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**Testimony AGAINST H.B. 393**

Chairman Landis, Vice-Chairman Hagan, Ranking Member O'Brien and Members of the House Energy and Natural Resources Committee:

I oppose House Bill 393, the proposal to legalize the use of so-called "brine" from oil and gas extraction as a de-icer and dust control chemical on Ohio's public roads and highways.

Far from being relatively benign salt water, the so-called "brine" will actually be oil and gas industry wastes containing dozens, possibly more than a hundred, industrial chemicals, heavy metals, and radioactive wastes. Using unspecified treatment processes ordered on a case-by-case basis, a mere section chief within the Ohio Department of Natural Resources would have complete, unfettered discretion to decide how much chemical and radioactive contamination to allow to be sprayed on public roads and highways. The effects of rain and weather inevitably will move these poisons into surface water and subsurface water tables.

Recent science verifies that so-called "brine"--which is actually toxic liquid industrial radioactive waste--contains health-threatening levels of radium and related radioisotopes that emit alpha radiation, embed in bones and inevitably cause cancer and cell damage. There is radium in each of the thousands of barrels of so-called "brine" tapped from every conventional oil and gas well and also, from hydraulically-fractured ("fracked") oil and gas wells. A 2011 U.S. Geological Survey (USGS) study revealed that millions of barrels of wastewater trucked into Ohio from shale-gas wells in Pennsylvania were probably highly radioactive. Radium in one sample of Marcellus shale wastewater--a/k/a brine-- collected in 2009 was 3,609 times more radioactive than the federal safety limit for drinking water. It was 300 times higher than a Nuclear Regulatory Commission limit for industrial discharges of radiation to water. The USGS also found that the median levels of radium in brine from Marcellus shale wells was more than three times higher than brine collected from conventional oil and gas wells.<sup>1</sup>

Another study of fracking waste treatment in Pennsylvania revealed that even when more than 90% of the radioactive barium and radium was removed from Marcellus Shale produced waters, the levels of Radium-226 in stream sediments where the stuff was dumped were still 200 times greater than normal background levels of radiation.<sup>2</sup>

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<sup>1</sup><http://www.dispatch.com/content/stories/local/2012/09/03/gas-well-waste-full-of-radium.html>

<sup>2</sup><http://pubs.acs.org/doi/abs/10.1021/es402165b>

Spraying of this toxic liquid industrial radioactive oil and gas waste as a de-icer and dust control will bioaccumulate radiation and chemical poisons, year after year, in the yards and fields and streambeds alongside roads. Stream and river beds will become permanently and dangerously radioactive. Land to produce crops or simply grass cover will produce industrially poisoned and irradiated crops for animals and people.

So-called “brine” contains a lot of iodide and bromide. Treatment before using it on roads will not remove most of the iodide and bromide unless very expensive, and thus very unlikely, technologies are used. Consequently, iodide and bromide will turn into many toxic compounds when they combine with organic metals in rivers and then flow into water treatment plants, where they will then combine with the chlorine added to drinking water during the disinfection process. The interaction with organic metals and chlorine results in “disinfection byproducts”—like iodinated trihalomethanes, brominated trihalomethanes and chloroform—which are cancer-causing. All surface water, as time passes, will become increasingly contaminated with cancer-causing chemicals. Since H.B. 393 merely camouflages large-scale oil and gas waste dumping that will gradually contaminate all surface water, minimal, cheap treatment of oil and gas wastes will become that norm under a completely unaccountable section chief in ODNR.

H.B. 393 will delegate complete regulatory discretion to a single, unaccountable individual who will not be legally required to have any relevant expertise in toxic or organic chemistry and who, alone, will decide “safe” levels of oil and gas waste sprayed by the millions of gallons onto public roads, year-round. This is part of a legislative magic trick where provably dangerous wastes will be renamed as beneficial material by a mere change of name. You cannot legislate the laws of chemistry and physics. Passage of this bill will legalize widespread contamination and poisoning of land and water and with them, people.

Proposed O.R.C. § 1509.22(C)(9)© contains wording which clearly forbids the ODNR from developing any uniform rules to identify or set any limits on what industrial toxic chemicals could be sprayed on the roads and become part of our water table. The statute limits the chief to sampling the wastes being sprayed on the roads by any profiteer to only four tests per year, yet any oil and gas driller will tell you that the chemistry and radiation of every individual well can vary tremendously. The profiteers selling these poisons will know that there is almost zero chance that extreme radiation or chemical toxicity will be caught.

Legislating the use of liquid industrial radioactive waste as a public road de-icer and dust control will violate the federal Clean Water Act, the Safe Drinking Water Act and the imminent endangerment provisions of the federal Resource Recovery and Conservation Act.

Also, it is a felony under O.R.C. § 2927.24 for any person to “knowingly place a poison, hazardous chemical, biological, or radioactive substance, or other harmful substance in a spring, well, reservoir, or public water supply, if the person knows or has reason to know that the . . . water may be ingested or used by another person.” No one on the Committee can claim ignorance of the fact that passage of this bill into law will create a knowing, intentional vector for damage to the public health, to food production, and to the environment. Please kill H.B. 393 before it legalizes expanded use of liquid, toxic industrial radioactive oil and gas waste to kill us.

Thank you.

Very truly yours,

*/s/ Terry J. Lodge*

Terry J. Lodge

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