UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Oil and Natural Gas Sector: Control Techniques for the Oil and Natural Gas Industry	)	**Docket No. EPA-HQ-OAR-2010-0505**
		Via email
		December 4, 2015

Clean Air Task Force, Earthjustice, Environmental Defense Fund, Natural Resources Defense Council, and Sierra Club appreciate the opportunity to submit comments on EPA's Proposed Control Techniques Guidelines for the oil and Natural Gas Industry ("CTG Proposal"). All of the documents cited to in these comments are hereby incorporated as part of the record in this rulemaking proceeding. In addition to climate destabilizing methane emissions, the oil and natural gas sector is a source of harmful air pollution, including ozone-forming volatile organic compounds ("VOCs") and toxic air pollutants like benzene, a known human carcinogen.

EPA's CTG Proposal addresses many of the same types of equipment as EPA's proposed methane standards for new and modified sources, and EPA's proposed standards and guidelines for these sources are nearly identical.[1] The CTG Proposal, however, includes VOC guidelines for *existing sources* in certain areas that violate the National Ambient Air Quality Standards ("NAAQS") for ozone. As ICF International found, nearly 90 percent of the oil and gas sector's emissions come from existing infrastructure,[2] and a meaningful percentage of these sources are located in areas that are subject to CTGs. While comprehensive standards for existing sources under section 111(d) are urgently needed to protect all communities across the country, EPA's CTG Proposal is an important step forward and can provide information for state air quality planners to help reduce emissions from the oil and gas sources in areas with elevated ozone concentrations.

While affirming that CTGs are not an adequate substitute for a 111(d) existing source rule, we strongly support EPA's CTG Proposal and urge the agency to strengthen these guidelines consistent with our recommendations on the NSPS. Section 1, below, describes health harms associated with ozone pollution and emissions from the oil and gas sector that contribute to this pollution. In Section 2, we describe EPA's clear legal authority to adopt these guidelines, the contours of the agency's reasonably available control technology ("RACT") analysis, and the

[1] 80 Fed. Reg. 56593 (September 18, 2015).

[2] ICF International, "Economic Analysis of Methane Emission Reduction Opportunities in the U.S. Onshore Oil and Natural Gas Industries," (March 2014), *available at* https://www.edf.org/energy/icf-methane-cost-curve-report (hereinafter "ICF Cost Curve Report"). ICF looked specifically at the percentage of methane emissions contributed by existing sources. They did not conduct a comparable estimate of the amount of VOC emissions that come from existing oil and gas sources. Nevertheless, it is reasonable to expect that existing oil and gas sources are also responsible for the vast majority of VOC emissions from the oil and gas sector due to the sheer number of existing oil and gas facilities.

appropriateness of EPA adopting standards for new and existing sources that are aligned. Section 3 addresses EPA's proposed guidelines for particular sources and recommends approaches to strengthen them. Given the substantial overlap with EPA's 111(b) Methane Proposal, we focus our specific comments here only on those areas where our recommendations diverge from those on the methane proposal or where a feature related to controlling emissions from existing sources is particularly notable.

We conclude:

- The oil and natural gas sector is a significant source of smog-forming VOCs and reductions in these pollutants are critical to protect the health of communities;
- EPA has clear authority to adopt guidelines for the oil and gas sector and EPA's proposal to align new and existing source requirements satisfies the statutory mandate that standards be based on reasonably available control technology and is likewise supported by substantial technical evidence in the record;
- EPA should strengthen LDAR requirements, consistent with our NSPS comments, and equipment availability considerations are especially unwarranted in the CTG context;
- EPA should adopt a performance-based threshold liquids unloading standard, given substantial emissions from existing liquids unloading wells; and
- While the CTG Proposal represents a positive step toward controlling emissions from existing oil and gas sources, it is not enough: EPA must propose existing source standards for these sources under section 111(d) as soon as possible.

I. THE OIL AND NATURAL GAS SECTOR IS A SIGNIFICANT SOURCE OF SMOG-FORMING VOCS

Oil and gas equipment are significant sources of smog-forming pollutants that contribute to unhealthy air pollution in multiple areas across the country. Rigorous standards that reduce emissions of VOCs and nitrogen oxides ("NOx") that contribute to unhealthy levels of ozone are urgently needed to protect public health in states that are home to, or impacted, by oil and gas development.

