**Oregon SIP Infrastructure Addressing the Interstate Transport Pollutant Impacts of Lead (Pb), Nitrogen Dioxide (NO2), Sulfur Dioxide (SO2) and Fine Particulate Matter (PM 2.5)**

**Clean Air Act Section 110(a)(2)(D)**

**Oregon Department of Environmental Quality**

**<Date>**

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# Addressing Interstate Pollutant Impacts under the Clean Air Act

**Overview** (from 2009 DEQ submittal)

Some amount of air pollution transport occurs routinely across all state borders and across all regions of the country. This document discusses Oregon’s ability to address interstate air pollution transport. Based on the information summarized in the sections that follow, DEQ concludes that air emissions (Pb, NO2, SO2 and PM 2.5) from Oregon sources do not significantly contribute to violations of national ambient air quality standards in other states, or interfere with other states efforts to meet air quality standards, prevent significant air quality degradation, or protect visibility. DEQ’s conclusions are based on its understanding of air pollution problems in adjacent states, and the emission sources, meteorology (weather patterns), and topographic features (mountain ranges, etc.) that influence air quality problems in these states.

DEQ will collaborate with Washington, Idaho, Nevada, California and other state air agencies whenever necessary to evaluate case-specific air quality problems that may involve regional transport of air pollution. DEQ’s Section 110 infrastructure SIP provides the framework and legal mechanism for DEQ to act as needed to reduce any Oregon emissions found to significantly contribute to air quality problems in other states.

The map below (Figure 1) illustrates the significant distances and mountain ranges that in many areas separate Oregon from communities in Washington, California, Idaho, and Nevada, and can help limit the long range transport of air pollution.

**Figure 1: Map of Oregon and major mountain ranges** 

**I. Introduction**

The interstate transport provision in Clean Air Act (CAA) section 110(a)(2)(D)(i) (also called “ the good neighbor” provision) requires each state to submit a State Implementation Plan (SIP) that prohibits emissions that will have certain adverse air quality effects in other states. This SIP submittal is due within three years of the Environmental Protection Agency (EPA) promulgating a new or revised National Ambient Air Quality Standard (NAAQS).

II. Background

**EPA Promulgated NAAQS**

* Lead (Pb): On October 15, 2008, the EPA revised the level of the primary and secondary Pb NAAQS from 1.5 micrograms per cubic meter (µg/m3) to 0.15 µg/m3.
* Nitrogen Dioxide (NO2): The EPA first set standards for NO2 in 1971, setting both a primary standard (to protect health) and a secondary standard (to protect the public welfare) at 53 parts per billion (53 ppb), averaged annually. The EPA reviewed the standards in 1985 and 1996, deciding to retain the standards at the conclusion of each review. In 2005, the EPA began another review, resulting in the January 22, 2010, rulemaking to establish an additional primary NO2 standard at 100 ppb, averaged over one hour (75 FR 6474).
* Sulfur Dioxide (SO2): Primary standards for SO2 were first set in 1971, at 0.14 parts per million (ppm) averaged over a 24-hour period, not to be exceeded more than once per year, and 0.030 ppm, annual arithmetic mean. The EPA subsequently reviewed the primary standards and determined to retain them in 1996 at the conclusion of the review. More recently, on June 2, 2010, the EPA promulgated a revised primary SO2 standard at 75 ppb, based on a three-year average of the annual 99th percentile of one-hour daily maximum concentrations (75 FR 35520).
* Fine Particulate Matter (PM 2.5): On December 14, 2012 the EPA promulgated a revised NAAQS for fine particulate matter (PM 2.5) from 15 µg/m3 to 12 µg/m3.

Section 110(a)(2)(D)(i) identifies four distinct requirements related to the impacts of air pollutants transported across state lines. It requires that each SIP for a new or revised NAAQS contain adequate provisions prohibiting any source or other type of emissions activity within the state from emitting air pollutants that may:

1. contribute significantly to nonattainment of the applicable NAAQS in any other state;
2. interfere with maintenance of the applicable NAAQS in any other state;
3. interfere with measures required to be included in the applicable implementation plan for any other state to prevent significant deterioration of air quality; and
4. interfere with measures required to be included in the applicable implementation plan for any other state to protect visibility

The federally approved SIP for the State of Oregon currently addresses elements 3 and 4 above. (Q for EPA: Why include 3 and 4 if they are approved?) This SIP submittal addresses the requirements of CAA section 110(a)(2)(D)(i)(I) for the new/revised NAAQS for Pb, NO2, SO2 and PM 2.5 for elements 1 and 2 listed above.

III. Air Quality Data and Attainment Status within Oregon and Surrounding States

* 1. **Surrounding contiguous states**: Oregon is bordered by Washington to the north, the Pacific Ocean to the west, California and Nevada to the south, and Idaho to the east. The Snake River separates the state from part of Idaho. The Columbia River forms most of the state's northern border. The are six major sources in Oregon within 5 km of a contiguous Washington state and one major source within 5 km of Idaho.
  2. **Designation of all areas within the state and in each surrounding state (attainment, nonattainment, and unclassifiable), including maintenance areas in adjacent states:**
* Lead (Pb): All areas in the states of Oregon, Idaho, Nevada, and Washington were designated by EPA in 2008 as “unclassifiable/attainment”. In California, Los Angeles County South Coast Air Basin is classified as “nonattainement”. The rest of the state is designated “ unclassifiable/attainment”
* Nitrogen Dioxide (NO2): On January 20, 2012 EPA designated all areas of the country as “unclassifiable/attainment” for the 2010 NO2 NAAQS. The available air quality data show that all monitored areas in the country meet the 2010 NO2 NAAQS for 2008-2010. No state or tribe recommended an area be designated “nonattainment.”
* Sulfur Dioxide (SO2): According to EPA, designations for entire states of Oregon, Washington, Idaho, California, and Nevada will be addressed in a future action. The EPA's review of the monitored air quality data from 2009-2011 showed no violations of 2010 1-hr SO2 standard in any of these states.
* Fine Particulate Matter (PM 2.5): Shoshone county in Idaho, Imperial, Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare counties in California are designated in nonattainment of 2012 annual PM2.5 standard.

There are no nonattainment areas for the annual PM 2.5 standard in Oregon, Washington, Idaho, and Nevada. There have been no annual PM 2.5 NAAQS violations in SW Washington during the most recent three-year period (2012-2014).

* 1. **Monitoring networks for pollutants within the state and surrounding states:**

