August 1, 2016

President Kevin J. Worthen Brigham Young University c/o Janet Heier@byu.edu

Dear President Worthen,

I am an environmental epidemiologist and physicist who has had a long academic career at UCLA and I am an expert in the health effects of air pollution in California. I am writing to you because findings on fine particulate matter (PM2.5) and mortality by BYU Professor of Economics C. Arden Pope, III, are being used to justify multi-billion dollar air pollution regulations in Southern California. Since 1995 Dr. Pope has published epidemiologic evidence that PM2.5 is weakly associated with an increase in total mortality in the United States. However, overwhelming evidence from over a dozen sources, including studies by both Dr. Pope and me, shows that there is NO relationship between PM2.5 and total mortality in California (<u>http://scientificintegrityinstitute.org/NoPMDeaths112215.pdf</u>). Furthermore, a very strong case has recently been made by nine accomplished experts, including myself, that "Particulate Matter Does Not *Cause* Premature Deaths" (<u>https://www.nas.org/articles/nas_letter</u>).

Since Dr. Pope refuses to communicate with me in any meaningful way, I respectfully request that you ask him to send me a YES or NO answer to the following question: "Do you support the way that the South Coast Air Quality Management District (SCAQMD) has used three epidemiologic studies co-authored by Pope (Jerrett et al. 2005, Krewski et al. 2009, and Jerrett et al. 2013) to calculate their 'Preliminary Health Impacts – Mortality', knowing that that these preliminary mortality impacts are the primary public health justification for a Draft 2016 Air Quality Management Plan (AQMP) that will impose an estimated \$38.2 Billion in compliance costs on the South Coast Air Basin economy?" The July 28, 2016 SCAQMD slides containing the preliminary mortality impacts and preliminary AQMP costs are attached to this letter, with full details at this weblink (<u>http://www.aqmd.gov/home/library/meeting-agendas-minutes/agenda?title=STMPRSocio_072816</u>). A table summarizing all studies of PM2.5 and total mortality in California, with the 2005, 2009, and 2013 studies highlighted in red, is also attached.

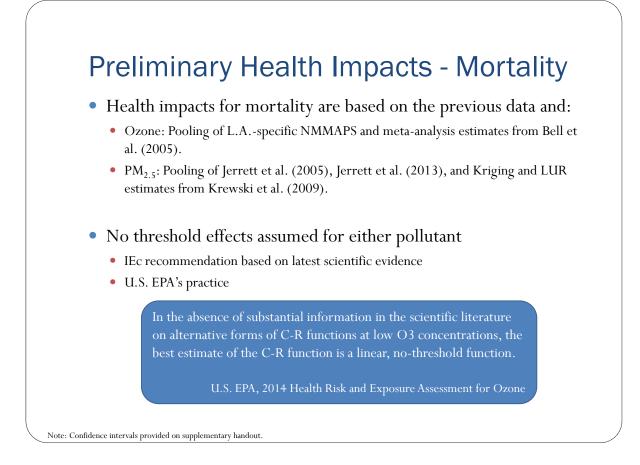
If Dr. Pope refuses to answer my question, then I request an answer from you or any BYU academic who you specify. Because the AQMP is being finalized this summer, I request a timely response, hopefully by August 15, 2016. Until I receive a response to the contrary, I will assume that the official BYU answer to my question is YES. Please let me know if you need more details about this request.

Thank you very much for your consideration and assistance.

Sincerely yours,

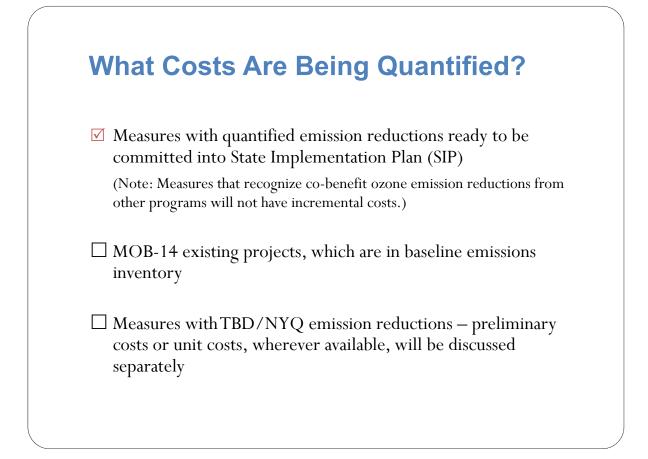
James E. Enstrom

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Preliminary Health Impacts – Mortality
(cont'd)

Premature Mortalities Avoided						
	2023	2031				
Mortality, All Cause	2193	2563				
Short-term Ozone Exposure	51	87				
Los Angeles	22	40				
Orange	10	14				
Riverside	11	16				
San Bernardino	9	15				
Long-term PM _{2.5} Exposure	2111	2425				
Los Angeles	1481	1707				
Orange	321	356				
Riverside	141	166				
San Bernardino	169	197				