A. *Ozone is a Dangerous Air Pollutant that Harms Public Health*

Since EPA revised the ozone NAAQS in 2008, there have been more than 1,000 new studies that demonstrate the health and environmental harms of ozone.[3] Based on these studies and the previous literature, EPA has concluded:

> Scientific evidence shows that ozone can cause a number of harmful effects on the respiratory system, including difficulty breathing and inflammation of the airways. For people with lung diseases such as asthma and COPD (chronic obstructive pulmonary disease), these effects can aggravate their diseases, leading to increased medication use, emergency room visits and hospital admissions.
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> Evidence also indicates that long-term exposure to ozone is likely to be one of many causes of asthma development. In addition, studies show that ozone exposure is likely to cause premature death.[4]

An extensive body of scientific and technical analyses underscores that the risk of these harmful health effects is even more pronounced for people with asthma and other respiratory diseases, children, older adults, and people who work or are active outdoors. An estimated 23 million people have asthma in the U.S., including almost 6.1 million children.[5] Further, asthma disproportionately impacts communities of color and lower-income communities.[6]

Children, in particular, are most at risk because they breathe more air per unit of body weight, are more active outdoors, are more likely to have asthma than adults, and are still developing their lungs and other organs. In fact, EPA's Children's Health Protection Advisory Committee—a body of external experts that provides the Administrator with recommendations concerning children's health—finds that "[c]hildren suffer a disproportionate burden of ozone-related health impacts due to critical developmental periods of lung growth in childhood and adolescence that can result in permanent disability."[7]

On October 1, 2015, EPA established a revised ozone standard of 70 parts per billion ("ppb"), improving America's national air quality standard for ground-level ozone. The standard is

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[3] U.S. Environmental Protection Agency, Fact Sheet, OVERVIEW OF EPA'S UPDATES TO THE AIR QUALITY STANDARD FOR GROUND-LEVEL OZONE, *available at* http://www3.epa.gov/ozonepollution/pdfs/20151001overviewfs.pdf (hereinafter "Ozone Standard Fact Sheet"); *see also* U.S. Environmental Protection Agency, Integrated Science Assessment for Ozone and Related Photochemical Oxidants, Final Report (Feb. 2013), *available at* http://cfpub.epa.gov/ncea/isa/recordisplay.cfm?deid=247492#Download.

[4] Ozone Standard Fact Sheet, supra note 3.

[5] Ozone Standard Fact Sheet, supra note 3.

[6] *Id*.

[7] Letter from Sheela Sathyanarayana MD MPH, Chair, Children's Health Protection Advisory Committee to Christopher Frey PhD, CASAC Review of the Health Risk and Exposure Assessment for Ozone and Policy Assessment for the Review of the Ozone NAAQS: Second External Review Drafts, (May 19, 2014), *available at* http://yosemite.epa.gov/sab/sabproduct.nsf/7F79D27B503CB28385257CDE00546CB3/$File/CHPAC+May+2014+Letter+&+Attached+2007+Letters.pdf.

expected to prevent up to 660 premature deaths, 230,000 asthma attacks, and 160,000 lost school days across the nation in 2025, excluding California. EPA estimates the benefits at this level of protection provide up to $5.9 billion in monetized benefits, greatly outweighing the costs of implementation.[8]

Scientific evidence overwhelmingly demonstrates that the previous 75 ppb standard was not requisite to protect human health with an adequate margin of safety, as required by the Clean Air Act.[9] Even while EPA's final standard of 70 ppb will improve upon this outdated standard, it nonetheless falls at the least protective end of the range recommended by the EPA's independent scientific advisors and the nation's leading health and medical societies,[10] and accordingly, falls short in protecting the health of all Americans. Had EPA established a more protective ozone standard of 60 ppb, more counties with oil and gas development would have been brought under the protection of the proposed CTGs.[11]

B. *The Oil and Gas Sector is a Substantial Source of Smog-Forming VOCs*

Oil and gas activities release pollutants that mix together in the atmosphere to form ground-level ozone or smog, including VOCs and NOx.[12] Several recent analyses have found these emissions from the sector are significant:

- According to the 2014 National Emissions Inventory (NEI), "Petroleum & Related Industries" was the second largest source of VOCs nationally, excluding miscellaneous emissions, and the fifth largest source of NOx emissions nationally.[13]
- The ICF Cost Curve Report found that the oil and natural gas sector was responsible for over 1.5 million tons of VOC emissions.[14]

[8] U.S. Environmental Protection Agency, By the Numbers fact sheet (October 2015), http://www3.epa.gov/airquality/ozonepollution/pdfs/20151001numbersfs.pdf.
[9] Letter from H. Christopher Frey PhD to Administrator McCarthy, *CASAC Review of the EPA's Second Draft Policy Assessment for the Review of the Ozone National Ambient Air Quality Standards*, EPA-CASAC-14-004, at ii (June 26, 2014), *available at* http://yosemite.epa.gov/sab/sabproduct.nsf/5EFA320CCAD326E885257D030071531C/$File/EPA-CASAC-14-004+unsigned.pdf (hereinafter "CASAC Letter").
[10] EPA's independent Clean Air Scientific Advisory Committee found that at 70 ppb there is "substantial scientific evidence of adverse effects … including decrease in lung function, increase in respiratory symptoms, and increase in airway inflammation." *Id*.
[11] Based on state-reported DrillingInfo HPDI data in conjunction with the EPA published 2012-2014 Design Values by county, *available at* http://www3.epa.gov/airtrends/values.html.
[12] Methane also reacts to form ozone, but the agency has found that methane largely contributes to background ozone concentrations.
[13] EPA, National Emissions Inventory (NEI) Air Pollutant Emissions Trends Data, http://www3.epa.gov/ttnchie1/trends/.
[14] ICF International, "Economic Analysis of Methane Emission Reduction Opportunities in the U.S. Onshore Oil and Natural Gas Industries," 4-12 (March 2014).

State and regional analyses have similarly concluded that oil and gas activities emit significant amounts of VOCs.

- A paper examining the impacts of natural gas production and use on emissions and air quality notes that production sites in the Barnett Shale Region in Texas contribute 19,888 tons of VOCs per year.[15]
- According to a recent study of VOCs and HAPs at oil and gas facilities in several regions, production facilities in the Denver-Julesburg Basin emit an average of 0.12 to 0.19 grams per second of VOCs (about 4 to 6 metric tons per year).[16] The study also notes that "VOC and HAP emissions from upstream production operations are important due to their potential impact on regional ozone levels and proximate populations ."[17]
- A study that examines top-down VOC and methane emissions for the Denver-Julesburg Basin in Colorado found that "the emissions of the measured species are most likely underestimated in current inventories."[18]
- Another Colorado study found "[o]il-and-gas-related emissions for a subset of volatile organic compounds (VOCs), which can contribute to ground-level ozone pollution, were about 25 metric tons per hour, compared to the state inventory, which amounts to 13.1 tons."[19]
- A recent study that examined VOC emissions from oil and gas in the Uintah basin in Utah found that well pads are responsible for high VOC mixing ratios in the vicinity of the site, specifically that "[s]trongly elevated mixing ratios of the measured VOCs were found at almost all source locations…".[20]
- The Uinta Basin Winter Ozone Study found very high ozone episodes observed in the December 2013 – March 2014 winter study and concluded that, "activities associated

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[15] David T. Allen, "Atmospheric Emissions and Air Quality Impacts from Natural Gas Production and Use," *Annu. Rev. Chem. Biomol. Eng.* 2014. 5:55–75, 2014. doi: 10.1146/annurev-chembioeng-060713-035938, *available at* http://www.annualreviews.org/doi/abs/10.1146/annurev-chembioeng-060713-035938.

[16] Brantley, et al., (2015) "Assessment of volatile organic compound and hazardous air pollutant emissions from oil and natural gas well pads using mobile remote and onsite direct measurements," *Journal of the Air & Waste Management Association*. ISSN: 1096-2247 (Print) 2162-2906 (Online) Journal homepage: http://www.tandfonline.com/loi/uawm20.

[18] Pétron, G., et al., (2012), "Estimation of Emissions from Oil and Natural Gas Operations in Northeastern Colorado," Earth System Research Laboratory, National Oceanic & Atmospheric Administration, *available at* http://www3.epa.gov/ttnchie1/conference/ei20/session6/gpetron.pdf.

