



IN REPLY REFER TO:

United States Department of the Interior
NATIONAL PARK SERVICE
Air Resources Division
P.O. Box 25287
Denver, Colorado 80225

N3615 (2350)

February 15, 2013

Steve Body
EPA Region 10,
Office of Air, Waste and Toxics
1200 Sixth Avenue, Suite 900
Seattle, WA 98101

EPA Docket ID: EPA-R10-OAR-2010-1071

Dear Mr. Body:

The National Park Service (NPS) has reviewed the Environmental Protection Agency (EPA)'s proposed "Approval and Promulgation of Implementation Plans; State of Washington; Regional Haze State Implementation Plan; Federal Implementation Plan for Best Available Retrofit Technology for Alcoa Intalco Operations and Tesoro Refining and Marketing" that was published in the Federal Register on May 29, 2012.

We agree with EPA's determination for Alcoa's Intalco Operations that while a limestone slurry scrubber with forced oxidation would be cost effective for BART, based on EPA's affordability analysis, Alcoa could not remain a viable operation if it were required to install controls as BART. We disagree, however, with EPA's proposal to accept Tesoro's existing sulfur dioxide (SO₂) emissions reductions as a BART alternative rather than require new nitrogen oxide (NO_x) controls as BART. We also believe that Alcoa's Wenatchee facility was improperly exempted from a BART analysis. Our concerns are discussed in the attached document.

Additionally, we have noted considerable inconsistency between EPA Regions 8, 9, and 10 in review of western states' reasonable progress analyses. 40 CFR 51.308(d)(1)(i)(A) requires a state to consider four factors: (1) the costs of compliance; (2) the time necessary for compliance; (3) the energy and non-air quality environmental impacts of compliance; and (4) the remaining useful life of any potentially affected sources. Similar to other western states, Washington Department of Ecology relied on the 2009 EC/R

report for the Western Regional Air Partnership¹ to provide general four-factor analyses for eleven source categories. However, Washington did not analyze controls for specific sources in these categories, as EPA Regions 8 and 9 have required for other states. In its long term strategy, Washington indicated that further source specific evaluation would require a rule making process for Reasonably Available Control Technology (RACT) to establish emissions limits for all facilities in the state in the same source category. Washington committed to implement the RACT rule-making process for one to two source categories over a five year period beginning in 2011. EPA Region 10 did not comment on this commitment when proposing to approve Washington's reasonable progress goals. In contrast, EPA Regions 8 and 9 have required detailed source specific control analyses for reasonable progress for other western states. We recommend that EPA include the expectation for RACT review for two industries in the final Washington SIP approval.

We appreciate the opportunity to work closely with EPA Region 10 and Washington DOE to improve visibility in our Class I areas. For further information regarding our comments, please contact Don Shepherd at (303) 969-2075.

Sincerely,



Susan Johnson
Chief, Policy, Planning and Permit Review Branch

Enclosure

cc: Stuart Clark
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¹ EPA-R10-OAR-2010-1071-0003, State Submittal Part 2, Appendix F, Supplementary Information for Four Factor Analyses by WRAP States, 2009 report by EC/ R.

**National Park Service Comments on EPA's Review
of State of Washington's Determinations of Best Available Retrofit Technology
February 15, 2013**

Sources Subject to BART

Intalco Aluminum Corp.

The Alcoa, Intalco Works (Intalco) is a primary aluminum smelter utilizing the prebake process located at Cherry Point near Ferndale, Washington. The visibility-impairing pollutants from the facility are sulfur dioxide (SO₂), nitrogen oxides (NO_x), and particulate matter (PM). The major sources of these pollutants at the facility are the potlines and to a lesser extent, the anode bake furnace. Base year SO₂ emissions from the potlines were 6,550 t/y from sulfur in anode coke that is consumed in the smelting process. PM emissions from the potlines and the anode bake oven are well controlled. The primary air pollution control system employed by Intalco for control of potline emissions consists of dry alumina injection followed by fabric filtration which effectively controls PM. Emissions of NO_x from the potlines are insignificant because the potlines are electrically heated and none of the raw materials contain significant quantities of nitrogen.

