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1 STATE OF NEW MEXICO ENVIRONMENTAL IMPROVEMENT BOARD 2 3 No. EIB 21-27(R) 4 IN THE MATTER OF PROPOSED NEW REGULATION, 20.2.50 NMAC - Oil and Gas Sector - 5 Ozone Precursor Pollutants 6 7 8 TRANSCRIPT OF PROCEEDINGS 9 10 BE IT REMEMBERED that on the 28th day of 11 September, 2021, this matter came on for hearing before 12 FELICIA ORTH, Hearing Officer, virtually through Cisco 13 Webex Meetings video conferencing, commencing at 9:00 a.m. 14 15 16 17 18 19 20 REPORTED BY: THERESA E. DUBOIS, RPR, CCR #29 Albuquerque Court Reporting Service, LLC 21 3150 Carlisle Boulevard, Northeast Suite 104 22 Albuquerque, New Mexico 87110 (505) 806-1202 23 abqcrs@gmail.com 24 25	1 A P P E A R A N C E S (Continued) 2 For the New Mexico Oil and Gas Association: 3 ERIC L. HISER, ESQ. BRANDON CURTIS, ESQ 4 JORDAN HISER & JOY, PLC 5080 North 40th Street 5 Suite 245 Phoenix, Arizona 85024 6 (480)505-3900 ehiser@jhjlawyers.com 7 bcurtis@jhjlawyers.com 8 DALVA L. MOELLENBERG, ESQ. GALLAGHER & KENNEDY, P.A. 9 1239 Paseo de Peralta Santa Fe, New Mexico 87501 10 (505)982-9523 dlm@gknet.com 11 For the Conservation Votes New Mexico, Dine C.A.R.E., 12 Earthworks, Natural Resources Defense Council, San Juan Citizens Alliance, Sierra Club, and 350 New Mexico 13 ("Clean Air Advocates"): 14 TANNIS FOX, ESQ. WESTERN ENVIRONMENTAL LAW CENTER 15 409 East Palace Avenue, #2 Santa Fe, New Mexico 87501 16 (505)629-0732 fox@westernlaw.org 17 DAVID R. BAAKE, ESQ. BAAKE LAW LLC 18 2131 North Main Street Las Cruces, New Mexico 88001 19 (575)343-2782 david@baakelaw.com 20 For Environmental Defense Fund: 21 ELIZABETH DELONE PARANHOS, ESQ. DELONE LAW INC. 22 1555 Jennine Place Boulder, Colorado 80304 23 (303)442-0610 elizabeth@delonelaw.com 24 25
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1 A P P E A R A N C E S (Continued) 2 For Oxy USA Inc.: 3 J. SCOTT JANOE, ESQ. 4 BAKER BOTTS LLP 5 910 Louisiana Street 6 Houston, Texas 77002 7 (713)229-1421 8 scott.janoel@bakerbotts.com 9 For Gas Compressor Association: 10 JEFFREY HOLMSTEAD, ESQ. 11 TIM WILKINS, ESQ. 12 WHIT SWIFT, ESQ. 13 BRACEWELL LLP 14 111 Congress Avenue 15 Suite 2300 16 Austin, Texas 78701 17 (512)472-7800 18 jeff.holmstead@bracewell.com 19 tim.wilkins@bracewell.com 20 whit.swift@bracewell.com 21 STUART R. BUTZIER, ESQ. 22 CHRISTINA C. SHEEHAN, ESQ. 23 MODRALL, SPERLING, ROEHL, HARRIS & SISK, P.A. 24 500 Fourth Street, Northwest, Suite 1000 25 Albuquerque, New Mexico 87102 (505)848-1800 srb@modrall.com ccs@modrall.com For Kinder Morgan, Inc., and its subsidiaries and affiliates, El Paso Natural Gas Company, LLC TransColorado Gas Transmission Co., LLC, and Natural Gas Pipeline Company of America, LLC: ANA MARIA GUTIERREZ, ESQ. HOGAN LOVELLS US LLP 1601 Wewatta Street Suite 900 Denver, Colorado 80202 (303)454-2514 ana.gutierrez@hoganlovells.com	1 I N D E X 2 PUBLIC COMMENT (9 a.m.) 3 NATE DUCKETT 2001 4 SENATOR GAY KERNAN 2004 5 HARVAN CONRAD 2009 6 DAVID COSS 2012 7 MARLA MEAD 2014 8 NMED WITNESS: 9 ELIZABETH BISBEY-KUEHN/BRIAN PALMER 10 Direct Examination by Ms. Katz 2018 11 Cross-Examination by Mr. Hiser 2039 12 Examination by the Board 2046 13 Redirect Examination by Ms. Katz 2051 14 CLEAN AIR ADVOCATES WITNESS: (Pneumatics) 15 DAVID McCABE, Ph.D. 2055 16 Direct Examination by Ms. Baake 2084 17 Cross-Examination by Mr. de Saillan 2086 18 Cross-Examination by Ms. Gutierrez 2088 19 Cross-Examination by Mr. Hiser 2094 20 Examination by the Board 21 NMOGA WITNESS: 22 JOHN R. SMITHERMAN (Pneumatics) 2106 23 Direct Examination by Mr. Hiser 2113 24 Cross-Examination by Mr. Baake 2116 25 Examination by the Board PUBLIC COMMENT: (1 p.m.) GLENN SCHIFFBAUER 2122 LUIS GUERRERO 2126 MARLA PAINTER 2128 JOHN JONES 2132 ANNA RONDON 2135

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21	NMED REBUTTAL WITNESS:		21	Exhibit 14. Reduced Emissions Completions and Smart	
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22	Rebuttal Direct Examination by Ms. Katz	2237	22	NMOGA and EPA Natural Gas STAR Program	
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23	Rebuttal Cross-Examination by Mr. Janoe	2258	23	Exhibit 15. Reducing Methane Emissions from	
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	Examination by the Board	2275	24	ConocoPhillips, NMED, and NMOGA (May 11, 2010)	2105
25	Redirect Rebuttal Examination by Ms. Katz	2277	25		
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1	PUBLIC COMMENT: (5 p.m.)		1	CLEAN AIR ADVOCATES EXHIBITS: (Continuing)	ADMITTED
2	CARLA SONNTAG	2266	2	Exhibit 16. Williams Northeast Supply	
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4	KINDER MORGAN WITNESS: (Pneumatics)		4	Nutshell," Energy in Depth (Nov. 26, 2012)	2105
5	LESLIE NOLTING		5	Exhibit 18. Photographs from Hilcorp recompletion	
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7	COMMERCIAL DISPOSAL GROUP WITNESS:		6	Exhibit 19. 5 CCR Section 1001-9:D.VI.D and	
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13	Examination by the Board	2297	12	Exhibit 23. Rebuttal Testimony of David McCabe,	
14	ELIZABETH BISBEY-KUEHN/BRIAN PALMER (Glycol Dehydrators)		13	Ph.D.	2017
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17	NMOGA WITNESS (Topic 118)			Hill, MPH PSE Health Energy	2105
18	MARISE TEXTOR		17	Exhibit 26. September 19, 2021 Joint Proposed	
19	Direct Examination by Mr. Hiser	2312		Second Revised Amendments to Proposed 20.2.50 NMAC,	
20	CERTIFICATE OF REPORTER	2326	18	Clean Air Advocates, EDF, CCP, and NAVA EP's Notice of	
21				Filing Joint Proposed Second Revised Amendments	2105
22			19	Exhibit 27. Curriculum Vitae of Daniel Orozco,	
23	E X H I B I T S		20	Ph.D.	2105
24	NOTE: No exhibits are attached physically to this		21	ENVIRONMENTAL DEFENSE FUND EXHIBITS:	PAGE
	transcript. They can be found online at www.env.nm.		22	Exhibit B - Curriculum Vitae of David Lyon,	
25	gov.opf/docketed-matters/			Ph.D.	2224
			23	Exhibit J - Allen, et al. "Methane Emissions from	
			24	process Equipment at Natural Gas Production Sites in	
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1 ENVIRONMENTAL DEFENSE FUND EXHIBITS: (Continuing) PAGE 2 Exhibit L - Allen, et al., Measurements of methane emissions at natural gas production sites in the U.S., 3 110 Proc. Natl. Acad. 18,023 (Oct. 29, 2013) 2224 4 Exhibit M - ERG and Sage Environmental Consulting, LP, City of Fort Worth Natural Gas Air Quality Study, 5 Final Report (July 13, 2011) 2224 6 Exhibit N - The Prasino Group, "Determining bleed rates for pneumatic devices in British Columbia;" 7 Final Report 19 (Dec. 18, 2019) 2224 8 Exhibit O - Carbon Limits, Quantifying Cost-effectiveness of Systematic Leak Detection and 9 Repair Program Using Infrared Cameras (Mar. 2015) 2224 10 Rebuttal Exhibit BB - Cost/Benefit Analysis, Colorado Department of Public Health and Environment 11 (Feb. 7, 2014) 2224 12 Rebuttal Exhibit RR - Direct Testimony of David Lyon, Ph.D. 2224 13 14 Rebuttal Exhibit XX - Rebuttal Testimony of David Lyon, Ph.D. 2224 15 Rebuttal Exhibit AAA - Allen, et al. "Methane Emissions from Natural Gas Production Sites in the U.S.: 16 Liquid Unloadings" 2224 17 18 19 20 21 22 23 24 25	1 MR. DUCKETT: Sure. My name is Nate, N-A-T-E; my 2 last name is Duckett, D-U-C-K-E-T-T. 3 HEARING OFFICER ORTH: Thank you very much. And 4 if you would raise your right hand. Do you swear or 5 affirm to tell the truth? 6 MR. DUCKETT: I do. 7 HEARING OFFICER ORTH: Thank you. I'll start 8 your five minutes now. 9 MAYOR NATE DUCKETT, 10 having been first duly sworn or affirmed, 11 gave public comment as follows: 12 PUBLIC COMMENT OF MAYOR NATE DUCKETT 13 MR. DUCKETT: Thank you, Ms. Orth. My name is 14 Nate Duckett, I'm the mayor of Farmington, New Mexico. 15 And I appreciate this opportunity to speak to the Board 16 regarding the methane rules that are being considered. My 17 emphasis as the mayor of this beautiful city in Northwest 18 New Mexico really builds around the economy that has been 19 built by the oil and gas industry. 20 The oil and gas industry has provided 21 opportunities for hundreds of thousands of individuals who 22 have lived in this community to make a quality of life for 23 themselves and their family, providing a future for their 24 children, and has supported communities across the state 25 through the extraction and production of these important
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1 HEARING OFFICER ORTH: Good morning. My name is 2 Felicia Orth, the Hearing Officer, appointed by the New 3 Mexico Environmental Improvement Board to conduct a 4 hearing in EIB 21-27. This is a rulemaking concerning 5 ozone precursor air pollutants. We begin every morning -- 6 this is day seven of the hearing. We begin every morning 7 with public comment every day of the hearing at 9 a.m., 8 1 p.m. and 5 p.m. 9 The best way to have me call on you is to reach 10 out to the Board's Administrator, Pam Jones. Her contact 11 information is on the EIB web page; otherwise, if you're 12 on this platform and did not reach out by email, I'm still 13 happy to take your comment, just reach out in the Chat 14 which is enabled for everyone, or call or text Pam at her 15 number (505) 660-4305. Public comment is taken under oath 16 pursuant to the Board's rule. It's taken by audio rather 17 than video, and is limited to five minutes. 18 I'll call on you in this order. Nate Duckett, 19 Gay Kernan, Harvan Conrad, David Coss and Marla Mead, and 20 again, anyone else who reaches out through Chat. So let 21 me start with Mr. Duckett. Excuse me. Mr. Duckett, can 22 you hear me? 23 MR. DUCKETT: Yes, ma'am. 24 HEARING OFFICER ORTH: Terrific. I can hear you 25 clearly. If you would please spell your name.	1 natural resources. 2 My concern is any type of additional onerous 3 regulations that would go above and beyond maybe what the 4 feds are requiring, but certainly to the point where these 5 wells that exist in San Juan Basin, which are 6 marginally-produced wells, so they're not -- they're not 7 producing a high amount of natural gas or barrels of oil a 8 day, they are very sensitive to price changes and to costs 9 associated with their operation. 10 My concern is if we see a rule get in place where 11 these stripper wells, as many of them are called here in 12 our area, were to come under a high dollar requirement to 13 institute new technologies, we could see a number of these 14 wells shut down, which could lead to a large job loss in 15 our area. You know, the Northwest corner of the state has 16 been blessed with an abundance of natural resources from 17 natural gas, oil and coal. And what has happened over the 18 last 10 to 15 years is an attack on those industries and 19 we've seen an exodus of individuals from San Juan County. 20 The most recent -- recent census shows we've lot close to 21 8,000 members of our local community. 22 Our local communities area extends beyond the 23 borders of this county. It goes into Southwest Colorado, 24 Southeast Utah, Northeast Arizona, and is an important 25 driver for local economies in all of those areas. So I

2003 1 would just ask the Board to be aware of those concerns. 2 We cannot afford to lose more individuals from our city or 3 county, let alone, the state, as we focus efforts on the 4 energy industry that may -- that may be not conducive to 5 making this an area where we can continue to be 6 competitive and provide high quality jobs, not just direct 7 jobs, but indirect jobs, which are so critical, and allow 8 us a true transition that is not one that is just a 9 jump-off-the-cliff type mentality. 10 So that is my -- that is my statement for the 11 Board. I appreciate your time. I know that they will do 12 their best to take everybody's comments and concerns into 13 it. I just want to make sure that they leave leeway for 14 the industry to drive innovations, spurring new ideas and 15 things that will help -- will help our local economy and 16 address the growing concerns with methane. 17 Also, final note: my apologies. We are looking 18 here in the Northwest corner of the state as being a hub. 19 The federal government is looking for hydrogen hubs, and 20 natural gas is a critical component for the production of 21 hydrogen and we would certainly not want to add any 22 additional costs to that as we do a transition into the 23 hydrogen economy. Thank you. 24 HEARING OFFICER ORTH: Thank you, Mr. Mayor. We 25 will move then to Senator Kernan. Let's see here.	2005 1 deep and abiding interest in the community that I serve. 2 This includes the many men and women who are part of the 3 oil and gas industry in Southeast New Mexico. My family 4 moved to New Mexico in the 1950s, where my father 5 established a rental tool company supporting the 6 activities of the industry. 7 In 1986, upon his death, I had the responsibility 8 of operating his lease, that consisted of five marginal 9 wells. Maintaining the lease was exceptionally 10 challenging for as you may recall, the plight of the oil 11 and gas industry in 1986 was dire. I worked hard to learn 12 as much as possible about the operation of a well, by 13 taking classes at the New Mexico Junior College. It was 14 important to me to maintain the lease and protect my 15 father's investment until I was able to transfer the lease 16 to new ownership. 17 Today, I speak to you with considerable concern 18 for the industry that has provided so much to my 19 community, to the State of New Mexico, and to the country 20 in general, by producing over a million barrels of oil a 21 day to support the many needs that oil and gas provide for 22 our daily use, both as an energy source and a source for 23 the manufacturing of many goods, too numerous to name. 24 I have reviewed a significant amount of 25 information related to this issue, much of which has
2004 1 Senator Kernan, I've unmuted you. Can you hear me? 2 SENATOR KERNAN: Yes, I can. Thank you very 3 much. 4 HEARING OFFICER ORTH: Oh, you're coming through 5 nice and clearly. If you would please spell your name for 6 the transcript. 7 SENATOR KERNAN: G-A-Y, K-E-R-N-A-N. 8 HEARING OFFICER ORTH: Thank you. And raise your 9 right hand. Do you swear or affirm to tell the truth? 10 SENATOR KERNAN: Yes. 11 HEARING OFFICER ORTH: Thank you very much. I'll 12 start your five minutes now. 13 SENATOR GAY KERNAN, 14 having been first duly sworn or affirmed, 15 gave public comment as follows: 16 PUBLIC COMMENT OF SENATOR GAY KERNAN 17 SENATOR KERNAN: Good morning. My name is 18 Senator Gay Kernan. I represent Senate District 42, which 19 include Lea, Eddy and Chavez Counties. I've been a member 20 of the New Mexico legislature for 19 years and currently 21 serve on the legislative finance committee. And during 22 the regular session, I serve on the senate education 23 committee and the tax business and transportation 24 committee. 25 I'm a lifelong resident of Hobbs and I have a	2006 1 already been presented to this Board. What I think I have 2 learned relative to the New Mexico Environment 3 Department's proposed ozone precursor rule, is that it is 4 a methane rule disguised as an ozone rule. This rule is 5 attempting to control both NOx and VOC. The great 6 controls that NMED proposes on VOCs is not justified in 7 reducing ozone emissions. They are costly and somewhat 8 limited in reducing those levels. 9 My question to the Board is, would the rule 10 reduce ozone levels sufficiently to meet the National 11 Ambient Air Quality Standards? Any rule proposed by NMED 12 should consider the technical practicability and economic 13 reasonableness consistent with statutory authority for 14 rulemaking. 15 This brings me to two additional points that I 16 would like to make: First, the determination by the 17 legislative finance committee, that the state stands to 18 lose over 1 billion dollars in revenue should the proposed 19 rule be adopted. 20 Secretary Kenney discounts the study of JVA as 21 being flawed, and in his response to the LFC, cites an 22 economic forecast that New Mexico is expecting to receive 23 close to 1.4 billion dollars in new revenues. In my view, 24 those revenues are dependent only on a strong oil and gas 25 industry. If this rule is adopted as is, the independent

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1 producers, who are my friends, my constituents and my 2 fellow New Mexicans, who have long contributed to the 3 wealth of this state, will be unfairly impacted and many 4 will be forced out of the industry, and the revenue to the 5 state will be reduced at a significant level. 6 My second point is related to the constitutional 7 requirement that all children in the State of New Mexico 8 receive a sufficient education, although we spend close to 9 45 percent of our state revenues on education, we continue 10 to be under the judicial order of the Martinez/Yazzie 11 lawsuit. For those on the Board who have deep 12 appreciation and understanding of our educational system, 13 we cannot adequately provide for the educational needs of 14 our children without the revenue the industry provides. A 15 1 billion dollar loss in revenue will make it impossible 16 to address the requirements of Martinez/Yazzie. 17 I propose to the Environmental Improvement Board 18 that you reconsider the agency's original agreement with 19 industry, to allow once-in-a-lifetime inspection of wells 20 that emit less than 2 tons of pollutants per year. This 21 will allow smaller operators and low-emitting wells to 22 continue production. 23 The small business examination that replaced the 24 original exemption is meaningless. I would also ask the 25 Board to consider whether New Mexico, by creating a	1 gave public comment as follows: 2 PUBLIC COMMENT OF HARVAN CONRAD 3 MS. CONRAD: Thank you. I would like to preface 4 my comments by stating that I live in Magdalena, New 5 Mexico, having recently retired from 44 years in the oil 6 and gas industry as a quality manager, which includes the 7 fields of mechanical integrity and failure analysis. 8 I am well aware that as in many other places in 9 New Mexico, the oil and gas industry contributes 10 significantly to the release of methane into the 11 atmosphere, which is contributing to climate warming, 12 which is a serious matter that we need to take into 13 account for ourselves and our future generations. 14 I am also well aware as from inside the industry, 15 that there are several comments that this -- this -- these 16 changes would cause a significant impact to the oil and 17 gas industry and would not provide a lot of benefit. But 18 I have read over the years and contributed to over the 19 years, many reports that show otherwise; that working to 20 reduce out-gassing, to stop leaks on the pneumatic and 21 other equipment, not only is not such a severe impact to 22 the oil and gas industry as we might believe, but it also 23 contributes to increasing their profits. 24 They are a hugely profitable industry and I do 25 not see a significant cost impact in making these changes.
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1 methane rule that sets an industry standard as the most 2 stringent oil and gas regulations across the country, will 3 produce any significant benefit related to emissions 4 nationwide or worldwide. Yet, it will put New Mexico at a 5 disadvantage when looking at the prosperity and quality of 6 life compared to our neighboring states. 7 I thank you very much for allowing me to submit 8 my testimony. 9 HEARING OFFICER ORTH: Thank you, Senator. 10 We move next to Harvan Conrad. Mr. Conrad, can 11 you hear me? 12 MS. CONRAD: Yes, and it's Ms. Conrad. Thank 13 you. 14 HEARING OFFICER ORTH: I'm very sorry. If you 15 would please spell your name for the transcript. 16 MS. CONRAD: Yes, my name is Harvan, H-A-R-V-A-N, 17 last name is Conrad, C-O-N-R-A-D. 18 HEARING OFFICER ORTH: And if you would raise 19 your right hand. Do you swear or affirm to tell the 20 truth? 21 MS. CONRAD: Yes, I do. 22 HEARING OFFICER ORTH: Thank you. I'll start 23 your five minutes now. 24 HARVAN CONRAD, 25 having been first duly sworn or affirmed,	1 In addition, the industry is replete with assets for 2 research and development. They have highly educated 3 engineers and chemists and people that can do the research 4 and find ways to reduce these emissions, and to 5 significantly improve the manufacture of oil and gas for 6 our society and all of the other elements that come from 7 that, without significantly impacting the earth, the 8 climate and our quality of life. 9 And so I believe that these rules are not going 10 to significantly impact them. I've heard many dollar 11 costs, but I think when we hear those dollar costs, we 12 should also take into account the significant dollar 13 profits that these companies make. And I -- I -- when I 14 compare those two, I do not see a significant challenge to 15 the oil and gas industry. 16 And as far as costing jobs and -- and -- and 17 reducing our profits to the state, I think we should take 18 a look at some other states, especially our neighbor to 19 the north, Colorado, who has already implemented rules and 20 they are not seeing a significant challenge to employment 21 or cost of living. So I think that in the end, these 22 rules will benefit us. Climate change is a serious 23 problem that we need to start looking at seriously. 24 The oil and gas industry is well positioned to do 25 research and development into how to continue to provide

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1 us with oil and gas, and all of the elements that they 2 create for our society -- the plastics, the fibers and 3 everything, and do it in a way that does not significantly 4 impact our lives, our climate, and the earth itself. As 5 having worked in the industry for 44 years, I'm well 6 aware, I believe that this is significantly possible, 7 without impacting their bottom line dollar profits in a 8 significant way, and it would be beneficial to all of us. 9 I've also seen, as I said, several reports that 10 show that when they do take these steps, they actually 11 increase their profits because they're capturing elements 12 that they can then process and sell, rather than burning 13 them off or releasing them to the atmosphere. 14 So I would like to speak in favor of these rule 15 changes as an oil and gas industry insider for 44 years, I 16 see it can be benefits to both the population of New 17 Mexico and the industry. And thank you very much. 18 HEARING OFFICER ORTH: Thank you very much, 19 Ms. Conrad. 20 We move now to David Coss. 21 MR. COSS: I'm here. 22 HEARING OFFICER ORTH: Hello. If you would, 23 please spell your name for the record. 24 MR. COSS: Yeah, it's David, D-A-V-I-D, Coss, 25 C-O-S-S.	1 achievements of my generation -- actually before my 2 generation, was the Clean Air Act. And I've seen a lot of 3 work at implementation of that in New Mexico over the 4 decades, and I think it's about time we apply that act to 5 the oil and gas industry as well. 6 The other thing I do is I go quail hunting once a 7 year down in Carlsbad. I love the Chihuahuan Desert down 8 there, but I have just seen the impacts -- the flaring at 9 night, the flaring all day long, the leaky gas lines all 10 over the area. Those impacts are personal to me, but I've 11 got to think they're even more personal to the people that 12 live down there. And so I'm in favor of these rules 13 because of the health impacts on our communities in New 14 Mexico, from being an ozone nonattainment day after day, 15 year after year, something that we used to just say we 16 can't do anything about, but here we have the 17 administration saying, actually, we think we can and we've 18 proposed a way, through regulation, to address this issue 19 that affects so many of our -- so many of our New Mexico 20 residents. 21 Finally, I'd just like to thank the Environment 22 Department. You know, I worked there for a long time. I 23 understand how difficult and complex these types of 24 regulations are, so I commend the Department for 25 proceeding with this. And I'm thankful that we're at this
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1 HEARING OFFICER ORTH: All right. If you would 2 raise your right hand. Do you swear or affirm to tell the 3 truth? 4 MR. COSS: I do swear that. 5 HEARING OFFICER ORTH: Thank you so much. I'll 6 start your five minutes now. 7 DAVID COSS, 8 having been first duly sworn, gave public 9 comment as follows: 10 PUBLIC COMMENT OF DAVID COSS 11 MR. COSS: Oh, five minutes. I thought it was 12 just two, but I'll just take a couple. Hi, Ms. Orth, it's 13 good to see you. Thank you for giving me an opportunity 14 to speak this morning. My name's David Coss and I live in 15 Santa Fe, New Mexico, but I do have some statewide 16 experience from working for the land office and the New 17 Mexico Environment Department. 18 I just wanted to speak in favor of these 19 regulations. I -- I am just very pleased that those 20 are -- that these are proposed and being looked at now. I 21 think they're essential to our quality of life in New 22 Mexico. I want to thank Governor Michelle Lujan Grisham 23 and her administration for putting -- for putting this 24 forward and doing this difficult work. 25 You know, I think one of the proudest	1 stage in New Mexico finally, where we're going to apply 2 the Clean Air Act. And I am in favor of these regulations 3 and I thank you for this opportunity to give my opinion 4 and thanks to the Environmental Improvement Board for 5 considering all of this. Thank you very much. 6 HEARING OFFICER ORTH: Thank you very much, 7 Mr. Coss. 8 The final speaker I have who requested a slot 9 this morning is Marla Mead. Ms. Mead, can you hear me? 10 MS. MEAD: Yes, I can. 11 HEARING OFFICER ORTH: All right. If you would, 12 please, spell your name for the transcript. 13 MS. MEAD: Marla, M-A-R-L-A, Mead, M-E-A-D. 14 HEARING OFFICER ORTH: Thank you. And raise your 15 right hand. Do you swear or affirm to tell the truth? 16 MS. MEAD: Yes, ma'am. 17 HEARING OFFICER ORTH: Thank you. I'll start 18 your five minutes now. 19 MARLA MEAD, 20 having been first duly sworn or affirmed, gave public 21 comment as follows: 22 PUBLIC COMMENT OF MARLA MEAD 23 MS. MEAD: I am from Silver City. I am a native 24 of Silver City, lived in New Mexico almost all of my life. 25 I've also lived in Socorro and McKinley Counties. I am a

2015 1 product of the education system in New Mexico, and I know 2 that it is greatly impacted by the amount of funding that 3 is given through the oil and gas industry. 4 My county in itself, although, not directly 5 related to the gas and oil industry has over 1,000 jobs, 6 and considering the way the mining industry also 7 fluctuates, which is what we base a lot of our income on, 8 it's important to have those jobs as stable as possible. 9 My concern is the fact that New Mexico is last in 10 so many areas across the United States. We're 48th, 49th, 11 50th in a lot of the areas, and although money is not the 12 only solution in that area, reduced money can definitely 13 affect the quality of life for both those of us now and 14 our upcoming grandchildren and on further than that. 15 So my concern is definitely -- part of my concern 16 is the funding that affects the schooling and -- and also 17 the Universities that we face, if -- if there is 18 significant cuts in the industry's ability to provide 19 that. It did provide over a third of the state's income 20 last year, and so that is important, I think, to all New 21 Mexicans. 22 One of the questions I had for the Board was, I 23 know that the Environmental Department had done a modeling 24 study on controlling oil and gas emissions, and it came 25 out that it was -- the emissions were negligible to	2017 1 hoping that the regulation will not do that. And I feel 2 that one size fits all does not, like I said before, in 3 the mining industry, one size fits all did not work there 4 and it doesn't -- I don't think it will work within the 5 gas and oil industry. I do believe there needs to be a 6 flexible consideration out there for protecting that, but 7 I do not feel that a strict adherence or strict rule will 8 help the industry across the board. 9 I want to thank you for allowing me to speak 10 today, and I am hoping that you will consider all New 11 Mexicans as you consider this rule. Thank you. 12 HEARING OFFICER ORTH: Thank you very much, 13 Ms. Mead. 14 We have come to the end of the folks who wanted 15 to offer public comment this morning. There are 11 other 16 opportunities: 9, 1 and 5 each day. So at this point we 17 will return to the technical case. 18 And the counsel agreed that today immediately 19 following public comment, we would turn to pneumatics. 20 So, Ms. Katz, I see you on screen. 21 MS. KATZ: Good morning, Madam Hearing Officer, 22 Madam Chair, members of the Board. The Department calls 23 Liz Bisbey-Kuehn and Brian Palmer once again. This -- 24 this testimony pertains to Section 20.2.50.122 pneumatic 25 controllers and pumps. The Department's testimony on this
2016 1 affecting the ozone. And so I'm going, like, okay, if 2 it's negligible effect, according to your study, why are 3 we putting in place a rule that supposedly will improve 4 the quality of air? Those two don't -- don't seem to fit, 5 to me. So I -- I have a question about the validity of 6 the rule because of that. 7 I do think we need to target pollution. I do 8 think the Clean Air Act is important, but I think we need 9 to target overall pollutants, not just one industry. And 10 it feels to me like this is just one industry and they're 11 focusing on it. Also, having worked in the mining 12 industry, I know that one size doesn't fit all. When I 13 worked there, we had mines that were less than 100 miles 14 apart, and the needs of those particular mines were 15 completely different. 16 And so, I believe that because of the difference 17 in the Permian Basin and the San Juan Basin, and some of 18 the small -- especially the small providers, that it is 19 important to consider the cost to them. Yes, maybe the 20 big producers won't be affected much, but the small 21 producers that do contribute may be gravely affected by 22 that. 23 I would hope that there won't be any duplications 24 of federal laws. I think that's very burdensome, to have 25 laws that are already in effect, be duplicated. I'm	2018 1 appears in NMED Exhibit 32, beginning on page 122 and NMED 2 Exhibit -- sorry, Rebuttal Exhibit 1, beginning on page 3 82. Ms. Kuehn will need sharing privileges. There she 4 goes. 5 And Ms. Kuehn and Mr. Palmer have already adopted 6 this testimony on the record, and I don't believe there 7 are any errors in it. So we can move forward. 8 ELIZABETH BISBEY-KUEHN AND BRIAN PALMER, 9 having been previously duly sworn or affirmed, were 10 examined and testified as follows: 11 DIRECT EXAMINATION OF ELIZABETH BISBEY-KUEHN 12 AND BRIAN PALMER (Pneumatics) 13 BY MS. KATZ: 14 MS. KATZ: Ms. Kuehn, can you please summarize 15 and discuss the equipment that is subject of this section 16 of the rule? 17 MS. BISBEY-KUEHN: Yes. Good morning, everyone. 18 This morning we'll be talking about pneumatic controllers 19 and pumps in Section 122 of our proposed rule. 20 MS. KATZ: I'm sorry to interrupt, Madam Hearing 21 Officer, Mr. Palmer -- oh, there he is. Sorry, he got on 22 okay. 23 MS. BISBEY-KUEHN: Great. Pneumatic controllers 24 and pumps are process control devices used throughout the 25 oil and gas sector to control the position of valves.

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1 Natural gas-powered pneumatic controllers use natural gas 2 as well as force to operate valves that regulate safety 3 shut downs, position, fluid level, pressure, temperature 4 and flow rate. They also may be powered by compressed 5 air. 6 They are used to control multiple processes, 7 based on a sensed process perimeter, such as a liquid 8 level in a tank or separator. They can also be used as 9 emergency shut-off devices to regulate flow, liquid 10 levels -- or liquid levels or as temperature and pressure 11 regulators. An example is a control liquid level in a 12 separator; when that liquid reaches a certain set point 13 and the separator, based on the setting of a gauge, the 14 associated pneumatic controller then sends a signal to 15 open the control valve between the separator and the tank. 16 This signal would consist of pressurized gas 17 turning the valve from the closed to the open position. 18 And when the level in the separator reaches a low level, 19 that pneumatic controller sends a signal to the control 20 valve to close and to stop flow from the separator to the 21 tank. 22 VOC and methane emissions occur from natural 23 gas-powered controllers when the pressurized gas is 24 directed to the atmosphere after the control action is 25 performed. Pneumatic pumps inject chemicals into the well	1 the amount of gas vented per actuation and the frequency 2 of actuation. Zero bleed pneumatic controllers do not 3 bleed natural gas at all. Those are self-contained units 4 that release gas back into the process. 5 MS. KATZ: Ms. Kuehn, can you discuss some of the 6 emission control options for pneumatic controllers and 7 pumps? 8 MS. BISBEY-KUEHN: Yes. There are several ways 9 to reduce emissions from pneumatic controllers, including 10 replacing high-bleed controllers with low bleed or zero 11 bleed models; using instrument error, rather than natural 12 gas to drive the controller; using nongas-driven 13 controllers, such as mechanical or electric controllers. 14 They're also requiring regular maintenance and proper 15 adjustment of pneumatic controllers, can be used to 16 minimize emissions by repairing leaks and optimizing the 17 amount of gas needed to operate the device. 18 And options for reducing emissions from pneumatic 19 pumps include using instrument error rather than natural 20 gas to drive the pumps; also using nongas-driven pumps, 21 such as electric pumps or routing emissions to a control 22 device or process. 23 MS. KATZ: And turning to Mr. Palmer, can you 24 discuss the basis for the proposed requirements for 25 pneumatics and the estimated emissions reductions and
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1 bore, circulate glycol and move liquids. VOC and methane 2 emissions occur from pneumatic pumps when the pressurized 3 gas used to drive the pumping action is released to the 4 atmosphere after the pumping action. And the quantity of 5 VOC emitted is dependent upon the type of pump employed 6 and the concentration of VOC in the gas stream. 7 Natural gas driven pneumatic controllers and 8 pumps are available in a variety of designs and are 9 characterized by their bleed rate, which is a measure of 10 how much natural gas is used to operate the controller or 11 pump. Continuously bleeding controllers or continuous 12 bleed controllers emit or bleed natural gas on a 13 continuous basis. When the process condition rises or 14 falls above or below that set point, the pneumatic 15 controller responds to return the process to the 16 predetermined set point. 17 Continuous bleed controllers may either be a 18 low-bleed controller, which has a bleed rate or an 19 emission rate less than or equal to 6 standard cubicle 20 feet per hour, or a high-bleed controller, which has a 21 bleed rate or emission rate of greater than 6 standard 22 cubic feed per hour. Intermittent controllers do not vent 23 continuously, but instead, release gas only when they open 24 or close a valve or as they adjust gas flow. 25 The bleed rate from these controllers depends on	1 costs? 2 MR. PALMER: Yes, I can. The Department's 3 proposal is based on the concepts developed by Colorado, 4 but with some important differences that were intended to 5 simplify the approach. It requires that operators convert 6 a certain percentage of their controllers to be 7 nonemitting controllers through 2030. It has graduated 8 requirements depending on the number of nonemitting 9 controllers that an operator starts with. So those with 10 lower numbers of nonemitting controllers, have a -- have a 11 lower target -- final target. 12 Some differences in between the Department's 13 proposal and Colorado's Regulation 7: The Department's 14 proposal does not exempt low-producing wells as Regulation 15 7 does. Regulation 7 has an exemption for operators who 16 have an average of low-producing wells. 17 NMED -- the Department's proposal is also based 18 on the total controller count, whereas Colorado's Reg. 7 19 is based on production amounts. And there's an important 20 distinction, is that Colorado has for several years, other 21 regulations in place that have already addressed emissions 22 from pneumatics. In particular, to reduce the frequency 23 of malfunctioning pneumatics. 24 The Department's proposal provides similar 25 flexibility as Colorado's Regulation 7. It allows

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1 operators to prioritize high-producing production 2 facilities. It includes exceptions for certain temporary 3 controllers or those used in specific circumstances. It 4 allows for emitting controllers for safety and process 5 purposes. It also contains options for complying with the 6 requirements. There's built in to the proposal an 7 off-ramp if owners meet a 75 percent target for 8 nonemitting controllers by January 1st, 2025. 9 And then, also, if after January 1st, 2027, there 10 are still some remaining units that are not cost effective 11 to retrofit, an owner may submit an analysis to the 12 Department of the retrofit costs for the Department's 13 consideration. 14 We estimated the overall emission reduction from 15 the Department's proposal to be 31,347 tons per year of 16 VOC as a result of the rule. These reductions are 17 achieved at an estimated cost effectiveness of \$2,475 per 18 ton of VOC on an overall basis. And the cost 19 effectiveness is based on costs from the U.S. EPA's study 20 called "Lessons learned: Converting gas pneumatic 21 controls to instrument air," and that was in October of 22 2006. That was part of the EPA's Natural Gas STAR 23 Program. 24 MS. KATZ: Thank you, Mr. Palmer. 25 Ms. Kuehn, can you please discuss the definitions	1 bleed rates or emission rates associated with each one of 2 those types and so I won't read this for you all, but we 3 thought that those were good additions to the regulation, 4 to the extent that they help distinguish between different 5 types of controllers. 6 And it may be ultimately that depending on how -- 7 how the Board decides to move forward on this section, 8 that certain definitions may no longer be appropriate if 9 they're not relevant to the section. 10 MS. KATZ: And can you summarize the provisions 11 of the rule, including the emission standards and the 12 revisions that NMED is proposing based on input from the 13 stakeholders? 14 MS. BISBEY-KUEHN: Yes. The Department reviewed 15 extensive comments and proposed revisions to this section 16 in the direct testimony and rebuttal testimony submitted 17 by EDF, CCP, NAVA, NMOGA, IPANM, Oxy, GCA, CDG and Kinder 18 Morgan. Those comments are far too numerous and pervasive 19 to address here today. 20 On a broader level, much of the testimony from 21 certain parties proposes adoption of the regulatory 22 approach to pneumatic controllers adopted in February of 23 2021 by Colorado as part of its Regulation 7. 24 The Department does not believe that the Colorado 25 approach is appropriate for New Mexico, and while there
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1 from Section 7 of the rule that are pertinent to the 2 pneumatic controller section in Section 122? 3 MS. BISBEY-KUEHN: Yes. The first definition is 4 bleed rate, which I just discussed, which is the rate in 5 which in standard cubic feet per hour, at which gas is 6 continuously vented from pneumatic controllers. There 7 were revisions made to clarify that many different types 8 of gas may be used in a pneumatic controller, and also 9 that bleed rate is more typically referred to those 10 continuous bleed pneumatic controllers. 11 And intermittent controllers don't vent 12 continuously and so are not appropriate to have a 13 specified bleed rate, but have an actuation rate. And 14 their emissions rate is dependent on the actuation rate 15 and the length of actuation. 16 The definition of nonemitting controller was 17 requested, and we agreed to adopt that -- that definition. 18 It clarifies that controlled devices that are routed to a 19 control -- controllers that are routed to a control device 20 can be considered a nonemitting controller for the 21 purposes of this part. 22 We also received a request from the stakeholders 23 to break out the definitions of pneumatic controllers, to 24 distinguish between high bleed, low bleed, and 25 intermittent controllers. I've already discussed the	1 are general statements about the benefits and workability 2 of the Colorado approach, they have not been ascribed or 3 demonstrated how the Department's proposal is unworkable 4 or inappropriate for New Mexico. And nor does that 5 conclusion follow from the comments that have been 6 provided. 7 The Department does not agree with the proposed 8 adoption of -- or with the parties' proposals to adopt the 9 approach taken in Colorado, which regulates pneumatic 10 controllers on the basis of the total historic liquids 11 production, rather than controller counts. 12 As stated by Mr. Palmer, Colorado has an 13 extensive infrastructure and regulatory approach to -- for 14 the pneumatic controllers that has been in place since 15 2009 and it's something that the Department's regulatory 16 approach simply -- simply lacks. And so, the result of 17 those prior regulatory efforts is that New Mexico -- or is 18 that Colorado, through Reg. 7, has already achieved 19 significant reductions in the overall number of high-bleed 20 pneumatics and their associated emissions, and has 21 implemented a robust inspection and monitoring program to 22 oversee the proper operation of those devices. 23 And, therefore, Colorado has already reduced 24 emissions by replacing large numbers of high-bleed 25 pneumatics and reducing emissions from pneumatic

2027 1 controller malfunctions before it established the newer 2 targets for nonemitting controllers based on company-wide 3 production. 4 And the Department's proposal, while premised on 5 a similar but much more straightforward concept, but not 6 used by Colorado, does not have the similar advantage of 7 building regulatory provisions off of emission 8 reductions -- reductions achieved by past regulatory 9 efforts. As a result, the proposed revisions to this 10 section or the proposed provisions of this section will 11 likely achieve higher emission reductions from pneumatic 12 controllers by targeting reductions in the overall number 13 of emitting controllers, rather than by reducing a 14 fraction of controllers represented by a certain 15 percentage of overall production. 16 At the same time, the Department's proposed 17 approach will also address emissions from pneumatic 18 controller malfunctions by establishing monitoring 19 requirements for all pneumatic controllers, to ensure 20 they're functioning properly and emitting only when they 21 should be. 22 We have received opposing comments from -- from 23 the parties. The environmental NGOs initially had agreed 24 to this concept. Since then, they have worked on a 25 different proposal with Oxy that's reflective of a	2029 1 this part. 2 Table 1 and 2 provide the schedule for complying 3 with a percentage of nonemitting controllers by certain 4 timelines. And I will go into how that calculation is 5 made on the next page. 6 But just to discuss this table in a bit more 7 detail right now, if you are an operator of a well site, 8 tank battery, gathering -- and gathering and boosting 9 station, you first determine what your total historic 10 percentage of nonemitting controllers are, and you then 11 find within that first column what your -- where your 12 percentage falls within those five categories. That 13 percentage then determines how many total required 14 percentage of nonemitting controllers you have to meet by 15 the next three deadlines. And there are staggered 16 additional requirements over those -- those time frames. 17 And so, if you were an owner of a well site and 18 you had 20 percent of your controllers were a nonemitting 19 controller, you would be in that -- that fourth line down, 20 between 20 to 40 percent. Actually, you would be in the 21 configuration first line, so you would be between zero and 22 20 percent. So your next -- your requirement would then 23 be to have a total required percentage of nonemitting 24 controllers by January 1st, 2024. 25 So if you were at 20 percent, you must retrofit
2028 1 production-based approach. In addition, NMOGA similarly 2 opposed this concept but we've -- we believe now that they 3 are in general support of the Department's concept. 4 Despite all of the different comments that we 5 have received on our concept, the Department has retained 6 kind of its original framework for regulating pneumatics. 7 We think it is a right approach for New Mexico. It works 8 best for the Department. None of the comments that were 9 provided by the other stakeholders have demonstrated why 10 this proposal isn't workable or shouldn't be adopted. So, 11 before you -- and I just wanted to kind of explain all of 12 that initially so that you have some context for 13 evaluating this section of the rule. 14 You'll be receiving different -- different 15 testimony from the other parties on their proposals later 16 on. So before -- before us on the screen are the 17 requirements for pneumatic controllers and pumps. The 18 applicability section, again, identified those units that 19 are subject to the rule. The emissions standards 20 establish the requirements for specific equipment and it 21 requires new pumps and controllers to comply with the 22 requirements of this part of pump startup. It establishes 23 a schedule for existing pneumatic controllers and it 24 requires that existing pneumatic pumps comply with the 25 requirements within three years of the effective date of	2030 1 emitting controllers to a nonemitting controller 5 percent 2 of your fleet by January 1st, 2024. And then you would 3 need to meet a 65 percent total required percentage of 4 nonemitting controller by January 1st, 2027. And then you 5 would need to meet an 80 percent requirement by January 6 1st, 2030. And I know there will be a lot of questions 7 about how all of this works, so I will be able to answer 8 any other questions as we -- at the conclusion of the 9 PowerPoint. 10 This next slide addresses the standards for 11 non -- for natural gas driven controllers, new pneumatic 12 controllers are required to have -- 13 MS. KATZ: Ms. Kuehn. I'm sorry, Ms. Kuehn. Can 14 you maybe just jump back and just mention the Table 2 and 15 just what it -- its distinction from Table 1? 16 MS. BISBEY-KUEHN: Oh, sure. So Table 1 targets 17 well sites, tank batteries and gathering and boosting 18 stations. And Table 2 targets transmission compressor 19 stations and gas processing plants. And they have 20 different sets of required percentages based on their 21 access to line power, primarily. 22 MS. KATZ: Thank you. 23 MS. BISBEY-KUEHN: Paragraph 4 establishes 24 requirements for -- or establishes the emission standards 25 for natural gas-driven pneumatic controllers. 4A requires

2031 1 new pneumatic controllers to have an emission rate of 2 zero. 4B was amended with a -- with language to require 3 that existing pneumatic controllers with access to 4 commercial line power, shall have an emission rate of zero 5 within two years of the effective date of this part. 6 We do -- we did receive a comment that this is 7 problematic and in conflict with the requirements in Table 8 2. And so the Department intends to strike that, that 9 language, and have owners and operators of pneumatic 10 controllers meet the requirement of Table 1 and 2. That 11 is more clear and that was the Department's intent. 12 Paragraph 4C outlines the process by which owners 13 and operators of existing pneumatic controller have to 14 determine what percentages they have to meet. So the 15 first step is by January 1st, 2023, those operators need 16 to determine the total controller count for all 17 controllers at all of the facilities owned by that 18 operator that commenced construction before the effective 19 date of this Part. 20 The total controller count must include all 21 emitting controllers and nonemitting controllers, except 22 that those controllers that are necessary for safety or 23 process purpose that cannot otherwise be met without 24 emitting natural gas, do not need to be included in the 25 total controller count. Those are tracked separately.	2033 1 additional retrofit requirements. 2 Paragraph D authorized the use of emitting 3 pneumatic controllers when it's based on functional needs, 4 including response time, safety and positive actuation. 5 And an owner or operator that's seeking to maintain the 6 operation of that unit must prepare and justify the need 7 for that safety or process purpose prior to the 8 installation of a new unit, or the retrofit of an existing 9 unit. And we were requiring that that justification be 10 also certified by a qualified professional or in-house 11 engineer. 12 There are also two additional paragraphs that we 13 have include based on feedback from stakeholders that -- 14 one is that temporary pneumatic controllers that are used 15 for well abandonment activities or prior to the end of 16 flow back, and controllers used in emergency shut-down 17 devices are not subject to this section. We've also added 18 a paragraph that temporary reportable controllers that are 19 on site for less than 90 days are not subject to this 20 section. 21 Paragraph 5 sets the standards for pneumatic 22 pumps, pneumatic diaphragm pumps. Paragraph 5A requires 23 that new pneumatic diaphragm pumps located at gas plants 24 have an emission rate of zero and that new pneumatic 25 diaphragm pumps located at those facilities listed, that
2032 1 The operator then has to determine which 2 controllers in the total controller count are nonemitting 3 and sum those -- and designate those as total historic 4 nonemitting controllers. And then they determine the 5 overall percentage by dividing the total historic 6 nonemitting controller count by the total controller count 7 and multiplying by 100. 8 And again, based on that percentage that's 9 calculated in the step above, the owner/operator then 10 determines which provisions of Tables 1 or 2 apply, and 11 the replacement schedule that they must meet. This 12 section contains an additional provision that if they -- 13 if an owner or operator meets at least a 75 percent total 14 nonemitting controller count by January 1st, 2025, that 15 the owner/operator has -- is not subject to the 16 requirements of Tables 1 and 2. We think that's an 17 important flexibility that streamlines the retrofit of 18 emitting -- of high-emitting controllers. 19 In addition, this regulation allows that if after 20 January 1st, 2027, an owner or operator's remaining 21 pneumatic controllers are not cost effective to retrofit, 22 that they may submit a cost analysis of retrofitting those 23 remaining units to the Department, and the Department 24 shall review those to determine whether or not those -- 25 those units qualify for a waiver from meeting the	2034 1 have access to commercial line power, have an emissions 2 rate of zero. 3 And we have added a clarifying paragraph for 4 existing pneumatic diaphragm pumps located at well sites, 5 tank batteries, gathering and boosting stations, gas 6 plants and transmission compressor stations with access to 7 commercial line power have an emission rate of zero within 8 two years of the effective date of this Part. 9 And the requirement that owners and operators of 10 pumps located at those facilities listed without access to 11 commercial line power, shall reduce VOC emissions from the 12 pumps by 95 percent if it is technically feasible to route 13 those to a control device. And if the -- if not 14 technically -- if there is a control device available, but 15 it is -- that unit is unable to achieve a 95 percent 16 emission reduction and it is not technically feasible to 17 route the pump to a fuel cell or process, that the 18 owner-operator shall still route the pump emissions to the 19 control device, and that must occur within two days of the 20 effective date -- two years of the effective date of this 21 Part. Paragraph 6, which requires the installation or the 22 use of an equipment monitoring tag has been struck. 23 And now we'll get to the general monitoring 24 requirements which are in paragraph C. The first 25 paragraph just states clearly that pneumatic controllers

