

**STATE OF NEW MEXICO
ENVIRONMENTAL IMPROVEMENT BOARD**

IN THE MATTER OF PROPOSED NEW REGULATION,
20.2.50 NMAC-Oil and Gas Sector-Ozone Precursor Pollutants **No. EIB 21-27 (R)**

**ENVIRONMENTAL DEFENSE NOTICE OF INTENT TO PRESENT DIRECT
TESTIMONY**

Environmental Defense Fund (“EDF”), through undersigned counsel, as required by NMAC 20.1.1.302 and the June 8, 2021 Order of Hearing Determination and Hearing Officer Determination, submits its Notice of Intent to Present Direct Testimony in above-captioned matter. As required by applicable regulations, EDF provides the following information in this notice:

1. Identify the person for whom the witnesses will testify:

The four witnesses identified below will testify on behalf of Environmental Defense Fund. EDF is a national membership organization with more than 2.5 million members residing throughout the United States and more than 18,000 residing in the state of New Mexico, many of whom are deeply concerned about the pollution emitted from oil and natural gas sources. EDF brings a strong commitment to sound science, collaborative efforts with industry partners, and market-based solutions to our most pressing environmental and public health challenges.

2. Identify each technical witness the person intends to present, and state the qualifications of that witness, including a description of their educational and work background:

EDF intends to present David Lyon, Senior Scientist; Hillary Hull, Director of Research and Analytics; Tammy Thompson, Senior Air Quality Scientist; and Thomas Alexander, Consultant. Mr. Lyon's educational and work background is set forth in his resume, which is EDF Exhibit B.

Hillary Hull's educational and work background is set forth in her resume, which is EDF Exhibit P. Tammy Thompson's educational and work background is set forth in her resume, which is EDF Exhibit FF. Thomas Alexander's educational and work background is set forth in his resume, which is EDF Exhibit KK.

3. Include a copy of the full direct testimony of each technical witness:

As required by the June 8, 2021 Order of Hearing Determination and Hearing Officer Determination, EDF submits the full written direct testimony of David Lyon in Exhibit RR; Hillary Hull in Exhibit SS; Tammy M. Thompson in Exhibit TT; and Tom Alexander in Exhibit UU.

4. Include the text of any recommended modifications to the proposed regulatory change:

A text of the modification to 20.2.50 NMAC proposed by EDF is attached as Exhibit A.

5. List and attach all exhibits anticipated to be offered by that person at the hearing:

Below is a list of all exhibits to be offered by EDF in support of its direct testimony, which are attached as noted below.

Ex.	Description	Page
A	EDF's proposed revisions to NMED's Proposed Oil and Gas Sector-Ozone Precursor Pollutants Rule, 20.2.50 NMAC (May 6, 2021)	9
B	Resume of David Lyon	40
C	Alvarez et al., <i>Assessment of Methane Emissions from the U.S. Oil and Gas Supply Chain</i> , 361 SCI. 186-88 (2018), https://science.sciencemag.org/content/361/6398/186 .	44
D	<i>Permian Methane Analysis Project</i> , EDF, https://www.permianmap.org/ (interactive website).	N/A
E	Zhang et al., <i>Quantifying Methane Emissions from the Largest Oil-Producing Basin in the United States from Space</i> , 6 SCI. ADVANCES, Apr. 22, 2020, https://advances.sciencemag.org/content/6/17/eaaz5120 .	47
F	Robertson et al., <i>New Mexico Permian Basin Measured Well Pad Methane Emissions Are a Factor of 5–9 Times Higher Than U.S. EPA Estimates</i> , 54:21	56