Modeled visibility impacts of baseline emissions were over 2.0 dv at Olympic National Park.¹ Impacts of greater than 0.5 dv were shown for six other Class I areas, two of which (North Cascades and Mt. Rainier national parks) are administered by the National Park Service (NPS). The modeling also showed that SO₂ emissions from the exit of the existing dry alumina baghouse potline emission control system as being responsible for 94% of the facility's total visibility impact and these emissions were the focus of EPA's evaluation of Washington's BART determination. While Intalco used baseline emissions to estimate the facility's impact, the BART Guidelines recommend—and we agree—using “anticipated future” conditions to determine the efficacy of various control technologies.

¹ Two modeling efforts were conducted by an Intalco contractor; one analysis used 4 kilometer (km) grid cells and the other used 1 km grid cells. The analysis using 4 km grid cells considered only the baseline case. The analysis using 1 km grid cells considered both the baseline and the control case. The use of 1 km grid cells for Intalco underestimates visibility impacts compared to results using 4 km grid cells.

Class I Area	2003		2004		2005		2003 - 2005 avg		Total
	Modeled 98th Percentile (deciview)	Number of Days Exceeding 0.5 dv	Modeled 98th Percentile (deciview)	Number of Days Exceeding 0.5 dv	Modeled 98th Percentile (deciview)	Number of Days Exceeding 0.5 dv	Modeled 98th Percentile (deciview)	Number of Days Exceeding 0.5 dv	Number of Days Exceeding 0.5 dv
Alpine Lakes Wilderness Area	1.244	36	0.965	37	0.881	23	1.030	32	96
Goat Rocks Wilderness Area	0.500	8	0.579	10	0.317	3	0.465	7	21
Glacier Peak Wilderness Area	1.161	37	1.156	38	0.736	23	1.018	33	98
Mount Adams Wilderness Area	0.456	7	0.472	6	0.357	2	0.428	5	15
Mount Rainier National Park	0.843	22	1.052	26	0.629	15	0.841	21	63
North Cascades National Park	1.376	65	1.395	56	1.138	32	1.303	51	153
Olympic National Park	2.363	59	1.858	53	2.136	45	2.119	52	157
Pasayten Wilderness Area	0.866	30	0.871	33	0.659	13	0.799	25	76
Cumulative	8.809	264	8.348	259	6.853	156	8.003	226	679

EPA independently estimated the cost-effectiveness of limestone slurry forced-oxidation (LSFO) scrubbing. We agree with EPA that the redundant, second tower, is not necessary. It is self-evident that, if cost-effectiveness is reasonable, a substantial, if not total, reduction in SO₂ emissions is preferable to no reduction. The BART emission limit could be written to account for periods of time with higher emissions such as during maintenance of the scrubber tower. We also agree that the EPA Air Pollution Control Cost Manual clearly supports the use of the low bid.

We also agree with EPA that it is reasonable to assume that Intalco will not need to pay to dispose of the gypsum from the LSFO process in a landfill. For example, the Centralia Power Plant has sold its scrubber sludge for wallboard manufacture (http://www.awb.org/articles/environment/transalta_and_georgia_pacific_share_win_win_situation.htm).

We commend EPA for the thoroughness of its cost analysis and agree with EPA's estimate that the cost-effectiveness of a limestone forced oxidation scrubber system is in the range of \$3,875/ton to \$4,363/ton and is reasonably cost-effective. We note that EPA Region 9 has typically accepted cost/ton values as high as \$5,000, Region 6 has accepted over \$6,000/ton, and Oregon concluded that \$7,300/ton was reasonable for the Boardman power plant because of its impacts upon several Class I areas. We recommend that EPA R10 also consider the number of Class I areas impacted by Intalco in any future determinations.

Visibility Impacts

We agree with EPA that modeling results show significant SO₂ visibility impacts from Intalco in several Class I areas, with the greatest impact at Olympic National Park. Installation and operation of LSFO would significantly improve visibility in several Class I areas in Washington.

Summary of Affordability Analysis

We have reviewed Confidential Business Information submitted by Alcoa in June 2012, as well as the independent analysis conducted by EPA of the financial status of the Alcoa Intalco operations. We agree with EPA that, at this time, the Alcoa Intalco operations cannot afford LSFO at the Intalco facility and remain a viable operation.

Summary of Other, Less Costly BART Options

EPA also considered less costly control of partial scrubbing of the potline emissions. We agree with EPA that, in light of the increased cost-effectiveness values and decreased visibility improvement, partial scrubbing is not reasonable.

