PA 14-200

SB237

House	6738-6929, 7071-7073, 7097-7102	201
Senate	2537-2600, 2692-2777, 2921-2923	153
Energy	608-609, 639, 652, 696-697	6
Transportation	(7), (28-29)	3
Environment	284-302, 304-330, 332, 333-363, (363-365), 365-367, 368-369, 374-388, (388-390), 390-408, 433, 434, 563, 588-619, 620-639, 641-675, 698, 720, 721-722, 731-753	236
		599

H – 1200

CONNECTICUT
GENERAL ASSEMBLY
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THE CLERK:

House Calendar 527, Favorable Report of the joint standing committee on Judiciary; Senate Bill 237, AN ACT PROHIBITING THE STORAGE OR DISPOSAL OF FRACKING WASTE IN CONNECTICUT.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Good afternoon, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Good afternoon, sir.

REP. ALBIS (99th):

Mr. Speaker, I move for acceptance of the joint committee's Favorable Report and passage of the bill, in concurrence with the Senate.

DEPUTY SPEAKER GODFREY:

Motion is on acceptance and passage. Will you explain the bill, please, sir?

REP. ALBIS (99th):

Mr. Speaker, the Clerk has an amendment, LCO Number 4911. I'd ask that the Clerk please call the amendment and I be allowed to summarize.

DEPUTY SPEAKER GODFREY:

Clerk is in position of LCO Number 4911,

previously designated Senate Amendment Schedule "A."

Mr. Clerk, please call the amendment.

THE CLERK:

Senate Amendment "A," LCO 4911, introduced by Senator Williams, Looney, et al.

DEPUTY SPEAKER GODFREY:

The gentleman has asked leave of the Chamber to summarize. Is there objection?

Hearing none, Representative Albis.

REP. ALBIS (99th):

Thank you, Mr. Speaker.

Mr. Speaker, you may remember that we started this Legislative Session with two bills regarding fracking waste. This amendment is the result of a compromise that ended up between the extremes of those two bills, and it is a bipartisan compromise.

What the bill does -- what the amendment does -- I'm sorry -- is establish a minimum, three-year moratorium on the importation, the collection, storage, et cetera, of fracking waste in the State of Connecticut.

It requires the Department of Energy and Environmental Protection to come to the Regs Review Committee no earlier than July 1, 2017, with

regulations regarding the collection, disposal, treatment, et cetera of fracking waste. It also addresses the by-products, such as de-icers, the dust suppressants that may contain fracking waste, and it --

DEPUTY SPEAKER GODFREY:

Excuse me, Representative Albis. It appears the House doesn't have copies of the Senate amendment, if we can stand at ease for a moment.

(Chamber at ease.)

DEPUTY SPEAKER GODFREY:

The House will come back to order.

As you will recall, we are considering adoption of Senate Amendment Schedule "A."

Representative Albis, you still have the floor, sir.

REP. ALBIS (99th):

Thank you, Mr. Speaker.

I will start where I left off. We're talking about the by-products of fracking wastes. The -- the bill requires a ban of such by-products, including de-icers and dust suppressants -- which we know to have

been used in other states, such as New York and Pennsylvania -- that contain fracking waste, until the department establishes regulations for such products.

The bill also allows for a research and development approval from the department so that persons or companies who are interested in researching fracking waste can do -- do such research and development with approval from the department and under certain conditions, including a limited gallonage.

Mr. Speaker, I'd be remiss if I didn't thank some of the folks who have been involved in these negotiations, including my Environment Co-Chair, Representative Gentile; the Energy and Technology Committee Chairwoman, Lonnie Reed; Representative Steinberg, Vice Chairman of the Energy and Technology Committee; as well as the Ranking Members, Representative Shaban and the Ranking Member up in the Senate, Clark Chapin. And I'd like to thank Representative Tony Hwang, also for his advocacy on this issue, as well as many others in this Chamber who have, who have helped out and really made this a -- a priority this session.

So, Mr. Speaker, with that, I move adoption of

Amendment "A."

DEPUTY SPEAKER GODFREY:

Question is on adoption of Senate Amendment Schedule "A."

Representative Shaban.

REP. SHABAN (135th):

Thank you, Mr. Speaker.

If I may, a few questions through you to the proponent of the amendment.

DEPUTY SPEAKER GODFREY:

Proceed, sir.

REP. SHABAN (135th):

Thank you, sir.

Through you, Mr. Speaker, just before I ask the questions, obviously the -- the gentleman has already informed the Chamber that this is, in fact, the compromise bill, a compromise amendment, but for the information of the Chamber, I have a few questions.

So through you, Mr. Speaker, you direct the gentleman through, to lines 16 through 21, the definition of hydraulic fracking. Through you, Mr. Speaker, does hydraulic fracking include fracking for water wells?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

And Representative Shaban, as we go forward with these questions, please remember asking questions for the benefit of the Chamber is explicitly disallowed by Mason's, so we're all in better shape if we just ask. Ask the question.

Representative Albis, do you still want to give a try at it?

Thank you.

REP. ALBIS (99th):

Thank you, Mr. Speaker.

Through you, the definition of hydraulic fracturing does not include a fracturing for water wells of geothermal.

Through you.

DEPUTY SPEAKER GODFREY:

Representative Shaban.

REP. SHABAN (135th):

Thank you, Mr. Speaker.

So following up on that definition of hydraulic fracking, there's been some, there was some conversations at the public hearing and the back and forth about what different, various, well-drilling companies can and cannot use.

Through you, Mr. Speaker, would this amendment if it becomes the bill and ultimately gets passed, would that impact what those well, water-well drilling companies are going to be doing in their business?

Through you.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, no.

DEPUTY SPEAKER GODFREY:

Representative Shaban.

REP. SHABAN (135th):

Thank you, Mr. Speaker, and I should thank the gentleman for highlighting that.

Moving down the bill, Mr. Speaker, through you; looking at basically the guts of the bill, Section B, starting in lines 41, the adoption of regulations, through you, Mr. Speaker, what is the general process that is anticipated now and what timeline for the adoption of regulations under this amendment, should it become the bill?

Through you.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, through Subsection (b) in this amendment requires the Commissioner to not release regulations to the Regulations Review Committee prior to July 1st of 2017. However, during that time, during those three years between when the bill would become law and that date, the department can do the research necessary to promulgate such regulations. They can do the testing they need to -- to do to promulgate such regulations. They can really go through the science and determine what is an appropriate manner to -- to go through to adopt such regulations.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Shaban.

REP. SHABAN (135th):

Thank you, Mr. Speaker.

And through you, the same section, lines 47 through 53. The amendment talks about eliminating the exemption in the state's hazardous waste management regulations but then cites to a federal regulation, 40 CFR; it's as quoted in line 50.

Through you, Mr. Speaker, what exactly is that

exemption?

Through you.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, that exemption does exist in federal law, as the, as the good representative mentioned, and it -- currently, under federal law, waste products from the process of fracturing for gas or oil are exempted from being considered hazardous waste material. So what this amendment would do is close that effective loophole and consider fracking waste to be considered such hazardous waste.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Shaban.

REP. SHABAN (135th):

Thank you, Mr. Speaker.

And through you, am I correct that that has sometimes been called -- almost accurately sometimes -- the "Halliburton Exception?"

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, yes, that is correct.

DEPUTY SPEAKER GODFREY:

Representative Shaban.

REP. SHABAN (135th):

So through you, Mr. Speaker, what we're doing here then, if I'm reading the bill correctly -- and I -- I believe that I am -- is saying that despite what the federal exemption may be, the State of Connecticut is going to treat these materials or these wastes as hazardous waste, pursuant to our laws and/or any federal we incorporate. Is that correct?

Through you --

DEPUTY SPEAKER GODFREY:

Representative --

REP. SHABAN (135th):

-- Mr. Speaker.

DEPUTY SPEAKER GODFREY:

-- Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, yes, that is correct. And nothing in federal law precludes us from doing so.

Through you.

DEPUTY SPEAKER GODFREY:

Representative Shaban.

REP. SHABAN (135th):

Thank you, Mr. Speaker.

Moving on in the bill, there's -- there's some language in the bill about the collection of information from various, private-sector companies that may or may not engage in, who are -- that obviously engage in this type of activity.

Through you, Mr. Speaker, why are we collecting that information and what information are we collecting?

Through you.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, I thank the gentleman for that question.

That's a very important question and -- and really gets to the crux of this bill and why it's so important for the State of Connecticut. The information reported by these companies would be required to include what is in the hydraulic fracturing waste. And currently that is an issue that

many scientists have been grappling with. They -- they don't know what's in this waste. And for the department to accurately make regulations to ensure that we're handling this waste properly, we need to know what's in it.

So, through you, Mr. Speaker, I hope that answers -- answers the gentleman's question.

DEPUTY SPEAKER GODFREY:

Representative Shaban.

REP. SHABAN (135th):

Thank you, Mr. Speaker, and I believe it does.

I think that is probably the most important part of -- of what we're trying to do here. You were going to say hold on a second; let's not do anything until we know what we're doing but more or less collect the information and find -- find out if and whether these materials are hazardous and what, and to what level.

But through you, Mr. Speaker, citing the gentleman to lines 105 to 107, speaking that any information acquired by the Commissioner under this section shall be subject to disclosure in accordance with the provisions of Chapter 14; through you, Mr. Speaker, if the gentleman could inform me, what exactly is Chapter 14; what's it referring to?

Through you.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, Chapter 14 refers to our state's Freedom of Information laws, so basically what this or these three lines are saying is that any information collected from the department's procedures for collecting this information shall be subject to Freedom of Information.

Now, that does not necessarily mean that any trade secrets would be allowed to be shared with the public. Trade secrets are still protected under Freedom of Information.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Shaban.

REP. SHABAN (135th):

Thank you, Mr. Speaker.

And the gentleman hits an important point here, because one of the objections, I think, from some industry folks was that, wait a second, if we start giving away the secret formula here, that's going to put us through a competitive disadvantage. The

gentleman is correct; I confirmed it while we were doing this, doing this, negotiating this bill. Chapter 14 of our FOI laws does, in fact, allow for the nondisclosure of trade secrets. And the definition of trade secret is, in fact, captured in Chapter 14 of our statutes. So to the extent that market participants are going to disclose this information as required, should this amendment become the law, they -- they can feel protected that that information is not going to get out.

Through Mr. Speaker, moving on in the bill, looking at Section (g), so a whole lot of words here basically talking about a research exemption.

Through you, Mr. Speaker, what exactly is this research exemption going to allow potential researchers to do?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, this exemption will allow potential researchers to use up to 330 gallons of hydraulic fracturing waste to see if it can be treatable. So I believe that was an issue that we

heard during our public hearing process, and it was certainly an accommodation that -- that we felt during negotiations was necessary. And this is a -- a small amount in relative terms but an amount that should be enough to be able to conduct such research.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Shaban.

REP. SHABAN (135th):

Thank you, Mr. Speaker.

The gentleman is correct. During our public hearing, there was at least one industry participant whose, who alerted the committee and everybody to the fact that they were pursuing the technology to treat fracking waste. And I -- I think it was ionization -- I can't remember what it was -- but they are, in fact, located here in Connecticut. They're a going concern. I believe they've even received some money from the State of Connecticut to do what they do; to do what they do. And this, at least, at least for me, this was one of the most important parts of this compromise package, and I -- I alert the -- I tell the Chamber because other people have the same concern.

If someone wants to be, if some company wants to

be able to treat this stuff, wants to be able to do the research, wants to be able to create a potential market, they have the ability to do so. While we have a moratorium in place, while we treat hazardous waste as -- or the fracking waste as hazardous under our existing law, you have the ability to do the research to find out if and whether or how this stuff may be treated, assuming, of course, the market exists and it does, in fact, come into Connecticut.

One last question, if I may, Mr. Speaker, on -- on this amendment. Section B, there's, there was some talk back and forth, and I believe there's going to be an amendment, a subsequent amendment that's going to address this, but if the gentleman would, in plain, in plain words rather than go, us beating through the entire paragraph, during the time it -- it, when DEEP does the regulations, takes them three, maybe four years, does the regulations, if in the event that DEEP determines that fracking waste, the materials that they've discovered through this disclosure process, that the fracking waste is, in fact, not hazardous under our existing law, is it the expectation of the gentleman and this bill that any such regulations would then not continue to -- to categorize things

hazardous under the law if, in fact, they are not?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, that -- that is technically correct. However, I -- I feel that that is probably a very unlikely scenario, as the hydraulic fracturing waste that may be likely to come into our state we know comes from the Marcellus Shale or the Utica Shale, which is known to be fairly highly radioactive. So I think that while that may be technically correct, it is very, very unlikely.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Shaban.

REP. SHABAN (135th):

Thank you, Mr. Speaker.

And I agree with the gentleman; I agree. I think based on what we do know, I -- I think it, that scenario I proposed to be unlikely. However, I think the important thing is -- and we're going to highlight this again in -- in a minute -- that that possibility exists of anyone who objects to our treatment of these

materials in this fashion has the ability to prove us wrong and push it the other way. So with that, Mr. Speaker, I thank the gentleman for his explanations on the, on the amendment.

I rise in support of the amendment, that this was a lot of work of a lot of people to try and meet the needs of both protecting our citizens but -- but not thwarting a potential industry in -- in its infancy.

So I urge my colleagues adoption of this amendment and -- and the bill as it should stand, once we're done with this discussion.

Thank you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

And I thank the co-sponsor of the amendment. Thank you, sir.

Representative Miner.

REP. MINER (66th):

Thank you. Thank you, Mr. Speaker. Good evening.

Mr. Speaker, I have a number of questions.

DEPUTY SPEAKER GODFREY:

Proceed.

REP. MINER (66th):

Thank you, Mr. Speaker.

So on page 2 of the amendment, on line 7, the word "spilling" is used. If the good gentleman could tell me, would that be associated with something that might be deposited on the ground as a result of a well-drilling exercise that may leave both liquid and solid materials?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, I believe that is correct.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

And if the gentleman could tell me as well, in the process of moving such materials, would that also include something during the loading or unloading process?

Through you.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, yes, that could be the

case.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Well thank you, Mr. Speaker.

And in the same area, the language talks about on any land. And so if someone were to be drilling a well that would meet the restrictions of this amendment, if the good gentleman could tell us, would it be required that all those materials be removed from the surface?

Through you.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, I don't believe that any fracture, hydraulic fracturing waste would be involved in that process by way of this amendment until such regulations are -- are promulgated. And at that time, I would imagine the regulations would address that particular issue.

Through you.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

And -- and so if I move down to hydraulic fracturing, the definition there, it speaks to a -- a process and a -- a number of wells once drilled that would fall under this regulation. And so in the area where it talks about geothermal water well, in the process of repairing a geothermal water well under this legislation, if it were enacted, would that be permitted under this bill?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, yes, it would.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

And thank you, Mr. Speaker.

And in the same line, line 20, there's some language here that talks about any other well drilled or repaired for drinking-water purposes. So would that be for a single-family home?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, yes, that -- that could be the case.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

And if I could, through you, Mr. Speaker, if it was a community well, again, drilled well used specifically for the purpose of drinking water, would that also fit under this definition?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, yes.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

In rural parts of Connecticut where fire protection is not always possible in terms of a hydranted system, I am aware that in some cases there

are catchment areas; sometimes they're lagoons; sometimes they're either plastic or concrete or metal tanks buried in the ground. And as I look at this definition, I don't see any provision here where a well for the sole purpose of fire protection would be permitted under this language. Am I correct?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, my reading of this language is that hydraulic fracturing only refers to the drilling of wells for purposes of natural gas. We know that there are many geothermal water wells or drinking-water, water wells in the state, so that's why we specifically exempted those two particular types of wells. But the language clearly states that it only pertains to wells drilled for purposes of extracting natural gas.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Well, thank you, Mr. Speaker, and I thank the

gentleman for his comments.

I would disagree. I think the fact that the legislation goes through some length to define those which are specifically precluded from this leads me to believe that there may be a list of wells that could be included in the exempted class that are not for the exploration of gas. And so I don't see how we get on line 20 from drinking water to those wells that would be solely for fire protection, Mr. Speaker.

And I guess I would go on to say that, again, in rural Connecticut I am aware that there are some wells driven -- drilled specifically for the purpose of hydrating the ground, whether it is for livestock or whether it is for propagation, aquaculture. And so, Mr. Speaker, I -- I would suggest that the fact that those are not listed either in Section 4, I don't see how we could declare definitively that they are somehow protected, seeing as we've gone through some lengths to include items such as geothermal water wells and other drinking wells.

I have another question, Mr. Speaker, when it gets on to the definition of radioactive materials. If I could, through you, if the gentleman could tell me how is it that someone would know materials such as

solids that come out of a well are radioactive?

Through you.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, I'm -- I'm not a scientist but I -- I know that there are certain tests that the department can run to -- to see if the materials may be radioactive, including, for example, gamma-ray technology.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

And so if the gentleman knows, with regard to solids that might be deposited through the well-drilling process, again for one that would be used for fire protection, would that same company be required to have a piece of equipment to make that determination?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, no.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

And so for the -- the intentions of this legislation, the meaning of the legislation, there would be no requirement to have such equipment and therefore any deposits left on the property would not have to be separately tested to meet some standard, provided they were from a drinking water well?

Through you.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, that is correct. That's my understanding as well.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

And remembering that we were talking about those other wells, fire protection, aquaculture, agriculture, in those cases where they are not used

for drinking water, Mr. Speaker, would the same equipment be required if the well was drilled for those purposes?