2035 1 and pumps that don't use natural gas or other hydrocarbon 2 gas as a mode or source are not subject to the 3 requirements of this subsection. 4 And paragraph 2 requires owners and operators of 5 a natural gas-driven pneumatic controller subject to the 6 deadlines in the tables -- Table 1 and 2 shall monitor the 7 compliance status of each pneumatic controller. Paragraph 8 3 requires that the owner or operator conduct a monthly 9 AVO -- audio, visual, olfactory, or OGI inspection, and 10 shall also inspect the pneumatic controller and perform 11 necessary maintenance, and to maintain the unit in 12 accordance with manufacturer's specifications to ensure 13 VOC emissions are minimized. 14 For the paragraph 4, requires the owner and 15 operator to -- to monitor all of these elements, including 16 the controller and an ID number, the type of controller, 17 whether it's continuous or intermittent, and then the -- 18 either the bleed rate or the emission rate of each 19 controller. 20 Paragraph 5 establishes a requirement to inspect 21 diaphragm pumps also on a monthly basis and to conduct an 22 AVO or OGI inspection and also perform necessary 23 maintenance to ensure that VOC emissions are minimized. 24 We have added a paragraph 6 to the -- under the 25 monitoring requirements. This requires pneumatic	2037 1 this part. 2 Paragraph 2 requires owner/operators to maintain 3 the record of the total controller count for all affected 4 facilities, and the total control account must include all 5 emitting and nonemitting controllers. Paragraph 3 6 requires the owners and operators to maintain a record of 7 the total controller count of the total count of natural 8 gas-driven pneumatic controllers necessary for a process 9 or safety purpose. 10 Paragraph 4 details the schedule and the 11 compliance deadlines for each pneumatic controller. This 12 ensures that the owner -- this requires the owner/operator 13 to develop the schedule and the compliance timelines for 14 each subject controller. The paragraph 5 identifies the 15 type of records that must be kept for each inspection of 16 the unit and information on the controller type and 17 emission rate, any maintenance -- and any maintenance 18 activity associated with that controller. 19 Paragraph 6 identifies the record that must be 20 kept for pneumatic controllers that have a bleed rate 21 greater than 6 standard cubic feet per hour. Then, 22 paragraph 7 are the recordkeeping requirements for 23 pneumatic pumps. Those include natural gas -- a record of 24 those pumps that are in operation for less than 90 days, a 25 record of the control device being used to achieve at
2036 1 controllers to comply with the LDAR requirements of 2 paragraph 3 of Subsection C of 116. Those -- those 3 fugitive leak detention and repair requirements will be 4 discussed in extensive detail tomorrow. In essence, it 5 requires the use of an OGI infrared camera or other type 6 of technology to search for leaks when the unit is in 7 actuating, to -- to determine whether or not the 8 intermittent controller is malfunctioning. Again, that 9 type of controller shall only -- should only be emitting 10 when it's actuating, and so this type of leak detection 11 survey will help ensure that those units are operating as 12 intended and not malfunctioning and resulting in increased 13 emissions. 14 Paragraph 7 requires the owner or operator to 15 date and time stamp any monitoring event. And it looks 16 like we have a numbering error here, so we'll need to 17 update that number of that last requirement to update that 18 to a new paragraph 8. 19 The recordkeeping requirements, again, are 20 straightforward. They're recording the information 21 that's -- that's required to be monitored. The first 22 paragraph clears -- clearly states that the controllers 23 and pumps that are not subject to the recordkeeping 24 requirements -- I'm sorry. Nonemitting controllers and 25 pumps are not subject to the recordkeeping requirements of	2038 1 least a 95 percent emission reduction and the records of 2 the engineering assessment certification by the qualified 3 professional or in-house engineer. 4 And we received no other -- no other comments on 5 this -- this section. 6 MS. KATZ: Thank you, Ms. Kuehn. I believe 7 that's all for the Department's presentation of its 8 summary of this section. 9 HEARING OFFICER ORTH: All right. Thank you, 10 Ms. Katz, Ms. Kuehn and Mr. Palmer. 11 Ms. Katz, as I understand it, this is one of the 12 two remaining topics where we will return to 13 cross-examination by other parties and also Board 14 questioning of each panel. Okay. Before we return to the 15 new system we had for the smaller parts. 16 All right. So, please, if you are a party or 17 counsel and you have questions of the Department panel, 18 turn on your camera. I'm not seeing anyone. In that case 19 I will turn to the Board -- 20 Oh, I see Mr. Hiser. Mr. Hiser? 21 MR. HISER: Thank you, Madam Hearing Officer. We 22 have a few questions, I think, on some details to 23 understand the implementation approach that's recommended 24 by the Department. 25 CROSS-EXAMINATION OF ELIZABETH BISBEY-KUEHN

2039 1 AND BRIAN PALMER (Pneumatics) 2 BY MR. HISER: 3 MR. HISER: Thank you, Ms. Kuehn and Mr. Palmer 4 for a very concise explanation of a very complex proposal. 5 We appreciate it. Ms. Kuehn, you stated in your direct or 6 your summary that industry could retrofit or reduce 7 emissions by using a low-bleed device, but you actually 8 would mean that we would have to switch to a nonemitting 9 device to fully comply with the requirements of your 10 proposal; is that correct? 11 MS. BISBEY-KUEHN: That's correct. 12 MR. HISER: Okay. And then, is it the 13 Department's intent to allow like kind replacement of 14 existing controllers, rather than treating them as a new 15 controller? If we have to replace one, that we don't have 16 an inadvertent or unplanned conversion of a facility? 17 MS. BISBEY-KUEHN: That is correct. 18 MR. HISER: And then in proposed Section 19 20.2.50.122B.4(d,) and I don't know if you may want to put 20 that up on the screen just so you have it to look at it 21 and the Board as well. I have a couple of questions which 22 are sort of down in the weeds and I'd appreciate that. I 23 apologize for that. 24 And I'm not yet seeing the screen. 25 MS. BISBEY-KUEHN: One second.	2041 1 So the requirements should read: A pneumatic 2 controller with a bleed rate greater than zero is 3 permitted when the owner or operator has demonstrated that 4 it is required based on functional needs, including 5 response time, safety and positive actuation. And then we 6 will need to make an adjustment that the owner/operator 7 that seeks to maintain operation of an emitting 8 controller -- I actually think that language is clear as 9 is, and may not need to be revised. 10 MR. HISER: Okay. And so, I guess the next 11 question that comes up, is that this is a phase-out 12 proposal. Some controllers are going to be subject to the 13 phase-out, some will still be allowed to be existing under 14 the Department's proposal. The intent of this provision 15 is only to reach those that the operator is trying to take 16 out because it's being used for a -- as a response time 17 safety or positive actuation, correct, and not any 18 controller that's being retained under the phase-out 19 schedule? 20 MS. BISBEY-KUEHN: That's correct. 21 MR. HISER: Okay. And then -- and I'm sorry to 22 keep hammering on this, but I want to understand. What's 23 the time frame within which we need to make that 24 determination? Because this appears to imply immediately, 25 but would it only apply as we find a controller that meets
2040 1 MR. HISER: Okay. Take your time. 2 Yes, there you were. So I guess I had a couple 3 of questions on that. This provision starts off by 4 talking about a pneumatic controller with a bleed rate 5 greater than 6 standard cubic feet is permitted when the 6 owner/operator makes a certain demonstration in the first 7 sentence. And then in the second sentence, you simply say 8 an owner/operator that seeks to maintain operation of an 9 emitting pneumatic controller must prepare and document 10 the justification for the safety and process purpose. 11 In your discussion, it seemed a little bit 12 unclear whether this demonstration and professional 13 engineer or an in-house engineer certification applied to 14 all devices that we were trying to maintain, or just those 15 over 6 standard cubic feet, or how exactly it interplayed 16 with the requirements. 17 MS. BISBEY-KUEHN: Yeah, so this -- this 18 language, we intended to require a justification for 19 continuing to operate an emitting controller -- an 20 existing controller that initially was for emitting 21 controllers with an emission rate greater than 6 standard 22 cubic feet per hour, but it makes more sense to require 23 the demonstration for units that are emitting above zero. 24 And so, we will have -- we will need to make some 25 adjustments to this -- this paragraph to make that clear.	2042 1 that requirement and that we would otherwise be phasing 2 out at a facility, or do we need to try to, before this 3 rule becomes effective, identify every controller that we 4 think meets this criteria before the effective date? 5 MS. BISBEY-KUEHN: So, ideally, they would be 6 identified, along with a list of the total controller 7 count by January 1st, 2023. 8 MR. HISER: Okay. So your intent was -- is to 9 use that January 2023 -- January 1, 2023, as sort of the 10 date to complete a number of these requirements? 11 MS. BISBEY-KUEHN: Yes. 12 MR. HISER: And is that true of a number of 13 the -- a number of the monitoring provisions, I think in 14 Section C, have sort of a similar issue to them, where 15 they're just stated as the positive monitoring obligation, 16 and it appears they start as of the date of the effective 17 date. Was it your intent to wrap all of those in 18 immediately or only some of those requirements consistent 19 with maybe looking at that January 2023 date for 20 identification? 21 And this was something that struck me as I was 22 listening to your explanation. I'm sorry, we hadn't 23 raised it before. 24 MS. BISBEY-KUEHN: No. No, that's a good point. 25 And so, the monitoring requirements typically are in

2043 1 effect when the emission standard requirements are in 2 effect. But in this case, you know, I don't think it 3 makes sense to require to have delayed monitoring, you 4 know, for those units that aren't going to be covered 5 until 2027 or 2030. And so we'll have to -- we'll have to 6 look at that, but my initial reaction is that these 7 monitoring requirements, if it's not clear in the LDAR 8 section -- which I'll need to check -- I'll need to check 9 on that -- that these monitoring requirements come into 10 effect by January 1st, 2023 as well. 11 MR. HISER: Okay. We appreciate the 12 consideration of that, and just making sure that things 13 sort of line up in a logical way so we can roll the 14 program out in an organized fashion. Thank you for your 15 discussion. I really appreciate it. 16 And then in the 75 percent revision, which I 17 believe is found just up above this on the slide right 18 before, where the Department has proposed what I'll call 19 sort of an early adopter provision in B.4. (c)(5,) that if 20 the owner-operator meets at least 75 percent total 21 nonemitting controllers by January 1, 2025; there are two 22 questions on that. First is, is this a different count in 23 some way than the count that's being done for Tables 1 and 24 2, or is it just meant to be the sum total of the 25 controllers that are in Table 1 and 2? We're just	2045 1 reductions required by 2024 in the Table 1? We're just 2 trying to understand whether it's 75 percent and you're 3 complete under this provision, or if we would have to go 4 to 80 percent and stay at 80 percent thereafter? 5 MS. BISBEY-KUEHN: This is for owners and 6 operators that are meeting -- no, if you have a 75 percent 7 total nonemitting controller today, you don't 8 automatically qualify for this exemption. You do need to 9 still go through the process and determine what your total 10 percentage amount is, and then meet those, at least that 11 first set of requirements, to add an additional percentage 12 of nonemitting controllers to your fleet. 13 And then, if you have at that point, met at least 14 75 percent, you would have met the requirements of the -- 15 of the rule. 16 MR. HISER: Okay. So as the Department's looking 17 at this, if I -- if the 75 percent is determined as of 18 that date, and it determines your requirements from that 19 date going forward, but it doesn't change the requirements 20 in Table 1 as it relates to the '24 -- 2024 time frame? 21 MS. BISBEY-KUEHN: That's correct. 22 MR. HISER: Okay. We just wanted to make sure we 23 understood the Department's intent for that. 24 I believe those were the primary questions that I 25 had mostly to help us understand the intent behind your
2044 1 trying -- the wording is a little bit different and we're 2 trying to understand exactly if we're looking at a 3 different universe a little bit than in the other ones. 4 MS. BISBEY-KUEHN: I'm sorry. Can you repeat 5 your question? 6 MR. HISER: So is the -- is the count for (c)(5) 7 meant just to be the count of the total historic emitting 8 controllers or is it meant to be total -- total 9 controllers, both nonemitting and historically emitted? 10 MS. BISBEY-KUEHN: It's meant to be both. 11 MR. HISER: Okay. 12 MS. BISBEY-KUEHN: The total nonemitting 13 controllers, yeah. 14 MR. HISER: Okay. And then the question that has 15 come up and which we hoped through testimony would 16 resolve, but it didn't quite clear it up for us is, is 17 this -- is the January 1st, 2025 date and the "by" in 18 front of that, meant to mean by that date and before, or 19 does it mean as of that date only? And the reason it 20 makes a difference is because of how the -- this provision 21 would interact with Table 1. 22 In other words, so if I have a facility that's 23 at, say, 75 percent as of the effective date, does that 24 qualify for this exemption in (c)(5) immediately, or does 25 it still need to make the first level of emissions	2046 1 proposal. Thank you very much, Ms. Kuehn, Mr. Palmer, for 2 your explanation of this complex proposal. 3 HEARING OFFICER ORTH: Thank you, Mr. Hiser. Any 4 other parties with questions of the Department panel, 5 please turn on your screen. 6 Not seeing anyone, we'll turn to the Board for 7 their questions. While I'm doing that, if you're an 8 attendee on the platform with a question, please reach out 9 through Chat. 10 EXAMINATION BY THE BOARD OF ELIZABETH BISBEY-KUEHN 11 AND BRIAN PALMER (Pneumatics) 12 HEARING OFFICER ORTH: Madam Chair, do you have 13 questions? 14 CHAIRPERSON SUINA: Good morning, Madam Hearing 15 Officer. I don't have any questions at this time. 16 HEARING OFFICER ORTH: Thank you. Vice-Chair 17 Trujillo-Davis? 18 VICE-CHAIR TRUJILLO-DAVIS: Good morning. I 19 don't have any questions at this time either. 20 HEARING OFFICER ORTH: All right. Thank you. 21 Member Cates? 22 BOARD MEMBER CATES: Thank you. No questions 23 here. 24 HEARING OFFICER ORTH: Thank you. Member Bitzer? 25 BOARD MEMBER BITZER: A couple of quickies if I

2047 1 might. This is probably a no-brainer, but what's 2 instrument air? Is that nitrogen, oxygen, outside air, or 3 is there something different about it? 4 MS. BISBEY-KUEHN: No -- 5 Go ahead, Brian. 6 MR. PALMER: Instrument air just refers to 7 compressed air that has been -- that has been dried to 8 remove any moisture from it. 9 BOARD MEMBER BITZER: And then -- 10 MR. PALMER: It's compressed fresh air. 11 BOARD MEMBER BITZER: And this one is probably 12 for the Environment Department. The proposed rule gives 13 you some discretion in terms of waivers down the line. 14 Would your decision to grant those waivers or not be based 15 on how we're doing overall in terms of hitting and 16 retaining attainment? If we're -- if we're in dire 17 straits, then you're less likely to grant those waivers 18 than if we're doing well and not -- and meeting the Good 19 Neighbor rule and all of that? Is that going to be part 20 of the criteria for deciding whether to grant those 21 waivers? 22 MS. BISBEY-KUEHN: No, Member Bitzer, it will be 23 simply an economic analysis on the cost of retrofitting 24 that challenging site. 25 BOARD MEMBER BITZER: Okay. That's all I have,	2049 1 BOARD MEMBER GARCIA: That was going to be my 2 next question, whether this idea came from Colorado. So 3 for this particular provision under vi, it says, If, after 4 January 2027, the remaining replacement of pneumatic 5 controllers is not cost effective, then they get a waiver. 6 Is that -- is that forever? Is that they just don't have 7 to do it as long as that analysis -- you agree with the 8 analysis? 9 MS. BISBEY-KUEHN: It would be -- so our concept 10 allows flexibility to the owner and operators to retrofit 11 those units first at the cost effective -- at facilities 12 where the retrofits are cost effective. And so, they will 13 be able to prioritize those cost effective retrofits 14 initially and ongoing. And depending on an operator's 15 unique set of circumstances, there may be some sites where 16 it is just simply not -- not cost effective to make these 17 retrofits. 18 The waiver would be in effect -- would be 19 effective permanently, but, you know, it's -- we think 20 that this deadline is -- is appropriate because it 21 achieves -- you know, it does achieve significant amounts 22 of retrofits for those cost effective controllers 23 initially. And so, it provides, kind of, an appropriate 24 off-ramp for some of the these sites where it really is 25 simply not effective to make these kind of retrofits
2048 1 Madam Hearing Officer. 2 HEARING OFFICER ORTH: All right. Thank you. 3 Member Garcia? 4 BOARD MEMBER GARCIA: Yes, Madam Hearing Officer, 5 I do have a couple of questions. Similar to Member 6 Bitzer's question, I kind of was focusing on the provision 7 in -- and you could put up that slide if you wanted to, 8 Ms. Kuehn, the same one you had up for Mr. Hiser. Only 9 it's one more -- it's B.4(c)vi, where there is a provision 10 for a waiver. I see that the company can provide a cost 11 effective analysis. Is this something that has been in 12 rules before or is this a new thing for this particular 13 subpart? 14 MS. BISBEY-KUEHN: Thank you, Member Garcia. The 15 Department has exercised its discretion to authorize this 16 type of waiver process in a very, very limited manner. 17 And it's really in only those very, very specific 18 situations where we think it's appropriate. And so you'll 19 see we've offered this type of concept within the 20 alternative emissions standard, within the engines. And 21 we've identified it here, and those are really the only 22 places where they -- where they exist in the rule -- in 23 this rule. 24 And Colorado's regulations do contain a similar 25 type of provision.	2050 1 happen. And so, I hope that answers your question. 2 BOARD MEMBER GARCIA: Yes, it does. Thank you. 3 And, finally, if there's disagreement -- they provide a 4 cost analysis and you decide it's not adequate reason to 5 delay or not do it, do they have an appeal ability? What 6 would happen if there's disagreement? 7 MS. BISBEY-KUEHN: This is an action by the 8 Department and so that, I think that action is appealable 9 to the Department -- to a Department secretary. 10 BOARD MEMBER GARCIA: Okay. Okay. That's all I 11 have. Thank you very much. 12 HEARING OFFICER ORTH: Thank you. Member Honker? 13 BOARD MEMBER HONKER: Yeah, just one question for 14 Ms. Kuehn, I guess. Apologies if you mentioned this and I 15 missed it. But do you know where we're starting on this, 16 in terms of what the current percentage of nonemitting 17 controllers is industry-wide in the state? 18 MS. BISBEY-KUEHN: I'll refer to Mr. Palmer, he 19 may have some data to share on that. We do not have a 20 great inventory of pneumatic controllers. Much of our 21 data was relied upon by the greenhouse gas reporting 22 program, and the CT -- the control techniques guidelines 23 put out by EPA. 24 And Brian can add to that. 25 MR. PALMER: Yeah, that's actually a great

2051 1 question. And in our cost analysis, we assumed 20 percent 2 were nonemitting. All I can say, my first response might 3 be that, you know, industry members might be able to 4 provide a better answer than I can, but we used 20 percent 5 as a starting point for the cost analysis. 6 BOARD MEMBER HONKER: Okay. All right. Thanks 7 very much. That's all I have. 8 HEARING OFFICER ORTH: All right. Thank you. 9 Ms. Katz, will there be any follow-up. 10 MS. KATZ: I guess I'll just do one question for 11 Ms. Kuehn to clear up her response to Member Garcia's 12 question. 13 REDIRECT EXAMINATION OF ELIZABETH BISBEY-KUEHN 14 BY MS. KATZ: (Pneumatics) 15 Q. Would the waiver -- the decision by the 16 Department not to grant a waiver be considered a final 17 agency action that would be -- by the Department that 18 would be appealable to the Court of Appeals under the Air 19 Quality Control Act? 20 A. Yes. 21 MS. KATZ: Okay. That's all. 22 HEARING OFFICER ORTH: All right. Thank you. 23 Thank you, Ms. Katz, Ms. Kuehn, Mr. Palmer. 24 As I understand it from a text, by agreement of 25 counsel, we will be turning to Mr. McCabe because of his	2053 1 HEARING OFFICER ORTH: All right. We'll wait a 2 moment. 3 MR. BAAKE: I just tried on my laptop and I think 4 I need to be added as a presenter. 5 HEARING OFFICER ORTH: Oh, okay. I'm looking for 6 you. There you are. 7 MR. BAAKE: Fantastic. 8 HEARING OFFICER ORTH: Any time you're ready. 9 MR. BAAKE: Okay. So thank you again for 10 accommodating -- 11 MR. McCABE: Madam Hearing Officer? 12 HEARING OFFICER ORTH: Hold on. Mr. McCabe? 13 MR. McCABE: I just realized I need to be able to 14 share. 15 HEARING OFFICER ORTH: All right. I'll do that 16 right now. 17 MR. BAAKE: So thank you again everyone for 18 accommodating Dr. McCabe's schedule. And we have the 19 sharing capability? 20 MR. McCABE: No, not that I can see. Oh, I 21 have -- Mr. Baake, I think you're going to have to do it. 22 It's not letting me. 23 MR. BAAKE: Okay. Can I have the sharing 24 ability, Madam Hearing Officer? 25 MR. McCABE: It's dumping me into -- oh, wait, I
2052 1 schedule. 2 Ms. Fox? Oh, I see Mr. McCabe on the screen. 3 Looking for Ms. Fox or Mr. Baake. 4 MR. BAAKE: It's me. Hold on. My video doesn't 5 want to work. 6 MR. McCABE: While Mr. Baake is turning on his 7 video, I just wanted to take a moment to thank everyone 8 for their flexibility in allowing me to testify now and 9 work things into my schedule. 10 HEARING OFFICER ORTH: All right. And while he's 11 getting on, if you would spell your name for the 12 transcript, please? 13 MR. McCABE: Yes, ma'am. David, D-A-V-I-D. 14 McCabe, M-C-C-A-B-E. 15 HEARING OFFICER ORTH: Thank you. Raise your 16 right hand. Do you swear or affirm to tell the truth? 17 MR. McCABE: Yes, ma'am. 18 HEARING OFFICER ORTH: Thank you. Let me just 19 say, Mr. Baake, if your video is not working, we -- I 20 believe we could hear you pretty clearly. 21 MR. BAAKE: All right. It was working this 22 morning in a different platform, and I think that's the 23 problem, is that -- let me try -- I'm just trying again on 24 my laptop. And if this doesn't work, we'll just proceed 25 with the audio.	2054 1 see how to do it. You know, I can do it. Wait. 2 MR. BAAKE: Do you want me to do it, David? 3 MR. McCABE: Yeah, I can't -- it won't let me 4 turn it on. 5 MR. BAAKE: Okay. 6 MR. NYKIEL: Madam Hearing Officer? 7 HEARING OFFICER ORTH: Mr. Nykiel? 8 MR. NYKIEL: I struggled with this myself and 9 just one recommendation, I don't mean to delay things, but 10 sometimes the newer Webex platform that we're using 11 requires the person to change the preferences on their 12 computer and then restart the program, and that seemed to 13 work for me. So just a word of advice. 14 HEARING OFFICER ORTH: Thank you. That's 15 helpful, Mr. Nykiel. 16 Mr. Baake, I've transferred it back to you. 17 MR. BAAKE: Okay. Maybe this would be a good 18 time for a five-minute break while we try to figure this 19 out. I apologize for our technical incompetence here. 20 HEARING OFFICER ORTH: Let's take ten minutes and 21 come back at 10:35. 22 MR. BAAKE: Thank you, Madam Hearing Officer. 23 MR. McCABE: Thank you. 24 (Recess taken from 10:26 a.m. to 10:35 a.m.) 25 HEARING OFFICER ORTH: Let's come back from the

2055 1 break, please. All right. We're back after a short 2 break. Mr. Baake -- and let's see, I believe, Mr. McCabe. 3 MR. BAAKE: Dr. McCabe. Dr. McCabe, are you 4 here? 5 HEARING OFFICER ORTH: I'm very sorry, 6 Dr. McCabe. 7 MR. BAAKE: No problem. And I believe Ms. Fox 8 will be doing the slides for us. 9 HEARING OFFICER ORTH: All right. Oh, I see 10 Mr. McCabe needs to be made a panelist again. So sorry. 11 MR. BAAKE: So, thank you, Madam Hearing Officer. 12 We will be offering a -- starting off and offering a 13 fairly detailed summary of our written direct and our 14 rebuttal and then we would propose to move straight into 15 surrebuttal, given Dr. McCabe's availability constraints. 16 And then offer him up for questions, if that's -- if 17 that's agreeable 18 HEARING OFFICER ORTH: It makes sense to me. 19 Mr. Baake, by the way, you're a little quiet. I don't 20 know if there's a way for you to just get a little louder. 21 MR. BAAKE: I'll talk louder and try to move in a 22 little bit. 23 HEARING OFFICER ORTH: Thank you. 24 DAVID McCABE, Ph.D., 25 having been first duly sworn or affirmed, was examined	2057 1 In New Mexico, I presented to the Methane 2 Advisory Panel in 2019 and also testified before the Oil 3 Conservation Commission earlier this year regarding the 4 waste prevention rule. And my CV is attached as Clean Air 5 Advocates Exhibit No. 2. 6 Q. Thank you, Dr. McCabe. Can you please summarize 7 the opinions you will give in your testimony today? 8 A. Sure. I will explain what pneumatic devices are, 9 why these devices emit air pollution and why it is so 10 important to replace these outdated devices with 11 nonemitting alternatives. I will review NMED's proposed 12 regulation, and explain that although we very much agree 13 with the Department's goal of transitioning to zero 14 emission controllers, the schedule that the Department has 15 proposed is far too slow. 16 This is particularly clear in comparison to the 17 schedule that was recently adopted in Colorado, with 18 unanimous support of industry. I will then explain why 19 the Board should adopt the joint proposal negotiated by 20 Clean Air Advocates, EDF, Center for Civic Policy, NAVA 21 Education Project, and Oxy, and which is also supported by 22 the National Park Service. 23 This proposal is very similar to the rule adopted 24 in Colorado, although it is somewhat less ambitious. I 25 will then address the cost of retrofitting polluting
2056 1 and testified as follows: 2 DIRECT EXAMINATION OF DAVID McCABE, Ph.D., 3 BY MR. BAAKE: 4 Q. All right. Dr. McCabe, could you please state 5 your full name for the record? 6 A. David McCabe. 7 Q. And Dr. McCabe, what is your educational 8 background? 9 A. I have a B.A. in chemistry from University of 10 Chicago and a Ph.D. in physical chemistry from the 11 University of Colorado. 12 Q. And can you please describe your work background? 13 A. I am an atmospheric scientist with the Clean Air 14 Task Force. I have 11 years of experience studying 15 emissions controls for the oil and gas sector. I have 16 designed several studies on emissions of air pollutants 17 from oil and gas facilities. And I am a co-author on a 18 number of peer-reviewed publications describing those 19 studies and their findings. 20 I have provided expert advice on technical 21 comments submitted on oil and gas emission controls and 22 waste prevention measures proposed by the U.S. 23 Environmental Protection Agency, the Bureau of Land 24 Management, the States of California, Pennsylvania and 25 Colorado, and internationally in Mexico and Canada.	2058 1 pneumatic devices. I will explain that NMED's analysis 2 shows that retrofitting pneumatic -- polluting pneumatics 3 is a very cost effective way to reduce ozone forming 4 emissions, and if anything, NMED overestimated costs. It 5 is important to understand that switching to zero emission 6 controllers increases operator's revenues, because they 7 are able to sell gas that would otherwise be wasted. 8 Zero emission controllers also have lower 9 maintenance costs than polluting pneumatic controllers. 10 NMED did not account for these savings in its analysis, 11 but even so, they found that their program was cost 12 effective. Our joint proposal with Oxy should have the 13 same total costs as NMED's proposals since we are simply 14 asking for the retrofits to occur more quickly. 15 Q. Thank you, Dr. McCabe. Have you filed direct and 16 rebuttal testimony on behalf of Clean Air Advocates in 17 this matter, which can be found at Exhibits 3 and 23; 18 respectfully; is that correct? 19 A. Yes. 20 Q. Is that testimony accurate and do you adopt it 21 today? 22 A. It is accurate to the best of my knowledge and I 23 adopt both sets of testimony. 24 Q. Thank you. Dr. McCabe, we've heard a little bit 25 earlier, but could you give us a little background about

2059 1 what pneumatic controllers are and why they cause air 2 pollution? 3 A. So pneumatic controllers are devices used 4 throughout the oil and gas industry to automate and 5 control certain processes. They work by using pressurized 6 gas to open or close a mechanical device, such as a valve, 7 in response to a change in a condition such as liquid 8 level or temperature. 9 Historically, most operators have used natural 10 gas to operate their pneumatic devices. When this is 11 done, natural gas is emitted directly into the atmosphere 12 as part of the normal operation of a controller. Of 13 course, the constituents of these natural gas emissions 14 include methane, ozone forming volatile organic compounds 15 and hazardous air pollutants. 16 Since pneumatic controllers are designed to emit 17 natural gas continuously -- I'm sorry. Some pneumatic 18 controllers are designed to emit natural gas continuously, 19 while others are designed to emit only when they're 20 activated. However, these devices often malfunction, 21 causing them to emit greater quantities of pollution than 22 they are designed to emit. 23 In my written testimony, I reviewed numerous 24 studies that have shown malfunctioning controllers are 25 pervasive in the field.	2061 1 A. Yes, they can. Several technologies are 2 available that can entirely eliminate emissions from 3 gas-driven pneumatic controllers. These technologies are 4 cost effective at new and existing sites with and without 5 electricity available. 6 These options were mapped out in a report that we 7 published several years ago, which we have submitted as 8 our Exhibit No. 4. One option that operators have is to 9 use compressed air instead of pressurized natural gas to 10 operate controllers. These compressed air systems are 11 often referred to as instrument air systems, as we 12 discussed a little bit earlier, where instrument is sort 13 of a synonym for a controller. 14 And they have been used -- these compressed air 15 systems have been in use at oil and gas sites for years. 16 Recently, several systems for utilizing solar power to 17 compress air on well pads with no other available 18 electrical power have come to the market. 19 A second approach is to use electric controllers, 20 avoiding the use of pneumatic operation altogether. 21 Electric controllers suitable for solar power battery 22 systems have been developed for the upstream oil and gas 23 industry. As discussed in the New Mexico Methane Advisory 24 Panel report, solar-powered controllers are technically 25 and economically feasible alternatives to emitting
2060 1 Q. And Dr. McCabe, what do we know about the extent 2 of emissions from pneumatic controllers at oil and gas 3 facilities? 4 A. Given the extent to which these devices 5 malfunction and emit more than they are designed to emit, 6 it is very difficult to precisely quantify emissions from 7 these devices. However, based on our analysis of data 8 collected from the Permian and San Juan Basins in EPA's 9 Greenhouse Gas Reporting Program, we estimate that there 10 are over 118,000 pneumatic controllers in New Mexico that 11 collectively emit about 108,000 metric tons of methane per 12 year and about 30,000 metric tons per year of VOC. 13 This is a very important source of methane and 14 VOC. For example, NMOGA estimated that the pneumatics 15 released over 60 percent of the reported methane emissions 16 from oil and gas production in New Mexico for 2017. Other 17 sources of emissions, in particular, super-emitters are 18 missing from reported -- those reported methane emissions. 19 So we don't think that that 60 percent figure is precise, 20 but it gives us an idea of the great importance of 21 pneumatic -- of pneumatic emissions. 22 Q. Thank you, Dr. McCabe. 23 Can pneumatic controllers that emit methane and 24 VOCs be replaced with controllers that do not emit any air 25 pollution at all?	2062 1 controllers. They have been proven in production regions 2 in Alberta, for example, which is a much, much harsher 3 location for utilization of solar than New Mexico. 4 In short, there are numerous zero emission 5 alternatives to gas-driven controllers, and operators are 6 using them in hundreds of sites in the U.S. and Canada. 7 As we explained in a report back in 2016, zero emission 8 solutions are available today and are cost effective to 9 implement in nearly every situation. 10 Q. In general, is retrofitting natural gas-driven 11 pneumatic controllers with zero emission alternatives a 12 cost effective option for reducing emissions? 13 A. Yes, it is. When operators switch to zero 14 emission controllers, they're able to capture and sell gas 15 that would otherwise be wasted and they also reduce 16 maintenance costs. For these reasons and other reasons, 17 retrofitting pneumatic devices is a highly cost effective 18 way to reduce air pollution. 19 Q. And we heard early today a little bit about 20 Colorado's program. Could you describe a little bit, the 21 program Colorado has for retrofitting polluting pneumatic 22 controllers? 23 A. Yes. Earlier this year, Colorado's Air Quality 24 Control Commission adopted regulations that require 25 operators to retrofit their facilities to eliminate

2063 1 venting from a substantial portion of their controllers 2 over a two-year period. These regulations were the 3 product of extensive negotiations between industry, 4 environment organizations, local governments and 5 Colorado's Department of Public Health and Environment. 6 They were unanimously adopted by the commission without 7 any objections from any of the parties. I participated in 8 the negotiations that crafted these regulations. 9 Q. Dr. McCabe, let me stop you there and see if we 10 can get our slide up. 11 MR. BAAKE: Tannis, are you there? Slide two. 12 Q. (BY MR. BAAKE) Okay. Please continue. 13 A. Yeah. And so I'll start off by talking about 14 compressor stations. And this is actually specific to 15 gathering compressor stations. For gathering compressor 16 stations, these regulations require operators to look at 17 all of the controllers they use and determine what 18 percentages of them are already nonemitting. 19 The operator must then retrofit a certain 20 percentage -- a certain additional percentage of its 21 controllers to make them nonemitting, as shown in this 22 table. Operators that start with a lower percentage of 23 nonemitting controllers must -- must retrofit more 24 controllers in each period than operators that start with 25 a higher percentage, but every operator must perform some	2065 1 row again -- must convert well sites representing an 2 additional 40 percent of its liquids production by May 3 2023. Again, that's in the last column. And all the 4 other percentages are also shown in this table, from the 5 Colorado rule. 6 Q. And Dr. McCabe, what is NMED's current proposal 7 with respect to requiring operators to retrofit these 8 pneumatic controllers? 9 A. Well, first, it cites with commercial line and 10 electrical power. NMED requires that the pneumatic 11 controller have an emissions rate of zero. Operators at 12 these sites must convert any emitting controller to 13 instrument air, electric controls and actuators where they 14 can capture emissions from controllers, or otherwise 15 prevent emissions. 16 And I -- I understand based on the testimony this 17 morning, that NME -- NMED intends for these retrofits to 18 happen over two years. Second, and most important, NMED 19 requires operators at sites without commercial line and 20 power to convert a portion of their fleet of controllers 21 to nonemitting; i.e., air-driven or electric. 22 Operators are required to convert controllers 23 according to two schedules in the proposal: One schedule 24 applies to production facilities and one to gathering 25 compressor stations. Both schedules require operators to
2064 1 retrofits. 2 For example, if all of an operator's controllers 3 are emitting, so it has no nonemitting controllers, it 4 would be in the bottom row of this table, and, therefore, 5 it must retrofit 45 percent of its controllers by May 6 2023, which you can see in the last columns. If an 7 operator starts between 20 and 40 percent nonemitting, it 8 would be in that second from the last row. And in that 9 case it must retrofit an additional 40 percent of its 10 controllers by May 2023, again, in the last column. 11 Also for each cohort, there's a maximum required 12 percentage for each target year. This provision is in the 13 program so that operators that start near the top of one 14 cohort, are not required to pass operators that are in the 15 bottom of the next higher cohort, which wouldn't be 16 sensible. 17 For wellhead sites, the program is similar, 18 except that operators are required to retrofit entire 19 facilities, and the percentage is based on the operator's 20 total liquids production, which is liquid hydrocarbons 21 plus produced water. 22 So, the next slide please. For example, an 23 operator that currently produces ten percent of its total 24 liquids at well sites that have fully converted to zero 25 emissions controllers -- so that would be in the bottom	2066 1 increase portions of their fleets by three deadlines; as 2 shown this morning, January 1st of 2024, 2027 and 2030. 3 And then, for both schedules, the portion of controllers 4 that operators are required to convert depends on the 5 portion of the operator's controllers that are already 6 nonemitting. 7 Q. Thank you, Dr. McCabe. 8 And how does NMED's approach compare to 9 Colorado's? 10 A. So Colorado's rules and the NMED proposal both 11 require operators to comply with the schedule for 12 replacing controllers. The specific requirements for an 13 operator depend on the fraction of the operator's valve 14 controllers that are already nonemitting, with the 15 operator's assigned to one of five cohorts, determined by 16 that fashion. So those are -- those are -- that overall 17 structure is very similar. 18 The critical difference is that NMED's proposal 19 is much, much slower than the approach adopted unanimously 20 and with industry support in Colorado. This is clearly 21 shown in this slide, which compares the near term 22 requirements under the Colorado rule and under NMED's 23 proposal for gathering compressor stations. For example, 24 an operator with no nonemitting controllers would be in 25 the bottom row again.

2067 1 And under the Colorado rule, they would have to 2 convert 45 percent of their controllers by May 1st, 2023, 3 which is shown in that left-hand column for Colorado. 4 Under NMED's proposal, those operators would only have to 5 convert 25 percent of their controllers by January 1st, 6 2024. An operator with 15 percent nonemitting controllers 7 today would be in that same bottom row cohort. So under 8 the Colorado rule, they would also have to convert an 9 additional 45 percent of their controllers that -- by 10 2023, but New Mexico would only require them to convert an 11 additional 10 percent of their controllers by January of 12 2024. That's because they're in that bottom cohort, so 13 they only need to get to 25 percent under the New Mexico 14 rule, and they're already at 15 percent, so they just have 15 to add 10 percent. 16 And finally, just one more example; an operator 17 with 25 percent nonemitting controllers now would have to 18 convert an additional 40 percent by May of 2023 in 19 Colorado, but only an additional 20 percent to get to the 20 45 percent threshold under the New Mexico proposal. 21 Clearly, the NME -- NMED proposal is much weaker for 22 initial years and would only require operators to catch up 23 to Colorado 2023 requirements by 2027. 24 Each additional year of delay means thousands of 25 additional tons of VOC and tens of thousands of additional	2069 1 For example, under this -- the joint proposal 2 with Oxy, a producer that currently produces 10 percent of 3 its liquids at sites that it converted to zero emission 4 controllers, so it's again in the bottom row, would have 5 to convert 35 percent in the joint proposal column by 6 December 2023. 7 In Colorado, such an operator would need to 8 convert an additional 40 percent and, of course, their due 9 date is eight months earlier. So our proposal gives 10 operators more time than they have in Colorado, but it is 11 an improvement on NMED's proposal; although I do note that 12 the instruction is based on liquids rather than controller 13 account for production. 14 And just once more, I want to note that this 15 proposal is supported by Clean Air Advocates, EDF, the 16 Center for Civic Policy, NAVA Education Project, along 17 with Oxy, a major producer, and the National Park Service. 18 Q. Thank you so much, Dr. McCabe. 19 Now I'm shifting gears a little bit. I want to 20 ask about LDAR or leak detection and repair. I understand 21 that Clean Air Advocates and Oxy and EDF have also agreed 22 to require operators to include pneumatic devices in their 23 leak detection and repair program and that NMED has 24 proposed to adopt this proposal. Why is this so 25 important?
2068 1 tons of methane will be emitted. The environmental and 2 public health impact of that pollution, unfortunately, 3 aren't reversible. 4 A second difference that I'll mention is that -- 5 I want to emphasize this just briefly; that Colorado 6 requires operators to increase their fraction of 7 nonemitting controllers by 6 percent, those cross-ups in 8 that table, while NMED requires operators to increase 9 their fraction to a fixed percentage. This difference 10 makes NMED's proposal both less efficient and less fair 11 than Colorado. 12 Finally, we've already discussed the difference 13 between the structure based on controller count versus 14 liquids production. The key difference really is that New 15 Mexico's rule is just much slower than Colorado. 16 Q. Thank you, Dr. McCabe. 17 So would the joint proposal developed by Clean 18 Air Advocates and Oxy make NMED's regulation more similar 19 to what Colorado has adopted? 20 A. Yes, it would. The agreement will result in a 21 more rapid transition to zero emission controllers for 22 well pads than the NMED proposal; although, it will still 23 be slower than what is required in Colorado. The 24 agreement will also ensure that this phase-out occurs in a 25 more efficient and fair way.	2070 1 A. As I explained in my written testimony and noted 2 above, much of the pollution we observe from pneumatic 3 devices is due to malfunctions. The best way to limit 4 emissions associated with pneumatic controllers is the 5 retrofit to nonemitting designs, but all proposals on the 6 table will leave tens of thousands of gas-driven 7 controllers operating in New Mexico for years. 8 Inspecting these devices to find and repair 9 malfunctions is a critical step that can reduce emissions 10 from devices that haven't yet been retrofitted. So, yes, 11 these devices should be included in each operator's LDAR 12 program. 13 This is something that Colorado has required in 14 the nonattainment area since 2018, and it extended it to 15 the rest of the state in 2020. So, yes, this is an 16 important step to reduce emissions from malfunctioning 17 controllers. 18 Q. Now, let's talk a little bit about the cost of 19 the various proposals. Did NMED estimate the cost of its 20 draft provision? 21 A. Yes. NMED estimated the cost per ton of VOC 22 reduced under its pneumatics proposal. For wellhead and 23 tank battery sites, it estimated a cost of \$2,745 per ton 24 of VOC reduced. For gathering and boosting stations, the 25 cost -- the cost was \$2,596 per ton. These are reasonable

2071 1 costs. 2 Q. And is NMED's methodology for estimating these 3 costs reasonable? 4 A. NMED did use a reasonable approach to estimated 5 costs -- to estimate costs, but it overestimated the net 6 costs of pneumatic controller retrofits for several 7 reasons. First, NMED did not consider the increased 8 revenue that operators receive by selling gas that would 9 otherwise vent. 10 Second, NMED did not consider the maintenance 11 savings that operators realize after switching to electric 12 controllers or instrument air compressors. These savings 13 can be significant since constituents of natural gas, 14 especially raw gas used at production and gathering sites, 15 can be chemically incompatible with components of the 16 controller, and droplets of liquid that condense in 17 components using raw natural gas can interfere with 18 operation of the controllers. 19 There are additional specific reasons that NMED 20 overestimated the cost of retrofitting sites that are 21 discussed in my written testimony. If these corrections 22 were made, the analysis would show that the retrofit is 23 even more cost effective than NMED's analysis suggested. 24 Q. And how would the changes that Clean Air 25 Advocates and Oxy propose for the retrofit provision	2073 1 not vented. 2 And finally, Bauer greatly overestimated the cost 3 of equipment in installations. One particularly notable 4 problem with Bauer's cost estimate for instrument air 5 systems is that it was based on air compression equipment 6 that is sized to provide a far, far higher volume of 7 compressed air to the pneumatic controllers at a site than 8 those pneumatic controllers would need based on Bauer's 9 claims about emissions from those controllers. 10 Q. Thank you, Dr. McCabe. 11 I want to ask you about a particular proposal 12 that NMOGA has set forth to create an exemption from the 13 pneumatics retrofit program. Specifically, NMOGA proposes 14 to exempt operators that produce less than 15 barrels of 15 oil equivalent per well per day from the retrofit program. 16 Do you agree with this proposal? 17 A. No, I do not. Although Colorado has an exemption 18 that is similar to the one that NMOGA proposes, it would 19 not be appropriate to adopt this exemption in New Mexico. 20 First, NMOGA is proposing to add this exemption 21 to a proposal that is already considerably weaker than the 22 Colorado rule. Since the NMED proposal is weaker, it is 23 easier to comply with and reduces emissions less than the 24 Colorado rule. 25 Even if the Board adopts the changes, we jointly
2072 1 change the costs of the -- of the provision? 2 A. So the changes that we propose for the pneumatic 3 controller retrofit provision simply accelerate the 4 transition already required by NMED's proposal. The 5 required pace of retrofits under the program would still 6 be quite reasonable and somewhat slower than that required 7 in Colorado. 8 This accelerated schedule would, therefore, not 9 increase overall costs in a significant way; at most, it 10 would require operators and owners to incur some of these 11 costs sooner than they otherwise might, but it would -- 12 will also increase cumulative environmental benefits and 13 ensure that those benefits are reached sooner. So, 14 therefore, the changes we propose won't materially change 15 the overall cost effectiveness of the program. 16 Q. And Dr. McCabe, you provided extensive rebuttal 17 to NMOGA's cost analysis. Can you briefly summarize it? 18 A. Definitely. NMOGA's Consultant Bauer made a 19 variety of erroneous assumptions that lead it to 20 overestimate equipment and installation costs. Most 21 importantly, Bauer uses an emissions factor for 22 intermittent bleed controllers that have been plausibly 23 low for New Mexico. It also ignores all of the way that 24 the NMED overestimated costs, including the failure to 25 factor in the value of the gas that can be sold if it is	2074 1 propose with Oxy, the rule will still be less stringent 2 than the Colorado rule. In this context it would be 3 inappropriate to simply add in the exemption from the 4 Colorado rule. Second, the firms that qualify for the 5 exemption from the Colorado retrofit requirement for 6 operators of low-producing wells are limited in size. 7 In New Mexico, much larger firms would qualify 8 for the exemption that NMOGA proposes. For example, 9 NMOGA's exemption would apply to Hilcorp Energy Company, 10 which operates over 11,000 wells in Col -- in New Mexico. 11 Excuse me. Hilcorp generates hundreds of millions of 12 dollars in revenue every year. They can certainly afford 13 to replace polluting pneumatic devices at these sites. 14 According to our analysis, the largest firm 15 qualifying for the exemption in Colorado has about a fifth 16 of the wells that Hilcorp produces, and it produces about 17 40 percent less hydrocarbons per well than Hilcorp 18 produces from its wells. 19 Finally, the exemption would be much more 20 damaging in New Mexico than it is in Colorado because a 21 larger appropriation of New Mexico wells are owned by 22 operators that would qualify for the exemption that NMOGA 23 proposes. Our analysis shows that 187 operators in 24 Colorado who collectively operate about 15,000 wells would 25 qualify for the exemption.

