Alaska Department of Environmental Conservation

Amendments to:
State Air Quality Control Plan

Volume III: Appendix III.K.11.c

Consultation: Public Participation and Review

Appendix to
Section III. K: Areawide Pollutant Control Program for Regional Haze

Adopted

February 11, 2011

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Consultation: Public Participation and Review

Prior to regulatory adoption of this SIP, ADEC held a public comment period on the revisions from October 7, 2010 through December 6, 2010, including public workshops in Healy on November 3, 2010, Soldotna on November 4, 2010, and Sand Point on November 9, 2010. A statewide teleconference hearing on November 16, 2010 provided a forum for the public to comment on the air quality plan prior to its adoption at the state level and submission to EPA. This appendix contains the ADEC response to public comments and copies of public comments received.

Public Participation and Review Sections:

ADEC Response to Public Comments on the Proposed Adoption of the Regional Haze SIP

November 18, 2010 comment letter from Tesoro Companies, Inc.

December 3, 2010 comment letter from the Golden Valley Electric Association (GVEA)

December 6, 2010 comment letter from the United States Department of the Interior, National Park Service (NPS)

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Department of Environmental Conservation

Response to Public Comments

on the

Proposed Adoption of the

Regional Haze SIP; Interstate Transport SIP; Open Burn SIP

Public Comment Period Closed: 5pm on December 6th, 2010

February 4, 2011

Prepared by:
Division of Air Quality
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This document contains the Department of Environmental Conservation's (DEC) response to public comments made on its proposed adoption of the Regional Haze State Implementation Plan (SIP), Interstate Transport SIP and Open Burn SIP; to be adopted by reference in 18 AAC 50.030. The public comment period opened October 7th, 2010 and closed December 6th, 2010 at 5pm.

TESORO Alaska Company comments dated November 18, 2010

(Tesoro Companies, Inc., 19100 Ridgewood Parkway, San Antonio, TX, 78259)

> **Tesoro Comment 1)** Tesoro Alaska Company provided comments and examples related to the various tables in Chapter III.K.9, Section C.3 (Four Factor Analysis). "…Tesoro is concerned that the WRAP cost/ton data presented in the tables may be used as the basis for future control determinations, but contains pollution control cost information that is not accurate…" "…Tesoro requests that the cost/ton information presented in the Section 3 tables be clearly identified as very preliminary and general. It should also be clearly noted that any emission unit specific pollution control review could result in a vastly different cost/ton result and possibly may conclude that a particular technology may not be technically feasible."

DEC Response: DEC appreciates Tesoro's comments on the cost effectiveness values that were provided in the SIP as an initial analysis and starting point for future control analyses in later Regional Haze SIP submissions. DEC agrees that the cost effectiveness numbers are preliminary and that costs in Alaska may be higher than those listed in the WRAP study referenced in the SIP. To address this concern, DEC has added another paragraph to Chapter III.K.9.C.3 (just prior to C.3.a) that notes the preliminary nature of the cost effectiveness numbers provided in the remainder of the section. The new language also clearly notes that the cost effectiveness of controls may differ at Alaskan sources and often is higher than for facilities located in the contiguous states due to differences in climate, transportation and construction costs.

> **Tesoro Comment 2)** Tesoro Alaska Company commented that Chapter III.K.9, Section C.3.b includes types of units that are not found at the refineries in Alaska. These included: "Catalytic Cracking Units," "Fluid Coking Units," and "Coke Calcining." "…Tesoro does not operate this type of equipment at its Kenai Refinery, and Tesoro is not aware of any other Alaska refinery operating these types of emission sources. Therefore, Tesoro requests that this information/data be removed from the proposed Regional Haze SIP."

DEC Response: Given that these types of units do not operate within the state, DEC agrees with Tesoro that the information for these three types of units is not needed for the Alaska SIP. DEC has updated the SIP to remove these units from the relevant tables in Chapter III.K.9, Section C.3.b.

> **Tesoro Comment 3).** Tesoro Alaska Company provided comments and additional information on Chapter III.K.9, Section 3. They note that, "In the 'Factor 2 Time Necessary for Compliance' paragraphs throughout this section, ADEC indicates that if additional controls were implemented for refinery emission sources, the overall compliance time is expected to be in the range of 5 -6.5 years. Because petroleum refineries shut-down equipment for maintenance and

other projects on set schedules of 3 —5 years, any installation of control technology would need to be accomplished during one of these scheduled maintenance windows. Therefore, when the time to engineer and procure new equipment is combined with the scheduled maintenance periods, the overall timeline for installation and compliance could be much longer. The Washington State Department of Ecology proposed Regional Haze SIP recognizes this issue when discussing the four-factored test. This language is presented as follows:

> *'Based on discussions with the 2 refineries subject to BART and staff at the local air pollution authority that regulates the 4 largest refineries, it would take approximately 9—12 years to implement S02 and NOX emission reductions from all process heaters at the plants. This is based on the rotating 3-to-5 year schedules used by refineries for turn-arounds that take different process areas out of service for major maintenance activities. Emission reduction projects such as new burner installations occur only at these major maintenance periods. '*[1]

Tesoro requests that the language in this section be updated to reflect that any installation of a control technology could take longer than 5 - 6.5 years due to the requirement for refineries to schedule the work during a set maintenance schedule."

DEC Response: DEC appreciates the feedback from Tesoro on this point and has added a paragraph that includes this information and the potential for a longer timeframe of 9-12 years.

Golden Valley Electric Association (GVEA) comments dated December 3, 2010

(GVEA, P.O. Box 71249, Fairbanks, AK 99707-1249)

GVEA Comment 1) Significant Impacts from Sources Beyond Alaska's Control:

"The most significant conclusion reported in the Plan is that returning visibility to natural conditions by 2064 at Denali is beyond the control of the State of Alaska. The Plan states that the primary sources of visibility degradation in Alaska's Class I areas are dust and anthropogenic emissions originating in Asia, Arctic Haze originating from anthropogenic sources in Europe and Russia, and regional wildfires. The Plan also states that dust and anthropogenic emissions from other countries will likely increase over the coming decades. Therefore, the anthropogenic sources having the largest impact on visibility are not within the State of Alaska, but originate from outside the United States."