Through you.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, no they would not.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

In Section 7, where it uses the word "store" and then defines it, if you could through -- if I could, through you, Mr. Speaker, there are circumstances where well-drillers will create an impoundment area. And if the gentleman knows, would an impoundment area with bales of hay and some kind of a silt fence constitute the definition under storage in Section 7?

Through you.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, my understanding is

that it could. However, it would have to be the waste product from hydraulic fracturing for natural gas to apply to this amendment.

Through you.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

I -- I thank the gentleman for his answer and I, and I understand that it is opinion that it would be for hydraulic fracturing for natural gas exploration. But as I indicated earlier, I think there are some other definitions that some, someone might rule could fit outside that definition. And so in those cases in the materials would, were to be stored, would the DEEP have any action that they could take?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, that would be determined through their regulations that they develop per this amendment.

Through you.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

And so until such time that those regulations are developed, then wells that do not specifically fall in the categories listed in Section 4, such as those for drinking water purposes would have to wait until after those regulations are developed?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, no.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

And if the good gentleman could explain to me how it is that someone could store materials that are not permitted as a by-product of a process that would not be allowed without regulations to be done prior to the regulations being done.

Through you.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, they would not be able to store such materials that were, that were covered under the moratorium of this act. But I think that we -- we may agree to disagree about the types of wells that -- that are covered under this act.

My -- my understanding is that the hydraulic fracturing definition only includes the drilling of wells for the recovery of natural gas. So the -- the water wells for, for example, fire hydrant use would not be covered. And any such materials that occur through that process could be stored, would not need to be subject to the regulations per this amendment.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

And so is it the gentleman's understanding that this is probably more likely to deal with materials that are brought into the state as opposed to materials that are generated in the state?

Through you.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, yes; that is absolutely correct.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

And if the good gentleman could tell me, materials that traverse the state; that is to go from New York, let's say to Massachusetts, and I'm not sure, I guess from Massachusetts through the corner of Connecticut to New York, would that be prohibited under this legislation?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, no; the transport of such materials would not be prohibited under this act, should it pass.

Through you.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

And knowing that it's not prohibited under this legislation, if there were to be a spill, through you, Mr. Speaker, what would happen at that point?

Through you.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, the department currently has regulations to deal with those types of spills, so they would be able to address that instance should it occur.

Through you.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

At this point, that is all the question -- well, those are all the questions that I have. I will listen to the rest of the debate and other questions that may be asked and answered.

And I thank the gentleman for his answers.

DEPUTY SPEAKER GODFREY:

Thank you, sir.

Will you remark further on Senate "A?"

Representative O'Dea.

REP. O'DEA (125th):

Thank you, Mr. Speaker.

I have a few questions for the --

DEPUTY SPEAKER GODFREY:

Proceed, sir.

REP. O'DEA (125th):

-- proponent of the bill.

DEPUTY SPEAKER GODFREY:

Proceed, sir.

REP. O'DEA (125th):

The first question I have, with respect to Section 1(b), as I understand it, no person may accept, receive, collect, store, treat, transfer or dispose of waste from hydraulic fracturing in the State of Connecticut. Does this apply if a, say a Connecticut company wants to do cleaning of fracking waste in -- in Pennsylvania, for example?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, no; it would not apply

in that case.

DEPUTY SPEAKER GODFREY:

Representative O'Dea.

REP. O'DEA (125th):

And so in Section 1 (g) where there is a limit to the amount of times and the amounts of gallons that can be treated, as I under the proponent's testimony, through you, Mr. Speaker, that does not apply if a, say, a local company, a local company in Connecticut goes to West Virginia and treats the fracking waste on-site, that they wouldn't need to abide by any of the section, any of Section 1(g) -- 1(g).

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, that is correct.

DEPUTY SPEAKER GODFREY:

Representative O'Dea.

REP. O'DEA (125th):

Thank you, Mr. Speaker.

And I thank the proponent for his responses.

We heard a lot of testimony from businesses, or at least one business and the -- the CBIA opposing

legislation limiting the -- the ability of companies to treat fracking waste. I believe this is a fair compromise. For the time being, we prohibit it in Connecticut but we allow a local company to bring in 300-plus gallons or up to 500 gallons on a request, during the time that there is a limit here in the State of Connecticut, but we allow them to treat unlimited at the site of where the fracking is going on, wherever it is throughout the world.

So I believe this is a fair compromise. I thank the proponent for his responses, and I encourage my colleagues to vote for this compromise bill.

Thank you very much.

DEPUTY SPEAKER GODFREY:

Thank you, sir.

Representative Case.

REP. CASE (63rd):

Thank you, Mr. Speaker.

Through you, a few questions to the proponent of the --

DEPUTY SPEAKER GODFREY:

Proceed, sir.

REP. CASE (63rd):

-- bill, please.

Lines 16 through 21, for a point of clarification, hydraulic fracturing means the purpose of pumping a fluid into or under the surface of the ground in order to create fracturing rocks for exploration, development, production or recovery of gas. Hydraulic fracturing does not include the drilling or repair of a geothermal water well or any other drilled or repaired for drinking-water purposes.

Does that include directional boring for, let's say, utility lines?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, no, it does not.

DEPUTY SPEAKER GODFREY:

Representative Case.

REP. CASE (63rd):

Through you, Mr. Speaker, in the northwest corner, we -- we deal a lot with drilling companies for other purposes, as far as drilling for ledge; we have a lot of limestone. And they use a lot of the chemical bentonite, which is on the safe registry for the federal government but it becomes a hazardous

waste under this bill. Are those people considered exempt from this, even though they are using these chemicals that were considered hazardous?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, it would not apply to that particular instance unless that chemical came from a fracking waste that was specifically from the hydraulic fracturing of a well for natural gas exploration. But to my knowledge, that particular product that -- that the gentleman is referring to does not come from such waste and it would not be covered under this amendment.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Case.

REP. CASE (63rd):

Through you, Mr. Speaker, the -- the concern I have with that is we don't spell that out in the bill. And I know, in speaking with the good Co-Chairman of Environment, I've given him copies of the chemicals that are used for companies in the state of

Connecticut for drilling, for many different reasons, for power lines, utilities, fiber optics, sewers. And from my understanding, this chemical is dumped into the hole to help with the drilling. It comes out as a fracturing waste I just want to make sure, through him, that this is not going to hurt the local companies that do the drilling for these certain applications.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, that is not the intent of this -- this amendment, and it would not apply in that case.

DEPUTY SPEAKER GODFREY:

Representative Case.

REP. CASE (63rd):

Through you, Mr. Speaker, then we'll move to lines 37 through 40, which I think clarifies it a little better for me, which concerns, is: Waste from hydraulic fracturing means any wastewater, water solids, brine, sludge, drill cuttings or any other substance used or generated through secondary purpose

of hydraulic fracturing.

Well, these companies are hydraulic fracturing and they have this brine, sludge, drill cuttings and waste. I want to make sure, through you, Mr. Speaker, that once again in this language we're not going to have an issue with local companies in the state of Connecticut.

Through --

DEPUTY SPEAKER GODFREY:

Representative --

REP. CASE (63rd):

-- you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

-- Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, we -- we would not have a problem in -- in those cases. In Connecticut, we do not have any shale, gas shale that can be fractured for -- for use of extracting such gas for use by the general population, so there is no such fracturing for natural gas occurring in our state. Any fracturing that is currently occurring is not for that purpose and would not be covered by the provisions of this amendment.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Case.

REP. CASE (63rd):

Thank you, Mr. Speaker.

Number one, I'd like to thank Representative Albis, Gentile, Shaban, and Representative (sic) Chapin for working so diligently on this and keeping a bunch of us on Environment aware of what's going on.

I just, I -- I wanted to make it clear, and I -- I know the good gentleman knows that I wanted to make it clear that in Connecticut we do do a lot of drilling; we do do a lot of directional drilling for sewers, et cetera. And their by-product in the federal standards of 40 CFR 126 (sic) .4(b) Number (5), and Number (5) is what spells out these chemicals that are used in the state of Connecticut, and it eliminates them in the federal language as a hazardous waste.

If you read the language that we have in this bill, it makes them a hazardous waste. And I just, for legislative intent, through you, Mr. Speaker, very clearly I just want to make sure that these companies are all set. Thank you, Mr. Speaker.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, the -- the companies that Representative Case is referring to would not be affected by this amendment.

Through you.

DEPUTY SPEAKER GODFREY:

Representative Case.

REP. CASE (63rd):

Mr. Speaker, I will reserve the rest of my questions and listen to other good representatives in the room. And, once again, I thank all the work that Representative Albis -- I know he's been waiting for days for this bill to come out -- and hopefully we can have a few more hours of discussion on it.

Thank you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

I -- I hear that when he started working on this, he didn't have a beard; I'm not sure, though.

Representative Srinivasan.

REP. SRINIVASAN (31st):

Good evening, Mr. Speaker.

Through you, Mr. Speaker, just a few questions to the proponent --

DEPUTY SPEAKER GODFREY:

Proceed, sir.

REP. SRINIVASAN (31st):

-- of the amendment. Thank you, Mr. Speaker.

Through you, Mr. Speaker, lines 110 talk about three requests to allow a person. Through you, Mr. Speaker, those three requests, can they all come from the same person?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, yes, they can. The -- the Section (g) spells out that three people can make three such requests.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Srinivasan.

REP. SRINIVASAN (31st):

So through you, Mr. Speaker, so that I'm clear, it's three people making three requests. So in total we could have up to nine requests.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, that is correct.

DEPUTY SPEAKER GODFREY:

Representative Srinivasan.

REP. SRINIVASAN (31st):

Through you, Mr. Speaker, being a physician, math has never been a strong point, so I just wanted to, so -- so I wanted to be sure that three times three is nine here in the Chambers as well.

Through you, Mr. Speaker, when we look at lines 126, three such, the one -- sorry -- 125 through 126, three such approvals for treating 330 gallons of waste. So through you, Mr. Speaker, as I understand, that one person who can make three requests would be able to get three, three times 330 gallons that could be used.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, that is actually not my

reading of the, of what this language says. What -- what my understanding is, is that three people can make three requests, but they can request no more than a total of 330 gallons in each of the three requests as -- as a top line for -- for what they can request in total. So they could make three requests, one for a hundred and ten, one for a hundred and ten, one for a hundred and ten; they can make one for 300 and one for 20 and one for 10, but the 330 is the overall cap for that one person.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Srinivasan.

REP. SRINIVASAN (31st):

Thank you, Mr. Speaker.

And I want to thank the good representative for the clarification.

So a person, regardless of how many requests he makes, one, two or three, he or she or that company that they represent can get up to 330 gallons of waste?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, that is correct.

However, one of those request orders can actually request a larger amount, if they feel that that is necessary for their research. For example, if they need to put more gallonage through the machine that they're operating with, they can request up to 500 gallons at once. But that is the, that is only allowed once, for one person. And else is subject to the 330 cap.

Through you.

DEPUTY SPEAKER GODFREY:

Representative Srinivasan.

REP. SRINIVASAN (31st):

Through you, Mr. Speaker, I was coming to that, and I want to thank the good representative for discussing that, which is, which is -- was for my next question. In lines 129, onwards, where we talk about 500 gallons. That 500 gallons, as I understand the good representative said, can only be given to one person of the three people that apply and qualify.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, that is correct.

DEPUTY SPEAKER GODFREY:

Representative Srinivasan.

REP. SRINIVASAN (31st):

Through you, Mr. Speaker, what I'm not clear about is why would one person apply three times? Is it because the first application was rejected for whatever be the reason, that they apply again or what other reason would they apply two to three times?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, I would imagine maybe they want to run different tests on different sample sizes. That could be one potential reason. Maybe they just want to apply once and get all 330 gallons at one -- one time. But maybe they want to run different tests. That -- that would be my understanding.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Srinivasan.

REP. SRINIVASAN (31st):

Through you, Mr. Speaker, that definitely looks very reasonable that as they're doing, conducting research, they may want to look at different sample sizes. And that may be the reason for the three requests.

But through you, Mr. Speaker, if a request is made, and following the criteria that is well established here in Section (g), if that application is rejected, through you, Mr. Speaker, could that person apply again?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, yes, they could.

DEPUTY SPEAKER GODFREY:

Representative Srinivasan.

REP. SRINIVASAN (31st):

Through you, Mr. Speaker, is there any limit as to the number of times that they could apply if they continue to be rejected?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, there is no cap on the number of times they may apply; there is just a cap on the number of approvals.

Through you.

DEPUTY SPEAKER GODFREY:

Representative Srinivasan.

REP. SRINIVASAN (31st):

Through you, Mr. Speaker, so this process, this research to determine how to treat and how effective it is will occur from the date of passage, as I understand of this bill, to the time period that they have to come with the regulations before the Legislature. Is that the understanding?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, yes, that is correct.

DEPUTY SPEAKER GODFREY:

Representative Srinivasan.

REP. SRINIVASAN (31st):

And through you, Mr. Speaker, my final question

to the good representative. I hope it never happens; I hope we never see that day, but if there is unfortunately some kind of an accident or some kind of an error that happens in this research process, which has been, which has been approved by the State, and if such a thing were to happen, through you, Mr. Speaker, do we have the appropriate contingency plans?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, yes, we do. And, in fact, the Subsection (g) does spell out the fact that this, any waste generated from this research and development should be considered hazardous waste and will be subject to the hazardous waste management regulations that the department administers. So through you, Mr. Speaker, I believe that is adequate protection for the folks handling this, this waste for research and -- and the general public at large.

DEPUTY SPEAKER GODFREY:

Representative Srinivasan.

REP. SRINIVASAN (31st):

So through you, Mr. Speaker, all of this waste

until we get all the information on this will be considered as hazardous waste and will follow those appropriate guidelines.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, that is correct.

DEPUTY SPEAKER GODFREY:

Representative Srinivasan.

REP. SRINIVASAN (31st):

Mr. Speaker, I want to thank the good representative for all the hard work. I see it is a joint effort by, you know, bipartisan way, and a lot of people have come together to make this happen. And I want to thank not -- I'm not going to name each one of them -- but I want to thank everyone for all their hard work, because this has been a very -- I have received a lot of e-mails.

I've received a lot of requests from people, very concerned about what we are going to do. And I'm sure all of those people will feel comfortable that we as a State Legislature here are doing the right thing. We are looking and looking at this. They're looking at

it in a cautious way, and after the research is done, we will then act on that.

Thank you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Thank you, sir.

Continuing on Senate "A," Representative Alberts.

REP. ALBERTS (50th):

Good evening, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Evening.

REP. ALBERTS (50th):

I'm betwixt and between on the amendment that's before us. On one hand, like many of my colleagues, I've received much input from my constituents about the need to address this issue, but I -- I do have to admit that I share the concerns of the honorable Representative from the 66th District -- not to be confused with someone celebrating their 66th birthday -- with regard to lines 16 through 21.

And in particular, lines 16 through 18 do seem to give us the comfort; if they were there, in and of themselves and they didn't have anything else, it would give me comfort. But those lines 19 through 21, with that specific exclusion of drinking water, really

concerns me.

So through you, Mr. Speaker, to the proponent of the amendment, is there some other language that is in this amendment that I haven't seen that might give me comfort in terms of the status of wells -- that we have many of -- that are drilled for fire suppression, fire, you know, water, suppression storage?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, there is no other language other than lines 16 through 18, but my reading of those lines is -- is pretty clear that it refers only to the drilling for natural gas, only -- only wells drilled for the purpose of extracting natural gas, which we don't do in the state of Connecticut. So for -- for intent purposes for -- of this amendment, I would say that any other well drilled in Connecticut, as long as it's not for natural gas, which we currently have none of, is not covered by this amendment

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Alberts.

REP. ALBERTS (50th):

Thank you, Mr. Speaker.

And I -- I do appreciate the answer. I understand it's for legislative intent. We may do, proceed with an amendment to clarify that a little bit further, but I do thank the gentleman for his response.

DEPUTY SPEAKER GODFREY:

Thank you, sir.

Representative Piscopo.

REP. PISCOPO (76th):

Thank you, Mr. Speaker.

Mr. Speaker, a questioning from a, from a former colleague just made me curious about a few things, and just a couple questions to you, through to the --

DEPUTY SPEAKER GODFREY:

Proceed, sir.

REP. PISCOPO (76th):

-- proponent, please.

It said it wasn't your intent; the questions were, dealt with drilling with power lines, utilities, sewers, fiber optics, directional drilling, that kind of thing. And -- and the question was on intent, but

I kind of want to go a little bit, one above intent. I want to just try and see if it's in the bill somewhere and in the actual language of the bill.

Could the gentleman help me with that, through you, Mr. Speaker?

DEPUTY SPEAKER GODFREY:

You willing to help, Representative Albis?

REP. ALBIS (99th):

Of course, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Excellent; go -- go ahead.

REP. ALBIS (99th):

Mr. Speaker, my understanding is that only lines 16 through 18 deal with the -- the drilling that the good representative is referring to.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Thank you, Mr. Speaker.

Would that cover mining operations in the state? We have some limestone up in Northwest Connecticut and we have some granite. Would that be covered under that?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, no; that would not be covered.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

So -- so the by-products of that operation would then become a hazardous waste, if I interpret that question right.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

But through you, Mr. Speaker, no; the -- the, that would not be correct. They would not be considered hazardous waste unless they were mining for the purposes of extracting natural gas, which my understanding is that they are not, so they would not be covered.