[19] Pétron, G., et al., (2014), "A new look at methane and non-methane hydrocarbon emissions from oil and natural gas operations in the Colorado Denver-Julesburg Basin," J. Geophys. Res. Atmos., 119, 6836–6852, doi:10.1002/2013JD021272, *available at* http://onlinelibrary.wiley.com/doi/10.1002/2013JD021272/full.

[20] Warneke, C. et al., (2014) "Volatile organic compound emissions from the oil and natural gas industry in the Uintah Basin, Utah: oil and gas well pad emissions compared to ambient air composition," *Atmos. Chem. Phys*., 14, 10977–10988, *available at* www.atmos-chem-phys.net/14/10977/2014/.

with oil and gas exploration and production are the predominant sources of ozone precursors."[21]

- The most recent Alamo Area Council of Governments Oil and Gas Eagle Ford Shale emissions inventory projects that the Eagle Ford will produce 929 tons per day VOC and 302 tons per day NOx in 2018 under a moderate development scenario, and 1,248 tons per day VOC and 423 tons per day NOx under a high development scenario.[22]

As many of these studies indicate, oil and gas activities are significant sources of VOC and NOx emissions that contribute to ozone pollution.

C. *Emissions from the Oil and Natural Gas Sector Have Been Linked to Unhealthy Levels of Ozone*

The oil and gas sector's substantial emissions have been linked to unhealthy levels of ozone pollution, including monitored ozone exceedances and ozone "action days" (days when the air quality in an area becomes unhealthy and people, especially susceptible populations, are encouraged to take certain precaution or stay indoors).[23] Examples include the following:

1. Wyoming. In designating Sublette County and portions of Lincoln and Sweetwater Counties in Wyoming as failing to attain the 2008 ozone standard, EPA noted that the ozone air quality problems were "primarily due to local emissions from oil and gas activities: drilling, production, storage, transport and treatment of oil and natural gas."[24] The Wyoming Department of Environmental Quality provided a similar assessment, and then-Governor Freudenthal recommended that parts of the Upper Green River Basin be designated as an ozone non-attainment area,[25] which EPA did in May of 2012.[26] Since this time, ozone levels have fallen. This decline is likely due in part to oil and gas air quality standards put in place by Wyoming Department of Environmental Quality.
2. Utah. The Utah Department of Environmental Quality has noted that "[i]ncreased oil and gas development in the Uinta Basin have [sic] led to environmental issues regarding air

[21] ENVIRON, "Final Report: 2013 Uinta Basin Winter Ozone Study," (March 2014), *available at* http://www.deq.utah.gov/locations/U/uintahbasin/ozone/docs/2014/06Jun/UBOS2013FinalReport/UBOS_2013Secs_1-2.pdf.

[22] Alamo Area Council of Governments, "Oil and Gas Emission Inventory Update, Eagle Ford Shale: Technical Report," (2015), prepared for Texas Commission on Environmental Quality, *available at* http://www.aacog.com/DocumentCenter/View/30289.

[23] AirNow Action Days: http://airnow.gov/index.cfm?action=airnow.actiondays; Air Quality Guide for Ozone, http://www.airnow.gov/index.cfm?action=pubs.aqiguideozone.

[24] 77 Fed. Reg. 34221 et. seq; see also EPA, TECHNICAL SUPPORT DOCUMENT, WYOMING AREA DESIGNATIONS FOR THE 2008 OZONE NATIONAL AMBIENT AIR QUALITY STANDARDS (2012), *available at* http://www.epa.gov/ozonedesignations/2008standards/documents/R8_WY_TSD_Final.pdf (Wyoming).

[25] Letter to Ms. Carol Rushin, Acting Regional Administrator from Governor Dave Freudenthal (March 12, 2009), http://deq.state.wy.us/AQD/Ozone/Gov%20Ozone%20to%20EPA%20(Rushin)_Final_3-12-09.pdf.

