THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Department of Environmental Conservation

OFFICE OF THE COMMISSIONER

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July 24, 2023

Mr. Casey Sixkiller
Regional Administrator, Region 10
Environmental Protection Agency
1200 Sixth Avenue
Seattle, WA 98101
Sent via Email

Dear Mr. Sixkiller,

The Alaska Department of Environmental Conservation (DEC) has long made the assertion that costly control measures, also known as Best Available Control Technology or BACT, on major point sources within the Fairbanks Northstar Borough PM2.5 Nonattainment Area would inappropriately and unnecessarily raise the cost of living. The US Environmental Protection Agency (EPA) Office of Research and Development (ORD) recently presented preliminary modelling results for the Fairbanks Northstar Borough PM2.5 Nonattainment Area that indicate major point sources within the Nonattainment Area do not significantly contribute to the particulate matter pollution during winter-time episodic conditions.

These results are a significant achievement in science made possible only through the urgent requests for investigation by DEC and the collaborative efforts of an outstanding team of individuals from DEC's own modelling staff, the ORD, and the Alaska Layered Pollution And Chemical Analysis or ALPACA study - a consortium of over fifty international scientists to improve the air quality modeling efforts for the Fairbanks Northstar Borough Nonattainment Area. These results support the DEC's longstanding assertion that additional BACT requirements indicated through EPA's Proposed Disapproval available at the Federal Docket EPA-R10-OAR-2022-0115-0001, would inappropriately and unnecessarily raise the cost of living, already some of the highest in the country, on Alaska residents without actually bringing the area closer to attainment of the air quality standards.

The EPA has yet to issue its final decision on the proposed disapproval of the State's plan. Given the recent and compelling weight of evidence presented by these results, the Alaska Department of

Environmental Conservation believes that this evidence should be considered by the EPA prior to any final decision and may need to be published for additional comment.[1]

In addition to the Department's comments submitted March 22, 2023, to the EPA's Proposed Disapproval, the EPA must consider the enclosed information.[2] DEC has been engaged on this issue for over a decade and with ORD since 2020 with a FY20 Regional Applied Research Effort ("RARE") grant to explore improvements to meteorological model performance and updated chemistry to the model enhancing secondary sulfate understanding. This new information shows that point sources likely contribute a regulatorily insignificant fraction of the particulate matter in the nonattainment area through sulfur emissions under typical conditions. And, as a result, EPA's Proposed Rule is likely in error. Moreover, the State's SIP submission and BACT analysis need to be revisited before placing any additional burden on Alaskans.

To this end, and given previous court precedent[3], we believe that EPA has the discretion and authority to grant the State of Alaska an additional year from the date of this letter to submit a revised SIP that will be fully approvable given the new science from the sulfur analysis discussed in this letter. We look forward to a favorable and expeditious response to this request.

Sincerely,

Jason Brune, Commissioner

Enclosure: RARE Meeting Notes July 5, 2023
Subject to judicial notice

cc: The Honorable Dan Sullivan, United States Senate
The Honorable Lisa Murkowski, United States Senate
The Honorable Mary Peltola, United States House of Representatives
Lou Florence, President/CEO, Doyon Utilities
Kathleen Hook, Environmental Project Manager, Doyon Utilities
Rob Brown, Vice President, Business Development, Usibelli Coal Mine
David Fish, Environmental Manager, Usibelli Coal Mine
Naomi M. Knight, Environmental Officer, Golden Valley Electric Association
Julie Queen, Vice Chancellor for Administrative Services, University of Alaska Fairbanks
Frances Isgrigg, PE, Division of Design and Construction, University of Alaska Fairbanks
Tracey Martinson, Director of Environmental Health, Safety & Risk Management, University of Alaska Fairbanks

[1] *Air Transp. Ass'n of Am. v. F.A.A.,* 169 F.3d 1, 7 (D.C. Cir. 1999) ("[T]he focus in our rulemaking cases is primarily on whether the final rule changes critically from the proposed rule rather than on whether the agency relies on supporting material not published for comment.")
[2] 42 U.S.C. 7607(d)(4)(B)(I) ("All documents which become available after the proposed rule has been published and which the Administrator determines are of central relevance to the rulemaking shall be placed in the docket as soon as possible after their availability.")
[3] NRDC v. EPA, 22 F.3d 1125 (D.C. Cir. 1994)

RARE meeting 07/05/23

Agenda:

Project #2186 component status updates
ALPACA updates
Updates from Dea

Project #2186 component status updates

(1) Fuel oil sample/analysis

Toni Smith offered to send a fuel oil sample (Petro Star) and/or analysis.