"Indeed, an evaluation of the impacts from aerosols at Denali NPP (Denali) from sources outside of the control of Alaska including anthropogenic sources from other countries, shows light extinction exceeding natural conditions for the 20% worst visibility days (Section III.K.4.C.8). In other words, the Plan demonstrates that returning visibility to natural conditions by 2064 at Denali is outside the State's control. Therefore, further controls of native anthropogenic sources will not achieve the required visibility outcome for Denali. The Plan states that "[a]ny reductions in international origin anthropogenic emissions would likely fall under the purview of the U. S.

[1] Located at: http://www.ecy.wa.gov/programm/air/globalwarm_RegHaze/RH SIP/RH_SIP_Document Table.pdf

EPA through international diplomatic activities" (Section III.K.2.B.2). As stake holders in Alaska and its natural resources, and out of concern for our members, GVEA would like to encourage the State of Alaska and the U. S. EPA to immediately push forward with negotiations with China, Russia and other countries to curtail their anthropogenic sources. It is the control of these anthropogenic sources that will make the greatest positive impacts for visibility within Alaska."

DEC Response: DEC appreciates GVEA's observation that international transport of air pollution and natural emission sources are important to the overall visibility degradation observed at Denali. While these sources are important and outside of direct state control, DEC is responsible to evaluate and address the emissions that it can control. As GVEA points out, any reduction in air pollution emissions and transport from Asia and Europe will assist in improving visibility at Denali and would be valuable to making progress. This is an area for EPA and the U.S. government to consider through international efforts. DEC has not revised the plan as a result of this comment. However, DEC provides the following additional clarification, in response to GVEA, regarding the evaluation of local and international sources.

As cited in the public notice document, atmospheric science research has identified air pollution from Asia and Northern Europe influencing Alaskan air. IMPROVE monitoring results at Denali reflect overseas aerosol sources in late spring (and perhaps occasionally in summer). However, the IMPROVE monitoring results underline the much greater importance of **local** wildfires **and anthropogenic** emission sources to worst day visibilities. Also, the modeling analyses in section III.K.7 point to local emission sources from as far north as the Fairbanks North Star Borough contributing to worst day visibilities at the DENA1 monitoring site. With our existing resources and tools, a relative ranking of international sources and local sources of air pollution in Alaska is not possible.

As a result, the State has evaluated whether local emission sources are significant sources of visibility degradation for the Denali Class I Area. The state has examined whether local controls can improve visibility consistent with the reasonable progress requirements of the Regional Haze Rule. The data and analyses for this SIP indicate that local emissions are impairing visibility at DENA1 and, particularly for sulfate, may be controlled (if controls are found to be reasonable) to improve visibility.

Figure III.K.4-57 is derived from average extinctions on worst days of each aerosol species, without examination of individual sampling days. However, it is the individual sampling days that are designated as worst days, not averages. A crude analysis of sulfate emissions illustrates the importance of this point. Sulfate is found year- round at Denali, contributing to worst days at any time of year (see Figures III.K. 4-45, 4-46). Spring sulfate peaks attributed to international transport are also typical. The baseline worst days at Denali almost always exceed 10 Mm^{-1} total extinction (see Figure III.K.4-33). Most days with total extinction above 10 Mm^{-1} are worst days. Sulfate is an important component of the 10 Mm^{-1} worst day threshold seen at Denali. At DENA1, 37% of annual worst days would not reach the 10 Mm^{-1} threshold without sulfate, 50% for May-October months in which local sources are believed of primary importance. At TRCR1, 50% of annual worst days would not reach the threshold without sulfate, 52% for May-October months in which local sources are believed paramount. Clearly, local control of sulfate emissions can improve worst days during summer months and likely during the rest of the year as well.

GVEA Comment 2) Clarify the Minimal Impacts from HCCP's Expected Operations:

GVEA 2.1) GVEA comments that "the Plan overstates the impact of the expected emissions from Healy Unit 2 (HCCP), and that language in the Plan excerpted below is misleading or incorrect in a number of ways."

> *" If brought on line, the point source NOx emitted within the Denali Borough would increase by a factor of 4.0 and the SOx would increase by a factor of 2.8 (based on permitted not actual emissions)."* (Regional Haze SIP, Section III.K.7.C, page III.K.7-16, Public Review Draft dated Oct. 7, 2010)

"This language appears to overstate the increase of NOx and SOx emission factors. It results from an apples to oranges comparison; i.e., comparing permitted to actual emissions. The permitted emissions from HCCP should be compared with the permitted emissions from the other stationary sources within the borough, and the emission factors need to be adjusted accordingly."

DEC Response: DEC agrees with GVEA that the use of permitted emissions rather than actual emissions likely overstates the NOx and SOx emissions from Healy Unit #2. All the other permitted sources that are included in the emissions inventory and projections have long records of actual emissions to use in analyses for this SIP, which represent a realistic emission level to analyze in relation to the baseline period visibility impacts. These actual emissions have been projected to 2018 rather than using the permitted emission thresholds, because they are a more reasonable estimation for these facilities in the future. Because there is no long term operation or record of actual emissions from Healy Unit #2, DEC has taken a conservative approach and used the maximum amount of emission that could be emitted by the unit under the existing operating permit. Should Healy Unit #2 be brought on line and actual emissions are less, this can be accounted for in future revisions to the SIP. However, in light of GVEA's concerns, DEC has added a statement to the Denali WEP summary at the end of Section III.K.7, to note that actual emissions will likely be less than presented in the analysis, as follows:

> *"It should be noted that HCCP will likely emit less than its permit emission threshold when actually operating, thus this analysis is highly conservative in representing potential impacts from the future operation of this unit."*