[26] 77 Fed. Reg. 30,088, 30,157 (May 21, 2012).

quality, water quality, and management of drilling wastes."[27] The Uinta Basin Winter Ozone Study found that the high ozone episodes observed in the December 2013 to March 2014 time period, which corresponded with colder temperatures, snow cover, and atmospheric inversions, were triggered by compounds "directly released from various emission sources and form in the atmosphere from directly emitted volatile organic compounds (VOCs) such as those emitted from oil and natural gas exploration and production activities."[28]

3. Texas. EPA has found that emissions from Wise County Texas, including from oil and gas collection and production in the Barnett Shale field, are contributing to unhealthy levels of smog in nearby Dallas-Fort Worth.[29]

Updated CTGs will provide much needed help to states in addressing areas with smog problems and complying with EPA's ozone standard. In fact, about 17% of the oil and gas wells nationally are located in counties that have current design values in excess of the recently announced new ozone NAAQS threshold of 70 ppb.[30] Moreover, several states have recognized the need to control VOCs from oil and gas to address ozone issues, and adopted standards to minimize VOC emissions from both new and existing sources. For example, Colorado requirements to address these pollutants from certain sources date back to early 2004.

II. EPA Has Clear Authority to Issue Control Techniques Guidelines for the Oil and Natural Gas Industry

In this section, we describe EPA's authority to adopt CTGs for the oil and gas sector, along with the timing and applicability of these guidelines in areas with elevated levels of ozone pollution. We then briefly describe the contours of EPA's RACT assessment and the reasonableness of the agency's proposal here to align guidelines for existing sources with proposed standards for new and modified sources under section 111(b).

A. EPA's Authority to Adopt CTGs for the Oil and Natural Gas Sector

The Clean Air Act provides EPA with clear authority to issue CTGs for sources in the oil and natural gas sector. Section 7511b(a) requires that the Administrator issue CTGs for certain

[27] Utah Dept. of Environmental Quality, "Uinta Basin, Ozone in the Uinta Basin," *available at* http://www.deq.utah.gov/locations/U/uintahbasin/ozone/overview.htm.
[28] "Final Report: 2014 Uinta Basin Winter Ozone Study" (2015) Prepared by Environ for the Utah Division of Air Quality, http://www.deq.utah.gov/locations/U/uintahbasin/ozone/docs/2015/02Feb/UBWOS_2014_Final.pdf.
[29] *Mississippi Comm'n on Envtl. Quality v. EPA*, No. 12-1309, slip opinion at 46 (D.D.C., June 2, 2015) available at https://www.cadc.uscourts.gov/internet/opinions.nsf/74C882991045080985257E580051699C/$file/12-1309-1555205.pdf.
[30] Percentage of wells based on DrillingInfo HPDI data in conjunction with the EPA published 2012-2014 Design Values by county, *available at* http://www3.epa.gov/airtrends/values.html.

categories of consumer and commercial equipment and likewise authorizes EPA to "issue such additional control techniques guidelines as the Administrator deems necessary."[31]

The Administrator has reasonably exercised that discretion here. As demonstrated above, the oil and gas industry is a significant source of smog-forming VOCs. While EPA has promulgated or proposed standards to address VOC emissions from various *new* oil and gas sources, existing oil and gas sources remain largely unaddressed and are responsible for the vast majority of emissions from this sector. Moreover, available, low-cost technologies can dramatically reduce VOC emissions from existing oil and gas sources. And there is precedent for EPA promulgating CTGs for VOCs from oil and gas sources, as EPA has issued CTGs for a variety of VOC sources in the past, including natural gas processing plants located in the oil and natural gas industry.[32]

CTGs provide EPA's guidance on the technologies that the agency considers presumptive reasonably available control technology, or "RACT," for VOC source categories and for pieces of consumer and commercial equipment.[33] EPA determines RACT for each particular industry, accounting for technological and economic feasibility of control techniques.[34] States are free to propose their own approach, which is subject to EPA approval,[35] and must be consistent with the Act's RACT requirements.

