural event. The state has submitted the required exceptional events documentations to EPA

Region 9 providing the causal relationship between the active volcano and the SO₂ exceedances. With the data excluded, all stations on the island of Hawaii would be in compliance with the standard.

Therefore, although none of the Honolulu MSA SO₂ monitors violated the standard, the area is unclassifiable because of the absence of large-scaled refined modeling. There were exceedances of the standard in Hawaii County but the area is unclassifiable because the data is due to a natural event awaiting exclusion concurrence by EPA and there is a lack of modeling data. The rest of the state (Kauai, Maui, and Kalawao Counties) is unclassifiable because there was no SO₂ monitoring or modeling conducted.

III. Data Exclusion Due to a Natural Event

The SO₂ ambient air monitoring stations on the island of Hawaii were established to monitor impacts from volcanic emissions. The Kilauea volcano has been erupting continuously since 1983 emitting on average 2,000 tons per day of SO₂. In March 2008, a second vent opened at the summit causing an increase of SO₂ up to 9,000 tons per day at one point. The Hilo and Mountain View stations were established to monitor SO₂ during southerly winds; the Pahala and Kona stations were established to monitor SO₂ during the prevalent northeasterly winds.

All hourly data of 75 ppb and greater from these stations have been flagged with the AQS code "RS" for volcanic eruption. Quarterly exceptional events documentations have been submitted to EPA Region 9 for concurrence with the flags for data exclusion.

In the 2008 national emissions inventory, SO₂ emissions from anthropogenic sources in Hawaii County were 73 percent less than in the City and County of Honolulu. This equated to 5,257 annual tons of SO₂ emitted in Hawaii County compared to 19,678 tons emitted in the City and County of Honolulu from point, area, on-road, and off-road sources. However, SO₂ emissions from biogenic sources were attributed entirely to the volcano at 961,366 annual tons in Hawaii County compared to zero tons in all other counties. The volcano is clearly the single largest SO₂ emitter in the state.

IV. 2008 to 2010 1-Hour SO₂ NAAQS Compliance Data

The following table presents the 99th percentile values and the 3-year average from 2008 to 2010 at the three stations in the City and County of Honolulu and the four stations on the island of Hawaii. The three year average 99th percentile of the daily maximum 1-hour SO₂ values is the metric that determines attainment of the standard. All daily maximum values 75 ppb and above collected from the stations on the island of Hawaii were excluded from consideration.

There was no SO₂ monitoring in Kauai and Maui counties.

State of Hawaii

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Station	2008 99 th percentile	2009 99 th percentile	2010 99 th percentile	3-year average 99 th percentiles
City & County of Honolulu				
Honolulu (150031001)	11	15	13	13.0
Kapolei (150030010)	16	9	18	14.3
West Beach (150030011)	13	15	12	13.3
Hawaii County				
Hilo (150011006)	51	53	58	54.0
Kona (150011012)	67	49	60	58.7
Pahala (150012016)	72	74	70	72.0
Mt. View (150012017) ¹	58	64	57	59.7

¹ The Mt. View station was closed in October 2010 and moved to a new location. The 2010 data year represents 3 quarters of complete data.