EPA SO₂ BART Determination

We agree with EPA that LSFO would be BART but for the cost to the company: while LSFO is cost-effective and would significantly improve visibility, it is not affordable at this facility at this time. Therefore, the pollution prevention measure of limiting the sulfur content of anodes to 3% is BART for Intalco.

Better Than BART Alternative Proposal

In the letter dated June 22, 2012, from Alcoa to EPA, Alcoa proposed a Better than BART alternative. This alternative consists of limiting SO₂ emissions from the potlines to 80% of the base year emissions of 6,550 t/y, or 5,249 t/y. EPA states that Intalco is currently operating the potlines with SO₂ emissions below this limit and that making the limit permanent and federally enforceable will prevent emissions from increasing if Intalco increases production in the future.

Better Than BART Visibility Impact

Alcoa modeled the visibility difference between base year SO₂ emissions of 6,550 t/y and a 20% reduction in emissions to 5,240 t/y from the Intalco facility. Although EPA has summarized the modeled results for Olympic National Park in its proposal (p76192), the visibility improvement for the year 2003 is overestimated. As we stated above, we believe current emissions should be used to model improvements. EPA should make it clear that the modeled improvements are not improvements compared to current operations.

NPS Conclusions & Recommendations

While we commend EPA on its BART analysis and agree with its conclusion that LSFO is not affordable at this time, we recommend that EPA explain how Intalco will be re-evaluated to determine if LSFO does become affordable at some future time. We recommend that this issue be re-evaluated as part of the five-year plan review and before the beginning of the next planning period.

Tesoro Refining and Marketing

The Tesoro refinery (Tesoro) near Anacortes, Washington, processes crude oil into refined oil products, including ultra-low-sulfur diesel oil, jet fuel, #6 fuel oil, and gasoline. Modeling of visibility impairment was done following the Oregon-Idaho-Washington Region 10 BART modeling protocol. Modeled visibility impacts of baseline emissions show impacts on the 8th highest day in any year (the 98th percentile value) of greater than 0.5 dv at five Class 1 areas. The highest impact was 1.72 dv at Olympic National Park. Tesoro also causes visibility impairment at North Cascades National Park, and contributes to impairment at Mt. Rainier National Park. Ten process heaters, one flare, one boiler, and two cooling towers at the plant are BART-eligible. The primary emission units of concern are the process heaters, boiler, and flares which have significant emissions of SO₂ and NO_x. Direct PM emissions from the BART-eligible units are low because almost all burn either refinery fuel gas or natural gas. Only one BART-eligible unit subject to BART, the crude oil distillation heater (unit F-103), is currently permitted to burn fuel oil. Tesoro reported three tons of PM_{2.5} emissions from this unit in 2009.

The following are units at Tesoro subject to BART:

F-103 Crude Oil Distillation
F-104 Gasoline Splitter/Reboiler
F-304 CO Boiler No. 2
F-654 Catalytic Feed Hydrotreater
F-6600 Naphtha Hydrotreater
F-6601 Naphtha Hydrotreater
F-6602 Naphtha Hydrotreater
F-6650/6651 Catalytic Reformer
F-6652/6653 Catalytic Reformer
F-6654 Catalytic Reformer
F-6655 Catalytic Reformer
X-819 Flare
CWT #2 Cooling Water Tower
CWT #2a Cooling Water Tower

NO_x Controls Evaluated for All Combustion Units

Tesoro evaluated available NO_x control technologies generally applicable to combustion units. Unit-specific evaluations were completed based on technologies found generally feasible.

- *Low-NO_x Burners:* LNB retrofits are commonly installed on combustion units. NO_x limits range from 0.08 to 0.1 lb/mmBtu.
- *Staged-Air Low-NO_x Burners:* For this burner design, retrofitting heaters with less than three feet between the burner and the opposite wall of the firebox may not be practical due to potential flame impingement on the firebox refractory materials or heat transfer tubes. Tesoro used a 40% NO_x reduction for its initial cost analysis review.
- *Staged-fuel, Low-NO_x burners:* Tesoro used a 60% average NO_x reduction for its initial cost analysis review.

