Michael Best & Friedrich LLP
Attorneys at Law
Cameron F. Field
T 608.283.2259
E cffield@michaelbest.com

August 3, 2018

VIA EMAIL (wheeler.andrew@epa.gov)
AND VIA HAND-DELIVERY (202-564-4700, Mail Code 1101A)

Andrew Wheeler, Acting Administrator
Office of the Administrator
U.S. Environmental Protection Agency
EPA WJC North Building, Room 3000
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Re: Petition for Administrative Reconsideration of the Additional Air Quality Designations for the 2015 Ozone National Ambient Air Standards and Provisional Exceptional Event Demonstration for Snow Related Ozone Exceedances Experienced within the Uintah Basin; Docket No. EPA-HQ-OAR-2017-0548

Dear Acting Administrator Wheeler:

Please find attached a Petition for Administrative Reconsideration of the Additional Air Quality Designations for the 2015 Ozone National Ambient Air Standards; Provisional Exceptional Event Demonstration for Snow Related Ozone Exceedances Experienced within the Uintah Basin: Docket No. EPA-HQ-OAR-2017-0548. Thank you and your staff for your consideration of the attached petition.

Sincerely,

MICHAEL BEST & FRIEDRICH LLP

Cameron F. Field

Attachments

cc: Mr. Todd E. Palmer, Esq.
Mr. Jeffrey W. Hartley

000000-1383\23891893.1

BEFORE THE ADMINISTRATOR OF THE UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY

In re:	)	
	)	**EPA Docket No.**
Additional Air Quality Designations	)	**EPA-HQ-OAR-2017-0548**
For The 2015 Ozone National	)	
Ambient Air Standards,	)	
83 Fed. Reg. 25,776 (June 4, 2018)	)	
	)	

PETITION FOR ADMINISTRATIVE RECONSIDERATION OF THE INITIAL AIR QUALITY DESIGNATION FOR THE UINTAH BASIN FOR THE 2015 PRIMARY AND SECONDARY NATIONAL AMBIENT AIR QUALITY STANDARD FOR OZONE

PROVISIONAL EXCEPTIONAL EVENT DEMONSTRATION FOR SNOW RELATED OZONE EXCEEDANCES EXPERIENCED WITHIN THE UINTAH BASIN

Submitted By:

Todd E. Palmer, Esq.
Cameron F. Field, Esq.
Michael Best & Friedrich LLP
100 East Wisconsin Avenue, Suite 3300
Milwaukee, WI 53202
tepalmer@michaelbest.com
cffield@michaelbest.com

Submitted: August 3, 2018

INTRODUCTION

Pursuant to Section 307(d)(7)(B) of the Clean Air Act, 42 U.S.C. § 7607(d)(7)(B), Patel Industrial Park[1] (the "Petitioner") respectfully requests the Administrator of the U.S. Environmental Protection Agency ("EPA" or "the Administrator") to reconsider the final rule titled *Additional Air Quality Designations for the 2015 Ozone National Ambient Air Standards* ("Final Rule") and published at 83 Fed. Reg. 25,776, *et seq.* (June 4, 2018) as it pertains to the Uintah Basin in the State of Utah (the "Final Rule"). CAA § 307(d)(7)(B) provides in relevant part:

> If the person raising an objection can demonstrate to the Administrator that it was impracticable to raise such objection within [the time provided for public comment] or if the grounds for such objection arose after the period for public comment (but within the time specified for judicial review) and if such objection is of central relevance to the outcome of the rule, the Administrator shall convene a proceeding for reconsideration of the rule and provide the same procedural rights as would have been afforded had the information been available at the time the rule was proposed.

The grounds for the objections raised in this petition are based upon actions undertaken for the first time in the Final Rule or since promulgation of the Final Rule, and therefore could not have been raised during the public comment period. None of the issues raised in the petition are a logical outgrowth of the proposed rule. Further, and as explained below, these issues are of central relevance to the outcome of the Final Rule with respect to the Uintah Basin area. These shortcomings, whether considered individually or collectively, amount to a failure to adequately provide notice and solicit public input on key components of the Final Rule, thereby depriving the Petitioner and the general public of their rights in the rulemaking process.

Therefore, the Administrator is required to "convene a proceeding for reconsideration of the rule and provide the same procedural rights as would have been afforded had the information been available at the time the rule was proposed."[2]

This submittal also serves as a provisional demonstration that snow related events are the cause of excess ozone levels that have been monitored within the Uintah Basin. As explained below, new data and information confirms that these events qualify as exceptional events pursuant to CAA § 7619(b) and the elevated ozone levels associated with these events should not be considered by EPA when establishing attainment designations for the Uintah Basin under the 2015 ozone NAAQS.

Petitioner also requests an administrative stay of the Final Rule pursuant to CAA §§ 307(d)(7)(B) and 5 U.S.C. § 705 to allow EPA, as well as State, Local, or Tribal air agencies (collectively "Air Agencies") the opportunity to review the information contained herein and in

---

[1] Patel Industrial Park is a landowner in the Uintah Valley. The development potential of Patel Industrial Park land will be restricted or otherwise burdened by the Final Rule.

[2] *Id.*; *See also Coalition for Responsible Regulation, Inc. v. EPA,* 684 F.3d 102, 125 (D.C. Cir. 2012) [EPA is required to convene a proceeding for reconsideration of a rule if a party raising an objection to the rule meets the requirements in CAA § 307(d)(7)(B)].

the case of Air Agencies, submit their own formal exceptional event demonstrations pursuant to the procedure established at 40 C.F.R. part 50 and 51.[3] As allowed by 5 U.S.C. § 705, this stay should remain in place beyond the three months prescribed in CAA § 307(d)(7)(B), instead extending until resolution of pending judicial review proceedings that are challenging the Final Rule and EPA promulgates a revised version of the Final Rule which adequately considers and accounts of the issues raised in this Petition, including any exceptional event demonstrations that may be submitted or supplemented by Air Agencies.

BACKGROUND OF THE FINAL RULE

On October 1, 2015, EPA revised both the primary and secondary National Ambient Air Quality Standards (NAAQS) for ozone.[4] These standards were set at a level of 0.070 parts per million (ppm) established as the annual fourth-highest daily maximum eight-hour average concentration, averaged over three years.[5] The previous ozone NAAQS had been established in 2008 at 0.75 ppm using the same general form and averaging period.

On February 25, 2016, EPA issued guidance for state and tribal agencies to use in making designation recommendations as required by Section 107(d)(1)(A) of the Clean Air Act.[6] This guidance directed states and tribes to submit their designation recommendations, with proposed area boundaries, to the EPA by October 1, 2016. Although EPA originally anticipated to complete initial designations for the 2015 ozone NAAQS consistent with the two-year schedule set forth in Section 107(d)(1)(B)(i), (*i.e.*, October 1, 2017), EPA missed that deadline. On November 6, 2017, EPA designated approximately 85% of the counties in the United States as being either in attainment or unclassifiable with the 2015 standard. Roughly one month later, EPA was sued in the U.S. District Court for the Northern District of California for failing to timely meet its mandatory obligation to designate all areas in the United States under the 2015 ozone standard by October 1, 2017.[7] By order dated March 12, 2018, the court ordered EPA to promulgate final designations for all areas of the country by April 30, 2018, with the exception of the San Antonio area.