Preliminary Costs of Draft 2016 AQMP

Measures	Present Value of Compliance Cost (2017) \$MM	Colu mn1	Present Value of Incentives (2017) \$MM	Colu mn3	Present Worth Value (2017) \$MM	Average Annual Amortized Cost (2017- 2031) \$MM
Stationary Source	\$6,639.3	+	\$1,366.6	=	\$8,005.9	\$402.6
SCAQMD Mobile Source	\$861.9	+	\$588.7	=	\$1,450.6	\$120.1
CARB Mobile Source	\$16,945.3	+	\$11,815.8	=	\$28,761.2	\$1,987.6
Total	\$24,446.6	+	\$13,771.1	II	\$38,217.7	\$2,510.3

Note: Numbers may not add up due to rounding.

Summary Table. Epidemiologic cohort studies of PM2.5 and total mortality in California, 2000-2016 <u>Relative risk of death from all causes (RR and 95% CI) associated with increase of 10 μg/m³ in PM2.5</u> (<u>http://scientificintegrityinstitute.org/NoPMDeaths112215.pdf</u>)							
	0 CA CPS II Cohort 408 F]; 4 MSAs; 1979-1983	N=40,408 PM2.5; 44 covar	RR = 0.872 (0.805 ates)	5-0.944)	1982-1989		
McDonnell 2000 (N~[1,347 M + 2,42]	CA AHSMOG Cohort 2 F]; SC&SD&SF AB; M RR=1	N~3,800 09(0.98-1.21) 8	RR ~ 1.00 (0.95 F RR~0.98(0.92-1		1977-1992		
	CPS II Cohort in LA Basin 67 zip code areas; 1999-200				1982-2000		
Enstrom 2005 (N=[15,573 M + 20,2	CA CPS I Cohort 210 F]; 11 counties; 1979-19	N=35,783 983 PM2.5)	RR = 1.039 (1.010 RR = 0.997 (0.978	-	1973-1982 1983-2002		
Enstrom 2006 (11 counties; 1979-:	CA CPS l Cohort 1983 & 1999-2001 PM2.5)	N=35,783	RR = 1.061 (1.017 RR = 0.995 (0.968		1973-1982 1983-2002		
Zeger 2008 (N=[1.5 M M + 1.6 N	MCAPS Cohort "West" A F]; Medicare enrollees in		RR = 0.989 (0.970 73%); 2000-2005	-	2000-2005		
Jerrett 2010 (N=[34,367 M + 43,4	CA CPS II Cohort 400 F]; 54 counties; 2000 PN	N=77,767 VI2.5; KRG ZIP; 20	RR ~ 0.994 (0.965) ind cov+7 eco va	-			
Krewski 2010 (2009 (4 MSAs; 1979-1983 (7 MSAs; 1999-2000	3 PM2.5; 44 cov)	N=40,408 N=50,930	RR = 0.960 (0.920 RR = 0.968 (0.916		1982-2000 1982-2000		
Jerrett 2011 CA CPS II Cohort N=73,609 RR = 0.994 (0.965-1.024) 1982-2000 (N=[32,509 M + 41,100 F]; 54 counties; 2000 PM2.5; KRG ZIP Model; 20 ind cov+7 eco var; Table 28)							
Jerrett 2011 (N=[32,509 M + 41,3	CA CPS II Cohort 100 F]; 54 counties; 2000 PM	N=73,609 M2.5; Nine Mode	RR = 1.002 (0.992 el Ave; 20 ic+7 ev;		1982-2000 Tab 27-32)		
Lipsett 2011 (N=[73,489 F]; 2000	CA Teachers Cohort -2005 PM2.5)	N=73,489	RR = 1.01 (0.95	- 1.09)	2000-2005		
Ostro 2011 (N=[43,220 F]; 2002	CA Teachers Cohort -2007 PM2.5)	N=43,220	RR = 1.06 (0.96	- 1.16)	2002-2007		
Jerrett 2013 (N=[~32,550 M + ~4	CA CPS II Cohort 1,161 F]; 54 counties; 2000	N=73,711 PM2.5; LUR Cor	RR = 1.060 (1.003 urb Model; 42 ind				
Jerrett 2013 (same parameters a	CA CPS II Cohort and model as above, except	N=73,711 including co-pol	RR = 1.028 (0.957 lutants NO2 and O				
Thurston 2016 (N=[~95,965 M + ~6	CA NIH-AARP Cohort 4,245 F]; full baseline mode	N=160,209 el: PM2.5 by zip o	RR = 1.02 (0.99 code; Table 3)	-1.04)	2000-2009		
Enstrom 2016 unpub CA NIH-AARP Cohort N=160,368 RR = 1.001 (0.949-1.055) 2000-2009 (N=[~96,059 M + ~64,309 F]; full baseline model: 2000 PM2.5 by county)							