- *Ultra-Low-NO_x Burners (ULNB)*: Tesoro used a 75% average NO_x reduction for its initial cost analysis based on EPA methods.
- *Selective Non-Catalytic Reduction (SNCR)*: Vendor NO_x reduction guarantees ranged from 35 to 40% based on Tesoro's fuel gas compositions and measured bridgwall temperatures.
- *Selective Catalytic Reduction (SCR)*: Tesoro used a 90% NO_x removal in its cost analyses.

BART for NO_x

Unit F-103, Crude Oil Distillation Heater: ULNB, SCR, SNCR, ULNB plus SCR, and ULNB plus SNCR were evaluated for cost effectiveness. Only ULNB, with a control efficiency of 75% had a reasonable cost effectiveness value at \$3,398/ton. All others cost effectiveness values exceeded \$6374/ton. Washington determined ULNB to be BART for Unit F-103.

Unit F-104, Gasoline Splitter Reboiler: This reboiler currently has ULNB installed. The next more efficient control technology would be the addition of SCR with a cost effectiveness of \$100,000/ton. Washington determined this cost to be unreasonable.

Unit F-6650 Catalytic Reformer Feed Heater: ULNB is not technically feasible since there is insufficient space to install it. LNB is estimated to achieve a 60% reduction in NO_x, is cost effective at \$3,349/ton if installed during turnaround² and over \$10,000/ton outside normal turnaround. All of the SCR combinations are not cost effective with costs exceeding \$10,000/ ton during turnaround and even greater during non-scheduled turnaround refinery maintenance. Washington determined BART for NO_x emissions to be existing control.

Unit F-6651 Catalytic Reformer Inter-Reactor Heater: There is insufficient space to install ULNB thus it is not technically feasible. The cost of installing SCR on the common exhaust duct in addition to LNB is not reasonable with a cost effectiveness of greater than \$10,000/ton. LNB with 60% control efficiency and a cost effectiveness of \$3,349/ton within the routine maintenance turnaround was determined to be reasonable. Washington found that the cost effectiveness increases to over \$10,000/ ton if the controls were required to be installed during non-routine turnaround. Washington determined BART for NO_x emissions to be existing control.

Unit F-6652 Catalytic Reformer Inter-Reactor Heater: Cost effectiveness of SCR options exceed \$10,000/ton and thus these options are not reasonable. ULNB with a control efficiency of 75% and cost effectiveness of \$3349/ton was determined to be BART for NO_x emissions, if installed during routine turnaround. Washington found that the cost effectiveness values increase to over \$10,000/ton if installed outside routine turnaround. Washington determined BART for NO_x emissions to be existing control.

² Turnarounds are the only occasion when process units are intentionally taken out of operation, and during a turnaround, major maintenance occurs on all process units that are shut down.

Unit F-6653, Catalytic Reformer Inter- Reactor Heater ULNB with a control efficiency of 75% and cost effectiveness of \$3349/ton was determined to be BART for NO_x emissions, if installed during routine turnaround. Washington determined BART for NO_x emissions to be existing control.

Unit F-304: LNB with SNCR, with a control efficiency of 39% and cost effectiveness of \$4592/ton when installed during turnaround was determined to be reasonable. Washington calculated the cost effectiveness to be over \$10,000/ton if the installation was conducted outside of the regularly scheduled turnaround. Washington's NO_x BART determination for unit F-304 (CO Boiler No. 2) indicated that an emission limit, representative of the installation of LNB plus SNCR, would be reasonable if the controls could be installed during routine maintenance "turnaround" at Tesoro.

Turnaround and the BART Timeframe

During a routine turnaround, low-NO_x burners or other appropriate controls could be installed and loss of production would not be included in the cost-effectiveness calculations. However, for the analysis contained in the SIP submittal, Washington assumed that the date for EPA's action to approve or disapprove the SIP submittal, plus the time allowed to comply with BART (i.e., as expeditiously as practicable, but no later than five years after SIP approval), would occur prior to the next scheduled turnaround. More specifically, Tesoro informed Washington that the next scheduled turnaround would not occur until 2017, which Washington had estimated would be after the date the BART controls would need to be installed. Consequently, Washington estimated costs for BART to include lost production, since, in order to comply within BART timeframe, the facility would be required to install the controls well before the 2017 turnaround. Including lost production into the costs, results in most cases in a cost-effectiveness figure well in excess of \$10,000/ton and the controls are not cost-effective. As a result, Washington determined that no additional control was required for BART for NO_x for several combustion sources.