Through you.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Thank you, Mr. Speaker. I thank the gentleman for the clarification.

Has there, with -- with this amendment, has -- has there been any contact with Connecticut with any of the mining, fracking operations in Pennsylvania? I understand that New York has a -- a moratorium on -- on high-volume fracking, so I don't think there'd be any contact from New York. Has there been any intention? Has there been any contact to Connecticut of people that might want to send a fracking waste to Connecticut?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, I know that the Department of Energy and Environmental Protection has been looking at Pennsylvania's laws and regulations, and I'm not aware if they have had any contact or not with -- with those types of companies. But that's the best I can offer.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Thank you, Mr. Speaker. I thank the -- the proponent for that clarification.

It -- it seems that there's been no contact made in Connecticut to take on any of these wastes.

Is there any facility in Connecticut that wishes to solicit these wastes?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, we -- we do have waste management facilities in the state of Connecticut. There may be some interest in -- in handling this type of waste, and I think that's why it's prudent for us to examine that waste and determine how we can appropriately handle it or if it should even be handled at all.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Thank you, Mr. Speaker.

So there -- there's no one contracted with any company that you're aware of in Connecticut that will take these fracking wastes?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, I am not aware at the moment of any such contracts.

REP. PISCOPO (76th):

Thank you, Mr. Speaker.

And -- and let me see. If -- is it the -- the volumes of these operations, of these fracking operations, the volumes of the water that goes into them is quite extensive. Is it more prudent for the company or the driller to treat that waste on-site?

Through you, Mr. Speaker, is it a best practice to treat it right there or as close to there as possible?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, that is often termed the best practice.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

I'm sorry, Mr. Speaker. I didn't hear the answer.

DEPUTY SPEAKER GODFREY:

Representative Albis, again, please.

REP. ALBIS (99th):

Sure. Through you, Mr. Speaker, that practice is often termed the -- the best practice for -- for the industry.

Through you.

DEPUTY SPEAKER GODFREY:

Did you hear that, Representative Piscopo?

REP. PISCOPO (76th):

It is the best practice to treat it on-site. Was that correct, Mr. Speaker?

DEPUTY SPEAKER GODFREY:

Yes.

REP. PISCOPO (76th):

Okay. Thank you very much; I think that answers my question.

What's the -- I guess I -- I'm trying to visualize, you know, why this is in front of us, you know, this particular amendment is in front of us, and it just seems that it's a best practice to treat it on-site; the nearest is Pennsylvania; there's some, maybe Marcellus Shale way in upper-state New York, a long way away. Would it -- I just -- it doesn't seem prudent to even consider Connecticut as a, as a treatment for your, for your operation, so I was just trying to get that straight in my mind.

I'm not on Environment anymore and I didn't have the luxury of sitting through that public hearing, so I just wanted to get that straight. It -- it just seems like a long distance to truck the stuff, and there's a high volume, so it wouldn't be cost effective to even think of Connecticut to bring the stuff there. And so I'm just, I'm trying to, I'm trying to figure out why this is in front of us, quite frankly, Mr. Speaker.

Thank you very much. And I'll -- I'll try and offer -- offer some maybe proposed solutions in the near future.

Thank you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Thank you, sir.

For the second time, Representative Miner; on Senate "A?"

REP. MINER (66th):

Thank you, Mr. Speaker.

I have a few more questions on the amendment --

DEPUTY SPEAKER GODFREY:

Proceed.

REP. MINER (66th):

-- if I might, through you, to the proponent.

Mr. Speaker, on line 61, it would appear that the earliest date at which the Commissioner from the DEEP could make application, I guess it's to the Regulation Review Committee, would be July 1, 2017. If the gentleman could tell me, through you, what the reason for the delay would be, please.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, I believe the reason for the delay is we want to ensure that the department has enough time to review these types of materials, review this available science, as -- as other states are looking into this same issue. It will allow ample

time for the proper resources to be brought in to analyze this, this material. And we feel that it may even take the department three years, regardless of this date restriction or not. It's -- it's very important that we review the science when we're making these regulations, so that would be the reasoning.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

And in so trying to, I guess make that application, if the gentleman knows, there's some language a little bit later that says that they shall be submitted by July 1, 2018. And so is it anticipated that at that point they would have completed all their investigation so that that application could be made?

Through you, Mr. Speaker:

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, it's anticipated that -- that they very well could have the regulations

ready to be submitted to Regs Review. If not, the department can always apply for an extension, if they haven't done sufficient research.

That is not a new process; that's been done many times in the past. So there, while we anticipate that there will be regs ready for that time, it's not necessarily the case, and there are mechanisms through rules and -- and legal means for the department to request extensions.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

And so as I read this, it seems pretty clear that the regulations must be submitted, not later than July 1, 2018.

If the gentleman can point to the line in this amendment that indicates that that's not, in fact, required, through you, Mr. Speaker?

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, that -- that is

required by lines 62 to -- to 63. However, there are mechanisms in statute where the department can request an extension, if they are unable to promulgate the regs by that date.

That has happened in the past, where various departments have not met dates set in statute by this Legislature to promulgate regulations. It -- it would not be a -- a first occasion, and it does not need to be addressed in this particular amendment. But the intent is that we'd like those regulations by July 1, 2018.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

I -- unless the gentleman can correct me -- I believe what it says on lines 62 and 63 is that the regulations be submitted but that they not, they -- we don't necessarily say they have to be approved. Is that correct?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, that is correct.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

And it's the gentleman's opinion that under the regulatory process, a request for an extension would meet the guidelines, the statutory requirement of this language?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Perhaps if you could rephrase that and not ask for an opinion.

REP. MINER (66th):

Thank you, Mr. Speaker.

And so my read of this is that the regulations would need to be submitted by July 1, 2018, and the gentleman, I believe, has said that the agency under the regulations' process could request an extension. I don't see, through you, Mr. Speaker, where requesting an extension meets the definition located in 62 and 63 with regard to the timeline.

Through you.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, the gentleman is correct; it's not addressed in this amendment. However, it is addressed in the UAPA, which has been promulgated in this state for -- for many years.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

And -- and so I know there was some prior dialogue about businesses in Connecticut, I think in the eastern part of the state, that have expressed an interest in treating perhaps wastewater from drilling facilities. I guess the message is that we are expecting the DEEP to have applied by July 1st, but not necessarily.

Mr. Speaker, if we go to the next page, on line 92, there's some language here that talks about a process by which the Commissioner will request information, if the gentleman could tell me how this process will work.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, that -- that process will be determined by the -- the Commissioner of the department. But I imagine it could involve requests in writing, requests from other means, electronically, perhaps. But the intent of this section is to get the information about these products necessary to determine what type of regulations the department should adopt.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

And if the gentleman could tell me, am I correct that this would be in place after the regulations are adopted?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, not necessarily; the

department could implement this process of information gathering, and they very well likely should, as they're doing their investigative process during the three-year period before which they are required to submit regulations to the regs review committee. Through you, Mr. Speaker.

SPEAKER SHARKEY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker. And if the gentleman knows, is there a process currently under way? I know there's been a fair amount of press about the fact that, in New , some of these substances are being used on the roadways for deicing. If the gentleman knows, has anyone indicated to him that that, in fact, is the case already? Through you, Mr. Speaker.

SPEAKER SHARKEY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker. I'm not aware if that process has started yet or not, but this section would indicate that the department would like to start that process if they have not yet begun. Through you.

SPEAKER SHARKEY:

Representative Miner.

REP. MINER (66th):

And once again, Mr. Speaker, then, so if the agency wants to begin that process, if I have a company that supplies liquid to the State of Connecticut for deicing, if the gentleman knows, will they be making requests to every entity that acquires liquid for the purpose of deicing? Through you.

SPEAKER SHARKEY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker. I would imagine no. I think that the department would be judicious in which companies and which products they choose. If they have reason to believe that the product is derived from fracking waste, they would make such a request, but I have no reason to believe that they would make that request to every company that makes such a product. Through you, Mr. Speaker.

SPEAKER SHARKEY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker. And in the same section of -- there's some language here that talks about dust

suppression. If the gentleman knows, is there any process in place right now where the DEP manages liquids for dust suppression? Through you, Mr. Speaker.

SPEAKER SHARKEY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker. I'm not aware of such a process. I know that they have regulated products in the past, but I'm not aware of if they were these particular types of products. Through you, Mr. Speaker.

SPEAKER SHARKEY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker. So when I think about some of the construction projects that go on, especially in the milder months, more often than not, they're usually in conjunction with some dust control system. The gentleman is currently not aware of a monitoring system that would identify materials coming from out of state into Connecticut that may actually be used for that purpose might fit this definition? Through you.

SPEAKER SHARKEY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker. I'm not aware of such a process at this point in time.

SPEAKER SHARKEY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker. Earlier, Representative Case was asking some questions about a contractor that I believe he's --

A VOICE:

I can't hear.

REP. MINER (66th):

Questions about a contractor that he was aware of that actually was, I believe, involved in the process of either using or moving fracking materials. And, in line 77, the word "distribute" is listed. If the gentleman knows, is this language -- would this language restrict that Connecticut company from bringing equipment back into the state that may have some of these products in them, either liquid or solids? Through you.

SPEAKER SHARKEY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker. It could, but that particular equipment would have had to have been used specifically for the purpose of drilling a well for natural gas exploration. So if it was used for any other type of well, it would be able to be used in Connecticut. There would be no problem. Again, it's specifically for the use of drilling wells for hydraulic fracturing of natural gas. So my understanding, and I have had several conversations with Representative Case about this, as well as Senator Chapin, is that the company in question would not be affected at all through this legislation. Through you, Mr. Speaker.

SPEAKER SHARKEY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker. And so a Connecticut company that may actually move equipment outside the state, it stays out there for that purpose, may come back into the state for maintenance; that still would be all right under this language, would not require a

special permit, only if it was actually hauling some quantity of substance? Through you, Mr. Speaker.

SPEAKER SHARKEY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker. The gentleman is correct.

SPEAKER SHARKEY:

Representative Miner.

REP. MINER (66th):

And if the gentleman could tell me what that quantity of substance would be? Through you, Mr. Speaker.

SPEAKER SHARKEY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker. Any quantity that could be hazardous, so it could even be a very small quantity, but to be safe, I would say any quantity of such substance. Through you.

SPEAKER SHARKEY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker. And so, again, let's say, staying on the concept of a dust control process, if equipment leaves the state of Connecticut and goes to an area where it is permitted to use fracking waste as a dust control process, and that vehicle comes back to Connecticut, if the gentleman could tell me, how would someone ensure or assure that the materials in that tank did not contain fracking waste? Through you, Mr. Speaker.

SPEAKER SHARKEY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker. The department would not be testing equipment itself. They would only be looking at a product such as the deicers that were mentioned, products basically put on the market for sale. It would not be these types of equipment, to my understanding. Through you, Mr. Speaker.

SPEAKER SHARKEY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker. And so, if it was a company that had a 4,000 gallon tank on the back of a large piece construction equipment, and it, along with

other equipment, was sent out to Pennsylvania for some road project, and they were able to use these materials in dust control, is the gentleman stating that when that equipment comes back to Connecticut, there is no inspection and there is no permitting required? Through you.

SPEAKER SHARKEY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, I believe the gentleman is correct.

SPEAKER SHARKEY:

Representative Miner.

REP. MINER (66th):

Thank you. And the last question, at this time, deals with the sections in 105 and 107 where it is disclosable under Freedom of Information. If the gentleman knows, if there is a technology that may arise out of this process, so once permitted, if there is a technology, is that recoverable under the auspices of lines 1 through 7 -- 105 through 107? Through you, Mr. Speaker.

SPEAKER SHARKEY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker. If that technology is considered a trade secret by the company or person that develops that technology, it would be protected and redacted in Freedom of Information requests. So the department would have access to that information, but if considered a trade secret, it would not be available to the public. Through you, Mr. Speaker.

SPEAKER SHARKEY:

Representative Miner.

REP. MINER (66th):

So, in essence, if someone knew that the -- I guess it's the makeup of that liquid or the makeup of that solid, was able to do something that was patentable, the individual who had made that discovery would not lose the value of that patent through some exchange of either the DEP or some other state agency. Through you.

SPEAKER SHARKEY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, that is correct.

SPEAKER SHARKEY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker, and I thank the gentleman for his answer.

SPEAKER SHARKEY:

Thank you, sir.

Continuing on Senate "A," Representative Hoydick.

REP. HOYDICK (120th):

Thank you Mr. Speaker. Good afternoon. A few questions, through you, to the proponent of the bill.

SPEAKER SHARKEY:

Proceed.

REP. HOYDICK (120th):

Representative Albis, good afternoon. Thank you for bringing forward this bill and answering all the questions. I stepped out briefly, so I hope I'm not redundant. But could -- would you, in Section 1, specifically lines 41 through 63, where you've established the process and the timeline, could you go through that for me of why you laid it out particularly like this. Through you, Mr. Speaker.

SPEAKER SHARKEY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker. The reason it was laid out in this manner was to ensure that the department had enough time to do the research necessary to adopt the kind of regulations that they feel comfortable handling such waste. We want to make sure that they have all available science; they're able to do any testing that they need to do. So we felt a three-year time period was very adequate to ensure that the department does have that time. Through you, Mr. Speaker.

SPEAKER SHARKEY:

Representative Hoydick.

REP. HOYDICK (120th):

Thank you for that answer, sir. And I remember, in your discussion with Representative Miner, you stated that, if the department should need more time, they would just come back to -- I'm thinking the Committee of Cognizance would be the Environmental Committee -- to request that extension. Through you, Mr. Speaker.

SPEAKER SHARKEY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker. I'm not sure of the correct mechanism to do so, but there is a mechanism where, if they did need more time, they could request it, and they could be granted more time. Through you.

SPEAKER SHARKEY:

Representative Hoydick.

REP. HOYDICK (120th):

Thank you, sir, for that answer. I am in support of making sure that there is no hazardous waste in Connecticut, and you know, dotting our i's, crossing our t's, that this process be completely vetted before the waste crosses the border.

However, I'm a little concerned since we've had two bills in the Environment and in the Energy Committee, 5308 in the Environment Committee, 5304 in the Energy Committee, which talks about the same subject matter as in Senate Bill 237. In those bills and in the testimony that came through those -- through that public hearing process, the commissioner testified and requested a year to study this process, which seemed reasonable to me. And, through you, Mr. Speaker, I'll ask the kind Representative why this was extended to three years.

SPEAKER SHARKEY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker. I think in further discussions with the department, they were in agreement that a three-year time period would be appropriate. We will be back in legislative session again next year and the following year, so if we determine that, in fact, that's too much time, we can always come back and make changes. But my sense is that the three-year time period is adequate, and those involved in negotiations agreed with that assessment, including the department, so I think it's a valid time period for study and adequate study. Through you, Mr. Speaker.

SPEAKER SHARKEY:

Representative Hoydick.

REP. HOYDICK (120th):

Thank you, Mr. Speaker, and thank you, Representative Albis. I'm encouraged to know that should further discussion and further revelations come forward, that the three-year time is more than adequate, and the time period can be shortened for determining whether there should be a permanent ban, or moratorium -- excuse me -- that you and your

committee would be willing to entertain legislation to enact this, as I'm sure the good cochair -- the current cochair of the Energy and Technology Committee would, since she is the one who sponsored 5409.

I thank the good gentleman for his answers and just want to make a couple comments. In the commissioner's testimony on this subject matter, he did state that, in Connecticut, we have active hazardous waste management regulations under 22a through 449c. And in the proposal that they submitted in 5308, it would ensure that we are -- where we currently exempt waste from oils, gases, thermal energy, and are subject to the regulations of Connecticut's program, their endeavor to do the investigation required to determine if fracking waste was hazardous would be thorough.

And, again, as the commissioners said on March 4, 2014 -- he had asked the Energy and Technology Committee to substitute the following language that they had in 5409, which gave them all the procedures and process, within a year, to establish if this was hazardous. So I am encouraged by the good representative's comments that we would revisit this should the committee come -- the commission come back

-- commissioner come back and advise us that we do not need a three-year moratorium and that maybe we can move forward with the subject matter.

Thank you, Mr. Speaker.

SPEAKER SHARKEY:

Thank you, ma'am.

The question is on adoption of Senate Amendment Schedule "A." Are you ready for the question? If so, let me try your minds.

All those in favor, signify by saying aye.

REPRESENTATIVES:

Aye.

SPEAKER SHARKEY:

Opposed, nay.

The ayes have it. The amendment is adopted.

Representative Albis.

REP. ALBIS (99th):

Thank you, Mr. Speaker. Mr. Speaker, the Clerk is in possession of another amendment, LCO Number 5103. I'd ask that the Clerk please call the amendment and I be granted leave of the Chamber to summarize.

SPEAKER SHARKEY:

The Clerk is in the possession of LCO Number 5103, previously designated as Senate Amendment Schedule (indiscernible). Mr. Clerk, kindly call the amendment.

THE CLERK:

Senate "B" LCO 51 -- 5103 introduced by Senator Meyer.

SPEAKER SHARKEY:

The gentleman has asked leave of the Chamber to summarize. Is there objection?

Hearing none, Representative Albis.