GVEA 2.2) GVEA comments that "The increases in emissions from the anticipated operation of HCCP should be compared with all anthropogenic sources impacting Denali, not just the anthropogenic sources within the control of the State. The relative increases from the operation of HCCP should be compared to the entire inventory impacting visibility at Denali, not only the sources included in the Weighted Emissions Potential (WEP) analysis. The current language could lead a reader to believe that the operation of HCCP could significantly impact visibility at Denali. HCCP, however, is not projected to be a significant source of visibility degradation at the Park. As stated in Section III.K.9.E, "*the PSD modeling analysis for [HCCP] demonstrated little potential for visibility impacts from plumes and haze derived [from] that facility's operations.*" Therefore, GVEA requests that the following language be deleted:

> *"This increase would make the Denali Borough the largest source of anthropogenic emissions and the second largest source of all emissions impacting the Denali monitors""* (Regional Haze SIP, Section III.K & III.C, page III.K.7-16, Public Review Draft dated Oct. 7, 2010)

DEC Response: DEC does not have and cannot generate estimates of emissions from anthropogenic sources in Asia, Russia, and Eastern Europe. As a result, it is currently impossible to conduct the analysis that GVEA proposes in this comment. However, in light of GVEA's concerns, DEC has added a statement to the Denali WEP summary on Page III.K.7-16 (see also response to GVEA Comment 2.1 for further discussion), to note that actual emissions from HCCP will likely be less than presented in the analysis, as follows:

> "*It should be noted that HCCP will likely emit less than its permit emission threshold when actually operating, thus this analysis is highly conservative in representing potential impacts from the future operation of this unit.*"

GVEA 2.3) GVEA comments that "The potential NOx and SOx emissions from HCCP are not the principal pollutants of concern regarding visibility at Denali. As stated in Section III.4.C.3.a:

> *"By far the greatest relative change was for organic matter which was 36 times higher than on best days for DENA1 and 23 times higher than on best days for TRCR1. Extinction due to organic matter carbon varies from 0.3-10.8Mm-^{1}. Extinction due to sulfate varies only from 0.8-4.9Mm-^{1}. Clearly, wildfire-related organic matter carbon is the strongest determinant of worst days at the Denali IMPROVE sites."*

"Therefore, GVEA requests that the language quoted in subsection (c) *(and below)* be deleted:"

> *"If [HCCP] is brought on line, the permitted NOx and SOx emission levels would cause the WEP trend line to fall well above the* 95% *confidence bounds surrounding the URP glide path."* (Regional Haze SIP, Section III.K.9.E, page III.K.9-40, Public Review Draft dated Oct. 7, 2010)

DEC Response: DEC agrees with GVEA that on the 20% worst visibility days in Denali, organic matter pollution results in greater impacts than SOx and NOx. However, the State is responsible for controlling human caused sources of pollution which impact visibility on both the worst and the best days and demonstrating progress with respect to the uniform rate of progress (URP). Given the current level of understanding and science available for this SIP, the state is essentially analyzing the trends in SOx, NOx, and PM based on emission projections and the impact of known control programs. The analysis that has been performed, albeit with many uncertainties, shows that if HCCP emits at permitted levels, the SOx and NOx emissions are a potential impediment to confidently demonstrating that emissions at Denali will fall within the 95% confidence bounds of the URP glide path. However, in response to GVEA's concerns, DEC has inserted the following language immediately after the statement above:

"However, it should be noted that HCCP will likely emit less than its permit emission threshold when actually operating, thus this analysis is highly conservative in representing potential impacts from the future operation of this unit."

GVEA Comment 3) Natural Visibility Conditions, Glide Path, and Reasonable Progress Goal Adjustment:

GVEA 3.1) "The Plan states that "[m]any factors come into play in determining whether the uniform glide path can be achieved in the initial progress period, including cost and feasibility of controls as well as the appropriateness of the level set for natural conditions in 2064 ." Section III.K.1.C.3.c. GVEA suggests that establishing natural conditions for the worst 20% days at extinction levels below that of impacts from natural sources, particularly if those impacts do not include all natural sources regardless of whether originating within or outside Alaska, is inconsistent with the intent of the regional haze program. Section III.K.1.C3.a states that "[n]atural visibility conditions represent the long-term degree of visibility estimated to exist in the absence of anthropogenic sources." Yet Figure III.K.4-57 shows natural conditions at the Denali and Trapper Creek monitors for the 20% worst days above the 11.81 Mm^{-1} worst day natural conditions estimate in Table III.K.4-1, which excludes natural sources beyond the control of Alaska. GVEA asks that the worst day natural conditions extinction value be set no lower than the extinction levels from all natural sources -including aerosols, nitrates, and sulfates outside Alaska's control -depicted in Figure III.K.4-57 and that the glide path be adjusted accordingly. "

DEC Response: DEC has estimated Natural Conditions per EPA's "*Guidance for Estimating Natural Visibility Conditions Under the Regional Haze Program*" (EPA-454/B-03-005, September 2003), and in a manner consistent with other western states through consultation within the Western Regional Air Partnership. While DEC understands GVEA's concerns with the current approach and target, DEC does not have sufficient scientific evidence at this time to support a different approach to calculating natural visibility conditions. This may be an activity undertaken in the future during the required 10 year revisions to the Plan.

With respect to the example given by GVEA, Figure III.K.4-57 contrasts the computed worst day Natural Conditions estimate (also found in Table III.K.4-1) with averaged monitored light extinctions. The monitored extinctions are divided into two categories: nitrate and sulfate, presumed from human activities, and all other aerosols, presumed of natural origin. The purpose of Figure III.K.4-57 is to demonstrate the challenge facing Alaska in improving visibility. Using the comparison as a basis for further quantitative analysis is not recommended because uncertainty estimates are not available, attribution of origins are still somewhat speculative, and averaging conceals natural variability in extinction.

GVEA 3.2) "Because the glide path demonstration relies so heavily on the WEP, the State should make every effort to ensure the best available data is used in the emissions potential forecast.

To ensure that the best available data is used to determine the overall impacts from stationary sources, the permitted emissions from HCCP as well as the BART-related improvements and production curtailments must be included in the analysis. Only by including these factors and

comparing them to a glide path that appropriately accounts for all natural sources (regardless of whether such sources are within Alaska's control) can DEC accurately analyze overall impacts from stationary sources through 2018. The revised analysis may result in the WEP trend line remaining within confidence bounds surrounding the glide path. Even if the WEP trend line did not fall within the confidence bounds, under the rules, DEC would have a reasonable explanation for this difference: 1) the baseline year is skewed low because it fails to include permitted but temporarily inactive sources, and 2) the primary sources of visibility impairment are beyond Alaska's control."

