

From: [Davidson, Florene, EMNRD](#)
To: [Salvidrez, Marlene, EMNRD](#)
Subject: FW: [EXT] Science Journalist & Author Seeking to Make Comment At Thursday's Public Hearing on Oil & Gas Produced Water, Documents Attached
Date: Thursday, July 30, 2020 7:43:24 AM
Attachments: [Peter Gray NORM Contamination in the Petroleum Industry, 1993 Society of Petroleum Engineers.pdf](#)
[1982 API Analysis of RADIONUCLIDES in oil and gas industry.pdf](#)
[OCCUPATIONAL EXPOSURES TO RADIOACTIVE SCALE AND SLUDGE Coleman et al v. H.C. Price Co.docx](#)
[Bureau of Economic Geology UT Austin 1991 paper on the Geology of the Woodford Formation.pdf](#)
[Radium in Drinking Water and the Risk of Death From Bone Cancer Among Ontario Youths.pdf](#)
[New Mexico Produced Water Rule Comments Justin Nobel 7 30, 4.docx](#)

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From: Justin Nobel <justinnobel@gmail.com>
Sent: Thursday, July 30, 2020 12:26 AM
To: Davidson, Florene, EMNRD <florene.davidson@state.nm.us>
Subject: Re: [EXT] Science Journalist & Author Seeking to Make Comment At Thursday's Public Hearing on Oil & Gas Produced Water, Documents Attached

Ms. Davidson, I have attached to this email my comments, as well as five key sources I cite. I have also pasted my comments below in the body of this email. Please do let me know if you have any questions. Thank you once again. Sincerely, Justin Nobel

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Good Day, My name is Justin Nobel. I have a dual master's degree in earth and environmental science and journalism, write regularly on issues of science and the environment for US magazines and investigative sites, recently published a lengthy story for Rolling Stone magazine entitled, "America's Radioactive Secret" on the issue of the radioactivity brought to the surface in oil and gas production and the many different pathways of contamination posed to the industry's workers, the public and communities, and the environment, and I am presently writing a book on this topic to be published with Simon & Schuster. Ladies and gentleman, it is pathetic that a journalist for a music magazine has been forced to break news that the America's oil and gas industry has known full-well for four decades.

I quote, "Almost all materials of interest and use to the petroleum industry contain measurable quantities of radionuclides that reside finally in process equipment, product streams, or waste. In addition, groundwater used for waterflood and brine solutions from operating wells contain biologically significant quantities of Radium 226 and Radon 222." These lines do not come from a research scientist at some eastern university far removed from the oil patch, they do not come the newsletter of some environmental action group which may have a vested interest in halting oil and gas production. These lines, in fact, come from a 1982 report of the Department of Medicine and Biology, of the American Petroleum Institute. Apparently, the New Mexico Energy, Minerals and Natural Resources Department and the Oil Conservation Commission are unaware of this vital research by the nation's foremost oil and gas industry experts. The American Petroleum Industry report goes on to describe the radioactivity risks of the industry's waste, quote, "Radium 226 is a potent source of radiation exposure, both internal and external...Radon 222 and its daughters cause the most severe impact to the public health."

The 1982 American Petroleum Institute report also invalidates the Department's plan, as laid out in this proposed rule, to, quote, "encourage the recycling or re-use of produced water." Again, I quote from the American Petroleum Institute report, "Any control methodology

proposed for radioactive materials must recognize the fact that radioactivity can not be modified or made inert by chemical means. It also must recognize that radioactivity dissipates at fixed rates through fixed sequences or series. Decay to daughter products cannot be guaranteed to reduce the hazard..." And just a few lines later the American Petroleum Institute report points out that any attempt to remove radioactivity is merely transforming, quote, "a very dilute source of radioactive materials into a very concentrated source of radioactivity." So your proposed rule, encouraging the treatment of this complex radioactive waste stream, is nothing more than a free pass for industry to contaminate uninformed and inappropriately protected oil and gas workers, ie, human beings, ie, men and women, mothers and fathers.