BACKGROUND RELEVANT TO THE UINTAH BASIN

On September 27 and 29, 2016, respectively, the Ute Indian Tribe of the Uinta and Ouray Reservations, and the Governor of Utah provided EPA with their designation recommendations for all areas in Utah which had not been designated in the November 2017 EPA action.[8] The

[3] EPA has recognized that any agency, group or individual can submit an exceptional events demonstration. However, EPA believes that it is obligated to consider only those submittals that meet the exceptional event demonstration requirements which come from authorized agencies (i.e., all states; local air quality agencies to whom a state has delegated relevant responsibilities for air quality management including air quality monitoring and data analysis; tribal air quality agencies operating ambient air quality monitors that produce regulatory data).
[4] *See*, 80 Fed. Reg. 65,292 (October 26, 2015).
[5] *Id.* at 65,296.
[6] *See* February 25, 2016, memorandum from Janet G. McCabe, Acting Assistant Administrator, to Regional Administrators, Regions 1-10, titled, "Area Designations for the 2015 Ozone National Ambient Air Quality Standards" (Designations Guidance).
[7] American Lung Association, et al. v. Pruitt (N.D. Cal. No. 4:17-cv-06900). A coalition of 15 states also filed a similar suit on December 5, 2017. State of California v. Pruitt (N.D. Cal. No. 4:17-cv-06936).
[8] Letter from Gary R. Herbert, Utah Governor, to Shaun McGrath, Reg'l Adm'r, EPA Region 8 (Sept. 29, 2016), *available at* https://www.epa.gov/sites/production/files/2016-11/documents/ut-rec.pdf ; *see also* Utah Dep't Envtl.

State of Utah recommended that areas in the Uintah Basin[9] below 6,000 feet in elevation be designated as non-attainment, and the Ute Tribe recommended all areas within its borders be designated as attainment or, in the alternative, only the area around the Ouray monitor in the Uintah Basin to be designated non-attainment.[10] The Tribe's recommendation was based, in part, upon an exceptional event demonstration that had been submitted on August 25, 2015 and which was supplemented by the Tribe's September 27, 2016 letter.[11]

On December 20, 2017, EPA responded to the Governor of Utah and relevant tribal leaders, providing its intent to designate as nonattainment those portions of both state and tribal lands below 6,250 feet in the Uintah Basin.[12] Both the Governor of Utah and the Ute Indian Tribe filed comments disagreeing with EPA's proposal as it pertained to the Uintah Basin. Despite these concerns, on June 4, 2018, EPA issued the Final Rule designating that portion of the Uintah Basin below 6,250 feet of elevation as being in nonattainment with the 2015 ozone NAAQS.[13]

BACKGROUND RELEVANT TO OZONE FORMATION IN THE UINTAH BASIN

The Uinta Basin is a rural area of northeastern Utah bounded on the north by the Uinta Mountains, on the south by the Tavaputs Plateau, on the west by the Wasatch Range, and on the east by elevated terrain that separates it from the Piceance Basin in Colorado. The Basin is sparsely populated with a density of approximately 6.6 persons per square mile. The Basin has experienced infrequent ozone exceedances that have been demonstrated to be attributable to the simultaneous occurrence of several factors, including snow cover. As explained thoroughly below, snow cover plays a significant role in promoting ozone formation in the Uintah Basin by reflecting ultraviolet radiation from the sun which then causes precursor emissions to react and form ozone. Additionally, snow contributes to a chemical reaction that occurs in the air just above the snow surface which also promotes ozone creation.

Although ozone monitoring began in the Uintah Basin in 2009, the first elevated ozone readings were not observed until the winter of 2010-2011. Elevated wintertime ozone levels have been occasionally observed thereafter and have been correlated each time with snow-

---

Qual., *Utah Area Designation Recommendations for the 2015 8-Hour Ozone National Ambient Air Quality Standard* 52–57 (2016), *available at* https://www.epa.gov/sites/production/files/2016-11/documents/ut-rec-tsd.pdf (Utah TSD); Letter from Shaun Chapoose, Chairman, Ute Tribal Business Committee, to Shaun McGrath, Reg'l Amd'r, EPA Region 8 (Sept. 27, 2016) *available at* https://www.epa.gov/sites/production/files/2016-11/documents/t-ute-rec.pdf.

[9] This recommendation did not include areas under EPA or tribal jurisdiction for air quality purposes as specified under 42 U.S.C. §760l (d)(2).

[10] *Id.*

[11] The exceptional events related to asserted intrusions of stratospheric air into the troposphere contributing ozone to the surface ozone measurements in the Uintah Basin. *See*, https://www.epa.gov/sites/production/files/2016-08/documents/uinta_basin_ee_public_notice_8_2016_bwp.pdf . This petition and demonstration relates to the impact of snow events on Uintah Basin ozone concentrations.

[12] Letter from Douglas H. Benevento, Reg'l Adm'r, EPA Region 8, to Gary Herbert, Utah Governor (Dec. 20, 2017) (Benevento Utah Letter), *available at* https://www.epa.gov/sites/production/files/2017-12/documents/ut-epa-resp-ozone.pdf ; Letter from Douglas H. Benevento, Reg'l Adm'r, EPA Region 8, to Luke Duncan, Chairman, Ute Business Committee (Dec. 20, 2017) (Benevento Ute Tribe Letter), *available at* https://www.epa.gov/sites/production/files/2017-12/documents/utetribe-epa-resp-ozone.pdf.

[13] 83 Fed. Reg. at 25,837 (June 4, 2018).

covered ground being present during periods of sunshine and strong temperature inversions. Ozone levels monitored during periods without all three of these conditions have been consistently below the 2015 ozone NAAQS. As of October 2017, no wintertime exceedances have ever been observed in the Basin without snow cover.[14]

Numerous reports have concluded that snow cover is a critical natural event causing elevated ozone levels in the Basin. The UDEQ Technical Support Document which accompanied Governor Herbert's recommendations for initial area designations under the 2015 ozone NAAQS noted the significance of snow cover in ozone formation:

> The quality of air in the [Uintah] Basin is generally good, with the exception of certain episodic periods in the winter months where exceedances of the ozone standard are observed. These occurrences are associated with winter inversion periods with snow cover, light wind conditions, and strong temperature inversions. They are most common in February when the days are beginning to get longer and snow cover is still likely to be present, creating more ultraviolet rays to facilitate the photochemical reaction between NOx and VOCs. Figure 26 below illustrates ozone time series from 2009 through the winter of 2016. This shows the Basin does experience the more standard annual pattern of winter minimums and summer maximums following the availability of sunlight for ozone photolysis; this is fairly consistent each year. However, we see the spikes of high ozone values during winter months, but not consistently. The winters of 2012 and 2015 did not see the spike in ozone and exceedance of the standard. The common denominator for the winters without ozone spikes was the lack of snow on the ground and the absence of cold temperature inversions.[15]