	ENVTL. SCI. TECHNOL. 13926-13934 (2020), https://pubs.acs.org/doi/10.1021/acs.est.0c02927 .	
G	Lyon et al., <i>Concurrent Variation in Oil and Gas Methane Emissions and Oil Price During the COVID-19 Pandemic</i> , ATMOS. CHEM. PHYS. DISCUSS (in review, Dec. 11, 2020), https://doi.org/10.5194/acp-2020-1175 .	65
H	Cusworth et al., <i>Intermittency of Large Methane Emitters in the Permian Basin</i> , 8:7 Envntl. Sci. Technol. Lett. 567-573 (June 2, 2021), https://pubs.acs.org/doi/10.1021/acs.estlett.1c00173 .	108
I	Irakulis-Loitxate et al., <i>Satellite-Based Survey of Extreme Methane Emissions in the Permian Basin</i> , 7:27 Sci. Adv. (June 30, 2021), https://advances.sciencemag.org/content/advances/7/27/eabf4507.full.pdf .	115
J	Allen et al., <i>Methane Emissions from Process Equipment at Natural Gas Production Sites in the United States: Liquid Unloadings</i> , 49:1 Envntl. Sci. Technol. 641–648 (2015) (“Allen et al., 2015”), http://pubs.acs.org/doi/abs/10.1021/es504016r .	123
K	EPA, <i>Lessons Learned from Natural Gas Star Partners: Options for Reducing Methane Emissions from Pneumatic Devices in the Natural Gas Industry</i> , Appendix 1 (2006), https://19january2017snapshot.epa.gov/sites/production/files/2016-06/documents/ll_pneumatics.pdf .	131
L	Allen et al., <i>Measurements of methane emissions at natural gas production sites in the United States</i> , 110 PROC. NATL. ACAD. 18,023 (Oct. 29, 2013) (“Allen et al., 2013”), http://www.pnas.org/content/110/44/17768.full .	145
M	ERG and Sage Environmental Consulting, LP, <i>City of Fort Worth Natural Gas Air Quality Study, Final Report</i> . (July 13, 2011) (“Fort Worth Study”) https://www.fortworthtexas.gov/files/assets/public/development-services/documents/gaswells/ergreport-section-3.pdf .	151
N	The Prasino Group, <i>Determining bleed rates for pneumatic devices in British Columbia; Final Report</i> 19 (Dec. 18, 2013) http://www.bcogris.ca/sites/default/files/ei-2014-01-final-report20140131.pdf .	253
O	Carbon Limits, <i>Quantifying Cost-effectiveness of Systematic Leak Detection and Repair Program Using Infrared Cameras</i> (Mar. 2015), https://www.catf.us/wp-content/uploads/2014/03/CATF_Pub_CarbonLimitsLDAR.pdf .	293
P	Resume of Hillary Hull.	329
Q	Smith et al., <i>Airborne Quantification of Methane Emissions over the Four Corners Region</i> , 51 ENVTL. SCI. TECHNOL. 5832 (2017), https://www.scientificaviation.com/wp-content/uploads/2019/04/smith_4Corners_2017.pdf .	331
R	Allen et al., <i>Methane Emissions from Process Equipment at Natural Gas Production Sites in the United States: Pneumatic Controllers</i> , 49:1 Envntl. Sci. Technol. 633 (Dec. 9, 2014), https://pubs.acs.org/doi/abs/10.1021/es5040156 .	337
S	EDF source-level methane inventory at all well sites in New Mexico for 2019.	Xcel file
T	O&G Emissions Inventory Project: Greater San Juan and Permian Basin, Western Regional Air Partnership (“WRAP”), https://www.wrapair2.org/SanJuanPermian.aspx (multiple downloads).	345