DEC Response: The State has ensured that the best currently available data is used in the 2018 emissions forecast. It is not appropriate to include anticipated emissions in the baseline emission inventory for 2002. Healy Clean Coal Plant (HCCP) reported no emissions during the baseline years. A baseline inventory cannot be considered "skewed low", as it is based on reported emissions and monitoring results.

Certainly, uncertainty exists over predicting 2018 emissions and monitoring results. The projection's uncertainty includes contributions from sources outside the United States, and when or whether the HCCP will be restarted, as well as whether other sources may start up or shut down. The 2018 projection is meant to be an estimate of future emissions based on our understanding of changes to emission sources within the state. The HCCP did not operate during the baseline years, and has not operated during subsequent years. As a result, it was not possible to project actual emissions from the baseline period for the unit and DEC chose to use a conservative estimate based on the unit's potential to emit in looking at those potential emissions within the reasonable progress goal. With regards to the inclusion of emission reductions related to Unit 1, those reductions were also not included in the WEP analysis due to the timing of the WEP analysis and final BART determination. The Unit 1 reductions will help offset potential impacts resulting from emission increases due to the operation of HCCP. However, HCCP is a relatively large emission source and the reductions from BART at Unit 1 will not fully offset emissions from the operation of HCCP. There is considerable uncertainty over future emissions of the HCCP and over the timetable for operation of the unit. Projecting these uncertainties forward does not fall within the compass of "reasonably foreseeable future changes". The inclusion of the currently permitted emissions from HCCP causes the WEP trend line to fall above the 95% confidence bounds surrounding the URP glide path, however this and future emission reductions at Unit 1 can be addressed in future submittals when more information about the operation of the units are available.

GVEA 3.3) "As the Plan notes, the 2018 Reasonable Progress Goal (RPG) can differ from visibility improvements established by the URP. If the RPG provides less visibility improvement than the URP, the state must document why it is not possible to achieve the URP and why the RPG is reasonable. GVEA contends that the RPG goal should be equal to the rate predicted after including reasonably foreseeable future changes to stationary sources (i.e., operation of HCCP, BART implementation, production curtailments), with a margin for increased impacts from sources outside the United States. This RPG is reasonable because it is the best prediction that can be made at this time with available data and taking into account that a photochemical model was not available for use. Furthermore, the primary impacts on visibility within the State are from sources outside the United States. Given that outside anthropogenic source

emissions and their estimated impacts are forecasted to increase; developing an RPG without accounting for the impacts from these sources is unreasonable."

DEC Response: The monitoring data and analyses presented in Section III.K.4 do not support the statement that the primary impacts on visibility within the State are from sources outside the United States. International sources do contribute to Alaska's air, but detailed quantification of their impacts is not yet possible. Research into international transport of pollutants into Alaska and the rest of the United States is underway on many fronts. Reasonable progress goals are required by the Rule to demonstrate the impacts of the state's actions toward mitigating visibility impacts on the worst days and maintaining visibility on the best days. International transport is a contributing factor in the state not meeting a uniform rate of progress, but it is not possible given the available information to accurately include it into the state's reasonable progress goal in a meaningful manner. Perhaps in the future more robust data sets will allow the state to better account for and project the impacts of international emissions.

GVEA Comment 4) BART Determination for Unit #1: "In Section III.K.6.B.7, the Plan goes into a great deal of detail regarding the BART determination for the Healy Unit 1. GVEA notes that similar detail was not included in the BART determination descriptions for other sources. While the public process used for determining the BART determinations is germane to the Plan, the details from the process and the many steps in determining the BART for Healy Unit 1 is not. GVEA requests that this section of the Plan be streamlined to a summary of the process and the final BART determination. Additionally, GVEA requests that the quotation from the DEC response to GVEA's request for informal review at the end of the section be removed. If DEC chooses to include this excerpt from the letter, then GVEA requests the following language be included:"

> "*GVEA continues to disagree that DEC has authority to shut down Unit 1 after 2024 if Unit 1 is otherwise complying with the emissions limits set by the BART determination, which did not result from a contracted remaining useful life for Unit 1.* (*See Final Enviroplan BART Report at page 16.*)"

DEC Response: DEC acknowledges the comments from both the National Park Service (NPS) and GVEA on the Regional Haze SIP regarding the potential to require GVEA to shutdown Healy Unit 1 in 2024. The BART Guidelines in 40 CFR 51, Appendix Y, Section IV.D.4.k.2 give DEC the authority to require the shutdown of the BART eligible unit after 2024 if the unit continues to operate beyond the presumed useful life used to make the BART determination. However, the wording of 40 CFR 51, Appendix Y, Section IV.D.4.k.2 states that DEC *should* ensure that the date is federally or State enforceable; it does not say that it *must* to do so.

DEC intends to include the BART determination emission limit requirements in the Title V renewal permit which will be in effect when they are required to be in place under 18 AAC 50.260(n). If GVEA is found to not be meeting the established BART determination emission limits by the required deadlines under the Rule and 18 AAC 50.260, DEC has enforcement authority to require compliance. DEC recognizes that there is a possibility that GVEA Healy Unit 1 might operate beyond the end of 2024, although the Department anticipates, based on information from GVEA provided as part of the BART process, that it will not. If GVEA finds

that it will be necessary to operate Healy Unit 1 beyond the end of 2024, DEC expects that GVEA will notify the Department in sufficient time that the BART emission limits or shutdown requirements can be evaluated, reassessed, and included as enforceable requirements in the Title V renewal permit in place for the facility in 2024. DEC also has the authority to further evaluate visibility impacts under the reasonable progress process of the Regional Haze Rule.