Other reports support the UDEQ's conclusion that snow is a critical contributor to high ozone levels in the Basin, several of which are quoted below:

> Observations made during the 2013 winter study confirmed that high winter ozone in the Uinta basin *only occurs when the ground is covered with snow* and weather conditions promote the formation of a strong temperature inversion which traps a layer of cold, stable air (a "cold pool") within the basin. In the absence of any snow cover, warming of the earth's surface by the sun causes too much convective mixing for a cold pool to form.[16]
>
> ***
>
> Chemical reactions resulting in ozone formation are driven by the illumination of the atmosphere from direct, reflected and scattered ultraviolet solar radiation. *Reflection of light from the snow surface significantly increases (by roughly 50%) the total flux of ultraviolet radiation and thus the rate of ozone formation*.[17]
>
> ***

[14] 2017 Annual Report, Uintah Basin Air Quality Research, Utah State University, p. 12, available at: https://usu.app.box.com/s/7bd8f3hjs3u0pa7tefl6etue3e2ol4tj.
[15] "Utah Area Designation Recommendations for the 2015 8-Hour Ozone national Air Quality Standard" (September 2016).
[16] 2013 Uinta Basin Winter Ozone Study" by Environ (March 2014), p. ES-3.
[17] *Id.*

> Nitrous acid (HONO) and formaldehyde rather than ozone photolysis were found to be the biggest contributors to the pool of chemical radicals responsible for ozone formation. *A daytime HONO source at the snow surface appears to be primarily responsible for the contribution of HONO to the radical pool*.[18]
>
> ***
>
> Measurements made during 2013 suggest that VOC reactions in the *snow may contribute to ozone chemistry within the layer of air just above the snow surface* (the mixed layer).[19]
>
> ***
>
> Measurements we have collected, as well as evidence from many other studies (mostly carried out in polar regions) show that organic compounds can be entrained in the snow during or after snowfall, and that snow can be a reservoir for organic compounds, taking them up and releasing them back into the atmosphere. Furthermore*, organics in the snow can undergo chemical transformations, generating more reactive compounds that are more able to produce ozone.*[20]
>
> ***
>
> *During Uintah Basin winters, ozone stays well below the EPA standard of 70 ppb except when adequate snow cover and multi-day temperature inversions exist* (a temperature inversion exists when the air temperature aloft is warmer than the temperature at the surface).[21]

Aside from these reports, numerous studies have been conducted by various consortiums over the last 10 years to develop a better understanding of the formation of winter-time ozone episodes in the Uinta Basin located in Uintah and Duchesne Counties, Utah.[22] In some cases the Upper Green River Basin in Wyoming was studied due to the similarity in geography, population, and meteorology. These studies are summarized below and provide the scientific background of how snow cover causes and/or enhances the formation of ground level ozone:

Sunlight Reflection Off Snow Contributions to Ozone Formation. A study titled "Anatomy of wintertime ozone associated with oil and natural gas extraction activity in Wyoming and Utah," (Oltmans et al., 2014)[23] was conducted in Boulder, Wyoming and showed that high levels of ozone were correlated to high levels of radiation, which in turn were also related to the depth of snow. Specifically, as the winter season drew to a close, the combined incoming and outgoing UV levels (and ozone concentration) at the beginning of March were 80% higher than that measured of the end of March when most of the snow had melted away.

Snow's Promotion of Chemical Reaction in Formation of Ozone. In the study "Evaluation of Community Multiscale Air Quality (CMAQ) Model or Simulating Winter Ozone

---

[18] *Id.*
[19] *Id.* at ES-4.
[20] 2017 Annual Report, Uintah Basin Air Quality Research, Utah State University, p. 3 copy at: https://usu.app.box.com/s/7bd8f3hjs3u0pa7tefl6etue3e2ol4tj.
[21] *Id.* at 16.
[22] Utah State University's Bingham Institutes' Research of Uinta Basin Ozone Studies (UBOS), *available at* http://binghamresearch.usu.edu/reports.
[23] *Available at,* https://www.elementascience.org/articles/10.12952/journal.elementa.000024/.

Formation in the Uintah Basin" (Matichuk et al., 2017)[24], it is stated that the photolysis rate is a large contributor to the formation of ozone and is directly a function of the solar radiation. Specifically in the CMAQ model, the photolysis rate is a function of the solar zenith angle, altitude, surface albedo, and cloud cover, amongst many other parameters. Additional CMAQ runs were conducted to better understand the chemical/physical interactions between the snowpack and troposphere. Observations from these additional CMAQ runs conclude that these interactions are heavily dependent on the amount of gas entrained in the snow, solar irradiance, temperature of the snow, and the type of material beneath the snow.

Snow Recycles Nitrates in Air Which Promotes Ozone Formation. The paper "The magnitude of the snow-sourced reactive nitrogen flux to the boundary layer in the Uintah Basin, Utah, USA" [25] establishes the role of snow ground cover in the formation of ozone. In summary, adequate snow cover on the Uinta Basin floor allows an increase in recycled nitrates in the air along with the enhanced reflection of UV radiation upwards into the boundary layer, both of which contribute the ingredients for the chemical reaction and provides maintenance of a stable air mass yielding increased ozone formation. The key points documented in this paper are as follows:

- Reactive nitrogen (N_f = NO, NO_2, HONO) and volatile organic carbon emissions from oil and gas extraction activities play a major role in wintertime ground-level ozone exceedance events of up to 140 ppb in the Uintah Basin in eastern Utah. Such events occur only when the ground is snow covered, due to impacts of snow on the stability and depth of the boundary layer and ultraviolet actinic flux at the surface.
- Ozone exceedance events occur only when the ground is snow covered because snow aids in the formation and maintenance of a stable air mass and reflects UV radiation upwards into the boundary layer.
- In addition to aiding in the formation and maintenance of a stable air mass with enhanced UV radiation, snow may also recycle reactive nitrogen oxides ($N_f = NO_x$, HONO) between the snow surface and the overlying atmosphere, effectively increasing the atmospheric lifetime of N_f.
- When nitrate is deposited to snow, its photolysis serves to recycle NO_x to the overlying boundary layer (Grannas et al., 2007; Honrath et al., 2000). This snow-sources N_f can then be re-oxidized to nitrate and re-deposited to the snow surface.
- The photolysis of nitrate occurs in the liquid-like region (LLR) in or on ice grains (Domine et al., 2013) in the top snow layer where UV radiation is present.
- The presence of a new dusty layer on the snow surface five days after the fresh snowfall event does not significantly alter the vertical profile of normalized UV actinic flux, likely because UV absorption by LAI [Lithosphere-Atmosphere-Ionosphere] in the surface layer is at least five times lower than UV absorption by LAI in the original dusty layer. Surface snow UV albedo is strongly influenced by the presence of LAI… (P13845-13846; Calculations of snow actinic flux profiles and flux of snow-sourced N_f).