However, the BART compliance timeframe is now estimated to be much later than Washington originally estimated and now could accommodate the 2017 turnaround cycle. When calculating cost-effectiveness without considering lost production, Washington concluded that controls for BART would in fact be reasonable. Therefore, the SIP submission indicates that LNB would be cost-effective for F-6650 and F-6651, while ultra-LNB would otherwise be cost-effective for F-6652 and F-6653, except for the added costs due to lost production. It is now evident that the BART compliance deadline could be structured to include time for the scheduled turnaround. Thus, Washington's BART determination of no controls for these units is not appropriate since the controls are cost-effective if installation is conducted during a scheduled turnaround period.

Therefore, we agree with EPA's proposed disapproval of Washington's BART determinations for NO_x for units F-304, F-6650, F-6651, F-6652, and F-6653.

SO₂ Controls Evaluated for All Combustion Units *Plant-Wide SO₂ Control:* Plant-wide SO₂ control is accomplished by reducing the sulfur content of fuel burned in various combustion units. Requiring the use of "low sulfur fuel" is the most common SO₂ control technique applied to oil refinery process units. "Low sulfur fuel" is usually defined as refinery fuel gas meeting

the New Source Performance Standard (NSPS) requirements of 40 CFR part 60, Subpart J. This NSPS limits the hydrogen sulfide (H₂S) in fuel gas to 0.1 gr/dscf. Tesoro has already implemented improvements at the facility to reduce the H₂S concentration in the flue gas; any additional reduction in refinery fuel gas sulfur content will require construction of a new sulfur recovery unit (SRU). Tesoro evaluated the construction of a new 50 ton/day SRU and refinery modifications to route sulfur streams to the new unit. The capital cost is estimated to be \$58 million to continuously treat all refinery gas to the level of the NSPS standard (162 ppm of H₂S).

Attributing all the cost to the SO₂ reductions to all combustion units (not just the BART-eligible units) results in a plant-wide reduction from the 2003 to 2005 average emissions of 395 tons of SO₂ with a cost-effectiveness of \$16,100/ton of SO₂ (not including O&M costs). Tesoro also evaluated the cost effectiveness of continuously meeting a limit of 50 ppm of H₂S (a plant-wide annual decrease of 451 tons per year), with the use of a new SRU. To meet a 50 ppm H₂S concentration would increase the cost-effectiveness value to \$14,100/ton (also not including O&M costs). Washington determined that the construction of a new SRU to meet either 162 ppm H₂S or 50 ppm H₂S is not cost effective and that SO₂ BART for combustion units burning refinery fuel gas is the current H₂S limit of 0.10 percent by volume (1000 ppm).

Tesoro NOX BART Alternative

Tesoro submitted a request to EPA on November 5, 2012, for an alternative to BART for NO_x for units F-304, F-6650, F-6651, F-6652, and F-6653. (NPS was informed of the proposal on 11/20/12.) EPA is proposing a BART alternative for the NO_x emissions from the CO boiler #2 (unit F-304) and the four heaters, units F-6650, F-6651, F-6652, and F-665. Tesoro has identified seven non-BART units at the facility and has requested SO₂ emission limitations on those non-BART units as an alternative to emission limits for NO_x on the BART-subject units. The table below shows the seven non-BART eligible units for which Tesoro is requesting SO₂ emission limits under the proposed alternative.

SO₂ UNITS REGULATED UNDER THE PROPOSED BART ALTERNATIVE

Unit Description

F-101 Crude Heater, 120 MMBtu/hr.
F-102 Crude Heater, 120 MMBtu/hr.
F-201 Vacuum Flasher Heater, 96 MMBtu/hr.
F-301 Catalytic Cracker Feed Heater, 128 MMBtu/hr.
F-652 Heater, 67 MMBtu/hr.
F-751 Main Boiler, 268 MMBtu/hr.
F-752 Boiler, 268 MMBtu/hr.

NPS Response

We agree with EPA's disapproval of Washington's BART determinations for NO_x for units F-304, F-6650, F-6651, F-6652, and F-6653. In our 2010 comments to Washington, we recommended that because Tesoro and Washington had determined that NO_x controls were cost-effective if installed during routine maintenance in 2017, even if the controls could not be installed within five years as required for BART, the controls should be installed in 2017 for reasonable progress. Now that installation in 2017 is within five years of final approval of the state implementation plan, EPA should require NO_x controls as BART.