2075 1 In contrast, about 312 operators in New Mexico 2 would qualify, meaning that over 32,000 wells could be 3 exempt from the proposal. That is more than half -- 57 4 percent -- of the oil and gas wells that were operating in 5 New Mexico in 2019. So NMOGA's proposal would create an 6 exemption that would prevent well over half of the 7 benefits of the rule. 8 In summary, the exemption NMOGA proposes would 9 exempt twice as many wells as would be -- as are exempted 10 by the Colorado rule and would exempt much larger 11 operators. It is not appropriate for New Mexico and the 12 Board should not adopt it. 13 Q. Thank you, Dr. McCabe. 14 And just one more question before we turn to the 15 surrebuttal. I want to ask you about Kinder Morgan's 16 emissions. Why do Clean Air Advocates oppose Kinder 17 Morgan's proposal to exclude a transmission compressor 18 station from the pneumatics division? 19 A. So it's particularly feasible to retrofit 20 pneumatic controllers at transmission compressor stations 21 because these stations are typically large and have access 22 to electric power. Indeed, NMED's analysis indicates that 23 all transmission compressor stations in this state have 24 access to electric power. 25 As I've explained in my written testimony, access	2077 1 retrofitting problematic polluting pneumatic devices is a 2 logical and straightforward way to reduce these emissions. 3 And, of course, these devices also emit significant 4 amounts of methane. While it is not the specific focus of 5 this rulemaking, reducing methane is a critical cobenefit 6 of this rule. Including transmission compressor stations 7 in the retrofit program is just common sense. 8 So, in summary, these facilities shouldn't be 9 exempted from this straightforward feasible requirement 10 just because their VOC emissions are more diluted with 11 methane. 12 Q. Thank you, Dr. McCabe. 13 MR. BAAKE: And Madam Hearing Officer, we will 14 now do our surrebuttal. 15 Q. (BY MR. BAAKE) Dr. McCabe, did you review the 16 rebuttal testimony of Adam Meyer filed by NMOGA? 17 A. Yes, I did. 18 Q. Can you summarize what he had to say? 19 A. Yes. Mr. Meyer asserts that there are economic 20 hurdles associated with transitioning to zero emission 21 controllers that I did not fully consider and that NMED 22 did not consider. Examples of the economic challenges 23 that Mr. Meyer's cites, include supply change issues and 24 personnel issues. Mr. Meyer faults my analysis for not 25 taking into account the COVID-19 pandemic, which he
2076 1 to electric power makes it especially easy to retrofit to 2 nonpolluting controllers. Kinder Morgan did not introduce 3 any evidence of transmissions stations that have access to 4 elec -- that did not have access to electric power. To 5 the contrary, their expert, Leslie Nolting testified that 6 the company has commercial power at its compressor 7 stations and that it has emergency engines to sustain 8 essential systems in the event commercial power is lost. 9 Given that it is straightforward to convert 10 nonemitting -- to nonemitting controllers at these 11 facilities, performing these retrofits will reduce 12 significant amounts of VOC and methane pollution. These 13 facilities should be required to perform these retrofits. 14 As I explained in my written testimony, based on 15 precedent from Colorado for gas processing plants, which 16 are also large sites with electrical power available, six 17 months is sufficient time to implement these retrofits. 18 Kinder Morgan doesn't dispute that it is technically 19 feasible to retrofit transmission compressor stations, nor 20 does it argue that the costs are too high. Its argument 21 is based on the fact that the natural gas being moved 22 through the transmission sector has a lower portion of 23 VOCs than the gas farther upstream. 24 But we need to be clear: transmission compressor 25 stations are still a significant source of VOC and	2078 1 asserts will contribute to supply chain complications. 2 He asserts that many operators will need to hire 3 third-party engineers to perform electrical upgrades and 4 speculates that there may be a shortage of available 5 engineering firms -- excuse me -- if the rollout of the 6 rules is too short. He also argues that accelerating the 7 schedule for transitioning to zero emissions controllers 8 as we propose, could cost more because vendors typically 9 have expedited fees. 10 Based on these concerns, Mr. Meyer argues it is 11 not feasible to convert pneumatic devices at transmission 12 compressor stations within six months. He doesn't, 13 however, specifically discuss the schedule for the 14 retrofit provisions for well pads in our proposal. 15 Mr. Meyer also asserts that there are technical hurdles 16 that exist at many sites that do not have access to 17 electric power. Among other things, he suggests that 18 using solar panels to power electric controllers may not 19 guarantee proper operation or safe operation. He states 20 that if a valve requires a quick reaction time, for 21 example, if it must actuate in 3 seconds or less, it could 22 require a large print, which a solar-powered system may 23 not be able to provide. 24 He also notes that it may be a challenge to 25 design a facility that has 3-day autonomy, which I

2079 1 understand to mean a facility that can operate for three 2 days under conditions where the solar panels are unable to 3 generate electricity. 4 Q. So let's start by talking about the economic 5 concerns. First of all, is there any precedent for 6 requiring operators to transition to zero emission 7 pneumatics in a year or less? 8 A. Yes, there is. As I explained in my direct 9 testimony, Colorado adopted a rule in December of 2017, 10 that gave gas processing plants in the Front Range 11 nonattainment area six months to convert all of their 12 pneumatic controllers to nonemitting technology. 13 Q. Are you aware of any operators that were not able 14 to complete both retrofits within the required six months? 15 A. No. 16 Q. What about the production sector; is there any 17 preface for a schedule like the one that we have jointly 18 proposed with Oxy? 19 A. Yes. As I have explained, the rule Colorado 20 adopted earlier this year, which represented a consensus 21 proposal of industry, governmental and environmental 22 stakeholders, represents a more rapid transition than the 23 one we had proposed with Oxy. 24 Q. Did any operator oppose the Colorado proposal on 25 the basis of supply chain or personnel issues or claim	2081 1 earlier, you set forth several reasons why you believe 2 NMED overestimated the costs of retrofitting pneumatic 3 devices. Can you just quickly remind us why you believe 4 that that was an overestimate? 5 A. Yes. We listed at least four reasons in our 6 written direct testimony. First, NMED fails to account 7 for the increased revenue operators obtain when they 8 retrofit to zero emission controllers and are able to sell 9 the gas that they would otherwise vent. 10 Second, NMED fails to account for maintenance 11 savings that operators realize when they convert. Third, 12 NMED assumes that all sites without electricity will use 13 instrument air systems, when it will often be more cost 14 effective to use electric controllers at certain sites. 15 And last, or fourth, NMED implicitly assumes that 16 operators will conduct several partial retrofits at each 17 sites, instead of retrofitting all of the controllers at a 18 site at the same time, just given the structure of the 19 cost calculation. 20 Q. So Mr. Meyer stated in his rebuttal that he 21 disagreed with you, that NMED's estimate was too high. 22 Did he address any of these specific reasons that you just 23 laid out? 24 A. No. To my knowledge, he never addressed the 25 increased revenue argument, the maintenance savings
2080 1 that it would be technically infeasible? 2 A. No, there was no option to the proposal. 3 Q. Did Mr. Meyer explain why he thinks it would not 4 be possible to implement a proposal in New Mexico that is 5 slightly weaker than the proposal that industry agreed to 6 in Colorado? 7 A. No. I -- I did not see any discussion of the 8 Colorado rule in that testimony. 9 Q. Now, Mr. Meyer argues that the COVID-19 pandemic 10 has caused supply chain challenges that make it difficult 11 to predict how quickly operators will be able to acquire 12 the technology they need to transfer to zero emission 13 devices. 14 Did the pandemic exist when Colorado adopted its 15 comprehensive retrofit program in February of 2021? 16 A. Certainly. Operators had been dealings with 17 COVID-19 for almost a year when the Colorado rule was 18 adopted. 19 Q. And did any operator suggest that the pandemic 20 would make it impossible to comply with that -- that 21 program? 22 A. No. No party objected to the Colorado rule, 23 which as we've stated, is more stringent than the proposal 24 we have jointly put forth here with Oxy. 25 Q. And in your direct testimony, which we reviewed	2082 1 argument, the ability to use electric controllers instead 2 of instrument air systems, or the ability to retrofit 3 sites one at a time instead of this partial retrofit that 4 NMED implicitly models. 5 Q. Thank you, Dr. McCabe. 6 I have -- we have two more questions, for those 7 keeping score at home. Do you have any response to 8 Mr. Meyer's assertion that solar power is not viable for 9 controllers that must activate quickly? 10 A. Yes. Electric controllers systems powered with 11 solar have been in service for years at Northern Alberta 12 production sites which are far, far more challenging for 13 solar power than New Mexico locations for several reasons: 14 Having to do with sunshine and snow cover and battery -- 15 battery performance in extreme cold. 16 These systems have been proven at a variety of 17 production sites, including newer, higher production 18 sites, sites where large valves must quickly actuate. 19 Additionally, it is important to note that this is 20 possible to retrofit controllers even at sites that do not 21 have access to the grid, by using a solar system to 22 compress air. This compressed air can then be used to 23 activate the controller, which can allay operator concerns 24 about rapid actuation. 25 Important point is that there are zero emission

2083 1 options available for virtually every type of controller 2 at virtually every facility. So there really is not 3 technical reason we can't be converting the lion's share 4 of controllers in the field. That is why industry was 5 able to sign on to the Colorado rule adopted earlier this 6 year. 7 Q. And finally, Dr. McCabe, Mr. Meyer stated that he 8 was not able to find anything in your direct testimony to 9 support your assertion that thousands of additional tons 10 of VOCs and tens of thousands of additional tons of 11 methane will be emitted if the retrofit program is 12 unnecessarily delayed. Can you provide the support for 13 that assertion? 14 A. Certainly. In my direct testimony at pages 7 and 15 8, and earlier in my oral testimony today, I explained 16 that there are about 118,000 pneumatic controllers in New 17 Mexico, and that we estimate that they collectively emit 18 about 108,000 metric tons of methane and 30,000 metric 19 tons of VOC per year. 20 Each additional year you wait to retrofit means 21 an additional years of emissions. Under our proposal, 22 less than 10 percent of the controllers in the state would 23 be emitting after 2027. Under NMED's proposal, some 24 operators might have 35 percent of their controllers still 25 emitting in 2027. They wouldn't catch up to our target	2085 1 You're breaking up quite a bit. I'm wondering if it would 2 help to turn off your video. I'm sorry. 3 MR. DE SAILLAN: I apologize, Madam Hearing 4 Officer. I will do that. 5 Q. (BY MR. DE SAILLAN) Again, good morning, 6 Dr. McCabe. My name is Charles de Saillan; I'm an 7 attorney representing the New Mexico Environmental Law 8 Center and I just have a couple of clarifying questions 9 here. 10 MR. DE SAILLAN: Is that -- am I coming in well 11 now? 12 HEARING OFFICER ORTH: Yes. Thank you. 13 MR. DE SAILLAN: Thank you. 14 Q. (BY MR. DE SAILLAN) So, first of all, 15 Dr. McCabe, you mentioned that there were several 16 organizations that are supporting your proposal, or the 17 proposal to more quickly require retrofitting to replace 18 pneumatic controllers. Are you aware that the New Mexico 19 Environmental Law Center also supports that proposal? 20 A. Yes, sir. 21 Q. Okay. Thank you. 22 And then the second question I have is, you 23 testified, I think, about a NMOGA estimate that some 60 24 percent of the emissions are from pneumatic controllers. 25 Do you recall that testimony?
2084 1 until at least 2030. So that's a significant number of 2 controllers continuing to emit for three years, which 3 would certainly be expected to result in the tens of 4 thousands of tons -- in thousands of tons of VOCs and tens 5 of thousands of tons of methane that could be otherwise 6 avoided. 7 Q. Thank you, Dr. McCabe. With that, we will open 8 it up for, I suppose, cross-examination and then Board 9 questions. 10 HEARING OFFICER ORTH: Thank you very much, 11 Dr. McCabe and Mr. Baake. Please, if you are a party 12 representative, turn on your screen for cross-examination. 13 Mr. de Saillan, I see you on screen. 14 MR. DE SAILLAN: Thank you, Madam Hearing 15 Officer. 16 CROSS-EXAMINATION OF DAVID MCCABE, Ph.D. 17 BY MR. DE SAILLAN: 18 Q. Good afternoon -- or good morning, Mr. Baake and 19 Dr. McCabe. Excuse me. My name is Charles de Saillan and 20 I am an attorney representing the New Mexico Environmental 21 Law Center. 22 HEARING OFFICER ORTH: Mr. De Saillan? I'm 23 sorry. 24 Q. I just have a -- (unintelligible.) 25 HEARING OFFICER ORTH: Mr. de Saillan, I'm sorry.	2086 1 A. Yes, sir. To be specific, it's 60 percent of 2 reported emissions. 3 Q. Ah, thank you. Okay. I appreciate that 4 correction. 5 And you stated that you didn't think that that 60 6 percent figure was precise. Is it your view that that 60 7 percent figure is an underestimate or an overestimate? 8 A. So the 60 percent figure is a portion of total 9 emissions and it is actually something of an overestimate 10 because the total emissions in that case do not include 11 emissions from super emitters. 12 Q. All right. Okay. Thank you. That's all I have, 13 Dr. McCabe. 14 HEARING OFFICER ORTH: All right. Thank you, 15 Mr. de Saillan. Ms. Gutierrez, I see you on screen. 16 MS. GUTIERREZ: Yes. Thank you, Madam Hearing 17 Officer. 18 CROSS-EXAMINATION OF DAVID MCCABE, Ph.D. 19 BY MS. GUTIERREZ: 20 Q. Good afternoon, Dr. McCabe. Ana Gutierrez here, 21 with Hogan Lovells on behalf of Kinder Morgan. It's good 22 to see you again. If I understood -- I have just a couple 23 of questions here. If I understood your testimony 24 correctly, it's generally your position that Colorado's 25 rule is a good model for New Mexico's rule; is that right,

2087 1 as a starting point. 2 A. Yes, in general. 3 Q. And is it correct that the Colorado rule does not 4 regulate transmission compressor stations? 5 A. That is correct, because transmission compressor 6 stations are covered under different provisions. 7 Q. But not with respect to the pneumatic rule we're 8 discussing? 9 A. Correct. 10 Q. And then, in your testimony, you made some 11 general statements about it being, you know, 12 straightforward to retrofit controllers to nonemitting at 13 a location with commercial power. 14 Did you present technical data or analyze the 15 ability of an operator, assuming the six-month time frame, 16 if a transmission compressor station would be required to 17 modify or increase commercial electric power because that 18 power source is inadequate for additional equipment? Did 19 you evaluate those costs and feasibility concerns? 20 A. Not directly. 21 MS. GUTIERREZ: Thank you. We have no further 22 questions. Thank you very much. 23 HEARING OFFICER ORTH: Thank you, Ms. Gutierrez. 24 We'll pause in the event -- oh, Mr. Hiser? 25 MR. HISER: Thank you, Madam Hearing Officer.	2089 1 supplemental information for Allen 2015 open in front of 2 me, so I'm not really able to answer that. I -- I -- I 3 can presume that that's the case. 4 Q. Okay. And so, then, you wouldn't be able to know 5 whether if you took those six out, if that average would 6 fall to .14 -- .14 standard cubic foot per hour? 7 A. The -- throughout the oil and gas industry we 8 have situations where a small number of devices, sites, or 9 pieces of equipment emit vastly more than other -- other 10 devices and sites. Unfortunately, those are very hard to 11 predict, and this is part of the reason we need to 12 evaluate emissions from pneumatic controllers very 13 carefully and consider what are appropriate ways to manage 14 those emissions. 15 Q. So this might be an example of one of those 16 distortions from a high-emitting device? 17 A. Sir, I don't agree that that's a distortion. 18 Q. In terms of the correctly-functioning device, are 19 you saying, then, that you believe they actually emitted 20 10. -- whatever that number was, 10.8? 21 A. For purpose of air quality management, what's 22 important is not the emissions factor for 23 correctly-functioning devices. For the purposes of air 24 quality management, what's important is the emissions 25 factor for real pneumatic controllers as they exist in the
2088 1 CROSS-EXAMINATION OF DAVID MCCABE, Ph.D. 2 BY MR. HISER: 3 Q. Dr. McCabe, just a couple of questions about some 4 of your testimony that you had. You cited a number of 5 studies to support your calculations for the impact of 6 pneumatic devices on VOC and also methane emissions. Were 7 several of those studies based upon gas meter supply 8 measurements to the emitting device or the pneumatic 9 controllers? 10 A. One study brought that out, I believe it used -- 11 yes, put meters upstream of controllers. And in my 12 written testimony, I discussed how they identified -- they 13 used that to identify malfunctions. 14 Q. And in the study where we're using the upstream 15 supply for that, would it not have the effect of including 16 leaks and other parts in that supply loop and attributing 17 that to the controller? 18 A. It could. 19 Q. In the Allen 2015 study, is it not true that the 20 low-bleed controllers which you reported as a national 21 average of 10.8 standard cubic foot per hour, that that 22 really depends upon the inclusion of six controllers from 23 Facility CZ, which had an average rate of 57 standard 24 cubic foot per hour for those six controllers? 25 A. Mr. Hiser, I'm afraid I don't have the	2090 1 field. 2 Q. Well, I thought Mr. -- Dr. McCabe -- excuse me -- 3 that your proposal and the proposal from NMED were that we 4 would do leak detection repair and, hence, fix those 5 devices should they be leaking. So doesn't that make the 6 rate -- the emission rate a little bit more relevant here? 7 A. The -- first of all, the -- let me be clear, that 8 we support the find-and-fixed provisions, as we called 9 them in Colorado. Colorado felt that it was important to 10 move forward with retrofitting pneumatic controllers to 11 inherently nonemitting technology, even though they 12 already had the find-and-fix program in effect. 13 And the reason is, it's clear that some of the 14 pneumatics malfunctions are difficult to find during 15 normal inspections. Many of the malfunctions that that 16 Luck, et al., paper identified, were only -- were only 17 found by analyzing more than a day's worth of logged info 18 into the controller. They were not identifiable in an 19 inspection period of even 15 minutes. 20 So the inspections reduced emissions from 21 malfunctions, but there's no evidence that they eliminate 22 them. 23 Q. But they do reduce them? 24 A. Yes, sir. 25 Q. What other factors are there that affect a

2091 1 pneumatic controller's bleed rate besides its design or 2 its malfunction status? 3 A. Actuation frequency, for example. 4 Q. Okay. Any others? 5 A. Maintenance status, whether it's a low-bleed or a 6 high-bleed which, I guess, you might consider a design 7 feature. There are many, many, many factors. 8 Q. Okay. Are you an engineer? 9 A. No, sir. 10 Q. Okay. In Exhibit 3 -- your Exhibit 3, page 23, 11 you criticize NMED's cost analysis because it failed to 12 account for alleged economic benefits that industry 13 receives from captured gas. Did you ever quantify that 14 benefit? 15 A. It is quantified, for example, in the cost 16 estimation tool that we utilized. I -- we -- we have 17 estimated that ourselves, we have not submitted it. And I 18 don't have that cost -- that effect on costs at my 19 fingertips. I can provide those later if that would be of 20 use. 21 Q. Okay. And then you also criticized NMED's cost 22 analysis in more or less the same place in that exhibit, 23 as it failed to account for maintenance savings. You're 24 not suggesting by that, are you, that electric or air 25 systems also don't have maintenance costs?	2093 1 alternative cost data. 2 We didn't redo NMED's analysis because we thought 3 it was basically valid. 4 Q. Okay. 5 A. But we didn't -- so, yes, we did submit those 6 alternative costs assumptions, but we did not highlight 7 them. 8 Q. And do you believe that LDAR systems -- or LDAR 9 generally results in significant emissions improvements or 10 not, on pneumatic devices? 11 A. Yes, they've been -- I think that's been a little 12 hard to pin down because the behavior of pneumatics is so 13 hard to predict. 14 Q. And then in your surrebuttal testimony, I think 15 that there was a question from Mr. Baake about that 16 precedent for a short-term retrofit. And I believe you 17 gave an example from Colorado. Wasn't that example for 18 gas processing plants? 19 A. Yes, sir. 20 Q. And don't gas processing plants tend to be larger 21 facilities that are manned? 22 A. Yes, sir. 23 Q. All right. Those are my questions. Thank you 24 very much, Dr. McCabe. I appreciate your testimony. It 25 was very informative.
2092 1 A. No. The maintenance savings that are discussed 2 in, for example, of the report that carbon limits produced 3 for Clean Air Task Force are net maintenance savings. So 4 they consider the -- the -- how much lease maintenance is 5 needed at the -- with the nonemitting alternatives, but I 6 agree that the replacement systems also need maintenance. 7 Q. Okay. In rebuttal Exhibit 23 on page 14, I 8 believe you said that you agree that it's more cost 9 effective to look at conversion of sites as a whole, 10 rather than a piecemeal basis; is that correct? 11 A. Yes, sir. 12 Q. And then at page 15, you state that the 13 instrument air should be sized, I think you said at the 14 vetting rate, plus approximately 25 percent? 15 A. Yes, I believe that's right. 16 Q. Do you have any personal experience in 17 contracting for electrical service at an oil and gas well 18 site or processing facility? 19 A. No, sir. 20 Q. And did you provide any alternative costs to 21 those provided by Valor EPC? 22 A. We -- we -- there are alternative costs embedded 23 in the cost tool, which is a transparent tool that allows 24 you to look into the cost assumptions that are used to 25 estimate costs in that tool. So, yes, we did submit	2094 1 A. Thank you. 2 HEARING OFFICER ORTH: Thank you, Mr. Hiser. 3 If you're a counsel or party with question of 4 Dr. McCabe, please turn on your screen. I'm seeing no one 5 else among the parties, we'll turn to questions from the 6 Board. And if you're an attendee on this platform and 7 would have a question, please reach out through the Chat 8 while -- while we are taking the Board's questions. 9 EXAMINATION BY THE BOARD OF DAVID MCCABE, Ph.D. 10 HEARING OFFICER ORTH: Madam Chair, do you have 11 questions of Dr. McCabe? 12 CHAIRPERSON SUINA: Thank you so much, Madam 13 Hearing Officer. I do have a few questions. I was trying 14 to take some notes here. I think Mr. Hiser had brought 15 some of these questions up in his cross-examination, but I 16 just wanted to get my head around, Dr. McCabe, is the 17 Colorado rule in your analysis -- and I think you've 18 touched upon this -- how has it affected the industry in 19 Colorado? Have we seen a major increase or decrease in 20 the industry in Colorado because of the rules there in 21 Colorado? 22 DR. MCCABE: No, ma'am. What we have seen, 23 looking back historically in Colorado, is that Colorado 24 has put in place rules starting in 2014, which 25 comprehensively address the sources of VOC and methane for

2095 1 many, many different sources. And, of course, when you 2 look at production or drilling activity in any state, 3 there's huge changes over time. Right? 4 And I believe in some rebuttal testimony we 5 submitted -- some written rebuttal testimony we submitted, 6 I compared two -- I compared Colorado to two other states: 7 North Dakota and Oklahoma. And what you see in that -- 8 and North Dakota and Oklahoma have not put in place those 9 protective rules to limit methane and VOC pollution. 10 And what you can see when you just do that in 11 comparison, you know, just by comparing the states, then 12 you can see that the trend over time in Colorado is 13 matched pretty much exactly by the trend over time in 14 Oklahoma and North Dakota. So things are changing a lot, 15 but it's not because of these rules. It's because of the 16 price of oil, the price of gas. 17 And the reason I chose Oklahoma and North Dakota 18 is it's also changing because so many of the resources are 19 flowing to the Permian Basin. So, over time, for example, 20 the grid count is lower over time in all of the states 21 than it starts. So, no, we simply don't see the -- any 22 sign of economic problems upsetting the industry as a 23 result of these rules when we look at the data from 24 Colorado. 25 CHAIRPERSON SUINA: So, given some of those	2097 1 have for right now, Madam Hearing Officer. And I may have 2 some additional questions later. 3 HEARING OFFICER ORTH: Thank you. Vice-Chair 4 Trujillo-Davis? 5 VICE-CHAIR TRUJILLO-DAVIS: Thank you, Madam 6 Hearing Officer. And thank you, Mr. McCabe for your 7 testimony and for the examples and stuff that you put in 8 your exhibits. It was very explanatory as I was looking 9 through them. 10 I was curious, though, are you familiar with the 11 construction differences between Colorado facilities and 12 Permian Basin facilities and did you account for that? 13 DR. McCABE: No, I don't have data available on 14 those construction differences. 15 VICE-CHAIR TRUJILLO-DAVIS: Okay. I'll reserve 16 the rest of my questions for later. Thank you. 17 HEARING OFFICER ORTH: All right. Thank you. 18 Member Cates? 19 Member Cates said he would be off and on today. 20 Member Bitzer? 21 BOARD MEMBER BITZER: I have no questions. Thank 22 you. 23 HEARING OFFICER ORTH: Thank you. Member Garcia? 24 BOARD MEMBER CATES: I'm sorry, Madam Hearing 25 Officer. This is Member Cates. I have no questions.
2096 1 examples you used with Oklahoma, North Dakota and 2 Colorado, and then you had mentioned the Permian Basin; 3 where are we in terms of Colorado being on the scale of -- 4 in terms of nationwide, the amount of production they 5 have? I think -- you know, I think in previous testimony 6 during this hearing we're at -- New Mexico is second in 7 terms of the producers -- the state as a -- as a 8 nationwide producer. Where -- where is Colorado on that 9 scale, do you know? 10 DR. McCABE: Ma'am, I'm sorry, I don't know off 11 the top of my head. It's -- it's in the top eight, but 12 I'm not 100 percent sure. You know, you've got Alaska and 13 California that are also major producers, Oklahoma. So 14 I'm not -- I'm not really sure where it lies, but it is a 15 significant producer. 16 CHAIRPERSON SUINA: And so, Oklahoma -- what 17 would you say in your review is Oklahoma -- are Oklahoma 18 rules less strict than Colorado and New Mexico? 19 DR. McCABE: That's my understanding. 20 CHAIRPERSON SUINA: Okay. And less strict in 21 terms of monitoring and inspection and the requirements 22 for retrofitting? Is that what -- that's what I'm trying 23 to see is, is that, in your mind what is less strict? 24 DR. McCABE: All of the above, yes, ma'am. 25 CHAIRPERSON SUINA: Okay. I think that's all I	2098 1 Thanks for asking. 2 HEARING OFFICER ORTH: Oh, thank you, Member 3 Cates. Member Garcia? 4 BOARD MEMBER GARCIA: So I just have a couple of 5 questions. I was going to ask exactly what Chair Suina 6 asked about the impact to Colorado. Let me ask you, sir, 7 I know you are not an economist, but you do have a pretty 8 good feel for the industry. And I asked this of another 9 witness, I think it was Mr. Smitherman, but I will ask you 10 the same thing. 11 I understand that regulation does play an 12 important role when a company is determining cost 13 effectiveness of continuing their work or whether to shut 14 down a well, et cetera. Would you say commodity price was 15 the most important factor in determining whether they 16 should move forward with production or not? 17 DR. McCABE: Yes, I would agree with that. 18 BOARD MEMBER GARCIA: Okay. Thank you. And then 19 one -- one other item. I was also going to ask you what 20 Mr. Hiser asked, which is if you had quantified the 21 benefit of gas saved in reduced maintenance for replacing 22 pneumatic controllers, if you had quantified that. You 23 said you did not submit it, but you did estimate it. Did 24 I hear you say you might be providing that information 25 later or?

2099 1 DR. McCABE: Yes, if that would be of use to the 2 Board we can -- we can go back and do that, you know. 3 BOARD MEMBER GARCIA: And what did you base your 4 estimate on? 5 DR. McCABE: You mean, like -- I'm sorry. For 6 the gas savings or for the -- 7 BOARD MEMBER GARCIA: Gas and maintenance 8 savings, to quantify those savings, how did you do that, 9 just generally? 10 DR. McCABE: So for pneumatic controllers, the 11 gas that is emitted is the -- when you switch to a 12 nonemitting solution, such as electric controllers or 13 instrument air, all of the gas that the old controllers 14 emit is kept in the system and, therefore, sold. So you 15 can just multiply that -- that gas savings, which is also 16 the same as the, you know, avoided pollution, by the price 17 of gas. So, typically, what we would do is take a Henry 18 Hub price and discount it somewhat. 19 For the maintenance savings, our information 20 comes from a consultant's report we published several 21 years ago that estimated -- provided estimates of 22 maintenance savings per device replaced, based on 23 interviews of producers and technology providers. 24 BOARD MEMBER GARCIA: Okay. Thank you. 25 And so you -- it sounds like your determination	2101 1 cumulative requirements up until 2023, to the NMED 2 requirements for 2024 just because those were close in 3 time. 4 BOARD MEMBER HONKER: But in the case of 5 Colorado, that -- the May 1st, 2023, deadline was over two 6 years after they finalized their rule? 7 DR. McCABE: Yes, sir. 8 BOARD MEMBER HONKER: Okay. Just wanted to make 9 sure I was clear on that. Thank you. Nothing else. 10 HEARING OFFICER ORTH: Thank you. Vice-Chair 11 Trujillo-Davis, do you have more questions of Dr. McCabe? 12 VICE-CHAIR TRUJILLO-DAVIS: Yes, just one more 13 question. And I apologize, it just kind of popped up 14 right after I finished. I was thinking about the 15 transition time that you talked about with Colorado and 16 the transition times that you were identifying with NMED. 17 And I'm curious, was -- in either of those cases, were 18 there any analyses done on the grid that supports those 19 locations, and if it can support those timelines as well? 20 I've lived in Southeast New Mexico for 13 years 21 and the power grid's always been a little bit behind. So 22 I'm -- that's kind of where my question is coming from. 23 DR. McCABE: Not to my knowledge. Again, 24 industry, you know, is obviously following support of the 25 rule. I want to be clear that -- I have not seen any
2100 1 is the savings are significant enough that it should be 2 accounted for in a cost analysis, which NMED did not do? 3 DR. McCABE: If you want the -- the -- yes, if 4 you want it to be precise. Not to be argumentative, but I 5 suppose you could also say that NMED showed it was cost 6 effective and not -- you know, didn't feel that it was 7 necessary to show that it was even lower than the cost 8 effective amount, if you follow me. 9 BOARD MEMBER GARCIA: Okay. Thank you very much. 10 Appreciate that. That's all I have. 11 HEARING OFFICER ORTH: Thank you, Member Garcia. 12 I managed to pass Member Duval. Member Duval, do you have 13 questions? 14 BOARD MEMBER DUVAL: No question. I just wanted 15 to make sure you knew I was on the -- I was on the call. 16 HEARING OFFICER ORTH: Thank you very much. 17 Member Honker? 18 BOARD MEMBER HONKER: Yes, just one question. 19 When did the Colorado rules go into effect? 20 DR. McCABE: Let's see. I believe the hearing 21 was in February, sir. February 2021, and the retrofit 22 provisions, you know, go into effect on that schedule, so 23 actually the first date under their program is actually 24 May 1st, 2022. And then the second date is May 1st, 2023, 25 and we were comparing the 2023 requirements -- the	2102 1 indication that any operator in -- any significant 2 operator in Colorado anticipates that connecting to the 3 grid will be -- you know, that they will depend on grid 4 connections in order to comply with the Colorado program. 5 They also express frustration with the difficulty 6 in getting connected to the grid and so, to my knowledge, 7 there's no dependence on that connection for compliance. 8 VICE-CHAIR TRUJILLO-DAVIS: And I appreciate you 9 using Colorado as a template, but, you know, really, we're 10 talking about New Mexico. And so, I'm just curious, was 11 any investigation done in to either the San Juan or into 12 the Permian, because, I mean, that's really where we're 13 talking? 14 DR. McCABE: So these devices are -- you know, 15 these technologies have been proven in a number of places, 16 actually more to the north of Colorado than in Colorado, 17 to my knowledge. So we believe there are generally 18 applicable technologies. And we haven't done a 19 Permian-specific study or a San Juan-specific study and -- 20 but it -- it -- it -- we do believe that the lessons 21 learned from the many places where these devices are in 22 use, are valid in New Mexico. 23 And I will say one more thing, which is, several 24 of the vendors of these technologies are very much focused 25 on the Permian and are selling these technologies.

2103 1 VICE-CHAIR TRUJILLO-DAVIS: And I apologize if I 2 wasn't clear in my questioning. I am not questioning your 3 device or the devices or the technology at all. I was 4 really focusing on the timeline and that transition. So 5 that was really where my questions were going, not so much 6 the technology. But thank you for answering that question 7 about Permian-specific studies. So I don't have any -- 8 any more questions. 9 HEARING OFFICER ORTH: Okay. Thank you, 10 Vice-Chair. 11 Mr. Baake, has this questioning raised any 12 redirect for you? 13 MR. BAAKE: No redirect, Madam Hearing Officer. 14 My co-counsel did remind me that I neglected to move to 15 admit our exhibits subject to IPANM's objection, which I 16 think we agreed to brief later. So if it's agreeable to 17 the Board, we would move to admit those now. 18 HEARING OFFICER ORTH: Yeah, and actually that is 19 something we need to talk about. I was hoping to talk 20 about it with counsel before we broke for lunch. 21 So thank you very much, Dr. McCabe. I'm going to 22 move to a different topic here. And this discussion 23 really is for counsel more than the Board. I would very 24 much like to pack as much real testimony into the day 25 between, say, 9 and 6 if possible, without using that time	2105 1 MS. KATZ: No, that's -- I'm certainly amenable 2 to that. 3 HEARING OFFICER ORTH: All right. So -- oh, 4 Ms. Fox? 5 MS. FOX: I was just going to add to what 6 Mr. Baake said about moving in our Exhibits 1 through 27. 7 And that is we have agreement with IPANM counsel to move 8 them into evidence, subject to his objection related to 9 methane, which we have agreed can be argued through 10 post-hearing briefing if -- if that's acceptable to you, 11 Madam Hearing Officer. 12 HEARING OFFICER ORTH: Absolutely. Absolutely. 13 I'm sorry, I didn't understand that I could do that now. 14 So Exhibits 1 through 27 are admitted and we will 15 take up the rest of the argument later. I wasn't sure if 16 we were waiting on that argument. All right. Thank you 17 for that. 18 (Clean Air Advocate's Exhibits 1 - 27 received 19 into evidence at this time.) 20 HEARING OFFICER ORTH: So let's break for lunch. 21 If we could take something less than an hour, we need to 22 pack a lot of testimony in to today. It's ten of noon. 23 Can we come back at 20 of 1? Oh, wait. 24 Yeah, so we're going from here to Mr. Smitherman 25 and Mr. Meyer, aren't we? Okay. Let's get Mr. Hiser back
2104 1 to have lawyer arguments, because the Board certainly can 2 hear it if they want, but they don't -- they don't need 3 to. 4 So we have a number of motions, including one I 5 saw this morning. We've already had some testimony 6 subject to objection on the record. And yet, I feel like 7 the motion that was filed this morning is going to have 8 rather more significant impact on what we do or do not 9 hear tomorrow on LDAR. So my question of counsel -- I'm 10 happy to take anyone's opinion -- is whether we should 11 take that up at the end of the day today when hopefully we 12 will be done with the pneumatics testimony, or whether we 13 should take it up tomorrow morning before 9. It doesn't 14 matter to me. 15 I see Ms. Fox and Ms. Katz. Ms. Fox? 16 MS. FOX: Thank you, Madam Hearing Officer. I 17 think whether we argue it today or tomorrow morning, I 18 would defer to Mr. Hiser because he will be preparing his 19 response. 20 HEARING OFFICER ORTH: Mr. Hiser? 21 MR. HISER: I would prefer tomorrow morning 22 because I'm in the middle of a hearing, I really can't do 23 much. 24 HEARING OFFICER: All right. Ms. Katz, any -- 25 any observations here?	2106 1 on the screen. 2 MR. HISER: Madam Hearing Officer. 3 HEARING OFFICER ORTH: Yes, sir. What would be 4 your preference? I believe we go from here to 5 Mr. Smitherman and Mr. Meyer if I read the spreadsheet 6 correctly. What is your preference, to take 20 or 30 7 minutes now or to do some before public comment? I'm 8 loathe to take too long of a lunch break. 9 MR. HISER: I think Mr. Meyer will be fairly 10 extensive. Mr. Smitherman may be a little bit briefer. 11 Let me check here. So we might be able to get 12 Mr. Smitherman in now. 13 HEARING OFFICER ORTH: Terrific. Let's -- 14 let's -- let's jump with that. Thank you very much. 15 MR. HISER: I see him. 16 MR. SMITHERMAN: May I have sharing rights, 17 please? 18 JOHN R. SMITHERMAN, 19 having been previously duly sworn, was examined and 20 testified as follows: 21 DIRECT EXAMINATION OF JOHN R. SMITHERMAN 22 BY MR. HISER: 23 Q. Mr. Smitherman, while you're getting yourself up, 24 can you go ahead and state your name for the record? 25 A. Name is John R. Smitherman.

2107 1 Q. And you've previously adopted your testimony 2 which is found in direct -- NMOGA Direct Exhibit A1 and 3 Rebuttal Exhibit 41, correct? 4 A. That's correct. 5 Q. Do you have any change to that testimony as it 6 relates to this topic? 7 A. I do not. 8 Q. Okay. 9 A. Let me stop for just a second. I've got the 10 wrong file up. 11 Q. That would be unhelpful. 12 A. That would be unhelpful. 13 Well, I still have the wrong file up. Just one 14 second, I'm going to turn that file off. 15 Q. Is this the one you were looking for? 16 A. Oh, is that working? 17 Q. No. 18 A. I can see it from here. 19 Does that say "Surrebuttal." 20 Q. It says Surrebuttal Testimony of John 21 Smitherman." 22 A. Perfect. 23 Q. So. Mr. Smitherman, did you prepare some 24 testimony on the pneumatics issue? 25 A. I did.	2109 1 count toward the NMED statute. I know I heard some 2 testimony this morning about NMOGA's initial proposals. 3 In fact, even the most redline proposals, but we've 4 listened carefully to all the testimonies that we have 5 seen so far. And upon reflection, we recognize that 6 there's many proposals out there, and rather than try to 7 pick a little bit of this and a little bit of that from 8 the various proposals, we believe that by accepting the 9 current NMED pneumatics proposal, that's the best, if you 10 will, package that's on the table. 11 We think that it balances the needs of emissions 12 reductions with the realities of the oil and gas business 13 in New Mexico. We believe that the controller count basis 14 is a reasonable approach for New Mexico. Some of the 15 other proposals are either not technically or economically 16 feasible, or create big challenges that are not warranted, 17 including putting, in essence, additional strains on 18 companies and supply chains that are just not warranted. 19 We also recognize that a coupling -- a coupled 20 proposal, which is to include intermittent pneumatics in 21 LDAR programs further reduces the urgency, if you will, of 22 these pneumatic change-outs because it identifies those 23 malfunctioning intermittent controllers more quickly. 24 Couple that with the more recent OCD requirements for very 25 frequent documented AVOs, we believe that the combination
2108 1 Q. Would you like to provide a summary of that 2 testimony to the Board, please? 3 A. I would be happy to do so. Thank you for the 4 opportunity. I'd like to first, in essence, compliment 5 the NMED for a change that they made in the bleed rates 6 definition. As you already heard today from a couple of 7 different witnesses, a properly functioning intermittent 8 device does not have a bleed rate, and that's an important 9 distinction in making sure that this rule basically 10 applies to the facts. 11 So I want to move on from there. Dr. McCabe 12 stated in his testimony that NMED should require all 13 operators to deploy nonemitting -- nonemitting pneumatic 14 devices at sites with grid power within a six-month period 15 of time. 16 We would -- we would disagree with that. We 17 think that that's too rapid a transition time. NMED has 18 already proposed fairly aggressive transition times for 19 pneumatics, and we believe that they have the right 20 balance in balancing the desires for emission reduction, 21 with the realities of budgetary, human resources, and 22 supply chain challenges. So we would -- we would prefer 23 to see the NMED schedule prevail. 24 And also, just as a little sidebar, all -- all of 25 the non -- all of the replacements to nonemitting should	2110 1 of LDAR and AVOs, and these change-out provisions that the 2 NMED has proposed, will end up with a nice balance 3 between, as I said, emissions reductions and viability of 4 the oil and gas business. 5 And by the way, to make a point, NMOGA does 6 support LDAR on every site: Every well site, every 7 gathering and boosting station, every transmission 8 compressor station and every gas processing plant across 9 the boards, regardless of potential to emit at least once 10 per year. 11 Q. And part of that NMOGA adoption of the NMED 12 proposal is based upon our understanding that the short 13 time frame or the line power issue is going away and that 14 that could be addressed as part of the overall approach 15 toward phasing these devices out; is that correct? 16 A. That's correct. And, lastly, I'd like to 17 approach a topic that was just discussed by Dr. McCabe and 18 the Board. This concept that somehow the additional 19 revenues from these gases that are not emitted once you 20 switch from a gas emitting device to a nonemitting device, 21 that somehow that that's going to make a significant 22 impact on the cost effectiveness; in fact, even the 23 cost -- the net cost of these change-outs. 24 Dr. McCabe says that the gas that you don't emit 25 adds to the revenue. That's a true statement, but it's

2111 1 only part of the story, and it really -- it ignores the 2 rest of the story, which is it costs money to change these 3 out. So you need to compare the cost of the change-out 4 with the additional revenues that come from that 5 change-out. I've used the ERG -- NMED's numbers -- 6 basically ERGs' numbers in doing an analysis of a 7 change-out. I used an air compression system with a 8 hundred controllers; it's a fairly large one, and by using 9 the larger choice they had several choices in their -- 10 their underlying work; it is the least costly of those air 11 compressor change-over systems on a per controller basis. 12 So the cost of the installation of that type of a system, 13 that large system is \$719 and some change for the upfront 14 cost to change. 15 Now, you also have costs of operations, and 16 you've heard a lot of discussion about maintenance and the 17 difference in making sure that you kept the maintenance 18 costs in there. This number here that I show you -- 19 again, these are ERG's numbers: \$247.80 per year per 20 controller. Now, that does include maintenance costs, and 21 I did not include maintenance cost on the ongoing use of 22 the underlying gas emitting controller, but that's a very, 23 very small part of this total cost of operations; in fact, 24 94 percent of the cost of this operation is simply buying 25 the electrical power to run the air compressor to run the	2113 1 royalty, we have to pay taxes on those prices, so you 2 might get a Henry Hub price of \$4, but, basically, you get 3 about 80 percent of that. So I used \$3.20 as my revenue 4 stream. So you take 12 mcf times \$3.20 per mcf over a 5 ten-year life, and you're barely over 10 percent of the 6 cost of the conversion and operating. 7 So I do believe that you get additional revenues, 8 there's no doubt about that, but that doesn't tell you the 9 whole story. These things won't pay out and I think that 10 NMED has properly recognized that. That concludes my -- 11 my testimony, sir. 12 Q. Thank you, John. 13 MR. HISER: Madam Hearing Officer, I'll make him 14 available for questions. 15 HEARING OFFICER ORTH: Thank you. If you would 16 briefly stop sharing your screen. I see Mr. Baake on 17 screen. Mr. Baake, do you have questions of 18 Mr. Smitherman? 19 MR. BAAKE: I do. 20 CROSS-EXAMINATION OF JOHN R. SMITHERMAN 21 BY MR. BAAKE: 22 Q. Hello, Mr. Smitherman. I represent the Clean Air 23 Advocates. Thank you. I think you know who we are. 24 A. Could you speak up, sir? 25 Q. Sorry. Yes. Hello, Mr. Smitherman. I represent
2112 1 system. 2 So even if you decided that for some reason you 3 thought that the maintenance cost on the existing system 4 is equal to the maintenance cost on the air compressor 5 system, then this is substantially still correct. These 6 systems have an estimated ten-year life, so you take the 7 cost of installation and ten years of operations to get a 8 full-cycle cost of around \$3,200 per controller. And 9 let's offset with those revenues that we're supposedly 10 going to get when we convert -- we are going to get when 11 we convert. 12 I used an emission rate, again, that came from 13 the ERG study. This basically came from EPA work, of 1.37 14 standard cubic feet per hour. That's associated with a 15 low-bleed device. Now, anecdotally I have spoken to many 16 operators in New Mexico, and many of them have already 17 changed out high-bleed devices to low-bleed devices, 18 virtually -- or intermittent devices everywhere. So I 19 think it's appropriate for us to compare the gas -- the 20 additional gas that gets sold based on a low-bleed device. 21 That 1.37 scf per hour -- standard cubic feet per 22 hour, relates to basically 12 mcf a year per controller. 23 And at a \$4 gas price -- and once again, I keep hearing 24 this, too; just take the gas, and multiply it by the 25 price. We don't get the whole price. We have to pay	2114 1 Clean Air Advocates. I think -- I'm sure you probably 2 know the groups that are included in that. Could we get 3 actually that slide back up? 4 All right. Thank you so much. So I -- I do 5 appreciate that NMOGA has -- has acknowledged that the 6 value of saved gas is a relevant factor and tried to 7 put -- put together an estimate. I did want to ask just 8 about the emission rate here. So I think that you would 9 agree, would you not, that the emission rate is a very 10 important factor for determining the value that you're 11 going to get from a conversion? 12 A. Certainly. 13 Q. And I think you said that you used the 1.37, 14 which is the Subpart W emission rate for this analysis; is 15 that correct? 16 A. I used the same emission rates that ERG used in 17 their study. 18 Q. Okay. So do you not -- are you not certain 19 whether it's Subpart W, or -- we could go back and look at 20 that, I guess. 21 A. Yes, I don't recall that. 22 Q. But you would agree that if the emission 23 factor -- if that -- if the Board were to determine that 24 that emission factor was too low, that this analysis would 25 not be -- would need to be updated to reflect that?