And members of the Department and Commission, this one damning 1982 American Petroleum Institute paper is not alone. I read you the first two lines of a 1993 article published by the Journal of Petroleum Technology, which is produced by the oil and gas industry's flagship professional society, the Society of Petroleum Engineers, quote, "Contamination of oil and gas facilities with naturally occurring radioactive materials (NORM) is widespread. Some contamination may be sufficiently severe that maintenance and other personnel may be exposed to hazardous concentrations." Later in this report it states, quote, "Much of the material wastes from a facility contaminated with NORM must be handled as low-level radioactive waste and disposed of accordingly."

So, the idea that this issue is not a big problem, or only a problem in the Marcellus shale play or back East, is not just absurd, this ignorance puts the lives and safety of the workers and communities of this great state in peril. And just to prove the point, from the opening lines of a 63-page report produced in 1991 by the esteemed petroleum geologist John B. Comer, of the Bureau of Economic Geology at the University of Texas at Austin, quote, "The Upper Devonian Woodford Formation is an organic-rich petroleum source rock that extends throughout West Texas and southeastern New Mexico and...is very radioactive."

Your rule makes no mention of this highly dangerous radioactivity, and it makes no mention of how you will protect the workers and residents of New Mexico from this contamination. While the present New Mexico regulatory agencies and commissions have unfortunately taken scant interest in assessing and monitoring radioactive elements inevitable in the oil and gas industry's waste streams, such as radium, a bone-seeking human carcinogen known to have pronounced effects in children with swiftly growing bones, that does not mean your workers and residents cannot be affected by radium, or any of the other well-known carcinogenic radioactive elements common to oil and gas waste such as produced water.

Quote, "There is no threshold of exposure below which low levels of ionizing radiation can be demonstrated to be harmless...The health risks – particularly the development of solid cancers in organs – rise proportionally with exposure." This from Harvard epidemiologist and committee chair of the National Academy of Sciences 2006 Biologic Effects of Ionizing Radiation report, known among radiation experts as the BEIR VII report.

Just because you do not believe the science or know the science or care to read a few research papers to understand the science does not mean the science doesn't exist, and does not mean the science won't eventually lead to lethal cancers in the residents you are charged with protecting. I sincerely hope the Department and Commission reconsiders this ridiculous science-starved rule and makes a complete about-face on the topic of oil and gas waste.

But either way, your paltry regulations have already enabled an easily traceable trail of

contamination to be spilled across the great state of New Mexico, and quite literally, deposited in the bones and bodies of its people. Radium, again, as anyone in the medical community well-knows, is a “bone seeker,” mistaken for calcium, and incorporated into our skeleton. And as cases during the 1980s and 1990s from the Mississippi and Louisiana oil patches have shown, these exposures may not just lead to cancer and disease in oil and gas workers, workers bring contamination home on their clothes and bodies and their family members can and will be contaminated as well. There is no reason to think that the science of exposure will operate any differently in New Mexico workers and residents in 2020 than it did in Louisiana and Mississippi workers and residents 30 and 40 years ago.

As Dr. Harrison Martland, one of the great founders of the field of occupational radiation safety, lays out in his seminal 1931 paper on the “Radium Girls” in the American Journal of Cancer, the bombardment of radioactivity given off by these women—who unknowingly digested radium in their use of radioactive paints in the painting of watch and clock dials—, quote, “will last, for an indefinite period. For instance in the year 3491 A.D., the skeleton will still be giving off 185,000 alpha particles per second.” End quote. So the contamination you enable to be spread, spilled, and sloppily treated across this awesome Land of Enchantment is not going anywhere. Your carelessness will be recorded indefinitely on the land and in the bodies of its people, and myself and my colleagues and the scientific experts—and the many, many, attorneys of the future—will find your victims, and we will expose the catastrophe you have unleashed.

Please find all sources cited and linked or attached in full. Thank you.