Tiffany said she would touch base with Amara re. preferences for sample and analysis and get back to Toni.

(2) Woodstove testing
(3) Update from Sara

ALPACA updates

ALPACA paper workshop (June 15-16)
Several grad students/postdocs presented preliminary results and gave paper plans

Kayane Dingilian	Characterization of Hydroxymethanesulfonate (HMS), Sulfite, Bisulfite, and Sulfate in Fairbanks, Alaska Winter: Size-Resolved Measurements and S(IV) Partitioning
Meeta Cesler-Maloney	One-dimensional modeling of pollution above Fairbanks, Alaska, shows shallow trapping heights controlled by the surface-based temperature inversion strength.
Allison Moon	Primary sulfate is the dominant source of particulate sulfate during winter in Fairbanks, Alaska
James Campbell	Large Variability in Ambient Fine Particle pH in Fairbanks Winter
Natalie Brett	Estimating relative contributions of power plant emissions to wintertime surface pollution in the stably stratified Arctic boundary layer
Yuhan Yang	Assessing the Oxidative Potential of PM2.5 in Fairbanks, Alaska Winter
Kasey Edwards	Environmentally Persistent Free Radical formation, decay, and correlation with ambient pollutants in Fairbanks, Alaska over a two month winter period (as part of the ALPACA research campaign)
Sukriti Kapur	Reactive Oxygen Species and Oxidative Potential of Particulate Matter from outdoor and indoor environments in Fairbanks, Alaska

Notes:
Kayane-
Inorganic SIV and HMS differences in cold vs warmer conditions
Looking at size distribution (more inorganic SIV in coarse particles – complexing with metals?)

Meeta- 1D modeling of pollution in Fairbanks – Controlled by surface based T inversion. Looks like dominant source of SO2 = home heating

Alli – SO4 is enriched in smaller particles; most of that sulfate is proposed to be primary; secondary from H2O2 in small particles? (note only sampled at CTC); higher secondary contribution in particles > 0.7 μm (more influence from NO2 and O3); HMS also shifted towards larger particles.

James – high variability in particle pH (estimated with isorropia, I think) – T impacts variability more than ALWC; aerosol pH can be particularly high when T is low → necessary for HMS formation

Natalie – currently seeing more impacts to surface pollution from surface emissions than power plants

From Rodney Weber: Soluble Fe is mostly from biomass burning; not total Fe

Slides should be available on ALPACA google drive

Data sharing/repositories:
Bill/UAF will post a page pointing people to groups' data but will not host the data. All finalized data needs to be available 2 years post campaign.

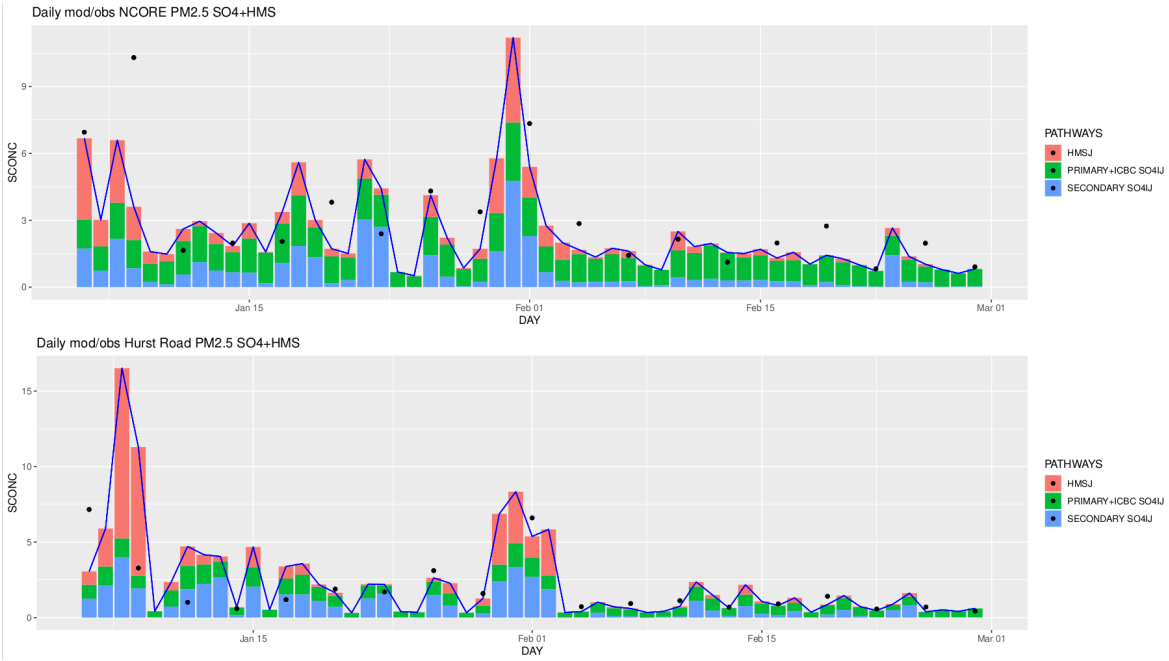
Next workshop in September. No meetings for the rest of the summer.