The Clean Air Act requires that state implementation plans ("SIPs") include RACT for existing source of emissions in a variety of circumstances where air quality fails to meet the NAAQS. Specifically:

- Section 172 (addressing nonattainment plan requirements generally) requires that SIPs for nonattainment areas include "reasonably available control measures," including RACT for sources of emissions within the nonattainment area.[36]

- Section 182(b)–(e) (applying to states with moderate and above ozone nonattainment areas) requires that SIPs be updated to include RACT for various VOC sources, including all VOC sources covered by a CTG;[37] and

- Section 184(b) requires that states located in Ozone Transport Regions include RACT for all sources located in their state that are covered by a CTG issued before or after the 1990 Clean Air Act Amendments.[38]

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[31] 42 U.S.C. § 75411b(a).
[32] EPA, "Guideline Series. Control of Volatile Organic Compound Equipment Leaks from Natural Gas/Gasoline Processing Plants," (Dec. 1983).
[33] *NRDC v. EPA*, 571 F.3d 1245, 1254 (D.C. Cir. 2009); *see also Conn. Fund for Env't v. EPA*, 672 F.2d 998, 1003 (2nd Cir. 1982); *U.S. v. Ford Motor Co.*, 736 F. Supp. 1539, 1543 (W.D.Mo. 1990).
[34] *See* Consumer and Commercial Products, Group II: Control Techniques Guidelines in Lieu of Regulations for Flexible Packaging Printing Materials, Lithographic Printing Materials, Letterpress Printing Materials, Industrial Cleaning Solvents, and Flat Wood Paneling Coatings, 77 FR 58745, 58746-47 (Oct. 5, 2006).
[35] *Id*.
[36] 42 U.S.C. § 7502(c)(1).
[37] 42 U.S.C. § 7511a(b)-(e).

In EPA's final guidelines, we recommend the agency broadly encourage adoption of these measures, including in marginal nonattainment areas and in those areas that, while not designated nonattainment, nonetheless experience elevated concentrations of ozone. With respect to the latter, we encourage EPA to clarify how states choosing to broadly adopt these CTGs can incorporate them into programs like Ozone Advance.

B. EPA Reasonably Determined that the Same Measures Available to Reduce Emissions from New Sources Are Likewise Applicable to Existing Sources

As EPA states in the proposal, RACT is defined as the "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility."[39] Courts have recognized EPA's discretion to determine RACT based on these and other factors.[40]

Here, EPA has reasonably determined that RACT for existing sources constitutes the same suite of measures EPA proposed to control emissions from new and modified oil and gas sources. This determination is based on extensive evidence demonstrating the technical and economic feasibility of requiring the same controls for both new and existing sources. Namely, EPA considered:

- State and local regulations and permit requirements that require the control of VOCs from oil and gas sources;
- The 2012 NSPS for oil and gas sources that require control of VOCs and the underlying technical documents in support of those standards;
- Information on costs and available control technologies obtained by EPA since promulgation of the oil and gas NSPS in 2012; and
- Information on costs and available control technologies EPA relies on in support of the proposed 2015 oil and gas NSPS.

In addition to this information, EPA's determination is supported by state analyses, documenting the feasibility and cost-effectiveness of deploying the same measures at both new and existing sources. Specifically:

[38] 42 U.S.C. § 7511c(b).

[40] See e.g., *NRDC v. EPA*, 571 F.3d 1245, 1254 (D.C. Cir. 2009).

- Colorado requires the same measures to control VOC and methane emissions from new and existing storage tanks, equipment leaks, liquids unloading activities, pneumatic controllers, and glycol dehydrators;[41]

- Wyoming requires the same measures to control VOC emissions from new and existing storage tanks, glycol dehydrators, pneumatic controllers, pneumatic pumps, and liquids unloading activities;[42]

- Utah requires the same control measures to reduce emissions from existing pneumatic controllers as EPA requires for new controllers;[43]

- California requires the same type of inspection and maintenance program to identify and repair VOC equipment leaks at new and existing oil and gas facilities;[44] and

- California has proposed to require the same measures to control methane emissions from a suite of new and existing oil and gas equipment and activities, including storage vessels, compressors, liquids unloading activities, equipment leaks, and pneumatic controllers and pumps.[45]

Various technical assessments and studies likewise support application of the same control measures at both new and existing oil and gas sources. The ICF Cost Curve Report evaluated and applied the same measures to control emissions from new as existing oil and gas sources.[46]

We agree that there is substantial information documenting the "technological and economic feasibility" of applying these control measures at existing sources, and accordingly, that EPA's determination to align RACT requirements with 111(b) new source standards is reasonable.