REP. ALBIS (99th):

Thank you Mr. Speaker. Through you, this amendment makes a technical change, and it permits the department to link appropriate provisions of the hazardous materials law with the rules -- law and rules with fracking waste water. And, Mr. Speaker, I move adoption.

SPEAKER SHARKEY:

The question is on adoption.

Representative Shaban.

REP. SHABAN (135th):

Thank you, Mr. Speaker. Through you, a few questions to the proponent.

SPEAKER SHARKEY:

Proceed, sir.

REP. SHABAN (135th):

Thank you, sir.

Through you, Mr. Speaker. I believe, if the gentleman would confirm my reading, that the real change here, the technical change mentioned is the addition of the words -- I believe all it is, is "as applicable," going from lines 13 through 14. Is my reflection on the new language correct? Through you.

SPEAKER SHARKEY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, yes, that is correct.

SPEAKER SHARKEY:

Representative Shaban.

REP. SHABAN (135th):

Thank you, Mr. Speaker. And, through you, linking back to our earlier discussion about this particular section, i.e., the hypothetical I proposed that while we're going to flip the switch, so to speak, to hazardous waste while we learn about what's in this material and the DEP regulates this material, that in the possibility that our research determines

that maybe this isn't hazardous waste, as defined, but some other waste, a special waste. There's different types -- there's different levels of waste under our statutes, that this language, "as applicable," was added to capture that possibility, even though I admit it's probably a small possibility. Am I reading that correctly? Through you, Mr. Speaker.

SPEAKER SHARKEY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, that is correct.

SPEAKER SHARKEY:

Representative Shaban.

REP. SHABAN (135th):

I thank the gentleman for his responses. I stand in support of this amendment. Again, this was part of a collaborative effort to make the bill a little bit better. Again, the net result of what we're doing here is, let's have a moratorium, figure out what we're doing before we do anything. I think that's good public policy, but at the same time, not to shut the door on a potential industry or to do something in the absence of knowledge. So I support the amendment, and thank you, Mr. Speaker.

SPEAKER SHARKEY:

Thank you, sir.

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker. If I might, a few questions to the proponent on this amendment.

SPEAKER SHARKEY:

Proceed.

REP. MINER (66th):

Through you, Mr. Speaker. Is it the case that, if it is determined that these substances would not qualify as something that needed to be regulated, how would that occur? Through you, Mr. Speaker.

SPEAKER SHARKEY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker. I imagine that would be determined through testing, which the department would be required to do through this -- through this amendment and the amendment we have already adopted. Through you, Mr. Speaker.

SPEAKER SHARKEY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker. And so with regard to applicability, that determination would be made after some amount of testing on some substances? Through you, Mr. Speaker.

SPEAKER SHARKEY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, yes that is my understanding.

SPEAKER SHARKEY:

Representative Miner.

REP. MINER (66th):

And so, in terms of the start date, which is July 1, 2017, which would be the earliest that they could submit regulations, would that testing process be embodied in that regulatory authority? Through you, Mr. Speaker.

SPEAKER SHARKEY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker, yes.

SPEAKER SHARKEY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker. So until July 1, 2017, any product that may, in the agency's -- well, let me ask this question: How would the agency know which products would or wouldn't be limited prior to July 1, 2017? Through you, Mr. Speaker.

SPEAKER SHARKEY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker. This particular amendment does not speak to the products that may be derived from fracking waste. This is specifically from the waste from the drilling itself. Through you, Mr. Speaker.

SPEAKER SHARKEY:

Representative Miner.

REP. MINER (66th):

Fair enough. And so with regard to the waste products as a result of the drilling itself, how would someone know, through you, Mr. Speaker, which would or which would not come under the auspices of the regulations? Through you.

SPEAKER SHARKEY:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker. Any waste generated from the process of hydraulic fracturing for extracting natural gas would qualify and be subject to the regulations of this section and of the moratorium. Through you, Mr. Speaker.

SPEAKER SHARKEY:

Representative Miner.

REP. MINER (66th):

And in -- thank you, Mr. Speaker, and I thank the gentleman for his answers. And in line 3, there's a reference -- I think it's intended to speak clearly to what the effects of this bill would be once passed. And so, the word "receive," through you, Madam Speaker -- I noticed the switch. Through you, Madam Speaker, does the word "receive" mean physically take possession of? Through you.

(Deputy Speaker Sayers in the Chair.)

DEPUTY SPEAKER SAYERS:

Representative Albis.

REP. ALBIS (99th):

Through you, Mr. Speaker. My understanding is it could include that definition. Through you.

DEPUTY SPEAKER SAYERS:

Representative Miner.

REP. MINER (66th):

And through you, Madam Speaker, could "receive" also mean something that a company could have in its inventory?

Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Albis.

REP. ALBIS (99th):

Through you, Madam Speaker. I would imagine that that is correct. I believe "collect" or "store" could also fit that definition as well. Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Miner.

REP. MINER (66th):

And through you, Madam Speaker, for those businesses that would be domiciled here in Connecticut that may actually be in the business in other locations other than in the state of Connecticut, would the definition of "receive" restrict them in any way in taking delivery of these materials outside the state of Connecticut, even if they are on the books,

the management of their handling is on the books, and the like? Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Albis.

REP. ALBIS (99th):

Through you, Madam Speaker. No. It would only be concerning activity that occurs within the borders of the state of Connecticut. Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Miner.

REP. MINER (66th):

Thank you, Madam Speaker. And if I remember from an earlier discussion, any activity taking place outside the state of Connecticut that may have some residual deposit on equipment coming into the state of Connecticut would not be subject to this. Is that correct? Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Albis.

REP. ALBIS (99th):

Through you, Madam Speaker, no.

DEPUTY SPEAKER SAYERS:

Representative Miner.

REP. MINER (66th):

And the last question, in terms of transfer, once again, that would be the physical transfer, not a paper transfer of a quantity of substance that would otherwise fall under the requirements of this? Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Albis.

REP. ALBIS (99th):

Through you, Madam Speaker. The gentleman is correct. In fact, "transfer" is defined in lines 31 to 32 of Amendment "A," which has already been adopted, as to mean "to move from one vehicle to another or to move from one mode of transportation to another." Through you.

DEPUTY SPEAKER SAYERS:

Representative Miner.

REP. MINER (66th):

Thank you, Madam Speaker, and I thank the gentleman for his response.

DEPUTY SPEAKER SAYERS:

Will you remark? Will you remark further on the amendment that is before us? If not, let me try your minds.

All those in favor, signify by saying aye.

REPRESENTATIVES:

Aye.

DEPUTY SPEAKER SAYERS:

Those opposed, nay.

Senate amendment "B" passes.

Will you remark further on the bill that is before us as amended? Will you remark further? If not - oops.

Representative Hoydick, you have the floor, ma'am.

REP. HOYDICK (120th):

Thank you, Madam Speaker. That's a nice save.

Madam Speaker, through you, just a couple questions to Representative Albis, maybe one question.

DEPUTY SPEAKER SAYERS:

Please prepare your questions.

REP. HOYDICK (120th):

Thank you very much, Madam Speaker.

You know, over the last few years, we worked very hard on the Energy Committee to adopt a comprehensive energy strategy. There were several long bills, as we do in the Energy Committee, that came up to that point to adopt CES, and under the Governor's initiative

about reducing utility rates, CES focused on natural gas and the expansion of natural gas to allow our residents lower gas prices and lower electricity prices. And to the good representative's point, he just wants to make sure that this fracking waste is safe and it is not considered hazardous, and I applaud him for that.

My concern is that, if other neighboring states adopt a three-year moratorium, such as we are doing, we may lose access to that gas. And so, what I would like to ask, through you, Madam Speaker, is, Representative Albis, if this were to happen, and if one of the resulting problems was that we were incurring increased prices for electricity and natural gas, would you and the committee be willing to go back to the department and speed up the process for the review of fracking waste as a hazardous waste? Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Albis.

REP. ALBIS (99th):

Through you, Madam Speaker. That is always a possibility, and I would note also that the department does have powers in emergencies where they could make

determinations that we need to do something outside of the normal regulatory process if they felt it was necessary to either keep gas prices down or do anything else that they might feel is -- falls under an emergency type situation. But I would say that, in general, these states that are benefitting from the process of hydraulic fracturing are benefitting economically. They get taxes through this process, so if they're benefitting financially, we're benefitting financially, as well, but we're not seeing the majority of the economic assistance that these states are seeing.

So I think it's important that, if they're putting up the cost to reap these financial benefits that they also make sure that they're doing it in a safe manner and keeping the citizens of their state safe and ensuring the safety of our citizens as well. Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Hoydick.

REP. HOYDICK (120th):

Thank you, Madam Speaker, and I thank the gentleman for his answer. I couldn't agree more with the one caveat that we are reaping the benefits, and

we are reaping the benefits because our electricity rates are much lower than they were four years ago. And this is because of natural gas and fracking of natural gas. And it's happening in New York, and it's happening in Pennsylvania. And, again, my concern is that instead of spending, you know, $6 a dekatherm, or whatever the price is, we are going to be doubling that because of a moratorium on fracking waste or fracking.

So I thank the kind gentleman for his answers and will continue to listen to the debate. Thank you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Thank you, madam.

Representative Piscopo of the 76th.

REP. PISCOPO (76th):

Thank you, Madam Speaker. I rise for the purposes of bringing out an amendment. The Clerk has Amendment LCO Number 5652. Will the Clerk please call and I be allowed to summarize?

DEPUTY SPEAKER SAYERS:

Will the Clerk please call LCO Number 5652, and the gentleman has asked that he be allowed to --

A VOICE:

No. You have to designate it.

DEPUTY SPEAKER SAYERS:

And it will be designated House Amendment "A."

THE CLERK:

Madam Speaker, House Amendment "A" LCO 5652, as introduced by Representative Piscopo.

DEPUTY SPEAKER SAYERS:

Representative Piscopo, will you remark?

REP. PISCOPO (76th):

Thank you, Madam Speaker. This amendment simply talks to the -- to the question of if it does result in higher prices, if this policy does result in higher prices of natural gas, the commissioner could put a halt to it.

I move adoption.

DEPUTY SPEAKER SAYERS:

The question before the Chamber is adoption of House Amendment Schedule "A." Will you remark further, sir?

REP. PISCOPO (76th):

Yes, thank you Madam Speaker. This is real fortuitous that I just followed the questioning of the Ranking Member of Energy, because that was right to the heart of her questions on this. She said that we

went through a huge energy strategy plan in Connecticut. Last year we approved of this great strategy where we're going to bring in all this natural gas; it's going to be the driver of our energy source, the main driver of our energy source as we wind down nuclear. And it's cheap now with this new technology of fracking, and it's coming in from the Marcellus Shale of Pennsylvania and New York, and it's -- and we've -- Connecticut citizens have seen a tremendous decrease in their fuel prices. We have cold winters, and we've seen a huge decrease in our fuel prices.

So we can't take that for granted. I -- there's figures that we see $1200 a year less in our fuel prices than we used to as early as four years ago, so the Connecticut working people are seeing $1200 more than they would. It's like a raise. It's like being given 1200 bucks. And so, for all those reasons, I think this is a good amendment. I really worry about price -- the price of fuel going up, and policies like this will tend -- might tend to drive it up.

We all remember. I moved into a house in '92. Our house -- we bought our house in '92. It was natural gas. When we hit a cold winter, those gas

prices were quite, quite high. It really hurt our family, and now it is a little easier to deal with. It's a break. And this fracturing has been a huge technological revolution. It's opened this up to this tremendous flow of cheap fuel, and we should honor that and protect that. And I think the policies like this may detract from that. It may not. This gives the commissioner that discretion. If he sees that it's going to drive it up, it will.

So I would just hope my colleagues would join me in adopting this amendment. Thank you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Albis.

REP. ALBIS (99th):

Thank you, Madam Speaker. While I appreciate the sentiments of Representative Piscopo, I believe that this amendment is probably unnecessary. The department, like I mentioned earlier, already has mechanisms to be able to interact if there's an emergency situation. If suddenly our gas prices rise dramatically, they can adopt emergency regulations that would allow for the prices to drop and the circumstances that Representative Piscopo is outlining. I also think that, in general, any

disruption would not be -- in terms of gas prices, we may see disruptions in distribution, but I can't imagine that we would see the dramatic types of higher prices that he is describing.

So, Madam Speaker, I would urge my colleagues to vote against this amendment, and I would also request that when the vote be taken, it be taken by roll.

DEPUTY SPEAKER SAYERS:

The question before the Chamber is on a roll call vote. All those in favor of a roll call vote, please signify by saying aye.

REPRESENTATIVES:

Aye.

DEPUTY SPEAKER SAYERS:

The requisite 20 percent has been met. When the vote is taken, it will be taken by roll call.

Representative Yaccarino of the 87th.

REP. YACCARINO (87th):

Thank you, Madam Speaker. I rise in support of this amendment. We should look at the three-year moratorium as far as the scientific evidence, but this amendment gives the State of Connecticut -- in the energy use, it's a line of insurance, and it's a very proper and smart amendment. It's like having an

insurance policy for our taxpayers and for our energy usage. And so I urge strong support of this amendment. Thank you.

DEPUTY SPEAKER SAYERS:

Representative Chris Davis of the 80th.

REP. DAVIS (57th):

Thank you, Madam Speaker. And if I could, a few questions, through you, to the proponent of the amendment.

DEPUTY SPEAKER SAYERS:

Please prepare your questions, sir.

REP. DAVIS (57th):

Thank you, Madam Speaker. I'm looking at lines 8 and 9 of the amendment. Through you, Madam Speaker, we're talking about higher prices are likely to contribute to higher prices, and through you, Madam Speaker, what would constitute a higher price? Is it literally just a short-term spike in the price, or is it something that has to be long-term higher prices? Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Piscopo.

REP. PISCOPO (76th):

Thank you, Madam Speaker, and thank the gentleman for that question. It -- and the reason why it was worded this way is very important because it could be either. The commissioner, as he's adopting these regulations, and I left it purposely loose like that so it's with the commissioner's discretion. He may see a spike in a price just on maybe a -- like what happened this winter when our pipelines choked up. So he may see a temporary spike. Maybe that would not necessitate a loosening of the regulations. I think it's up to the commissioner to make that determination, so I specifically left it like that.

And, yes, the gentleman is correct in citing that line that it is reasonably likely to contribute to higher prices for natural gas. Over the long run, I would believe it would be his discretion, but it's a -- for his or her, whoever the commissioner is at the time's discretion as they're doing these regulations. Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Davis.

REP. DAVIS (57th):

Thank you, Madam Speaker. And I also notice that in line 9 of the amendment we say higher prices for

natural gas in Connecticut or New England. And through you, Madam Speaker, does it have to be -- if for instance, say it goes up in Maine or Massachusetts, but not here in Connecticut, would this then mean that they could -- they could delay the adopting of these regulations? Through you.

DEPUTY SPEAKER SAYERS:

Representative Piscopo.

REP. PISCOPO (76th):

Thank you, Madam Speaker.

Yes. And then this is important, too. We're a region here, and the gas flows in through pipelines. It crosses many of our states. The commissioner may see a trend where Massachusetts, Rhode Island is starting to -- the prices of their natural gas is starting to go up. It's pretty much we are in that market of New England, so the commissioner could look to other states and see what's happening there. A lot of times we're pretty similar with the -- most times we're pretty similar, the natural gas prices, with that of all of New England. But this gives the commissioner to use that discretion. It may happen in one state in New England. It may not -- you know, Maine may be just getting hit by those nor'easters

that got to our north a lot and don't hit us for a particular season, but its generally the whole New England territory. Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Davis.

REP. DAVIS (57th):

Thank you, Madam Speaker. So, through you to the proponent of the amendment, we're saying that it may be contributing to or is reasonably likely to contribute. Through you, Madam Speaker, that reasonably likely to contribute, would that be kind of where we would see, perhaps, those issues going on in other states affecting us? Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Piscopo.

REP. PISCOPO (76th):

Yes, Madam Speaker, absolutely. Here we are -- you know, we're not taking the -- the waste -- we choose not to take the waste. Our gas prices may go up. They may give

-- if another New England state decides to treat the waste, and they're doing it effectively, and it's cost-effective for a company, and their prices go down

as a result, kind of a benefit to them, the commissioner can use that discretion also. Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Davis.

REP. DAVIS (57th):

Thank you, Madam Speaker.

And I just wanted to be sure and follow up on what the kind Representative just said, that this amendment solely says that it would be up to the discretion of the commissioner; it wouldn't necessarily say that, if those prices go up, then they automatically delay the regulations. Is that correct? Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Piscopo.

REP. PISCOPO (76th):

Madam Speaker, I apologize. Would the maker of the question please repeat his question?

DEPUTY SPEAKER SAYERS:

Certainly. Representative Davis, if you would -- Davis, if you would please repeat your question.

REP. DAVIS (57th):

Thank you, Madam Speaker. I was just following up on a comment that you made at the end there and just clarifying for the Chamber that this is only for -- at the discretion of the commissioner, so you know, if they do not want to move forward with it, they don't have to. If they do want to move forward with it, this doesn't necessarily mean that once the prices go up that a delay is to take place. Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Piscopo.

REP. PISCOPO (76th):

Thank you, Madam Speaker.