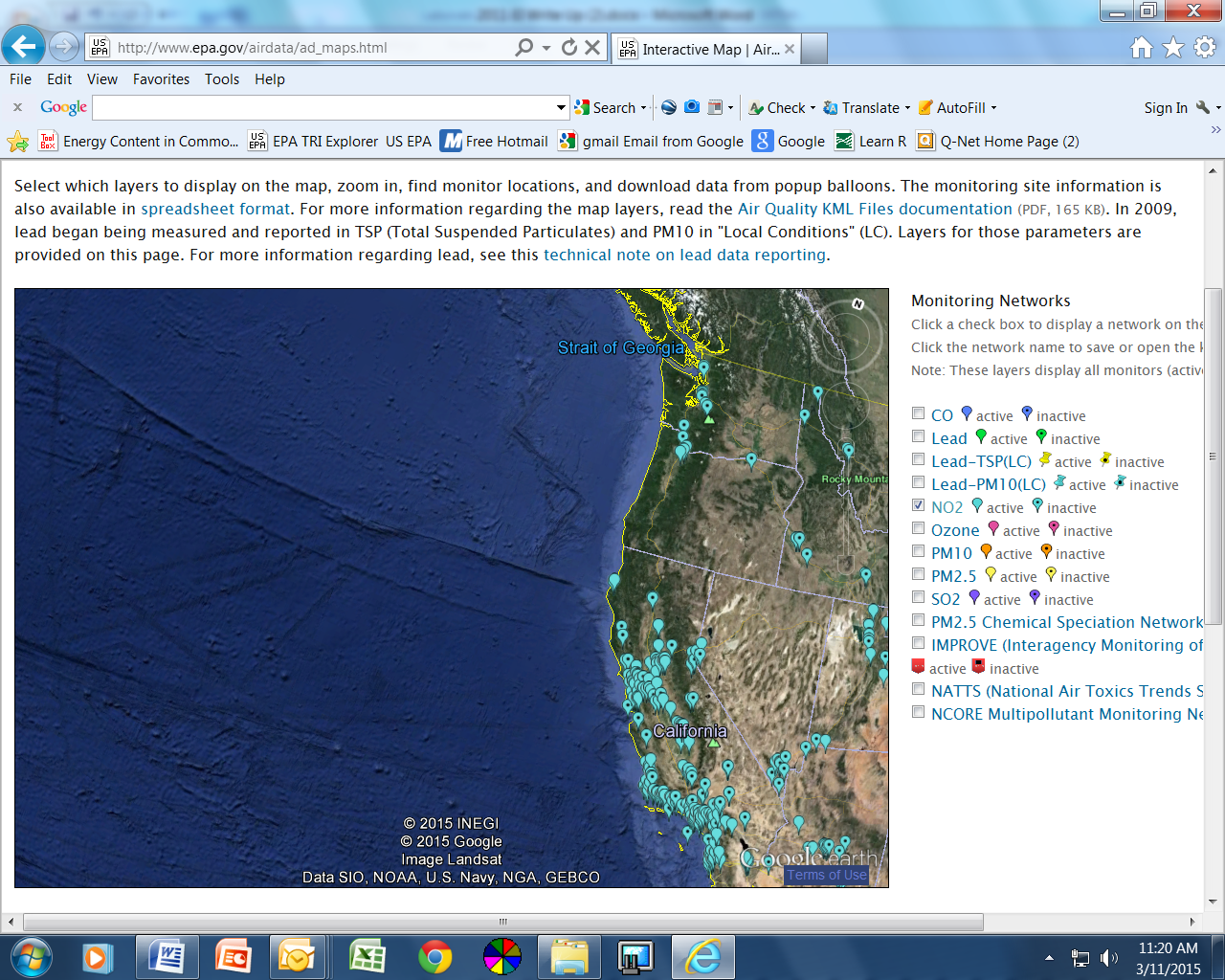
**Figure 2: Monitoring network for NO2, and SO2, in Oregon**



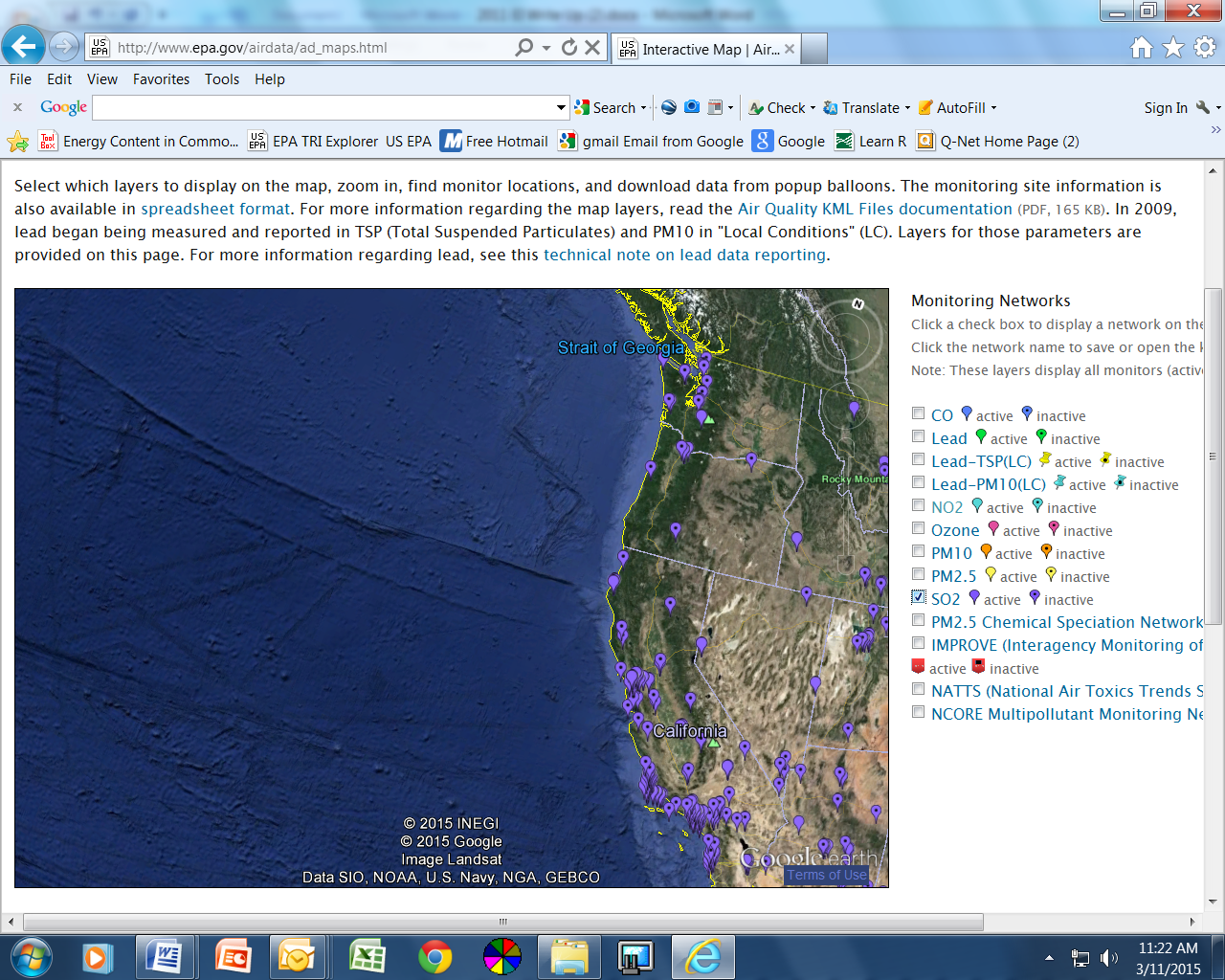
**Figure 3: Monitoring network for PM 2.5 and Lead in Oregon**