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[41] *See, e.g.,* Colorado Department of Public Health and Environment, 5 C.C.R. 1001-9, CO Reg. 7, §§ XVII.C, XVII.F.4.b, XVII.H, XVIII.C.1.b and XVIII.C.2.b, XVII.D (Feb. 24, 2014) *available at* https://www.sos.state.co.us/CCR/GenerateRulePdf.do?ruleVersionId=5670&fileName=5%20CCR%201001-9.

[42] *See, e.g.,* Wyoming Department of Environmental Quality, Oil and Gas Production Facilities Permitting Guidance (Revised Oct. 2015), pp. 6, 11, 13, 17, 19 and 21 (storage tanks), 7, 14 and 19 (glycol dehydrators), 10, 15 and 20 (pneumatic controllers), 9, 15 and 20 (pneumatic pumps), and 12 (liquids unloading), *available at* http://deq.wyoming.gov/media/attachments/Air%20Quality/Rule%20Development/Proposed%20Rules%20and%20Regulations/Oil-and-Gas-Guidance-Revision_Draft-9-24-2015.pdf.

[43] *See* Utah Administrative Code Rule R307-502. Oil and Gas Industry: Pneumatic Controllers (effective October 1, 2015), *available at* http://www.rules.utah.gov/publicat/code/r307/r307-502.htm.

[44] *See, e.g.,* San Joaquin Valley Air Pollution Control District R. 4409 (2005); South Coast Air Quality Management District R. 1173 (1989); Santa Barbara County Air Pollution Control District R. 331 (1991); Ventura County Air Pollution Control District R.74.10 (1989).

[45] *See, e.g.,* California Draft Proposed Regulation Order, at 6 (April 22, 2015 Draft), *available at* http://www.arb.ca.gov/cc/oil-gas/meetings/Draft_Regulatory_Language_4-22-15.pdf

[46] ICF Cost Curve Report, supra note 2.

III. Comments on Specific RACT Determinations

In our comments on the proposed NSPS for methane from the oil and gas sector, we recommend that EPA strengthen a number of standards applicable to new sources. Those comments apply equally to EPA's CTG Proposal, given the effectiveness and low-cost of deploying these technologies at existing sources, as discussed above. Here we comment only on aspects of EPA's RACT determinations that differ from the proposed NSPS or are otherwise notable in light of the inventory of existing oil and gas sources.

A. *Equipment Leaks at Well Sites and Compressor Stations*

i. EPA should strengthen frequency requirements in the Proposed CTGs

EPA has proposed that semi-annual inspections using OGI and repair of leaking components constitutes RACT for existing well sites that produce at least 15 barrels of oil equivalents (per well per day) (BOE/d) and compressor stations.[47] In reaching this recommendation, EPA relied on the same technical analysis it performed for its 111(b) proposal, though here, the agency does not evaluate or explain the basis for the proposed 15 BOE/d exemption for wells.

EPA declines to adopt quarterly monitoring based on concerns that requirements may adversely affect small businesses. Specifically, EPA suggests small businesses may not have the resources or expertise to conduct OGI inspections in-house, and will therefore rely on third-party contractors, which may not be available in sufficient numbers to ensure that small businesses can timely comply with a quarterly OGI inspection requirement.[48] EPA cites this same concern in its LDAR proposal for new compressor stations.[49]

Here, as in EPA's NSPS proposal, EPA's assumption is unfounded. As we discuss in our comments on the proposed NSPS, air quality standards, such as LDAR programs, often accelerate production of these technologies,[50] and with them, the availability of service providers. Moreover, as EPA recognizes in the CTG Proposal, many operators, including small operators, already are complying with state rules that require the use of OGI or similar inspection technologies.[51] EPA specifically mentions the Colorado, Wyoming, and Ohio LDAR requirements,[52] though Pennsylvania and Utah also require LDAR inspections routinely at well sites and compressor stations for which operators may use OGI.[53] These requirements have been implemented without any evidence of hardship to small businesses.[54]

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[47] CTG Proposal at 9-31.
[48] CTG Proposal at 9-32.
[49] *See* 80 Fed. Reg. 56637, 56641 (Sept. 18, 2015).
[50] See Joint Comments Submitted by CATF, et al., on EPA's proposed NSPS for Quad OOOOa.
[51] *See* CTG Proposal, Section 9.3.1.1 at 9-16 – 9-23 and Section 9.3.2.2 at 9-30 – 9-31.
[52] CTG Proposal at 9-30 – 9-31.
[53] *See, e.g.,* Pa. Dep't of Envtl. Prot., General Permit for Natural Gas Compression and/or Processing Facilities (GP-5) Section H (1/2015); See also Utah Department of Environmental Quality, Division of Air Quality, Approval