[24] *Available at,* https://usu.app.box.com/s/27ce0wyyy0a8x1sdzicd9tg5l02a8qgs.
[25] Zatko et. al, *available at,* http://binghamresearch.usu.edu/files/ZatkoACP2016.pdf.

New Information Confirms That Excess Ozone Levels in the Uintah Basin Are Attributable to Exceptional Events Related to Snow

Ozone data gathered in the winter of 2016-2017 conclusively establishes that the elevated ozone levels in the Uintah Basin are attributable to snow cover and therefore all snow related elevated ozone readings should be excluded from consideration as exceptional events under 42 U.S.C. § 7619(b). Attachment 1 summarizes U.S. EPA certified ozone ambient monitoring data for the Uinta Basin during calendar years 2016 and 2017. This data demonstrates a direct correlation between snow cover data and ozone concentrations in excess of 70 ppb. Snow cover data was collected from meteorological stations identified through the National Oceanic and Atmospheric Administration (NOAA) National Climate Data Center (NCDC) website (https://gis.ncdc.noaa.gov/) representative of Uinta Basin. The locations of NOAA meteorological and ambient monitoring stations can be found in Figure 1.

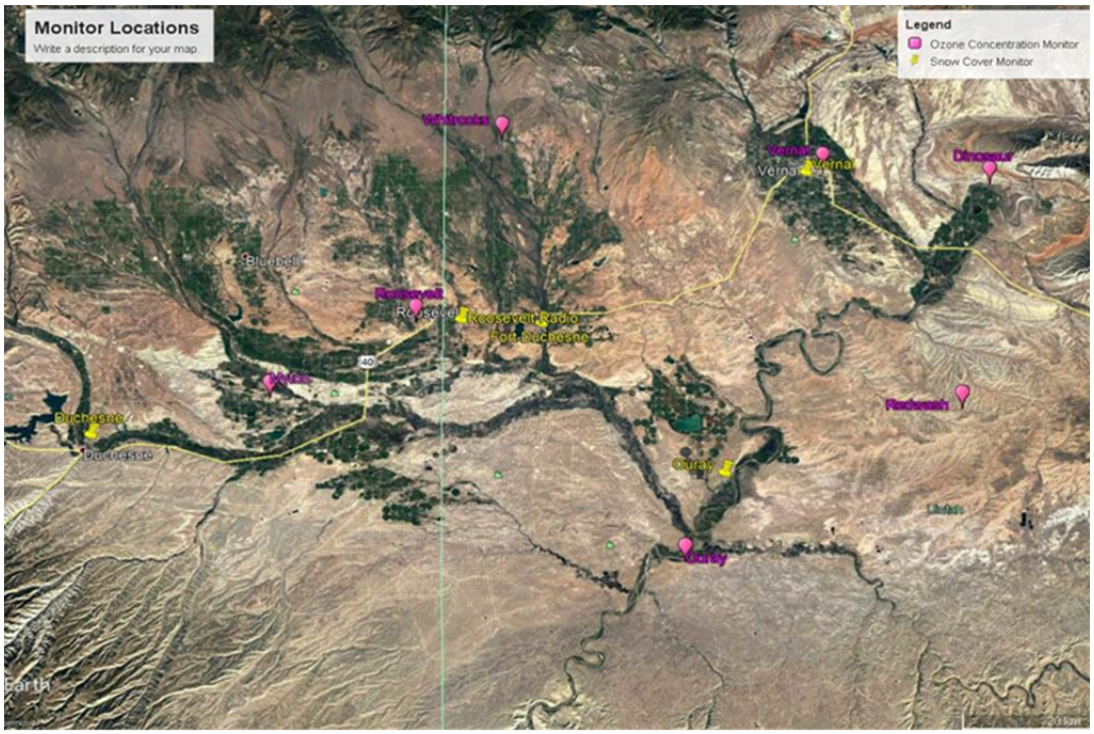

Figure 1 - Locations of NOAA Meteorological and Ambient Monitoring Stations in the Uintah Basin

Daily formation demonstrates a direct correlation, but as the formation of ozone involves complex atmospheric and chemical reactions, examining trends at a regional level is a more representative indicator of the underlying effect of snow cover and ozone formation. Conclusively, the new data in Attachment 1 demonstrates a direct correlation and regional trend between snow cover and exceedances of the 2015 8-hour Ozone Standard that goes back for years but was not considered by EPA when designating the attainment status of the Uintah Basin.

ISSUES FOR RECONSIDERATION

I. The Final Rule Improperly Relied Upon Monitoring Data Influenced by Exceptional Events in the Uintah Basin.

A. The Clean Air Act Requires EPA to Exclude Air Quality Data Where an Exceedance Was Caused by An Exceptional Event.

The Clean Air Act directs the EPA to promulgate "regulations governing the review and handling of air quality monitoring data influenced by exceptional events."[26] If an event is designated as exceptional, then the EPA may exclude air quality monitoring data associated with that event from use in determining whether an area experienced exceedances or violations of the national ambient air quality standards. 42 U.S.C. § 7619(b)(3). An event is exceptional if it meets four statutory conditions: it (1) "affects air quality"; (2) is not "reasonably controllable or preventable"; (3) is "an event caused by human activity that is unlikely to recur at a particular location or a natural event"; and (4) EPA certifies the exceptional event criteria are met.[27]

In 2007 and 2016, EPA promulgated rules for the administration of its exceptional events regime and specific guidelines as to what constitutes an exceptional event.[28] Under the EPA's 2016 Exceptional Events Rule (EER), "[a] State . . . may request the Administrator to exclude data showing exceedances or violations of any national ambient air quality standard that are directly due to an exceptional event . . . ."[29] Any agency, group, or individual may submit an exceptional events demonstration[30] and the data must provide the following:

> **(A)** A narrative conceptual model that describes the event(s) causing the exceedance or violation and a discussion of how emissions from the event(s) led to the exceedance or violation at the affected monitor(s);
> **(B)** A demonstration that the event *affected air quality* in such a way that there exists a *clear causal relationship* between the specific event and the monitored exceedance or violation;
> **(C)** Analyses comparing the claimed event-influenced concentration(s) to concentrations at the same monitoring site at other times to support the requirement [for demonstrating a clear causal relationship]. The Administrator shall not require a State to prove a specific percentile point in the distribution of data;
> **(D)** A demonstration that the event was both *not reasonably controllable* and *not reasonably preventable*; and
> **(E)** A demonstration that the event was a human activity that is unlikely to recur at a particular location *or was a natural event*.[31]

EPA *shall* exclude data from its determinations of exceedances and air quality standard violations where it is demonstrated "that an exceptional event caused a specific [standard

[26] 42 U.S.C. § 7619(b)(2) (emphasis added).
[27] 42 U.S.C. § 7619(b)(1)(A).
[28] *See*, 72 Fed. Reg. 13,560 (March 22, 2007); 81 Fed. Reg. 68,216 (October 3, 2018).
[29] 40 C.F.R. 50.14(a)(1)(ii).
[30] *See*, 82 Fed. Reg. 68222, fn 14 (October 3, 2016).
[31] 40 C.F.R. § 50.14(c)(3)(iv)(A)-(E)(emphasis added).

exceedance] at a particular air quality monitoring location" and where the State otherwise satisfies the requirements of the EER.[32] While the Air Agencies have not yet had the opportunity to certify and independently demonstrate recent snow cover event data as meeting the exceptional event standard, as this information and demonstration are first being presented in this Petition and Provisional Exceptional Event Demonstration, the substantive requirements for snow cover to be an exceptional event are satisfied here, as more fully explained below.