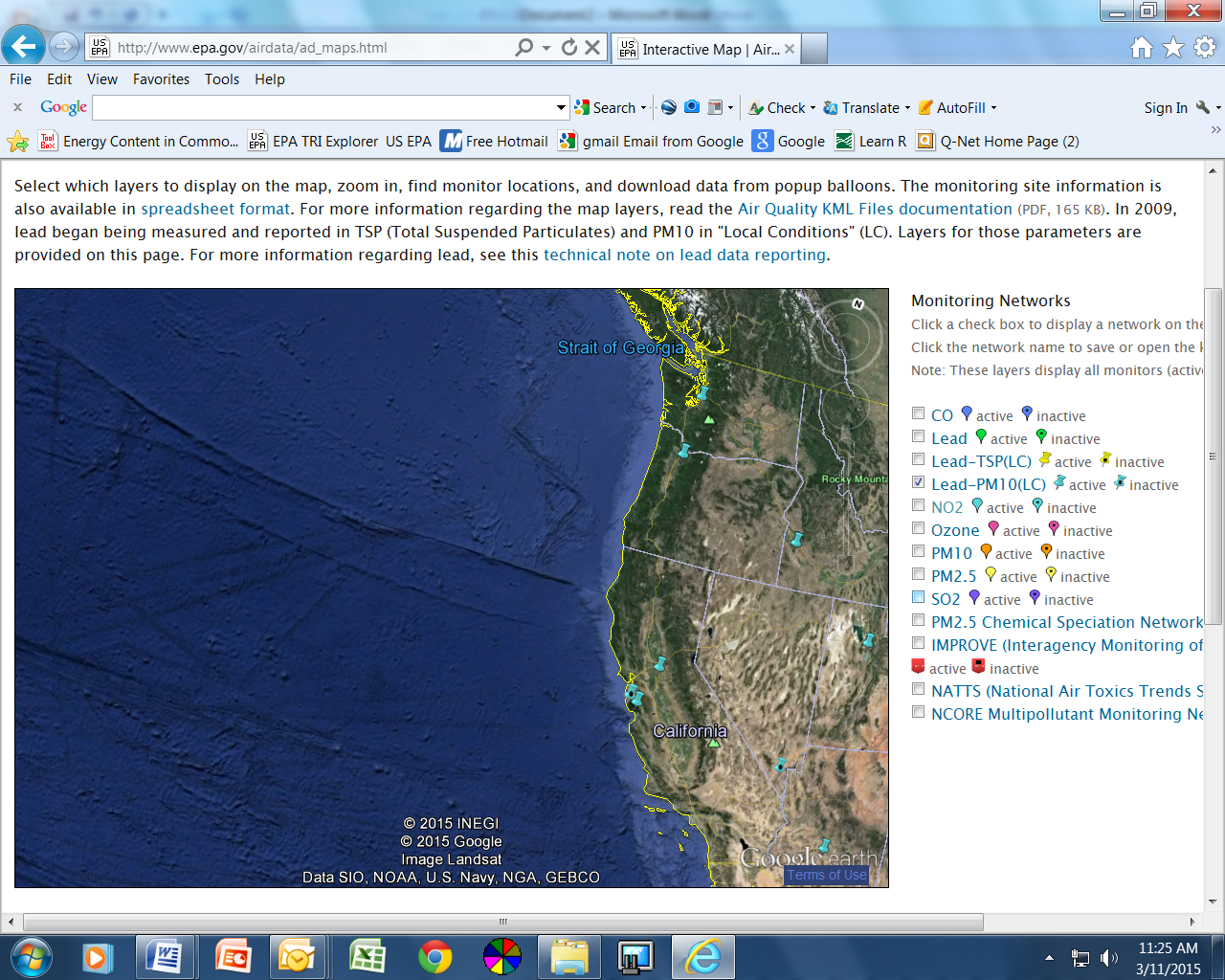
**Figure 4: Monitoring networks for NO2 in Washington, Idaho, California and Nevada**



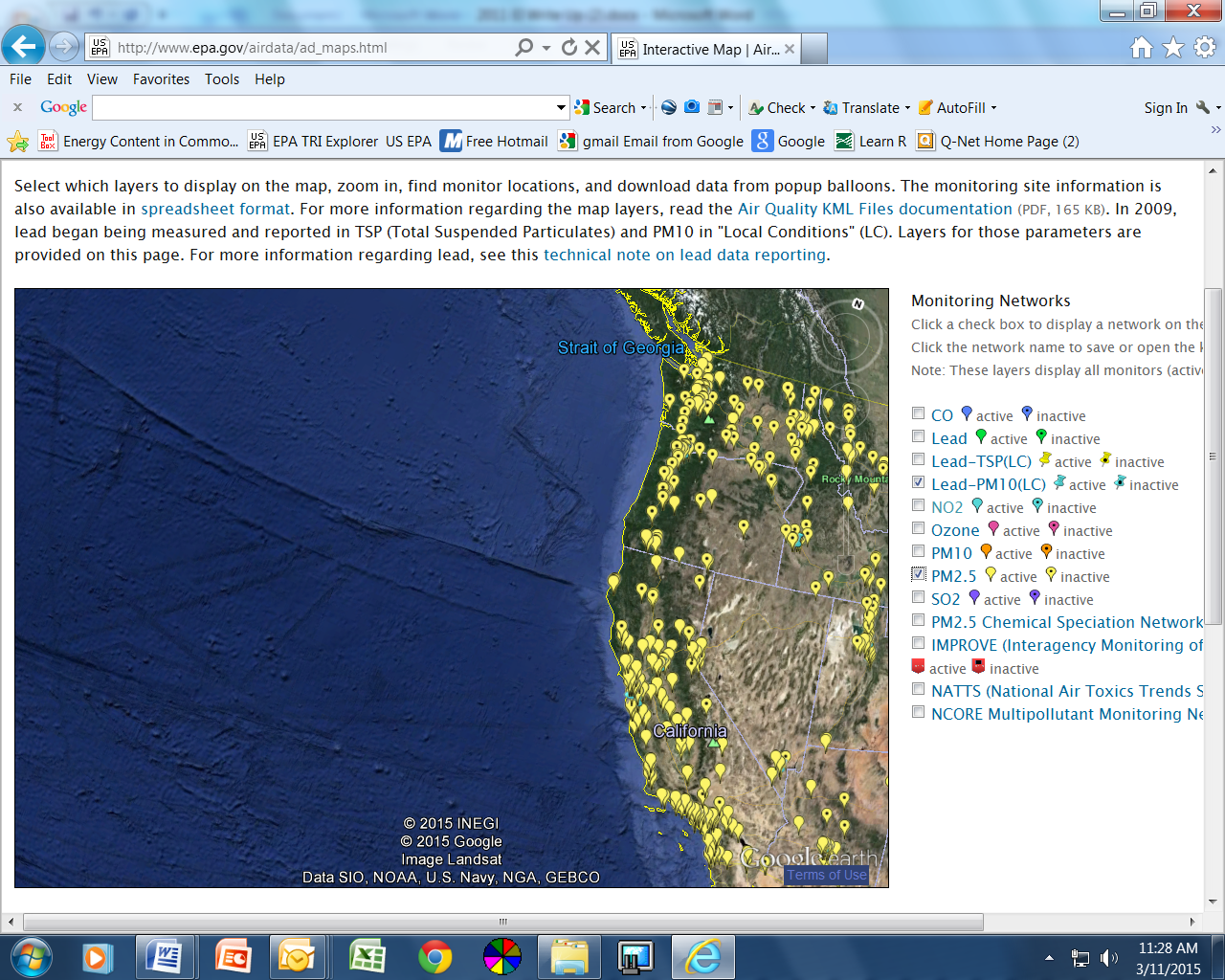
**Figure 5: Monitoring networks for SO2 in Washington, Idaho, California and Nevada**



**Figure 6: Monitoring networks for Pbin Washington, Idaho, California and Nevada**



**Figure 7: Monitoring networks for PM 2.5 in Washington, Idaho, California and Nevada**

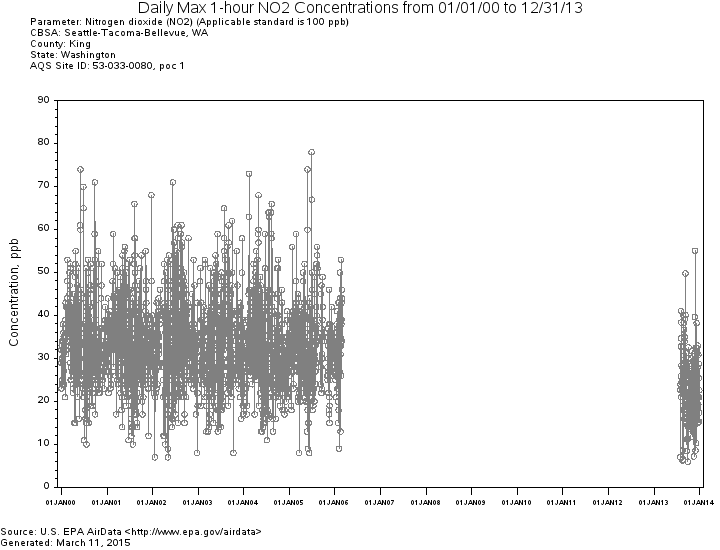


* 1. **Ambient data, including the ‘design value’ for pollutants of interest at each monitoring site and trends over the last 5-10 years.**