Finally, the equipment availability argument is particularly unfounded in the context of CTG implementation, which will not take effect immediately. Indeed, EPA has proposed a RACT SIP submittal deadline 2 years after finalization of these guidelines, and this substantial lead time should alleviate any concerns with equipment availability.[55] Accordingly, EPA should strengthen LDAR frequency requirements as we recommend in our NSPS comments.

ii. EPA Should Remove the BOE/d Exemption

EPA likewise proposes to exempt wells that produce less than 15 BOE/d from its CTG LDAR guidelines, though the agency provides no rationale for this exemption. As we demonstrate in our comments on the proposed NSPS LDAR requirement, this exemption is unfounded and allows wells with potentially significant emissions to avoid inspection.[56]

The 15 BOE/d exemption is particularly problematic for existing wells. The table below shows that 79% of existing oil and gas wells produce less than 15 BOE/d and therefore would be exempt from LDAR requirements under the guidelines. Moreover, existing oil and gas wells that produce 15 BOE/d or less are responsible for 83% of emissions from all existing oil and gas wells. The proposed exemption works to exclude the majority of existing wells and emissions from LDAR requirements, and accordingly, we urge EPA to remove it.

TABLE 1:

Existing wells	Gas Wells				Oil Wells				Total	
	> 15 BOED	<= 15 BOED	% Breakdown > 15 BOED	% Breakdown <= 15 BOED	> 15 BOED	<= 15 BOED	% Breakdown > 15 BOED	% Breakdown <= 15 BOED	% Breakdown > 15 BOED	% Breakdown <= 15 BOED
National Emissions (Mg CH4)	67,868	284,539	19%	81%	7,617	71,691	10%	90%	17%	83%
Existing well counts	112,921	316,786	26%	74%	85,967	414,239	17%	83%	21%	79%
Major Operators (well count)	70,728	138,243	34%	66%	56,286	137,857	29%	71%	32%	68%
Minor Operators (well count)	42,193	178,543	19%	81%	29,681	276,382	10%	90%	14%	86%

B. *Liquids Unloading Activities*

EPA has not proposed CTGs to address liquids unloading activities nor provided any rationale for declining to do so. EPA's failure to consider this significant source is arbitrary, given the agency's recognition in its NSPS proposal that liquids unloading events are a significant source of emissions.[57]

Order: General Approval Order for a Crude Oil and Natural Gas Well Site and/or Tank Battery, II.B.10 (June 5, 2014).

[54] See Joint Comments Submitted by CATF, et al., on EPA's proposed NSPS for Quad OOOOa.

[55] See Joint Comments Submitted by CATF, et al., on EPA's proposed NSPS for Quad OOOOa.

[56] See Joint Comments Submitted by CATF, et al., on EPA's proposed NSPS for Quad OOOOa.

[57] 80 FR. 56,645; See Joint Comments Submitted by CATF, et al., on EPA's proposed NSPS for Quad OOOOa.

In our comments on EPA's proposed NSPS for oil and gas sources, we recommend that EPA address liquids unloading emissions by establishing a performance-based annual venting limitations.[58] We recommend that EPA take the same approach here. As with the other CTGs EPA recommends, the control technologies and measures available to reduce emissions from existing wells during liquids unloading activities are the same as those available for new and modified wells. For example, both Colorado and Wyoming require operators of new and existing wells to undertake steps to limit emissions from liquids unloading activities.[59]

IV. Conclusion

We greatly appreciate EPA's consideration of these comments and urge the agency to finalize rigorous, control techniques guidelines to reduce oil and natural gas sector VOC emissions.

Respectfully submitted,

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[58] See Joint Comments Submitted by CATF, et al., on EPA's proposed NSPS for Quad OOOOa.
[59] Colorado Department of Public Health and Environment, 5 C.C.R. 1001-9, § XVII.H.; Wyoming Department of Environmental Quality, Oil and Gas Production Facilities Permitting Guidance (Revised Oct. 2015), p 12.

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