Yes, the gentleman is correct. And that's exactly the way that it was written. That's exactly the way I wanted to write it, to leave it at the discretion of the commissioner, and we can -- you know, we always, as legislators, have the right to call a meeting. The commissioner comes to the Environment Committee quite often or the Energy Committee, and we can question him on it if it goes one way or the other. If we don't agree with his -- his decisions. But yes, it was very important that it was at the discretion of the commissioner, so I

chose to leave it like that. Thank you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Davis.

REP. DAVIS (57th):

Thank you, Madam Speaker, and I thank the kind gentleman for his answers.

It would appear to me, based on my questioning of the proponent, that whether you're for the moratorium or you're against the moratorium, this amendment, in fact, makes this bill even that much better because it allows for the discretion of the commissioner. When looking at the prices throughout -- not only here in Connecticut, but throughout the entire region here in New England, and be able to make a decision, okay, you know, we have the moratorium in place, and we're going to adopt these regulations, but maybe if we slow that down, maybe we can provide some relief for our citizens here in the state of Connecticut.

I think it -- if that's the case, whether you're for or against this whole idea and the underlying bill, this amendment certainly would just make the

bill that much better. So thank you, Madam Chairman -- or Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Sampson of the 80th.

REP. SAMPSON (80th):

Thank you, Madam Speaker. I rise in strong support of the amendment before us as well. I think that a very good case has been made for the fact that we cannot predict what the future might hold for energy prices or even the status of so-called "fracking waste" in the future, and I think that this bill is very simple protection that allows the commissioner of DEEP the discretion to decide whether or not a moratorium has any merit at a given point in the future when the facts may become more clear.

The reason why I like this amendment so much is that it doesn't hurt anything. The fact is that the bill remains intact. All we're doing is we're creating a mechanism by which, if something does happen, the changes -- what our perception of the future might be, we have given the power to the person who is most responsible to make the proper decision at that time. So for those reasons, Madam Speaker, I support this amendment. Thank you.

DEPUTY SPEAKER SAYERS:

Representative Aman of the 14th.

REP. AMAN (14th):

Thank you, Madam Speaker. To the proponent of the bill, I will have some questions.

DEPUTY SPEAKER SAYERS:

Please prepare your questions, sir.

REP. AMAN (14th):

Looking at the amendment, you use the word "preclude." Could the proponent explain why he particularly used that to describe the commissioner's ability to act quickly in making these regulations? Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Piscopo.

REP. PISCOPO (76th):

Through you, Madam Speaker. Would the gentleman please direct me to the line and the word he's questioning me on? Through you, Madam Speaker.

REP. AMAN (14th):

Yes. Maybe I'll rephrase it. Is there anything in the underlying bill that would prevent the commissioner from making a decision more rapidly, or is the way the bill is set up, is there a time frame

for them that he would have to follow? Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Piscopo.

REP. PISCOPO (76th):

Yes. Through you, Madam Speaker, I think that's the reason why I offered that amendment. It was -- and in fact, it was fortuitous I went right after the ranking member of Energy. That questioning that preceded this amendment was just that. We weren't sure that there was a timeline that the commissioner had this discretion in the underlying bill. So this does make it a little clearer. This gives it the commissioner that discretion to act on that particular case where, if our prices do go higher as a result of this new regulation, the commissioner can then make adjustments. But, in the underlying bill, I was worried that there was no timeline that precluded that. Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Aman.

REP. AMAN (14th):

Yes, would these regulations that they came up with have to go through the Legislative Review Committee process? Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Piscopo.

REP. PISCOPO (76th):

Thank you, Madam Speaker.

That's a great question for the proponent of the bill, but I would imagine they would. I would imagine that they would.

DEPUTY SPEAKER SAYERS:

Representative Aman.

REP. AMAN (14th):

Madam Speaker, may I direct that same question to the proponent of the bill: If the underlying bill has a timetable and if Legislative Review would have to go through it? Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Aman, we're currently on House Amendment "A." Could you save your question till we're on the bill?

REP. AMAN (14):

The concern I have with that is I understand what the attempt of this amendment is of giving the

commissioner a chance to do things more quickly, but the amendment, unfortunately, does not address the question of our Legislative Review Committee, and some of our problems with Energy and the Legislative Review Committee over the past year, has shown an ability for the agency and the committee not to agree and have regulations take a very long time to get together. So I will be asking those questions, at some point, to the proponent, but I think it ties into -- exactly into this amendment.

Also, I agree that trying to get the commissioner, giving them the flexibility, when they see a crisis, to move forward, whether it's a major crisis or a minor crisis, if they think the regulations are ready to go, I think they should be produced just as soon as possible. Thank you, Madam Speaker, and thanks to the proponent of the bill.

DEPUTY SPEAKER SAYERS:

Thank you, sir.

Representative Alberts of the 50th.

REP. ALBERTS (50th):

Good evening, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Good evening.

REP. ALBERTS (50th):

Thank you. And for the first time, on House Amendment "A," I have a few questions for the proponent of the amendment.

DEPUTY SPEAKER SAYERS:

Please prepare your questions.

REP. ALBERTS (50th):

Thank you, Madam Speaker.

In looking at the line -- line 9, which makes reference to higher prices, could those -- would those prices be wholesale or retail? Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Piscopo.

REP. PISCOPO (76th):

Thank you, Madam Speaker.

I think the way this amendment is written, it could be both. It could be just -- it could be wholesale -- the wholesale prices as they come into the state and the retail prices as the wholesale -- turns it. The regulations that the commissioner -- that are going to be adopted to enact this legislation, may have -- may have a connection to either one of those processes, so I particularly left

that discretion up to the commissioner to decide whether it be wholesale or on the retail level. He can look at the state as a whole, he can look at the flow of gas coming into our state, and he can look at the distribution level -- the distribution to each individual user. Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Alberts.

REP. ALBERTS (50th):

Thank you, Madam Speaker.

And I notice there wasn't a distinction for delivery to either residential or commercial customers. Would there be a distinction here for residential or commercial customers, or do they pay different rates? Does the proponent know that? Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Piscopo.

REP. PISCOPO (76th):

I believe, through you, Madam Speaker, the question is on is there a distinction between residential and commercial. Yes, sometimes there is. And this particular amendment would speak to that. It would give the commissioner the discretion to see if

either of those are rising and act accordingly.

Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Alberts.

REP. ALBERTS (50th):

Thank you, Madam Speaker.

And I know that in some sources of energy delivery, like electricity, we often have the actual cost of the source of energy, and then we also have a distribution charge. So would this be applicable, this reference to higher prices, could it be to either the cost of the gas or the transmission distribution cost of the gas or the total thereof? Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Piscopo.

REP. PISCOPO (76th):

It could be on the distribution or the transmission. And that's the reason that -- that we have to -- that we give the commissioner discretion to see how these regulations are going to be adopted. The word "preclude" that the earlier questioner asked me on, on line 4, is very important in this amendment: It shall preclude the commissioner of the

Environmental from adopting regulations required. So the commissioner may do it in advance of the time this moratorium may be over. Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Alberts.

REP. ALBERTS (50th):

Thank you, Madam Speaker.

And I know some of the commodities have differing rates. They may have an actual spot rate, which is what the market condition is now, or they may have a futures rate in terms of what the cost is for delivery for that. So when we make reference to higher prices, are we making some type of distinction between the spot price or futures price? Are we giving the commissioner the wherewithal to make that judgment? Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Piscopo.

REP. PISCOPO (76th):

Yes, Madam Speaker, through you, absolutely we are. If the commissioner sees, in the future, there may be, through a certain company's actions, contracts with the state, interaction with different wholesalers in the state, the commissioner then can -- would then

be able to make that adjustment. If he sees that, in the present, it's going along fine, then there would be no need to, of course. But yes, absolutely, both in present time and into the future because companies may start, you know, looking at Connecticut in a negative way if we start -- if we -- if we offer a moratorium, if we offer a prohibition maybe in the future, and so it's -- we would give the commissioner that discretion.

And that's a very good question. That kind of gets to the heart of this -- of the intention of this amendment. Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Alberts.

REP. ALBERTS (50th):

Thank you, Madam Speaker, and I think this is my final question to the proponent.

So there's nothing in this amendment that would preclude the commissioner of Energy and Environmental Protection from consulting with other commissioners like, for example, DECD to look at the impact of these rising rates. Is that correct? Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Piscopo.

REP. PISCOPO (76th):

Through you, Madam Speaker. Yes, that's absolutely correct. There's nothing that prevents the commissioner from doing this. It's the and -- "and out of state also" was the reason why we include New England in the verbiage in, I think, the last word of this amendment. So not only Connecticut, he can confer with commissioners of other states -- other agencies in other states -- he or she. And that's a -- so that's the reason why that word is in there too. Through you, Madam Speaker.

DEPUTY SPEAKER SAYERS:

Representative Alberts.

REP. ALBERTS (50th):

Thank you, Madam Speaker. I do thank the proponent for his answers.

DEPUTY SPEAKER SAYERS:

Representative O'Neill of the 69th.

REP. O'NEILL (69th):

Yes, thank you, Madam Speaker. If I may, just a couple of questions.

With respect to the amount -- it talks about a price increase. Is there any amount that we're

talking about, a percentage amount, a dollar amount that is called for as the trigger point for a price increase that the commissioner might use discretion to exercise? Through you, Mr. Speaker.

(Deputy Speaker Godfrey in the Chair.)

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Thank you, Mr. Speaker.

No. I didn't -- I didn't part -- on purpose, I did not want to put a particular price rise in. If the prices rise by 10 percent, 20 percent. I didn't want to necessarily put a price increase in. I left it up to the discretion of the commissioner on purpose. And, you know, the commissioner could take a whole host of different factors into consideration when thinking on this price increase after the regulations are in. It could be the drive-through costs. It could be transportation costs. And so I particularly left it up to the discretion of the commissioner. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative O'Neill.

REP. O'NEILL (69th):

Thank you, Mr. Speaker.

And with respect to the mechanism by which the commissioner is to determine whether or not it is the absence of the regulations being enacted that is contributing to the increased cost of natural gas, how is the commissioner supposed to do that? Is there some formula that we know of or some method of calculating prices by which the commissioner would be able to determine how much, if any, of the cost in price increase is related to the absence of regulations on the subject of the disposition of fracking waste. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Through you, Mr. Speaker. No. I think this is a check and balance that is put in, that will be put in this new piece of legislation. This is new ground we're going

-- we're going through. These are going to be a new policy that's being proposed here today on the last day of session. And so there's an unperceived cost

that can be -- that can occur, so particularly, that's the reason why the amendment is written the way it is. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative O'Neill.

REP. O'NEILL (69th):

So, then, the -- the commissioner of the Department of Environmental Protection and Energy will have sole discretion in his or her own opinion as to whether or not the regulations are contributing an increase, assuming that there is an increase, in the price of natural gas, that the regulations are a contributing factor. Is that correct? Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Through you, Mr. Speaker. Yes, and there's -- the commissioner has to take in a lot of different factors. And it is solely in his discretion. He -- of course, he is attuned to the EIA, the energy assessments that come in to the state, very, very detailed set of curriculum and formula. In judging prices of energy, he could make that discretion. If

it's because of just an increase in the supply -- a decrease in the supply, an increase in the cost, he can make that discretion.

And so that's the reason -- that's one thing. And, of course, he has -- that's the check. The balance is, of course, us. We're the Legislature. He will, as part of our comprehensive energy strategy, be submitting reports to the Energy Committee and the Environment Committee on an -- I think it's an annual basis so we could keep an eye on the increased cost of natural gas and all other energy costs into this -- into this state. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative O'Neill.

REP. O'NEILL (69th):

Thank you, Mr. Speaker.

And I just want to be -- make sure I understand what the amendment is doing, because some of the earlier speakers seemed to be talking about the regulation as being not imposed or seemed to imply that by the commissioner not taking action or that this was going to block some sort of action. But, as I read the amendment -- and I want to be sure that this is the intent of the proponent -- the purpose

here is to expedite the issuance of the regulations by the commissioner so that the commissioner will, more quickly, produce regulations than in the absence of this amendment. Is that correct? Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Yes. Through you, Mr. Speaker, yes, that is correct and that is the intent. There may be an -- there may be unforeseen costs. We just adopted a strike-all amendment. We -- it's been vetted through -- with members of the legislative -- of a working group here in the Legislature. But we just adopted a strike-all amendment, and so there may be some unforeseen costs. So that, yes, the answer is yes. And that is the intent of this amendment. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative O'Neill.

REP. O'NEILL (69th):

Mr. Speaker, are you okay? You seem to be struggling.

DEPUTY SPEAKER GODFREY:

It went down the wrong way. Thank you, Representative O'Neill. Proceed.

REP. O'NEILL (69th):

Thank you, Mr. Speaker.

The -- the increase in the prices that we're talking about, which I guess the commissioner is going to have to solely determine what they are, or if there's an element that's contributing to this, if someone wanted to challenge the commissioner's actions; in other words, question whether or not the price increase was caused by the absence of the regulations dealing with the subject of fracking, what would they do? How would they challenge or question that? What is the trigger mechanism, if any, that would sort of say no, it's not due to the absence of the fracking regulations? Is there anything, any piece of evidence that could be produced that would say, No, commissioner, you're wrong; it's not being caused by the absence of those regulations? Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Thank you. Through you, Mr. Speaker.

Well, the first questioner, of course, would be us when the commissioner comes before the Legislature's Environment and Energy Committees with the comprehensive energy strategy plan. And the second it would -- court -- would be our judicial branch, and that may even be an avenue that we could take. And that would be -- that would drive up more of the costs also. But that's a -- that's the only two avenues I could come up with right off the top of my head, Mr. Speaker. Through you.

DEPUTY SPEAKER GODFREY:

Representative O'Neill.

REP. O'NEILL (69th):

Thank you Mr. Speaker.

I was thinking more along the lines of, assuming that the regulations are presented to the Regulations Review Committee for their review, and then the question is raised about whether or not the cause of the increase in the prices is because of the absence of the regulations, if I were -- if these regulations, if this law were in effect today and we had a committee meeting today, what would I be able to say, if anything, to challenge the commissioner's

determination that the price increase was caused by the absence of the fracking regulations?

Is there anything, any fact that I could point to, a government agency report, documents, what could I say as an argument to say, Mr. Commissioner or Madam Commissioner, you're wrong, it's not the fracking regulations absence that's causing the price increase; it's something else? Is there a -- what could I do to say it's not fracking regulations if the prices went up -- the fracking regs haven't gone into effect, the prices go up, what can I use to show it's not the fracking regulations that are causing the price to go up? Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Thank you, Mr. Speaker. Through you, I think you'd take a historic perspective, of course. And the Energy Committee would -- would do that. Since fracking started, we -- just before fracking, we were paying an exorbitant amount of price for natural gas. Our gas bills were extremely high to heat our homes in the winter, and other uses of natural gas. So, and then after fracking, you saw the price of natural gas

go way down under the price of oil, of home heating oil, Number 2 home heating oil, well under oil. And that was opposite just before fracking, so I think you would use a historic perspective, of course, right up front and see that the prices were at a -- not a low level.

This is what I fear, that now, with policies like this, it may drive up the price of natural gas, so I kind of fear that. And -- and like I said earlier, our own government is -- has a plan where we're starting to push our own natural gas policies. Our comprehensive energy strategy plan was hugely dependent on natural gas from fracking, from the Marcellus Shale. It -- we depend on it, and we saw that this winter when it got real cold and the pipelines were being choked off.

So we are very, very much dependent on this low-cost fuel, and our economy will do much better as we keep it low. I worry that policies proposed in the underlying bill may drive that up. So this amendment is just simply a precaution to try and avoid that. So the answer to my friend's questions are a historic perspective, of course, since we started fracking, and all the literature, the energy assessments, the supply

and demand, the other states now that are putting in pipelines -- sometimes pipelines go right through Connecticut into New York. Are we getting -- are we tapping into those? -- and, of course all those many, many other factors that can contribute to this. Thank you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative O'Neill.

REP. O'NEILL (69th):

Thank you, Mr. Speaker.

But, I guess looking at the historical record, we've seen that there's been a drop in the price of natural gas. As I understand it, there have been no facilities that dispose of the waste product from fracking, constructed or proposed, here in the state of Connecticut. And I would ask that as a question to the proponent of the amendment. Am I correct that there have been no fracking waste disposal facilities established in the state of Connecticut or proposed for the state of Connecticut at the present time? Is that correct? Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Yes, through you, Mr. Speaker, that is exactly correct. There has been no proposed facilities. To the best of my knowledge, in Connecticut, there's been none that have seen -- have expressed an interest of taking in fracking waste, absolutely zero. There's some that want to treat the waste, but they want to do it on site. They do the research in Connecticut. I believe there's a firm out of Stonington that wants to -- that is developing technologies to treat the waste. But, as brought out in earlier questioning on the underlying bill, the best practice is to treat it on site. It a -- it's just a huge -- just the volume of waste coming out of those wells makes it cost-prohibitive to send the waste to Connecticut.

And it makes it cost-prohibitive to send it to Connecticut; best practices make it just prudent to treat it on site. The distance that you would have to truck or train the waste in by rail to Connecticut and storage, would be -- the cost-benefit would be would be totally exorbitant, so I understand the gentleman's question, and so that's the answer to his question. I just -- I put the amendment in because, as we see these policies even being proposed, let's put in this safeguard anyway.

The bill is in front of us, anyway. I was fishing for an answer why this bill is in front of us because there's no facilities here in Connecticut. We don't want it. No one wants to send it to us. I don't know why the underlying bill is in front of us, but since we're dealing with this policy, my reaction is to try and put a check and a balance on the underlying bill with this amendment.

Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative O'Neill.

REP. O'NEILL (69th):

Thank you, Mr. Speaker.

It seems to me that, based on what evidence we do have, we don't -- there have been no fracking facilities built and/or proposed for the state of Connecticut. The price of natural gas produced by fracking has plummeted over the last few years. Based on the discussions we've just had, I'm not sure that fracking has been the sole cause of the decline of the price of natural gas. Perhaps that is the major driving force, but whatever is going on, the existence or nonexistence of fracking waste disposal facilities here in the state of Connecticut, doesn't -- can't

possibly have had an impact on the decline in the prices.

So, basically, by not having any in the future, it's hard for me to see how you can show that the absence of regulations that would govern how this could or could not be done in the future, a thing which hasn't been done up till now, how that absence can impact the price of natural gas. So I guess I'm -- if I were the commissioner, or if I were reviewing the commissioner's work product, I would have a very hard time seeing the relationship between the regulations in Connecticut and the price of natural gas, which as I understand it is pretty much of a national market, possibly even a global market in terms of production and distribution of the stuff.

Although, my understanding is that there is some measure of regulation that's imposed in the state of Connecticut that governs the price somewhat. So I guess I'm struggling a little to understand how this is going to work, especially from the standpoint of someone on the Regulations Review Committee, who's going to have to determine whether or not the regulations are in comportment with the intention of

the bill -- the amendment if it becomes part of the bill and then becomes law.

Thank you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Thank you, sir.

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

I guess what I want to do is try and follow Representative O'Neill in getting to the bottom of what is intended with this amendment. It seems rather simple on its face, nine lines, but I'm -- I guess I'm kind of struggling with the process. And so, if the gentleman could tell me, through you, Mr. Speaker, is it strictly the price of natural gas that would be the determining indicator that a commissioner would have to reach, or could it be any other fuel associated with this process? Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Thank you. Through you, Mr. Speaker, yeah, it looks like -- yes, it's just natural gas. It's in line 9 of the amendment, for higher prices for natural

gas in Connecticut. The reason being is that this is -- this is the fracking technology, and I believe this is what the underlying bill addresses: The moratorium on treatment of natural gas, fracking waste out of a natural gas well. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

And in line 7, is it -- is it indicated anywhere that the commissioner on line 7 is the same said commissioner, which would be the commissioner of Energy and Environmental Protection? Through you.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Through you, Mr. Speaker, yes.

Let me see here, line 7: "Preclude the commissioner of Environmental -- Energy and Environmental Protection from adopting regulations required by said section at the time following its termination by the commissioner." Yes, it's in the same sentence of the Department of Energy and Environmental Protection. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

And so, in having the commissioner of Energy and Environmental Protection undertaking a process to determine whether or not the price of fuel had increased due to a delay in adopting the regulations, how would the gentleman suggest that they go about that process? Through you.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Thank you, Mr. Speaker.

I left that up to the total discretion of the commissioner. I believe that there's reports coming in regionally. The EIA report, the energy assessments come in on a daily basis, monthly basis, quarterly basis, and I think that would give the commissioner that kind of information. As they set up the regulations for treatment -- or the regulations implied by this section, I believe that it would -- it would take that into consideration. It would take in a whole slew of different factors: supply, demand,

what different states are producing and not, and different wells, even. I think it would a whole host of different factors that the commissioner would have at his or her -- at his or her discretion. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

And in line 7, it refers to a delay in the adoption of such regulations. So if the gentleman could help me understand how it is that delaying the adoption of regulations would somehow impact the price of natural gas either in Connecticut or in New England. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

This addresses - through you, Mr. Speaker. This addresses the probability that the moratorium -- the proposed moratorium in the underlying bill, or the proposed ban, is affecting our natural gas prices, so this line, I hope it's -- yeah, as it's correctly

drawn, and it addresses that. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

And so, in terms of the reference to delay, it is not so much the adoption of the regulations themselves than it is the time lapse between the effective date of the underlying bill and the time at which the regulations would be in place. Is that correct? Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Yes, through you, Mr. Speaker, that's correct. And that's why I gave the commissioner that kind of discretion. With the word "delay" in there, it's -- anything can happen. We're dealing with a whole new policy here on the last day of session, so it is my concern. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner -- Representative Miner.

REP. MINER (66th):

Well, thank you, Mr. Speaker. I didn't hear you.

And so, in terms of making that determination that somehow, because of the delay, the market has somehow changed, is there -- is there a requirement that the commissioner actually make a nexus between that delay and the cost of fuel, this natural gas. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Through you, Mr. Speaker, yes.

The question was on is there discretion with the commissioner in making that connection; is it the moratorium that's causing the higher gas prices or the delay in regulations. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

And so, as I think about this process and just what's occurred here naturally in the course of the last four months, I guess -- I mean we haven't changed our current tax policy here in Connecticut. The tax on the price of fuel has been stable, and I can't

necessarily speak to the pricing of fuel in other states in this country, but knowing that the process of hydrofracking goes on in Pennsylvania and Ohio, the Dakotas, Texas, Oklahoma, so I'm trying to imagine this process by which the commissioner of the DEEP, with a very limited staff that I suspect has no real background in economics, would go through the process of singling out, individually, the difference in pricing from the effective date of the bill, at any point in time, to try to make a determination whether or not that delay, in and of itself, was the cause of the increase in the price of natural gas.

So, as I said, Mr. Speaker, you know, I mentioned the price of just the fuels by which a lot of this equipment operates. I can only imagine that, as the commissioner and his staff go through this rather arduous process, they would have to single out, separate, if you will, from the equation, cost of insurance, cost of licensure, cost of fuel, cost of transportation, all those other costs and specifically vest the increased price of natural gas, if you will, on the delay itself. Is that correct? Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Yes. Through you, Mr. Speaker, yes, that's absolutely correct. And I couldn't have said it better myself. The gentleman, in his question, outlines the reason why this amendment is before us. I was very, very concerned about that. We have a lot of Marcellus Shale in Ohio and Pennsylvania, and it's being produced at a quite high volume, and it's producing very, very low-cost fuel. New York has its moratorium on high-volume fracking. There's tremendous reserves of Marcellus Shale in New York.

You see towns in New York that are -- they were distressed. I don't know if I could use the word "impoverished," but they are distressed. Their economies are really hurting. You see them holding billboards, demonstrations: Let's bring fracking into this town. The people of different villages and towns in New York, upper state New York, where the Marcellus Shale is, are asking for this technology that would just be a boom to their economy. And I think this policy we have in front of us directly affects that policy in New York. So if we stop, New York is

affected by that, if I may make that correlation. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

And so, following on with that correlation, then it wouldn't necessarily be the delay to reach the conclusion that somehow this material, these fracking materials fit in some category either of hazardous waste or not hazardous. It's the delay caused by any responsible investor in not wanting to actually go through the effort of, I guess, setting up shop in the state of New York or one of these other states to extract the natural gas through the process of fracking because the State of Connecticut somehow would have made a determination that that residual material, the waste of the fracking byproduct is something other than hazardous waste. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Thank you, Mr. Speaker.

That's correct, and I -- and yes, the answer is a simple yes. It's a by the EPA, which has very, very stringent laws and regulations, do not classify this waste as hazardous. The underlying bill would then classify this waste as hazardous. It's a whole nother world when that classification becomes apparent. When that classification becomes regulation in Connecticut, it's a whole 'nother world. It's a whole 'nother expense in the way you even treat this stuff. So that's what my concern is, and that's the reason why the underlying amendment is before us. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

And so, again, there's nothing in this amendment that should cause us to be concerned, I guess. What the amendment seeks to find out or, at least, establish is that, in the process of evaluating whether or not these materials would fit some criteria, there's a, I guess, an economic impact evaluation on its cost to the economy at the same

time, and if that economic impact evaluation were to determine a year from now that to delay any longer in setting aside the definition for those items that the agency might know would not qualify as hazardous materials, they could actually go ahead and make that determination earlier than the 7 -- July 21, 2017, I think it was? Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Through you, Mr. Speaker, yes, absolutely yes. And that's -- and that was why I purposely left the wording of the amendment that loose, so yes. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

And so, through you, Mr. Speaker, the reason for the amendment, then, is not so much to cause someone to rush to judgment without some other purpose; it's to try to balance the potential impact to the economy, potential impact to homeowners who may heat their homes with natural gas, transportation for those vehicles that may run on natural gas. The development

of technology around the area of electric generation, I believe, also is directly related to the cost of natural gas. So the intent of this amendment is not to say let's forget it.

I believe the intent of the amendment is to recognize that, while we're going through this evaluative process, we know that other states have looked at these same substances and have said continue on. In Connecticut, where we don't have any plan whatsoever, that I'm aware of, to actually undertake this drilling exercise, I guess by not adopting this amendment, we would be saying, Well, that's all right. If the price of natural gas goes up, and it's going up either because you haven't made a decision on these materials or it's going up, and you know it's going up, and it's directly related to the cost of moving those materials or treating those material, then I guess that's okay.

You know, to some degree, Mr. Speaker, I think the administration has a responsibility to consider the implications on the taxpayers of Connecticut, and I'm not convinced that this is a bad way to do it. We're not saying, I think -- I believe the gentleman is not saying that we should stop doing the scientific

evaluation of these byproducts of drilling. I don't think he's saying that we should, you know, put out indefinitely or rush to judgment.

Well, let me ask that question through you, Mr. Speaker. Is it the intent of this language to only have the cost associated with natural gas be a part of this conversation? Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Thank you, Mr. Speaker.

No, not necessarily. And that's the reason why it was written this way. We -- there's a -- there can be a huge array of unintended consequences when we partake -- when we go down this new policy trend, so if this new policy is adopted, there may be unforeseen eventualities that we can't predict right now. So that is the reason. And that is simply -- I tried to do it in the word, but if I didn't do it in the word, that is definitely the intent of this amendment. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

And so just to clarify, when the gentleman answered my question, I think what he said was no. I believe what he said was no that that's not the purpose of this, and then I thought I understood him to say, at least through his description, that in fact, it was the intention of this amendment, that the intention was to try and have the evaluation done as to the economic impact of studying this and of making a determination or, in fact, not necessarily making the determination, just putting off the question of whether a determination could be made because I remember the underlying bill, which this seeks to amend, the agency is restricted from actually even going to the Regs Review process until July 21, 2017.

In fact, I think I asked the gentleman that question, and I believe it was pretty clear that they would be precluded from doing that. And so the answer that was given, I think most recently, seemed to indicate that yes, rather than no, the intent of this was to have them work at the same time, make a determination or attempt to make a determination, let's not be blind to the cost of natural gas in this

process. And if the gentleman could just confirm for me that, fact is true. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Through you, Mr. Speaker, yes, that is indeed true. It is well-stated, and that is the reason this amendment is before us.

I will say that I have amendments that may be coming up the future that will -- that will tend to try and address different aspects of this policy before the regs are due in '17. I have maybe -- maybe a few looks at this policy in a way that we could improve it, but the answer to the gentleman's question is yes.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

And the last question that I have on this amendment is that, in trying to make that determination, presumably sooner rather than later, if the gentleman has any idea whether there is something within the agency themselves in terms of people

technically qualified to make that definitive answer so that, as the commissioner, at that time, seeks to create some relief for the taxpayers because the cost of this energy is going up because the facts, at that point, seem to indicate that cost associated with this delay is directly affecting the price of natural gas to not only residents here in Connecticut, but also in New England, if the gentleman knows, do they have in house the technical capability of making that determination? Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Thank you, Mr. Speaker.

I don't know if they have the expertise provided in house. There's some very, very competent people in that department that can help the commissioner in making this determination, but the commissioner has the discretion seeking outside sources, reports, experts in the field, other states, how it affects New England, even, and the nation. So the commissioner will avail himself of every bit of information he can -- he or she -- I would hope. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker. The gentleman just mentioned one thing that triggered one more question, if the Chamber would indulge me.

And that question is that I can only imagine across this country there are other states attempting to deal with this same circumstance, maybe in some states where they actually have the kind of terrain, the kind of underground materials, gas, shale, where this would really, actually, be of some great value. And so, through you, Mr. Speaker, if the gentleman knows, has this -- has this amendment, what's embodied in this amendment, if he knows, to his knowledge, has it been done, offered, and accepted somewhere else in this country in an attempt to try and balance what I think is a -- is a definite interest in trying to make sure that we don't go down the wrong path in terms of accepting materials, having them deposited here, maybe having them treated, maybe having them used for dust control and, at the same time, balancing that action against the costs associated with the rising cost of natural gas? If he could tell us, are there any other

states that have actually taken a look at this?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Through you, Mr. Speaker.

To the best of my knowledge, Vermont might have been a state that has gone down this policy that's in the underlying bill. I believe Vermont has. I don't believe any other state is doing it, including maybe Hawaii or California, I can't imagine -- I don't know of any other state that's doing this. Vermont, I believe -- don't hold me to this -- has gone down this policy and actually banned the treatment of natural gas. Now, I don't know what that has done to its prices yet. That -- that will be maybe a subject of a -- of a question we can ask, research in the future or look up ourselves in the future.

Vermont -- I believe that the states that are doing it, that are fracking, are constantly looking at cost savings -- cost-saving ways to treat their waste, to bring down the price of natural gas because -- and the companies are looking for -- always striving to do -- have a cleaner waste product, a more efficient

system. Every day, every minute they're doing research and trying to make it cleaner and easier and more efficient to use. So the states that are actually fracking, of course, are looking into this, but to the best of my knowledge, that's the only answer I can give my friend -- the questioner. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

Perhaps I wasn't clear in my question. My question was related to the impact evaluation that I think this amendment seeks to have undertaken and whether or not that evaluation, as to the cost, has been done somewhere else. I know the good gentleman mentioned the state of Vermont as having done some evaluation, and I'm not clear, at this time, whether he was speaking, at least by virtue of his answer, whether he was speaking on the underlying bill and the testing that was involved in that or whether it was actually what was imbedded in this amendment, which I think is the economic evaluation of a delay. So if he

could just clear that up for me. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Through you, Mr. Speaker, yes -- to the best of my knowledge, no. I believe that any state looking into this policy, they'd be prudent to, of course, take a look at the economic impacts of this policy with its neighbors and within itself as a state. I believe it would be a prudent thing for any state to look into and adopt as policy if they're going to go down this route. So there should be a check and a balance into if you decide to ban something, what are the implications. And let's give somebody the power to make corrections if that, indeed, happens. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker, and I thank the gentleman for his help in clearing that up.

Mr. Speaker, you know we passed legislation here all the time. Sometimes it moves quicker than others.

And I think we have, at times, been marked as a state that is not as business friendly as other states. Maybe it is because different organizations look at what has passed other bodies within this General Assembly. You know, every now and again, you read an article that talks about something that came out of the Labor Committee having an effect on business. In this case, somebody might make the same claim about legislation that came out of the Environment Committee that seeks to establish a threshold that may or may not be warranted for the byproducts of something that we don't do.

If I understand the gentleman correctly, and I think he knows a lot more about this than I do, there's nothing in the offing for us here in Connecticut to actually drill for natural gas. There's no business plan for someone to poke a hole in Danbury and run a pipe all the way out to Pennsylvania and capture what might be in the shale, I guess. So I think it makes sense to look at just the mere cost of having this conversation. And we do this all the time, Mr. Speaker. As I said, whether it's a bill that flies through the Labor Committee or, in this

case, the Environment Committee, it has an effect on business.

Sometimes it has an effect on businesses that never intended to do business here. And, in this case, the only way the nexus is drawn is the cost of that product. So, as it comes out of the ground, we all know it's associated with its cost of not only delivery, but the cost of extraction, the cost of collection. It goes on and on and on. I think, if you look at the process, one thing is linked to the other. And the mere fact that we're talking about this legislation, let alone enacting this legislation, could very well have an impact on the price of natural gas, Mr. Speaker.

So I think that this is a very reasonable amendment. I think it allows the agency to look at the cost associated with any delay. They could begin to track it tomorrow if they wanted to. In fact, they probably should have began tracking it yesterday, knowing that there's already been some action on this bill. And let's make sure that the -- to the taxpayers of the state of Connecticut that this administration is not negatively impacting what goes on in terms of the cost of energy, in terms of the

cost of natural gas, but in fact, they're actually looking at this, not in a vacuum, that they're looking at this in conjunction with its safe passage through, its deposit in, its treatment of, and the economics involved in that product that we're all after, which is natural gas, Mr. Speaker.

So I would hope that the Chamber would join me in supporting this amendment, and then we can talk about the underlying bill. Thank you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Hoydick.

REP. HOYDICK (120th):

Thank you, Mr. Speaker. Through you, some questions to the proponent of the amendment.

DEPUTY SPEAKER GODFREY:

Proceed.

REP. HOYDICK (120th):

Thank you, sir.

Representative Piscopo, was it your -- would it have been your intent to file this amendment if the original date, as posed by DEEP, the DEEP commissioner, of a one-year or seven-month study period, moratorium to the study period presenting the findings to the Committee of Cognizance by February of

2015, would you have filed this amendment. Through you, Mr. Speaker.

REP. PISCOPO (76th):

Through you --

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

I'm sorry. Through you, Mr. Speaker.

Well, that addresses the timeline of when the previous questioner just summed up his remarks. It put it off till 2017. I think it would be more prudent to, so there would be no real need to. We should have been looking at this all along, probably all year because we knew this was coming in front of us as a Legislature. So this economic study should have been done because I do believe, in my heart, that it will drive up the cost of natural gas. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Hoydick.