2115 1 A. Well, I think if any of these numbers were either 2 too high or too low, that you'd have to recalculate. For 3 example, the cost -- I used what I thought was the lowest 4 cost option for the installation itself. There are much 5 more expensive options if you have smaller sites, you 6 simply can't defray some of those overhead costs to as 7 many controllers, so that would make a difference as well. 8 Q. Thank you. And Mr. Smitherman, did you review 9 Dr. McCabe's written testimony as well as listening to him 10 earlier today? 11 A. No -- some of it. I've read some of his 12 testimony, not every word. 13 Q. Understood. There are a lot of words. I know 14 that very well. Would -- could I -- if I were to 15 represent to you that Dr. McCabe testified that the 16 emission factor that NMED used for low-bleed controllers 17 is too low, and that it would be more appropriate to use 18 an emission factor of 5.1 standard cubic feet per hour for 19 those controllers, would that surprise you that he 20 testified to that? 21 A. Well, he said what he said, so my surprise 22 doesn't really mean much. 23 Q. Okay. But you are trying to rebutt his 24 testimony, and so it's just good to know if you had read 25 that part of it.	2117 1 on generally in a panel, all the witnesses for the party, 2 and so I believe NMOGA has another witness and then it was 3 supposed to be Board questions. But, anyway, so we're 4 getting a little off, but I guess maybe it's fine since 5 we're in this -- falling in this strange time right now at 6 lunch and public comments. 7 HEARING OFFICER ORTH: All right. I'm sorry, I 8 thought I had confirmed earlier we were going back to Plan 9 A with questioning. 10 MS. KATZ: Yeah, except that the witnesses would 11 be the panel for the Board, not after all of the parties, 12 but the same witnesses for a party would sit for cross as 13 a panel, and then would sit for Board questioning as a 14 panel. So it was kind of not -- that applies to both -- 15 to both plans. 16 HEARING OFFICER ORTH: All right. Thank you for 17 that. Mr. Hiser, would you like me to wait for Board 18 questions of Mr. Smitherman until after Mr. Meyer has 19 spoken? 20 MR. HISER: I don't know that it's necessary, 21 Madam Hearing Officer. I would rather if the Board wants 22 to ask questions before lunch so they don't have that 23 break, I would indulge the Board. If they'd like to wait 24 I am also good with that. 25 HEARING OFFICER ORTH: All right. Vice-Chair,
2116 1 A. I'm not trying to rebutt his whatever claims he 2 has for an emission rate. I'm using an emission rate that 3 was consistent with what NMED has used, in essence, to try 4 to come to some common ground with some of the testimony 5 that's out there. 6 Q. All right, Mr. Smitherman. No further questions. 7 Thank you. 8 A. Thank you. 9 HEARING OFFICER ORTH: All right. Thank you, 10 Mr. Baake. Let's see if there is anyone else turning on 11 their screen. I don't see any other party turning on 12 their screen. 13 I'm going to turn to the Board for their 14 questions. While I'm doing that, if you are an attendee 15 on this platform and would have a question, please reach 16 out through the Chat. 17 EXAMINATION BY THE BOARD OF JOHN R. SMITHERMAN 18 HEARING OFFICER ORTH: Madam Chair? 19 CHAIRPERSON SUINA: Madam Hearing Officer, I 20 don't have any questions at this time 21 HEARING OFFICER ORTH: Thank you. Oh, I see 22 Ms. Katz. 23 MS. KATZ: Yes, Madam Hearing Officer. You know, 24 I know that we're in this weird time, but I do think for 25 these, we were still planning to try to put the witnesses	2118 1 Trujillo-Davis, do you have any questions of 2 Mr. Smitherman? 3 VICE-CHAIR TRUJILLO-DAVIS: Yeah, just one. 4 Mr. Smitherman, the slide you put up, it kind of triggered 5 a little bit of déjà vu for me. So I'm curious did -- 6 when you were looking at these numbers and putting them 7 together, was any of this work kind of done back when 8 Subpart W was being implemented? Was there -- was there 9 some leading up to where we're at now, with that work that 10 was done then? 11 MR. SMITHERMAN: Madam Vice-Chair, I was not 12 involved in any of that work, so if there was some work 13 that was similar to this, I'm not aware of it. This was 14 original work by me. 15 VICE-CHAIR TRUJILLO-DAVIS: Oh, okay. Thank you. 16 I appreciate the information. 17 MR. SMITHERMAN: Thank you, ma'am. 18 HEARING OFFICER ORTH: Thank you. Member Cates? 19 BOARD MEMBER CATES: No questions here. Thank 20 you. 21 HEARING OFFICER ORTH: Thank you. Member Bitzer? 22 BOARD MEMBER BITZER: It should be fairly simple. 23 Real quick, Mr. Smitherman. Assuming for the moment that 24 the emission rate that Counsel Baake was pointing out from 25 Mr. -- I think this was Mr. McCabe's testimony -- or

2119 1 Dr. McCabe's testimony; assuming that was correct or 2 assuming there was some point in between the state's data 3 and that data, the equation, to me, seems pretty 4 straightforward. Do any of those scenarios get you -- get 5 you to break even? 6 MR. SMITHERMAN: Well, just looking at the 7 numbers in my head, the -- the revenues that we get at the 8 1.37 standard cubic foot per hour get you about 15 percent 9 of the total cost. So you'd have to go up by a factor of 10 at least 6. I can do that math in my head, which takes 11 you well over the number that he gave. And this is also 12 recognized -- you know, our witness, Mr. Meyer estimated 13 costs on these systems that were much high than the cost 14 that ERG used. 15 So, in essence, I tried to use a somewhat 16 noncontroversial cost number, but if you put the higher 17 cost number to it, I'm not sure how high the emission rate 18 would have to be to pay it out, certainly being 19 reasonable. 20 BOARD MEMBER BITZER: That's my only question. I 21 didn't -- I didn't see any scenario in which it got to 22 break even. I did the math a little differently in my 23 head, but I still came up short. 24 MR. SMITHERMAN: Thank you, and I think the same, 25 sir.	2121 1 within six months, that's a very different question than 2 asking the entire industry, both upstream well sites and 3 all of these other smaller numbers of facilities to do so 4 in six months. 5 BOARD MEMBER GARCIA: Okay. That's a very good 6 clarification. Thank you, sir. That's all I have. 7 MR. SMITHERMAN: Thank you, ma'am. 8 HEARING OFFICER ORTH: Thank you. Member Honker? 9 BOARD MEMBER HONKER: I have no questions. Thank 10 you. 11 HEARING OFFICER ORTH: All right. Thank you. 12 Well, we got to just about 12:15. Let's take a break for 13 lunch and return at 1 for public comment. Thank you, all. 14 (Recess taken from 12:14 p.m. to 1:00 p.m.) 15 HEARING OFFICER ORTH: Let's come back from the 16 lunch break, please. 17 My name is Felicia Orth, Hearing Officer 18 appointed by the Environmental Improvement Board 19 conducting a hearing in EIB 21-27. We have three public 20 comment sessions a day, including one at 1:00. We've 21 reached the 1:00 session. Public comment is taken under 22 oath, is taken by audio, not video, and is limited to five 23 minutes. Several folks reached out to the Board 24 Administrator, Pamela Jones, to request a spot this 25 afternoon. I'll call you in the order in which you
2120 1 HEARING OFFICER ORTH: Okay. Thank you. Member 2 Duval? 3 BOARD MEMBER DUVAL: No questions. Thanks. 4 HEARING OFFICER ORTH: All right. Member Garcia? 5 MEMBER GARCIA: One question, please. 6 Mr. Smitherman, you said that the six-month time frame for 7 deploying the nonemitting devices was not economically 8 feasible -- not reasonable. And I believe Dr. McCabe 9 testified that -- and I may have this wrong, so correct me 10 if I'm wrong, but I believe that he testified that when 11 Colorado suggested the six-month time frame, their 12 industry did not object to it. 13 And I'm wondering what would be the difference -- 14 what is the economic difference between New Mexico and 15 Colorado, where they would not object to it and we are 16 here in New Mexico? 17 MR. SMITHERMAN: That's an excellent question. 18 I'm going to have to base this on my memory of his 19 testimony. But I believe what he said was that the 20 six-month time frame was on processing plants; basically, 21 the larger facilities of which are fewer of them. And 22 so -- and by the way, it's not necessarily our position 23 that it's an economic challenge as much as it's a physical 24 and logistical challenge. When you have a relatively few 25 numbers of facilities that are being asked to retrofit	2122 1 reached out. Glenn Schiffbauer, Patricia Stern, Luis 2 Guerrero, Marla Painter, John Jones, and Anna Rondon. In 3 the event you are on the platform to offer comment and I 4 did just not read your name -- read your name, please 5 reach out through the Chat, which is enabled for everyone 6 and I'd be happy to take your comment. 7 There are ten more public comment session this 8 week at 9, 1 and 5 each day between now and Friday. So we 9 look for Mr. Schiffbauer. Mr. Schiffbauer, I'm unmuting 10 you. Can you hear me? 11 MR. SCHIFFBAUER: Yes, I can. Thank you. 12 HEARING OFFICER ORTH: Oh, your voice is coming 13 through nice and clear. Would you please spell your name? 14 MR. SCHIFFBAUER: Yes, first name is Glenn with 15 two Ns. G-L-E-N-N. My last name, Schiffbauer is 16 S-C-H-I-F-F-B-A-U-E-R. 17 HEARING OFFICER ORTH: Thank you. If you would 18 raise your right hand. Do you swear or affirm to tell the 19 truth? 20 MR. SCHIFFBAUER: I do. 21 HEARING OFFICER ORTH: Thank you. I'm going to 22 start your five minutes now. 23 GLENN SCHIFFBAUER 24 having been first duly sworn or affirmed, 25 gave public comment as follows:

2123 1 PUBLIC COMMENT OF GLENN SCHIFFBAUER 2 MR. SCHIFFBAUER: Thank you. Good afternoon. My 3 name is Glenn Schiffbauer, and I'm the Executive Director 4 for the Santa Fe Green Chamber of Commerce here in Santa 5 Fe. I want to thank the EIB for this opportunity to 6 speak. 7 The Santa Fe Green Chamber has been involved with 8 the methane mitigation issue since 2014, and I would like 9 to speak a little bit about job creation today. New 10 research shows that reducing methane emissions from oil 11 and gas facilities not only helps clean the air, as we've 12 been hearing the past few days, but it is a creator of 13 good, high-quality jobs also. Over 200 companies across 14 the country are helping to manufacture the technology and 15 provide the services needed to reduce harmful oil and gas 16 pollution. These industry jobs offer well-paying 17 employment opportunities across the country that can't be 18 off-shored: saving money, minimizing waste and keeping 19 otherwise lost product in the pipe, while reducing harmful 20 pollutions. 21 Some key facts: there are over 225 manufacturing 22 and service companies with nearly 1,000 employee locations 23 across the country. The methane mitigation service sector 24 in the U.S. has nearly doubled in size since 2017; 65 25 percent of these are small businesses, like most of our	2125 1 Lujan Grisham has committed to putting us in a position of 2 being a national leader with these proposed rules. Let's 3 be a national leader in methane mitigation job creation as 4 well. I thank you for giving me the time today. 5 HEARING OFFICER ORTH: Thank you very much, 6 Mr. Schiffbauer. I'm going to look for Patricia Stern 7 next. Let's see here. All right. I'm not seeing 8 Ms. Stern. Let me see if I have any call-in users. 9 Call-in user number 10, would you speak up? Who 10 is this? I'll go back to call-in user number 10. So I 11 don't see Ms. Stern. 12 Let me turn to Mr. Guerrero. There you are. 13 Mr. Guerrero, I've unmuted you. Can you hear me? 14 MR. GUERRERO: Yes. Can you hear me? 15 HEARING OFFICER ORTH: Yes. Thank you. If you 16 would, please, spell your name. 17 MR. GUERRERO: Of course. It's Luis, L-U-I-S; 18 last name Guerrero, G-U-E-R-R-E-R-O. 19 HEARING OFFICER ORTH: Thank you. And raise your 20 right hand. Do you swear or affirm to tell the truth? 21 MR. GUERRERO: Yes, ma'am. 22 HEARING OFFICER ORTH: Thank you. I'm going to 23 start your five minutes now. 24 LUIS GUERRERO, 25 having been first duly sworn or affirmed,
2124 1 businesses in New Mexico. And they have the potential to 2 grow larger with the expansion of national methane 3 reduction efforts. 4 Three-quarters of manufacturing firms and 88 5 percent of service firms report that they could create 6 more jobs as national methane standards are tightened. 7 The starting salary for methane mitigation jobs is nearly 8 10 percent higher than the national average salary. 9 We have 11 locations in New Mexico where methane 10 mitigation companies are operating and we have five 11 company headquarters here: LaSen, Sky, Mesa Platonics, 12 Engineered Concepts and Spectral Sensor Solutions all have 13 homes in our state. 14 And on another note, there has been some industry 15 concern regarding the impact that these rules might have 16 on smaller producers. While the Santa Fe Green Chamber of 17 Commerce is an advocate for small business, we expect all 18 of our member businesses to abide by the laws and the 19 regulations of their industry. A small restaurant has to 20 pass health inspections, just as a large one does. If 21 keeping your restaurant clean and healthy isn't something 22 you can afford, you perhaps maybe have the wrong business 23 model and should think about other ways that you can make 24 money. 25 The same should apply in this industry. Governor	2126 1 gave public comment as follows: 2 PUBLIC COMMENT OF LUIS GUERRERO 3 MR. GUERRERO: Okay. Thank you. Thank you very 4 much, everyone, for the opportunity to provide a comment 5 this afternoon. My name is Luis Guerrero. I live in Las 6 Cruces in Doña Ana County. For work, I am the legislative 7 and political organizer with the Sierra Club, Rio Grande 8 Chapter, but I am representing and speaking for myself 9 today. 10 I am today in favor of strong precursor ozone 11 rules, and here are some reasons why. Oil and gas 12 pollution have been taking a toll on all New Mexicans: 13 our air, our water and our health. Rural communities, 14 tribal communities, children and also the elderly are 15 especially at risk. In fact, the American Lung 16 Association gave New Mexico's top oil and gas producing 17 counties: Lea, Eddy and San Juan Counties an F grade for 18 ozone in the 2021 state-of-the-air report. 19 Oil and gas operations are a significant source 20 of ozone-forming VOCs from venting, flaring and leaks, 21 well site toxins that can worsen respiratory diseases and 22 trigger asthma attacks. 23 Smog can also worsen emphysema and impact the 24 cardiovascular system. Having worked in various areas 25 Southern and Eastern New Mexico, I can tell that you this

2127 1 is true, and affects people in so many ways, that can 2 include, as I mentioned, respiratory issues as in kids and 3 can result also in missed days at school, and work for 4 parents, which ultimately affects the economy -- or local 5 economy and people being able to provide for their 6 families. 7 We are living right now historically dangerous 8 times. New Mexicans already are experiencing severe 9 impacts of climate change, that is in part powered by 10 methane that pollutes out of oil and gas operations with 11 ozone precursors. Harming our health, our air, land, 12 water and our economy. Scientists, NASA, and the 13 Department of Defense all agree that climate change is a 14 threat to our kids' future and we can no longer ignore the 15 increasingly strange, severe weather. 16 Reducing methane waste pollution, which is an 17 associated benefit of these rules is a key step for 18 Governor Lujan Grisham's strategy to address air pollution 19 and climate impacts caused by oil and gas facilities. And 20 the Governor has committed to enacting nation-leading 21 methane emission rules. We need to do better for the 22 future of New Mexicans and our planet. Again, I am in 23 support of strong precursor ozone rules. This would not 24 only prevent potential health risks, but also be 25 beneficial to our planet. We do only have one planet. We	2129 1 Community Action, a grass roots group working to improve 2 the environment, health and well-being of the residents in 3 Mountain View and the bosque next to our homes and farms. 4 I want to thank you for allowing me to speak 5 before the EIB, on strengthening the rules that regulate 6 the precursors to ozone. I bring to the discussion a 7 perspective that does not come from a scientist or an 8 industrial voice or one even of the communities directly 9 impacted by oil and gas extraction. I come -- but I come 10 from a community that suffers from unhealthy exposure to 11 locally-generated VOCs and the broader exposure to ozone. 12 Mountain View is a neighborhood, primarily 13 Hispanic Chicano that has existed for over 100 years. 14 Forty years ago, Bernalillo County decided to zone a swath 15 of vacant land in Mountain View, formerly subsistence 16 farms, for industrial use. As a result, we live next to 17 oil and gas terminals, oil and gas transloading 18 facilities, asphalt plants, salvage yards that dismantle 19 vehicles and degrease and clean vehicle parts, salvage 20 yards that accept barrels of unidentified toxic materials, 21 idling train engines, vehicle body stripping and 22 repainting facilities, contractor yards that store the 23 chemicals used for stripping and repainting road lines, 24 dumping yard for old asphalt, facilities that house 25 chemicals, the identify of which the Homeland Security Act
2128 1 do not have a Planet B. 2 New Mexico can, and I believe will be a leader 3 when it comes to fighting climate change and make a 4 difference for future generations. Thank you. 5 HEARING OFFICER ORTH: Thank you very much, 6 Mr. Guerrero. We turn now to Marla Painter. Ms. Painter, 7 can you hear me? 8 MS. PAINTER: Yes, uh-huh. Can you hear me? 9 HEARING OFFICER ORTH: Yes, I can. If you would 10 please spell your name. 11 MS. PAINTER: Yes. Marla, M-A-R-L-A; Painter, 12 P-A-I-N-T-E-R. 13 HEARING OFFICER ORTH: Thank you very much. And 14 if you would raise your right hand. Do you swear or 15 affirm to tell the truth? 16 MS. PAINTER: I do. 17 HEARING OFFICER ORTH: Thank you. I'll start 18 your five minutes now. 19 MARLA PAINTER, 20 having been first duly sworn or affirmed, 21 gave public comment as follows? 22 PUBLIC COMMENT OF MARLA PAINTER 23 MS. PAINTER: Thank you. My name is Marla 24 Painter and I live in the Mountain View neighborhood of 25 the South Valley. I am representing Mountain View	2130 1 cannot allow us to know. 2 The monitoring of these facilities is thin and 3 inadequate, especially in an airshed like Bernalillo 4 County, which is at levels of ozone that impact the health 5 of many people who live here. Bernalillo County cannot 6 adequately monitor these VOCs with their current policies. 7 The City of Albuquerque does not monitor many VOCs and 8 there is no fenceline monitoring; yet, the residents of 9 Mountain View, like many residents of communities next to 10 oil and gas, wake up to the pungent odor of VOCs coming 11 into our homes each morning when the morning cool air is 12 heavy and settled in the lowest parts of the valley. 13 We -- we do not have adequate health monitoring 14 or health impact assessments to precisely know our state 15 of health in Mountain View. Still, we know that there is 16 asthma, heart disease, cancer, emphysema, and other 17 pulmonary illnesses in most households here, and while 18 many factors determine the community's baseline health, 19 the industrial VOCs significantly add to the problems. 20 None of the dangers of the gases from the oil and 21 gas operations in our area are monitored. When I was a 22 little girl in the 1950s in Los Angeles, I suffered from 23 asthma caused by ozone. I remember that the sensations 24 that go -- I remember all of the sensations that go along 25 with breathing in too much ozone. Until the past few

2131 1 years here in Albuquerque, I hadn't had those sensations 2 since the 1950s in LA. My parents moved me out of LA to 3 protect my health. 4 I think of all the kids in Mountain View who 5 don't know why it hurts to breathe. And so I encourage 6 you and my organization encourages you to consider the 7 community-level impact of inadequate monitoring and 8 regulation of the precursors to ozone, and to remedy these 9 dangerous impacts on public health. We are desperate for 10 additional oversight and regulation. We support the EIB 11 finalizing strong rules that include requirements to 12 protect all communities near industrial areas that 13 generate ozone precursors, particularly in oil and gas 14 producing counties, but also at the end of that line, 15 where the oil and gas is transferred and travels outside 16 of our area. 17 The recommended measures will help protect all 18 impacted areas of our state that now suffer from a 19 disproportionate amount of environmental and public health 20 fallouts from the industries that contribute to ozone. 21 Thank you very much. 22 HEARING OFFICER ORTH: Thank you, Ms. Painter. 23 Let me go now to Mr. Jones. There you are. Can you hear 24 me, Mr. Jones? 25 MR. JONES: Yes.	2133 1 MR. JONES: Ms. Orth and members of the Board, 2 thank you for this opportunity to speak on this important 3 environmental and economic issue. My name is John Jones. 4 I'm retired, but professionally, I managed community water 5 systems for 21 years, a heavily-regulated industry. I 6 adamantly support regulatory oversight because it helps 7 with industry safety and the public having faith in those 8 processes. 9 But not every well-intentioned regulation is a 10 good one. Placing 35 new administrative requirements on 11 small producers is going to be counterproductive. We have 12 a collective duty to both the environment and filling the 13 coffers of the state requires balance. As the -- excuse 14 me. As a water professional, I support treating and 15 cleaning produced water and I oppose anything that 16 inhibits the progress of developing those technologies, 17 particularly in a drought-stricken state. 18 Oil and gas has been proactive in developing 19 those technologies to clean up produced water. Encourage 20 them. Allow for -- allow for diverse technologies. Don't 21 tell them how to do it; encourage them to do it. Do not 22 disproportionately target small producers in the methane 23 rule. 24 Oil and gas produces are leading the development 25 of technology to limit emissions and reduce their
2132 1 HEARING OFFICER ORTH: Will you speak up? 2 MR. JONES: Yes, I can hear you. 3 HEARING OFFICER ORTH: Oh, good. There's your 4 voice, loud and clear. If you would, please, spell your 5 name. 6 MR. JONES: J-O-H-N, J-O-N-E-S. 7 HEARING OFFICER ORTH: Thank you. And if you 8 would raise your right hand. Do you swear or affirm to 9 tell the truth? 10 MR. JONES: I do. 11 HEARING OFFICER ORTH: Thank you. I'll start 12 your five minutes now. 13 JOHN JONES, 14 having been first duly sworn or affirmed, 15 gave public comment as follows: 16 PUBLIC COMMENT OF JOHN JONES 17 MR. JONES: Ms. Orth and members of the Board, 18 thank you for this opportunity to speak on this important 19 environmental -- (unintelligible.) 20 HEARING OFFICER ORTH: Hold on, Mr. Jones. I'm 21 sorry. Mr. Jones, I'm sorry to interrupt. I'll start 22 your minutes again. But you faded and we couldn't hear 23 you. 24 MR. JONES: I apologize. 25 HEARING OFFICER ORTH: Please start again.	2134 1 environmental footprint. Encourage them. 2 Thank you for your time and for your service to 3 the state. Thank you very much. 4 HEARING OFFICER ORTH: Thank you very much, 5 Mr. Jones. 6 Let me go to Anna Rondon. There you are. Hello, 7 can you hear me? 8 MS. RONDON: Yes. 9 HEARING OFFICER ORTH: I can hear you. 10 MS. RONDON: Can you hear me? 11 Okay. Thank you so much. Thank you for the 12 Environmental Improvement Board. 13 HEARING OFFICER ORTH: Excuse me. Ma'am? 14 MS. RONDON: Can you hear me? 15 HEARING OFFICER ORTH: I can. I need you to 16 spell your name first. 17 MS. RONDON: Oh. Anna, A-N-N-A, R-O-N-D-O-N. 18 HEARING OFFICER ORTH: Thank you. And if you 19 would raise your right hand. Do you swear or affirm to 20 tell the truth? 21 MS. RONDON: Yes, I do. 22 HEARING OFFICER ORTH: Thank you. And I'll start 23 your five minutes now. And if you would project -- 24 project more so we can make a transcript of your comments. 25 ANNA RONDON,

2135 1 having been duly sworn or affirmed, 2 gave public comment as follows: 3 PUBLIC COMMENT OF ANNA RONDON 4 MS. RONDON: Okay. Thank you. Well, thank you 5 to the Environmental Improvement Board for having this 6 space for the public to comment. I am speaking to you as 7 a private citizen. I am a Navajo woman, grandmother. I 8 have lived in Northwest New Mexico mostly all my life and 9 have children and grandchildren and relatives that work in 10 the industry up around the Counselor, New Mexico area. 11 And I just wanted to bring a couple of different 12 perspectives. You know, our communities, along with this 13 industry, also have problems -- social issues with the man 14 camps and also the accumulated impacts of oil, gas, coal, 15 uranium mining and the Gold King mine-spill up in 16 Northwest New Mexico. So with all of these industries 17 contaminating, and, of course, bringing energy to the 18 American people, but still, we suffer. Like previous 19 presenters this morning talked about the school, the child 20 well-being. We're 50th in the country, but still in 21 education, also we are at the bottom of the list. So it 22 seems that the revenue coming in from this industry is 23 really not making an impact on the success of our 24 children. So, either they give more money or also to 25 replace the revenue for education with upcoming cannabis	2137 1 MR. HISER: That's correct, Madam Hearing 2 Officer. Adam Meyer will be our next witness. 3 HEARING OFFICER ORTH: Okay. 4 MR. MEYER: I'm on here. Can you hear me? 5 MR. HISER: Yes, we can hear you, Mr. Meyer. 6 And Madam Hearing Officer, he will need presenting 7 permission. 8 ADAM MEYER, 9 having been previously duly sworn or affirmed, was 10 examined and testified as follows: 11 DIRECT EXAMINATION OF ADAM MEYER 12 BY MR. HISER: 13 Q. And Adam -- Mr. Meyer, could you please state 14 your name for the court reporter? 15 A. My name is Adam Meyer; last name spelled 16 M-E-Y-E-R. 17 Q. And you've previously submitted your testimony 18 and adopted it in direct exhibit NMOGA A2 and rebuttal 19 Exhibit 42; is that correct? 20 A. That's correct. 21 Q. Are there any changes you need to make to your 22 testimony in those parts? 23 A. No. 24 Q. Okay. Did you prepare a summary of your direct 25 and rebuttal testimony?
2136 1 taxes that can be -- replace this industry. 2 I support this methane rule that will protect our 3 people -- all people in this state. And I understand the 4 economics of it and a slow transition would do our state 5 very well. And also creating jobs in doing the 6 retrofitting to capture the methane gas. And just a 7 reminder that we did have a -- we're very famous of having 8 a methane cloud seen from NASA. And, you know, we do have 9 the evidence that our people are getting sick and don't 10 have the proper healthcare as well. So in public health, 11 it's a major issue, on how we generate money, at whose 12 expense. 13 So that also needs to be balanced as well, in the 14 social justice realm. But thank you all and thank you for 15 hearing my comments. (Speaking Navajo.) 16 HEARING OFFICER ORTH: Thank you very much, 17 Ms. Rondon. 18 We have come to the end of the list of those who 19 reached out to offer public comment at the 1:00 session 20 today. So we will return to the technical case. If 21 you're on the platform and would like to offer public 22 comment, there are 9:00, 1:00 and 5:00 sessions every day. 23 So when we broke, I believe we were going to move 24 from NMOGA's witness, Mr. Smitherman, to NMOGA's witness, 25 Mr. Meyer.	2138 1 A. Yes. 2 Q. Would you like to share your screen? 3 A. Sure. Can everyone see that? 4 Q. Yeah. Can you make it bigger? 5 A. Yes. Is that acceptable? 6 Q. Yes, that's great. If you want to move ahead to 7 the pneumatics portion. 8 A. Absolutely. 9 Okay. Well, I -- first, I would like to start 10 off talking about summary of the effort related to the 11 pneumatics that Valor conducted. There was two separate 12 reports that were provided; one of them was on the 13 emission factors where we highlighted the latest studies 14 on emission factors from pneumatic controllers; and the 15 second one, which was more comprehensive, was a cost 16 estimate report that actually took into account the 17 current market costs during this post -- I won't say 18 "post," but post-COVID time. And of course, then there's 19 storage vessels, which we'll get to later on. 20 Q. Why don't you proceed and tell us about the first 21 step that you did, which was to look at the emission 22 factors. What types of studies did you consider and what 23 were your conclusions? 24 A. So the Valor team took a very simplistic approach 25 to this, which was to gather all of the studies that we

2139 1 knew about, too, then tried to quantify emission factors. 2 And, specifically, it came down to the intermittent 3 pneumatic controller discussion. And we compiled them and 4 evaluated them and used that as a kind of a -- you know, 5 providing that reference, to say that in our estimation, 6 we recommend using -- kind of following in line with what 7 Colorado has done, and adopting that 3.5 standard cubic 8 feet per hour for an intermittent controller. And it was 9 a very simple study. 10 Q. And as part of that evaluation did you consider 11 prior critiques that Dr. McCabe had made about some of 12 those studies, and was one of the things you considered 13 attached as Exhibit -- as Appendix A to your Exhibit A2? 14 A. Yes. I think, yeah, there was a report that was 15 appended to that -- to that memo, to just kind of 16 illustrate in our perception that this was the latest and 17 greatest information that we have, and that the 3.5 is a 18 more appropriate emission factor. And I think a lot of 19 this will come to light in a lot of the surrebuttal 20 testimony. 21 Q. Okay. Why don't we move on then. 22 A. Okay. So a lot of this is -- I have a few slides 23 here to kind of wrap my arms around the greater effort 24 that we did. And so, portions of this will be anecdotal, 25 so I apologize for that. What we were charted to do was,	2141 1 describing the facilities that need to be converted to 2 instrument air for sites that have access to electricity 3 or have it on site already; conversion where they don't 4 currently have electricity on site. 5 The next one being if we -- what is the cost 6 associated with, say, it didn't have access to electricity 7 at all, any grid power, how would you power those 8 instrument air compressors. And so we evaluated a 9 generator and solar hybrid combination and how much that 10 would kind of cost. And then, the last one was, you know, 11 completely going to solar power for all of your instrument 12 gas -- instrument needs. 13 And so for each of those kind of categories, and 14 I'm sure there's other hybrids and more, what we did was, 15 you know, provide the latest vendor information and tried 16 to keep everything as consistent as possible with -- with 17 the NMED cost estimate sheet, to the point where there are 18 costs associated in that sheet that are -- or, sorry, 19 there are features in that estimate sheet that we don't 20 necessarily agree with; for example, the -- the time to 21 pay back, you know, with ten years and an interest rate. 22 We don't believe in that, you know, you should be looking 23 at a ten-year payback for these facilities. But, again, 24 that would have added another variable that we weren't 25 trying to focus on.
2140 1 based on the time frame we had, was not to do a full 2 comprehensive State of New Mexico evaluation of the costs; 3 what we did -- what we thought was the best use of our 4 time was to piggyback off of the ERG and NMED cost 5 analysis and make adjustments as we thought were more 6 appropriate to the current marketplace with -- in terms of 7 equipment, and installation costs, and try to correct 8 those where -- where it was applicable. 9 Part of that, too, was, we believe that the ERG 10 cost estimate was quite impressive. I must say that it 11 was a very good -- it was a very good cost estimating 12 exercise. And, to me, the most important thing when we 13 evaluate cost estimates between Individual A and 14 Individual B is -- is to try to compare apples to apples 15 where we can. And so, therefore, we just used the NMED 16 cost estimating sheet as the first step. 17 So what we did through that process is, we 18 incorporated this emission factor of 3.5 scf's per hour 19 for the intermittent controller. And that was a simple 20 change and, you know, update the sheet appropriately. And 21 then what we did is, we conducted a series of studies 22 gathering vendor information on the various configurations 23 we could think of that may be instituted at some of these 24 production facilities, midstream facilities in New Mexico. 25 So you see here I have a couple of bullet points	2142 1 There's other instances that you see here, 5 2 horsepower or 15. You know, one of the things that the 3 cost estimating sheet that ERG did was where it was very 4 impressive, as to how they broke it down but the, you 5 know, the number of pneumatic controllers and the 6 horsepower of a compressor that would be required to 7 supply that. We gathered the process and made costs and 8 vendor information for those similar sizes. 9 Q. Okay. 10 A. Okay. One of the biggest kind of deltas was in 11 between the ERG cost estimate sheet and the updates we 12 made, is based on the vendor information -- the vendor 13 quotes -- right -- hard vendor quotes that we received 14 from working these projects over the years -- and the air 15 compressors always seem to be the delta. And one -- the 16 thing to take away from this is, this is not your -- this 17 is not your Home Depot air compressor. You know, it's 18 different. There's more to it. There's more bells and 19 whistles. And, you know, to the point, like there's also 20 not a standard -- there's not a linear cost per horsepower 21 once you get to a lower threshold. 22 You know, so, for example, if I needed a -- you 23 know, if I calculated I needed a 3 horsepower, you know, 24 maybe the standard one that's available is 5, and the 25 things I need to go with that are all pretty much the

2143 1 same, even if I went to 15 or 30, or whatever. The -- I 2 still need a building, I still need to protect the system. 3 I still need to wire it up. I still need some steel to 4 support it, an electrical panel, and then, of course, all 5 of the piping and tubing that go with it. 6 So, I mean, it's very much like you're, you know, 7 buying a car. You can buy a standard -- get a standard 8 package, you know, a starting-at price of this, and then 9 you add on your leather and your features like that. It's 10 very similar. It's not -- it's not linear with 11 horsepower. 12 So, other things that we added to this were 13 installation costs; a crane -- you know, there's things to 14 consider like personnel time and crane time. And I think 15 you've heard from other testimony that, you know, 16 personnel -- trained personnel are kind of short in 17 supply. And I have on here, B-O-P, which means balance of 18 plant. For anybody who doesn't know, that's -- that's 19 basically everything around the building, around the air 20 compressor, piping that I need to hook up to it, or, you 21 know, electrical, or instrumentation, if I need to monitor 22 how well it's performing. 23 So we -- we added those costs into the 24 spreadsheet and came up with something significantly 25 higher. One of the things that we, you know, have been	2145 1 failure, we -- we recommend to put in a redundant 2 compressor that's on standby. So we call them, like, two 3 100 percent compressors; meaning, each one of them can 4 handle the facility, but they are redundant, you know, for 5 a -- to accommodate for a failure. 6 Other things that we are kind of seeing is, we're 7 looking at -- with instrument air is the reliability of 8 the grid. And, you know, that just kind of goes along 9 with single-point failure discussions. And, you know, 10 what happens when -- when that system goes down? All of 11 these things have to be considered when we are designing 12 these systems. 13 Q. Your basic point here is that the expectation of, 14 certainly, the company that you're working for, certainly 15 the agency and the surrounding public, is that control 16 systems should work and they should work all the time? 17 A. Yeah, yeah. And that's right. And -- and, 18 ultimately, you know, I'm a service provider, right? So I 19 always have to recommend for redundancy or providing a 20 little bit oversizing of equipment because if I'm wrong, 21 usually it's on me and my team. I don't want to get the 22 phone call at 11 p.m., so... 23 Another point that was in the Valor memo 24 regarding, you know, conversion, was to like completely 25 electric actuated valves and dump valves on separators,
2144 1 dealing with a little bit is, you know, when we switch 2 over to instrument air and air compressors, there is 3 this -- we sort of introduced it as a single-point failure 4 into the system. You know, a lot of -- a lot of 5 facilities that are on instrument gas, or, you know, fuel 6 gas, sometimes the pneumatics are taken off of the 7 separator that they're servicing or maybe there's a 8 combined fuel gas system that just goes to a passive 9 vessel or knockout, that then services all of the end 10 devices. 11 And there is a little bit of a fear right now 12 with, you know, converting to a system that has a 13 single-point failure. And, you know, I bring that up for 14 there was a minor delta, I think, in some -- that you see 15 in some rebuttal, that was, hey, the cost for a 60 16 horsepower instrument air system is almost double than 17 what I would have thought. And the reason for that is 18 because, you know, usually if you're in that range of size 19 of compressor, you're servicing a much bigger facility. 20 And if that bigger facility goes down due to a 21 single-point failure, you've got bigger emission problems, 22 such as any kind of emissions from restarting a system, to 23 blowing down equipment, emissions from tanks, if there's 24 thermal breathing losses. So with those bigger 25 facilities, sometimes if there is a fear of single-point	2146 1 and basically everything. Now, you know, I, personally, 2 have some issues with that, only because there's a -- we 3 have to consider these valves and the process condition 4 that they're serving, that we want them to be failsafe. 5 When we say "failsafe," it's usually like you lose 6 pneumatics, the valve closes, or it opens, depending on if 7 it's a normally-opened valve or a normally-closed valve. 8 But all of these things we have to -- the 9 failsafe state is really what we have to consider. And in 10 addition to that, we have to consider actuation time; how 11 fast do we want this to open, and how fast do we need it 12 to close. All of those things are -- take a lot -- a lot 13 of thought and -- and if you have a valve, for example, 14 that requires -- it is a bigger valve and requires a high 15 demand and needs to open quickly or close quickly, there, 16 you have to look -- and if we were to convert it to 17 electric, you know, there's an immediate quick amperage 18 draw, you know, it requires a lot of current to -- to 19 actuate that valve. 20 So, in my experience, most people are very just, 21 you know, it's either instrument air conversion or 22 nothing, if they have to -- if they have to. Right? So 23 I'm a little hesitant -- you know, me, personally, I don't 24 recommend electric actuating, you know, for many reasons, 25 including -- but mostly from the failsafe perspective.

2147 1 The other consideration similar to the instrument 2 air compressor is, you know, we've got a lot of -- well, 3 let me first say, you know, it's not just we've got to 4 convert an actuator to electric. You also have to convert 5 the level controllers and basically pressure transducers 6 that were pressure gauges. A lot of instrumentation go 7 along with actuating one valve, you know. 8 You know, you've heard other testimony that, you 9 know, these valves are controlling something. It's 10 either, you know, pressure, temperature, flow rate. So 11 the corresponding measurement device also has to be 12 electric in most cases. So -- so the cost is not just the 13 cost of the actuator, there's more to it than that. And 14 then I have to tie all of that together into some control 15 cabinet where the -- where the valve comes -- leads come 16 into, and the level controller -- the electric level 17 controller leads come into, or pressure. And those PLC 18 cabinets can get pretty expensive pretty quickly. And 19 they, too, have a bottom line cost. Right? 20 You need a cabinet. You know, you need what they 21 call ding rails which are where all the -- where all of 22 the controllers come into on these IO devices. Those PLC 23 cabinets run upward of \$10,000 or more easily. 24 Okay. And then we talk about -- you know, we had 25 talked about in there, solar. Well, when you're talking	2149 1 it kind of would require -- you know, you have a facility 2 shut down and the same -- same consequences as the 3 instrument air system, you could be having more emissions 4 from thermal breathing than you probably would have saved 5 just keeping it on instrument gas. 6 Now, how much that -- how will you quantify that, 7 is kind up to the facility engineer to do that, but these 8 are all things that we all have to consider when we're 9 talking about major infrastructure change like this. 10 I believe that concludes my direct, Mr. Hiser. 11 Q. Okay. Did you also prepare some surrebuttal? 12 A. I did. 13 Q. Why don't you take this down and switch to that, 14 and we will do your surrebuttal as well. 15 A. How do I stop sharing? Oh, there it is, the big 16 stop sharing button. 17 Okay. And so, the first part of your 18 surrebuttal, then, you evaluated some of the commentary 19 that you received in rebuttal from the other parties, 20 challenging whether the 13.5 or 3.5 standard cubic foot 21 per hour, which sometimes you call "scf" per hour, and 22 this is your evaluation of that testimony; is that 23 correct? 24 A. Yes. We start off with that, yep. 25 Did you have questions? I'm sorry.
2148 1 about solar it's very important to -- it's not just that 2 you have solar panels that power these things directly. 3 You know, they provide to that PLC cabinet, but then 4 provide power to the end devices. Now, what if you had a, 5 you know, a snowstorm or cloudy day? Right. 6 So you actually have to design and have a battery 7 backup. You know, the batteries are usually put in 8 battery boxes that, you know, they have to be sized -- you 9 know, you have to size them for the appropriate amount of 10 days of autonomy, as we call it. So if you want to size a 11 facility that can handle five days of cloud cover, you 12 have to have enough batteries to last you that entire 13 time. 14 So there's a lot to consider. And, of course, 15 all of these devices: the control cabinet and the battery 16 box, all of those need to be mounted off the ground and so 17 that requires some structural and some civil work. So the 18 costs -- the costs for all of these things, you know, if 19 you just look at the cost of an actuator -- an electric 20 actuator, that's just the tip of the iceberg when it comes 21 to facility design. 22 And, again, just like the instrument air 23 compressors, you've got a lot of single-point failures in 24 that system. Right? You have breakers and fuses, where 25 if they, too, fail inadvertently, or, you know, by design,	2150 1 Q. No, go ahead. I mean, what did you conclude 2 based on the commentary from Dr. McCabe and others? 3 A. I guess the conclusion of -- which kind of plays 4 through this is, you know, which one is more suitable. 5 And, you know, I will say that I just inherently have -- 6 I've always had issues with -- with these emission 7 factors, in terms of -- for several reasons: one, because 8 there's no kind of distinction between malfunctioning 9 versus as designed emission factor. 10 In addition, I understand there is always a 11 very -- a statistical approach that is always taken, you 12 know, we're going to go evaluate all of these facilities, 13 all of these pneumatics and try to quantify an emission 14 factor. But as a kind of a designer of facilities, I 15 would say that there's a lot that goes into determining 16 that. 17 I think you pointed it out earlier, where you 18 weren't sure if a couple of data points were 19 malfunctioning or properly operating. But, you know, what 20 things go into evaluating, you know, how much -- what is 21 the consumption of gas that a pneumatics valve uses. 22 Right? There's several. There's several things that go 23 into that. And I never see any studies that talk about 24 that. 25 And so, the problem becomes, if you take the

2151 1 statistical approach to evaluating all of the emission 2 factors from all of these devices, but then you try to use 3 that as a -- saying what a root cause is or why something 4 is lower in one state versus another, if you don't know 5 how the system is operating or, for example, is it on a 6 plunger well or not -- and I'll get to that later -- how 7 can you say, you know, it's applicable to one state or 8 another? 9 So, to me, my -- my thought -- and this is on 10 this slide, is that, to my knowledge, there's no studies 11 in New Mexico that would evaluate pneumatics from a 12 facility-engineering perspective. So until that time, I 13 always consider -- I consider both of them arbitrary. 14 So the pneumatics memo that we put together was 15 just to highlight the latest studies that were done from 16 an environmental engineering perspective, but to this day, 17 nothing has really satisfied me, in terms of from a 18 facility design perspective. 19 I guess I'm halfway through the slide, so I'll 20 just keep going. So, you know, I think Dr. McCabe had 21 said that, you know, in some of his rebuttal testimony, 22 that he didn't believe the 3.5 was appropriate -- or that 23 that 3.5 scfs per hour was appropriate for Colorado 24 because of, you know, more regulations, more frequent leak 25 detection or repair, and just a general, more aware --	2153 1 or the hole's diameter that the fluid can go through. 2 Q. And so, basically, what you're saying, Adam, 3 here, is that there were changes in how industry was 4 designing and implementing some of this equipment, that 5 were going on at the same time as the LDAR developments 6 that Dr. McCabe was speaking about? 7 A. Absolutely. And -- and so as a result of the 8 smaller trims, what you see is valves that would -- that 9 used to, say, actuate -- I'll just throw an arbitrary 10 number -- 5 times in a minute, and now with the smaller 11 trims, there's less liquid going through it, a less liquid 12 flow rate and so the valve would stay open for 1 cycle. 13 So I reduced that 5 down to 1 just by trimming down the 14 valve orifice. 15 So, you know, to say that it's a strictly LDAR, I 16 don't know if that's true, but I do know what we were 17 doing for the past seven years has helped the frequency 18 and the amount of emissions out of controllers. 19 So I have a picture here to kind of illustrate 20 that, because I know this is a little technical or at 21 least can be, but the -- if I'm looking at a separator 22 right here, and this is a certain design of separator, 23 where you have an oil bucket and a water bucket, as they 24 call them, and the flow kind of goes up and down in that 25 area, and the level goes up and down in those buckets.
2152 1 awareness of emissions in Colorado. 2 You know, which brings to the -- you know, my 3 fourth bullet here, which is if we were to implement very 4 similar stringent LDAR at these facilities in New Mexico, 5 wouldn't we perhaps in a few years be seeing that we are 6 trending toward the 3.5 scfs per hour. Again, not -- not 7 disagreeing with -- you know, not trying to dog any kind 8 of approach -- statistical approach, but if we're talking 9 apples to apples, I'm just going to talk apples to apples. 10 So wouldn't we be potentially going toward more 11 of a 3.5 scfs per hour if this LDAR was implemented? But 12 then another kind of point came to mind, which, you know, 13 a lot of these studies were done in, you know, 2015, or at 14 least in the past recent years, I'll say, and, you know, 15 with reference to Colorado. And in -- from 2014 until 16 basically now, there's been a big push toward ozone system 17 analysis on storage tank compliance. Right? Producing 18 emissions from storage tanks. 19 Well, what people don't really know, but which me 20 and my team members do know, is that from and during that 21 time, how we were recommending and the operators were 22 putting smaller valved trims all over the field. What 23 that means is a valve is -- it could be a 2-inch valve and 24 it has an orifice size in it of 1 inch, for example, but 25 to reduce the trim, you're basically reducing the orifice	2154 1 Well, when the level goes up, it opens the valve. And 2 when the float goes down to the bottom of its span, it 3 closes the valve. 4 So you can imagine that if I were to take that 5 valve and put a really small orifice or choke-point on the 6 exit of it or inside of it, that when it hit that high 7 level in the separator, it would take a much longer time 8 for that liquid level to go down. And as a result of 9 that, I took something that would have cycled -- again, an 10 example, you know, five cycles in a minute down to one 11 cycle in a minute. 12 This is not intended to confuse anyone, but, you 13 know, as part -- it's to illustrate that as part of the 14 closed-vent system analyses that I've done over the past 15 seven years, that we gained, in my opinion, a much better 16 understanding of the pneumatics and how they work and how 17 they -- how the valve opens and closes, and how the well 18 behavior affects it. 19 And so these equations were developed over time 20 to best quantify the number of cycles in a plunger run or 21 during normal operations. Now, they're not perfect, 22 because in real life, you have slugging and unanticipated 23 events, but at the same time, these have been proven up 24 time and again with actual field data. 25 So, along those same lines, you have this, you

2155 1 know, you have different types of wells and they affect, 2 you know, separators and valves, and then, you know, 3 differently. So, a free-flowing well, you know, if you 4 look at that previous slide, the liquid is coming into 5 the -- into the separator at a pretty constant rate, near 6 constant. What we have observed from doing these 7 closed-vent system analyses and closed-loop vapor control 8 systems, is, you know, they can actuate for 3 to 5 seconds 9 and close -- you know, be closed for 20 to 40 seconds, 10 that's pretty, pretty typical. Again, I'm not saying that 11 every facility is like that, but that's pretty typical. 12 And plunger levels are kind of all over the 13 place, but what we do know is that when you have a plunger 14 well that brings up a large slug of liquid at a pretty 15 fast rate, you know, again, going back to the trim size, 16 if you have a small trim size, that valve will be open one 17 time during that plunger arrival. 18 So, I say all of this to kind of demonstrate that 19 maybe LDAR is not the only reason or that heightened 20 awareness of the pneumatics is the only reason why maybe 21 the Colorado emission factor of 3.5, you know, why it was 22 established at that. You know, there have been other 23 facility design changes in the past seven years. 24 So, here on this next one, it's kind of a 25 calculation. And I kind of think it's, you know, maybe a	2157 1 is look at pneumatics from a facility-engineering 2 perspective, not from an environmental-engineering 3 perspective. 4 Q. And from the facility-engineering perspective, 5 you're saying that given the sizes of the valves and the 6 amounts of gas that are involved, and a reasonable 7 estimate of the number of cycles, it's not going to be as 8 high as some of these studies have suggested? 9 A. That's right. I just can't see it. I don't 10 understand how -- how they came to these numbers. You 11 know, it also kind of plays to a little bit, just kind of 12 a little aside, is that, you know, this is a very good, 13 you know, opportunity for immediate emission reduction 14 from pneumatics. You know, change the trim size on your 15 valve so it doesn't cycle as often. That is something 16 that is very, very doable, and doesn't require an entire 17 instrument air system to do that. 18 Okay. Moving on here, want to discuss a little 19 bit of the going back to the ERG cost analysis. Again, 20 you know, I want to say that it was a very impressive 21 study. So I don't want to dog anyone for that, there were 22 just a few things that we're changing here. Right? So 23 here's a snip of that estimating sheet and, you know, for 24 10 controllers, 40 controllers and 100 controllers, you 25 know, NMED kind of calculated a horsepower requirement,
2156 1 little too much for this discussion, but the takeaway is 2 that, you know, you can actually calculate the volume 3 of -- a volume within a -- inside a valve actuator. And 4 you can calculate that if I pressure it up to "X" number 5 of psi of gas, you can -- you could literally just say, 6 Okay, when it depressurizes, it lets go of this amount. 7 So, what I noticed in the ERG cost analysis is 8 that they use that 13.5 scfs per hour as kind of like a 9 total op for intermittent controller totalized over an 10 hour. Okay? So, you'll see here you have -- I have 11 some -- an example of a 2-inch valve and the amount of 12 volume that it contains. 13 And over here in this -- on this slide, what I 14 kind of show is that with 13.5 scfs per hour based on what 15 we know of how much is actually contained in those valves, 16 those valves have to cycle 135 times in an hour; or even 17 the 3.5, 35 times an hour. Again, you know, the 135 seems 18 very unlikely to me based off of my observation and 19 testing done in the field. And even 35 is very unlikely. 20 That basically means that valve needs to open for 1 21 second, close for another; open for another second and 22 close for another. 23 But, you know, what we don't know from that 3.5 24 estimate is whether or not that's a failed condition or 25 not. So, again, what I, you know -- what I'm trying to do	2158 1 you know, for 4 horsepower, 16.1, 40.2. Now, we can't -- 2 you know, we can't order a compressed air system in 3 that -- right, in that size. You have to round up to the 4 nearest 5, 10, 15 horsepower. So what we did was we 5 basically just -- where it said 4 horsepower, we put in 6 our cost analysis for a 5 horsepower system. And for a 15 7 -- I'm sorry, for a 16.1, we put in a 15. 8 So we tried to echo everything that NMED did in 9 terms of their assumptions in order to compare apples to 10 apples. So another part of Dr. McCabe's rebuttal 11 testimony, I believe, was, you know, how did you come up 12 with that horsepower and, you know, the calculations don't 13 make sense. 14 And, you know, what I will say is that, I've 15 been -- you know, we've been -- I've been designing all 16 kind of systems for -- for years and, you know, did 26 17 instrument air systems back at Kennedy Space Center, and 18 did most of them for the senior gas turbine balance of 19 plant systems, and, of course, have done that here in oil 20 and gas. 21 And what I will say is in my travels, that all 22 engineers do the math differently on how they come up with 23 the required amount of instrument air, and by association, 24 the amount of horsepower required. So, some of them do 25 them based off of a known frequency, which is kind of how