Recently provided gridded emissions files to Jochen Stutz at UCLA (will be using for 1D modeling)

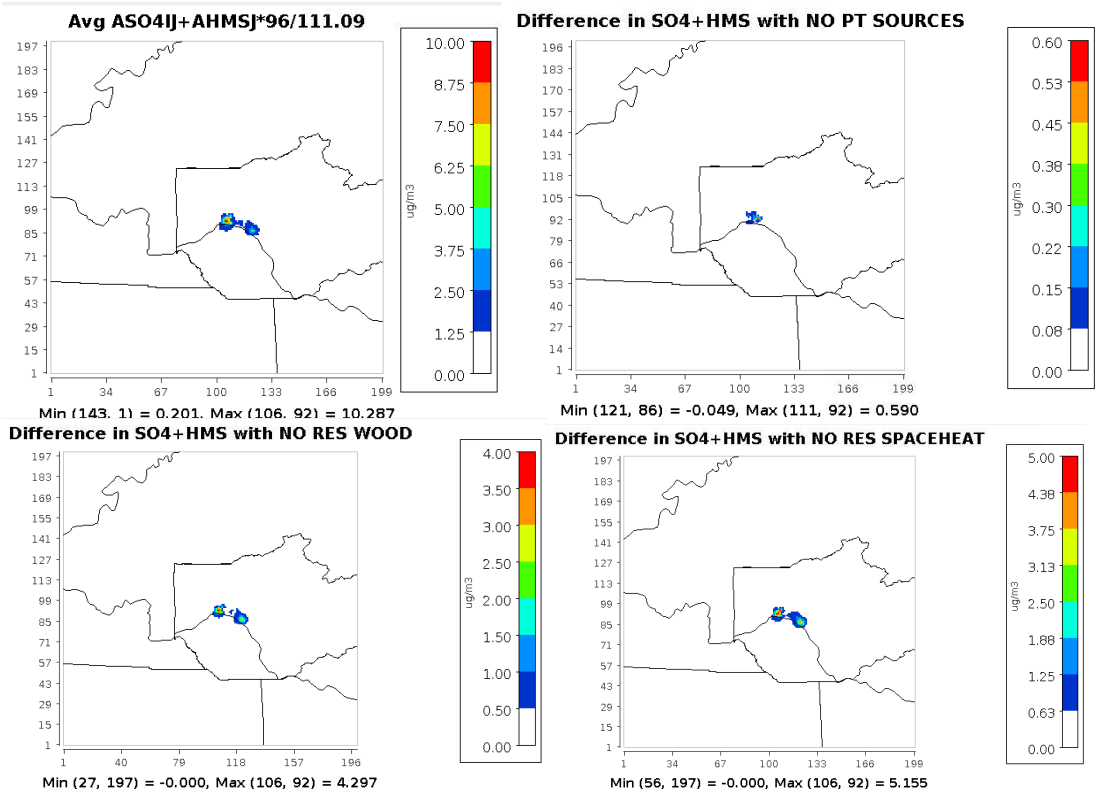
Will provide Becky Alexander and Alli Moon to provide SO4 tags and process analysis for H2O2 for latest het-chem and no-het-chem simulations (no-het-chem simulation should be done today)

Do we see qualitatively similar results to what was presented at the paper workshop?