U	Oil and Natural Gas Sector: Standards for Crude Oil and Natural Gas Facilities, Background Technical Support Document for the Proposed New Source Performance Standards 40 CFR Part 60, subpart OOOOa (Aug. 2015).	N/A
V	Colorado Air Quality Control Commission rule, 5 C.C.R., 1001-9, D.	392
W	Map of wells within the affected counties (proximity boundary).	408
X	Proximity Dataset Table	409
Y	Control Techniques Guidelines for the Oil and Natural Gas Industry Table 9-13, EPA (Oct. 2016), https://www3.epa.gov/airquality/ctg_act/2016-ctg-oil-and-gas.pdf .	N/A
Z	Background Technical Support Document, Proposed Reconsideration of the New Source Performance Standards 40 C.F.R. Part 60, subpart OOOOa (Sept. 2018).	N/A
AA	Analysis of OOOOa Annual Air Emission Reports, MJB&A (Dec. 11, 2018).	411
BB	Cost-Benefit Analysis, Colorado Department of Public Health and Environment (“CDPHE”) (Feb. 7, 2014).	416
CC	California Air Resources Board (“CARB”), <i>Summary of Cost, Emissions, and Cost per Ton using the 20 year and 100 year GWP, respectively</i> (revised Feb. 17, 2017).	458
DD	American Community Survey Data, United States Census Bureau, https://www.census.gov/programs-surveys/acs/data.html and Places:Local Data for Better Health, Centers for Disease Control and Prevention, https://www.cdc.gov/places/index.html (data drawn from multiple links).	N/A
EE	Cost-Benefit Analysis, Regulation 7, CDPHE (Sept. 4, 2020).	473
FF	Resume of Tammy M. Thompson	515
GG	Preventing Disease Through Healthy Environments, WHO (2010), https://www.who.int/ipcs/features/benzene.pdf .	519
HH	National Ambient Air Quality Standards for Ozone, 80 Fed. Reg. 65292, 65322 (Oct. 26, 2015), https://www.govinfo.gov/app/details/FR-2015-10-26/2015-26594 .	N/A
II	Final Report: Human Health Risk Assessment for Oil and Gas Operations in Colorado, ICF (Oct. 17, 2019) (submitted to CDPHE), https://drive.google.com/file/d/1pO41DJMXw9sD1NjR_OKyBJP5NCb-AO0I/view .	Stand alone file
JJ	State of New Mexico Environmental Improvement Board, IN THE MATTER OF PROPOSED NEW REGULATION, 20.2.50 NMAC – Oil and Gas Sector – Ozone Precursor Pollutants No. EIB 21-27 (R), Petition for Regulatory Change, https://www.env.nm.gov/air-quality/wp-content/uploads/sites/2/2021/03/2021-05-06-EIB-21-27-Petition-for-Regulatory-Change-Part-20.2.50-pj.pdf .	N/A
KK	Resume of Tom Alexander	524
LL	Pneumatic Controller Task Force Report to the Air Quality Control Commission, Colorado Air Pollution Control Division, (June 1, 2020), https://drive.google.com/file/d/1JStgs0SD2NvZiHt1Ti8QQnJAmUZxKgsn/view .	527
NN	Economic Impact Analysis (Final Analysis) for Regulation 7 (Nov. 5, 2019).	570
OO	California Air Resources Board, Standards for Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities, Section 95668(e)(2),	N/A

	https://casetext.com/regulation/california-code-of-regulations/title-17-public-health/division-3-air-resources/chapter-1-air-resources-board/subchapter-10-climate-change/article-4-regulations-to-achieve-greenhouse-gas-emission-reductions/subarticle-13-greenhouse-gas-emission-standards-for-crude-oil-and-natural-gas-facilities/section-95668-standards .	
PP	Ohio General Permit.18.1, C.1.(d)(3)(b), https://epa.ohio.gov/Portals/27/genpermit/GP18.1_F20170210.pdf .	612
QQ	Rutherford, Jeffrey S. et al., <i>Closing the Gap: Explaining Persistent Underestimation by US Oil and Natural Gas Production-Segment Methane Inventories</i> , EARTHARXIV (in review), https://eartharxiv.org/repository/object/1793/download/3784/ .	623
RR	Direct testimony of David Lyon	646
SS	Direct testimony of Hillary Hull	658
TT	Direct testimony of Tammy M. Thompson	674
UU	Direct testimony of Tom Alexander	681

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Certificate of Service

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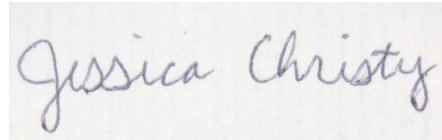
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A handwritten signature in blue ink that reads "Jessica Christy". The signature is written in a cursive, flowing style.

8/4/2021

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