2159 1 I like to do it because it understands the -- it shows an 2 understanding of the well behavior. Some people put a 3 meter on the fuel gas system that they're currently using, 4 and then convert it. Right? And then other folks, you 5 know, do a -- they work with the valve manufacturer and 6 they find out what the demand is for that specific valve, 7 then they do a base-load case of "X" number of controllers 8 at a "Y" number of controllers that are out there, and 9 they add in safety -- you know, safety factors and 10 correction factors to it. 11 I will say that I think, you know, all are valid 12 and all are appropriate, but the most important thing to 13 look at is the demand. You know, what are -- what are 14 these valves requiring in a certain amount of time? So 15 that requires a lot of process knowledge. You kind of 16 need to know, you know, what it's supposed to do, what you 17 want it to do. 18 And, you know, so you select the valve and then 19 you estimate the proper opening time and close time for 20 that valve, and you size the actuator and the vent orifice 21 that comes off that actuator appropriately. Right? I 22 have an example here, but it's, in general, just trying to 23 illustrate that, you know, there may be valves where I 24 need it to close in 1 second, but I don't care how long it 25 takes to reopen. So, depending on if that's on the demand	2161 1 Q. Is that your final slide, Adam? 2 A. I believe so. 3 Q. Okay. So the point that you were trying to make 4 through this for the Board is that you tried to look at 5 the actual requirements for system design in coming up 6 with your cost estimates? 7 A. Yes, and to basically vet the NMED assumptions of 8 the 4, 16.1 horsepower and those things, and we found the 9 commercially-available ones that were in that range. 10 That's how we -- how I did it, again, so we could compare 11 apples to apples. 12 Q. So that you were using the commercially-available 13 equipment that you could actually go out and buy, correct? 14 A. Yes. 15 Q. And that you also tried to add into the cost, 16 where appropriate, the other parts of installation that 17 are required; things like tubing or logic controllers, 18 things of that nature that are part of any of these system 19 designs? 20 A. Yes, with one caveat; that we -- we kept 21 installation costs at 50 percent, you know, basically 22 man-hour frame time, and we kept that at 50 percent of the 23 capital costs. And we did that, again, not that we agree 24 with it in all cases, but that is what NMED used. And so, 25 again, trying to eliminate the number of variables we're
2160 1 or the exhaust side of the valve, kind of dictates, you 2 know, how I size for my demand for my instrument air 3 system, and by association what the -- what size 4 horsepower system I need. 5 You know, the point I'm trying to make here with 6 this is that I believe Dr. McCabe was trying to use the 7 environmental engineer approach of these emission factors, 8 these emission rates, to kind of extrapolate what a -- the 9 horsepower of an air compressor would be, but the point is 10 that the demand rate is not the same as vented rate, 11 because you need to know your specific process conditions 12 and what your valve can do. So, you know, at the end of 13 it, though, what I would like to illustrate again, is that 14 regardless of how Dr. McCabe performed the sizing, or me, 15 or, you know, Joe Smith, facility engineer, really, 16 there's very -- there's like commercially available 17 electric motors. You know, you can't just get a 3.15 18 horsepower air compressor. You -- you size your system, 19 you add a certain safety factor, and then you round it up 20 for whatever is commercially available. 21 And I think NMED, you know, almost -- almost got 22 to that point, but it -- they got close, but it's 23 basically -- the cost estimates we had put in there were 24 based off of those rounding to the nearest 5, 10, 15, et 25 cetera, horsepower.	2162 1 trying to debate her. 2 Q. You did not include some of those costs; you 3 accepted the 50 percent of the total cost? 4 A. Correct, I didn't go out to quote formally for 5 any mechanical contractor and what their bids would be. 6 Q. Okay. Well, thank you for that. Probably more 7 than anybody wanted to know about facility design. 8 A. I'm sure. 9 Q. But hopefully that will help answer questions 10 from Board members about some of the factors that go into 11 these decisions. 12 MR. HISER: Madam Hearing Officer, we're happy to 13 provide Mr. Meyer now for questions from other parties. 14 HEARING OFFICER ORTH: Thank you, Mr. Hiser and 15 Mr. Meyer. Parties, counsel, if you have questions of 16 Mr. Meyer, please turn on your camera. 17 MR. BAAKE: Madam Hearing Officer, we do. 18 HEARING OFFICER ORTH: Mr. Baake. Sorry. 19 MR. BAAKE: Can you hear me okay? 20 HEARING OFFICER ORTH: Yeah. You're going to 21 have to lean forward, though. 22 CROSS-EXAMINATION OF ADAM MEYER 23 BY MR. BAAKE: 24 Q. Thank you, Mr. Meyer, very interesting stuff. I 25 will do my best to try to make sense of it. So I'd like

2163 1 to start by going to a point, I think it was on your very 2 last slide there. 3 A. Sure. 4 Q. And I'm trying to understand this. I think you 5 said the demand rate is not the same as vented rate; is 6 that correct? 7 A. Yes. 8 Q. So we're just trying to understand this because 9 as you -- as you alluded to, Dr. McCabe, in his analysis, 10 said, you know, I went through and looked at the capacity 11 of these compressor systems that were included in the 12 economic analysis and said, well, it looks like they're 13 producing, you know, in some cases 30 to 80 times the 14 amount that is actually going to be vented from the 15 controller, so it seems they're oversized. 16 But your point is that, some of the air is not -- 17 you need some air that's not going to be used to actually 18 actuate the controller; is that correct? 19 A. I think I know where you're going with this. And 20 if you're okay I could -- the difference becomes in how 21 we -- how we talk about rate. Right? The vented rate, 22 like the immediately, when I depressurize that actuator, 23 what is that instantaneous rate? Right? What is that 24 flow -- right -- versus, if I total up the amount of gas 25 based on all of the actuations from that valve in an hour,	2165 1 overheated and shut down. 2 Q. I -- I understand that. I think this is a 3 helpful clarification. But I guess my -- I would push 4 back on that and say, do you think it's standard practice 5 or -- or good economics to have 80 times the amount of air 6 you aren't going to use over an average period, is that 7 maybe going a little too far in terms of having 8 redundancy? 9 A. Eighty times based on what, the bleed rate? 10 Q. Right. 11 A. That's not -- no, that's not correct. You know, 12 you put in a demand rate for -- based off of the 13 instantaneous flowing need to pressurize that valve, and 14 then you add a safety factor on top of that, and, 15 unfortunately, round it up to whenever is commercially 16 available. 17 Q. But, again, I thought with the tanks, that the 18 instantaneous rate was not -- because you do -- you are 19 able to store it. I'm not sure why the instantaneous 20 rate -- why it's not -- why you can't use the average 21 emissions over an hour, and say what we have, and generate 22 that much air so we have that much in the tank? 23 A. Well, some people -- you know, again, to your 24 point, some people do it in a very quick hurry, when they 25 don't know what the process needs are for that specific
2164 1 what's the volume in that hour. Right? 2 I think that's where the discrepancy is a little 3 bit, and what I was trying to illustrate is that, that 4 momentary rate of bleeding off is, that instantaneous rate 5 is not the same as the demand. Right? 6 If I need to pressurize these -- all of these 7 valves very quickly, but I don't care how quickly they 8 bleed off. Does that make sense? 9 Q. I think it does make sense. So, my question then 10 is, is it -- could you use a tank? Could you store this 11 compressed air so that you have -- you don't have to be 12 generating more than 40 or 50 times more than you need? 13 A. Yes, absolutely. So, yeah, most compressed air 14 systems have an accumulator or a receiver that are, you 15 know, are there so you're not putting too much of a demand 16 on the air compressor to operate immediately. Right? But 17 at the same time, I still need to replenish the air that 18 was in that receiver that was used in pretty quick order. 19 Right? 20 And, again, you know, going back to the 21 difference in the service world -- right -- I always err 22 on the side of the conservatism when sizing these things, 23 and most people do, because the last thing I want to do is 24 get a call that all of my valves stopped because my air 25 compressor has been running around the clock, and	2166 1 valve, you know, they throw in an assumption, you know, 1 2 cubic feet per minute, or whatever it is; they do an 3 estimation of, you know, base load and peak -- right -- 4 and then they add a safety factor on to that. 5 But at the end of the day, you know, it's very 6 important to keep in mind that, you know, you can't go buy 7 a 1.15 horsepower air compressor that's commercially 8 available. You usually have to round up to the -- what is 9 available. And, again, the costs for that are -- there's 10 a base model and then you add additional horsepower. 11 Q. No, I totally get that you can't, you know, 12 necessarily custom order, in particular, you know 17.3 13 horsepower or something. I get that. 14 A. Yeah. 15 Q. My point is, it still seems like, you know, the 16 calculations here are assuming either that a lot more 17 capacity is bleeding than the original numbers suggest, 18 that more, you know, many times the amount of gas that's 19 actually going to be needed to being produced. And I 20 understand, you know, that it's -- there's some complexity 21 there, but it seems like perhaps that that, you know, that 22 could be addressed as folks become more familiar with the 23 system, then they could say, well, we don't need to be 24 producing, you know, 80 times the amount of gas that we're 25 actually using on an hourly basis. I don't know if you

2167 1 agree with that. 2 A. Not the 80 number, I'm not quite sure where you 3 keep getting that from, but the -- 4 Q. So -- 5 A. I understand where you got it from, but I don't 6 understand why that's stuck. The, you know, again, it all 7 comes down to your process conditions, and I can't explain 8 every single circumstance of where you may need a higher 9 demand, or, hey, maybe there's a pneumatic pump 10 involved -- right -- an AOD pump -- right -- consumes 25 11 to 50 scfs per minute. There could be huge demands. And 12 we also have to size facilities, not right on the line of 13 demand, you know, we'd size exactly for the demand if we 14 could -- we've got to also size for expansion. Right? 15 If they're adding another well in the future, if 16 they're adding, you know -- you know, whatever, we have 17 to -- we have to be prepared for that. And, 18 unfortunately, I mean, I understand where your line of 19 questioning is coming, but there's -- there's no simple 20 answer, if that makes sense. It depends on the facility 21 and the demand. 22 Q. Understood. And just for -- for the Board 23 members, the 80 times is coming from Dr. McCabe's rebuttal 24 testimony, pages 15 and 16, where I think we did analysis. 25 And -- and I don't know if you -- do you recall,	2169 1 A. They could be, if we're adding malfunction into 2 it, yeah. If there is significant -- if there is 3 significant malfunctions, you know, statewide, that would 4 lead to a larger emission factor. And if we are -- you 5 know, defining emission factor as both the design vented 6 rate as well as any malfunction, then, yeah, I would 7 support that. 8 Q. And you agree that there -- that there are 9 malfunctions? 10 A. Oh, absolutely. 11 Q. And -- and, in fact, the literature documents 12 that -- at least in certain basins, they're quite -- quite 13 common? 14 A. It's -- it is common, but that's why we have 15 those other programs to catch them and fix them, and, you 16 know, like Colorado did and like we're going to be doing 17 here. 18 Q. Is there any reason, if the controllers are 19 malfunctioning a lot and more than their design bleed 20 rate, that you would not factor that in when you're trying 21 to design this program? 22 A. When you're designing the what? I'm sorry? 23 Q. So when you're trying to do your cost analysis 24 and you're trying to say the cost per ton, is there any 25 reason you would not use the emissions that are actually
2168 1 Mr. Meyer, reading that -- that discussion? 2 A. Yeah, I had reviewed it briefly. 3 Q. Yeah. So I think the discussion there was that, 4 you know, with a 60 horsepower compressor, you'd be 5 getting about 113 scfs per hour per controller, which is 6 about 80 times the emission rate that was used. But I 7 think we've -- we've done some good discussions here. 8 I wanted to also ask about the emission rates. I 9 think that's -- you would agree that the emission rates 10 that are used are a big driver, in terms of the overall 11 cost of the program, right? 12 A. I think a lot of things are, but, yeah. Yep. 13 Q. I think I heard you say at the beginning of your 14 presentation that, really, there is no way we can know for 15 sure what the bleed rate for intermittent bleeders is in 16 New Mexico because there hasn't been a New Mexico-specific 17 study. Did I get that right? 18 A. Not to my knowledge. At least I have not seen 19 them. 20 Q. But I characterize -- I characterized your 21 testimony, right, that that was your testimony? 22 A. Yeah, yeah. 23 Q. Right. So -- and you agree that the emission 24 rates here could conceivably be higher than what was used 25 in Colorado for an intermittent bleed, right?	2170 1 happening in the field? I mean, would that be good 2 practice? 3 A. Well, when it comes to -- okay, cost per ton. So 4 the cost-per-ton analysis is based off of an emission 5 factor -- right -- as well as all of the other equipment 6 that's associated with it. So, I mean, to me, the 7 equipment costs would dwarf any kind of, you know, pretty 8 much everything. I mean, a compressed air system is going 9 to cost you at least \$100,000, if not more, total package. 10 So I guess I'm not quite sure what you're getting 11 at. There's a lot of factors that go into that cost per 12 ton, I would say, in addition to the emission factor. Is 13 that what you're getting at? 14 Q. Well, right. But you know the total number of 15 emissions that you're going to be controlling by the rule, 16 the emission factors how you get there, right? 17 A. "How I get there." Yeah, that would be a 18 starting point, for sure. But, again, I fundamentally 19 disagree with not understanding of how a plunger well 20 works, or how they -- how you can change the air set on a 21 pneumatics valve, to reduce these emissions from the 22 beginning, you know. This is -- I don't know if that 23 makes sense, but switching to instrument air may not be -- 24 is not cost effective for some of the stripper wells, or 25 the low-producing wells. Right?

2171 1 And so emission factor really doesn't play in 2 too, too much, I would say, into that; more of the 3 equipment cost is a bigger driver. 4 Q. Well, I thought that the analysis that you did 5 was looking at cost per ton, and looking at how NMED 6 evaluated that. So -- 7 A. Yeah. Again, I was being very specific just now 8 to smaller producers. Right? But as a -- as an industry 9 whole, yeah, the emission factor would play into it. 10 Q. And so, if you're doing a -- you're trying to 11 find cost per ton, the number of -- the amount of 12 emissions is the denominator, right? 13 A. Yes. 14 Q. So if you're not using the right emission factor, 15 then your -- you know, your equation is not going to be 16 right? That's what -- 17 A. Well, neither is McCabe's -- Dr. McCabe's. If 18 he's using a higher one that's not correct, and I'm using 19 a lower one that's theoretically not correct, neither of 20 us are correct. That's why I said they're both arbitrary 21 until we do a study. 22 Q. Okay. But your testimony is that you -- yeah, 23 that -- 24 A. And what I was saying is from a 25 facility-engineering perspective of looking at valve	2173 1 does it make sense to ignore the fact that -- that there 2 are a significant number of malfunctions? Because it's 3 not -- I'm trying to understand why we would use the idea 4 of what they emit when they're correctly operating, if the 5 evidence shows that they do not correctly operate much of 6 the time? Maybe you can clarify that. 7 A. You're ask -- so you're asking why wouldn't I 8 incorporate into the cost, assuming that they're all 9 malfunctioning? 10 Q. No, they're malfunctioning at the rate that, you 11 know, these 15 studies that we cited suggest they are. 12 A. That Dr. McCabe was saying the 13.5. Why 13 wouldn't I incorporate that? So that would be on the low 14 end. Right? 15 So what we can easily do is update just the 16 equipment costs in that cost estimate sheet, and even 17 then, it's about 2 -- 2 "X" higher than what was projected 18 by NMED originally. So let's put that -- a good point, to 19 let's put the emission factor to the side, then the cost 20 estimate sheet would still show projected higher costs per 21 ton based on just the equipment alone. 22 Q. Mr. Meyer, in your analysis you did not include 23 the value of the saved gas, did you? 24 A. The value of the saved gas, no. And NMED did not 25 either. They showed it, but I don't think they took
2172 1 demand, you know, something doesn't add up. You know, I 2 mean, it would be cycling a valve once every second; it 3 doesn't make sense to me from a nonmalfunction 4 perspective. 5 Q. Right. But, again, you reviewed Dr. McCabe's 6 testimony, where he said that malfunctions are incredibly 7 common, did you not? 8 A. Yes, but it was more cost effective to go from a 9 5 horsepower compressor to a 30, or to fix my level 10 controller. Right? Think about that. So there's a 11 certain amount of liters that you actually, you know, 12 incorporate into sizing a system, but I wouldn't 13 automatically just go up and say, I need a bigger 14 horsepower, I'm not going to change my -- fix my leaks. 15 So the LDAR program is going to fix those, are 16 they not? That's what I thought. 17 Q. So -- so I -- I think that you -- 18 A. Did I misunderstand you? 19 Q. Huh? 20 A. Did I misunderstand you? 21 Q. So I think the testimony about the LDAR program 22 is -- is different. But I'm just trying to say that, you 23 know, when we're looking at where we are now, and we're 24 trying to figure out the costs and benefits of this 25 program as a whole, including the LDAR and the conversion,	2174 1 credit for it, if I recall. 2 Q. And the emission factor would also bear directly 3 on that, wouldn't it? 4 A. I think the emission factor would bear on -- if I 5 changed it to instrument air, it would have zero emission 6 factor, correct? 7 Q. So what I'm saying is that, the value of -- yeah, 8 the value that you're saving depends on how much you're 9 currently leaking, right? 10 A. Yes, in theory. 11 Q. So if you assume -- if your analysis assumes that 12 we're -- that they're currently leaking -- and I -- I have 13 a number of different numbers, but I think for every 14 minute of air, you said, what was it -- 3. -- 3.5, is that 15 what you said? 16 A. Yeah, that was the reset number. 17 Q. So if your analysis assumed that you were leaking 18 3.5 scfs -- I'm glad I know that -- I can just say "scfs," 19 it's easier. If you assume it's 3.5 scfs per hour, but 20 it's actually 13, then the value of saved gas, it's, you 21 know, almost 5 times higher? 22 A. Yes, but I think that Mr. Smitherman has already 23 gone over that. That part wasn't part of my assessment in 24 terms of how much, you know, you would be saving from a 25 higher bleed, but I think Mr. Smitherman did, and still

2175 1 the payout wasn't quite there, and I think people 2 generally agree with that. I'm just speculating though. 3 Q. Okay. But -- but that, again, just to be clear, 4 that was not -- there was -- (unintelligible.) 5 A. There's a lot of things in that -- 6 HEARING OFFICER ORTH: Hold on, gentlemen. You 7 really do have to speak one at a time. 8 A. Okay. The -- yeah, so there are a lot of 9 parameters, I believe, in that ERG/NMED spreadsheet that, 10 given the time, I think that, you know, maybe there could 11 be future discussions on refining that, but we did not 12 feel based on the time, and also based on what we know. 13 Right? 14 So what do I know? I know how to size systems 15 and I know how to get vendor quotes. So that is what was 16 relevant to my study. Extrapolating that out to how much 17 gas is saved, to your point, that is nothing that I did. 18 Q. Mr. Meyer, if you were doing a -- considering a 19 retrofit for a facility, not in the emissions context, 20 just as, you know, just a project that was devised for 21 some other reason, would it be standard practice to look 22 at, you know, the value of gas that you might capture, 23 that you might have otherwise been able to capture? 24 A. No, usually because, I think it's understood that 25 the amount of gas that you captured is a fraction of a	2177 1 is going to pay for itself in gas savings over three 2 years. That's not something that would be considered; is 3 that your testimony? I'm just not -- I'm trying to 4 understand. 5 A. That's not what I'm saying. I'm saying the 6 projects I've been dealing with, usually the cost savings 7 associated with switching to instrument air isn't brought 8 up in discussion. 9 Q. I'm -- I'm -- I was asking a hypothetical, not 10 necessarily instrument versus anything else. But -- but 11 just in general, is that something the industry considers? 12 A. If -- if -- so as a hypothetical, if a -- if a 13 client of mine says that we want to install "X, Y, Z," 14 because we've calculated that it pays itself back in three 15 years, and then we're making more on gas, are you asking 16 would I do it? Sure. 17 Q. No. I'm asking is if -- is that something that 18 people would consider? Is that -- is that not part of the 19 analysis when you're looking at equipment upgrades, 20 that -- the ability to capture gas? 21 A. It hasn't been a part of the analysis on projects 22 that I've been involved with. 23 On a future project, if that comes to my 24 attention, that that is their driver, then -- and that is 25 their driver for doing it and justification, then, great.
2176 1 percentage of what a facility would make, and that you 2 can't justify that that gas that you sell is going to be 3 paying off the equipment. 4 So, really, most of the drivers are just, we're 5 switching over to instrument air, either for compliance 6 reasons or otherwise. 7 Q. So your testimony today is that the oil and gas 8 industry does not consider the ability to increase the 9 product it's going to sell, in citing to upgrade the 10 infrastructure? 11 A. No. Well, for me, all I can talk about is the 12 projects I've dealt with, where that hasn't come up in 13 discussion. But I can't speculate on other operators. 14 Maybe they are down to that fine -- the finality. 15 Q. So if a -- if a -- if an upgrade, like, 50 16 percent of the cost might be paid for just by the 17 retrofit, that is not -- in your testimony, it's not 18 something someone should consider? 19 A. If 50 -- can you rephrase it? Can you say that 20 again, sir? 21 Q. So I'm just trying to give you an example. So if 22 you have -- so if you have an upgrade that you want for 23 some other reason, and you're comparing -- say a piece of 24 equipment broke, and you want to upgrade the equipment. 25 And one piece is going to have a slightly higher cost, but	2178 1 But I can't -- I can't speculate on how people 2 have done things on a hypothetical future project. Is 3 that -- am I -- or am I not hearing you right? 4 Q. Yeah. And I guess I'm just trying to understand 5 from the perspective of operating a business -- 6 MR. HISER: Madam Hearing Officer? 7 HEARING OFFICER ORTH: Mr. Hiser? 8 MR. HISER: He's asked about five ways the same 9 question. And his basic answer is, I don't know what my 10 clients are deciding on this issue. 11 MR. BAAKE: Madam Hearing Officer, I think the 12 witness is being evasive. This is a very basic question, 13 whether industry considers the value of the product that 14 they're saving. I don't know why I can't get a straight 15 answer. 16 HEARING OFFICER ORTH: All right. So I don't 17 think the witness is being evasive. I think he has 18 answered as to whether it was a practice of clients in the 19 past, in that regulatory landscape or product landscape, 20 and has acknowledged it might change in the future. But I 21 don't -- I don't think he's being evasive. 22 MR. BAAKE: Okay. 23 HEARING OFFICER ORTH: Do you have other 24 questions of Mr. Meyer? 25 MR. BAAKE: One other -- one other question.

2179 1 Q. (BY MR. BAAKE) This relates, again, to emission 2 factors. Mr. Meyer, in your analysis, I believe you used 3 the Colorado estimate for intermittent bleed; is that 4 correct? 5 A. Yes. As I understand it, yes. 6 Q. And did you use the Colorado emission factor for 7 low bleed? 8 A. I did not change low bleed or high bleeds at all. 9 MR. BAAKE: No further questions. Thank you. 10 HEARING OFFICER: All right. Thank you, 11 Mr. Baake. 12 If you're another party with questions of 13 Mr. Meyer, please turn on your camera. 14 I'm not seeing anyone. In that case, I'll turn 15 to the Board for their questions. While I'm doing that, 16 if you're an attendee on this platform and have a 17 question, please reach out through the Chat. 18 EXAMINATION BY THE BOARD OF ADAM MEYER 19 HEARING OFFICER ORTH: Madam Chair, do you have 20 questions of Mr. Meyer? 21 CHAIRPERSON SUINA: Thank you, Madam Hearing 22 Officer. I don't have any questions at this point. 23 HEARING OFFICER ORTH: Thank you. Vice-Chair 24 Trujillo-Davis? 25 VICE-CHAIR TRUJILLO-DAVIS: Yes. Thank you. And	2181 1 And the second part of the rebuttal was 2 justification for sizing of equipment and how you actually 3 size instrument air systems, and providing technical 4 detail for that. 5 VICE-CHAIR TRUJILLO-DAVIS: Thank you. I 6 appreciate you just summarizing it for us real quick. And 7 I think if I have any more questions I'll be looking 8 through your presentation, so thank you. 9 MR. MEYER: You're welcome. 10 HEARING OFFICER ORTH: All right. Thank you. 11 Member Cates? Member Bitzer? 12 BOARD MEMBER BITZER: Good discussion. No 13 questions. Thank you. 14 HEARING OFFICER ORTH: Thank you. Member Duval? 15 Member Garcia? 16 BOARD MEMBER GARCIA: No questions. Thank you. 17 HEARING OFFICER ORTH: Member Honker? 18 BOARD MEMBER HONKER: No questions. Thank you. 19 HEARING OFFICER ORTH: Thank you. Let's see. 20 I'm checking the Chat. I don't see a question there, 21 although I thought I might get one there. Let me -- oh, 22 Madam Chair? 23 CHAIRPERSON SUINA: Yeah. And I appreciate your 24 testimony, Mr. Meyer, and the extensive cross and also 25 Vice-Chair's question. So, given the summary that you
2180 1 thank you, Mr. Meyer, for your detailed testimony. And -- 2 and I apologize for the directness of this question. I 3 was just curious if you could just give us -- the Board 4 just some quick bullet points of, like, a summary of your 5 presentation? I just want to make sure we didn't miss 6 anything. 7 MR. MEYER: Okay. Sure. Yeah, there was a lot 8 there, wasn't there? So the -- kind of the highlights of 9 this were, you know, speaking strictly from the 10 emission-factor perspective, you know, Valor thought it 11 was prudent to use the latest studies, so that was used as 12 part of the cost estimating adjustment. 13 In addition, you know, we evaluated the various 14 ways to change-over to instrument air or electric-driven 15 systems, and found that the costs based off of the current 16 market right now, post-COVID, and ramp up of the commodity 17 price, is pretty -- was much higher than what NMED had 18 predicted. 19 As part of the rebuttal testimony, most of it was 20 defending how -- the summary is that defending how, one, 21 there are more emission factors, in my opinion, from a 22 facility-engineering perspective, is much more complicated 23 and it takes someone with an intimate understanding of 24 wells, production and the process in order to ascertain a 25 correct -- a correct emission rate, malfunction excluded.	2182 1 provided in response to Vice-Chair's question, so, really, 2 it just sounds like we don't have really good estimates 3 here in New Mexico as to the emission rate. I mean, the 4 studies that were provided were for other facilities 5 outside of New Mexico, and we have yet to do those for New 6 Mexico is what it sounds like. Is that -- is that 7 accurate? 8 MR. MEYER: Yes, to my knowledge, the -- there 9 has been no study, to my knowledge. And based on how 10 other studies have gone, I would do them differently, 11 basically. 12 CHAIRPERSON SUINA: Okay. So -- and then just so 13 I can get my head around it, so in those -- you know, say 14 you were able to do those things, those studies 15 differently, they're still -- you still have questions 16 about how other studies were done; is that correct? 17 MR. MEYER: Well, yes, it is correct, from the 18 perspective of how a facility engineer sizes systems and 19 analyzes systems, versus an environmental engineer. I 20 think it's just two different disciplines. And to provide 21 an accurate cost estimate and value summary, I would need 22 to have it be viewed at from a facility perspective, if 23 that makes sense. 24 CHAIRPERSON SUINA: Okay. It does. And I mean, 25 you know, it's like ten different lawyers will look at the

2183 1 same piece of paper ten different ways. Like you said 2 earlier, ten different engineers will look at a system ten 3 different ways. 4 MR. MEYER: Absolutely. 5 CHAIRPERSON SUINA: And it's just what we look at 6 as the assumptions and, you know, what we're modeling, and 7 then, of course, you know, the details. So I appreciate 8 your perspective on this, Mr. Meyer, as well as the others 9 that have provided that -- their perspective as well. 10 Thank you so much. 11 HEARING OFFICER ORTH: All right. Thank you. I 12 did get -- Mr. Meyer, I did get a question in the Chat 13 from a Mr. Herndon. "It seems incongruent that his 14 company doesn't consider the value of the lost gas in 15 their operations, but they consider the value of replacing 16 those systems, which would, without argument, save them 17 products and money." 18 I know you had this discussion with Mr. Baake, or 19 a similar discussion with Mr. Baake, Mr. Meyer. Would you 20 have anything to add? 21 MR. MEYER: Yeah, only from the perspective of 22 that; I'm not an operator, I don't make the decisions as 23 to what drives change at a facility. I can recommend and 24 advise my clients on what is best for reducing emissions 25 while remaining cost effective. That is my role, that's	2185 1 the things that caught your attention, the report that 2 Dr. McCabe looked at the question of malfunction, and 3 that -- and putting those malfunction emissions back into 4 the emissions estimates in one of the other studies? 5 A. I did not look at it from that perspective. I 6 looked at it strictly from that, here on the environmental 7 side of the world, that it concluded for Colorado, that 8 this emission factor was appropriate, and that's how I 9 read it. That is basically the extent of it. 10 Dissecting it more in terms of deciphering 11 between the accuracy of those studies, including that one, 12 that is not a level that I personally got into. 13 Q. Okay. In terms of the overall -- there was a lot 14 of discussion about volume of air and some discussion 15 about emissions before that. When you were sizing the 16 system, you basically assumed an accumulator wouldn't be 17 appropriate; is that correct? 18 A. Yeah. Well, the costs of -- that we developed, 19 if you remember -- recall the picture in the PowerPoint, 20 there is an accumulator in that skidded system, so the 21 costs were all encompassing for the purpose of those, you 22 know, 5 and 15 horsepower estimates. 23 Q. If you were trying to account for the fact that 24 often operators will use the accumulator in order to avoid 25 having to put in a much bigger compressor --
2184 1 what I do. At the end of the day, though, it's ultimately 2 the operators, the oil and gas company's decision as to 3 why they change something or why they don't incorporate -- 4 why they don't account for captured revenue from the gas 5 they would have lost. I'm -- you know, all I can do is be 6 a good, you know, servant of my client and -- and do right 7 by them. 8 HEARING OFFICER ORTH: All right. Thank you very 9 much, Mr. Meyer. And I'm sorry, Theresa. Herndon was 10 H-E-R-N-D-O-N. 11 Mr. Hiser, does any of that prompt for you any 12 redirect? 13 MR. HISER: I think just a little bit on maybe 14 two points, Madam Hearing Officer. 15 REDIRECT EXAMINATION OF ADAM MEYER 16 BY MR. HISER: 17 Q. So, Mr. Meyer, you testified that you reviewed a 18 number of studies, including one from Dr. McCabe that was 19 attached as an appendix to your report; is that correct? 20 A. We -- we compiled the studies and reviewed them 21 in a very high level perspective. You know, it's -- I'll 22 let you ask the rest of your questions -- ask the rest of 23 your question. Sorry. 24 Q. And in the report that you included as Appendix A 25 to your expert report, the one from Dr. McCabe, was one of	2186 1 A. Yeah, it's not -- 2 Q. -- to contain the air? 3 A. Yes, yes. And, you know, that -- you know, 4 usually you see these accumulators for all systems, 5 regardless if the compressor is a, you know, reciprocating 6 type or kind of a continuous VFD-type of compressor, 7 you'll see that. But as far as I'm concerned, the cost 8 was incorporated in that study package. 9 Q. Yes, thank you. 10 And then, you talked about some of the additional 11 safety factors and air demand that you had to address. 12 Part of that design is you have to assume that some valves 13 may stick at some point in time, and you need to account 14 for that possible loss against your instrument air system; 15 is that correct? 16 A. Yes, that's correct. We have to try to predict, 17 again, the -- any malfunction, and try to size it so the 18 rest of the facility doesn't go down off that one thing. 19 Q. Thank you very much. That's my last question. 20 HEARING OFFICER ORTH: All right. Thank you, 21 Mr. Hiser. Thank you very much, Mr. Meyer, for your 22 testimony. 23 MR. MEYER: Thank you. 24 HEARING OFFICER ORTH: It looks like we can 25 excuse you for the moment. We do need a break. Let's

2187 1 come back at ten of 3, please. 2 (Recess taken from 2:37 p.m. to 2:50 p.m.) 3 HEARING OFFICER ORTH: Let's come back from the 4 break, please. 5 We are back after a short break. As I read the 6 spreadsheet, I believe next we'll hear from witnesses 7 Davis for IPANM, and Holderman for Oxy, but let me 8 double-check. Mr. Rose? 9 MR. ROSE: As to IPANM, yes, Mr. Davis will 10 testify. 11 HEARING OFFICER ORTH: Have I already made him a 12 panelist? 13 MR. ROSE: I can't speak for Oxy. 14 He's -- he's already -- I think I saw his -- 15 HEARING OFFICER ORTH: Got him. All right. 16 You're still under oath, Mr. Davis. 17 MR. DAVIS: Thank you, Madam Hearing Officer. 18 JEFFREY "RYAN" DAVIS, 19 having been previously duly sworn or affirmed, was 20 examined and testified as follows: 21 DIRECT EXAMINATION OF JEFFREY "RYAN" DAVIS 22 BY MR. ROSE: 23 Q. Okay. For the Board, we're talking about IPANM 24 Exhibit 1, which is the proposed modifications, IPANM 25 Exhibit 2, which is Mr. Davis's written direct testimony,	2189 1 Colorado, as we've heard already, has the basis 2 for retrofit or phase-out based on percent of production. 3 So IPANM proposed moving toward the percent of production 4 phase-out instead of the controller count. The other 5 piece that we -- we see that's missing from Colorado Reg 6 7, that's already been mentioned as well, is the 7 flexibility that Colorado Reg. 7 had for small producers. 8 So IPANM is proposing to put that flexibility back in. 9 And that flexibility was -- was based on production, and 10 it was based on a company-wide -- a company-statewide 11 average production. And we feel like that's critical for 12 relief for the smaller producers and the lower-producing 13 wells. 14 In addition to those two changes that we 15 proposed, we proposed to encourage the use of intermittent 16 controllers. The justification, we've already heard quite 17 a bit about intermittent controllers, it's not a surprise. 18 I was pretty sure this was going to be a hot topic, but I 19 think one -- one point that I want to highlight, and 20 Ms. Kuehn highlighted this earlier, but one of the key 21 differences on an intermittent controller is, it does not 22 continuously bleed natural gas during normal operations, 23 but bleeds back the actuation gas after the actuation has 24 taken place. 25 So an intermittent controller, it's very
2188 1 and IPANM Exhibit 10, which is Mr. Davis's rebuttal 2 testimony. And they've been -- already been admitted into 3 the record. 4 Mr. Davis, could you briefly summarize your 5 direct and rebuttal testimony for the Board? 6 A. Yes, sir. So in the spirit of trying to expedite 7 this, I'm going to try to just hit on the points that I 8 don't think have been covered yet by the previous parties. 9 I believe the Department, as well as Clean Air 10 Advocates and NMOGA covered the purpose of pneumatics, and 11 the only thing that I really wanted to highlight there is, 12 you know, just the importance that pneumatic controllers 13 have in terms of our field separation and process control. 14 The pneumatics-driven control has been utilized 15 in the industry for many, many years. It's a 16 tried-and-true technology and most of these sites are in 17 remote areas, and that being the reason that pneumatics 18 control is utilized. 19 Moving on, I wanted to start off with my summary 20 here just on the proposed changes that IPANM made to the 21 rule that was before the Department. NMED had based, 22 roughly, this proposal on Colorado Reg 7. The differences 23 are primarily where the basis for our changes lay. NMED 24 proposed to phase out pneumatics based on a controller 25 count, versus production.	2190 1 difficult, as we've already heard, to, you know, quantify 2 a bleed rate, as these are not a continuous-type bleed 3 controller. But we feel like, you know, most of the 4 modern controllers out there are intermittent-type 5 controllers. And, in fact, based on the inventories that 6 the NMED had in their analysis, intermittent controllers 7 seemed, you know, to make up a large count in New Mexico. 8 And these controllers, as Mr. Meyer discussed 9 earlier, are tied to frequency of actuation in terms of 10 the emissions associated with them. So this was one of 11 the other reasons that we felt that it was important to 12 move the phase-out or retrofit to percent of production. 13 With your intermittent controllers being based on their 14 actuation frequency, that's tied to the throughput on a 15 vessel or the production. 16 And so, it seems to make sense that -- to tie the 17 two together, as you phase out pneumatic gas-powered -- or 18 gas-driven pneumatics based on production, you would be 19 getting the best bang for your buck in the terms of the 20 phase out. As well as, you know, the point I believe 21 Mr. Meyer was trying to make earlier, you know, 22 intermittent controllers in and of themselves could be a 23 reduction made, as we move from the low-bleed continuous. 24 You know, there's reductions -- cost effective reductions 25 associated with the use of intermittent controllers.

2191 1 The basis for our proposed changes were really 2 surrounding the cost effectiveness of reducing these 3 emissions. We -- we have concerns with -- with the 4 pneumatics phase-out, just in terms of its burden to 5 industry with -- and that being associated with the, you 6 know, somewhat small reductions that may be made to 7 ambient ozone concentrations, resulting from the 8 reductions of VOC emissions. 9 And so, one of the things that really drives the 10 cost effectiveness in controlling the emissions from 11 pneumatics, as Mr. Meyer indicated earlier, is the cost of 12 that control. One thing that I wanted to touch on, I 13 think Mr. Meyer's already went through this in pretty 14 great detail, but I just wanted to kind of summarize, you 15 know, instrument air installations. I think sometimes it's 16 characterized as kind of a plug and play-type retrofit. 17 And instrument air, especially on a retrofit-type 18 application, is relatively involved. 19 You have the design and packaging of the air 20 package, as Mr. Meyer went through. And then, once that 21 package is -- is delivered to the site, you've got to set 22 that air package and you've got to set it with the 23 appropriate setbacks from other equipment or possible 24 emissions sources on the site. And with that, then you're 25 trenching in the air lines and power to that instrument	2193 1 may see power lines running next to a site, that doesn't 2 mean that there's available power on that line. You know, 3 it would take additional capacity and infrastructure 4 installations to actually get line power to these sites. 5 The other issue with line power that we see is 6 right-of-way acquisition. Specifically up here in the San 7 Juan Basin, toward the southern part of the basin we have 8 kind of a checkerboard-land surface ownership situation, 9 so securing right-of-way for power lines can be a 10 challenge. You could be dealing with multiple entities. 11 You've got the Bureau of Land Management, you've got the 12 state land office, you've got tribal lands as well as 13 private, so securing right-of-way can be a challenge. 14 So, the other piece that I wanted to touch on is, 15 you know, based on NMED's proposal, they evaluated two 16 control technologies associated with reducing emissions 17 from pneumatic controllers. The other one was a 18 solar-electric-type installation, and what I -- what I 19 want to focus my discussion on here is primarily my 20 experience regarding solar-electric. The point that I 21 want to start off with is, there are two primarily -- 22 primary types of actuators that are common in the oil and 23 gas industry, in terms of electric actuators. And you've 24 got rotary electric and linear. 25 Rotary electric are less costs -- costly, but
2192 1 air system. And so, instrument air is quite involved, in 2 terms of the overall installation and the associated costs 3 with it. 4 One of the big driving factors and one of the 5 concerns that IPANM has in terms of instrument air is 6 access to line power. We have a limited infrastructure up 7 here in the San Juan Basin, and wanted to touch on that a 8 little bit. It was something that -- that I outlined in 9 my rebuttal testimony. But, again, access to line power 10 is -- is something that we believe is necessary for the 11 installation of instrument air, and the engagement that 12 we've had with some outside consultants, you know, gave us 13 some general costs associated with installing power. 14 Average line drop costs that we were given are anywhere 15 from 200- to 300,000, and that includes the transformer 16 bank switches. 17 And then we have a distribution network build-out 18 cost that runs somewhere in the 300- to \$325,000 per mile, 19 and terrain being one of the most significant factors in 20 terms of getting line power to where it's needed. One 21 thing that -- that I wanted to mention in terms of line 22 power is, you know, utility providers operate in what I've 23 heard termed as the just-in-time development manner; 24 meaning that, they do not run with excess capacity or 25 infrastructure deployed. They -- you know, even though we	2194 1 they have their drawbacks. As Mr. Meyer's talked about 2 earlier, when we're looking at a facility, we have to look 3 at what our process response time is. Rotary electrics 4 tend to have a slower response time. And, you know, my 5 experience here, we deployed some all electric separators 6 up here in the San Juan Basin, that had rotary electric 7 dump valves for moving fluids from the separator to the 8 tank. And what we found was, it took a lot of fine-tuning 9 with that rotary electric to get it to where we weren't 10 leaving the dump valve open too long, because, ultimately, 11 it was sending more gas to our tanks. And so we found 12 that, you know, in some instances, the increased emissions 13 at the tank were more than what we had offset with the 14 conversion to the solar-electric system. 15 And then, as we concluded, that pilot up here in 16 the San Juan Basin, you know, the linear actuators were -- 17 were just start being to become available in a reasonable 18 cost fashion. Linear actuators can provide that response 19 time that's necessary. The issue that we see with those 20 is their power consumption. 21 Again, trying to match our process control times, 22 those linear actuators can be relatively power-intensive. 23 And just recently, I had -- I had one of them quoted, and 24 the vendor up here in the San Juan Basin said that he's 25 not aware of any operator in the San Juan Basin -- San

2195 1 Juan Basin utilizing those that don't have access to line 2 power; that they are not -- from his understanding, 3 they're not suitable for use with solar installations. 4 I apologize, I'm jumping along here. I've tried 5 to mark off what's already been covered. We dove into the 6 emission factors regarding intermittent controllers, and I 7 think for the most part that was covered pretty well. I 8 just wanted to highlight the fact that IPANM, you know, 9 testified that we felt like the 13.5 was based on an 10 outdated emission factor from the EPA. And, you know, 11 that EPA study that was used to develop that factor had a 12 small number of measurements that was taken, and that was 13 done, I believe, over 25 years ago. 14 We believe there's more recent studies that have 15 hundreds of measurements that show that the intermittent 16 controllers are anywhere between .32 standard cubic feet 17 per hour, to 2.2 standard cubic feet per hour. And, 18 again, assuming that they're properly functioning. And 19 then, we also noted that Colorado Air Quality Commission 20 recently utilized the 3 and 1/2 standard cubic feet per 21 hour. 22 And so, one -- one thing -- and I'll touch on 23 this later when I say properly functioning, I am 24 acknowledging that there are malfunctions associated with 25 intermittent controllers, but we do believe those can be	2197 1 have put forward our modifications to -- to incorporate 2 the relief that Colorado Reg. 7 has. 3 And our biggest concern here is, you know, 4 without that appropriate relief, you've got the premature 5 plugging and abandonment of thousands of wells in the 6 state, and that has its associated negative impact on the 7 local communities, in terms of lost jobs, royalty, and tax 8 revenue. 9 I wanted to talk a little bit about the Colorado 10 Reg. 7. I mentioned earlier that it's the relief that is 11 spelled out in Colorado Reg. 7 is a company statewide 12 average daily production. So it's not a blanket 13 exemption. It's a company that can prove that their 14 statewide average daily production is less than 15 BOE. 15 And I believe this strikes a good balance here to provide 16 relief for those smaller operators, again, that, you know, 17 may find their portfolio is primarily stripper wells. 18 This would provide the necessary relief, where they're not 19 having to go through and retrofit wells or pneumatic 20 controllers that are not -- that are not cost effective to 21 do so. 22 So, I would say at this point I'm going to be 23 moving into my rebuttal or surrebuttal. 24 Is that okay, Lou? 25 Q. Yes. Go ahead. In response to -- first, did you
2196 1 addressed through the proper monitoring programs. So, 2 one -- one thing that I wanted to touch on in this, is 3 regarding the current structure that the NMED has put 4 forward. There are two off-ramps in the current proposal: 5 122 B (4) 6 has the cost effective off ramp. This was 6 discussed earlier, where if an operator retrofits 65 7 percent of their entire controller count by 2027, they may 8 submit a cost analysis to the Department, showing that the 9 remaining controllers are not cost effective to retrofit, 10 and we do appreciate this. 11 The other off-ramp in there is 122 B (4) (v), 12 where an operator, if they achieve 75 percent of their 13 fleet, in terms of retrofitting by 2025, that's as far as 14 they have to go. Again, very, very appreciative of these 15 off-ramps. The -- the concerns that we have is this -- 16 this doesn't give the necessary relief for smaller 17 operators. You know, by the time you get to both of 18 these, you've had to retrofit 65 to 75 percent of your 19 entire pneumatic controller fleet. And so, to me, this 20 recognizes that -- or this is the Department's recognition 21 that, you know, there are some controllers out there that 22 may not be cost effective to retrofit, and we're just 23 concerned that this does not account for those smaller 24 operators where their entire portfolio may be marginal 25 wells or stripper wells. So that's another reason that we	2198 1 review the rebuttal testimony provided by the other 2 parties on this topic? 3 A. Yes, I did. 4 Q. And did you hear the testimony -- the testimony 5 given earlier today from the Department, from the Clean 6 Air Advocates and from NMOGA on this topic as well? 7 A. Yes, sir, I did. 8 Q. And do you have any comments on -- on that 9 testimony, and did it change any of your proposals before 10 the Board? 11 A. I've got a couple of comments there. I would say 12 that, overall, you know, our -- our primary concern here 13 was -- was trying to strike a balance with relief for 14 those smaller producers, so that hasn't changed. I do -- 15 do recognize that New Mexico needs to do what's best for 16 New Mexico, you know, basing the phase-out on percent of 17 production may not be the best approach. We felt like it 18 was because it aligned with the use of intermittent 19 controllers and them being -- their emissions being 20 associated with the production levels. But I would say, 21 overall, whether we phase out pneumatic controllers on 22 controller count or percent of production, we primarily 23 want to see some relief for the smaller operators. And I 24 wanted to kind of walk through some of the rebuttal 25 testimony and the testimony that -- that was presented

2199 1 today, and kind of a response to that. 2 So, the first part, you know, we -- we talked or 3 we heard from the Department and just looking at their 4 rebuttal testimony, and just for the benefit of others, 5 I'm referring to the Department's rebuttal testimony one, 6 and I believe it's on page 85. The Department stated, 7 "The Department also chose a different approach to 8 addressing economic impacts on small operators than 9 Colorado. Rather than exempting low-producing wells from 10 regulatory requirements as Reg. 7 does, NMED proposed a 11 scaled-back regulatory requirement to provide relief to 12 small operators." 13 I wanted to respond to this because this ties 14 back to what I testified on earlier, in terms of the small 15 business. We struggled to try to come up with the 16 appropriate relief, and one of -- our initial approach was 17 to try to focus on getting the appropriate relief in the 18 individual provisions. And I think this is a great 19 example of that, where we believe the appropriate relief 20 would be here in pneumatics and being able to exempt those 21 companies, as Colorado did, in terms of their company's 22 statewide average daily production being less than 15 23 barrels of oil per day, because that comes back to, you 24 know, a company doesn't necessarily make decisions on a, 25 you know, company-wide revenue basis, but more so on an	2201 1 that's a win/win. We've got a method to secure 2 reductions, in terms of encouraging the use of 3 intermittent controllers, while ensuring that they're 4 properly functioning through the proper monitoring 5 protocols. 6 Moving on to Clean Air Advocates, Dr. McCabe, 7 it's Exhibit 23. I'm not going to read the entire 8 testimony here, just summarize it, but my understanding 9 from Dr. McCabe's testimony here was he was highlighting 10 why the Colorado Reg. 7 exemption for small producers 11 isn't applicable in New Mexico. And he states that in -- 12 in Colorado, there were 187 operators that were below the 13 15 barrels of oil equivalent. And gives the well count at 14 15,411 wells, and that that is 30 percent of the total 15 well count in Colorado. 16 And then, further, goes on to show that in New 17 Mexico there are an estimated 312 firms that produce less 18 than the 15 BOE per well per day in New Mexico, and they 19 operate an associated 32,000 wells, which he showed to be 20 57 percent of the total well count in New Mexico. 21 And I agree with -- with the numbers that he's 22 put forward. I ran similar numbers, and they're in the 23 same ballpark here. I just disagree with his conclusion 24 that it's not appropriate in New Mexico. I believe that 25 these numbers show that it is very appropriate, that we
2200 1 individual well basis. 2 And so, when you're looking at pneumatics, it has 3 a significant upfront cost of compliance and has the 4 potential to burden a lot of these stripper wells. And 5 having that specific relief for those wells, we think is 6 important, because those decisions, again, are made on an 7 individual well basis, not necessarily the company 8 gross-revenue basis. 9 Moving on, I believe it was EDF in their 10 rebuttal -- and I apologize, I don't have the witness 11 noted here, but it's Exhibit XX, page 55. And the 12 acknowledgment here was that they agreed with -- with me 13 in my direct testimony about properly functioning 14 intermittent controllers being less than the 3 and 1/2 15 standard cubic feet per hour; however, they noted that 16 malfunctioning intermittent controllers can emit 17 significantly more. And then they also reference that as 18 why EDF has proposed that New Mexico require operators 19 periodically inspect controllers during LDAR inspections. 20 My initial response to this was, you know, we've 21 got AVO requirements, both from the Oil Conservation 22 Division, as well as what is proposed here by the NMED. 23 But I -- I would say that industry is supportive of doing 24 leak detention and repair on our pneumatic controllers. 25 And, you know, if that eliminates that concern, I think	2202 1 have 32,000 wells here that are in need of relief. And 2 without the proper balance of relief in the provision, 3 those wells stand to be prematurely plugged and abandoned. 4 And again, as I mentioned, this has a very negative impact 5 to our local communities in which we operate: loss of 6 jobs, taxes and royalty revenue. 7 One of the other things that I wanted to address 8 in surrebuttal here is the discussion that we just kind of 9 moved out of, in terms of the gas captured and sold. I 10 did a quick calculation just based on the 3 and 1/2 11 standard cubic feet per hour, and came up with .084 mcf 12 per day. For everybody's benefit, mcf is 1000 cubic feet. 13 That's the metric that we use to quantify gas production. 14 But if you multiply that out over an entire year, that 15 would be 30 mcf per year, per device. And if you multiply 16 that volume by \$5, just to make the math easy, that's \$150 17 a year. 18 And I think the point to be made here is, I mean, 19 we're in the business, especially if we're operating a gas 20 well, of capturing and selling every bit of product that 21 we -- that we can. The point here is, it's a very small 22 volume. I took that and just compared it to the upfront 23 cost of a solar-electric actuator, and that's less than 4 24 percent of the cost of that actuator. 25 And in terms of an instrument air installation,