B. Snow Cover in the Uintah Basin is an Exceptional Event that Influenced the Monitoring Data Relied Upon By EPA in the Final Rule.

What constitutes an exceptional event under the EER's definition tracks the substantive requirements in the statute:

> Exceptional event means an event(s) and its resulting emissions that *affect air quality* in such a way that *there exists a clear causal relationship* between the specific event(s) and the monitored exceedance(s) or violation(s), is *not reasonably controllable or preventable*, is an event(s) caused by human activity that is unlikely to recur at a particular location *or a natural event(s).*[33]

EPA has promulgated various guidance documents to further identify exceptional event standards for events such as high winds or fires, but no such guidance exists for the presence of snow cover, which, as discussed below, meets each of the EER requirements for an exceptional event.

i. There is a Causal Relationship Between Snow Cover and Ozone Events in the Basin.

EPA reviews whether an event and its resulting emissions *affect air quality* such that there exists a *clear causal relationship* between the event and the monitored exceedance on a case by case basis.[34] A clear causal relationship demonstration "should include analyses showing that the event occurred and that emissions of the pollutant of interest resulting from the event were transported to the monitor(s) recording the elevated concentration measurement(s)."[35]

According to the numerous studies previously cited in this Petition, as well as the State of Utah's own recommendations to EPA, it is well settled that there is a direct causal relationship between snow cover and winter time ozone exceedances in the Uintah Basin. The State of Utah's recommendations to EPA concluded that "we see the spikes of high ozone values during winter months, but not consistently. The winters of 2012 and 2015 did not see the spike in ozone and exceedance of the standard. The common denominator for the winters without ozone spikes was the lack of snow on the ground and the absence of cold temperature inversions."[36] The data

[32] 40 C.F.R. § 50.14(b).
[33] 40 C.F.R. § 50.1(j) (emphasis added).
[34] 81 Fed. Reg. 68241 (October 3, 2016).
[35] *Id.*
[36] "Utah Area Designation Recommendations for the 2015 8-Hour Ozone national Air Quality Standard" (September 2016).

presented in Attachment 1 compare snow cover data from the meteorological centers closest to the ambient monitoring stations in the Basin to most directly identify the correlation of snow cover near the monitors causing elevated ozone levels. For each winter time ozone occurrence presented in Attachment 1, there existed significant snow cover around the corresponding ambient air monitor.

Snow cover aids in the formation and maintenance of a stable air mass and reflects UV radiation upwards, promoting the formation of ozone. Additionally, the snow cover recycles reactive nitrogen molecules between the snow surface and overlying atmosphere, creating a condition in the atmosphere where the reactive nitrogen facilitates creation of ozone.[37] Correlating the new information in this Petition with data/ information going back as far as 2011 confirms this reaction has persisted for many years, solidifying the clear causal relationship that exists between snow cover and ozone exceedances in the Basin.

ii. The Snow Related Ozone Events Were Not Reasonably Controllable and Not Reasonably Preventable.

CAA section 319(b) requires that an exceptional event demonstration establish that an exceptional event NAAQS exceedance was not reasonably controllable or preventable. EPA's EER clarifies that an event is not reasonably *controllable* if reasonable measures to control the impact of the event on air quality were applied at the time of the event.[38] An event is not reasonably *preventable* if reasonable measures to prevent the event were applied at the time of the event.[39] The reasonableness of these measures is determined on a case-specific basis. EPA will deem as reasonable any enforceable control measures recently approved by the EPA as part of an implementation plan, however emission controls in unapproved rules can also be considered reasonable controls.[40] These criteria are met for the time period covered by this Petition and Demonstration.

Ozone precursor emissions in the Uintah Basin are predominantly associated with oil and gas production wells located in Uintah and Duchesne Counties, with approximately 20% of those on state lands and the remaining 80% on the Ute Indian Reservation and Indian Country land. Utah and the EPA implement many rules, regulations and permitting programs that control ozone precursor emissions (VOC and NOx) from these well operations:

EPA Regulations:[41]

- EPA implements NSPS and NESHAP emission standards to restrict air pollution from the oil and natural gas industry. UDEQ estimates that the "green completion" aspects of these rules will yield a nearly 95 percent reduction in VOCs from hydraulically fractured wells. These rules also impose VOC emission reduction requirements on storage tanks and other production equipment.[42]

[37] Zatko et. al, *supra* note at 25.
[38] 81 Fed. Reg. at 68,234.
[39] *Id.*
[40] *Id.* at 68,239, fn. 47.
[41] These EPA regulations are more thoroughly summarized in Attachment 2.
[42] 40 CFR part 60, subpart OOOO and 40 CFR part 63, subpart HH.

- EPA enforces NESHAP regulations establishing emission standards for new and modified reciprocating internal combustion engines (RICE) at oil and gas sources which significantly lower emissions, particularly VOCs.[43]
- EPA enforces NSPS standards for compression ignition engines and spark ignition engines associated with oil and gas operations that lower VOC and NOx emissions.
- On July 1, 2011, the EPA issued the Indian Country Minor New Source Review (NSR) rule requiring pre-construction permits for new and modified stationary sources and minor modifications at existing major stationary sources in Indian Country.[44]
- The counties in the Uinta Basin are designated as unclassifiable with respect to the 2008 ozone NAAQS and, as such, oil and natural gas sources located on the Indian country lands within the Basin have been subject to and utilizing the National Oil and Natural Gas Federal Implementation Plan (National O&NG FIP)[45] since August 2, 2016.

Utah Regulations:[46]

- New or modified sources within the jurisdiction of UDEQ that emit pollutants must obtain an Approval Order (AO) prior to beginning construction. These AOs may include emissions limits on construction and operation activities. The required BACT analysis for new or modified sources ensures that the permitted activity uses state-of-the-art pollution control devices to control the precursor emissions, particularly VOCs, which lead to the formation of ozone.
- Since 2014, UDEQ implements rules limiting emissions from oil and gas wells and transmission sources.
- Recent rules require permitting of minor oil and gas sources by replacing the current source-by source permitting process with permit-by-rule (PBR) provisions.