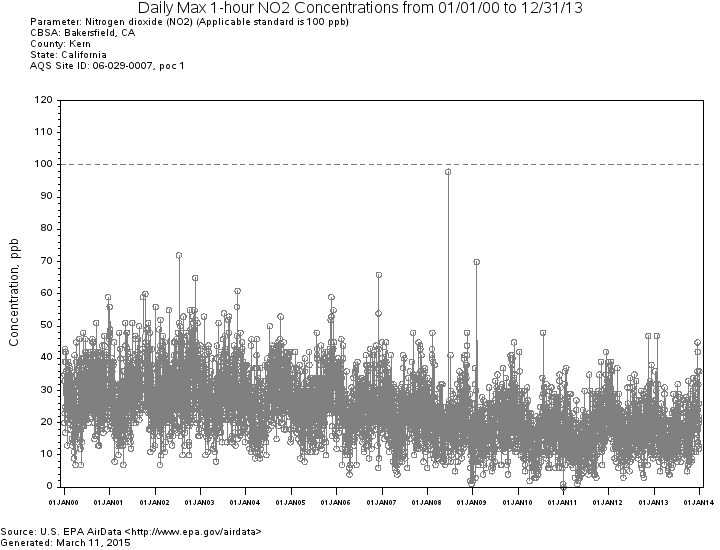
NO2: The level of the hourly NAAQS for nitrogen dioxide is 100 parts per billion (ppb) based on the 98th percentile value from three consecutive years of data. The design values shown here are computed for the latest design value period using Federal Reference Method or equivalent data reported to EPA by States, Tribes, and local agencies. The 2011-2013 Design values for NO2 are presented in Table 1. .Daily maximum 1-hr NO 2 2000-02013 trends at monitoring stations in Oregon, Washington, California, Idaho, and Nevada are in Figures 1-4.

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| **Table 1: County-Level Design Value Concentrations for NO2 1-Hour NAAQS** | | | |
| **State** | **County** | **Site** | **2011-2013 1-hr Design Value (ppb)** |
| California | Alameda | 060010011 | 50 |
| California | Butte3 | 060070008 | 37 |
| California | Contra Costa | 060131004 | 40 |
| California | Imperial | 060250005 | 64 |
| California | Kern | 060296001 | 46 |
| California | Kings | 060311004 | 46 |
| California | Los Angeles | 060371701 | 64 |
| California | Marin | 060410001 | 45 |
| California | Monterey | 060531003 | 35 |
| California | Napa | 060550003 | 39 |
| California | Placer | 060610006 | 50 |
| California | Riverside | 060655001 | 39 |
| California | Sacramento | 060670002 | 43 |
| California | San Bernardino | 060712002 | 62 |
| California | San Diego | 060732007 | 73 |
| California | San Francisco | 060750005 | 68 |
| California | San Joaquin | 060771002 | 53 |
| California | San Luis Obispo | 060798001 | 38 |
| California | San Mateo | 060811001 | 45 |
| California | Santa Barbara | 060831008 | 36 |
| California | Santa Clara | 060850005 | 51 |
| California | Solano | 060950004 | 42 |
| California | Sutter | 061010003 | 47 |
| California | Tulare | 061072002 | 52 |
| California | Ventura | 061112002 | 37 |
| California | Yolo | 061130004 | 34 |
| Oregon | Multnomah | 410510080 | 34 |
| Nevada | Washoe | 320310016 | 56 |

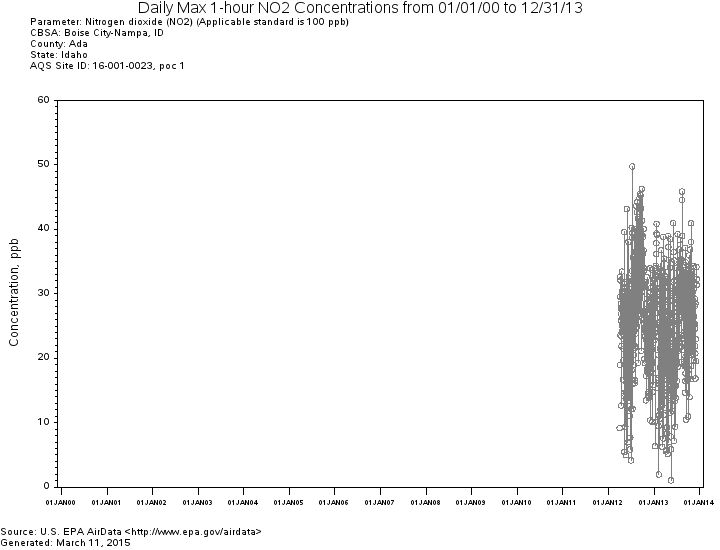
**Figure 1: Trends - Concentrations for NO2 1-Hour NAAQS - Washington**



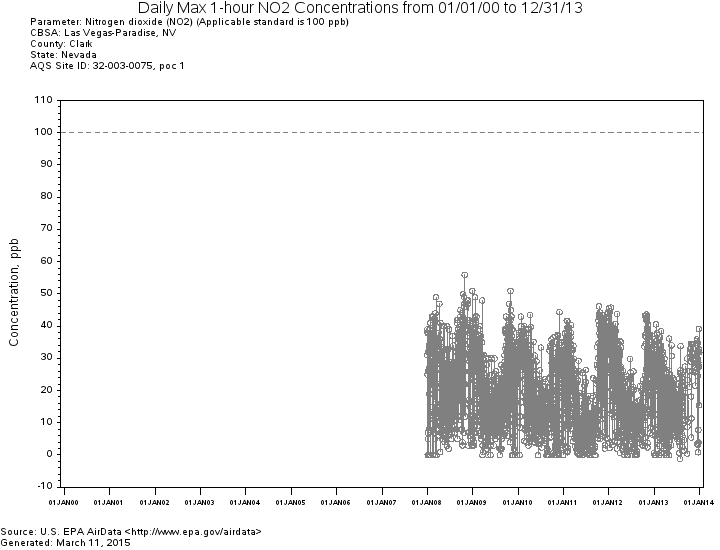
**Figure 2: Trends - Concentrations for NO2 1-Hour NAAQS - California**



**Figure 3: Trends - Concentrations for NO2 1-Hour NAAQS - Idaho**



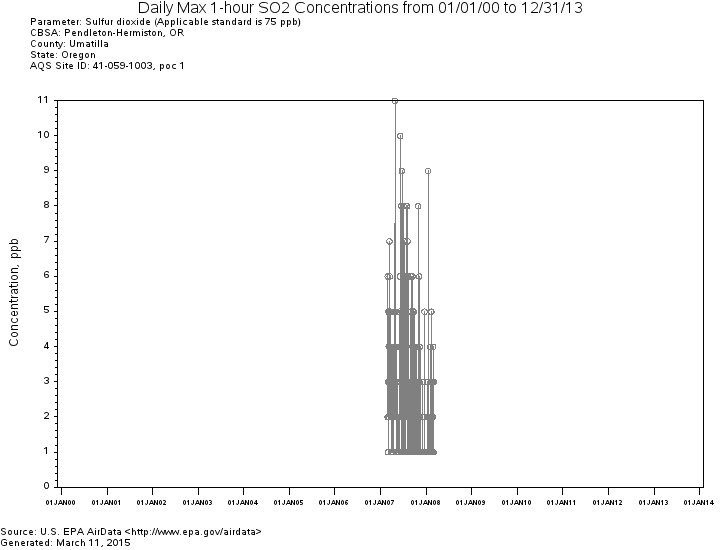
**Figure 4: Trends – Concentrations for NO2 1-Hour NAAQS - Nevada**