Primary vs Secondary

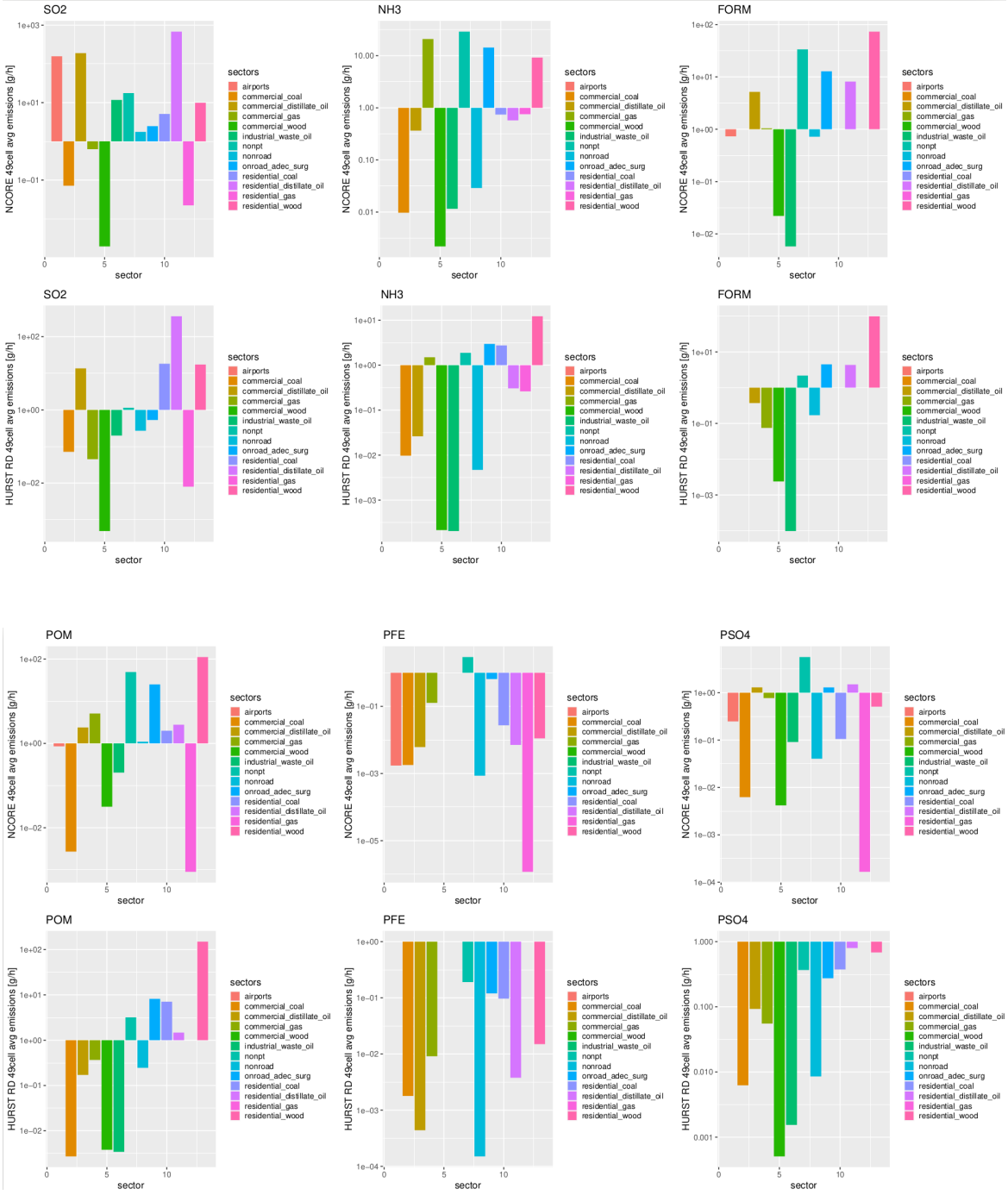


Zero-out runs



Emissions - checks

49-cell average (around NCORE (top) and Hurst Rd (bottom) emissions (vertical sum for airports and space heating)



Point sources

Other:
Going to submit an abstract to CMAS for the ALPACA CMAQ modeling
Running 2019-2020 with latest code now

Updates from Dea?

Other discussion?

Next meeting: Aug 2