

W A S A T C H



Clean Air Coalition

February 3, 2021

Joshua Wayland, PhD
Surface Transportation Board c/o ICF
9300 Lee Highway
Fairfax, VA 22031
Attention: Environmental filing, Docket No. FD 36284

RE: Comments on the Uinta Basin Railway

Dear Dr. Wayland,

Thank you for the opportunity to comment on the Surface Transportation Board's draft Environmental Impact Statement. This letter conveys official joint comments of Wasatch Clean Air Coalition and Dlbsigma Consulting on the draft EIS for the Uinta Basin Railway Project. Dlbsigma Consulting is a sole-proprietor firm that builds and facilitates stakeholder problem-solving groups in Utah. Wasatch Clean Air Coalition has evaluated and advocated data-driven environmental policy in Utah since 1996.

The Uinta Basin Railway presents an opportunity for economic development in the area, and OEA explores several cumulative impacts in Section 3.15 of the EIS. The greater context of the Railway project in affecting the Uinta Basin's relationship to global fossil fuel markets will receive brief comment at the conclusion. Foremost, these comments concern the implications of section 3.15.4.1, Oil and Gas Development.

It has likely been brought to the Board's attention that the Uinta Basin was listed in August 2019 as in nonattainment for ozone.¹ Because of its relatively unique geography and meteorology, the area is prone to wintertime episodes of high ozone levels. Some years produce no days on which the NAAQS for ozone is exceeded, but other years have produced late-winter stretches of 10 or days with ozone at harmful levels.² During these episodes, the air in the Uinta Basin is temporarily, thermally isolated from exchange from the atmosphere, and the vast majority of precursors forming the ozone have been demonstrated to be emissions from Oil and Gas operations.³ The Uinta Basin's nonattainment designation—which can be Marginal, Moderate, Serious, Severe or Extreme—creates constraints affecting several sectors of the economy, especially transportation and industry. The Uinta Basin is currently classified as Marginal but 2019 ozone levels may force a 'bump-up' to Moderate. The region must demonstrate a viable plan to reduce its ozone levels and achieve attainment..

In section 3.15.4.1, OEA developed two potential scenarios based on the Coalition's estimate of the train's shipping capacity for crude oil. These two scenarios, 130,000 barrels per day and 350,000 barrels

¹ Links to non-attainment schedules and regulatory timelines can be found with [Utah Division of Air Quality](#).

² For an excellent in-depth description of the patterns of ozone buildup, please see [Utah State University Bingham Research Center's resources on Uinta Basin air quality](#).

³ [UDAQ](#) and [USU BRC](#)

per day, are both significant increases over that of 2014 – 2019’s typical 80,000 - 90,000 barrels/day.⁴ Although it is reasonable to expect that the railroad will make oil reserves more attractive for development, evaluating the actual extent to which development will be stimulated is beyond the scope of these comments: the scenarios are taken as offered.

At issue is this question: will oil production induced by the Uinta Basin Railway be likely to prevent attainment, or even exacerbate the Uinta Basin nonattainment status? These comments do not treat the conclusion as foregone. Instead, these comments wish to direct the Board’s attention to the ozone issue of the Uinta Basin, and point out the necessity of accommodating the potential for ozone to be an impact of the Railway.

Regulatory and voluntary efforts to reduce ozone pollution have been underway for several years.⁵ There is evidence suggesting that recent measures have already improved emissions from newer and retrofitted operations. A recently-published retrospective analysis showed, with a high degree of confidence, that maximum annual ozone levels have been decreasing.⁶

For the purpose of developing a more finely-honed understanding of the emissions to the airshed from each aspect of operations, extensive research and statistical modeling has been conducted in the last decade. Our collective ability to predict emissions from current and future operations is still somewhat limited, but far less crude than it was 10 years ago when the ozone phenomenon was brought to public attention.⁷ For example, the 2016 New Source Performance Standards⁸, were modeled to decrease volatile organic compound (VOC) emissions for oil and gas processing by 40% and decrease VOC emissions for new well completions by 96% when fully implemented.⁹ N.B., the majority of the prescriptions of these standards apply to new wells only, so that the majority of benefits phase in as old wells are shut in and replaced.¹⁰ Models predicting the effectiveness of new rules depend on such variables.

Likewise, modeling of ozone formation based on weather and emissions is evolving. Predicting whether ozone will build to hazardous levels is a work in progress, but with several accumulated years of data on weather events, emissions, and ozone levels, it is possible (although labor-intensive and with broad error bars) to predict the risk of future ozone episodes.¹¹ A recent, rigorous application of predictive models is the 2017 Air Resource Management Strategy (ARMS-2017).¹² In this study, a range of oil and gas development levels were defined, analyzed for likely emissions levels, and then evaluated for likely ozone generation in the future year 2025 under the weather conditions of 2011. (The year 2011 produced severe inversion conditions and maximum ozone levels in the hazardous 120+ parts per billion range.)