2203 1 you know, assuming that an instrument air system -- and 2 this is kind of based on my experience -- would service 20 3 devices, you know, that comes up to be about 12 grand a 4 year, which -- which is a significant amount of money. 5 But when you compare that to the cost of just the 6 instrument air, not necessarily installation or anything 7 of that nature, that's 3 percent of that cost. 8 So, again, one of our -- our primary concerns, 9 you know, with the rule as it has been proposed, is it's 10 got a high cost of compliance, and we believe that there 11 needs to be necessary relief for smaller operators. 12 Ms. Kuehn today, mentioned that no other party 13 had -- had set out their clear proposal or justification. 14 And I just wanted to respond to that; I felt like IPANM 15 was clear that there is a need, you know, to have the 16 appropriate flexibility in the regulation, and we believe 17 that that was -- or could be achieved with the phase-out 18 of pneumatic controllers based on production, coupled with 19 the use of intermittent bleed controllers, and including 20 that low-producer exemption. That provides the best 21 balance, in terms of flexibility. And, again, that's -- 22 that's based on the fact that intermittent controllers are 23 prevalent in the state based on the EPA's greenhouse gas 24 reporting data, and that intermittent bleed emissions are 25 based on actuation frequency, which is dependent upon	2205 1 acronyms there and forget that folks may not know what I'm 2 talking about. BOE is barrel of oil equivalent. And so, 3 we -- we tend to roll up natural gas into an oil energy 4 equivalent. So by -- by MMBTU equivalent, the conversion 5 is 5.7, I believe; a lot of times folks use 6. 6 But you're rolling up gas and making it 7 equivalent to the same volume of oil. So we use that 8 measure just so we're looking at both production streams, 9 but you've got one measure to look at. Does that clarify 10 that? 11 VICE-CHAIR TRUJILLO-DAVIS: Yes, it does. 12 MR. DAVIS: And then I think your -- sorry. 13 VICE-CHAIR TRUJILLO-DAVIS: Oh, I was saying yes, 14 that does make sense. 15 MR. DAVIS: And then I believe you asked me to 16 explain a little more on the exemption based on, or the 17 flexibility based on the 15 BOE versus gross revenue? 18 VICE-CHAIR TRUJILLO-DAVIS: Yes. It sounds like 19 if a company has mostly stripper wells or marginal wells 20 in their portfolio, that their BOE would be less maybe, 21 and, therefore, it was a different metric for judging a 22 small business? 23 MR. DAVIS: Yeah. So, I would say that's kind of 24 a national standard, in terms of defining this term -- 25 these terms get intermixed in terms of marginal or
2204 1 production volume. 2 So, Lou, I believe that's all I have. 3 MR. ROSE: Okay. And Madam Hearing Officer, 4 Mr. Davis is available for questioning. 5 HEARING OFFICER ORTH: Thank you very much. 6 Other parties or counsel with questions of Mr. Davis, 7 please turn on your camera. 8 I'm not seeing anyone. 9 I'll turn to questions from the Board. While I'm 10 doing that, if you're an attendee on this site, please 11 reach out through the Chat with any questions. 12 EXAMINATION BY THE BOARD OF JEFFREY "RYAN" DAVIS 13 HEARING OFFICER ORTH: Madam Chair? 14 CHAIRPERSON SUINA: Thank you, Madam Hearing 15 Officer. I don't have any questions at this point. 16 HEARING OFFICER ORTH: Thank you. Vice-Chair 17 Trujillo-Davis? 18 VICE-CHAIR TRUJILLO-DAVIS: Thank you. I just 19 have a couple of quick follow-up questions. Mr. Davis, 20 you said something kind of interesting about the BOE 21 versus revenue for the small businesses. Can you -- first 22 of all, can you help out the Board by explaining BOE, and 23 then maybe kind of just go into that a little further. I 24 thought that was an interesting concept. 25 MR. DAVIS: Yeah. So, I apologize, I tend to use	2206 1 stripper well, but the stripper well, kind of cut-off is 2 that 15 barrels of oil equivalent, and, you know, I feel 3 that that's a better measure. Most wells below that 15 4 barrels of oil equivalent are marginal in nature, so 5 they -- when I say "marginal," I mean they don't have 6 enough margin in terms of, you know, the gross revenue to 7 the expenses that it takes to operate them to comply or 8 to, you know, have excess cash flow for cost of 9 compliance. 10 And so -- and basing it on production versus 11 gross revenue, production is production, it's publicly 12 available. It's not going to fluctuate with commodity 13 prices, though commodity prices do impact the 14 profitability or the margin of a well's production. It's 15 a very consistent, publicly-available metric that can be 16 used to identify wells that may have concerns of being 17 overburdened by cost of compliance. 18 VICE-CHAIR TRUJILLO-DAVIS: Do you currently 19 report your BOE volumes to OCD or to NMED? 20 MR. DAVIS: We do not. We -- we report barrels 21 of oil and our volume of gas produced, but not BOE. 22 VICE-CHAIR TRUJILLO-DAVIS: Okay. And my last 23 question is more of just an infrastructure question. And 24 actually, I appreciated you talking about the power 25 infrastructure earlier. That was one of my questions

2207 1 earlier in the day. 2 But when you're talking about these stripper 3 wells and modifications to them, I've noticed that a lot 4 of stripper wells have older equipment on them. Are there 5 any challenges with retrofitting the equipment on those 6 older wells versus the newer wells? 7 MR. DAVIS: In some cases, you know, in terms of 8 the pneumatics, you know, one thing that my company went 9 through back in, I believe, 2011, somewhere around there; 10 we went through and eliminated all of our high-bleed 11 pneumatic devices. 12 And WellMark actually makes a conversion to take 13 a continuous high-bleed WellMark controller and turn it 14 into an intermittent bleed using a MIZER valve. I 15 apologize, I'm probably getting too technical, but I think 16 this answers your question. You know, the more modern 17 pneumatic controllers, we were able to easily retrofit. 18 The older equipment, there were some challenges in terms 19 of trying to retrofit those. In a lot of instances we had 20 to replace the entire controller. It wasn't an easy 21 conversion to go from, say, a high-bleed to an 22 intermittent-bleed or a low bleed. 23 But across the board within this rule, I would 24 say that it's always the case: Storage tanks is one place 25 that we have concerns where an older tank may not be able	2209 1 can you give me a ballpark percentage of the wells that 2 are marginal in the San Juan Basin? 3 HEARING OFFICER ORTH: Mr. Davis, we seem to have 4 lost your video. You can certainly turn it off, if it's 5 on even. Let's see. 6 MR. DAVIS: Madam Hearing Officer, can you hear 7 me? 8 HEARING OFFICER ORTH: Yes. I just turned off 9 your video. Can you hear me? 10 Okay. Mr. Davis is unmuted, but he is clearly 11 having a technological challenge. 12 MR. ROSE: Madam Hearing Officer, he's going to 13 be around, so if we need to put him back on, if the 14 technology doesn't seem to work here shortly, we'd 15 certainly be willing to put him back on to answer Board 16 Member Garcia's questions. 17 HEARING OFFICER ORTH: All right. Well, I'm 18 sorry, Member Garcia. We're not getting him back right 19 away. He is definitely unmuted and his video is off, so 20 I'm not sure what to do. All right. 21 And is that you, Mr. Davis? No? All right. 22 Mr. Janoe, I see you on the screen. If we move 23 now to Mr. Holderman, does that work? 24 MR. JANOE: It sure does, Madam Hearing Officer. 25 Good afternoon. Mr. Holderman's testimony, for the Board
2208 1 to hold the necessary, you know, pressure rating for vapor 2 recovery or controls. It's an older tank, it wasn't 3 designed -- you know, it wasn't necessarily manufactured 4 to the current specs and may have challenges being, you 5 know, vapor tight in terms of being able to operate at 6 those higher pressures necessary for vapor recovery. 7 VICE-CHAIR TRUJILLO-DAVIS: Thank you. I think 8 that's all the questions I have for now. 9 MR. DAVIS: Thank you. 10 HEARING OFFICER ORTH: Thank you. Member Cates? 11 BOARD MEMBER CATES: Yeah, no questions here. 12 Thank you. 13 HEARING OFFICER ORTH: Thank you. Member Bitzer? 14 BOARD MEMBER BITZER: I have no questions. Thank 15 you. 16 HEARING OFFICER ORTH: Thank you. Member Garcia? 17 BOARD MEMBER GARCIA: Yes, thank you. One 18 question, Mr. Davis. I think you said that the Colorado 19 Reg. 7 had the cut-off of less than 15 BOE per day. And 20 15 BOE per day is basically the definition of a marginal 21 well, right? 22 MR. DAVIS: Correct. 23 BOARD MEMBER GARCIA: Could you tell me 24 approximately what percentage of the wells in your area 25 are marginal? I know this varies from year to year, but	2210 1 is at Oxy Exhibit 2 and Oxy Rebuttal Exhibit 2. We'll 2 cover Mr. Holderman's direct, rebuttal, and in this 3 instance he does have surrebuttal. And consistent with 4 our desire to move things along, we propose doing all of 5 those together. Mr. Holderman has three issues on direct 6 and rebuttal; they are first, an aggrieved compliance 7 schedule Oxy and the environmental groups have proposed. 8 This is the table you've heard a reference to before. 9 Secondly, an exemption for wellhead only 10 artificial lift facilities. And then, third, an agreed 11 clarification with the environmental groups, that certain 12 monitoring results are not evidence of noncompliance when 13 companies find and fix those issues. I'll turn it over 14 here to Mr. Holderman for direct and rebuttal and do the 15 surrebuttal after. 16 HEARING OFFICER ORTH: Thank you. 17 DANNY HOLDERMAN, 18 having been previously duly sworn or affirmed, was 19 examined and testified as follows: 20 DIRECT EXAMINATION OF DANNY HOLDERMAN 21 BY MR. JANOE: 22 Q. Good afternoon, Mr. Holderman. I'll give you a 23 second to get situated there. Could you please summarize 24 your direct and rebuttal testimony for the Board? 25 A. Yes. First, as originally drafted, the proposed

2211 1 rule includes a compliance schedule that requires a 2 certain percentage of pneumatic controllers and pumps be 3 in compliance by specific dates. The NMED-suggested 4 approach creates more of a burden for NMED and operators 5 because it relies on controller count, rather than -- or 6 excuse me. 7 We find that historic liquids production should 8 be the basis for the requirement. Oxy USA suggests that 9 basing the compliance timeline for pneumatic controllers 10 on historic liquids production, as opposed to the number 11 of pneumatic controllers at a site; for example, requiring 12 that the pneumatic controllers with highest historic 13 liquids production be addressed first would better ensure 14 that the pneumatic controllers that are actuated most 15 frequently, and therefore have the potential to emit more 16 often, are retrofitted first. 17 Oxy USA encourages the Department to adopt the 18 language in Exhibit 1 to my rebuttal testimony, which 19 includes a modified implementation schedule with more 20 reasonable timelines, that incorporate elements of Oxy 21 USA, EDF, Clean Air Advocates and NAVA's initial proposals 22 presented in direct testimony, and addresses the parties' 23 implementation concerns. 24 Oxy USA believes this proposal is workable for 25 Oxy USA's New Mexico operations. But I'm not -- I'm not	2213 1 EFD, Clean Air Advocates and NAVA that applies to the 2 monitoring requirements of Section 116, to pneumatic 3 controllers. The Department's September 16th version of 4 the rule also includes this requirement. 5 Oxy USA supports this addition, but believes it's 6 necessary to add language to clarify that detectable 7 emissions should not trigger enforcement if the 8 owner-operator properly addresses any findings. Oxy USA 9 believes this clarification is necessary because optical 10 gas imaging and methane 21 inspections cannot quantify 11 emission rate. 12 EDF, Clean Air Advocates and NAVA have supported 13 this additional language in their rebuttal proposals and 14 Oxy USA appreciates that. 15 Q. Mr. Holderman, does this conclude your direct and 16 rebuttal? 17 A. Yes, it does. 18 Q. And did you have a chance to review the rebuttal 19 testimony presented by other parties? 20 A. I did. 21 Q. Were you listening today to the testimony 22 earlier? 23 A. Yes, I was. 24 Q. Do you have any surrebuttal points you'd like to 25 raise?
2212 1 saying whether they're feasible for other operators in the 2 state. I can only speak for Oxy USA as an individual. 3 Second, Oxy USA requests the artificial lifts 4 located on wellhead-only facilities be exempt of the 5 requirement to retrofit with access to commercial line 6 electric power, which allows operators to focus resources 7 to retrofit larger-producing locations which would result 8 in the greatest emissions reduction. 9 The requirement in the proposed rule to retrofit 10 existing pneumatic controllers with access to commercial 11 line power -- excuse me -- commercial line electric power, 12 is problematic for artificial lift controllers located on 13 wellhead-only facilities. Wellhead-only facilities do not 14 contain other production or processing equipment and are 15 often in remote areas. It's not always logistically 16 feasible to electrify these locations due to issues 17 outside of Oxy USA's control, including right-of-way 18 acquisition issues, distance from line power, and the 19 capacity of that electric at a facility. Even without the 20 foregoing concerns, the cost and time can be prohibitive. 21 The cost to run an electrical line in Southeast New Mexico 22 at a facility is around \$200,000 per mile, and with lead 23 times up to a year at present. 24 Third is noted in my rebuttal testimony. Oxy USA 25 understands the additions to Section 22 C, advocated by	2214 1 A. I do. 2 Q. What are those, please? 3 A. The Department's September 16th proposal 4 establishes a two-year timeline to complete retrofits for 5 existing controllers with access to commercial line power, 6 and allows for pneumatic controllers with a greater than 7 zero bleed rate in certain circumstances. 8 Oxy USA appreciates these updates, but has 9 concerns with the proposals by other groups that would 10 first set a much shorter timeline of six months for 11 retrofits at exiting controllers with access to commercial 12 line power. And second, would adjust the bleed rate 13 threshold to zero for certain requirements in Section 122. 14 The proposed timeline of six months to complete a 15 retrofit for existing pneumatic controllers is unrealistic 16 and does not account for the time needed for engineering 17 design, securing the necessary parts and then completing 18 a -- completing the retrofit operations. 19 Second, as it concerns bleed rates, Oxy USA 20 disagrees with proposals to adjust the bleed rate 21 threshold for several requirements in Section 122, from 6 22 scf to zero 0 scf. It is impractical and unnecessary to 23 impose a bleed rate on all pneumatic controllers. 24 Q. Does that conclude your surrebuttal testimony? 25 A. It does.

2215 1 MR. JANOE: Mr. Holderman is available for 2 cross-examination. 3 HEARING OFFICER ORTH: Thank you very much. If 4 there's another party or party representative with 5 questions of Mr. Holderman. Mr. Hiser? 6 CROSS-EXAMINATION OF DANNY HOLDERMAN 7 BY MR. HISER: 8 Q. Hi, Mr. Holderman. I'm Eric Hiser, representing 9 the New Mexico Oil and Gas Association. I just wanted to 10 confirm that I had heard you say that Oxy had encountered 11 lead times of over -- or up to a year in Southeastern New 12 Mexico in trying to arrange for line power; is that 13 correct? 14 A. That's correct. 15 Q. Thank you. 16 HEARING OFFICER ORTH: Other party or counsel? 17 Ms. Gutierrez? 18 MS. GUTIERREZ: Thank you very much, Madam 19 Hearing Officer. 20 CROSS-EXAMINATION OF DANNY HOLDERMAN 21 BY MS. GUTIERREZ: 22 Q. Mr. Holderman, good to meet you virtually. I 23 have just a quick question. I understood you to say that 24 you evaluated these alternative pneumatic proposals as it 25 relates to Oxy USA's operations only; is that right?	2217 1 questions either. Thank you very much. 2 HEARING OFFICER ORTH: Thank you. Member Cates? 3 BOARD MEMBER CATES: No questions. Thanks 4 HEARING OFFICER ORTH: Thank you. Member Bitzer? 5 BOARD MEMBER BITZER: No questions. Thank you. 6 HEARING OFFICER ORTH: All right. Member Garcia? 7 BOARD MEMBER GARCIA: No questions. Thank you. 8 HEARING OFFICER ORTH: And Member Honker? 9 BOARD MEMBER HONKER: No questions. Thank you. 10 HEARING OFFICER ORTH: All right. Thank you. 11 Any follow-up, Mr. Janoe? 12 MR. JANOE: No, Madam Hearing Officer. 13 HEARING OFFICER ORTH: All right. Well, thank 14 you very much, Mr. Holderman and Mr. Janoe. 15 Do I understand now that we move to Mr. Carr, for 16 GCA? 17 MR. ROSE: Madam Hearing Officer, I believe 18 Mr. Davis is available if you want to complete his 19 questioning by Board Member Garcia. The problem, I guess 20 he had when he got cut off, was when he joined, he wasn't 21 a panelist, so you couldn't hear him and he couldn't hear 22 you. 23 HEARING OFFICER ORTH: I've made him a panelist 24 now, so thank you very much. Mr. Davis, you're back on 25 screen. Member Garcia, would you please repeat your
2216 1 A. That's correct. 2 Q. And does Oxy USA operate any transmission 3 compressor stations in the State of New Mexico, as that 4 term is defined in the proposed rules? 5 A. We do not. 6 Q. Okay. So it's safe to say that your analysis and 7 any support of the alternate proposals didn't consider 8 transmission compressor stations? 9 A. That's correct. 10 MS. GUTIERREZ: Thank you, sir. 11 HEARING OFFICER ORTH: All right. Thank you. 12 Any other counsel or party with questions of 13 Mr. Holderman? 14 No? 15 I will turn to the Board for their questions. 16 While I'm doing that, if you're an attendee on this 17 platform and have a question, please reach out through 18 Chat. 19 Madam Chair? 20 CHAIRPERSON SUINA: Thank you, Madam Hearing 21 Officer. I don't have any questions of this witness. 22 Thank you for your testimony. 23 HEARING OFFICER ORTH: Thank you. Vice-Chair 24 Trujillo-Davis? 25 VICE-CHAIR TRUJILLO-DAVIS: I don't have any	2218 1 question? 2 CONTINUED EXAMINATION BY THE BOARD OF JEFFREY "RYAN" DAVIS 3 BOARD MEMBER GARCIA: So my question was -- can 4 you hear me? 5 MR. DAVIS: Yes. 6 BOARD MEMBER GARCIA: Okay. So my question was, 7 you were interested in the rule 7 in Colorado, with their 8 cut-off of less than 15 BOE per day. So I'm wondering, in 9 New Mexico, could you give me a rough idea of what 10 percentage of the wells in the San Juan Basin are marginal 11 or stripper wells. And I realize this changes from year 12 to year, but generally speaking, can you give me a 13 ballpark? 14 MR. DAVIS: You know, I would say that it 15 probable follows to some degree what the average is across 16 the state, probably a little bit higher; so I would say 17 60, 65 percent of the wells in San Juan are stripper 18 wells. 19 BOARD MEMBER GARCIA: Great. That's exactly what 20 I needed. Thank you very much, sir. I appreciate it. 21 MR. DAVIS: You're welcome. 22 BOARD MEMBER GARCIA: That's all. 23 HEARING OFFICER ORTH: Thank you. Member Honker? 24 BOARD MEMBER HONKER: No questions. Thank you. 25 HEARING OFFICER ORTH: All right. Thank you.

2219 1 Mr. Rose, will there be any follow-up with Mr. Davis? 2 MR. ROSE: I have no redirect. 3 HEARING OFFICER ORTH: All right. Thank you very 4 much, Mr. Davis. 5 MR. DAVIS: Thank you. 6 HEARING OFFICER ORTH: We'll excuse you for now. 7 And Mr. Butzier, I see you on screen. Will we be 8 hearing from Mr. Carr next? 9 MR. BUTZIER: Good afternoon, Madam Hearing 10 Officer, Madam Chair, members of the Board. The Gas 11 Compressor Association offered advanced written testimony 12 from two technical witnesses on the subject of pneumatic 13 controller requirements in Section 122 of NMED's proposed 14 rule. Those witnesses are Mr. Raymond Carr of F.W. Murphy 15 Production Control, and Mark Davis, of J.W. Power Company. 16 And their testimony appears as GCA Exhibits 17 and 32 17 respectively. 18 In essence, they proposed changes to Section 122 19 that would encourage and look more favorably upon the 20 continued employment of intermittent pneumatic controllers 21 than what was originally proposed by NMED. The GCA 22 offered its viewpoint that intermittent pneumatic 23 controllers should be considered part of the emission 24 reduction goal solution, particularly in remote 25 applications. However, NMED did not accept GCA's proposed	2221 1 about -- about your journey to this point, and we'll thank 2 Mr. Carr and Mr. Davis for their willingness to testify. 3 MR. BUTZIER: Thank you, Madam Hearing Officer. 4 HEARING OFFICER ORTH: All right. Do I 5 understand, then, that we would be moving to EDF and 6 witnesses Lyon and Alexander? Although, I seem to 7 remember Mr. Alexander wasn't available until Friday. 8 Ms. Paranhos? Oh, there you are. 9 MS. PARANHOS: Good afternoon, Madam Hearing 10 Officer. I'm just confirming that David Lyon is on. And, 11 yes, he is on. 12 MR. LYON: I'm on. 13 MS. PARANHOS: Perfect. Oh, there he is. 14 Mr. Alexander is not until later this week. 15 HEARING OFFICER ORTH: All right. Thank you. I 16 think I already swore Mr. Lyon. Yes? 17 MS. PARANHOS: No. 18 HEARING OFFICER ORTH: All right. Thank you. 19 Mr. Lyon, if you would spell your name for the record, 20 please? 21 DR. LYON: Yes. D-A-V-I-D, L-Y-O-N. 22 HEARING OFFICER ORTH: Thank you. If you would 23 raise your right hand. Do you swear or affirm to tell the 24 truth? 25 DR. LYON: I swear, yes.
2220 1 changes in its September 16th draft, and other industry 2 commenters are pursuing a slightly different approach to 3 lessen the technological and cost burdens associated with 4 that section of the proposed rule. 5 The GCA has decided not to further pursue 6 testimony on its proposed changes to Section 122 today. 7 We'll defer to the oil and gas associations on the 8 pneumatics issues, and is committed to working with its 9 customers to comply with the pneumatic controller 10 requirements that the Board adopts as a final rule. 11 Accordingly, the GCA will not be offering oral 12 testimony from Mr. Carr and Mr. Davis, but it does offer 13 to make them available as a panel if any party or Board 14 member is inclined for any reason to ask questions of 15 them. 16 HEARING OFFICER ORTH: All right. Thank you very 17 much, Mr. Butzier. If you are a party representative or 18 counsel and would have questions were Mr. Carr and 19 Mr. Davis to present themselves, please turn on your 20 camera. 21 I'm seeing no one, Mr. Butzier. 22 Board members, perhaps wave a hand if you would 23 have questions of the panel. I'm seeing no hands, 24 Mr. Butzier. All right. 25 Well, thank you very much for being clear	2222 1 HEARING OFFICER ORTH: Thank you. 2 DAVID LYON, Ph.D., 3 having been first duly sworn, was examined and 4 testified as follows: 5 DIRECT EXAMINATION OF DAVID LYON, Ph.D. 6 BY MR. PARANHOS: (Pneumatics) 7 Q. Thank you so much. David, can you please tell 8 the Board where you are employed? 9 A. Yes, I'm a senior scientist at Environmental 10 Defense Fund, where I work on approaches to measure and 11 reduce oil and gas methane emissions. 12 Q. And what is your educational background? 13 A. I have a Ph.D. in Environmental Dynamics from the 14 University of Arkansas, and my dissertation was on oil and 15 gas methane emissions. 16 Q. And can you please provide an overview of your 17 work experience? 18 A. Yes. I've worked at EDF for over nine years, and 19 co-authored over 20 peer-reviewed papers on oil and gas 20 emissions. And prior to my work at EDF, I worked at the 21 Arkansas Department of Environmental Quality where I was 22 the manager of the state's air pollution emission 23 inventory program. And at the agency, I led an EPA-funded 24 project to develop an emission inventory and measure air 25 pollution from natural gas facilities in the Fayetteville

2223 1 Shale of Arkansas. 2 Q. Thank you. And is EDF Exhibit B an accurate copy 3 of your CV? 4 A. Yes. 5 Q. And did you submit direct and rebuttal testimony 6 on behalf of EDF in this matter? 7 A. Yes. 8 Q. Do you have any corrections to your filed direct 9 or rebuttal testimony on Section 122, which is the 10 pneumatics provisions? 11 A. No. 12 Q. And do you adopt your written, direct and 13 rebuttal testimony regarding pneumatic controllers here 14 today? 15 A. Yes. My written testimony is EDF Exhibit RR and 16 the rebuttal testimony is Exhibit XX, and I will be 17 discussing papers that are Exhibits J, L, M, N, O, BB and 18 AAA. 19 Q. Thank you. 20 MS. PARANHOS: Madam Hearing Officer, I would 21 move to admit Dr. Lyon's direct and rebuttal testimony and 22 the exhibits he just noted, subject to the objections that 23 have been raised by NMOGA and IPANM. 24 HEARING OFFICER ORTH: Right. So we can 25 certainly admit them subject to those objections, which I	2225 1 malfunctioning gas-powered pneumatic controllers, but they 2 will not eliminate these emissions. So replacing 3 gas-powered pneumatic controllers with zero-emitting 4 controllers will eliminate the emissions from both 5 properly operating and malfunctioning controllers. 6 Q. Thank you. And did your direct testimony 7 describe studies that found significant emissions from 8 malfunctioning gas-powered pneumatic controllers? 9 A. Yes. 10 Q. Can you please summarize for the Board the 11 findings from those studies? 12 A. Yes. So the first study is Exhibit J, Allen, et 13 al., 2015. So this was a study led by the University of 14 Texas and sponsored by Environmental Defense Fund, that 15 measured methane emissions from 377 pneumatic controllers 16 throughout the United States at production sites. And 17 this study found that the average emission rate was 5.5 18 standard cubic feet of gas per hour. 19 In the study that had industry's experts review 20 the emission patterns of the 40 highest emitting 21 controllers, which were responsible for about 80 percent 22 of the total emissions. And the experts concluded that 28 23 of these 40 highest emitting controllers were 24 malfunctioning and operating in a manner inconsistent with 25 the manufacturer's design.
2224 1 think we'll be discussing tomorrow morning. Thank you. 2 (EDF Exhibits B, J, L, M, N, O, BB, RR, XX, AAA 3 received into evidence, subject to objections.) 4 MS. PARANHOS: Thank you very much. 5 Q. (BY MS. PARANHOS) Dr. Lyon, could you please 6 provide a summary of your opinions regarding pneumatic 7 controllers? 8 A. Yes. So, first, we proposed that gas-powered 9 pneumatic controllers are included in the leak detection 10 and repair program. So NMED accepted this proposal in its 11 September 16th draft, Section 122.C 4. And we appreciate 12 the adoption of this proposal, as peer-reviewed studies 13 demonstrate that malfunctioning gas-powered pneumatic 14 controller can submit -- can emit VOC and methane 15 emissions. In addition, this requirement tracks a similar 16 rule promulgated by the State of Colorado's Air Quality 17 Control Commission. 18 We believe this requirement will help reduce 19 emissions from malfunctioning gas-powered pneumatic 20 controllers. Second, and importantly, as discussed by 21 Dr. McCabe this morning, the best and surest way to reduce 22 emissions from malfunctioning pneumatic controllers is to 23 replace them with zero emitting devices as EDF and others 24 have proposed. 25 Inspections will help minimize emissions from	2226 1 So, and this study also found that many devices, 2 which are designed to only emit during actuation, so 3 intermittently emitters, controllers that should have zero 4 emissions between actuations, some of them were having 5 malfunctioning -- malfunctions that caused them to emit 6 continuously. 7 HEARING OFFICER ORTH: Dr. Lyon, I'm sorry to 8 interrupt. Would you please slow down just a little bit? 9 DR. LYON: Yes. 10 HEARING OFFICER ORTH: Thank you. 11 Q. (BY MS. PARANHOS) Thank you so much, David. 12 A. So -- 13 Q. Please continue. 14 A. So the second study is Exhibit M, which is the 15 City of Fort Worth Natural Gas Air Quality Study. And in 16 this study, the contractors measured emissions from 489 17 intermittent pneumatic controllers. They detected the 18 emissions using infrared cameras, and then use Method 21 19 and high-flow stampers to quantify emissions of 20 controllers. And they found that many of these pneumatic 21 controllers were having high emissions, often due to 22 malfunctions. 23 And the emission rates of some of these 24 controllers, the average emission rate of pneumatic 25 controllers in the Fort Worth study were approaching that

2227 1 rate of high-bleed controllers. And so the study authors 2 found that a lot of this was due to malfunctions of 3 controllers. 4 The third study, Exhibit N, is the Prasino study 5 of pneumatic controller emissions in the Canadian 6 providence of British Columbia. And this study also noted 7 that a lot of maintenance issues led to abnormally-high 8 emission rates. And the researchers did not identify the 9 cause of these emissions rates, but these findings are 10 consistent that often issues with pneumatic controllers 11 cause abnormally-high emissions. 12 And then finally, Exhibit O, the carbon limits 13 report also confirms that pneumatic controllers often have 14 an excess emission rate due to malfunctions. 15 Q. Thank you so much. 16 And so, in your opinion, do these studies support 17 EDF's proposal to require operators to replace gas-powered 18 pneumatic controllers, more specifically than the 19 Department has proposed? 20 A. Yes, they do. 21 Q. Thank you so much. 22 Now, I'm going to move to one surrebuttal 23 question. Dr. Lyon, we heard testimony earlier today, as 24 well as in NMOGA's opening statement, that suggested that 25 AVO inspections, audiovisual olfactory inspections can	2229 1 CROSS-EXAMINATION OF DAVID LYON, Ph.D., 2 BY MR. CURTIS: 3 Q. Mr. Lyon, I apologize on behalf of all of us that 4 you have to hang out with lawyers today. I can't imagine 5 that's very much fun, but we appreciate you being here and 6 sharing with us your expertise. I have just a few 7 questions on some of the testimony that you provided. 8 You spoke a little bit about Exhibit J, which I 9 believe is referred -- is entitled: "Methane Emissions 10 from Process Equipment at Natural Gas Production Sites in 11 the United States." Are you familiar with that? 12 A. Yes. 13 Q. Okay. Great. I wanted to talk a little bit 14 about a statement that you made in your rebuttal testimony 15 where you state that, "A properly functioning intermittent 16 controller emits less than 13.5 standard cubic feet per 17 hour; however, malfunctioning intermittent controllers can 18 emit significantly more than this amount, and 19 significantly more than a properly functioning continuous 20 bleed controller." 21 So your testimony is basically that while 22 properly -- properly functioning intermittent controllers 23 emit less than 13.5, the 13.5 is, nevertheless, 24 appropriate to account for malfunctions; is that your 25 testimony?
2228 1 detect leaks from malfunctioning pneumatic controllers. 2 In your opinion, are AVO inspections as reliable in 3 detecting emissions from malfunctioning pneumatic 4 controllers, as possible gas-imaging cameras or other 5 instruments? 6 A. No. AVO is not as effective as OGI or other 7 instruments. So I've heard from industry experts that 8 occasionally AVO does work for finding malfunctions, 9 including malfunctioning pneumatics, but that the -- 10 really, the success rate of AVO is highly dependent on 11 conditions in the field, such as the weather conditions 12 and other sources. So, for example, if there's other 13 sources on site, or if there's other large or loud 14 emission sources, such as flares, often the operators are 15 unable to defect the malfunction through listening or 16 seeing. 17 Q. Thank you very much, Dr. McCabe. 18 MS. PARANHOS: And this concludes his summary. 19 HEARING OFFICER ORTH: Thank you, Dr. Lyon. Let 20 me pause for a moment in the event another party or lawyer 21 has questions. Let's see. Mr. Hiser's screen has gone 22 on. 23 MR. CURTIS: This is Mr. Curtis. Yeah, I pop in 24 from time to time. Sorry. Yeah, I just had a few 25 questions for Mr. Lyon.	2230 1 A. No. I do not provide a number that's 2 appropriate; just that the well functioning operation of 3 pneumatic controllers is less than 13, and the average for 4 all malfunctioning pneumatic controllers is above 13. I 5 believe it's close to about 40 scf per hour, based on that 6 study. 7 Q. Okay. And so, this study actually found for 8 intermittent controllers, that the average rate of 9 intermittent controllers was 2.2 standard cubic feet per 10 hour. Do you agree? 11 A. If I'm remembering correctly, that was the 12 average of the controllers that the operators told the 13 study partners were intermittent controllers. It was not 14 based on the actual emissions pattern of -- of those 15 controllers. 16 Q. And are you familiar with follow-up work that was 17 conducted by Dr. McCabe, to evaluate the impact of that -- 18 that that characterization might have introduced -- the 19 bias that might have introduced? 20 A. I'm familiar with some of Dr. McCabe's work. I 21 don't -- I'm not exactly sure which study you're talking 22 about, though. 23 Q. Have you reviewed Mr. Meyer's testimony, direct 24 testimony and any related appendices associated with that? 25 In particular, a letter provided by Dr. McCabe in 2015,

2231 1 responding to this particular study? 2 A. I have not read that letter, but I think if it's 3 announced, I'm remembering I was involved with the 4 analysis with Dr. McCabe at that time period. 5 Q. Wasn't the purpose of this analysis to adjust the 6 2.2 standard cubic feet per hour, to account for any bias 7 that may have been introduced by not including 8 malfunctioning intermittents as intermittents? 9 A. Yeah, I believe the purpose was to calculate the 10 emission factors based on the observed emissions profiles 11 of -- of those pneumatics. 12 Q. And specifically, to include the malfunctioning 13 components? 14 A. Yes, I -- I believe so. Both to try to come up 15 with a combined factor and separate factors, yes. 16 Q. And wasn't the recommendation based on that 17 revised analysis, that the appropriate emission factor 18 based on that study was 3.5 standard cubic feet per hour? 19 A. I don't recall the exact number, but that -- that 20 seems reasonable, yeah. 21 Q. To your knowledge, isn't that the emission factor 22 that ERG has relied on, and Valor and Adam Meyer have 23 relied on as well in their analysis? 24 A. Yes, I think so, yes. 25 Q. Thank you. Just a few other questions here. So	2233 1 reductions from retrofitting pneumatics, will not have as 2 large of an impact on ozone concentrations as reduction in 3 NOx in a majority of the areas affected by this rule? 4 A. I'm not an expert on ozone's photochemistry and 5 cannot speak to that. 6 Q. Okay. Fair enough. And one final question: Do 7 you agree that the proposals outlined that you've 8 endorsed, are more stringent than federal law would 9 otherwise require? 10 A. I mean, of current federal law, but there is a 11 draft federal rule that's at the Office of Management 12 Budget -- Office of Management and Budget, so I can't say 13 how it compares to the proposal. 14 Q. Fair enough. You don't have your crystal ball. 15 As it relates to current federal law, would you 16 agree that it is more stringent? 17 A. Yes. 18 Q. Okay. Thank you so much, Dr. Lyon. I appreciate 19 your time. 20 A. Thank you. 21 HEARING OFFICER ORTH: Thank you, Mr. Curtis. Is 22 there any other counsel or parties with questions of 23 Dr. Lyon? 24 No? In that case, I will turn to questions from 25 the Board. While I'm doing that, if you're an attendee --
2232 1 part of the proposal that you've endorsed with pneumatics 2 is to propose a more accelerated phase-out. Mr. Lyon, 3 have you considered -- I'm sorry. Dr. Lyon, have you 4 considered whether this would create any supply and 5 chain -- supply chain bottlenecks or similar issues? 6 A. No, I have not concluded that. 7 Q. Okay. And, again, in the pneumatics proposal 8 you've endorsed, the parties call for a more accelerated 9 phase-out of pneumatics. Wouldn't conducting LDAR on 10 pneumatics mitigate the need for the accelerated schedule 11 of retrofitting the pneumatics that NMED's proposed? 12 A. So, doing inspections on the pneumatic 13 controllers would eliminate the emissions from the 14 malfunctioning controllers, but you would still have the 15 emissions from the operational controllers. So the 16 accelerated retrofits would reduce emissions faster from 17 those operational controllers. 18 Q. But you agree fundamentally that LDAR will 19 identify malfunctioning pneumatics and allow repair of 20 those leaks? 21 A. Yes, if implemented properly, then, yes, LDAR of 22 pneumatics could reduce emissions from -- from 23 malfunctioning pneumatic controllers. 24 Q. And last question: do you dispute Mr. Morris and 25 Mr. McNally's testimony that VOC reductions, such as	2234 1 oops, I see Ms. Katz. 2 MS. KATZ: Sorry, Madam Hearing Officer, my -- my 3 camera took a minute. I actually don't have any questions 4 for Mr. Lyon, but I think maybe Mr. Curtis might have said 5 that ERG used 3.5 emission factor -- or we used a 13.5 -- 6 or sorry, we used 3.5, but we used 13.5. So, anyway, I 7 was just trying to correct that ERG did not use 3.5. 8 MR. CURTIS: I apologize. You're correct. I 9 meant to simply say that Valor used 3.5. Thank you. 10 MS. KATZ: Thank you. I thought you were 11 probably just misspeaking. I just wanted to correct that. 12 Thanks. 13 HEARING OFFICER ORTH: All right. Thank you, 14 Ms. Katz. 15 I'm going to turn to questions from the Board. 16 If you're an attendee on the platform and have a question, 17 reach out through the Chat. 18 EXAMINATION BY THE BOARD OF DAVID LYON, Ph.D. 19 HEARING OFFICER ORTH: Madam Chair, any questions 20 of Dr. Lyon? 21 CHAIRPERSON SUINA: Thank you, Madam Hearing 22 Officer. And I just wanted to thank Dr. Lyon for his 23 testimony and information he's provided, but I don't have 24 any questions at this time. 25 HEARING OFFICER ORTH: Thank you. Vice-Chair

2235 1 Trujillo-Davis? 2 VICE-CHAIR TRUJILLO-DAVIS: Yeah, I just have a 3 couple of questions. And I think Mr. Hiser's co-counsel 4 there kind of was touching on some of my questions. So, 5 first, I'd like to thank Dr. Lyon for taking the time to 6 chat with us today. I thought some of your testimony was 7 really enlightening. 8 I'm curious, are there any other regulations that 9 would require reporting failures or require frequent 10 inspections? 11 DR. LYON: From any jurisdiction or specific to 12 New Mexico? 13 VICE-CHAIR TRUJILLO-DAVIS: I'm sorry. I should 14 be more specific. I was thinking along the federal lines. 15 DR. LYON: Not that I'm aware of, because for the 16 EPA Greenhouse Gas Reporting Program, pneumatic controller 17 emissions are just based on the emission factors, 18 regardless of if they're functioning properly or not. 19 VICE-CHAIR TRUJILLO-DAVIS: Okay. I think that's 20 all I have here, so thank you. 21 HEARING OFFICER ORTH: Thank you. Member Cates? 22 BOARD MEMBER CATES: No questions here. Thank 23 you. 24 HEARING OFFICER ORTH: Member Bitzer? 25 BOARD MEMBER BITZER: No questions. Thank you.	2237 1 these things happen at the most inopportune time, but my 2 witness's computer did a forced reboot. So can we 3 circle -- can I circle back with you and ping you when 4 she's available? I sincerely apologize for that. 5 HEARING OFFICER ORTH: Yes, absolutely. I see 6 Mr. Rose on screen. Mr. Rose? 7 MR. ROSE: Yes, we discussed whether Mr. Brown 8 would be testifying. He's listed as, I think, rebuttal in 9 a number of areas. It relates to his testimony on Section 10 112, which is referenced through the reg., so we don't 11 intend to offer him as a witness on any of the other 12 sections. 13 It looks like you've muted yourself. 14 HEARING OFFICER ORTH: Ms. Katz? I'm sorry. 15 MS. KATZ: Okay. So I -- so I think we're up 16 then for surrebuttal. So I'll bring Ms. Kuehn and 17 Mr. Palmer back for that. 18 ELIZABETH BISBEY-KUEHN AND BRIAN PALMER 19 having been previously duly sworn or affirmed, was 20 examined and testified as follows: 21 REBUTTAL EXAMINATION OF ELIZABETH BISBEY-KUEHN 22 AND BRIAN PALMER (Pneumatics) 23 MS. KATZ: All right. So, beginning with 24 Ms. Kuehn, so in your previous testimony you had discussed 25 how Colorado has been regulating pneumatic controllers
2236 1 HEARING OFFICER ORTH: Member Garcia? 2 BOARD MEMBER GARCIA: No questions. Thank you. 3 HEARING OFFICER ORTH: And Member Honker? 4 BOARD MEMBER HONKER: I have no questions. Thank 5 you. 6 HEARING OFFICER ORTH: All right. Thank you. 7 Ms. Paranhos, will there be any redirect? 8 MS. PARANHOS: No need for redirect, Madam 9 Hearing Officer. 10 HEARING OFFICER ORTH: All right. Thank you very 11 much, Dr. Lyon, for your testimony and thank you, 12 Ms. Paranhos. I think we'll hear from Mr. Alexander on 13 Friday. All right. Thank you. 14 So do we move back to -- because we've already 15 heard from McCabe. Do we move back to the Department, 16 Ms. Katz? 17 MS. KATZ: Thank you, Madam Hearing Officer. 18 Yes, I think there's some rebuttal from -- yes, I know 19 Ms. Gutierrez, Kinder Morgan has some. I don't know if 20 IPANM, if they have Mr. Brown as rebuttal for this, but I 21 don't know if they're planning to put him up. 22 HEARING OFFICER ORTH: Okay. I guess I lost the 23 thread. I thought folks were putting on their rebuttal 24 and surrebuttal as we were going along, but Ms. Gutierrez? 25 MS. GUTIERREZ: Madam Hearing Officer, of course	2238 1 since 2009, and that this fact is part of why Colorado's 2 approach is not appropriate for New Mexico. Does the 3 Environmental Defense Fund's argument made by Mr. McCabe 4 that the retrofit schedule in the Department's proposal is 5 slower than Colorado's rule take into account the higher 6 number of controllers phased out in New Mexico compared to 7 Colorado? 8 MS. BISBEY-KUEHN: No, it does not. As I stated 9 previously, the Department's proposal would cover many 10 more controllers than EDF's proposal, which is based on 11 Colorado's rule, and an extended compliance time frame is 12 appropriate for that very reason. 13 MS. KATZ: And Ms. Kuehn, does the joint proposal 14 from Oxy and the environmental NGOs contain all of the 15 necessary elements to implement their proposal in the -- 16 in the redline that they are -- that they have provided? 17 MS. BISBEY-KUEHN: No, their proposal is not 18 fully developed and is missing significant rule language 19 that is necessary to actually implement the proposal. 20 That includes the method to determine total historic 21 percentage of liquids produced at facilities, in addition 22 to the barrel of oil per day production. That wasn't 23 specifically part of the redline strikeout, but that is 24 contained in other parties' redline strikeout versions of 25 the rule. And so, if that concept were to be implemented

2239 1 in this rule, that concept as well would need to be fully 2 fleshed out. 3 In addition, there's -- so the primary issue is 4 that the full calculation itself hasn't -- hasn't been 5 developed and the methodology to determine that 6 calculation hasn't been fully developed. 7 MS. KATZ: Okay. Thank you. If the Board were 8 to adopt that joint proposal from the Environmental NGOs 9 and Oxy, we heard that Oxy's witness, Mr. Holderman, state 10 that it would result in less of a burden to the 11 Department. Is that true? 12 MS. BISBEY-KUEHN: No. The proposal -- their 13 proposal would put a greater burden on the Department than 14 the Department's current proposal. As mentioned 15 previously, that concept has not been fully developed and 16 so the Department would need to develop that methodology 17 to determine the total historic percentage of liquids 18 produced. 19 And the proposal would -- prepared by other 20 parties, which may be necessary to implement, includes 21 significant reporting to the Department, which the 22 Department currently just would not have the resources to 23 fully -- to fully address. 24 MS. KATZ: And when you say the proposal from 25 other parties, which may be necessary to implement, you	2241 1 MR. PALMER: No. Based on the well count data in 2 the 2020 producing wells spreadsheet, which is included as 3 NMED Exhibit 94, it appears that the Department's proposal 4 could actually result in a faster replacement of pneumatic 5 controllers because that proposal is based on controller 6 counts rather than liquids production. 7 Earlier today, while considering his testimony, I 8 prepared a slide that I can share with you based on those 9 data that will illustrate an example. Let me bring that 10 up and then share my screen. Okay. Let me see if I can 11 get rid of this here. There we go. 12 So these two -- these are the two Table 1s from 13 the two rules. The one on top here is from the joint 14 proposal from Oxy and the Environmental NGOs. The lower 15 table is the current -- is the Table 1 from the NMED's 16 current draft rule. And the concern expressed by 17 Dr. McCabe was that our -- because our timeline is 18 extended outward, it will mean more years of excess 19 emissions because it won't require as many retrofits. 20 And so what I'd like to just draw your attention 21 to are these two circled values here as examples. So 22 these are both May -- or 2027 time deadlines, and they're 23 both within this 40 to 60 percent cohort, who currently 24 have nonemitting controllers. So this is 40 to 60 percent 25 based on the numeric count, and this is 40 to 60 percent
2240 1 mean if the Board were to choose the other option instead 2 of the one that's being proposed by the Department, 3 correct? 4 MS. BISBEY-KUEHN: That's correct. 5 MS. KATZ: Okay. Thank you. Okay. So I'm 6 turning to Mr. Palmer. So, Dr. McCabe in his testimony, 7 stated that the Department's cost estimate assumed partial 8 retrofits of controllers; is that correct? 9 MR. PALMER: No, it is not. The -- in our cost 10 spreadsheet, we manipulated some of the values in order to 11 hit an overall target of 80 percent nonemitting 12 controllers for the purposes of just estimating overall 13 cost and emission reductions, and that required that we 14 used a fractional value in some rows to meet that overall 15 80 percent nonemitting target, but that was -- that was 16 sort of an industry-wide approach. It was not at a 17 facility level, so it was not a partial retrofit. 18 MS. KATZ: Okay. Thank you. And Dr. McCabe 19 testified that the NMED proposal will result in slower 20 implementation of retrofits than the joint proposal of the 21 Environmental NGOs and Oxy. Did Dr. McCabe present any 22 data or analysis to support this assertion? 23 MR. PALMER: No, he did not. 24 MS. KATZ: And does the Department agree that 25 NMED's approach will result in slower retrofits?	2242 1 based on the production count. 2 So I looked at the well data, and assuming that 3 wells are directly correlated with the number of 4 controllers under the joint proposal this -- but also 5 recognizing that some wells have much higher production 6 than other wells, based on this -- on the joint proposal 7 under this deadline right here, achieving 92 percent 8 production in 2027 would mean that devices at 42 percent 9 of wells would be nonemitting. At this, really, the same 10 deadline -- actually, January 1st, 2027, so five months 11 earlier, under the NMED's proposal, 70 percent of wells 12 would be nonemitting -- or the controllers at 70 percent 13 of wells would be nonemitting because its the number of 14 controllers. So I think it's -- it's actually the NMED 15 proposal certainly will not result in any slower 16 implementation of nonemitting controllers, and in some 17 cases it may actually be faster, given the well production 18 data, but also making some assumptions about controllers 19 per well because we don't have data on exactly how many 20 controllers are out there and exactly how they're 21 distributed. 22 But the bottom line is, is that, no, the 23 Department's proposal will not result in a slower 24 implementation and it may actually be faster, based on my 25 analysis.