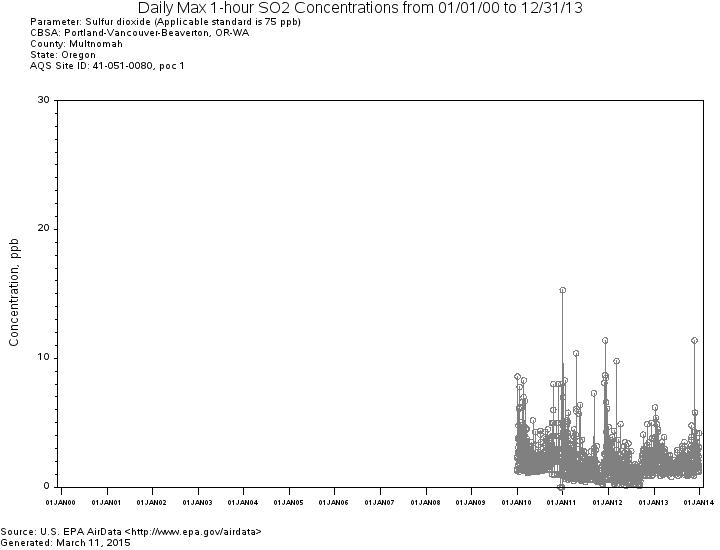
SO2: The level of the 1-hour NAAQS for sulfur dioxide is 75 parts per billion (ppb) calculated as the 3-year average of the 99th percentile of the annual distribution of daily maximum 1-hour average concentrations. The 2011-2013 Design values for SO2 are presented in Table 2. .Daily maximum 1-hr SO 2 2000-02013 trends at monitoring stations in Oregon, Washington, California, Idaho, and Nevada are in Figures 5-10..

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| **Table 2: County-Level Design Value Concentrations for SO2 1-Hour NAAQS** | | |
| **State** | **County** | **2011-2013 1-Hour Design Value (ppb)** |
| CA | Alameda | 15 |
| CA | Contra Costa | 14 |
| CA | Riverside | 3 |
| CA | Sacramento | 2 |
| CA | San Bernardino | 5 |
| CA | San Diego | 1 |
| CA | San Luis Obispo | 21 |
| CA | Santa Barbara | 36 |
| CA | Santa Clara | 13 |
| CA | Solano | 4 |
| ID | Caribou | 40 |
| NV | Clark | 8 |
| NV | Washoe | 6 |
| OR | Multnomah | 6 |
| WA | Clallam | 1 |

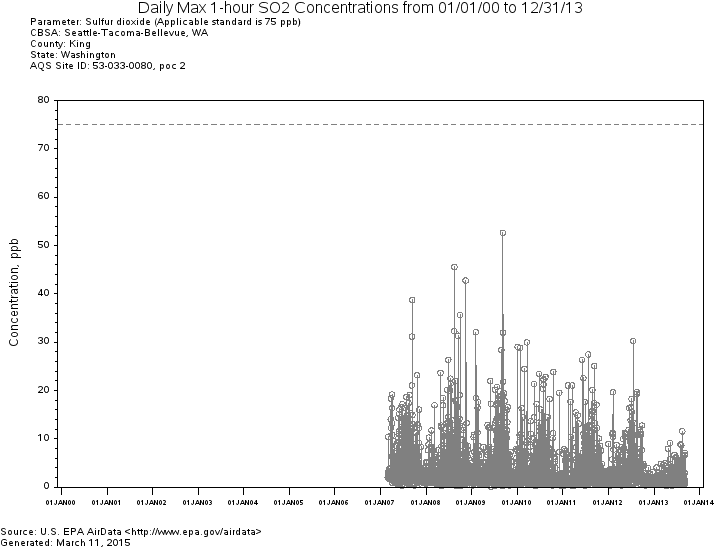
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| **Figure 5: Trends – SO2 1-hour NAAQS concentrations – Umatilla County, Oregon** |



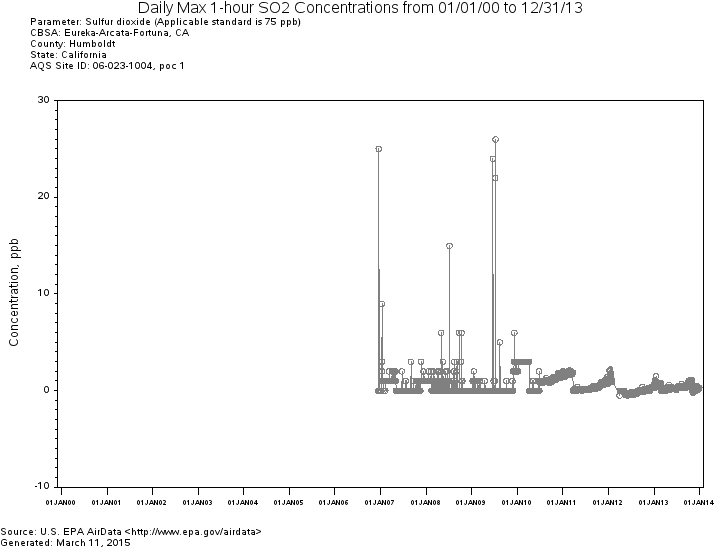
**Figure 6: Trends – SO2 1-hour NAAQS concentrations, Multnomah County, Oregon**



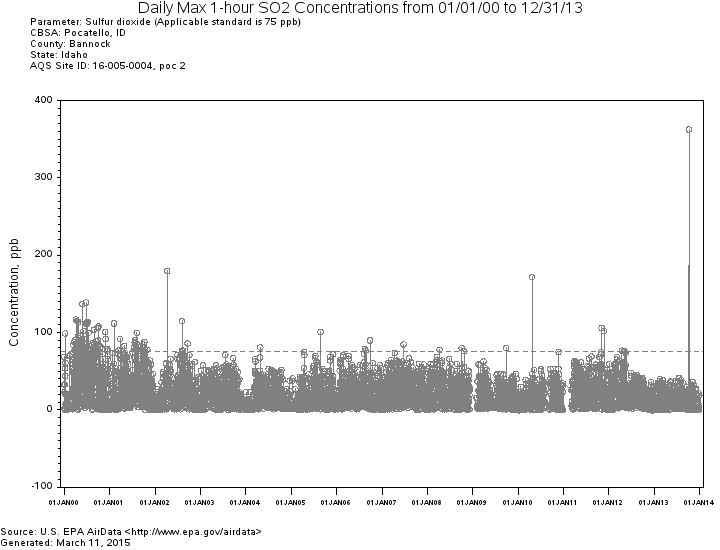
**Figure 7: Trends – SO2 1-hour NAAQS concentrations - Washington**