REP. HOYDICK (120th):

Thank you, Mr. Speaker, and I thank Representative Piscopo for that answer. I also think it would have sped up the process of identifying if

this fracking water was hazardous or was not, thus allaying the fears of Connecticut residents.

Through you, Mr. Speaker, another question on intent.

Representative Piscopo, you state here the commissioner may stop the process of studying and developing regulations if the higher -- if the higher prices of natural gas results in Connecticut and New England. In that particular instance, are you talking about fuel as in heating? Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Yes, Mr. Speaker. And that's what I'm mainly concerned about, the fuel costs of that -- of the people on fixed incomes, the people that not necessarily cannot afford to heat their homes, that is one of my real concerns. Our priority is home heating. Of course, as the good woman -- as the good Ranking Member of Energy knows, natural gas is part of our comprehensive energy strategy now, and we're converting a lot of homes -- I think it was 200,000 homes -- in the near future to natural gas. So my -- we don't want to invoke a policy that would run

contrary to that, driving up the cost of all those new homes that were converting to natural gas.

So yes, thank you. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Hoydick.

REP. HOYDICK (120th):

Thank you, Mr. Speaker.

And, Representative Piscopo, would you consider -- since natural gas is a primary use for generation of electricity, would you consider and expand your intent that not only the price of natural gas for heating, but the price of natural gas for generating electricity should be considered? Through you, Mr. Speaker.

REP. PISCOPO (76th):

Yes, through you, Mr. Speaker, yes I am. And that is the -- again, that's why I left this amendment so loose. It takes into the consideration of natural gas, heating, electric generation, automobile, bus systems, transportation systems. It takes in that whole gamut. The whole market of natural gas is the reason why we left it to the discretion of the commissioner and left it so loose as just to say natural gas in all its forms that we use this cleanest

burning, most efficient source of energy. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Hoydick.

REP. HOYDICK (120th):

Thank you, Mr. Speaker. And, Mr. Speaker, this reminds me of another moratorium we've had within the last three years. And we, as a state and through the commissioner of DEEP and this Governor, have tried to generate cleaner renewable energy. And the last moratorium that we had was on wind, and for three years we had this moratorium on wind until the regulations were adopted. And my fear is that this will happen again here. And consequently, the price of natural gas, through the development and the study of the hazardous waste, may affect a variety of things.

And, Mr. Speaker, as you well know, we have developed a microgrid policy, not only for stability of the infrastructure, but also as an alternative generation source. And through you, Mr. Speaker, I'd like to ask Representative Piscopo, do you know how are those microgrids fueled? Through you, Mr. Speaker.

REP. PISCOPO (76th):

They can be fueled in a number of different ways, the microgrids. Some can be fueled by their own generation. Fuel cells, there's the new fuel cell technology, natural gas. I think there's a variety. The potential -- to set up the microgrids, there would be a potential of different energy sources to fuel those. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Hoydick.

REP. HOYDICK (120th):

Thank you, Mr. Speaker.

And I thank my colleague for mentioning fuel cells. The State of Connecticut has embraced fuel cells not only as a home-grown product, but also through programs, such as Project 150, which we just expanded yesterday in Senate Bill 357, which has passed the House and the Senate and is awaiting the Governor's signature. So fuel cell energy, which has -- produces jobs and produces clean energy -- remember it's a Class 1 renewable. It's one of those sustainable energies. It's one of those things that helps our RPS standards that we worked so hard on last

year -- might negatively be affected, especially if the price of natural gas is increased.

And what this amendment does is it's a trigger, it's a catch, it's a safety net. And what it allows us to do is the commissioner, who is watching this with all the commissioners in the region, who's working with the governors in the region to enable cheaper, safer, cleaner energy, lowering rates, establishing transmission lines from Canada down through to Connecticut, this allows us to deliver a product and allows us to be safe and pragmatic and collaborative with it.

Our whole energy policy has been based on collaboration between this body, PURA, and the Governor's office. It's critically important that we continue this thread.

One last question, through you, Mr. Speaker, regarding turbines. Natural gas turbines and cogeneration are fueled -- if the good representative does know, how are they fueled, and how do they generate electricity. Through you, Mr. Speaker.

REP. PISCOPO (76th):

Through you, Mr. Speaker. Yes, that's kind of what I was getting to, the microgrid question.

Natural gas will fuel the turbines. It's a -- they could be used for emergency purposes, they could be used for a constant source of energy. And the technologies for the turbine sources of energy are just amazing what they're doing with them. We're building them right here in Connecticut, and that manufacturing of the actual turbine right here in Connecticut, fueled by natural gas, is -- is a real promising potential for this state and the nation. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Hoydick.

REP. HOYDICK (120th):

Thank you, Mr. Speaker. And one more question. I sound like Representative Miner. If you'll bear with me, things come to mind.

The industry that we have through fuel cells for turbines through microgrids, I believe is a popular industry in Connecticut. I believe we have established many new jobs. And I believe that, not only in this process, we have established lower cost of doing business. And my question to you, Representative Piscopo, is: Were all these things considered when you posed this amendment allowing the

commissioner that flexibility to modify the process of examining fracking waste and to allow him, in this case, the ability to see how it affects the economy of Connecticut and not just utility rates? Through you, Mr. Speaker.

REP. PISCOPO (76th):

Yes. Through you, Mr. Speaker, yes, the price of natural gas affects so much of what we do here and more and more every day: manufacturing, power generation, heating our homes. So, yes, and that's the reason why I left the wording of this amendment so loose to give the commissioner full discretion to take in all that -- all that into consideration. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Hoydick.

REP. HOYDICK (120th):

I thank the kind gentleman for his answer, Mr. Speaker, and I also thank him for posing this amendment because it gave me the opportunity to ask him some questions, which rarely happens, and to explore his knowledge of energy, not only in Connecticut but the United States.

I urge my colleagues to support this amendment. I wish it was considered friendly because I think it is in concert with this bill. I think it is, as I said before, a safety net.

A VOICE:

Should I ask him some more questions, do you think?

REP. HOYDICK (120th):

I'm sorry? May I continue, sir?

DEPUTY SPEAKER GODFREY:

Sure. I'm not aware of what just happened either.

REP. HOYDICK (120th):

Thank you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

You're welcome.

REP. HOYDICK (120th):

I consider this a good extension of policy, and I encourage my colleagues to support this amendment. Thank you.

DEPUTY SPEAKER GODFREY:

Thank you, madam.

Representative Camillo.

No? Good because I was just about to chase a few people out of the way. That's okay now.

For the second time, Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker, and good evening.

Mr. Speaker, I just, with the last line of questioning to the good representative from Thomaston, I wanted to be sure that I had my understanding correctly with regard to the delay that we're trying to do the analysis to. And, if the good gentleman could help me, is it the delay between the date of passage and the date that the regulations are submitted? Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Thank you, Mr. Speaker. Yes -- let me see. The delay, determination by the commissioner at the delay in adopting such regulations may be contributing or is reasonably high. Yes, that -- that's the delay in passage. The gentleman, in earlier questioning, referenced the 2017 date, so if, before that date, the commissioner decides this policy is ramping up our

natural gas costs, the prices of natural gas, I will -- I will intercede. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker. And I don't know if the gentleman from Thomaston remembers, earlier when we were talking about, I think it was about one of the other Senate amendments, I had asked some questions with regard to those dates and whether the regulations needed to be filed by a date certain and then approved by another date. And so is it the gentleman's intention in this amendment that if the delay -- that the time between the date of submission and the date of approval -- that approval, I don't remember the date, but I think it was -- wait a minute -- July 1, 2018. Is it the gentleman's intention in this amendment that those -- the days between submission and the days of approval would not be in consideration in terms of any reflected cost increase for the energy, the natural gas? Through you, Mr. Speaker.

REP. PISCOPO (76th):

Through you, Mr. Speaker.

Yes. I -- the purpose for this amendment is from the time of passage through the time of when the regulations are due, that is what is intended with the word "delay." I was worried that we're going to adopt this policy. New York reacts. Our prices start going up, and the regulations are not ready, but it's not 2017 yet, so the commissioner can delay the promulgation of these regulations so that we can act. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

And I think earlier there was a comment made, a statement made that actually requesting an extension would qualify if it went within that window or sometime after the 17th, so would the delay that would be in effect, let's say, if the agency were to ask for some extension of time through the regulatory process, would that also be technically eligible for this evaluation as to the cost? Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Piscopo.

REP. PISCOPO (76th):

Yes, through you, Mr. Speaker, yes. And that's the reason why I put it forward in this language. And I think this Chamber will see a lot of this kind of language coming up in front of us in the course of the evening. I have a number of different maybe policy tries -- to try and make this legislation a little better with that kind of thinking. So I worry about that, if the commissioner asked for an extension, even, in the regulations, does the moratorium persist, and will our prices of gas go up. So that was one of my main concerns. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker, and I do thank the gentleman for his clarification there.

I think, even more than before, if I could offer that, I think the significance of this amendment would be that it would point out, not only the delay from the date that this becomes law to the date at which we have, already in the language, restricted the commissioner from making the application, but we would then be able to track the increased costs, let's say, if they were in natural gas, for which the

administration would have some responsibility, I guess, if the commissioner were to determine that the increased costs were a direct result of the delay.

So, once again, Mr. Speaker, I would ask my colleagues here in the Chamber to support the amendment. I think it's a friendly amendment. All we're suggesting is let's get the information; let's not do this in a vacuum. And if the commissioner and the administration want to continue on with the course of a delayed timing in the face of increased costs of energy, then that will be their choice to make, Mr. Speaker. Thank you.

DEPUTY SPEAKER GODFREY:

Representative Hoydick for the second time.

REP. HOYDICK (120th):

Thank you, Mr. Speaker. The line of questioning from Representative Miner gave me pause to ask the good Representative Piscopo a few other questions. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Proceed.

REP. HOYDICK (120th):

Mr. Piscopo, as you know, that I purchase utilities for my company, and I'm in the process of

contracting for natural gas for several large commercial users. And currently I'm finding it difficult to get a realistic price because of the storage reports that come out where natural gas drilling is not being done in a timely manner because there is increased storage. And consequently, if there's no way to make a good price on the gas, they'll withhold the capacity and so the price will rise.

So, through you, Mr. Speaker, if this moratorium and delay were extended past our borders, and other bordering states adopted this, this policy like we have, could that be true that the storage reports would show that there is a great deal of storage; there's no need for fracking and, consequently, increase the price of natural gas. Through you, Mr. Speaker.

REP. PISCOPO (76th):

Thank you. Through you, Mr. Speaker, yes, that is a legitimate concern. And that is the reason why I -- the amendment is before us. I really worry about that, not only the poor little old lady that's trying to pay her bill in the winter, but our large commercial users also that buy, as our Ranking Member

has said, in bulk while watching storage, watching the markets. You know, jobs are on the line there. So, yes, that is exactly why -- and the answer to that is yes. And it may not only affect the policy here in Connecticut. Our policy here may affect New York's actions and how they interact with Connecticut. And that is one of the chain reaction worries I have with the underlying bill. So this is just a small step, maybe, to try and correct that. Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Hoydick.

REP. HOYDICK (120th):

Thank you, Mr. Speaker, and I thank the good gentleman for his answers.

It leads me to pointing out to the Chamber that Connecticut is a leader in energy policy. And though this an environment bill, it also affects energy in Connecticut and the nation. And you've heard from the esteemed chairwoman of the Energy Committee that, like California, Connecticut is looked as a leader and very progressive with energy policy. Look at our Green Bank that is being copied across the nation. Look at our microgrid, our storm response policies and process

and procedures. Connecticut is really doing things the right way. And the reason we've gotten that reputation and why we've had such great success is because we are collaborative, we're pragmatic, and we do things together.

So, incumbent upon that, this is a practical, pragmatic amendment. It is a safety net, as I mentioned before. The commissioner who evaluates and has his finger on the pulse of what is going on with energy policy in Connecticut, can affect us all positively and the region. So, again, I urge my colleagues to support the amendment. Thank you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Will you remark further on House Amendment "A"? Will you remark further on House Amendment "A"? If not, staff and guests, please come to the well of the House. Members take your seats. The machine will be open.

THE CLERK:

The House of Representatives is voting by roll. Members to the Chamber please.

The House of Representatives is voting by roll. Members to the Chamber please.

DEPUTY SPEAKER GODFREY:

Have all the members voted? Have all the members voted?

If all the members have voted, the machine will be locked.

The Clerk will take a tally and the Clerk will announce the tally.

THE CLERK:

Mr. Speaker, LCO 5652, designated House "A."

Total Number Voting	145
Necessary for Passage	73
Those voting Yea	53
Those voting Nay	92
Those absent and not voting	6

DEPUTY SPEAKER GODFREY:

The amendment is rejected.

Will you remark further on the bill as amended? Representative Alberts.

REP. ALBERTS (50th):

Thank you, Mr. Speaker.

For the --

DEPUTY SPEAKER GODFREY:

Just a moment, just a moment, sir.

Thank you, ladies and gentleman.

Please -- please proceed, sir.

REP. ALBERTS (50th):

Thank you, Mr. Speaker.

For the purpose of introducing an amendment if I may.

The Clerk is in possession of LCO 5671. I ask that it be called and I be granted leave to summarize.

DEPUTY SPEAKER GODFREY:

The Clerk is in possession of LCO Number 5671 which will be designated House Amendment Schedule "B".

Mr. Clerk, would you kindly call the amendment.

THE CLERK:

LCO Number 5671, designated House Amendment "B" and offered by Representative Miner.

DEPUTY SPEAKER GODFREY:

The gentleman has asked to leave the Chamber to summarize.

Is there any objection?

Representative Alberts.

REP. ALBERTS (50th):

Thank you, Mr. Speaker.

We have had an extensive debate on the bill, as amended, and one of the concerns that I had and I think other members of the Chamber had was trying to

provide some element of protection to ensure that adequate water supplies were available for our firefighting forces, particularly our volunteer firefighting forces.

This language that is in this amendment in line 8 simply adds the words or for fire suppression purposes and this helps ensure that water supply sources can be protected and maintained.

I move adoption, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

The question is on adoption.

Will you remark, sir?

REP. ALBERTS (50th):

Thank you, Mr. Speaker.

In some of our smaller communities or more rural communities actually, they're smaller by population, they are actually some of our largest communities in the state. The Town of Woodstock, for example, is nearly 62 square miles. We have about 20 bays of fire apparatus and those 20 bays of fire apparatus essentially include tankers, pumpers, attack vehicles of all types.

The one thing that we don't have, as many rural towns don't have, is a stable supply of water that can

H – 1201

CONNECTICUT
GENERAL ASSEMBLY
HOUSE

PROCEEDINGS
2014

VOL.57
PART 21
6912 – 7260

be tapped into via a fire hydrant system. So many rural communities across the state rely on the capability to drill, to locate water sources, to protect those water sources, to secure them for firefighting purposes, Mr. Speaker.

This bill essentially would allow them to have access to continue to do that without risk of being in violation of state law as I've read and looked at the bill that has been amended that's before us.

So for those reasons, Mr. Speaker, I do believe we should -- we should vote in favor of the amendment. And, Mr. Speaker, I do ask that when the vote be taken it be taken by roll.

DEPUTY SPEAKER GODFREY:

Let's try and keep it at least to a dull roar, ladies and gentleman. Thank you.

The question is on a roll call vote. All those in favor, signify by saying aye.

REPRESENTATIVES:

Aye.

DEPUTY SPEAKER GODFREY:

When the vote is taken it will be taken by roll call.

Representative Alberts, no, yes?

REP. ALBERTS (50th):

Thank you.

DEPUTY SPEAKER GODFREY:

Thank you, sir.

Representative Albis.

REP. ALBIS (99th):

Thank you, Mr. Speaker.

Mr. Speaker, while I appreciate the intent of this amendment, I believe it's unnecessary as we've enumerated throughout this debate that hydraulic fracturing, as defined by this -- this bill, does not refer to anything but the hydraulic fracturing for the purpose of extracting natural gas.

So I urge my colleagues to vote in opposition.

Thank you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Thank you, sir.

Representative Shaban.

REP. SHABAN (135th):

Thank you, Mr. Speaker.

While I appreciate the -- the sentiments of trying to get this thing out of here, I rise in support of this amendment. It's -- it's an interesting journey that we've gone with respect to

this definition of hydraulic fracturing and, you know, I agree if it was just the first sentence, say what it means to pump -- the process of pumping fluid into the surface to get natural gas, if there was a period there, I think that may fix it as well.

But through the negotiation process, to -- to accommodate the needs of certain people who are worried about what this could and may or may not do with respect to other wells, we added the second sentence I think and it may have had the unintended consequences of by adding an exception you could be limiting the exact rule.

So I think the -- the gentleman's amendment solves that problem. I trust that, as things typically move quickly in this last night, that it is something that we could get on the books adopted and moved upstairs to -- to get passed as well.

So -- so I rise in support.

Thank you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Thank you, sir.

Representative Sampson.

REP. SAMPSON (80th):

Thank you, Mr. Speaker.

Just a question to the proponent of the amendment --

DEPUTY SPEAKER GODFREY:

Proceed.

REP. SAMPSON (80th):

-- through you, if I could, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Proceed.