2243 1 MS. KATZ: Okay. Thank you, Mr. Palmer. So 2 turning to IPANM, Mr. Palmer, can you describe the impacts 3 of the -- of IPANM's proposal to exclude low-producing 4 operators from the pneumatics requirements? 5 MR. PALMER: Yes. The IPANM is referring to the 6 Colorado Reg. 7 for operators, whose statewide production 7 is less than 15 barrel of oil equivalent per well per day. 8 In Colorado, they're exempt from the company-wide 9 nonemitting controller program for well production 10 facilities. 11 And going back to the NMED exhibit that we used 12 for the small business definition, if we look at those 13 data, then a 15 BOE per well per day exemption as in 14 Colorado, it would exempt 269 out of 324 well operators 15 who have oil production. Only 55 well operators with oil 16 production would be subject, and also 63 percent of all 17 wells, or 30,200 wells would not be subject to the 18 nonemitting controller requirements. 19 MS. KATZ: And can you describe the impact of the 20 IPANM's proposal to exclude well sites that have fewer 21 than four controllers? 22 MR. PALMER: This was an item that they had in 23 their direct, but there was no supporting information 24 provided on that, so we can't -- we can't estimate what 25 the impact would be on that. However, there are many,	2245 1 AND BRIAN PALMER 2 BY MR. BAAKE: 3 MR. BAAKE: Okay. Dr. Palmer, I guess I would 4 start with you. So I think that you said that you work 5 with -- 6 MR. PALMER: I'm sorry, I'm Mr. Palmer. I'm not 7 a doctor. 8 MR. BAAKE: Oh. Well, I would believe that you 9 were, if you -- if you told me otherwise. Mr. Palmer, 10 you -- you -- I believe you just said that you didn't see 11 any evidence that the Department's program would be 12 slower; is that correct? 13 MR. PALMER: That is correct. Yes, that's 14 correct. I believe the slide that you're showing now is a 15 comparison of the numbers. These are -- these are just 16 the targets, but I don't know -- are they -- well, you can 17 tell me. 18 MR. BAAKE: Yeah. Let me -- let me -- so I think 19 that the -- that one point that needs to be made is that 20 there's -- there's the wellhead count, where we do have 21 this additional complication of the different metrics, but 22 there's also a table for gathering compressor stations, 23 which it -- it -- let me put this in the form of a 24 question. 25 Would you -- do you understand that the NMED
2244 1 many wells with -- that would also be exempt from that. 2 That's all I can really say. 3 MS. KATZ: Okay. And Mr. Palmer, can you -- does 4 this section, the requirements of Section 121, would they 5 apply to a small business facility as defined in the rule? 6 MR. PALMER: No, they would not. 7 MS. KATZ: Okay. Thank you. 8 MR. PALMER: They would not have -- okay. 9 MS. KATZ: That is all I have. 10 HEARING OFFICER ORTH: All right. Thank you, 11 Ms. Katz. 12 Let me ask if there are other parties. I see 13 Mr. Baake. Do you have questions of the Department's 14 panel? 15 MR. BAAKE: I do, Madam Hearing Officer. And 16 would it be possible to get -- to pull up his screen 17 sharing privilege, I would like to pull up again from 18 Dr. McCabe's presentation this morning for my question. 19 COURT REPORTER: And can I ask you to speak up, 20 now, please. Thank you. 21 MR. BAAKE: Sorry. I don't know why -- okay -- 22 I'm having trouble being heard. So let me just see if I 23 can -- oops. Okay. Is that -- do we have the slide up 24 there? 25 REBUTTAL CROSS-EXAMINATION OF ELIZABETH BISBEY-KUEHN	2246 1 approach and the Colorado -- the NMED approach has a 2 controller count number approach for gathering compressor 3 stations. Would you -- do you understand that that's also 4 how Colorado does it for those facilities? 5 MR. PALMER: I'm sorry. Can you repeat the last 6 part of the question? I'm sorry. 7 MR. BAAKE: So the question is just, do you 8 understand that -- based on your understanding of the 9 Colorado rule for gathering compression stations, that 10 they use a controller count metric? 11 MR. PALMER: Yes. 12 MR. BAAKE: So for those facilities, it should be 13 possible to do kind of an apples to apples comparison 14 between the Department's proposal and the Colorado rule? 15 Yes? 16 MR. PALMER: Yes, I would agree. 17 MR. BAAKE: Okay. And so here, this is a slide 18 that Dr. McCabe presented earlier. Did you see when he 19 presented this? 20 MR. PALMER: I did. 21 MR. BAAKE: And at least for these facilities, 22 would you agree that this appears to show that the 23 Colorado rule and the proposal that Clean Air Advocates 24 put forward is more stringent than the NMED's proposal? 25 MR. PALMER: I would agree for gathering and

2247 1 boosting stations. 2 MR. BAAKE: Right. Now, it would be -- now maybe 3 we could go back to your slide. Sorry for -- 4 MR. PALMER: Okay. But let me -- let me also 5 clarify that, please, my response. And that is that when 6 you look at our pneumatic controller cost spreadsheet, so 7 we have -- if you look on -- well, I could share it again 8 and that might help you out. 9 MR. BAAKE: Yeah, that would be great. Okay. 10 Yeah. 11 MR. PALMER: Let me do that because I think it 12 will -- I'm going to respond to what you're asking about 13 quickly here. So, here is our cost spreadsheet, one page 14 of it. And this row -- these rows here are for gathering 15 and boosting. And hide this -- okay. So we have 570 16 gathering and boosting sites in the Permian. We have 345 17 gathers and boosting sites in the San Juan. Those sites, 18 this is the average number of devices per site at a 19 gathering and boosting station, and this is based on the 20 Greenhouse Gas Reporting Program. 21 So this is the total number of controllers at 22 gathering and boosting; the Permian is 7,075. This is a 23 total number of controllers in the San Juan, is 4,265. 24 Relative to well sites, these are the number of 25 controllers at wellheads. Wellheads and tank batteries in	2249 1 there's a lot of complexity in trying to move from one 2 metric to the other, but in that box where you say that 3 devices at 70 percent of wells are nonemitting, don't you 4 mean that 70 percent of devices are not emitting? 5 MR. PALMER: Yes, that's correct. 6 MR. BAAKE: So not necessarily 70 percent of 7 facilities? 8 MR. PALMER: Correct, because we -- it's hard to 9 estimate actually how many devices there are per well, 10 because some wells -- some well sites will probably have 11 fewer controllers than others. 12 MR. BAAKE: Right. And would you agree that 13 under the Colorado rule, the reason why they used the 14 liquid production metric is the idea that the more liquids 15 that are produced, the more pneumatics -- 16 (unintelligible.) 17 HEARING OFFICER ORTH: Hold on. Hold on. 18 Theresa? 19 COURT REPORTER: Please speak slower for the 20 record. You put your head down and your volume goes down. 21 So please speak slower and louder. Thank you. 22 MR. BAAKE: Sure. Let me reask that question 23 slower and louder, if I can remember it. 24 Is your understanding, Mr. Palmer, that the 25 reason why Colorado used this percentage of liquid
2248 1 the Permian is 26,392. This is the number of controllers 2 at wellheads and tank batteries in the San Juan, and it's 3 100,819. 4 So, yes, you can compare apples to apples on the 5 gathering and boosting, but when you get to wellheads, 6 there's -- they account for the -- most of these wellheads 7 and tank batteries account for where most of your 8 controllers are. So I'm going to stop sharing my screen. 9 MR. BAAKE: I'd really appreciate that. And I 10 don't think anyone would disagree that production sites 11 are where -- are where the primary focus is for 12 pneumatics. But I do think that you would agree, that at 13 least for gathering and boosting stations, the 14 Department's proposal is less stringent than this 15 proposal? 16 MR. PALMER: It has a longer timeline. 17 MR. BAAKE: Longer timeline. Could you pull up 18 the Word document, I think, that you were using at the end 19 of your testimony there? 20 MR. PALMER: You're talking about the -- 21 MR. BAAKE: Sure. It was at the end of your 22 surrebuttal. 23 MR. PALMER: Uh-huh. Okay. 24 MR. BAAKE: So I just wanted to make sure I am 25 clear on what you're saying here. And recognizing that	2250 1 production metric is that facilities that produce more 2 liquids generally have more pneumatics? 3 MR. PALMER: I am not 100 percent -- I'm not 4 certain on why Colorado used that metric. 5 MR. BAAKE: Okay. Would that surprise you, if we 6 represented that that is our understanding? 7 MR. PALMER: I mean, if you told me that was your 8 understanding. 9 MR. BAAKE: So you don't know? 10 MR. PALMER: I'm not sure. However, the 11 Pennsylvania -- excuse me. The Department's rule 12 certainly allows operators to prioritize high-production 13 wells, as far as determining which ones they want to 14 retrofit with nonemitting controllers. 15 MR. BAAKE: But would you agree that this 16 comparison is -- perhaps more analysis needed to go into 17 it since we can't say for sure whether -- whether how 18 many -- how many wells want to be retrofit under the 19 table -- under the Department's rule? 20 MR. PALMER: Well, that's what I tried to do 21 here. But the question -- the question that we were 22 responding to, or the statement we were responding to was 23 that -- was the argument that the Department's rule was 24 going to result in a slower number of -- a lower number of 25 retrofits or greater emissions. And I've looked at the

2251 1 data and it doesn't necessarily indicate that. 2 MR. BAAKE: But I -- 3 MR. PALMER: So -- 4 MR. BAAKE: I guess what I'm trying to understand 5 is whether this -- this comment in the second bubble here 6 actually shows that, because I thought I heard you say 7 earlier that it does not correct what it says -- it's not 8 actually the 70 percent of wells not emitting. We don't 9 know how many -- what percent of wells would be not 10 emitting. We just know a percent of the devices; is that 11 it? Did I misunderstand that? 12 MR. PALMER: No. What I did was, I looked at the 13 wells and I ranked -- what I said was that if you look 14 at -- let me say this, there's another way to state the 15 table, restate this, is that 92 percent of production is 16 accounted for by 42 percent of wells in New Mexico. So to 17 get to 92 percent, you might have to retrofit the 18 controllers at only 42 percent of your wells. So, 19 therefore, the controllers at 68 percent of your wells 20 don't need to be retrofit. 21 On the same date, on the same time landmark of 22 2027, under the New Mexico proposal -- the Department's 23 proposal, 70 percent of your controllers have been 24 retrofit and only 30 percent have not been retrofit. So 25 that's the point I was trying to make, is that we are	2253 1 might have 42 percent of the wells, the ones that are 2 producing the most, might have 80 percent of the 3 pneumatics? 4 MR. PALMER: I don't have the information to 5 answer that question. 6 MR. BAAKE: So would you agree that more analysis 7 would probably need to be done to actually do a comparison 8 between the two proposals? 9 MS. KATZ: And Madam Hearing Officer, I believe 10 that is the point that we were trying to say about 11 Mr. McCabe's analysis. So the line of questioning is kind 12 of just going on and on. 13 HEARING OFFICER ORTH: All right. Thank you. 14 Mr. Baake? 15 MR. BAAKE: I mean, I don't necessarily agree. I 16 think their point was that their proposal was stronger 17 than ours. And it's -- so, anyway, but if the point is 18 that it's not -- if it's not known, then I accept the 19 point. 20 MS. KATZ: I believe the counter was that it was 21 in counter to Mr. McCabe's definitive statement that ours 22 was much slower than -- than his proposal. 23 MR. BAAKE: I did have one final shift in gears, 24 one final question. And this was actually something that 25 Ms. Kuehn testified to.
2252 1 targeting a higher number of controllers at the same date, 2 and actually five months earlier. 3 MR. BAAKE: So I guess what I'm trying to 4 understand here -- let me ask you a hypothetical. Would 5 you expect a larger facility -- a larger well that has 6 more production, to have more pneumatic controllers than 7 one with less production? 8 MR. PALMER: I think if you talk to the industry 9 folks, they'll probably say that. And maybe -- I think 10 maybe you should ask the industry folks that. My 11 understanding is that at some sites you may have fewer -- 12 relatively fewer controllers, but they actuate more often 13 because there is higher throughput through that 14 controller. 15 MR. BAAKE: So I think that's -- you're right, we 16 would need more information on that. I guess what I'm 17 trying to get at here, is it logically possible that you 18 might have 42 percent of the wells in the state that have 19 70 percent of the pneumatics? 20 MR. PALMER: I suppose that could be true. 21 MR. BAAKE: Is it logically probable that -- 22 MR. PALMER: But it's not -- 23 MR. BAAKE: Go ahead. 24 MR. PALMER: But we don't have that information. 25 MR. BAAKE: Is it logically possible that you	2254 1 The question from Ms. Katz was -- oh -- but, 2 actually, I would still like that table, if possible. 3 It's really hard to ask these questions without the table. 4 MR. PALMER: Okay. Sorry, I thought you were 5 shifting gears. 6 MR. BAAKE: I am shifting gears, but -- but in a 7 way it's still -- having the table would still be helpful. 8 So -- so I believe Ms. Katz asked the question 9 that -- of whether it would make sense for New Mexico to 10 have a longer phase-in period than Colorado, given that 11 Colorado has done more in the past. Do you remember that 12 question, Ms. Kuehn? 13 MS. BISBEY-KUEHN: No, that's not the question 14 that was asked. 15 MR. BAAKE: Oh. Could you -- could you tell me 16 what you recall the question was? 17 MS. BISBEY-KUEHN: The question was, in your 18 previous testimony you discussed how Colorado has been 19 regulating pneumatic controllers since 2009. And that 20 this fact is part of why Colorado's approach is not 21 appropriate for New Mexico. Does EDF's argument that the 22 retrofit schedule in the Department's proposal is slower 23 than Colorado's rule take into account the higher number 24 of controllers based out in New Mexico compared to 25 Colorado.

2255 1 MR. BAAKE: Okay. I appreciate it. That's -- 2 glad to have that. So I guess my question is, if an 3 operator is -- this is -- are you familiar with the 4 Colorado rule? 5 MS. BISBEY-KUEHN: I'm somewhat familiar. I'm 6 not an expert in the Colorado rule, so I can't speak to 7 specific Colorado requirements. 8 MR. BAAKE: To the extent you're familiar with 9 it, do you recall that Colorado has, like the Department's 10 proposal here, a cohort where it starts at zero percent? 11 MS. BISBEY-KUEHN: That's within the context of 12 this table, right. So there are -- there are other 13 regulations in place that target pneumatic controller 14 reductions that have been in place for over a decade in 15 Colorado, so it's not -- you can't -- I don't think you 16 can make those comparisons. 17 MR. BAAKE: But there is -- there is still what's 18 part of the new Colorado rule, that there's not a finished 19 increase requirement for operations to start at zero and 20 20 percent? 21 MS. BISBEY-KUEHN: That's what the -- I believe 22 that's true, but I don't know that for sure. 23 MR. BAAKE: So if an operator -- so putting aside 24 what Colorado has done in the past, is there a reason why 25 you couldn't compare the obligations of an operator	2257 1 mean, within Colorado's entire regulatory framework for 2 pneumatics, it's taken into account, but you can't 3 translate that into this concept, into this table for New 4 Mexico. 5 MR. BAAKE: Okay. I guess -- I mean, I've asked 6 the question several times and I guess I don't understand 7 the answer. Why -- why someone starting at 20 percent in 8 Colorado, versus someone starting at 20 percent in New 9 Mexico, why that comparison cannot be made. Is there any 10 other elaboration you can give on that, or am I not asking 11 the question correctly? 12 MS. BISBEY-KUEHN: No, I've answered the 13 question. The baselines are different and you can't 14 compare where the baselines -- 15 MR. BAAKE: But for any individual operator, you 16 can? 17 MS. BISBEY-KUEHN: I've answered the question. 18 MS. KATZ: I believe -- I believe Ms. Kuehn has 19 answered this as much as she can understand what Mr. Baake 20 is asking. 21 HEARING OFFICER ORTH: Yeah, I think she's been 22 trying to answer your question, Mr. Baake. And I'm 23 wondering if you have other questions. 24 MR. BAAKE: That's -- that's the only question, 25 but I -- yeah, I -- I -- I -- I don't understand why
2256 1 starting at zero percent in New Mexico, and an operator 2 starting at zero percent in Colorado? 3 MS. BISBEY-KUEHN: You can't make that comparison 4 because there are longstanding, established regulatory 5 requirement for controllers in New Mexico -- in Colorado. 6 Excuse me. 7 MR. BAAKE: All right. But I guess I'm trying to 8 figure out why that's relevant if you're just looking at, 9 where do you start, and saying how much you have to 10 increase from where you start? 11 MS. BISBEY-KUEHN: It's relevant because they're 12 starting at different baselines, so that's incredibly 13 relevant. Yes, that is very important. 14 MR. BAAKE: But -- but for each baseline, you can 15 say if you're starting at 60 percent, you have to do this 16 in New Mexico, and this in Colorado, right? 17 MS. BISBEY-KUEHN: No. They've already made 18 requirements that achieved important reductions and so the 19 baseline is very different between the two states. 20 MR. BAAKE: What I guess I don't understand is, 21 this table that New Mexico has, and that Colorado has, 22 there's different obligations, depending on where you'd 23 start, so the baseline is already taken into account, is 24 it not? 25 MS. BISBEY-KUEHN: No. No, it's not taken -- I	2258 1 it's -- why it's not coming through, because I think I've 2 asked it in a very clear way, and I've not gotten an 3 answer, but that's all right. We can move on. 4 HEARING OFFICER ORTH: All right. Thank you. 5 Any other parties or counsel with questions of this 6 Department panel? Just turn on your screen. 7 I see Mr. Janoe. Mr. Janoe? 8 MR. JANOE: Thank you, Madam Hearing Officer. I 9 have questions for Mr. Palmer, perhaps for 10 Ms. Bisbey-Kuehn. 11 CROSS-EXAMINATION OF ELIZABETH BISBEY-KUEHN 12 AND BRIAN PALMER (Pneumatics) 13 BY MR. JANOE: 14 MR. JANOE: So I'm understanding correctly, I 15 think I heard you testify that 92 percent of production in 16 New Mexico is accounted for by 42 percent of the wells in 17 New Mexico. Do I have that right? 18 MR. PALMER: That is what I estimated based on 19 the New Mexico well data. 20 MR. JANOE: Okay. And -- and were it true -- and 21 I understand there can a difference of opinion on this, 22 sir, but were it true that controlling the pneumatics at 23 42 percent of those wells would, in fact, control 92 24 percent of the pneumatic emissions, would you be fine with 25 that?

2259 1 MR. PALMER: I don't believe you can make that 2 connection exactly. 3 MR. JANOE: I appreciate -- I appreciate that 4 that's not your testimony. I'm asking you to bear with me 5 as an expert in a hypothetical here. But if it were true 6 that we could control 42 percent of the wells, and, 7 thereby, control 92 percent of the production and the 8 emissions from pneumatics, you'd be okay with that, 9 correct? 10 MR. PALMER: That's not my decision. 11 MR. JANOE: Okay. Well, it would be important to 12 air quality if controlling 42 percent of those wells 13 reduced 92 percent of the emissions, right? 14 MR. PALMER: Controlling 92 percent of the 15 emissions would be great. 16 MR. JANOE: Okay. And if we could do that at 42 17 percent of the wells, in your own personal opinion, 18 Mr. Palmer, would that be okay? 19 MR. PALMER: If that were the result, I think 20 that would be good for air quality. 21 MR. JANOE: Okay. And -- and, sir, I think I 22 further understood your testimony to say, in essence, that 23 you're not sure if the relationship between high producers 24 and pneumatic emissions pans out across all producers, is 25 that -- is that a fair way of putting it?	2261 1 Mr. Palmer? 2 MR. PALMER: Correct. 3 MR. JANOE: Okay. And -- and you don't have any 4 testimony on whether there's a linear relationship between 5 the number of pneumatics and the volume of production, 6 correct? 7 MR. PALMER: I don't. However, still, there is a 8 lot of testimony presented earlier about the fact that 9 some pneumatics can account for very high emissions 10 because of malfunctions. 11 MR. JANOE: Okay. And a program that would 12 prioritize higher emissions would address that concern, 13 though, wouldn't it, sir? 14 MR. PALMER: It depends on what's in that 15 program. 16 MR. JANOE: Okay. Well, a good program like the 17 one proposed by the NMED that requires inspections of 18 pneumatics to determine whether they're malfunctioning, 19 don't you think we could find the malfunctioning ones and 20 fix them, sir? 21 MR. PALMER: I believe that is one of the 22 objectives, yes. 23 MR. JANOE: And no one is questioning the 24 inspection provision as it relates to pneumatics here, 25 right, sir?
2260 1 MR. PALMER: I am not sure. There's, as we've 2 heard a lot of testimony, there's a lot of uncertainty in 3 the emissions from these controllers, and some of them 4 have very high emissions because of malfunctions. So it's 5 not clear to me, personally, whether there is a strong -- 6 I'm sure there's some relationship, but I'm not sure it's 7 strong enough to advocate for one regulatory approach over 8 another. 9 MR. JANOE: And Mr. Palmer, I think Mr. Baake was 10 trying to ask this question a little bit earlier. But 11 would you -- does it stand to reason that a facility with 12 more liquid production would have more pneumatics? 13 MR. PALMER: It's -- I would not be surprised if 14 that were true. I would expect it to be true. 15 MR. JANOE: And would you -- 16 MR. PALMER: I would say it's likely that, yes, 17 more equipment all around. Fair enough. 18 MR. JANOE: And would you expect that a facility 19 that is producing more liquids, that there be more 20 actuation of pneumatics at such facility? 21 MR. PALMER: That's my understanding of how they 22 work. 23 MR. JANOE: So it stands to reason, bigger 24 facilities with more pneumatics would have more emissions 25 than smaller facilities with less pneumatics, right,	2262 1 MR. PALMER: Not that I'm aware of, no. 2 MR. JANOE: Just the timing on the retrofits, 3 right? 4 MR. PALMER: That seems that to be -- the 5 question that was raised by Dr. McCabe was on timing. And 6 he was saying that the Department's proposal was less 7 stringent because of the timing issue, and that is what I 8 was responding to. I was not responding to the production 9 issue; it was the timing issue that he had raised. 10 MR. JANOE: And to be clear, I'm not going to 11 pick on you, Mr. Palmer, about the timing between the two 12 proposals. What I'm trying to get out is what's going to 13 be better for the environment. So if there were testimony 14 that getting out there, and concentrating on the bigger 15 producers, and the higher emissions, instead of an 16 arbitrary number like the number of sites, if that were 17 better for the environment, would you be for it, sir? 18 MR. PALMER: The fair proposal allows operators 19 to prioritize sites as they see fit. 20 MR. JANOE: But it also requires an arbitrary 21 number of retrofits at the back end of that process, 22 regardless of whether it achieves an emissions reduction, 23 correct, Mr. Palmer? 24 MR. PALMER: I don't believe that -- I don't 25 think it's correct to characterize that as arbitrary. I

2263 1 think that's a misleading word to use. 2 MR. JANOE: Okay. Fair enough. I'll use a 3 different word then. Sir, if we get out there and really 4 control for the big emitters and reduce emissions from 5 pneumatics at, say, 42 percent of the wells, and that 6 achieves 92 percent of the reduction, what's the 7 importance of the rest of that 58 percent of wells, if 8 we've really achieved the reductions needed for 9 attainment? 10 MR. PALMER: I don't know, I think that goes 11 beyond the scope of the question. That's still a 12 percentage of the emissions from pneumatics. There are 13 flexibility provisions in this rule as well. There is the 14 75 percent threshold; if you reach 75 percent of 15 pneumatics replacement, then you can stop early. 16 MR. JANOE: Right. Well, but that would still -- 17 I mean, in my hypothetical, sir, going from 42 to 75 means 18 I'm still working on 33 percent that really don't give me 19 a lot of bang for my buck, right? 20 MR. PALMER: I believe you've already asked that 21 question. 22 MS. KATZ: Madam Hearing Officer, there's a lot 23 of repetition and it's all based on hypotheticals without 24 actual backup from any of the testimony. So I'm just -- I 25 feel like this is going on and on, and assuming a lot of	2265 1 MR. JANOE: But emissions matter, not necessarily 2 number of wells, correct, sir? 3 MR. PALMER: Ultimately. 4 MR. JANOE: Thank you, Mr. Palmer. Nothing 5 further. 6 HEARING OFFICER ORTH: All right. We do need a 7 break. Let's come back at 5:03, please, so we can have a 8 15-minute break. Thank you. 9 (Recess taken from 4:48 p.m. to 5:03 p.m.) 10 HEARING OFFICER ORTH: Let's come back from the 11 break, please. 12 We are back after a short break and we've reached 13 the 5 p.m. public comment session. We accept public 14 comment in EIB 21-27 every day at 9, 1 and 5. The three 15 commenters who reached out to the Board Administrator are 16 in this order: Carla Sonntag, Victor Snover and John 17 Maddaus. If you are on the platform and would like to 18 offer public comment, but haven't reached out to the 19 administrator, I'm still happy to take your comment, just 20 reach out through Chat, which is enabled for everyone or 21 call or text Pam Jones at (505) 660-4305. 22 Public comment is taken under oath, is taken by 23 audio, not video, and is limited to five minutes. So let 24 me find Ms. Sonntag first. Ms. Sonntag, I've unmuted you. 25 Can you hear me?
2264 1 things. 2 HEARING OFFICER ORTH: All right. No, I hear it. 3 Mr. Janoe, to move to a different point, though, 4 we do need a break before the 5:00 public comment session. 5 I'm wondering if you're about ready to wrap up, or if we 6 can just continue after public comment. 7 MR. JANOE: Two more questions, Madam Hearing 8 Officer, and I promise I'll be done. 9 HEARING OFFICER ORTH: All right. 10 MR. JANOE: What's more important than 11 maintaining attainment with the ozone standard; the number 12 of wells that are controlled, or the volume of emissions 13 that are reduced? 14 MR. PALMER: There was plenty of testimony on the 15 modeling and the emission reductions that were needed to 16 meet the ozone standard, so I will ask you to refer to 17 that testimony. 18 MR. JANOE: Sure. Sir, you would agree with me, 19 though, that attainment will be determined by how many 20 emissions we reduce, not necessarily how many wells we 21 control? 22 MR. PALMER: I believe that we will reach 23 attainment when we have been able to reduce a certain 24 amount of emissions. So how we get there is -- it's up to 25 the Board.	2266 1 MS. SONNTAG: Yes, ma'am. 2 HEARING OFFICER ORTH: Oh, good. Your voice is 3 nice and clear. If you would please spell your name for 4 the transcript? 5 MS. SONNTAG: Carla, C-A-R-L-A. Sonntag, 6 S-O-N-N, T like Tom, A-G. 7 HEARING OFFICER ORTH: Thank you. And raise your 8 right hand. Do you swear or affirm to tell the truth? 9 MS. SONNTAG: I do. 10 HEARING OFFICER ORTH: Thank you. I'll start 11 your five minutes now. 12 CARLA SONNTAG, 13 having been first duly sworn or affirmed, 14 gave public comment as follows: 15 PUBLIC COMMENT OF CARLA SONNTAG 16 MS. SONNTAG: Thank you for the opportunity to 17 speak with you this evening. I'm Carla Sonntag, President 18 of the New Mexico Business Coalition, which is a statewide 19 nonpartisan association that seeks to find balance in New 20 Mexico's laws and regulations, to provide the best 21 solutions for the sake of our people. 22 New Mexico is a wonderful state, and we all agree 23 that we want to keep it that way, but striving to impose 24 the country's most stringent rules to the detriment of 25 some of our people is not a goal anyone should support.

2267 1 We have seen oil and natural gas producers 2 proactively accomplishing much other the past several 3 years to minimize release and flaring of methane. We urge 4 you to allow this process to continue, with flexible 5 regulations that promote this problem-solving creativity. 6 That would allow producers to develop and implement 7 cutting-edge technologies. This type of innovation would 8 be much more beneficial to all of us in the long term. 9 Fortunately, the oil and gas industry is doing well right 10 now and providing a huge surplus for state revenue. We 11 know, however, this is cyclical and will not continue 12 forever. 13 There is debate over the financial impact this 14 rule would have to the state, but we can all agree, it is 15 significant. While the state is flush with cash, the 16 administration may believe the financial impacts are not a 17 problem; unfortunately, the extra wealth the state is 18 receiving now will not last forever. And when we hit our 19 next down cycle, as we will, we will experience a greater 20 impact of this rule at that time. 21 While the proposed rule has been changing, even 22 right up to the start of this hearing, it's concerning to 23 hear any discussion -- discussion that could impact the 24 recycling of produced water from oil and gas operations. 25 The state should encourage the industry to recycle	2269 1 what we should be talking about is the impacts to the 2 lives and livelihoods of some incredible people in this 3 state. These aren't just jobs. These jobs represent 4 people who work hard every day to provide for their 5 families, to feed their children, and make sure they have 6 a home to live in. 7 Please consider the full impact of your decisions 8 on our people and put them first. Thank you. 9 HEARING OFFICER ORTH: Thank you very much, 10 Ms. Sonntag. We'll go now to Mr. Snover, and I saw you on 11 the platform. Mr. Snover, I've unmuted you. Can you hear 12 me? 13 MR. SNOVER: I can. Can you hear me? 14 HEARING OFFICER ORTH: Yes, very clearly. Thank 15 you. Would you spell your name, please. 16 MR. SNOVER: Yes. It is Victor, V-I-C-T-O-R. 17 And Snover, S-N, like Nancy, O-V, like Victor, E-R. 18 HEARING OFFICER ORTH: Thank you. Raise your 19 right hand. Do you swear or affirm to tell the truth? 20 MR. SNOVER: I do. 21 HEARING OFFICER: Thank you. I'll start your 22 five minutes now. 23 VICTOR SNOVER, 24 having been first duly sworn or affirmed, 25 gave public comment as follows:
2268 1 produced water so that freshwater stays in our streams and 2 aquifers. We need to make sure that the final rule will 3 allow continuation of produced water ponds so that oil and 4 gas companies in our state can keep investing in and 5 recycling water. 6 This proposed rule will affect our smaller 7 producers disproportionately. We appreciate the attempt 8 to consider those smaller producers, but we don't believe 9 it is accomplishing what it should. I encourage you to 10 work closely with industry producers to find a way to 11 accomplish what is desired and save as many people as 12 possible from the unemployment line. We're going to feel 13 a ripple effect from the implementation of this rule. As 14 local taxes drop, several communities will be affected. 15 The Four Corners area has been pummeled by other 16 issues and will be hard pressed to withstand another blow, 17 but many communities will feel this loss. We're also 18 going to see an impact on associated businesses that 19 supply goods and services to the industry. After the last 20 18 months of COVID-related issues, our businesses need a 21 break. 22 The rule as it currently stands could cost the 23 state more than 1,200 industry jobs and 3,200 related jobs 24 across the state. What's most important, though, is 25 talking about the people behind those numbers, because	2270 1 PUBLIC COMMENT OF VICTOR SNOVER 2 MR. SNOVER: Okay. Well, thank you for allowing 3 me to speak. I appreciate the opportunity. Thanks to 4 everybody that's been appearing so far in this testimony 5 throughout the entire process. And I will be brief. I 6 have a commission meeting to go to soon, so I just want to 7 say, you know, in a letter that was sent to the New Mexico 8 EIB, myself, along with 25 other elected officials 9 representing what really amounts to hundreds of thousands 10 of New Mexicans, was signed by us urging the passage of a 11 strong methane rule. 12 I also want to thank Governor Lujan Grisham for 13 committing to passing what has become the strongest 14 methane rules in the nation. And as elected officials, we 15 all recognize that states and federal -- and the federal 16 government have not really moved quickly enough to combat 17 climate change. And because of that, we have to do more 18 as states, to do more to take on this existential crisis 19 that threatens the West's economy, and its public health, 20 from increased temperatures, drought and wildfires. 21 We urge the EIB to make good on the Governor's 22 commitment to implement the strongest rules in the nation, 23 which include robust leak detection and repair 24 requirements, robust timelines for retrofitting existing 25 equipment with pollution control equipment, and installing

2271 1 pollution control equipment at new facilities, and 2 increased LDAR for oil and gas operations. 3 A lot of this technology exists, it can be done. 4 We just have to -- we just have to get it done. And I 5 appreciate the time that you've given me, and for 6 everybody attending today and that has attended during 7 this hearing process throughout. So thank you very much 8 and that is all I have. Thank you. 9 HEARING OFFICER ORTH: Thank you, Mr. Mayor. 10 Let me go, then, to the final commenter for this 11 session, John Maddaus. Mr. Maddaus, I'm unmuting you. 12 Can you hear me? 13 MR. MADDAUS: Yes, I can. Can you hear me? 14 HEARING OFFICER ORTH: Yes, I can. Thank you. 15 Would you spell your name, please. 16 MR. MADDAUS: John, J-O-H-N. Maddaus, 17 M-A-D-D-A-U-S. 18 HEARING OFFICER ORTH: Thank you. And if you 19 would raise your right hand. Do you swear or affirm to 20 tell the truth? 21 MR. MADDAUS: Yes. 22 HEARING OFFICER ORTH: Thank you. I'll start 23 your five minutes now. 24 JOHN MADDAUS, 25 having been first duly sworn or affirmed,	2273 1 profits by dumping toxic chemicals on our soils, into our 2 waters, and into the air we breathe. 3 If this were a case of heavy toxic chemicals, 4 such as mercury, being dumped on the soils of an 5 industrial site and into adjacent waters, the site would 6 long ago have been designated a super fund site, and the 7 responsible corporation forced to spend billions of 8 dollars on cleanup. 9 Does dumping gaseous toxic chemicals, including 10 methane, into the air make it okay, just because there is 11 no identifiable site? No, it is not okay. Already, there 12 are industrial sacrifice zones where these toxic gases 13 have concentrated and where it is difficult to live 14 because it is difficult to breathe. And as toxic gases, 15 specifically methane, are dispersed in the air, they 16 contribute to heat waves, droughts, wildfires, extreme 17 weather events, ocean acidification and sea level rise. 18 Already, there are climate refugees fleeing from 19 our Gulf Coast and from nations such as Haiti and 20 Honduras. If climate change continues, there will 21 eventually be no place to run to. The atmosphere of our 22 earth, upon which all life depends, is thin and fragile. 23 We must protect it. Stop releases of methane and other 24 toxic gases now. 25 Thank you to the Environmental Improvement Board
2272 1 gave public comment as follows: 2 PUBLIC COMMENT OF JOHN MADDAUS 3 MR. MADDAUS: Thank you for the opportunity to 4 speak at this hearing. I am John Maddaus. I'm a resident 5 of Albuquerque and a member of the First Congregational 6 Church, the United Church of Christ. We are a green 7 justice church. In May 2016, we voted to become a green 8 justice congregation. The First Congregational United 9 Church of Christ recognizes the interconnectedness of all 10 creation as a manifestation of God. 11 We commit ourselves to care for mother earth's 12 resources in a responsible and just way. We dedicate 13 ourselves to take concrete steps to reduce our carbon 14 footprint and urge community members to join this effort. 15 We affirm environmental justice and embrace the 16 global effort to preserve the earth's resources for 17 generations to come by educating, using resources 18 responsibly, establishing relationships with other 19 organizations invested in sustainability, and promoting 20 policies that ensure a safe and healthy environment for 21 all. 22 I support strong ozone precursor rules and strict 23 enforcement of those rules. The great tragedy of the 24 Industrial Revolution of the last 300 years or so, has 25 been the externalization of costs in order to increase	2274 1 for this hearing and for all your work on this issue. 2 HEARING OFFICER ORTH: Thank you very much, 3 Mr. Maddaus. 4 All right. That is the end of the public 5 comment. We'll return to finish up the questioning of the 6 Department's panel. Ms. Katz, Mr. Palmer, Ms. Kuehn, if 7 you would rejoin us on screen. Thank you. 8 And I believe -- I think we had finished 9 questioning by Mr. Janoe. And it appeared perhaps 10 Mr. Hiser had questions. Mr. Hiser? 11 MR. HISER: Thank you, Madam Hearing Officer. 12 CROSS-EXAMINATION OF ELIZABETH BISBEY-KUEHN 13 AND BRIAN PALMER (Pneumatics) 14 BY MR. HISER: 15 MR. HISER: Ms. Kuehn, do you, as the Air Quality 16 Bureau Chief making recommendations to the Board, believe 17 that the mix of controls that the Department has selected 18 in the Department's pneumatics proposal, which is a 19 relatively rapid implementation of leak detection and 20 repair on these devices to prevent malfunctions, 21 incentives for early reductions by those who have the 22 financial capability to do so, and the slightly longer 23 extended period for those who may not have the financial 24 capability to do that, represents the optimum mix for the 25 peculiar circumstances in which New Mexico finds itself

2275 1 now? 2 MS. BISBEY-KUEHN: I do, and in addition to the 3 inclusion of the small business facility definition. 4 MR. HISER: Thank you, Ms. Kuehn. I forgot that 5 is part of your proposal, but it is part of your proposal 6 as well. 7 With -- and then I know that Mr. Palmer spoke to 8 the reductions that would be seen, but, in fact, is it not 9 true that there would be somewhat higher reductions toward 10 the beginning of that phase-out period, as the LDAR 11 program also started to go into effect and we captured 12 more of the emissions from malfunctioning devices, as they 13 were fixed and repaired? 14 MS. BISBEY-KUEHN: That is likely true. 15 MR. HISER: Thank you, Ms. Kuehn. 16 HEARING OFFICER ORTH: All right. Thank you, 17 Mr. Hiser. 18 Are there any other parties with questions of the 19 ED's surrebuttal panel. Seeing nothing, I'll turn to the 20 Board for their questions. While I'm doing that, if 21 you're on the platform and have a question, please reach 22 out through the Chat. 23 EXAMINATION BY THE BOARD OF ELIZABETH BISBEY-KUEHN 24 AND BRIAN PALMER (Pneumatics) 25 HEARING OFFICER ORTH: Madam Chair?	2277 1 VICE-CHAIR TRUJILLO-DAVIS: Okay. Thank you. I 2 appreciate that. And I think that's all the questions I 3 have right now. 4 HEARING OFFICER ORTH: Thank you. Member Cates? 5 BOARD MEMBER CATES: Yeah, and I appreciate the 6 clarifying question from Member Davis and the answer from 7 Mr. -- I'm sorry, from Ms. Kuehn. Thank you. 8 HEARING OFFICER ORTH: Thank you. Member Bitzer? 9 BOARD MEMBER BITZER: I have no questions. Thank 10 you. 11 HEARING OFFICER ORTH: Thank you. Member Garcia? 12 BOARD MEMBER GARCIA: No questions. Thank you. 13 HEARING OFFICER ORTH: Thank you. And Member 14 Honker? 15 BOARD MEMBER HONKER: No questions. Thank you. 16 HEARING OFFICER ORTH: Thank you very much. 17 Thank you, Ms. Kuehn and Mr. Palmer and Ms. Katz. I 18 believe then -- 19 MS. KATZ: Sorry. Can I do some redirect after 20 the cross and the Board's questions? 21 HEARING OFFICER ORTH: Oh, I'm very sorry. I 22 rushed right past that. Go ahead. 23 MS. KATZ: That's all right. It will be short. 24 REBUTTAL REDIRECT EXAMINATION OF ELIZABETH BISBEY-KUEHN 25 AND BRIAN PALMER (Pneumatics)
2276 1 CHAIRPERSON SUINA: Thank you, Madam Hearing 2 Officer. Actually, Mr. Hiser asked my questions, so thank 3 you again for your testimony, Mr. Palmer and Ms. Kuehn. 4 HEARING OFFICER ORTH: Thank you. Vice-Chair 5 Trujillo-Davis? 6 VICE-CHAIR TRUJILLO-DAVIS: Yes. Thank you. I 7 believe this question would be for Ms. Kuehn. I'm just 8 curious, I wanted to see if I understood correctly your 9 exchange with Mr. Baake, is that the -- the table that was 10 showing us from the Colorado rule, that's a snapshot of 11 the rule. And that, you really -- is this -- I'm 12 paraphrasing what I think you were -- you were saying. 13 But to really understand the baseline, you had to 14 look at other portions of the rule and take the whole 15 thing in context, rather than just looking at this one 16 table? Do I -- do I -- did I understand that from you? 17 MS. BISBEY-KUEHN: You are correct. And the 18 table that they were pointing to is their own proposal, so 19 they were comparing their own joint proposal with our 20 current proposal. And you are correct, that the baselines 21 are different, and so you have to look at the Colorado 22 rule in its entirety to understand what emission 23 reductions have already been achieved under that program, 24 to understand why they have developed the concept, and why 25 that concept was appropriate for Colorado today.	2278 1 MS. KATZ: Just a few questions here. 2 Ms. Kuehn, did Oxy and the Environmental NGOs put 3 on any data or evidence supporting their claim that their 4 approach will result in far greater emissions reductions 5 far sooner than the Department's proposed approach? 6 MS. BISBEY-KUEHN: No, they did not. 7 MS. KATZ: And does the Department's proposal 8 allow operators to prioritize high production sites? 9 MS. BISBEY-KUEHN: Yes. 10 MS. KATZ: And would that be the like -- would 11 that be the most likely course of action they would take, 12 because that would be the most cost effective to retrofit 13 first? 14 MS. BISBEY-KUEHN: Yes. 15 MS. KATZ: And Mr. Palmer, so just because the 16 NMED timeline goes out further than that proposed by the 17 Environmental NGOs and Oxy, does that mean that NMED's 18 approach is less stringent? 19 MR. PALMER: No. Because NMED's approach is 20 based on controller count rather than production, it is 21 requiring replacement of a greater number of controllers, 22 and that means that there will be fewer controllers out 23 there that will have the potential to emit and the 24 potential to malfunction as well. 25 MS. KATZ: Okay. Thank you. That's all I have.

2279 1 HEARING OFFICER ORTH: All right. Thank you, 2 Ms. Katz. All right. Now I think we want 3 Ms. Gutierrez -- oh, wait. Vice-Chair Trujillo-Davis? 4 VICE-CHAIR TRUJILLO-DAVIS: Yes, I have one more. 5 Can I ask a question of Mr. Holderman? Is that 6 appropriate at this time? I've lost count of where we are 7 in the process here, so... 8 HEARING OFFICER ORTH: Right. So, let's 9 complete -- if we're done with the Environment 10 Department's surrebuttal panel, let's let them go. Thank 11 you, Mr. Palmer, Ms. Katz, and Ms. Kuehn. 12 We have Mr. Janoe on screen. Mr. Janoe, do we 13 still have Mr. Holderman available? 14 MR. JANOE: Mr. Holderman is here and happy to 15 answer questions. 16 HEARING OFFICER ORTH: All right. Vice-Chair? 17 VICE-CHAIR TRUJILLO-DAVIS: Thank you. And I 18 apologize for losing our space in this very complex 19 hearing. So thank you for accommodating me. 20 REBUTTAL EXAMINATION BY THE BOARD OF DANNY HOLDERMAN 21 VICE-CHAIR TRUJILLO-DAVIS: Mr. Holderman, I had 22 kind of just a -- like a basic question about operations. 23 When somebody conducts an LDAR report or an LDAR survey, 24 do -- and they find a pneumatic that is out of compliance 25 or leaking, do they -- do they fix it?	2281 1 DIRECT EXAMINATION OF LESLIE NOLTING 2 BY MS. GUTIERREZ: (Pneumatics) 3 Q. Ms. Nolting, as your qualifications have already 4 been presented, can you please introduce yourself to the 5 Board? 6 A. Yes. Hi, my name is Leslie Nolting. I am an EHS 7 manager at Kinder Morgan, focusing on air permitting and 8 compliance. I just want to say thanks, everyone, for 9 their patience with my technical difficulties earlier. 10 Thank you. 11 Q. Thank you. Did you submit written rebuttal 12 technical testimony at Exhibit 17 regarding pneumatic 13 devices? 14 A. Yes, I did. 15 Q. Do you have any changes to that testimony? And 16 if not, do you adopt your written testimony here today? 17 A. I don't have any changes and yes, I adopt it in 18 full. 19 Q. Were you able to hear NMED's presentations, and 20 multiple of them, regarding pneumatic controllers both 21 this morning and this afternoon? 22 A. Yes. 23 Q. Following that presentation, does Kinder Morgan 24 have any additional requests or revisions to the 25 Department's proposed Section 122?
2280 1 MR. HOLDERMAN: Yeah. I guess if you go to 0000a 2 compliance or something like that, you have 30 days to fix 3 any leaks that you find. I'm trying to remember the 4 number off the top of my head here, but, yes, if we do 5 LDARs, we -- we typically would target a week or so, if 6 it's equipment that we have on hand; it sometimes takes 7 longer if you have to order new equipment that you don't 8 have in your stock, but, yeah, we do fix it. 9 VICE-CHAIR TRUJILLO-DAVIS: Okay. Thank you. I 10 was just trying to reconcile some of the testimony that we 11 heard about failures of them. So, as I understand, if you 12 do a survey, you do fix -- fix a -- any sort of leak? 13 MR. HOLDERMAN: Yes. 14 VICE-CHAIR TRUJILLO-DAVIS: Okay. Thank you for 15 that. I appreciate it. 16 HEARING OFFICER ORTH: All right. Thank you. 17 Let's turn now to Ms. Gutierrez and Ms. Nolting. 18 MS. GUTIERREZ: Thank you, Madam Hearing Officer. 19 And I know we are well into our hearing fatigue, so we 20 will aim to keep this just as brief as possible. 21 For everybody's benefit, we will be referring to 22 Kinder Morgan Rebuttal Technical Testimony at Exhibit 17. 23 LESLIE NOLTING, 24 having been previously sworn or affirmed, was examined 25 and testified as follows:	2282 1 A. We do not. We support the NMED's proposed 2 Section 122 as described by Ms. Kuehn in her testimony 3 this morning. In particular, we appreciate that 4 clarification that the Department intends for that table 5 to schedule -- as the schedule for achieving the certain 6 percentages of nonemitting controllers at transmission 7 compression stations. 8 Q. Thank you. So to be clear, following discussions 9 with the Department, Kinder Morgan is not asking for an 10 exemption from this rule section, and supports the 11 reasonable timelines proposed by the Department with 12 respect to transmission compressor stations? 13 A. Yes, that's correct. 14 Q. Thank you, Ms. Nolting. 15 And were you able to review the alternate 16 proposal from the environmental groups: Clean Air 17 Advocates, EDF, Center for Civic Policy and NAVA? 18 A. Yes. 19 Q. Is it your understanding that the -- this 20 proposal is proposing that any site with commercial power 21 retrofit all emitting controllers to nonemitting within 22 six months of the effective date? 23 A. That is my understanding, yes. 24 Q. Do all of your transmission compressor stations 25 have commercial power?