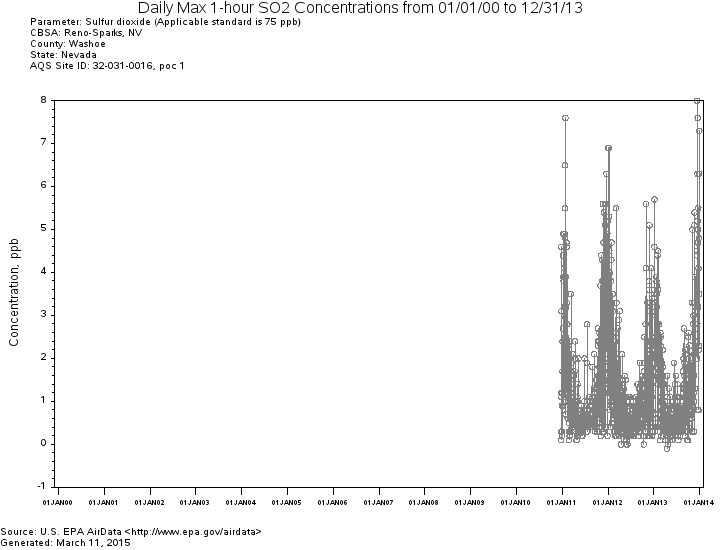
**Figure 8: Trends – SO2 1-hour NAAQS concentrations - California**



**Figure 9: Trends – SO2 1-hour NAAQS concentrations - Idaho**



**Figure 10: Trends – SO2 1-hour NAAQS concentrations - Nevada**



Pb: The level of the 2008 NAAQS for lead is 0.15 micrograms per cubic meter (µg/m3) not to be exceeded in any 3-month period. The 2011-2013 available Design values for PB are presented in Table 3. .Daily maximum 1-hr Pb 1990-2013 trends at monitoring stations in Oregon, California, and Idaho. are in Figures 11-13..

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| **Table 3. Site-Level Maximum Design Value Concentrations for 2008 Lead NAAQS, 2011-2013** | | | |
| **State** | **County** | **AQS Site ID** | **2011-2013 Design Value (µg/m3)** |
| California | Fresno | 060190011 |  |
| California | Imperial | 060250005 | 0.03 |
| California | Los Angeles | 060371302 |  |
| California | Los Angeles | 060371402 |  |
| California | Los Angeles | 060371404 |  |
| California | Los Angeles | 060374002 |  |
| California | Los Angeles | 060374004 |  |
| California | Los Angeles | 060375005 |  |
| California | Los Angeles | 060371103 | 0.01 |
| California | Los Angeles | 060371403 | 0.11 |
| California | Los Angeles | 060371405 | **0.46** |
| California | Los Angeles | 060371406 | 0.07 |
| California | Los Angeles | 060371602 | 0.01 |
| California | Riverside | 060651003 | 0.01 |
| California | Riverside | 060658001 | 0.01 |
| California | San Bernardino | 060719004 |  |
| California | San Bernardino | 060711004 | 0.01 |
| California | San Diego | 060730003 |  |
| California | San Diego | 060731021 |  |
| California | San Diego | 060731020 | **0.17** |
| California | San Mateo | 060812002 | **0.33** |
| California | Santa Clara | 060852010 |  |
| California | Santa Clara | 060852011 |  |
| Oregon | Yamhill | 410711702 | 0.05 |
| Nevada | Clark | 320030540 |  |
| Washington | King | 530330029 |  |
| Washington | Snohomish | 530610013 |  |

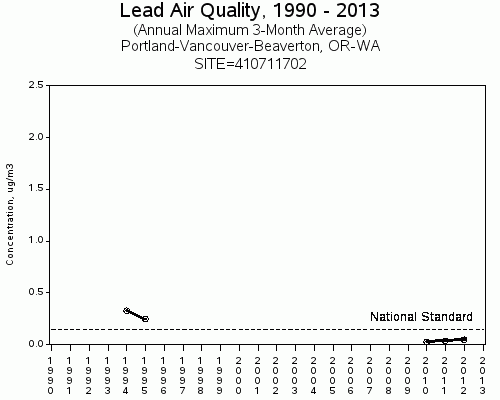
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Svetlana – I can’t manipulate the table above to take off the extended yellow line in the 0.17 above and I can’t close the box.

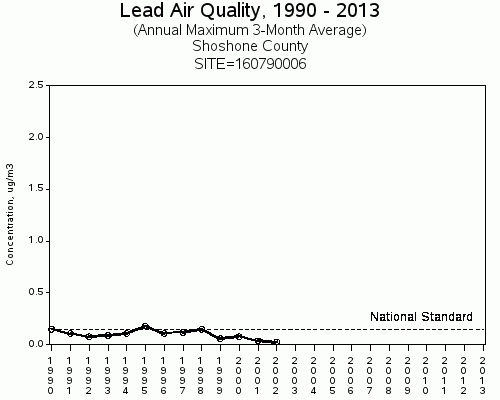
Svetlana, David wanted me to remark on the exceedances. How about thisThe Design values in bold in Table 3 exceed the 2008 Lead NAAQS. The monitoring site in California is 800 miles away and lead emissions from Oregon are not capable of transporting and contributing to the exceedances at such distances.

Local 1990-2013 Pb trends in Oregon, Washington, Idaho, and California are shown in Figures 11-13. Note: There are no Pb trends for Nevada and Washington.

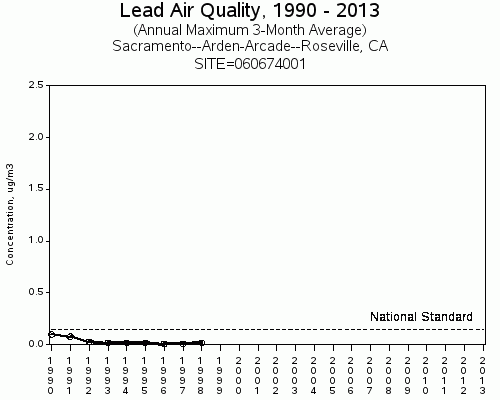
**Figure 11: Annual Maximum 3-Month Average Pb - Oregon**



**Figure 12: Annual Maximum 3-Month Average Pb - Idaho**



**Figure 13: Annual Maximum 3-Month Average Pb - California**



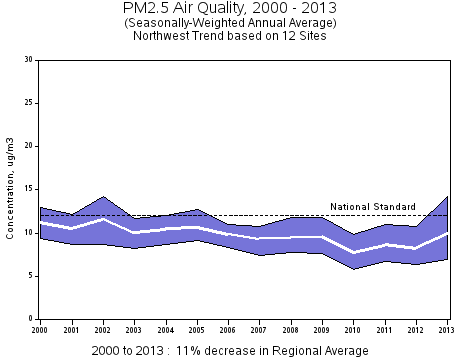
PM 2.5: The level of the 2012 NAAQS for PM2.5 is 12 ug/m3 calculated as a 3-year average of the annual arithmetic mean. The 2011-2013 Design values for PM2.5 are presented in Table 4. .Annual PM2.5 2000-2013 trends at monitoring stations in Oregon, Washington, California, Idaho, and Nevada are in Figures 5-10

The 2011-2013 Design values for PM 2.5 are presented in Table 4. .Annual PM2.5 2000-02013 NW trendd at monitoring stations in Oregon, Washington, California, Idaho, and Nevada presented in Figure 13 shows 11% regional decrease in PM 2.5 emissions across the NW region. .