Although Utah and EPA implement robust regulatory programs to limit VOC and NOx emissions from oil and gas production sites in the Uintah Basin, a study suggest that emissions from these wells do not significantly affect ozone on days of elevated ozone levels. In a paper titled "Statistical analysis of winter ozone exceedances in Uintah USA" (Mansfield et al. 2017)[47], Mansfield et al. focused modeling efforts on the 2010-2016 period for the Uintah Basin. Specifically, two models were developed: one that considered naturally occurring parameters (e.g., basin temperature, solar angle, pressure, etc.) and a second model that considered the total production rate of petroleum activities and drilling rig activity, in addition to the natural parameters used in the first model. These two models were developed to determine the sensitivity of the predicted ozone concentrations to the production rate of nearby petroleum activities. Both models were able to demonstrate (with 90% accuracy) as to whether the ozone NAAQS would be exceeded on any given day. As a result of running both models, Mansfield

[43] 40 CFR part 63, subpart ZZZZ.
[44] 40 CFR parts 49 and 51; 76 Fed. Reg. 38,748 (July 1, 2011).
[45] "Federal Implementation Plan for True Minor Sources in Indian Country in the Oil and Natural Gas Production and Natural Gas Processing Segments of the Oil and Natural Gas Sector; Amendments to the Federal Minor New Source Review Program in Indian Country to Address Requirements for True Minor Sources in the Oil and Natural Gas Sector," U.S. Environmental Protection Agency, 81 FR 35943, June 3, 2016, *available at* https://www.gpo.gov/fdsys/pkg/FR-2016-06-03/pdf/2016-11969.pdf.
[46] *See* Attachment 2 for a detailed summary of these rules.
[47] *Available at,* https://usu.app.box.com/s/9plh3829w98aknj33at54hf8wdg0o85l.

et al. determined that the additional parameters (such as humidity, drilling activity, and petroleum production) did not have a significant effect on deviation of the predicted ozone value from the measured concentration. Mansfield et al. thus determined that the base model, which only considered the lapse rate, snow depth, basin temperature, solar zenith angle, and number of consecutive inversion days, was sufficient to accurately predict the ozone concentration. Therefore, reasonable measures were applied to control and prevent ozone precursor emissions in the Basin during recently identified ozone exceedances, but natural indicators strongly influence ozone levels in the Basin.

iii. Snow Cover is a Natural Event.

A "natural event" is defined by the EER to mean:

> an event and its resulting emissions, which may recur at the same location, in which human activity plays little or no direct causal role. For purposes of the definition of a natural event, anthropogenic sources that are reasonably controlled shall be considered to not play a direct role in causing emissions.[48]

Recent case law helps examine the requirements of the rule as it applies to "natural events." The Tenth Circuit held that "the EPA requires exceptional events attributable to human activity to be 'unlikely to recur,' but permits recurring 'natural events.'"[49] "Natural events . . . can recur and still be eligible for exclusion under the Rule."[50]

In a decision upholding the EPA's definition of "natural event," the D.C. Circuit Court of Appeals held that EPA properly looks at the *activities that caused* the emissions to determine whether a recurring event is natural.[51] The court contrasts two hypothetical instances of high winds carrying emissions and causing pollutant exceedances. In one case, the emissions carried by the high wind were originally emitted by a power plant, in the other, they were generated by the high wind sweeping over a dirt road. In the case of the power plant emissions, the fact that the emissions were already emitted into the air means the emissions are attributed by EPA to the power plant, not the natural event.[52]

Here, for multiple reasons, snow cover and its resulting emissions are a "natural event" under the EER and precedential case law. Practically, human activity plays little to no role in the amount of snow cover that is present in the Basin on any given day during winter. Scientifically, as summarized in numerous studies referenced herein, the presence of snow cover creates a condition in the atmosphere that makes reactive nitrogen molecules more readily available to react and create ozone.[53] Additionally, snow itself can leach reactive nitrogen and other compounds into the atmosphere where, with sufficient UV rays, ozone is formed.

---

[48] 40 C.F.R 50.1(k) (second emphasis added).
[49] Ukeiley v. U.S. Environmental Protection Agency, No. 16-9556, p.8 (10th Cir. 2018).
[50] *Id.*
[51] Natural Resources Defense Council v. U.S. Environmental Protection Agency, No. 16-1413, page (D.C. Cir. 2018).
[52] *Id.*
[53] *See Supra,* at 25.

Compared to the D.C. Circuit's hypothetical examples, snow cover is more akin to the dirt road analogy as the pollutant—ozone—that reaches the monitoring station exists in high levels due to the natural event—snow cover. Without the snow cover, excess levels of ozone would not and have not formed at levels triggering ozone exceedances. Therefore, snow cover and its resulting formation of ozone qualifies as a natural event and its resulting emissions under the EER.

iv. The Clean Air Act Does Not Prohibit Snow Cover From Being An Exceptional Event.

By statute, exceptional events *do not* include (1) stagnation of air masses or meteorological inversions; (2) a meteorological event involving high temperatures or lack of precipitation; or (3) air pollution relating to source noncompliance.[54] Snow cover is none of these. While the ozone exceedances happen in the Uintah Basin when there is an inversion event, sunlight *and* snowpack, the exceedances do not occur but for the presence of snow cover in the Basin. The exceedances are not due to an inversion event in isolation. Snow cover acts to create emissions that exacerbate the formation of ozone at levels that exceed the 2015 ozone NAAQS.[55] And while the statute explicitly precludes the *lack of precipitation* from being considered an exceptional event, it does not bar the presence of accumulated precipitation from such a definition. Had Congress wanted the presence of snow to be prohibited from being considered an exceptional event it would have done so in the statute.

Moreover, classifying snow related ozone events in the Uinta Basin as exceptional events is consistent with the purpose of the procedures established in the Clean Air Act for identifying such events and excluding them from regulatory decisions and actions. Such events are natural and unavoidable in the Basin, and at the same time they are not a standard occurrence—some winters pass with no ozone exceedances. The winter-time ozone exceedances are also rather particular to the Uintah Basin and parts of Wyoming with similar geography. The exceptional events rule exists to identify situations such as this, where a natural event is influencing ambient air monitoring data, to eliminate such data from EPA's consideration in determining whether an area is in attainment with national ambient air quality standards.

CONCLUSION

For the foregoing reasons and in consideration of the fundamental and central relevance of the issues raised by this Petition, the EPA should reconsider the Final Rule pursuant to CAA § 307(d)(7)(B). This should be done by providing a new notice and comment rulemaking procedure to solicit public input on the issues raised above. In the interim, EPA should also initially stay the effectiveness of the Final Rule for a period of three months as provided for in CAA § 307(d)(&)B) and then extend the stay, if necessary to allow revisions to the Final Rule.

[54] 42 U.S.C. § 7619 (B)(1)(B).
[55] *See Supra,* at 25.