For the other units, EPA believes it is appropriate to consider SO₂ reductions as a substitute for NO_x reductions for the alternative BART scenario because the SO₂ reductions, which are more than twice the NO_x reductions, will likely result in proportionately more sulfate than nitrate removed from the atmosphere. Accordingly, visibility improvement would be greater under the alternative than under BART. EPA justifies its conclusion by referring to the IMPROVE monitoring data that shows more sulfate than nitrate on the 20% worst visibility days.

In order for EPA to conclude that “more SO₂ converts to sulfate than NO_x does to nitrate,” it should have modeled the improvements from reducing SO₂ versus reducing NO_x and evaluated the results on a daily basis for all seasons of the modeling period³. It has been our experience that, in cool, moist climates (like the Pacific Northwest), the CALPUFF model predicts that the conversion of NO_x to nitrates is enhanced in the winter months. However, the SO₂ reductions under the proposed BART alternative have already been accomplished and will not result in further visibility improvement. Requiring NO_x reductions that have been determined to be cost effective will result in new emission reductions and additional visibility improvement.

Our additional concerns about the proposed BART Alternative were expressed to EPA in our 11/27/12 letter to EPA, and relevant excerpts follow:

Taken at face value, it looks like we are getting a greater SO₂ reduction in exchange for a lesser NO_x reduction. However, the SO₂ reduction occurred in 2007 so that TESORO could avoid certain New Source Review constraints,⁴ which would seem to imply that the same reductions would not be “surplus” for purposes of BART. We understand that TESORO is making a profit by selling the sulfur extracted from the fuel gas, and it is highly unlikely that TESORO would ever go back to burning the higher sulfur gas. The BART Guidelines advise using anticipated future emissions to represent baseline emissions from which further emissions reductions should be considered for BART.⁵

Additionally, EPA’s Office of Air Quality Planning and Standards (OAQPS) addressed the issue of inter-pollutant trading in its August 3, 2006 Question & Answer document, “Additional Regional Haze Questions:”

In the context of BART, the Regional Haze Rule does not provide for inter-pollutant trading where the source is installing controls based on the State’s BART determination. The regulations, however, do allow States to adopt alternative measures in lieu of BART, so long as the alternative measures provides for greater reasonable progress than would BART. Inter-pollutant trading is not allowed in a trading program alternative to BART, see 64 FR at 35743.

³ For example, when IL proposed a pollutant trade at the Kincaid generating station, they modeled to show a benefit.

⁴ In 2007, TESORO made a major capital investment to improve the sulfur removal capability of the Anacortes refinery fuel gas (RFG) system and accepted a limit on hydrogen sulfide in the fuel gas. This resulted in a significant reduction in SO₂ emissions. The limit was established on a number of units at the facility, including eleven BART-subject units as part of the State’s BART determination for those units. TESORO requested that the same limit be extended to the seven additional non- BART units.

⁵ Appendix Y to 40 C.F.R. Part 51. IV. D.

Thus, the 2006 OAQPS guidance would prohibit the TESORO trading of different pollutants.

Finally, EPA Region 5 addressed the issue of trading between BART and non-BART sources in its September 16, 2011 letter to the State of Wisconsin. EPA advised Wisconsin regarding a proposal for a similar BART Alternative:

Since the BART guidelines do not address trades that involve sources not subject to BART, issues like this must be addressed in accordance with EPA's economic incentive program (EIP) policy, particularly the guidance on emissions averaging and on single source caps. A central tenet of this policy is that credits may only be granted for surplus emission reductions.

The impacts at our Class I areas are occurring despite the 2007 SO₂ reductions. We do not believe that the SO₂ reductions are appropriate to consider as a BART alternative, because they do not appear to be "surplus," and trading between pollutants and BART and non-BART sources is contrary to EPA guidance. The reductions from the non-BART sources should be required under the Reasonable Progress (RP) requirements of the Regional Haze Rule.

(End 1/27/12 comments).

EPA did not respond directly to our letter, which is contained in the docket. EPA may have attempted to address the issue of "surplus reductions" in its FR notice:

The reductions are surplus because they occurred during the first planning period, after the 2002 SIP baseline date and were not necessary to meet any other CAA requirements.