The BART Guidelines require that the State's BART determination process be supported by adequate documentation. The description in Section III.K.6.B.7 setting out the process DEC went through to make a BART determination for GVEA Healy Unit 1 is detailed because GVEA was the only source in Alaska which went through the full BART process. Therefore, the documentation necessary to support the determination is detailed. Most of the other BART-eligible sources in Alaska demonstrated, using modeling, that their units were not subject to BART and therefore were not required to provide additional information nor was it necessary to provide as extensive documentation of their processes. In other instances emission limitations were taken that resulted in less extensive documentation.

DEC has chosen to retain the end of Section III.K.6.B.7 as written. However, DEC has included GVEA's statement in a footnote to the section to indicate that GVEA continues to disagree that DEC has authority to shut down Unit 1 after 2024 if Unit 1 is otherwise complying with the emissions limits set by the BART determination.

Please note the information presented above has been previously addressed by DEC in an earlier response to comments from the NPS and GVEA and was included in the public comment version of the Regional Haze SIP.

National Park Service comments dated December 6, 2010

(Department of Interior, National Park Service, Air Resources Division,
P.O. Box 25287, Denver, CO 80225)

> **NPS Comment 1)** "As stated in sections III.K.7 and III.K.9, the GVEA Healy Power Plant Unit 2 would significantly increase NO_x and SO_x emissions affecting Denali National Park & Preserve if brought online as planned by GVEA. Since Unit 2 emissions are not currently accounted for in the Weighted Emissions Potential (WEP) analysis, an acceptable alternative is for ADEC to address Unit 2 emissions in the regional haze five-year reviews and other SIP documents once the plant is brought online, as described in Section III.K.10. We recommend, however, that ADEC consider future Unit 2 emissions and implications for regional haze reasonable progress goals during the Title V permit renewal process before Healy Unit 2 is brought online."

DEC response:

ADEC will address Unit 2 emissions in the regional haze five-year reviews and future SIP documents once the plant is brought online, as described in sections III.K.10. The results of such analyses will be considered in future Title V permit renewals. The following sentence has been added to section III.K.10:

> *Likewise, should Golden Valley Electrical Association (GVEA) Healy Power Plant Unit 2 be restarted, ADEC will reassess the need for control of the source and further evaluate*

control options during this five-year period to determine whether additional emission reductions would improve Class I area visibility in the next planning period.

NPS Comment 2) "In the Alaska Regional Haze Plan Response to Federal Land Manager Comments (Appendix III.K.ll.b), ADEC indicates that under Alaska state statutes, it is not possible to mandate an enforceable shutdown date for Healy Unit 1 beyond the duration of the current operating permit. We continue to maintain that an enforceable shutdown date for Healy Unit 1 by 2024 is a requirement of the BART guidelines (40 CFR 51, Appendix Y, Section IV.D.4.k.2), since the final BART determination report demonstrates that comparisons among evaluated control options were based on an 8-year remaining useful life for Healy Unit 1 beyond 2016. ADEC must either find a way to incorporate an enforceable shutdown date into the final regional haze SIP, or make a revised BART determination that is not based on an 8-year remaining useful life for Unit 1. If the Alaska Regional Haze SIP is finalized and approved without an enforceable shutdown date for Unit I, and the plant is still operating in 2019, the next subsequent Title V renewal permit should include language stipulating that Healy Unit 1 will not operate beyond 2024."

DEC Response: DEC acknowledges the comments from the NPS and GVEA on the Regional Haze SIP regarding the potential to require GVEA to shutdown Healy Unit 1 in 2024. The BART Guidelines in 40 CFR 51, Appendix Y, Section IV.D.4.k.2 give DEC the authority to require the shutdown of the BART eligible unit after 2024 if the unit continues to operate beyond the presumed useful life used to make the BART determination. However, the wording of 40 CFR 51, Appendix Y, Section IV.D.4.k.2 states that DEC *should* ensure that the date is federally or State enforceable; it does not say that it *must* to do so.

DEC intends to include the BART determination emission limit requirements in the Title V renewal permit which will be in effect when they are required to be in place under 18 AAC 50.260(n). If GVEA is found to not be meeting the established BART determination emission limits by the required deadlines under the Rule and 18 AAC 50.260, DEC has enforcement authority to require compliance. DEC recognizes that there is a possibility that GVEA Healy Unit 1 might operate beyond the end of 2024, although the Department anticipates, based on information from GVEA provided as part of the BART process, that it will not. If GVEA finds that it will be necessary to operate Healy Unit 1 beyond the end of 2024, DEC expects that GVEA will notify the Department in sufficient time that the BART emission limits or shutdown requirements can be evaluated, reassessed, and included as enforceable requirements in the Title V renewal permit in place for the facility in 2024. DEC also has the authority to further evaluate visibility impacts under the reasonable progress process under the Regional Haze Rule.

3) "We agree with the approach that ADEC has taken to use IMPROVE data from both the Denali headquarters and Trapper Creek monitoring sites to monitor progress under the Regional Haze Rule. However, we still assert that the Denali site near park headquarters is an official IMPROVE monitoring site, not an IMPROVE protocol site."

DEC Response: Both IMPROVE sites representing the Denali Class I area are important to understanding air quality at the site. The two sites represent dramatically different regions within Denali National Park. As shown in Section III.K.4 and Section III.K. 5 analyses, the sites provide different and frequently uncorrelated monitoring results and source attributions. International

transport into the Park from the south and west is believed to be significant, but not well represented by the DENA1 IMPROVE site. DEC supports retaining both sites for regional haze tracking purposes, as they each represent important contributions from anthropogenic emissions, one to the north and one to the south.

However, DEC continues to assert that the Trapper Creek IMPROVE site better represents both local and international emissions entering the Class I area, and represents the official site for regional haze purposes. No agreement has been reached with the National Park Service concerning official and protocol status for the headquarters site. The disagreement has continued since the creation of the Trapper Creek site. Apparently for this reason, the relative status of the two sites has not been finalized. DEC is currently awaiting analyses of drum sampling data from further within the Park than the Denali headquarters site; the study may influence final recommendations for monitoring of this 1,949,493 acre Class I area.

Response to Ms. Dana Olsen's public testimony dated November 16, 2010:

1). "One of the things I am concerned about is that DEC has no biologist."