Justin Nobel

SOURCES

1. "An Analysis of the Impact of the Regulation of 'Radionuclides' as a Hazardous Air Pollutant on the Petroleum Industry" - Prepared for the Committee for Environmental Biology and Community Health, Dept of Medicine and Biology, American Petroleum Institute. October 19 1982.
2. "NORM Contamination in the Petroleum Industry," Society of Petroleum Engineers' Journal of Petroleum Technology Peter Gray 1993
3. "Stratigraphic Analysis of the Upper Devonian Woodford Formation, Permian Basin, West Texas and Southeastern New Mexico." By John B. Comer, Bureau of Economic Geology of the University of Texas at Austin. 1991. P1.
4. "Radium in drinking water and the risk of death from bone cancer among Ontario youths." Dr. Murray M. Finkelstein. Canadian Medical Association Journal. Volume 151 (5). 1994.
5. Press Release for the National Academy of Sciences Biologic Effects of Ionizing Radiation 2006, BEIR VII, report. Comments from committee chair Richard R. Monson, associate dean for professional education and professor of epidemiology, Harvard School of Public Health. (<http://hps.org/documents/BEIRVIIPressRelease.pdf>)
6. "Occupational Exposures to Radioactive Scale and Sludge." Report prepared by nuclear physicist Dr. Marvin Resnikoff & Stanley Waligora for Louisiana legal case, "Coleman et al v. H.C. Price Co. et al." December 2013.
7. "The Occurrence of Malignancy in Radioactive Persons." Dr. Harrison S. Martland. The American Journal of Cancer, Volume XV No. 4. October 1931. (<http://cancerres.aacrjournals.org/content/amjcancer/15/4/2435.full.pdf>)

On Wed, Jul 29, 2020 at 6:08 PM Davidson, Florene, EMNRD <florene.davidson@state.nm.us> wrote:

Mr. Nobel, your comments will be in time for the hearing. The Commission Chair will announce at the beginning of the hearing the manner in which public comments will be taken, including length of time.

Florene Davidson

From: Justin Nobel <justinnobel@gmail.com>

Sent: Wednesday, July 29, 2020 4:01 PM

To: Davidson, Florene, EMNRD <florene.davidson@state.nm.us>

Subject: Re: [EXT] Science Journalist & Author Seeking to Make Comment At Thursday's Public Hearing on Oil & Gas Produced Water, Documents Attached

Ms. Davidson, Thank you very much for your reply - I intend to submit my written comments by 10PM tonight Mountain Time, which I do hope would be in time for them to be included in the pre-filed exhibits. If you could inform me as to the length of time I will be given as a speaker, that would be most helpful. Thank you again. ~ Justin

On Tue, Jul 28, 2020 at 3:42 PM Davidson, Florene, EMNRD <florene.davidson@state.nm.us> wrote:

Mr. Nobel, please submit your written comments prior to the hearing so that they may be included with the other pre-filed exhibits. You can refer to them during the hearing.

Florene Davidson
Commission Clerk

From: Justin Nobel <justinnobel@gmail.com>

Sent: Tuesday, July 28, 2020 12:22 PM

To: Davidson, Florene, EMNRD <florene.davidson@state.nm.us>

Subject: [EXT] Science Journalist & Author Seeking to Make Comment At Thursday's Public Hearing on Oil & Gas Produced Water, Documents Attached

Dear Florene,

I hope this note finds you well. I write on issues of science and the environment for a number of different US magazines and investigative sites and for the past three years I have been researching and reporting on the topic of the radioactivity brought to the surface in oil and gas production and the many different pathways of contamination posed to the industry's workers, the public and communities and the environment. It's a complex and far-reaching topic. In January I published a lengthy article with Rolling Stone magazine, [America's Radioactive Secret](#), and I am presently working on a book to be published with Simon & Schuster. In my reporting and research I have gained a significant expertise in the topic of oilfield waste, including waste streams such as

produced water, and I am looking to join the list of commenters for the **Thursday July 30th Public Hearing on the Proposed Rule Regarding Oil & Gas Industry Produced Water.**

Attached are two important early oil and gas industry documents that I plan to refer to in my comments. If you could please make sure these documents are made available to the public and members of the Commission. I will submit my written comments upon making my statement, as appropriately directed by you. Please let me know if you have any additional questions.

Thanks very much for your time and attention.

Sincerely,
Justin Nobel

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