However, the limit on hydrogen sulfide in the fuel gas is part of a federally-enforceable permit issued by Washington. The purported "surplus" has already been achieved as a result of that federally-enforceable action. It appears that EPA avoided imposing any additional regulatory burdens on Tesoro when it proposed its BART Alternative. For example, EPA says:

The proposed emission limit for the seven units being considered for the alternative to BART is the same limit as the other 11 BART-subject units for which we are proposing to approve. Since the proposed alternative would utilize the same requirement for monitoring refinery fuel gas combusted in the non-BART units that Washington has imposed for the BART-subject units, the proposed alternative would not impose any additional monitoring requirements.

EPA is proposing to allow Tesoro to avoid reducing NO_x emissions by asserting that when approved, the BART order will actually result in greater visibility improvements than projected in the regional haze reasonable progress demonstration. While neither the SO₂ nor NO_x emissions reductions at Tesoro were included in the regional modeling, EPA has not demonstrated specifically for Tesoro that the BART Alternative would produce greater visibility improvement than BART. As we stated in our 11/27/12 letter to EPA, "Consistent with our comments to the State of Washington, we continue to recommend Tesoro NO_x controls. The SO₂ reduction should be included in the FIP as a RP requirement."

Alcoa Wenatchee facility

In its FR Notice, EPA states:

To determine those sources exceeding this contribution threshold and thus subject to BART, Washington used the CALPUFF dispersion modeling. The dispersion modeling was conducted in accord with the "Washington, Oregon, Idaho BART Modeling Protocol". This Protocol was jointly developed by the states of Idaho, Washington, Oregon and EPA and has undergone public review. The Protocol was used by all three states in determining which BART-eligible sources are subject to BART. See appendix H⁶ of the SIP submittal for details of the modeling protocol, its application and results.

Relying on modeling that each source conducted using the "Idaho-Oregon- Washington BART Modeling Protocol" that was reviewed by Washington, the visibility impact of each source was determined on all Class I areas within 300 km of all but one of the BART-eligible sources.

However, it is our understanding that Washington deviated from the accepted modeling protocol to exempt the Alcoa Wenatchee (Wenatchee) aluminum refinery from BART analysis. When modeling based upon the accepted protocol showed that Wenatchee would be subject to BART, Washington accepted additional modeling using a finer (unapproved) grid spacing for the model receptors. Washington then based its BART exemption determination on the lower results from the unapproved method.

In our 6/11/10 letter to Washington, we advised that "We strongly disagree with using an ultra-fine modeling grid to exempt Alcoa Wenatchee from BART eligibility. Control options for this source should have been evaluated." Our 10/06/10 letter to Washington re-affirmed our concerns:

We continue to disagree with Ecology that the non-protocol CALMET modeling is suitable for exempting the Alcoa Wenatchee facility from BART. Even using the non-protocol approach, the visibility impacts from Alcoa were significant. We recommend that Ecology conduct a focused four factor analysis for Alcoa Wenatchee Works (costs of a wet scrubber were estimated generally in the materials presented in Appendix F) and require controls on the facility in the current five-year review period under reasonable progress.

We also understand that the US Forest Service, the EPA Region 10 modeler, and EPA's Office Air Quality Planning and Standards have expressed disagreement with the method used to exempt Wenatchee. Nevertheless, EPA made no mention of this issue in its FR Notice with regard to Wenatchee, but EPA did discuss the issue with respect to Alcoa's Intalco facility:

EPA considered the visibility impact of the potline SO₂ emissions and the resulting improvement of visibility in Class I areas surrounding Intalco expected to result from installation and operating LSFO. Two modeling efforts were conducted by an Intalco contractor; one analysis used 4 kilometer (km) grid cells and the other used 1 km grid cells. The analysis using 4 km grid cells considered only the baseline case. The analysis using 1 km grid cells considered both the baseline and the control case. The use of 1 km grid cells for Intalco underestimates visibility impacts compared to results using 4 km grid cells.

⁶ See Appendix H extract

Because “use of 1 km grid cells...underestimates visibility impacts compared to results using 4 km grid cells” prescribed by the approved modeling protocol, EPA should disapprove Washington’s determination that Wenatchee is not subject to BART.