Appendix

Attachment 1

Correlation of Ozone Ambient Monitoring Data and Snow Cover Data in the Uintah Basin

Date	Ozone Monitor	Max Concentration (ppm)	Snow Station & Depth (in)				
			Ft Duchesne	Roosevelt Radio	Vernal	Duchesne	Ouray
		Closest Monitor	Roosevelt	Roosevelt	Vernal	Myton	Ouray
2016							
1/28/2016	Ouray	0.073	4	2	10	1	NR
1/29/2016	Redwash	0.072	4	2	10	0	NR
1/29/2016	Ouray	0.079	4	2	10	0	NR
2/7/2016	Ouray	0.086	4	1	10	2	NR
2/7/2016	Redwash	0.07	4	1	10	2	NR
2/7/2016	Whiterocks	0.073	4	1	10	2	NR
2/7/2016	Myton	0.074	4	1	10	2	NR
2/8/2016	Whiterocks	0.081	4	1	10	1	NR
2/8/2016	Ouray	0.094	4	1	10	1	NR
2/8/2016	Redwash	0.073	4	1	10	1	NR
2/8/2016	Myton	0.074	4	1	10	1	NR
2/9/2016	Redwash	0.083	4	1	10	1	NR
2/9/2016	Dinosaur	0.071	4	1	10	1	NR
2/9/2016	Roosevelt	0.075	4	1	10	1	NR
2/9/2016	Myton	0.077	4	1	10	1	NR
2/9/2016	Ouray	0.094	4	1	10	1	NR
2/9/2016	Whiterocks	0.077	4	1	10	1	NR
2/10/2016	Whiterocks	0.081	4	1	10	0	NR
2/10/2016	Roosevelt	0.088	4	1	10	0	NR
2/10/2016	Dinosaur	0.075	4	1	10	0	NR
2/10/2016	Ouray	0.101	4	1	10	0	NR
2/10/2016	Myton	0.085	4	1	10	0	NR
2/10/2016	Redwash	0.083	4	1	10	0	NR
2/11/2016	Redwash	0.094	4	1	9	0	NR
2/11/2016	Dinosaur	0.077	4	1	9	0	NR
2/11/2016	Whiterocks	0.083	4	1	9	0	NR
2/11/2016	Roosevelt	0.081	4	1	9	0	NR
2/11/2016	Ouray	0.096	4	1	9	0	NR
2/11/2016	Myton	0.085	4	1	9	0	NR
2/12/2016	Redwash	0.096	4	1	9	0	NR
2/12/2016	Ouray	0.12	4	1	9	0	NR
2/12/2016	Whiterocks	0.086	4	1	9	0	NR
2/12/2016	Dinosaur	0.08	4	1	9	0	NR
2/12/2016	Roosevelt	0.094	4	1	9	0	NR
2/12/2016	Myton	0.092	4	1	9	0	NR
2/13/2016	Roosevelt	0.096	3	1	8	0	NR

Date	Ozone Monitor	Max Concentration (ppm)	Snow Station & Depth (in)				
			Ft Duchesne	Roosevelt Radio	Vernal	Duchesne	Ouray
		Closest Monitor	Roosevelt	Roosevelt	Vernal	Myton	Ouray
2/13/2016	Dinosaur	0.083	3	1	8	0	NR
2/13/2016	Myton	0.095	3	1	8	0	NR
2/13/2016		0.107	3	1	8	0	NR
2/13/2016	Redwash	0.087	3	1	8	0	NR
2/13/2016	Whiterocks	0.08	3	1	8	0	NR
2/14/2016	Roosevelt	0.071	3	1	8	0	NR
2/14/2016	Ouray	0.085	3	1	8	0	NR
2/15/2016	Ouray	0.071	2	1	7	0	NR
2017							
1/29/2017	Myton	0.071	7	7	13	14	NR
1/29/2017	Ouray	0.073	7	7	13	14	NR
1/30/2017	Myton	0.088	7	7	13	13	0
1/30/2017	Whiterocks	0.076	7	7	13	13	0
1/30/2017	Roosevelt	0.076	7	7	13	13	0
1/30/2017	Redwash	0.072	7	7	13	13	0
1/30/2017	Ouray	0.087	7	7	13	13	0
1/31/2017	Roosevelt	0.084	7	7	12	13	0
1/31/2017	Myton	0.088	7	7	12	13	0
1/31/2017	Whiterocks	0.07	7	7	12	13	0
1/31/2017	Dinosaur	0.072	7	7	12	13	0
1/31/2017	Redwash	0.077	7	7	12	13	0
1/31/2017	Ouray	0.097	7	7	12	13	0
2/1/2017	Dinosaur	0.077	7	6	11	12	0
2/1/2017	Redwash	0.08	7	6	11	12	0
2/1/2017	Ouray	0.11	7	6	11	12	0
2/1/2017	Roosevelt	0.08	7	6	11	12	0
2/2/2017	Dinosaur	0.075	7	5	11	12	0
2/2/2017	Redwash	0.084	7	5	11	12	0
2/2/2017	Ouray	0.103	7	5	11	12	0
2/2/2017	Myton	0.076	7	5	11	12	0
2/2/2017	Roosevelt	0.076	7	5	11	12	0
2/3/2017	Roosevelt	0.086	7	5	11	12	0
2/3/2017	Ouray	0.105	7	5	11	12	0
2/3/2017	Dinosaur	0.071	7	5	11	12	0
2/3/2017	Myton	0.081	7	5	11	12	0
2/4/2017	Dinosaur	0.075	7	5	10	11	0
2/4/2017	Myton	0.083	7	5	10	11	0
2/4/2017	Roosevelt	0.078	7	5	10	11	0
2/4/2017	Ouray	0.094	7	5	10	11	0
2/5/2017	Ouray	0.111	6	4	10	11	0

Date	Ozone Monitor	Max Concentration (ppm)	Snow Station & Depth (in)				
			Ft Duchesne	Roosevelt Radio	Vernal	Duchesne	Ouray
		Closest Monitor	Roosevelt	Roosevelt	Vernal	Myton	Ouray
2/5/2017	Redwash	0.076	6	4	10	11	0
2/5/2017	Dinosaur	0.074	6	4	10	11	0
2/5/2017	Roosevelt	0.078	6	4	10	11	0
2/5/2017	Myton	0.071	6	4	10	11	0
2/6/2017	Ouray	0.097	6	4	10	9	0
2/6/2017	Myton	0.074	6	4	10	9	0
2/6/2017	Roosevelt	0.075	6	4	10	9	0
2/7/2017	Ouray	0.074	6	4	10	8	0

Attachment 2

EPA Regulations Controlling Emissions from Oil and Gas Operations in the Uintah Basin