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| **Table 4 PM2.5 Site Listing, 2011-2013** | | | | | | | |
| **State** | **County** | | **Site ID** | | **2011-2013 Annual Design Value (µg/m3)** | |
| California | Alameda | | 060010007 | | 7.6 | |
| California | Alameda | | 060010009 | | 10.0 | |
| California | Butte | | 060070008 | | 10.1 | |
| California | Calaveras | | 060090001 | | 8.4 | |
| California | Colusa | | 060111002 | | 7.1 | |
| California | Contra Costa | | 060130002 | | 7.4 | |
| California | Fresno | | 060190011 | | **15.4** | |
| California | Fresno | | 060192009 | | 7.8 | |
| California | Fresno | | 060195001 | | **16.4** | |
| California | Fresno | | 060195025 | | **14.7** | |
| California | Humboldt | | 060231002 | | 6.2 | |
| California | Imperial 4 | | 60250005 | | **14.3** | |
| California | Imperial | | 060250007 | | 7.5 | |
| California | Imperial | | 060251003 | | 7.4 | |
| California | Inyo | | 060271003 | | 7.5 | |
| California | Kern | | 060290014 | | **16.4** | |
| California | Kern | | 060290016 | | **17.3** | |
| California | Kings | | 060311004 | | **17.0** | |
| California | Lake | | 060333001 | | 3.8 | |
| California | Los Angeles | | 060370002 | | 11.2 | |
| California | Los Angeles | | 060371002 | | **12.8** | |
| California | Los Angeles | | 060371103 | | **13.0** | |
| California | Los Angeles | | 060371201 | | 10.2 | |
| California | Los Angeles | | 060371302 | | **12.2** | |
| California | Los Angeles | | 060371602 | | 12.0 | |
| California | Los Angeles | | 060374002 | | 11.1 | |
| California | Los Angeles | | 060374004 | | 11.0 | |
| California | Madera | | 060392010 | | **18.1** | |
| California | Marin | | 060410001 | | 9.5 | |
| California | Merced | | 060470003 | | **13.3** | |
| California | Merced | | 060472510 | | 11.1 | |
| California | Monterey | | 060531003 | | 6.1 | |
| California | Nevada | | 060570005 | | 4.6 | |
| California | Nevada | | 060571001 | | 7.0 | |
| California | Orange | | 060590007 | | 10.7 | |
| California | Orange | | 060592022 | | 8.2 | |
| California | Placer | | 060610006 | | 7.5 | |
| California | Plumas | | 060631006 | | 10.2 | |
| California | Plumas | | 060631009 | | **12.2** | |
| California | Plumas | | 060631010 | | **12.8** | |
| California | Riverside | | 060650009 | | 7.7 | |
| California | Riverside | | 060651003 | | 11.5 | |
| California | Riverside | | 060652002 | | 7.7 | |
| California | Riverside | | 060655001 | | 6.4 | |
| California | Riverside | | 060658001 | | **13.4** | |
| California | Riverside | | 060658005 | | **15.1** | |
| California | Sacramento | | 060670006 | | 10.4 | |
| California | Sacramento | | 060670010 | | 9.5 | |
| California | Sacramento | | 060674001 | | 9.3 | |
| California | San Benito | | 060690002 | | 5.5 | |
| California | San Bernardino | | 060710025 | | **12.6** | |
| California | San Bernardino | | 060712002 | | **12.6** | |
| California | San Bernardino | | 060718001 | | 8.7 | |
| California | San Bernardino | | 060719004 | | 11.8 | |
| California | San Diego | | 060730001 | | 9.9 | |
| California | San Diego | | 060730003 | | 10.6 | |
| California | San Diego | | 060731002 | | 10.7 | |
| California | San Diego | | 060731010 | | 10.8 | |
| California | San Diego | | 060731016 | | 8.7 | |
| California | San Francisco | | 060750005 | | 9.2 | |
| California | San Joaquin | | 060771002 | | 13.8 | |
| California | San Joaquin | | 060772010 | | 10.2 | |
| California | San Luis Obispo | | 060792004 | | 8.7 | |
| California | San Luis Obispo | | 060792006 | | 6.6 | |
| California | San Luis Obispo | | 060792007 | | 11.3 | |
| California | San Luis Obispo | | 060798001 | | 7.0 | |
| California | San Mateo | | 060811001 | | 9.3 | |
| California | Santa Barbara | | 060830011 | | 9.5 | |
| California | Santa Barbara | | 060831008 | | 7.6 | |
| California | Santa Clara | | 060850002 | | 8.0 | |
| California | Santa Clara | | 060850005 | | 10.3 | |
| California | Santa Cruz | | 060870007 | | 6.3 | |
| California | Shasta | | 060890004 | | 5.7 | |
| California | Shasta | | 060893004 | | 6.2 | |
| California | Siskiyou | | 060932001 | | 6.3 | |
| California | Solano | | 060950004 | | 9.6 | |
| California | Sonoma | | 060970003 | | 8.4 | |
| California | Stanislaus | | 060990005 | | **13.6** | |
| California | Stanislaus | | 060990006 | | **15.7** | |
| California | Sutter | | 061010003 | | 7.7 | |
| California | Tehama | | 061030006 | | 8.1 | |
| California | Tulare | | 061072002 | | **16.6** | |
| California | Ventura | | 061110007 | | 9.1 | |
| California | Ventura | | 061110009 | | 8.1 | |
| California | Ventura | | 061112002 | | 9.1 | |
| California | Ventura | | 061113001 | | 9.0 | |
| California | Yolo | | 061131003 | | 7.2 | |
| Idaho | Ada | | 160010010 | | 9.1 | |
| Idaho | Bannock | | 160050020 | | 7.7 | |
| Idaho | Benewah | | 160090010 | | 9.9 | |
| Idaho | Canyon | | 160270002 | | 10.8 | |
| Idaho | Franklin | | 160410001 | | 8.0 | |
| Idaho | Lemhi | | 160590004 | | 12.0 | |
| Idaho | Shoshone | | 160790017 | | **12.8** | |
| Nevada | Clark | | 320030540 | | 8.1 | |
| Nevada | Clark | | 320030561 | | 8.8 | |
| Nevada | Clark | | 320031019 | | 4.6 | |
| Nevada | Washoe | | 320310016 | | 7.6 | |
| Oregon | Crook | | 410130100 | | 9.8 | |
| Oregon | Harney | | 410250003 | | 9.5 | |
| Oregon | Jackson | | 410290133 | | 10.9 | |
| Oregon | Josephine | | 410330114 | | 8.8 | |
| Oregon | Klamath | | 410350004 | | 11.6 | |
| Oregon | Lake | | 410370001 | | 11.1 | |
| Oregon | Lane | | 410390060 | | 7.0 | |
| Oregon | Lane | | 410391009 | | 5.8 | |
| Oregon | Lane | | 410392013 | | 9.1 | |
| Oregon | Lane | | 410399004 | | 7.1 | |
| Oregon | Multnomah | | 410510080 | | 8.1 | |
| Oregon | Umatilla | | 410590121 | | 7.6 | |
| Oregon | Washington | | 410670004 | | 8.2 | |
| Washington | King | | 530330057 | | 10.1 | |
| Washington | King | | 530330080 | | 6.1 | |
| Washington | King | | 530332004 | | 7.1 | |
| Washington | Pierce | | 530530029 | | 7.8 | |
| Washington | Snohomish | | 530610005 | | 5.9 | |
| Washington | Snohomish | | 530610020 | | 6.9 | |
| Washington | Snohomish | | 530611007 | | 7.7 | |
| Washington | Spokane | | 530630021 | | 8.0 | |
| Washington | Yakima | | 530770009 | | 9.1 | |

Svetlana, do you think we need to make a statement about the exceedances and why they aren’t an issue Yes, make a statement similar to the Pb statement. There are design values that exceed the annual PM2.5 NAAQS in neighboring states at the monitoring sites removed from Oregon by hundreds of miles. It would be unreasionable to assume that Oregon’s PM2.5 emissions contribure to those exceedances.