DEC Response: Ms. Olsen's comments were not related to the Regional Haze SIP and these comments did not result in any revision to the proposed Regional Haze SIP or regulations. We thank Ms. Olsen for her participation in the public comment process.

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ADEC AQ

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19100 Ridgewood Parkway
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210 626 6000

November 18, 2010

Mr. Scott Sloane
Division of Air Quality
Alaska Department of Environmental Conservation
Air Quality Program
410 Willoughby Avenue, Suite 303
P.O. Box 111800
Juneau, AK 99811-1800

Re: Tesoro Alaska Company Comments on the Proposed Alaska Department of Environmental Conservation Regional Haze State Implementation Plan (SIP)

Dear Mr. Sloane:

Tesoro Alaska Company (Tesoro) has reviewed the Proposed Regional Haze State Implementation Plan (Regional Haze SIP) information posted on the Alaska Department of Environmental Conservation (ADEC) website.[1] Based upon this review, Tesoro is providing the following comments.

Chapter III.K.9, Section C. 3. - Various Tables – This section describes the ADEC's process of performing the "Four-Factor Analysis" for the identified point source categories. In Section 3, ADEC indicates that no additional pollution controls beyond BART will be required during the initial planning period (2002 – 2018), but that the Four-Factor Analysis may be used for the future reviews and planning periods. ADEC's Four-Factor analysis contains several tables throughout Section 3 that presents the cost of control technologies per ton of pollutants reduced (cost/ton) for the point source categories reviewed. It appears that this cost/ton information comes from a study performed by the Western Regional Air Partnership (WRAP). Tesoro is concerned that the WRAP cost/ton data presented in the tables may be used as the basis for future control determinations, but contains pollution control cost information that is not accurate. For example, Table III.K.9-17 represents a cost/ton of installing Selective Non-Catalytic Reduction (SNCR) on refinery process heaters to be $890 - $5,200. Tesoro has determined through a detailed technical evaluation at other Tesoro refineries that the cost/ton to adding SNCR to a process heater can be at least $18,000/ton, and often is not technically feasible to be installed depending upon the heater design or use.

As another example and regarding SO_2 reductions from refinery process heaters, Table III.K.9-17 reflects a cost/ton reduced range of $1,300 - $1,700. The ability or reasonableness to achieve additional refinery gas sulfur reductions is refinery specific, and costs vary significantly. For example, Tesoro has previously determined through the

[1] Located at: http://www.dec.state.ak.us/air/anpms/rh/rhsip.htm

BART review process at another Tesoro refinery that any significant and reliable additional reductions in H_2S content of the refinery fuel gas would require the installation of an additional Sulfur Recovery Unit (SRU), at an estimated cost of approximately $14,000 - $16,000/ton reduced. This cost estimate was even considered conservatively low because it did not consider the annual operating costs of a new SRU.

Tesoro requests that the cost/ton information presented in the Section 3 tables be clearly identified as very preliminary and general. It should also be clearly noted that any emission unit specific pollution control review could result in a vastly different cost/ton result and possibly may conclude that a particular technology may not be technically feasible.

Chapter III.K.9, Section C. 3. b. – Table III.K.9-14 provides 2002 emissions data from a variety of sources at the refineries in Alaska. "Catalytic Cracking Units," "Fluid Coking Units," and "Coke Calcining" are all included in this table, but with zero emissions listed. The subsequent tables and paragraphs in this section lists pollution control options for these emission sources and cost/ton information as developed by the WRAP study. Tesoro does not operate this type of equipment at its Kenai Refinery, and Tesoro is not aware of any other Alaska refinery operating these types of emission sources. Therefore, Tesoro requests that this information/data be removed from the proposed Regional Haze SIP.

Chapter III.K.9, Section C. 3. – In the *"Factor 2 – Time Necessary for Compliance"* paragraphs throughput this section, ADEC indicates that if additional controls were implemented for refinery emission sources, the overall compliance time is expected to be in the range of 5 - 6.5 years. Because petroleum refineries shut-down equipment for maintenance and other projects on set schedules of 3 – 5 years, any installation of control technology would need to be accomplished during one of these scheduled maintenance windows. Therefore, when the time to engineer and procure new equipment is combined with the scheduled maintenance periods, the overall timeline for installation and compliance could be much longer. The Washington State Department of Ecology proposed Regional Haze SIP recognizes this issue when discussing the four-factored test. This language is presented as follows:

> *"Based on discussions with the 2 refineries subject to BART and staff at the local air pollution authority that regulates the 4 largest refineries, it would take approximately 9–12 years to implement SO2 and NOX emission reductions from all process heaters at the plants. This is based on the rotating 3-to-5 year schedules used by refineries for turn-arounds that take different process areas out of service for major maintenance activities. Emission reduction projects such as new burner installations occur only at these major maintenance periods."*[2]

[2] Located at: http://www.ecy.wa.gov/programs/air/globalwarm_RegHaze/RH_SIP/RH_SIP_Document_Table.pdf

Tesoro requests that the language in this section be updated to reflect that any installation of a control technology could take longer than 5 - 6.5 years due to the requirement for refineries to schedule the work during a set maintenance schedule.

Tesoro appreciates the opportunity to review and comment on the Proposed Regional Haze State Implementation Plan. Please contact Scott Rosin at (907) 776-3501 with any questions or if you require additional information.

Sincerely,

Daniel T. Riley
Vice President
State & Local Government Affairs

cc: Scott Rosin
Chris Drechsel
Rob Gronewold

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December 3, 2010

Mr. Scott Sloane
Division of Air Quality
Alaska Department of Environmental Conservation
410 Willoughly Avenue
Suite 303
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Juneau, AK 99811-1800

RE: 2010 Alaska Regional Haze Plan

Dear Mr. Sloane:

Golden Valley Electric Association (GVEA) appreciates the opportunity to review and comment upon the 2010 Alaska Regional Haze Plan (Plan): Amendments to State Air Quality Control Plan, Volume II, Analysis of Problems, Control Actions, Section III.K, Areawide Pollutant Control Program for Regional Haze. The Plan is well-written, and though the subject matter can be complicated and confusing, the Plan is clear and easy to follow. GVEA does have some comments regarding the Plan. We are submitting this letter documenting the following comments and concerns as part of the public record for the Plan.