Applicable Requirement	Requirement Title	Affected Facility	Standard	Compliance Date
40 CFR Part 60 Subpart OOOO	Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution for which Construction, Modification or Reconstruction Commenced After August 23, 2011, and on or before September 18, 2015	Hydraulically fractured wildcat and delineation wells	Completion combustion	10/15/12
		Hydraulically fractured low pressure non-wildcat and non-delineation wells	Completion combustion	10/15/12
		Other hydraulically fractured wells	Completion combustion	Before 1/1/2015
		Other hydraulically fractured wells	REC and completion combustion	After 1/1/2015
		Centrifugal compressors with wet seals	95% reduction	10/15/12
		Reciprocating compressors	Change rod packing	10/15/12
		Pneumatic controllers at NG processing plants	Zero bleed rate	10/15/12
		Pneumatic controllers between wellhead and NG processing plants	6 scfh bleed rate	10/15/13
		Group 2 and 1 Storage Vessels	95% reduction	April 15, 2014/2015
		Equipment Leaks	LDAR program	10/15/12
		Sweetening Units	Reduce SO_2 as calculated	10/15/12
40 CFR Part 60 Subpart OOOOa	Standards of Performance for Crude Oil and Natural Gas Facilities for which Construction, Modification or Reconstruction Commenced After September 18, 2015	Pneumatic pumps at gas processing plants	Zero bleed rate	11/30/16
		Pneumatic pumps at well sites	95% reduction if control or process available onsite (P.E. Certification if equipped with CVS)	11/30/16
		Storage vessels	95% reduction (P.E. Certification if equipped with CVS)	08/02/16
		Equipment leaks at gas processing plants	Leak Detection and Repair (LDAR) program	08/02/16
		Equipment leaks at well sites and compressor stations	LDAR program	06/03/17
		Sweetening units at gas processing plants	Reduce SO_2 as calculated	08/02/16
40 CFR Part 60 Subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	NSPS IIII control requirements apply	Emission Limitations; Fuel Requirements; Compliance Requirements; and Testing Requirements	Manufactured after 4/1/2006; or Modified/Reconstructed after 7/11/2005
40 CFR Part 60 Subpart JJJJ	Standards of Performance for Stationary Spark Ignition Internal Combustion Engines	NSPS JJJJ control requirements apply	Emission Limitations; Compliance Requirements; and Testing Requirements	Manufactured on or after 7/1/2007 and is 500 ≤ hp < 1,350 and is a lean burn
				Manufactured on or after 1/1/2008 and is > 500 hp
				Manufactured on or after 7/1/2008 and is < 500 hp
				Manufactured on or after 1/1/2009 and is a SI ICE emergency engine > 25 hp
40 CFR Part 63 Subpart HH	National Emission Standards for Hazardous Air Pollutants From Oil and Natural Gas Production Facilities	Small glycol dehydration unit (major source)	Compliance demonstration	10/15/2012 or 10/15/2015
		Glycol dehydration unit process vent standards.	Glycol dehydration unit process vent standards.	08/16/12
		Large glycol dehydration units	95% HAP reduction	08/16/12
		Closed system storage vessels	No detectable emissions.	08/16/12
		Equipment leak repairs (constructed before 08/23/2011)	Equipment leak standards	10/15/13
		Equipment leak repairs (constructed after 08/23/2011)	Equipment leak standards	10/15/13
		Newly installed control devices	Compliance demonstration	Upon initial start up or 10/15/2015
40 CFR Part 63 Subpart HHH	National Emission Standards for Hazardous Air Pollutants From Natural Gas Transmission and Storage Facilities	Small glycol dehydration unit (major source)	Compliance demonstration	10/15/2012 or 10/15/2015
		Glycol dehydration unit process vent standards.	Glycol dehydration unit process vent standards.	08/16/12
		Large glycol dehydration units	95% HAP reduction	08/16/12
		Newly installed control devices	Compliance demonstration	Upon initial start up or 10/15/2015
40 CFR Part 63 Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines	MACT ZZZZ control requirements apply	Emission Limitations; Operating Limitations; Fuel Requirements; Operation and Maintenance Requirements; and Compliance Requirements	Constructed or reconstructed after 12/19/2002 (existing major source > 500 hp)
				Constructed or reconstructed after 6/12/2006
				Manufactured on or after 1/1/2008 and is 4SLB ≥ 250 hp

Utah Regulations Controlling Emissions from Oil and Gas Operations in the Uintah Basin

UDAQ implements rules targeting oil and gas wells and transmission sources located in the Uinta Basin include the following:

R307-501 – General Provisions.
Equipment must be properly maintained and operated.
R305-502 – Pneumatic Controllers.
Replacing high-bleed controllers with low-bleed or no-bleed controllers by the following dates:
December 1, 2015 in Uintah and Duchesne Counties; and
April 1, 2017 state-wide.
R307-503 – Flares.
All new flares to be equipped with an automatic igniter.
Existing flares to be retrofit by the following dates:
December 1, 2015 in in Uintah and Duchesne Counties; and
April 1, 2017 state-wide.
R307-504 – Tank Truck Loading.
Requires bottom filling or submerged pipe filling on tanker trucks by January 1, 2015.

New or modified sources within the jurisdiction of UDEQ that emit pollutants must obtain an Approval Order (AO) prior to beginning construction. These AOs may include emissions limits on construction and operation activities. The required BACT analysis for new or modified sources ensures that the permitted activity uses state-of-the-art pollution control devices to control the precursor emissions, particularly VOCs, which lead to the formation of ozone.

On September 6, 2017, the Utah Air Quality Board proposed rules for permitting of minor oil and gas sources by replacing the current source-by source permitting process with permit-by-rule (PBR) provisions. The following rules became effective on July 1, 2018. A summary of the new permit by rule provisions require the following:

All new and existing oil and gas sources are required to register with UDAQ[56]
New source to register 30 days before operation
Existing by July 1, 2018
Emission Inventory must be submitted on the triennial year if uncontrolled actual emissions of an individual criteria air pollutant are greater than one ton per year
Storage Vessel Requirements[57]
Thief hatches on storage vessels shall be kept closed and latched except during vessel unloading or other maintenance activities.
Route VOC emissions from storage vessels to a process unit where the emissions are recycled, incorporated into a product and/or recovered, or be routed to a VOC control device under the following conditions
Existing Operators: If in operation as of January 1, 2018, with a site-wide throughput of 8,000 barrels or greater of crude oil or 2,000 barrels or greater of condensate per year on a rolling 12-month

[56] Utah Administrative Code (UAC) R307-505.
[57] UAC R307-506.

New Operators**:** must operate controls for a minimum of 1 year and then they may be removed if the site meets throughput or emissions exemption

Exemption: Uncontrolled emissions are less than 4 tons per year & emergency vessels

Inspections of VOC control devices is required once per month

Dehydrators[58]

Sites with more than 4 tons of VOC emissions per year must route VOC emissions to a process unit where the emissions are recycled, incorporated into a product, and/or recovered, or to a VOC control device

Dehydrators must be inspected once per month

VOC Control Devices[59]

Control Efficiency: 95% or greater demonstrated through performance test methods and procedures

Visible Emissions: None

Inspections: Monthly by audio, visual, or olfactory means

LDAR[60]

Develop and emissions monitoring plan including:

Monitoring Frequency

Monitoring Technique and Equipment

Procedures and Timeframes for Identifying and Repairing Leaks

Recordkeeping Practices

Calibration and maintenance Procedures

Address Difficult-to-monitor and Unsafe-to-monitor Components

Monitoring survey must be completed within 365 days of January 1, 2018 or 60 days after start-up whichever is later

Monitoring is repeated semi-annually

Natural Gas Engines[61]

Emission Rate Requirements

Maximum Engine Horsepower	NOx (g/hp-hr)	CO (g/hp-hr)	VOC (g/hp-hr)	HC+NOx (g/hp-hr)
≥ 25 hp and < 100 hp	-	4.85	-	2.83
≥ 100 hp	1.0	2.0	0.7	-

[58] UAC R307-507.
[59] UAC R307-508.
[60] UAC R307-509.
[61] UAC R307-510.