**Figure 13** Svetlana - How should we label this table? Should we comment on exceedances to National Standard? I addressed this in text above



IV. Nature and Extent of Expected Pollutant Transport

*Summary*: Lead (Pb), Nitrogen Dioxide (NO2) and Sulfur Dioxide (SO2) are not expected to be transported for long distances. Pb would most likely be deposited within a few miles of a source. Both NO2 and SO2 will most likely either disperse in the atmosphere or chemically react to form a secondary pollutant within a few miles of the source. The only transport of Fine Particulate Matter (PM 2.5) is related to regional haze and is not sufficient enough to contribute to exceedances to the NAAQS in neighboring states. Oregon receives a lot of PM 2.5 from forest fire smoke, exceptional events and residential wood burning. Thus only large pollutant sources in proximity to the State boundaries would be expected to significantly contribute or interfere in adjacent states.

*Nitrogen Dioxide (NO2)*: NO2 is one of a group of highly reactive gasses known as "oxides of nitrogen," or "nitrogen oxides (NOx)." Other nitrogen oxides include nitrous acid and nitric acid. EPA’s NAAQS uses NO2 as the indicator for the larger group of nitrogen oxides. NO2 forms quickly from emissions from cars, trucks and buses, power plants, and off-road equipment. In addition to contributing to the formation of ground-level ozone, and fine particle pollution, NO2 is linked with a number of adverse effects on the respiratory system. EPA first set standards for NO2 in 1971, setting both a primary standard (to protect health) and a secondary standard (to protect the public welfare) at 0.053 parts per million (53 ppb), averaged annually. The Agency has reviewed the standards twice since that time, but chose not to revise the annual standards at the conclusion of each review. In January 2010, EPA established an additional primary standard at 100 ppb, averaged over one hour. Closing statement? Therefore NO2 is not of concern….. Concentrations of NO2 emitted into the atmosphere will decrease during transport through three mechanisms: deposition, chemical transformation, and dispersion. Interstate transport of NO2 is not a concern for Oregon.

*Sulfur Dioxide (SO2)*: SO2 is one of a group of highly reactive gasses known as “oxides of sulfur.” Generally the largest sources of SO2 emissions are from fossil fuel combustion at power plants (73%) and other industrial facilities (20%). Smaller sources of SO2 emissions include industrial processes such as extracting metal from ore, and the burning of high sulfur containing fuels by locomotives, large ships, and non-road equipment. SO2 is linked with a number of adverse effects on the respiratory system. The emission inventory for Oregon demonstrates a similar source distribution.

EPA first set standards for SO2 in 1971. EPA set a 24-hour primary standard at 140 ppb and an annual average standard at 30 ppb (to protect health). EPA also set a 3-hour average secondary standard at 500 ppb (to protect the public welfare). In 1996, EPA reviewed the SO2 NAAQS and chose not to revise the standards.

In 2010, EPA revised the primary SO2 NAAQS by establishing a new 1-hour standard at a level of 75 parts per billion (ppb). EPA revoked the two existing primary standards because they would not provide additional public health protection.

Thus, concentrations of SO2 emitted into the atmosphere will decrease during transport through three mechanisms: deposition, chemical transformation, and dispersion. Interstate transport of SO2 is not a concern for Oregon.

*Lead (Pb)*: As noted in the EPA’s October 14, 2011 Pb infrastructure guidance, the physical properties of Pb prevent Pb emissions from experiencing the same travel or formation phenomena as fine particulate matter or ozone. More specifically, there is a sharp decrease in Pb concentrations, at least in the coarse fraction, as the distance from a Pb source increases. Accordingly, while it may be possible for a source in a state to emit Pb in a location and in quantities that may contribute significantly to nonattainment in, or interfere with maintenance by, any other state, the EPA anticipates that this would be a rare situation (e.g., where large sources are in close proximity to state boundaries). The EPA’s experience with initial Pb designations suggests that sources that emit less than 0.5 tons per year or that are located more than two miles from a state border generally appear unlikely to contribute significantly to nonattainment in another state. All sources of Pb emissions in the Oregon are below 0.5 tons per year and are located greater than two miles from the state border. Therefore, it is reasonable to conclude that sources in the Oregon will not significantly contribute to nonattainment or interfere with maintenance of the 2008 Pb NAAQS in any other state.

*Fine Particulate Matter (PM 2.5:* DEQ’s consultation with air agencies in adjacent states suggests that high PM2.5 levels in their respective communities are driven largely by local pollution sources during events of air stagnation. Local air stagnation events would generally preclude interstate air pollution transport as a significant contributor to high PM2.5 levels jeopardizing NAAQS compliance. Say more?

**V. Sources of Pollutant Emissions Near the State Boundary and Expected Impacts in Neighboring States** (Emission inventory of sources and emission for pollutants, specifically major point or area source emissions and their proximity to the state boundary. Likelihood that emissions from these sources would transport across the state boundary to significantly contribute or interfere with other states).

There are six Title V Oregon sources in close proximity to the Washington border and one source in close proximity to the Idaho border. The 2011 emission inventories of these sources are in the tables below.



Georgia-Pacific Consumer Products LP, Cascades Tissue Group-Oregon, Portland General Electric Company Beaver Plant/Port Westward I Plant, and Portland General Electric Company Coyote Springs Plant all went through PSD analysis.

Owens-Brockway Glass Containers and Evraz were evaluated as part of the competing sources inventory during both Port Westward and Troutdale Energy Center’s PSD analyses.

An applicant for a PSD permit is required to conduct an air quality analysis of the ambient impacts associated with the construction and operation of a proposed new source or modification. The purpose of the air quality analysis is to demonstrate that new emissions emitted from a proposed major stationary source or major modification, in conjunction with other applicable emissions from existing sources (including secondary emissions), will not cause or contribute to a violation of any applicable NAAQS.

Based on our analysis, we believe it is reasonable to conclude that emissions from sources in Oregon do not significantly contribute to PM 2.5 and NO2 concentrations in any other state.

Svetlana: Let me know what you think of the two paragraphs added below:

Regional Work with Western Regional Air Partnership (WRAP): In late 2010, WRAP initiated West-wide Jump-start Air Quality Modeling Study (WestJumpAQMS). The goals of the study were to develop the next generation of regional air quality modeling databases for ozone, PM 2.5, visibility and deposition planning in the western U.S and to provide information on the role of interstate and international transport to ozone and PM 2.5 under current and potential future NAAQS. In light of this SIP submittal, we reviewed the results of the study and found no evidence to suggest that Oregon Pb, SO2, NO2, or PM 2.5 emissions cause adverse effects or violations of NAAQS in the neighboring state. (note: Waiting to hear back from Tom Moore – WRAP)

Consultation with Neighboring States: In March 2015, Oregon DEQ contacted its neighboring states – Nevada (Adele Malone); Idaho (Mike Edwards)….. (Note: waiting to hear back from California (Sylvia Vanderspek); and Washington (Brian Fuller). They confirmed that Oregon’s emissions of Pb, SO2, NO2 and PM 2.5 are not impacting their states.

**VI. Conclusion**

Based on the rationale provided above, the current SIP contains adequate provisions prohibiting any source or other type of emissions activity within the state from emitting air pollutants which will:

1. contribute significantly to nonattainment of the applicable NAAQS in any other state
2. interfere with maintenance of the applicable NAAQS in any other state

Recommendations for closing remarks?

In reviewing Oregon 2011 emissions inventory, 2011-2013 design values, long-term trends, most recent WRAP study amd in consultation with Departments of Environmantal Quality in Nevada, Idaho, Department of Ecology and SWCAA in Washington, and ……. California, we found no evidence to suggest that Oregon emissions of NO2, SO2, PB, and PM2.5 excidances, violations of NAAQS, or cause adverse effects in the neighboring states.