1. **Significant Impacts from Sources Beyond Alaska's Control**

The most significant conclusion reported in the Plan is that returning visibility to natural conditions by 2064 at Denali is beyond the control of the State of Alaska. The Plan states that the primary sources of visibility degradation in Alaska's Class I areas are dust and anthropogenic emissions originating in Asia, Arctic Haze originating from anthropogenic sources in Europe and Russia, and regional wildfires. The Plan also

states that dust and anthropogenic emissions from other countries will likely increase over the coming decades. Therefore, the anthropogenic sources having the largest impact on visibility are not within the State of Alaska, but originate from outside the United States.

Indeed, an evaluation of the impacts from aerosols at Denali NPP (Denali) from sources outside of the control of Alaska including anthropogenic sources from other countries, shows light extinction exceeding natural conditions for the 20% worst visibility days (Section III.K.4.C.8). In other words, the Plan demonstrates that returning visibility to natural conditions by 2064 at Denali is outside the State's control. Therefore, further controls of native anthropogenic sources will not achieve the required visibility outcome for Denali. The Plan states that "[a]ny reductions in international origin anthropogenic emissions would likely fall under the purview of the U. S. EPA through international diplomatic activities" (Section III.K.2.B.2). As stake holders in Alaska and its natural resources, and out of concern for our members, GVEA would like to encourage the State of Alaska and the U. S. EPA to immediately push forward with negotiations with China, Russia and other countries to curtail their anthropogenic sources. It is the control of these anthropogenic sources that will make the greatest positive impacts for visibility within Alaska.

2. **Clarify the Minimal Impacts from HCCP's Expected Operations.**

GVEA appreciates ADEC contemplating and addressing HCCP's anticipated operation in the Plan. GVEA, however, believes that the Plan overstates the impact of the expected emissions from HCCP, and that language in the Plan excerpted below is misleading or incorrect in a number of ways.

> a. *If brought on line, the point source NOx emitted within the Denali Borough would increase by a factor of 4.0 and the SOx would increase by a factor of 2.8 (based on permitted not actual emissions).* (Section III.K.7.C, page III.K.7-16)

This language appears to overstate the increase of NOx and SOx emission factors. It results from an apples to oranges comparison; i.e., comparing permitted to actual emissions. The permitted emissions from HCCP should be compared with the permitted emissions from the other stationary sources within the borough, and the emission factors need to be adjusted accordingly.

> b. *This increase would make the Denali Borough the largest source of anthropogenic emissions and the second largest source of all emissions impacting the Denali monitors. (Section III.K.7.C, page III.K.7-16)*

The increases from the anticipated operation of HCCP should be compared with all anthropogenic sources impacting Denali, not just the anthropogenic sources within the control of the State. The relative increases from the operation of HCCP should be

compared to the entire inventory impacting visibility at Denali, not only the sources included in the Weighted Emissions Potential (WEP) analysis. The current language could lead a reader to believe that the operation of HCCP could significantly impact visibility at Denali. HCCP, however, is not projected to be a significant source of visibility degradation at the Park. As stated in Section III.K.9.E, "the PSD modeling analysis for [HCCP] demonstrated little potential for visibility impacts from plumes and haze derived [from] that facility's operations." Therefore, GVEA requests that the language quoted in subsection (b) above, be deleted.

> c. *If [HCCP] is brought on line, the permitted NOx and SOx emission levels would cause the WEP trend line to fall well above the 95% confidence bounds surrounding the URP glide path. (Section III.K.9.E, page III.K.9-40)*

The potential NOx and SOx emissions from HCCP are not the principal pollutants of concern regarding visibility at Denali. As stated in Section III.4.C.3.a:

> By far the greatest relative change was for organic matter which was 36 times higher than on best days for DENA1 and 23 times higher than on best days for TRCR1. Extinction due to organic matter carbon varies from 0.3-10.8Mm^{-1}. Extinction due to sulfate varies only from 0.8-4.9Mm^{-1}. Clearly, wildfire-related organic matter carbon is the strongest determinant of worst days at the Denali IMPROVE sites.

Therefore, GVEA requests that the language quoted in subsection (c) above, be deleted.

3. <u>Natural Visibility Conditions, Glide Path, and Reasonable Progress Goal Adjustment</u>

The Plan states that "[m]any factors come into play in determining whether the uniform glide path can be achieved in the initial progress period, including cost and feasibility of controls as well as the appropriateness of the level set for natural conditions in 2064 ." Section III.K.1.C.3.c. GVEA suggests that establishing natural conditions for the worst 20% days at extinction levels below that of impacts from natural sources, particularly if those impacts do not include all natural sources regardless of whether originating within or outside Alaska, is inconsistent with the intent of the regional haze program. Section III.K.1.C.3.a states that "[n]atural visibility conditions represent the long-term degree of visibility estimated to exist in the absence of anthropogenic sources." Yet Figure III.K.4-57 shows natural conditions at the Denali and Trapper Creek monitors for the 20% worst days above the 11.81 Mm^{-1} worst day natural conditions estimate in Table III.K.4-1, which excludes natural sources beyond the control of Alaska. GVEA asks that the worst day natural conditions extinction value be set no lower than the extinction levels from all natural sources - including aerosols, nitrates, and sulfates outside Alaska's control - depicted in Figure III.K.4-57 and that the glide path be adjusted accordingly.

Also, as stated in Section III.K.9.E, it was not possible to configure a photochemical model to represent conditions within Alaska and deciview levels in 2018 were not calculated. The State has completed an analysis of changes in deciview levels using the inventory and the percentage of change in the WEP values between the baseline and 2018, and assumed a corresponding percentage change in the Uniform Rate of Progress (URP). Because the glide path demonstration relies so heavily on the WEP, the State should make every effort to ensure the best available data is used in the emissions potential forecast.