2283 1 A. We do have commercial power at all of our 2 transmission compressor stations, but there's an important 3 point that cannot be left out of this conversation; the 4 fact that we do have purchase power does not uniformly 5 mean that we have adequate power for any additional 6 equipment, meaning in most cases we limit the electric 7 power, including the infrastructure, to only what is 8 needed to power the relevant equipment. 9 If additional equipment is added to pull from 10 that same power source, in many cases we may have to 11 upgrade the electrical system. It's inaccurate to 12 uniformly assume that any electric power source is 13 adequate power. 14 Q. Thank you, Ms. Nolting. 15 And as a point of clarification from prior 16 testimony by Dr. McCabe, do you have backup power at all 17 transmission compressor stations? 18 A. No. There are two stations that I know of off 19 the top of my head that we do not have backup power in 20 those subject counties for this rule. 21 I think Dr. McCabe's statement on this issue 22 was -- might have been based on our testimony regarding 23 emergency engines, in which we were speaking in general 24 terms regarding the use of those engines, but I can 25 confirm that it is not the case that we have backup power	2285 1 retrofit of each station. 2 Again, this is a significant and sometimes 3 multiyear process, which is why the Department's base 4 schedule makes good sense. 5 Q. Thank you. And is it also your understanding 6 that the environmental groups' proposal would further 7 require any transmission compressor station to retrofit to 8 nonemitting within six months, without regard for whether 9 the site has commercial power? 10 A. That is my understanding. 11 Q. Do you have concerns regarding this proposal? 12 A. Again, we don't have any sites without commercial 13 power, but for those same reasons I stated before, six 14 months for a site, even with commercial power, is not 15 workable. If there's a case where a site has no access to 16 grid power, an expectation for retrofit within six months 17 or even several years is infeasible. 18 Q. And to your knowledge, did these groups produce 19 any technical evidence, detailing the feasibility of 20 transmission compressor stations retrofitting pneumatic 21 controllers to nonemitting within six months? 22 A. Not to my knowledge. Clean Air Advocates makes 23 the broad statement that because transmission compressor 24 stations generally have access to the electric power, that 25 it would be "easy."
2284 1 at all of our stations. 2 Q. Thank you. And referring back to the 3 environmental group proposal, is the six-month proposed 4 timeline to retrofit all emitting pneumatic controllers 5 reasonable and feasible? 6 A. No, it is not. 7 Q. Can you please describe some of your concerns 8 with this proposal? 9 A. Yes. As I just mentioned, even if we have power 10 it may not be adequate for the retrofits or replacements 11 of those devices that might -- that will be required. To 12 be able to receive more power, the existing electric 13 infrastructure at the site may need to be upgraded. This 14 could require significant design and facility 15 modifications, which would not only be extremely costly, 16 but is easily a multiyear process. 17 Second, even if sites have adequate commercial 18 power, a six-month timeline is not feasible for 19 retrofitting or replacing all controllers. We first need 20 to do an inventory of all of those controllers, which is a 21 significant undertaking in and of itself. We would need 22 to do engineering and design. Based on my experience, 23 once we place an order for nonemitting controllers, it 24 would take three to six months to receive the equipment. 25 There is the added time to schedule the work for the	2286 1 However, they produced no technical evidence, 2 discussion or analysis of modifications that may be 3 required if current electricity is inadequate to support 4 the additional equipment. 5 Q. And lastly, does Kinder Morgan ask that the Board 6 reject the alternate proposal as it related to 7 transmission compression? 8 A. Yes, it is not a sound proposal. 9 Q. Thank you. 10 MS. GUTIERREZ: And I offer Ms. Leslie Nolting 11 for cross-examination. 12 HEARING OFFICER ORTH: Thank you very much, 13 Ms. Nolting and Ms. Gutierrez. 14 If you're a party with questions of Ms. Nolting, 15 please turn on your camera. 16 Not seeing anyone, I will turn then to questions 17 from the Board. While I'm doing that, if you are on the 18 platform as an attendee, please reach out through the Chat 19 with any questions. 20 Madam Chair? 21 CHAIRPERSON SUINA: Madam Hearing Officer, I have 22 no questions. Thank you. 23 HEARING OFFICER ORTH: Thank you. Vice-Chair 24 Trujillo-Davis? 25 VICE-CHAIR TRUJILLO-DAVIS: I don't have any

2287 1 questions. Thank you. 2 HEARING OFFICER ORTH: Member Cates? 3 BOARD MEMBER CATES: No questions. Thanks. 4 HEARING OFFICER ORTH: Thank you. Member Bitzer? 5 BOARD MEMBER BITZER: No questions. Thank you. 6 HEARING OFFICER ORTH: Member Garcia? 7 BOARD MEMBER GARCIA: No questions. Thank you. 8 HEARING OFFICER ORTH: Thank you. And Member 9 Honker, who I believe just had to depart a minute ago. 10 All right. 11 Thank you very much, Ms. Nolting and 12 Ms. Gutierrez. 13 MS. GUTIERREZ: Thank you. 14 HEARING OFFICER ORTH: So, as I understand it 15 then, Topic 122, pneumatics is done, with the exception of 16 EDF's Tom Alexander, who we'll hear from on Friday. 17 So I'd like to go to the brief testimony of 18 Mr. Kim, CDG's witness on Section 120. That's one of the 19 three or maybe four loose ends I'm keeping note of. 20 Ms. Shpall, and can we get Mr. Kim on the screen? 21 Let's see. 22 MR. KIM: Oh, I'm already a panelist. Can you 23 guys hear me? 24 HEARING OFFICER ORTH: Yes, nice and clear. 25 Thank you.	2289 1 that up. Are you guys able to see that? 2 Q. Yes. 3 A. Perfect. So, yes, I do have some concerns about 4 20.2.50.20 NMAC as proposed. 5 Q. And could you summarize those concerns for us? 6 A. Yes. The proposed rule fails to take into 7 account the operational differences between the groups 8 facilities and oil -- and the oil and gas E&P facilities. 9 E&P facilities can generally route emissions from 10 hydrocarbon liquid load-out back to the tanks or existing 11 controls on site, while water facilities must retrofit 12 these facilities to accommodate a combustor, regardless of 13 if that's on storage tanks or on hydrocarbon liquid 14 load-out. 15 The proposed rule also fails to take into account 16 the difference of the emissions profile of the oil from 17 the E&P facilities and PWMU facilities. For instance, 13 18 hydrocarbon liquid load-outs from a PWMU will result in 19 far fewer emissions when compared to 13 hydrocarbon liquid 20 load-outs at an E&P facility. 21 Q. And what threshold does NMED propose for 22 hydrocarbon liquid load-out? 23 A. NMED proposes 13 load-outs per year, which does 24 not equate to any standardized VOC emissions limits. For 25 example, 13 hydrocarbon liquid load-outs at an E&P site
2288 1 And Ms. Shpall, is it you or Mr. Kim who needs 2 the slides? 3 MR. KIM: It will be myself. 4 Casey, are you coming through? 5 HEARING OFFICER ORTH: All right. I've passed 6 slide presentation to Mr. Kim. 7 We can't hear you, Ms. Shpall. I will unmute 8 you. There, you're unmuted. 9 MS. SHPALL: Oh, that helps. Can you hear me 10 now, Mr. Kim? 11 MR. KIM: Yep, I sure can. Thank you. 12 IL KIM, 13 having been previously duly sworn or affirmed, was 14 examined and testified as follows: 15 DIRECT EXAMINATION OF IL KIM 16 BY MS. SHPALL: (Pneumatics) 17 Q. Okay. Good evening, Board members. Mr. Kim's 18 testimony has been admitted. It's Appendix A to his 19 original testimony and Appendix A to his rebuttal 20 testimony. 21 And we're going to be speaking briefly about 22 Section 120. Mr. Kim, could you please summarize your 23 concerns with Section 120? 24 A. Yes, I'll do that. And if you'd give me a second 25 and let me share my screen on my slides, so let me get	2290 1 will have substantially higher VOC emissions than 14 2 hydrocarbon liquid load-outs at PWMUs; thus, holding PWMU 3 operators at a more stringent and unnecessary standard. 4 Q. So is this threshold appropriate for hydrocarbon 5 liquid load-outs at PWMUs? 6 A. No, because the dead oil has a low BTU content 7 and a low VOC emission level. We will need to have 8 supplemental fuel delivered to the site and stored at the 9 site, and we will also need to introduce supplemental fuel 10 into the waste gas stream to increase the combustion 11 efficiency to match the regulations. This will increase 12 NOx emissions substantially, with little to no VOC 13 emissions reduction. 14 Q. And how does this proposed rule affect the 15 Commercial Disposal Group? 16 A. The process of managing produced water requires 17 us to separate out low volatility and low BTU hydrocarbon 18 liquids. Such load-out might be subject to the rule, even 19 though it is technologically infeasible to control the 20 emissions from this operation without the addition of 21 supplemental fuel. 22 Q. So are you proposing an alternate threshold? 23 A. Yes. The group proposes a threshold of 2 tons 24 per year VOC. 25 Q. And what alternate language are you proposing?

2291 1 A. Yes, so the group is proposing an alternative 2 language to be added for off-ramps due to technological 3 infeasibility without supplemental fuel. We've 4 communicated with the state on this matter, and are 5 interested in continuing that discussion. 6 Q. And have other states that you're aware of 7 adopted alternate off-ramps? 8 A. Yes. Colorado Regulation 7 has an alternative 9 threshold of 2 tons per year uncontrolled actual emissions 10 on a rolling 12-month basis and off-ramps due to 11 technological infeasibility without the use of 12 supplemental fuel for that regulation. 13 Q. Okay. And do you have other concerns or 14 suggestions regarding this rule? 15 A. Yes. The Commercial Disposal Group proposes to 16 add a provision to Section 120, stating that where air 17 pollution control equipment is demonstrated to be 18 techno -- technically infeasible, including, but not 19 limited to inability to operate without supplemental fuel, 20 the owner or operator may apply to NMED for an exemption 21 from the control requirements of this section. 22 Q. Mr. Kim, does that complete your testimony on 23 this issue? 24 A. Yes. 25 MS. SHPALL: Mr. Kim is now available for	2293 1 you said there's some similar language in the Colorado 2 rule as well, that you're proposing to be part of this New 3 Mexico rule; is that correct? 4 MR. KIM: Yes, that's correct. 5 CHAIRPERSON SUINA: Okay. Thank you. That's all 6 I have for right now. 7 MR. KIM: Thank you. 8 HEARING OFFICER ORTH: Thank you. Vice-Chair 9 Trujillo-Davis? 10 VICE-CHAIR TRUJILLO-DAVIS: Thank you. So 11 Mr. Kim, if I understand your issue correctly, are most of 12 your VOCs coming -- are they dissolved VOCs in the 13 produced water? 14 MR. KIM: So when we speak about produced water, 15 our VOCs are entrained in our oil, just like any E&P 16 facility -- right? You have oil, and that oil has gas and 17 water associated with it. When we get our water, we get 18 what you would consider dead oil from -- from that water. 19 Right? We get it, we separate it out from the water, and 20 then that oil goes into an oil tank, and then out of the 21 hydrocarbon liquid load-out section or truckload-out. 22 And so the VOCs would be entrained in the oil. 23 We differ, in that, our water and oil that we do receive, 24 should have little to no flashing emissions because it has 25 already gone through all of the separation upstream of us
2292 1 cross-examination. 2 HEARING OFFICER ORTH: All right. Thank you. If 3 you would stop sharing your screen for just a moment. 4 MR. KIM: Okay. 5 HEARING OFFICER ORTH: Thank you. 6 If any party or party representative would like 7 to ask questions of Mr. Kim, please turn on your camera. 8 I'm seeing nothing. 9 I'll turn then to questions from the Board. 10 While I'm doing that, if you're an attendee on the 11 platform and have a question, please reach out through 12 Chat. 13 EXAMINATION BY THE BOARD OF IL KIM 14 HEARING OFFICER ORTH: Madam Chair? 15 CHAIRPERSON SUINA: Yes, thank you, Madam Hearing 16 Officer. So as I understand, Mr. Kim, you've proposed 17 this language. What's been the feedback from NMED on the 18 proposed language? 19 MR. KIM: You know, so we've had discussions with 20 NMED, as well as some of the other companies that are 21 working for this regulation. And NMED has pretty much 22 told us that they would like to work with us as well as 23 the other groups, to come to an agreement on -- on 24 proposed language. 25 CHAIRPERSON SUINA: Okay. And as you testified,	2294 1 at an E&P facility, or say a midstream facility or a 2 drilling pad, and then it's either piped or trucked to our 3 facility. And so at that point, there is also less 4 emissions associated with that. 5 VICE-CHAIR TRUJILLO-DAVIS: So is that dead oils 6 that you're referring to, is that closer in consistency to 7 like bottom sludge or BS&W? 8 MR. KIM: Yeah, so I mean at our facilities, what 9 you can see is, for instance, if they have a tank 10 clean-out -- right -- it's not sandy sludgy material at 11 the bottom that isn't fresh, or per se, it's low 12 volatility. It would be consistent with that, as well as, 13 you know, from a standpoint, if we want to get technical, 14 it would be somewhere less than RVP 5 in most cases. 15 VICE-CHAIR TRUJILLO-DAVIS: Okay. That clarifies 16 for me. Thank you very much. 17 MR. KIM: Thank you. 18 HEARING OFFICER ORTH: Thank you. Member Cates? 19 BOARD MEMBER CATES: yeah, no questions here. 20 Thank you. 21 HEARING OFFICER ORTH: Thank you. Member Bitzer? 22 BOARD MEMBER BITZER: No questions. Thank you. 23 HEARING OFFICER ORTH: Thank you. Member Garcia? 24 BOARD MEMBER GARCIA: No questions. Thank you. 25 HEARING OFFICER ORTH: And that's it for the

2295 1 Board questioning. 2 Does that raise for you any redirect, Ms. Shpall? 3 MS. SHPALL: No, it doesn't. Thank you. 4 HEARING OFFICER ORTH: All right. Well, thank 5 you very much, Ms. Shpall and thank you, Mr. Kim. 6 Ms. Katz? 7 MS. KATZ: So Madam Hearing Officer, the 8 Department would request to put on Ms. Kuehn to address 9 the testimony provided by Mr. Kim. 10 HEARING OFFICER ORTH: Yes. Ms. Kuehn, let's 11 see. There you are. Do you need slide presentations? 12 MS. BISBEY-KUEHN: (Shaking head.) 13 HEARING OFFICER ORTH: Okay. Go ahead. 14 ELIZABETH BISBEY-KUEHN, 15 having been previously duly sworn or affirmed, was 16 examined and testified as follows: 17 REBUTTAL DIRECT EXAMINATION OF ELIZABETH BISBEY-KUEHN 18 BY MS. KATZ: 19 Q. Thank you. Ms. Kuehn, what is your response to 20 the proposal presented by Mr. Kim, to include a 21 potential-to-emit threshold of 2 tons per year for 22 applicability for this section? 23 A. The Department attempted to address that with the 24 increasing or providing a threshold for the total number 25 of load-outs. Apparently that didn't fully address this	2297 1 MS. KATZ: Okay. Thank you. That's all I have. 2 HEARING OFFICER ORTH: All right. Thank you. 3 Is there any party who would have questions of 4 Ms. Kuehn, based on that bit of testimony? 5 Ms. Shpall, would you have questions of 6 Ms. Kuehn? 7 REBUTTAL CROSS-EXAMINATION OF ELIZABETH BISBEY-KUEHN 8 BY MS. SHPALL: 9 Q. Ms. Kuehn, what type of alternatives would NMED 10 be willing to consider, other than an off-ramp for 11 technical infeasibility? 12 A. Looking at the thresholds -- applicability 13 thresholds and seeing if those can be arranged or revised. 14 We also haven't seen data indicating what the emissions 15 are, so it is difficult to comment on specific 16 applicability thresholds that would be appropriate. 17 MS. SHPALL: Okay. Thank you very much. 18 HEARING OFFICER ORTH: Any other party with a 19 question of Ms. Kuehn? 20 No? I'll check with the Board to see if they 21 have questions. While I'm doing that, if you're on the 22 platform as an attendee, please reach out through the 23 Chat. 24 EXAMINATION BY THE BOARD OF ELIZABETH BISBEY-KUEHN 25 HEARING OFFICER ORTH: Madam Chair?
2296 1 specific issue, so the Department is -- is willing to 2 revise the rule to include a 2-ton per year applicability 3 threshold for these type of events also. 4 Q. Thank you. 5 And to propose that for the Board's 6 consideration? 7 A. That's correct. 8 Q. And then, what is the Department's response to 9 the proposal to allow for technical infeasibility 10 demonstrations to be made, and requests for the Department 11 to review and approve those? 12 A. Correct. And we are trying to limit the number 13 of technical infeasibility waivers that will be submitted 14 to the Department because we just simply cannot handle the 15 volume of those that, you know, we feel that we would 16 receive. And so the better -- my proposal would be just 17 to continue working with the stakeholders on identifying 18 other alternatives that address that issue, outside of 19 authorizing waivers be submitted to the Department. 20 Q. And -- and is that -- I guess I would just say, 21 and is there in very extreme circumstances or, you know, 22 where there's really a problem, does the Air Quality 23 Control Act have a variance provision that allows for the 24 Board to grant a variance from the rule? 25 A. It does.	2298 1 CHAIRPERSON SUINA: Yes. Thank you, Madam 2 Hearing Officer. And thank you again, Ms. Kuehn. Just so 3 I can understand, I know it's a long day and we're on day 4 seven here, but I just wanted to understand a little bit 5 more in my mind, wrap it around. So some of the 6 provisions that have been presented by Mr. Kim, would 7 perhaps put additional burden on the Department, in terms 8 of the review for exemptions, I guess? 9 MS. BISBEY-KUEHN: That's correct. 10 CHAIRPERSON SUINA: And then you had mentioned 11 talking about a waiver process. I think Ms. Katz had 12 mentioned the waiver process. Would that also have some 13 additional resource burden on the -- on the Department? 14 MS. BISBEY-KUEHN: Madam Chair Suina, that -- 15 that variance request would go directly to the Board, 16 which would result in additional burdens for the Board. 17 So that is not the preference. The preference is to 18 right-size the rule and not write in waivers -- a waiver 19 process specifically. And then -- and also not to shift 20 the burden to the board. 21 CHAIRPERSON SUINA: Thank you for that. Yeah, I 22 you just wanted to flesh that out and make sure I 23 understood that path. So, appreciate it, Ms. Kuehn, for 24 the enlightenment. Thank you so much. 25 Thank you, Madam Chair, I have no further

2299 1 questions. 2 HEARING OFFICER ORTH: Thank you. Vice-Chair 3 Trujillo-Davis? 4 VICE-CHAIR TRUJILLO-DAVIS: I don't have any more 5 questions. Member Suina asked some really good ones 6 there, so thank you. 7 HEARING OFFICER ORTH: Thank you. Member Cates? 8 BOARD MEMBER CATES: No questions. Thank you. 9 HEARING OFFICER ORTH: Thank you. Member Bitzer? 10 BOARD MEMBER BITZER: No questions. Thank you. 11 HEARING OFFICER ORTH: Member Garcia? 12 BOARD MEMBER GARCIA: No questions. Thank you. 13 HEARING OFFICER ORTH: All right. Thank you. 14 Any follow-up, Ms. Katz? 15 MS. KATZ: Nothing from me. Thank you. 16 MADAM HEARING OFFICER: All right. Well, thank 17 you, all. Ms. Shpall, Mr. Kim, Ms. Katz and Ms. Kuehn, I 18 believe we can say we're done with that aspect of that 19 topic. 20 It's 10 of 6. Let's talk briefly about tomorrow. 21 I am happy to leap into another topic if folks are 22 willing, but I think tomorrow is going to be a big day and 23 we may -- oh, Ms. Katz, unless you have a preference. We 24 do have the materials on pigging, we could -- we could 25 start that anyway.	2301 1 HEARING OFFICER ORTH: Okay. So I had very much 2 wanted to call on Ms. Devore at the end of pneumatics. I 3 had -- in fact, my original plan was to call on Ms. Devore 4 before I called on Mr. Kim. 5 Ms. Devore, though, had to exit at 2 p.m. Her 6 workplace conflicts prevented her from being here this 7 late, so we will take her tomorrow. 8 My plan for tomorrow actually so that we weren't 9 sort of fitting her into the middle of LDAR, was to do the 10 motion to discussion at 8:30. I don't know that we need 11 more than that, frankly; public comment at 9, invite 12 Ms. Devore to offer what she wants to offer for NTS and 13 then to go to LDAR. 14 I had hoped to also include Ms. Witherspoon 15 somewhere in this conversation, but I haven't seen her on 16 the platform today. 17 MR. BUTZIER: Thank you. And I apologize that I 18 had missed some of that communication. 19 MADAM HEARING OFFICER: All right. Thank you. 20 Let's see here. Sounds like the glycol 21 dehydrators are the quickest thing to do, sort of eke out 22 just a little bit more tonight. 23 Member Bitzer has a question: "Are we catching 24 up timeline-wise? If not, I have a possible suggestion." 25 Member Bitzer, go ahead.
2300 1 MS. KATZ: Yeah, I'll -- I'll ask Mr. Hiser and 2 others to weigh in. The Department is ready to move 3 forward on any of those, but I don't know where everybody 4 else stands. 5 HEARING OFFICER ORTH: All right. Mr. Hiser? 6 MR. HISER: Madam Hearing Officer, Ms. Katz, we 7 are prepared to do either dehydrators or pigging. We have 8 our expert witness for both. Numerically, I guess 9 dehydrators comes first. 10 HEARING OFFICER ORTH: Ms. Gutierrez. 11 MS. GUTIERREZ: Thank you, Madam Hearing Officer. 12 I was just going to add that Kinder Morgan is prepared to 13 present on pigging today as well. 14 HEARING OFFICER ORTH: All right. Let me just 15 ask, would the dehydrators be faster than the pigging? 16 MR. HISER: We don't -- there's not very much on 17 the dehydrator provision, it will probably be quite fast. 18 MS. KATZ: Yes. 19 HEARING OFFICER ORTH: I think that would be my 20 preference then. 21 Mr. Butzier, do you want to weigh in? 22 MR. BUTZIER: Madam Hearing Officer, I may have 23 missed some communications on this, but I had understood 24 we were going to try to get to Ms. Devore for the MPS 25 relating to engines today or in the morning.	2302 1 BOARD MEMBER BITZER: I know we're all pushing 2 the limits of human endurance here, but we seem to -- if 3 I'm not mistaken, the rule only requires for us to 4 continue on, that we have a quorum, which I guess would be 5 four of us at any given time. I'm wondering if we might 6 start earlier with a shift, and then have a lot of overlap 7 during the day, and then go later with a shift. I know 8 that would mean we would need a second Hearing Officer 9 because your limits of human endurance would probably be 10 exceeded, but... And I'm just throwing that out there in 11 case we're not on track yet to make it in the two weeks we 12 have allotted, because I think it's important that we 13 conclude this business with everyone having had their say 14 and their shot at the full record by Friday, close of 15 business. So I don't know if a rolling quorum is what 16 that would be called or not, or if -- 17 HEARING OFFICER ORTH: Member Bitzer? Member 18 Bitzer, I'm sorry, let me interrupt you. One of the 19 charms of appointing a Hearing Officer is that no quorum 20 is necessary for any part of the hearing. You will need a 21 quorum for your deliberations, but no quorum is necessary 22 for the hearing. 23 My second observation would be that this 24 particular Board has exhibited just a fantastic amount of 25 engagement; certainly one of the highest levels of

2303 1 engagement I've had in a board or commission rulemaking. 2 Six of you have been on for the 99.9 percent of the time. 3 It's been terrific, really, to have you this engaged, but, 4 absolutely, you're volunteers. I think everyone 5 appreciates the fact that you will have conflicts 6 occasionally. And what you might do -- this is what other 7 boards and commissions I've served have done, is to have 8 some general understanding of when we might get to a 9 particular witness or a particular topic and just try to 10 make sure you're there for that part. 11 And if there are other parts maybe you don't 12 necessarily need to engage in questioning on, live that 13 other part of your life for those -- for those hours. So, 14 other questions about -- about that? 15 No? Okay. 16 So can we tackle glycol dehydrators tonight? 17 Okay. Ms. Katz? 18 MS. KATZ: Thank you, Madam Hearing Officer. So 19 I'm going to call Ms. Kuehn and Mr. Palmer again. This 20 section is -- if I can find it -- 20.2.50.118. The 21 exhibits are NMED Exhibit 32, beginning on page 98 and 22 NMED Rebuttal Exhibit 1, beginning on page 71. 23 ELIZABETH BISBEY-KUEHN AND BRIAN PALMER, 24 (Glycol Dehydrators) 25 having been previously duly sworn or affirmed, was	2305 1 dehydrators? 2 MS. BISBEY-KUEHN: Yes. There's a still vent and 3 often a flash tank. Those emissions can be routed to 4 the -- either the reboiler firebox to be used as a fuel, a 5 condenser, a combustion control device, to a process point 6 that recycles or recompresses the emissions or uses again 7 the emissions as a fuel, or to a vapor recovery unit that 8 reinjects the VOC back into the process stream or to a 9 natural gas pipeline. 10 MS. KATZ: And can you describe what the emission 11 standards in the rule are for dehydrators? 12 MS. BISBEY-KUEHN: Yes. The rule, as proposed, 13 requires existing dehydrators with a potential-to-emit 14 greater than 2 tons per year of VOC to reduce their VOC 15 emissions from the still vent and flash tank, if present, 16 by at least 95 percent no later than two years after the 17 effective date of this part. 18 New glycol dehydrators with the potential-to-emit 19 greater than 2 tons per year of VOC are required to reduce 20 VOC emissions from the still vent and flash tank, if 21 present, at least 95 percent upon startup. And both for 22 new and existing dehydrators, if they're using a 23 combustion device, that combustion device must meet a 24 minimum of 98 percent destruction efficiency. 25 MS. KATZ: I'll let you just go ahead and
2304 1 examined and testified as follows: 2 DIRECT EXAMINATION OF ELIZABETH BISBEY-KUEHN 3 BY MS. KATZ: 4 MS. KATZ: Ms. Kuehn is starting the share. And 5 Ms. Kuehn and Mr. Palmer have adopted their testimony and 6 I don't believe there are any corrections that need to be 7 made to this section. 8 So Ms. Kuehn, can you please begin with the 9 summary and overview of the equipment that is the subject 10 of this section of the rule? 11 MS. BISBEY-KUEHN: Yes. Good evening, everyone. 12 The subject of this section of the rule, Section 118, is 13 glycol dehydrators. They're used throughout the industry 14 to remove water from natural gas and natural gas liquids. 15 The failure -- the failure to remove water results in the 16 formation of hydrates, which then block pipelines, valves 17 and pipeline equipment and instrumentation. 18 Glycol used as an absorbent, it absorbs the water 19 and VOCs from natural gas, and then the glycol is then 20 regenerated by heating to release the absorbed compounds. 21 Through a boiler of the -- of a large glycol dehydrator 22 can discharge more than 100 tons per year of VOCs, 23 including benzene, toluene ethylbenzene and xylene. 24 MS. KATZ: Can you continue to discuss the 25 control options for controlling emissions from	2306 1 summarize the -- these provisions. 2 MS. BISBEY-KUEHN: Okay. So I have -- I have the 3 reactions broken up here, but I also have the slides of 4 the actual rule. So I might just skip these slides and go 5 directly to the next slide for Mr. Palmer. 6 MS. KATZ: Okay. Sounds good. 7 Mr. Palmer, can you please describe the basis for 8 the requirements for dehydrators in the rule and the 9 estimated emissions reductions and costs for implementing 10 those requirements? 11 MR. PALMER: Sure. So on the first slide, the 12 proposed glycol dehydrator requirements are based on 13 requirements in Colorado, Pennsylvania, and also similar 14 to those adopted by the U.S. EPA. The applicability 15 threshold of 2 tons per year of VOC is based on Colorado's 16 rule 7, which is the -- it's the same applicability 17 threshold they have for individual dehydrators and it's 18 comparable to a threshold in Pennsylvania's GP 5 and GP 19 5A, which is 2.7 tons per year of VOC. 20 The capture and control efficiency requirements 21 of 95 percent from an uncontrolled dehydrator still vent 22 and flash tank are based on the same requirements in the 23 federal NESHAP, the National Emission Standards for 24 Hazardous Air Pollutants, for glycol dehydrators, and 25 that's in 40 CFR Part 63 Subpart HH, and which requires

2307 1 controls for VOCs. 2 So we estimated the overall emission reductions 3 from glycol dehydrators of 1,865 tons per year based on 4 allowable VOCs. As a result of the rule, the estimated 5 cost effectiveness of the reductions is 234 tons -- excuse 6 me -- \$2,034 per ton of VOC, based on the use of a 7 condenser to control emissions. And the cost 8 effectiveness is based on total annualized cost of \$21,560 9 per year for a condenser, and that's calculated with the 10 same methodology we used in the EPA's 2007 amendments to 11 the NESHA for glycol dehydrators. And then, of course, 12 we scaled those up to the 2019 dollars. 13 MS. KATZ: Thank you, Mr. Palmer. 14 And Ms. Kuehn, can you walk through and summarize 15 the provisions of the rule and the revisions that were 16 made based on the stakeholders comments? 17 MS. BISBEY-KUEHN: Yes. So as we've discussed 18 for other sections, we have a similar framework here for 19 glycol dehydrators with the paragraph A speaking to 20 applicability, establishing that glycol dehydrators with a 21 potential-to-emit equal to or greater than 2 tons per year 22 of VOCs, and located at those sites are subject to the 23 requirements. 24 The emissions standards are outlined in paragraph 25 B. I've already gone through those so I won't restate	2309 1 And requires that the VRU be installed, maintained and 2 operated in accordance with manufacturer specifications. 3 Paragraph 3 B is prohibition against venting 4 directly to the atmosphere during normal operation. 5 Paragraph D, again, the requirement to install an 6 equipment monitoring tag was struck. There is an off-ramp 7 from the requirements of this part in paragraph B (5) that 8 states that the requirements of the subparts cease to 9 apply when the actual and controlled VOC emissions from a 10 new or existing dehydrator are less than 2/10's per year. 11 We struck the term "uncontrolled." We agreed 12 with the commenters that the use of actual annual VOC 13 emissions as an off-ramp is appropriate for this specific 14 section. Paragraph C outlines the monitoring 15 requirements. These are the standard monitoring 16 requirements of a dehydrator, and those are to conduct an 17 annual extended gas analysis on the dehydrator and the 18 gas, and calculate the uncontrolled and controlled VOC 19 emissions in tons per year. It's -- an annual extended 20 gas analysis for the specific facility is a critical input 21 into these emissions, and so that is an essential and 22 fundamental component of this monitoring strategy. 23 Paragraph C2 requires that the operator inspect 24 the dehydrator and control device, or process where 25 emissions are being routed on a semi-annual basis, to
2308 1 those. We received minimal comments on -- on this 2 section. We've inserted the tank, if present, after flash 3 tank. Not all glycol dehydrators have the flash tank on 4 that unit. And then we agreed with the insertion of other 5 minor editorial clarifying edits. 6 NMOGA did request that we exempt glycol 7 dehydrators that have an actual natural gas throughput of 8 3 million standard cubic feet per day or less. That 9 request was not accepted by the Department. That 10 threshold is present in the federal National Emission 11 Standards for Hazardous Air Pollutants and is appropriate 12 within that regulatory content. However, even small 13 dehydrators can have significant amounts of VOC emissions, 14 and that actual throughput is not appropriate for this 15 rule. And instead, we have an actual emission throughput, 16 which is a better -- a better type of threshold for this 17 part. 18 There are requirements that are specific to 19 operators that use a VRU to comply with the emission 20 standards of this part. Those are spelled out in 21 paragraph 3 B. It states that the VRU shall consist of 22 closed-loop systems of seals, ducts in the compressor that 23 reinject those vapors into the pipeline, and also 24 establishes a minimum operational requirement of 95 25 percent of the time that the facility is in operation.	2310 1 ensure that the unit is operating properly as initially 2 designed and in accordance with manufacturer's recommended 3 operation and maintenance schedule. We've also included 4 the requirement to date and time-stamp the monitoring 5 event. 6 Paragraph C4 references a requirement that owners 7 and operators that are using a control device to comply 8 with the emissions standard must comply with the 9 specification requirements for that control device in 10 Section 115, which we went through yesterday, which is the 11 section that covers control devices and closed-loop 12 systems. And we made minor edits to the paragraph 5. 13 Paragraph D are, again, the recordkeeping 14 requirements. This is -- these are the records to ensure 15 that the standards are enforceable. We made minor -- very 16 minor edits throughout this page. I won't go through each 17 of them in detail. You can see that there's a number of 18 records that are required to be made of this specific 19 equipment and the location. There's also process 20 parameters that are required to be recorded, and those are 21 the data used to estimate the emissions of the -- of the 22 unit. 23 And there were no comments on the reporting 24 requirements, and so that concludes this -- this 25 presentation on glycol dehydrators.

2311 1 MS. KATZ: Thank you. That's it from the 2 Department. 3 HEARING OFFICER ORTH: All right. Thank you. I 4 understand now we'll hear from Mr. Hiser's witness, 5 Ms. Textor, before we have questioning, unless there is a 6 cross-examination by a party. 7 Cross-examination by a party? Mr. Hiser? 8 CROSS-EXAMINATION OF ELIZABETH BISBEY-KUEHN 9 BY MR. HISER: 10 Q. I guess I only have one question for Ms. Kuehn. 11 And that was that when she was talking about the initial 12 applicability, I was wondering if she misspoke when she 13 said that was based on actual emissions rather than 14 potential? 15 A. The applicability is based on potential. 16 Q. Thank you. 17 MR. HISER: We're ready to move on if there are 18 no questions from any other party. 19 HEARING OFFICER ORTH: I see no one else on 20 screen. 21 MR. HISER: Is Ms. Textor, Marise Textor on the 22 panel? She will have slides, too, Madam Hearing Officer, 23 after you have sworn her. 24 HEARING OFFICER ORTH: All right. Ms. Textor, if 25 you would spell your name for the record, please.	2313 1 Q. Thank you. I didn't write that one down. So is 2 NMOGA Exhibit 52 an accurate copy of your resume? 3 A. Yes, it is. 4 Q. Could you please state your qualifications as it 5 relates to your participation in this hearing? 6 A. Yes. I have Bachelor and Master's degrees in 7 chemical engineering, registered professional engineer for 8 chemical engineering in both California and Texas. And I 9 have more than 40 years of experience in the oil and 10 chemical industries; process design in operations first, 11 and then environmental health and safety leadership, and 12 then engaged stakeholder engagement from the industry 13 perspective, and leadership in regulatory development. 14 And then for the last year, I've been an independent 15 consultant. 16 Q. Thank you. Does NMOGA Exhibit 46 reflect your 17 rebuttal technical testimony filed in this matter? 18 A. Yes, it does. Sorry. 19 Q. And do you have any changes to that prefiled 20 testimony? 21 A. No. 22 Q. Do you adopt that testimony as your testimony in 23 this matter? 24 A. Yes. 25 Q. Thank you.
2312 1 MS. TEXTOR: Can you hear me? 2 HEARING OFFICER ORTH: Yes. 3 MS. TEXTOR: First name is Marise, M-A-R-I-S-E. 4 Last name is Textor, T-E-X-T-O-R. 5 HEARING OFFICER ORTH: Thank you. If you would 6 raise your right hand. Do you swear or affirm to tell the 7 truth? 8 MS. TEXTOR: Yes. 9 HEARING OFFICER ORTH: Thank you. Go ahead, 10 Mr. Hiser. 11 MARISE TEXTOR, 12 having been duly sworn or affirmed, was examined 13 and testified as follows: 14 DIRECT EXAMINATION OF MARISE TEXTOR 15 BY MR. HISER: 16 Q. Good evening, Ms. Textor. Could you please tell 17 us what your involvement is in this proceeding? 18 A. Yes. I was asked by NMOGA to address NMOGA's 19 testimony on both the pigging and the glycol dehydrators. 20 Q. And -- I just froze. I don't have the Exhibit 21 No. for your resume with me right now. 22 A. Fifty-two. 23 Q. Oh, do you have it? 24 A. I don't have it in front of me, but it's Exhibit 25 No. 52.	2314 1 Did you prepare a summary of your testimony to 2 share with the Board tonight? 3 A. Yes. 4 Q. I believe the Hearing Officer has authorized you 5 as a presenter. 6 A. Okay. Okay. Can you see that? 7 Q. Yes. It's a bit off center, but we can see it. 8 A. Let's see. I can make that bigger. 9 Q. Perfect. 10 A. And move you out of the way. Okay. 11 Did you want me to walk through this? 12 Q. Yes, please. 13 A. Okay. I'm sorry. Go ahead. 14 Q. Start with a brief discussion of those areas 15 where NMOGA just had some discussions with the Department, 16 and where we've briefly reached agreement, and then move 17 on to where there is still a remaining disagreement. 18 A. Okay. So there were three areas that NMED had 19 made changes to the rule that we were in agreement with. 20 All of those were covered by Ms. Bisbey-Kuehn a few 21 moments ago: the issue of whether or not the flash tank 22 was present, changing natural gas to vapor, in the wording 23 for the flash tank overhead, because that is typically far 24 less methane than natural gas would be and emissions not 25 vented directly to atmosphere during normal operation, in

2315 1 part at least, because once it goes through a control 2 device, it still gets vented to the atmosphere downstream 3 of the control device, so adding "directly" addresses 4 that. 5 Q. Thank you. 6 A. Okay. 7 Q. What are the remaining issue? 8 A. Yeah, there's three areas that we're still in 9 disagreement with the proposed rule from NMED. The first 10 one is on the issue of exempting units that are greater -- 11 I'm sorry -- less than 3 million standard cubic feet per 12 day. And we understand that these units -- we understand 13 NMED's perspective that these units could still have 14 significant emissions, but, nonetheless, they have been -- 15 this -- this exemption would be consistent with the 16 exemption that EPA put in the mass rule Support HH 17 covering glycol dehydrators. 18 There's a -- on these very small units, there 19 would be less cost effectiveness and less environmental 20 benefit for controlling them. And if it was routed to a 21 control device -- a combustion control device, NOx 22 emissions would increase, which is directionally 23 inconsistent with the NOx sensitive environment in New 24 Mexico. 25 Aligning the volume throughput threshold with the	2317 1 inconsistency between those two things. 2 The redundant VRU would have a very high cost and 3 it disincentifies using a VRU, but to add this wording 4 that we're seeking would remove the disincentive. And, 5 really, VRU should be a preferred control mechanism from 6 an environmental standpoint because they don't emit ozone 7 forming NOx. 8 We also believe that NMED did not intend to 9 require a redundant VRU for glycol dehydrators, because if 10 they had intended that, they would not have allowed the 5 11 percent downtime allowance. 12 Q. Okay. Thank you. Is there one more issue that's 13 being recommended? 14 A. Yes, one more. And then in the monitoring 15 requirements, there's a requirement to sample the gas. 16 And we request that a representative gas analysis may be 17 utilized and this calculation be inserted in there. It's 18 a costly requirement to sample each location, and it's not 19 transparent to us whether or not this cost was included in 20 the NMED cost analysis. 21 But an engineering judgment of what a 22 representative gas analysis is, would not introduce an 23 appreciable uncertainty into the emissions calculations, 24 but it would improve the cost effectiveness without 25 impacting actual emissions or changing compliance
2316 1 throughput threshold in that HH would also make it easier 2 to comply. We disagree that there are significant 3 emissions in total from these units. Working with the 4 spreadsheet that NMED provided on the ozone precursor 5 rulemaking website, and the units that are listed in that 6 threshold -- in that spreadsheet, the total amount of 7 emissions from these units that are less than 3 million 8 standard cubic feet per day, and currently uncontrolled, 9 represents less than 1 percent of the current controlled, 10 plus uncontrolled VOC output. 11 And so, that less than 1 percent is not a 12 significant amount of emissions. And, therefore, we still 13 request that this exemption for units that are less than 3 14 million standard cubic feet per day be added to the rule. 15 Q. Thank you. Can you move on to our next request 16 that NMOGA has? 17 A. Yes. So the next one is an inconsistency in the 18 requirements for VRUs that are in Section 118 for glycol 19 dehydrators, and the 115, which is referred to in 118, as 20 it applies to glycol dehydrators. 21 And what we ask is that the phrase, "which shall 22 supersede any inconsistent requirements of Section 115" be 23 inserted in there. So, currently, the Section 115 24 requires a redundant VRU, and Section 118 allows up to a 5 25 percent downtime allowance, and so that's the	2318 1 decisions. 2 We understand NMED's rebuttal testimony, that the 3 written rebuttal that explains that the estimated 4 emissions should be based on the most accurate information 5 available, and that calculations based on the composition 6 of the actual gas being processed are by definition more 7 accurate, but when you consider the other variations that 8 are in the calculation; it could be variations in flow 9 rate, variations of gas composition, that there's -- using 10 a representative sample would not introduce an appreciable 11 additional variation into the calculation. 12 Q. Okay. And do you have a sense, Ms. Textor, of 13 what that representative gas analysis might cost? 14 A. I do not have that information. I'm sorry. 15 Q. That's okay. I do not believe -- do we have -- I 16 believe that's all we have on this section; is that 17 correct, Ms. Textor? 18 A. Yes, I think that's correct. 19 MR. HISER: All right. I do not have any 20 additional questions. So, Madam Hearing Officer, we would 21 make her available whenever you have the panel questions. 22 HEARING OFFICER ORTH: All right. Thank you. 23 Let me see if there are any other parties. 24 MR. HISER: If you could release the screen. 25 MS. TEXTOR: Yeah. How do I stop sharing?

2319 1 HEARING OFFICER ORTH: Let me look here. 2 MS. TEXTOR: Here we go. I found it. I'm sorry. 3 HEARING OFFICER ORTH: Thank you. Any party 4 questions of Ms. Textor? 5 So as I understand it, Ms. Kuehn, Ms. Textor and 6 Mr. Palmer will be questioned together by the Board, or 7 maybe it was just Ms. Kuehn. I'm sorry. 8 All right. Board members, I will turn to you for 9 your questions. While I'm doing that, if you're on this 10 platform and have questions, reach out through the Chat. 11 Madam Chair? 12 CHAIRPERSON SUINA: Madam Hearing Officer, I 13 don't have any questions at this time. 14 HEARING OFFICER ORTH: Thank you. Vice-Chair 15 Trujillo-Davis? 16 VICE-CHAIR TRUJILLO-DAVIS: Yes. Thank you. 17 Ms. Kuehn, is that -- are we reading that correctly? Did 18 the -- 19 MS. KATZ: I'm sorry. Can I just ask -- sorry. 20 I'm so sorry. Are we in the panel questioning right now? 21 Okay. And I think that maybe NMED still needs to 22 do their surrebuttal before we go into the Board 23 questioning. 24 HEARING OFFICER ORTH: Okay. 25 MS. KATZ: I think that might help with questions	2321 1 and small throughput. 2 The 3 million standard cubic feet per day 3 threshold is not appropriate because it is not linked to 4 any emission threshold, and you can have, as I stated, 5 very large VOC emissions from even these small throughput 6 dehydrators. And so the threshold -- the critical 7 threshold is the 2 ton per year applicability threshold. 8 Q. Okay. Thank you. And then, what is the 9 Department's response to NMOGA's proposed language 10 regarding the redundant VRU issue? 11 A. Yeah, if I may just make one additional comment 12 on the previous question. So the National Emissions 13 Standard for Hazardous Air Pollutants is targeting 14 hazardous air pollutants specifically, and it's 15 specifically targeting benzene emissions. There are 16 numerous other VOCs that are emitted by glycol dehydrators 17 that are not covered by that NESHAP. And so -- and this 18 rule is targeting VOC and NOx emissions. And so it's not 19 really translatable. The scope of the NESHAP rule is 20 different than the scope of this -- this part. 21 And I'm sorry, could you repeat your second 22 question? 23 Q. Yeah. Thank you. Sorry about that. 24 What is the Department's response regarding 25 the -- NMOGA's proposed language to address the redundant
2320 1 from the Board. 2 HEARING OFFICER ORTH: Okay. I'm sorry. 3 MS. KATZ: I'm sorry. 4 HEARING OFFICER ORTH: I thought that's where we 5 were. 6 MS. KATZ: Yes. 7 HEARING OFFICER ORTH: I should have taken a 8 longer pause. I'm sorry, Vice-Chair, for tricking you 9 into asking a question. 10 VICE-CHAIR TRUJILLO-DAVIS: That's okay. 11 MS. KATZ: I just thought some of the follow-up 12 might help with questions. 13 HEARING OFFICER ORTH: Okay. Go ahead, Ms. Katz. 14 ELIZABETH BISBEY-KUEHN, 15 having been previously duly sworn or affirmed, was 16 examined and testified as follows: 17 SURREBUTTAL EXAMINATION OF ELIZABETH BISBEY-KUEHN 18 BY MS. KATZ: 19 Q. So I was going to have Ms. Kuehn for -- up for 20 redirect really quickly. So Ms. Kuehn, regarding the -- 21 the request for the -- for the throughput threshold, can 22 you -- can you discuss the Department's response to that? 23 A. Yes, ma'am. And we feel that the 2 ton per year 24 threshold into the rule should handle -- should cover 25 those small dehydrators with small amounts of emissions	2322 1 VRU issue? 2 A. And I -- I thought we had addressed that issue 3 satisfactorily for NMOGA, and the Department would not be 4 opposed to agreeing to that language -- that proposed 5 language and providing that to the Board for their 6 consideration. 7 Q. Okay. Thank you. 8 And can you explain why NMED feels that the 9 extended gas analysis is important? 10 A. That's a standard requirement for -- in air 11 regulatory agencies. It's a standard requirement in all 12 of our facilities that require permits. Dehydrators are 13 typically located at larger-sized facilities that have air 14 permits, and so that -- that requirement likely exists for 15 every facility that already has a permit. 16 In addition, it's critical that we have the 17 composition of the gas nailed down in order to estimate 18 the VOC emissions from these dehydrators. 19 Q. Okay. Thank you. That's all I have. 20 MS. KATZ: Now we could go to the Board. I 21 apologize for that. 22 HEARING OFFICER ORTH: All right. Thank you, 23 Ms. Katz. Can we get Ms. Textor back on the -- on the 24 screen? There you are. Thank you. 25 Madam Chair, does that raise for you any

2323 1 questions at this point? 2 CHAIRPERSON SUINA: At this point I just 3 appreciate the further explanation that NMED provided to 4 the Board. Thank you. 5 HEARING OFFICER ORTH: Thank you. Vice-Chair 6 Trujillo-Davis? 7 VICE-CHAIR TRUJILLO-DAVIS: I -- I don't have any 8 more questions. My question was about redundant RVUs and 9 Ms. Kuehn addressed them, so thank you very much. 10 HEARING OFFICER ORTH: Thank you. Member Cates? 11 BOARD MEMBER CATES: Again no questions here. 12 Thank you. 13 HEARING OFFICER ORTH: Thank you. Member Garcia? 14 BOARD MEMBER GARCIA: No questions. Thank you. 15 HEARING OFFICER ORTH: Thank you. 16 Well, thank you Ms. Kuehn and Ms. Textor for your 17 testimony. I believe we actually managed to finish 18 another topic. Topic 118, I believe, is done completely. 19 So, again, tomorrow, counsel should be on the 20 platform at 8:30. We'll talk about all of these motions. 21 Board members, it's not a secret event, so if you're on 22 the platform, that's fine. I will ask you not to turn on 23 your camera. I need to be able to see the lawyers. 24 We'll start with public comment at 9 and then go 25 to Ms. Devore. And Ms. Katz, I just wanted to say the	2325 1 to Cheryl then tonight. Okay. All right. I'll reach out 2 to Cheryl Arreguin tonight. She rejoins us tomorrow 3 morning. All right. Anything further? 4 No? Thank you so much. Have a good evening. 5 See you in the morning. 6 (Proceedings concluded September 28, 2021, at 7 6:29 p.m.) 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
2324 1 Department may or may not want to do its rebuttal or 2 surrebuttal after NPS's presentation because we'll have to 3 get to LDAR. I'll leave that to you. And we'll get to 4 LDAR. 5 Mr. Hiser, I see you on the screen. 6 MR. HISER: Two items, Madam Hearing Officer. 7 One, I might remind you that we had surrebuttal from NMOGA 8 on the National Park Service presentation as well, so 9 don't forget us. And then, two, we will be filing a 10 response to the motion by the parties to exclude some of 11 our testimony so you should look for that this evening. 12 HEARING OFFICER ORTH: Thank you very much. I 13 know that's a short turnaround for you. Thank you. 14 All right. I think we're done. Thank you, all, 15 for hanging in there. 16 Oh, Theresa? 17 COURT REPORTER: Do you need a reporter at 8:30 18 in the morning? 19 HEARING OFFICER ORTH: I don't know that we need 20 a reporter. Does any of the counsel feel strongly that we 21 need a transcript on a motion hearing? I can record it. 22 MR. HISER: I think we need to have some sort of 23 a recording, Madam Hearing Officer, given the nature of 24 the motion and its impact on our case. 25 HEARING OFFICER ORTH: All right. I'll reach out	2326 1 STATE OF NEW MEXICO 2 BEFORE THE NEW MEXICO ENVIRONMENTAL IMPROVEMENT BOARD 3 PROPOSED ADOPTION OF RULE 21-27 NMAC 4 RULES HEARING 5 6 REPORTER'S CERTIFICATE 7 I, THERESA E. DUBOIS, RPR, CSR #29, DO HEREBY 8 CERTIFY that on September 28th, 2021, the Public Hearing 9 of the New Mexico Environmental Improvement Board was 10 taken before me, that I did report in stenographic 11 shorthand the Proceedings set forth herein, and the 12 foregoing pages are a true and correct transcription to 13 the best of my ability. 14 I FURTHER CERTIFY that I am neither employed by 15 nor related to nor contracted with (unless excepted by the 16 rules) any of the parties or attorneys in this matter, and 17 that I have no interest whatsoever in the final 18 disposition of this matter. 19  20 21 22 THERESA E. DUBOIS, RPR 23 New Mexico CCR #29 24 License Expires: 12/31/2021 25

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1992:11	1999:11	80 2030:5	90 2033:19	
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2313:2	2022:15	2113:3	900 1992:22	
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