The OEA’s low-production scenario of 130,000 barrels per day was tangentially addressed in the ARMS-2017 study. The study assumed a 2017-level implementation of NSPS and Utah rules and standards and oil production levels including roughly 4 million barrels per month (130,000 barrels/day would be approximately 4m bbl/mo). This scenario was predicted to give rise to high ozone in Duchesne County,

⁴ [Utah Division of Oil, Gas, and Mining Oil Production by County](#) accessed Jan 27, 2021. Uinta Basin production was estimated by adding the production of Duchesne and Uintah Counties for each year. In 2014 – 2019 production ranged between approximately 28 million barrels/year and 33 million barrels/year. Barrels per year are converted to barrels/day by dividing by 365.

⁵ [Ozone Advance Program of 2012](#), best management practices collected by UDAQ(1, 2) industry groups, and more recently the Uinta Basin Ozone Work Group and its Leadership in Ozone Awareness Award, are among the efforts to voluntarily reduce emissions. As noted in (1), the history of new rules and regulations is summarized by [UDAQ](#).

⁶ [Winter Ozone Pollution in Utah’s Uinta Basin is Attenuating \(USU BRC 2020\)](#)

⁷ [UDAQ Statewide Oil and Gas Emissions Inventory \(OGEI\)](#), with links to studies attenuating inventory assumptions.

⁸ <https://www.govinfo.gov/content/pkg/FR-2016-06-03/pdf/2016-11971.pdf>

⁹ [Predicting Emissions From Oil and Gas Operations in the Uinta Basin, Utah \(Wilkey et al 2016\)](#)

¹⁰ [Using Growth and Decline Factors To Project VOC Emissions From Oil And Gas Production \(UDAQ 2016\)](#)

¹¹ Descriptions of modeling work at USU BRC are on the [cumulative research summary page](#) and [annual report](#).

¹² [BLM 2017 Air Resource Management Strategy modeling reports \(ARMS-2017\): 2025 CAMx modeling results](#)

but not necessarily an ozone exceedance, in 2025. This is useful and encouraging, and a testament to the collective measures implemented by 2017 to reduce emissions. However, these results cannot and should not be taken to mean that the matter is resolved. For one, the predictive model is still a work in progress.

The mathematics and algorithms are extremely complex in order to be sensitive to the myriad factors of emission types, emissions locations, chemical pathways in open air with different precursor levels, etc. Those algorithms continue to evolve. For another, the output can only be as certain as the input. It is difficult enough to identify and measure a gas leak at one location on a given day; it's another matter to predict and quantify gas leaks over thousands of locations five years in the future. This is, however, the task at hand. Third, the OEA low-production scenario was lightly touched upon in ARMS-2017 runs, but it was near the outer limits of production ranges evaluated. Higher-production scenarios could involve twice or more the associated emissions. Furthermore, project-specific predictions were not the intent nor scope of the study. Model runs to address our questions would need to be attuned to do so.

Since the Uinta Basin is already in jeopardy of more severe ozone nonattainment designation, which carries both economic and health implications, we must proceed with caution and take necessary countermeasures. **These comments, therefore, make two recommendations.**

- 1) **Production scenarios of the completed railway need to be thoroughly evaluated for the likely ozone consequences.** The modeling performed for ARMS-2017 was a significant advance, but its results must not be over-interpreted to apply to this question. A dedicated modeling study for OEA's production scenarios must be undertaken.
- 2) If ozone levels will be predictably high, **further mitigating steps will need to be recommended and implemented.** It is important to emphasize that new production tends to utilize practices at or above required standards. What is needed is an outline for how production increases can simultaneously demonstrate progress towards attainment for ozone.

Lastly, a word on fossil fuel extraction, climate, and the Uinta Basin's future economy. It is widely recognized that energy production will eventually shift towards types that are low-carbon and renewable. Consumption will likewise shift as consumer preferences continue to become more climate-conscious and the needed technology and infrastructure are brought online. Many stakeholders concerned about the Uinta Basin Railway are worried that its induced oil and gas production will have detrimental climate consequences. It is an important question for any major investment going forward. The analysis needed to address whether Basin fossil fuels production will add to—rather than displace—production from the global market would require expertise on global commodities well beyond that of these authors. The concern is therefore merely stated and not answered, and the STB may wish to perform the evaluation. A different but related final point is that the Railway is not restricted to carrying fossil fuels. The opportunity for the Uinta Basin to diversify its agricultural and manufacturing economies once given access to global markets may help the community adapt to shifts in the energy economy. The analysis of that impact, too, is a suggestion and beyond the analysis of these comments.

Thank you for your attention to these matters. The opportunity to comment is appreciated.

Sincerely,
Deborah Burney-Sigman, PhD
Owner, dlbsigma consulting
(801)674-4596 dlbsigma@gmail.com

Kathy Van Dame, Policy Coordinator
Wasatch Clean Air Coalition
1148 East 6600 South
Salt Lake City, Utah 84121
(801)261-5989 dvd.kvd@juno.com