The emissions from sources within the control of the State of Alaska were used to determine if the forecast between the baseline and 2018 for each pollutant was roughly in proportion to the glide path established by the Uniform Rate of Progress (URP). Because HCCP was not operating during the baseline years, the emissions from this unit were not included in the 2018 forecast. The forecast appears to roughly follow the glide path and the inclusion of the permitted emissions from HCCP "would cause the WEP trend line [for extinction levels] to fall well above the 95% confidence bounds surrounding the URP glide path." However, the BART-related improvements and changes from production curtailing also were not included in the WEP versus glide path comparison.

To ensure that the best available data is used to determine the overall impacts from stationary sources, the permitted emissions from HCCP as well as the BART-related improvements and production curtailments must be included in the analysis. Only by including these factors and comparing them to a glide path that appropriately accounts for all natural sources (regardless of whether such sources are within Alaska's control) can ADEC accurately analyze overall impacts from stationary sources through 2018. The revised analysis may result in the WEP trend line remaining within confidence bounds surrounding the glide path. Even if the WEP trend line did not fall within the confidence bounds, under the rules, ADEC would have a reasonable explanation for this difference: 1) the baseline year is skewed low because it fails to include permitted but temporarily inactive sources, and 2) the primary sources of visibility impairment are beyond Alaska's control.

As the Plan notes, the 2018 Reasonable Progress Goal (RPG) can differ from visibility improvements established by the URP. If the RPG provides less visibility improvement than the URP, the state must document why it is not possible to achieve the URP and why the RPG is reasonable. GVEA contends that the RPG goal should be equal to the rate predicted after including reasonably foreseeable future changes to stationary sources (i.e., operation of HCCP, BART implementation, production curtailments), with a margin for increased impacts from sources outside the United States. This RPG is reasonable because it is the best prediction that can be made at this time with available data and taking into account that a photochemical model was not available for use.

Furthermore, the primary impacts on visibility within the State are from sources outside the United States. Given that outside anthropogenic source emissions and their estimated impacts are forecasted to increase; developing an RPG without accounting for the impacts from these sources is unreasonable.

4. BART Determination for Unit 1

In Section III.K.6.B.7, the Plan goes into a great deal of detail regarding the BART determination for the Healy Unit 1. GVEA notes that similar detail was not included in the BART determination descriptions for other sources. While the public process used for determining the BART determinations is germane to the Plan, the details from the process and the many steps in determining the BART for Healy Unit 1 is not. GVEA requests that this section of the Plan be streamlined to a summary of the process and the final BART determination. Additionally, GVEA requests that the quotation from the ADEC response to GVEA's request for informal review at the end of the section be removed. If ADEC chooses to include this excerpt from the letter, then GVEA requests the following language be included:

> GVEA continues to disagree that ADEC has authority to shut down Unit 1 after 2024 if Unit 1 is otherwise complying with the emissions limits set by the BART determination, which did not result from a contracted remaining useful life for Unit 1. *See* Final Enviroplan BART Report at page 16.

In conclusion, GVEA would like to thank the Alaska Department of Environmental Conservation for the opportunity to review the well-written Plan. We look forward to the successful adoption of the revised Alaska Regional Haze Plan.

Sincerely,

Kristen DuBois
Environmental Officer

cc: Kate Lamal/GVEA
Dave Hoffman, GVEA
Brian Newton, GVEA
John Kuterbach, ADEC
Alice Edwards, ADEC

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IN REPLY REFER TO:

December 6, 2010

N3615 (2350)

Scott Sloane
Division of Air Quality
Alaska Department of Environmental Conservation
410 Willoughby Avenue, Suite 303
P.O. Box 111800
Juneau, Alaska 99811-1800

Dear Mr. Sloane:

The National Park Service received notice on October 26, 2010 that the Alaska Regional Haze State Implementation Plan (SIP) was released for public comment. We appreciate the opportunity to review the revised plan. Alaska Department of Environmental Conservation (ADEC) has been responsive to many of our comments on the earlier draft plan. We have three concerns that we would like to bring to your attention as you finalize the regional haze plan.

- As stated in sections III.K.7 and III.K.9, the Golden Valley Electric Association (GVEA) Healy Power Plant Unit 2 would significantly increase NO_x and SO_x emissions affecting Denali National Park & Preserve if brought online as planned by GVEA. Since Unit 2 emissions are not currently accounted for in the Weighted Emissions Potential (WEP) analysis, an acceptable alternative is for ADEC to address Unit 2 emissions in the regional haze five-year reviews and other SIP documents once the plant is brought online, as described in section III.K.10. We recommend, however, that ADEC consider future Unit 2 emissions and implications for regional haze reasonable progress goals during the Title V permit renewal process before Healy Unit 2 is brought online.

- In the Alaska Regional Haze Plan Response to Federal Land Manager Comments (Appendix III.K.11.b), ADEC indicates that under Alaska state statutes, it is not possible to mandate an enforceable shutdown date for Healy Unit 1 beyond the duration of the current operating permit. We continue to maintain that an enforceable shutdown date for Healy Unit 1 by 2024 is a requirement of the BART guidelines (40 CFR 51, Appendix Y, Section IV.D.4.k.2), since the final BART determination report demonstrates that comparisons among evaluated control options were based on an 8-year remaining useful life for Healy Unit 1 beyond 2016. ADEC must either find a way to incorporate an enforceable shutdown date into the final regional haze SIP, or make a revised BART determination that is not based on an 8-year

remaining useful life for Unit 1. If the Alaska Regional Haze SIP is finalized and approved without an enforceable shutdown date for Unit 1, and the plant is still operating in 2019, the next subsequent Title V renewal permit should include language stipulating that Healy Unit 1 will not operate beyond 2024.

- We agree with the approach that ADEC has taken to use IMPROVE data from both the Denali headquarters and Trapper Creek monitoring sites to monitor progress under the Regional Haze Rule. However, we still assert that the Denali site near park headquarters is an official IMPROVE monitoring site, not an IMPROVE protocol site.

Thank you for the opportunity to participate in ADEC's regional haze planning. We ask that you continue to involve the Federal Land Managers in your future planning to protect visibility in our national parks and wilderness areas. If you have any questions regarding our comments, please contact Pat Brewer of my staff at (303) 969-2153.

Sincerely,

for

John Bunyak
Acting Chief, Air Resources Division

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