REP. SAMPSON (80th):

Looking at the amendment, it looks like the -- the number one thing that we're talking about here is the addition of water purposes for fire suppression and I'm just wondering if the proponent of the amendment is aware of how often these types of wells are drilled, how often they're maintained, how likely this is to -- to occur on a regular basis in any of the communities around the state?

Through you, Mr. Speaker.

REP. ALBERTS (50th):

Through you, Mr. Speaker --

DEPUTY SPEAKER GODFREY:

Representative Alberts.

REP. ALBERTS (50th):

-- the drill -- the well would only be drilled once but it would be kept clean through regular pumpings. It would be reexamined. There might need to be redrilling in the event that the water supply source went dry but the intent of this bill is -- is primarily to make sure that adequate water supplies are located for new water sources.

Thank you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Sampson.

REP. SAMPSON (80th):

Thank you, Mr. Speaker.

And I thank the kind gentleman for his answer. I think that's a -- a very thorough response and answers my question completely.

I will certainly support this amendment. I think this is another illustration of how the underlying bill didn't capture all of the potential circumstances that could arise and I think that this is a -- an important move to making sure that we -- we capture all of the potential dangers of passing legislation that hasn't been consistently and completely thought out.

So thank you, Mr. Speaker, for the opportunity and I urge my colleagues to support this amendment as well.

Thank you.

DEPUTY SPEAKER GODFREY:

Representative Ziobron.

REP. ZIOBRON (34th):

Thank you, Mr. Speaker.

I also rise in support of this amendment. I recall the public discussion on the Environment Committee. There was several questions about this and a lot of concern, especially when it came to geothermal. In my community a lot of folks look at geothermal as an environmentally sensitive way to deal with their utilities and be sensitive to their environment.

Geothermal is an important alternative energy source for a lot of folks and I think just the mere fact that there's been so much concern about the looseness of the definition in the underlying bill this amendment clears that up.

I think it -- it does a good job of also addressing the concerns of fire suppression. I also come from a rural district and many times we are

relying on other sources of water regardless of fire -- of fire hydrants and other resources for so many of my constituents.

So I think this is a common sense amendment. I think it does nothing to harm the underlying bill and I urge passage from my colleagues.

Thank you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank -- thank you, Mr. Speaker.

I think the Chamber probably remembers that I was the one actually that asked the question initially about the list of wells that would be exempted from the requirements under the underlying bill and I know that there was a representation made that, in fact, wells, other than drinking water wells, even though they were specifically cited in the language, might well be considered exempt under the underlying bill.

What this amendment seeks to do is to provide the same level of protection for those that might have need of deep water wells drilled for the purposes of fire suppression.

I can tell you just in the community that I live in, in Litchfield, not the whole community is served by public water and, in those cases, we depend on wells. I can tell you just on the street that I live in -- live on that some homes have two, three, sometimes four single wells for the purposes of providing enough water to the -- the homes that people live in.

In this case, Mr. Speaker, where it's required to fill rather large tanks or large ponds, in some cases you need very deep supply for that purpose and it's my understanding that the new rotary drills do, on occasion, tend to clog up the orifices that the water would actually come out from into what would be the bedrock.

And so, Mr. Speaker, it's my understanding that the fracking process actually cleans out those tiny tributaries so that the actual casing fills with water all the way to the top and then water is pumped into these storage areas so that if someone in a small development let's say has need for water, more often than not our communities are served by volunteer fire departments, it would limit the amount of time they

need to shuttle water back and forth on very narrow roads, Mr. Speaker.

It's an opportunity for us I think to provide the kind of protections that people in Connecticut expect and deserve.

The last thing I think we should be doing here is voting on a bill that has any chance of having a problem. I couldn't imagine someone with an application for a subdivision, for instance, even a -- I mean we have -- within the community of Litchfield we have conversation going on right now about I think a five-unit affordable housing neighborhood that we actually embrace in Litchfield.

And so I can only imagine that with the passage of this bill someone might actually use this as a mechanism to deter someone from that kind of a development.

I'm sure Representative Alberts in the eastern part of the state has the same problem. There is no other water source in some parts of town. People's fire insurance is -- is directly related to how much water would be available in the case of a fire.

I can tell you that, as a former first selectman in the Town of Litchfield, one of the things that we

did on a regular basis was to do testing to find out how long it takes to get from point A to point B, how many gallons it takes to go and put a fire out. There are calculations done for the purposes of determining what kind of a knockdown potential you would have if there was some kind of a structure fire.

So, Mr. Speaker, I really do think that this fire suppression issue should be important to everybody in the Chamber. I'm sure it's important even to the DEEP because they have structures in outlying areas in the State of Connecticut. Many of the parks, forest land -- I know that there was the Connecticut 100 Program that was established by the Commissioner has been wildly successful, a large capital project, where we have cabins built now.

I don't think they even want to put their structures at risk not to have the right kind of water availability available to them in fire suppression.

So if I could, Mr. Speaker, through you, a question to the proponent of the amendment please.

DEPUTY SPEAKER GODFREY:

Proceed.

REP. MINER (66th):

Thank you, Mr. Speaker.

And so, Mr. Speaker, through you, these fire suppression wells would they -- would they be limited to those fire suppression wells that would be for purposes of filling up let's say a pond?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Alberts, would you care to respond?

REP. ALBERTS (50th):

Thank you, Mr. Speaker.

And, through you, they would be any type of well that would be necessary to create and store a body of water that could be used for fire suppression.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

And so is it the intention of the gentleman on line 8 that those wells could also be wells that would be associated with a sprinkler system?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Alberts.

REP. ALBERTS (50th):

Thank you, Mr. Speaker.

But it may be hard to believe. I'm having a hard time hearing the questioner. Mr. Speaker, if he could rephrase.

DEPUTY SPEAKER GODFREY:

I know it's exciting. We're down to three hours and twenty minutes but if we could keep our emotions a little subdued while this continue.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

So my question, through you, Mr. Speaker, is that -- would there be any restriction in terms of which fire -- fire suppression purposes these wells would be restricted to? So in fact if there was a plan to drill wells and have them directly attached to some type of a sprinkler system -- interior sprinkler system, would those actually be included in this amendment as well?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Alberts.

REP. ALBERTS (50th):

Thank you, Mr. Speaker.

I had not anticipated that but I would not anticipate that there would be any restriction under this present language.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Miner.

REP. MINER (66th):

Thank you, Mr. Speaker.

Mr. Speaker, I -- I think it's probably pretty clear to everyone. I think that this is an important initiative. I think it will clear up any question. I think it would actually make it a lot easier through an application process if someone were to try and develop their property and -- which is more often the case than not.

Someone would need to show whether or not there would be sufficient access to water. Certainly for those us that own homes in -- in rural Connecticut, it's an issue that's discussed commonly when it comes to providing homeowners insurance. Insurance companies want to know where your fire suppression source is, how long it takes to get there.

The last thing we should be doing, Mr. Speaker, is passing a bill this evening that leaves to question anything, anything with regard to fire safety and I would urge support of this amendment.

Thank you.

DEPUTY SPEAKER GODFREY:

Representative Smith.

REP. SMITH (108th):

Thank you, Mr. Speaker.

It's been a long debate and --

DEPUTY SPEAKER GODFREY:

Excuse me, Representative Smith, just move the distractions away. Thank you.

Representative Smith.

REP. SMITH (108th):

Thank you for that, Mr. Speaker, because I -- I get easily distracted.

DEPUTY SPEAKER GODFREY:

It's a distracting kind of place.

REP. SMITH (108th):

I -- I missed --

DEPUTY SPEAKER GODFREY:

Where -- where were we?

REP. SMITH (108th):

I'm not sure if this is still the fracking bill but if it is, I'd -- and there is an amendment I believe that's been posed to the Floor, I missed a lot of the debate earlier today working on other projects and I hope some of the questions that I'm about to ask have not been asked but I -- I know that there seems to be a lot of people in the Chamber who have a great deal of interest in this and a great deal of knowledge about this area.

I know in my district, which is New Fairfield, Sherman, New Milford and a piece of Danbury, finding a suitable well and -- and finding a suitable storage tank for fire suppression purposes is all too important. I know on numerous jobs and contractors when they go for subdivision approval the towns require that a tank be placed within the subdivision for purposes of fire suppression.

I'm not sure if -- if this amendment would help that situation to be sure that our municipalities and cities would be able to require a fire suppression tank in the event that this bill were to pass without this amendment.

So my question, through you, Mr. Speaker, to the proponent, if he's able and if not perhaps he can

yield, assuming the language in this bill -- this amendment, as proposed, is not passed, would the town still be able to, as part of a subdivision approval, require a fire suppression tank on the premises?

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Alberts.

REP. ALBERTS (50th):

Thank you, Mr. Speaker.

And, through you, he is correct. I am not fully qualified to answer that. I -- I can say that the -- this amendment has been introduced to help ensure that -- that adequate water suppression resources are available -- fire suppression resources are available and I don't know how municipal boards would respond if this language were not there.

All I can say is that my concern in bringing forward this legislation is to make sure that there are adequate water resources for fire suppression.

Through you, Mr. Speaker.

DEPUTY SPEAKER GODFREY:

Representative Smith.

REP. SMITH (108th):

And I thank the gentleman for his answer. And I -- and I think that's a concern that I have and I -- I hope some of the members in the Chamber have is that we'd hate to see a board or municipality not dig for -- drill for a well because of some language in the bill that we have imposed by the fracking legislation.

And then we have some type of an -- of an incident where a house were to burn down and -- and not only the loss of the -- the dwelling but the loss of perhaps lives as a result of not -- the -- the town being fearful of drilling because it may violate the fracking statute.

So I -- I think just for that reason alone that we may want to consider supporting this amendment because of the potential liability that -- and the chilling effect that we may be imposing on our towns and municipalities for staying away from drilling that all too important well.

I'm not sure if this -- the fracking in the amendment here if there's any limit in terms of the -- the depth of the well. If -- for instance if we were only to go 100 feet down, would this language still apply or must there certain -- be a certain depth before we get into the -- the meat of the bill?

Through you, Mr. Speaker.

REP. ARESIMOWICZ (30th):

Mr. Speaker --

DEPUTY SPEAKER GODFREY:

(Inaudible).

REP. ARESIMOWICZ (30th):

-- I move we pass this bill -- bill temp --

DEPUTY SPEAKER GODFREY:

Representative Aresimowicz, for what purpose do you rise?

REP. ARESIMOWICZ (30th):

Thank you very much, Mr. Speaker.

I move we pass this bill temporarily.

DEPUTY SPEAKER GODFREY:

The question is on passing this bill temporarily.

Is there objection? Hearing none, the bill is passed temporarily.

Would the Clerk please call Calendar 524.

THE CLERK:

On page 28, House Calendar 524, favorable report of the Joint Finance, Revenue and Bonding Committee. Substitute Senate Bill 470, AN ACT CONCERNING A STUDY OF THE ADMINISTRATIVE COSTS TO COLLECT TAXES AND FEES.

DEPUTY SPEAKER GODFREY:

If not, let me try your minds. All those in favor of Senate Amendment "B," please signify by saying aye.

REPRESENTATIVES:

Aye.

SPEAKER SHARKEY:

Those opposed, nay.

The ayes have it. The amendment is adopted.

Would you care to remark further on the bill as amended? Would you care to remark further on the bill as amended?

If not, staff and guests to the well of the House. Members take your seats. The machine will be open.

THE CLERK:

The House of Representatives is voting by roll. The House of Representatives is voting by roll. Will members please return to the chamber immediately.

SPEAKER SHARKEY:

Have all the members voted? Have all the members voted? Members please stay close to the chamber. We have a half an hour left. Lots of work to do. Please stay close to the chamber.

If all the members have voted, the machine will be locked and the Clerk will take a tally.

Will the Clerk please announce the tally.

THE CLERK:

Senate Bill 95, as amended by Senate "A" and "B" in concurrence with the Senate.

Total Number Voting	147
Necessary for Passage	74
Those voting Yea	143
Those voting Nay	4
Those absent and not voting	4

SPEAKER SHARKEY:

The bill passes, as amended, in concurrence with the Senate.

Will the Clerk please call Calendar 527.

THE CLERK:

House Calendar 527, favorable report of the joint standing committee on Judiciary, Senate Bill 237, AN ACT PROHIBITING THE STORAGE OR DISPOSAL OF FRACKING WASTE IN CONNECTICUT.

SPEAKER SHARKEY:

Representative Albis.

REP. ALBIS (99th):

Thank you --

SPEAKER SHARKEY:

If I may -- if I may, sir. Before you call the bill, just to remind everyone in the chamber, we have previously adopted Senate "A" and Senate "B" on this bill. We have rejected House "A," and we were in the process of debating House "B".

So if you could proceed, Representative Albis.

REP. ALBIS (99th):

Thank you, Mr. Speaker. I urge rejection of House "B".

SPEAKER SHARKEY:

No. You have to call the bill first, sir.

REP. ALBIS (99th):

Okay. I move acceptance of the joint -- committee's joint favorable report and passage of the bill.

SPEAKER SHARKEY:

The question's on acceptance of the joint committee's favorable report and passage of the bill.

Will you remark, sir?

REP. ALBIS (99th):

Yes, Mr. Speaker. I reject House Amendment "B" and urge my colleagues --

SPEAKER SHARKEY:

I believe, sir, that you were not the person who called House "B". That's fine. You moved passage of the bill. Thank you.

Representative Alberts.

REP. ALBERTS (50th):

Thank you, Mr. Speaker.

At this time, I'd like to withdraw my amendment, LCO 5671, better known as House "B".

SPEAKER SHARKEY:

Seeing no objection, House "B" will be withdrawn.

Representative Aresimowicz.

REP. ARESIMOWICZ (30th):

Mr. Speaker, I move we pass this bill temporarily.

SPEAKER SHARKEY:

Thank you, sir.

Seeing no objection, we'll pass this bill temporarily.

Moving on, when Mr. Clerk is ready.

THE CLERK:

Yes.

SPEAKER SHARKEY:

Representative Aresimowicz.

REP. ARESIMOWICZ (30th):

SPEAKER SHARKEY:

The bill, as amended, passes in concurrence with the Senate.

Will the Clerk please call Calendar 527.

THE CLERK:

House Calendar 527, favorable report of the joint standing committee on Judiciary. Senate Bill 237, AN ACT PROHIBITING THE STORAGE OR DISPOSAL OF FRACKING WASTE IN CONNECTICUT.

SPEAKER SHARKEY:

Representative Albis.

REP. ALBIS (99th):

Thank you, Mr. Speaker.

I move acceptance of the joint committee's favorable report and passage of the bill.

SPEAKER SHARKEY:

The question's on acceptance of the joint committee's favorable report and passage of the bill.

A reminder to everyone here, we have adopted Senate "A" and "B," rejected House "B" and -- House "A" and Senate "B" has been withdrawn.

Would you care to remark further on the bill?

REP. ALBIS (99th):

Thank you, Mr. Speaker.

A good fracking bill ought to pass.

SPEAKER SHARKEY:

Thank you, sir.

Would you care to remark further?

Representative Shaban.

REP. SHABAN (135th):

Thank you, Mr. Speaker.

Ditto.

SPEAKER SHARKEY:

Thank you, sir.

Would you care to remark further?

Representative Cafero.

REP. CAFERO (142nd):

Thank you, Mr. Speaker.

Section 1 of the bill -- it's a curious thing. And I was wondering in the second sentence -- I think it's line 4, what that fourth word means. And if -- does somebody have that answer?

Through you, Mr. Speaker.

SPEAKER SHARKEY:

To whom would you like.to direct your question, Representative?

REP. CAFERO (142nd):

I would like to direct that to the chief of fracking. I would --

SPEAKER SHARKEY:

I believe the fracking chief is Representative Albis.

Representative Albis, please prepare yourself.

And, Representative Cafero, there was a question in there. I'm trying to remember what it was. What was the word?

REP. CAFERO (142nd):

The question was the fourth word, the fourth word there, I'm thrown by it.

SPEAKER SHARKEY:

The fourth word is "means" --

A VOICE:

Leans?

A VOICE:

"Means" with an "m".

REP. CAFERO (142nd):

Thank you, Mr. Speaker, now I've got it.

SPEAKER SHARKEY:

Thank you, Representative.

Would you care to remark further?

Representative Piscopo.

REP. PISCOPO (76th):

Yes. Thank you, Mr. Speaker.

Mr. Speaker, this bill just isn't necessary in my opinion -- in front of us. I have no questions for the proponent. But it's my opinion that this bill is just not needed.

I saw in one editorial in the paper that we might -- we might as well introduce an amendment that prevents asteroids from hitting the state of Connecticut. I mean, it's that -- it's that far out. One of the editorials in a local newspaper -- it -- this -- the waste that's produced in these fracking facilities are best practices treated on site or real close to the premises.

It's just -- it's just makes sense with the cost and benefit. It's -- that's -- that's -- it just makes so much sense to do it that way. We're miles and miles away from the nearest fracking facility or fracking well. The closest is way upstate New York, and I will conclude my remarks by saying I just oppose this bill.

Thank you, Mr. Speaker.

SPEAKER SHARKEY:

Thank you, sir.

Would you care to remark? Would you care to remark further on Senate Bill 37 -- 237?

If not, staff and guests to the well of the House. Members take your seats. The machine will be open.

THE CLERK:

The House of Representatives is voting by roll, The House of Representatives is voting by roll. Will members please return to the chamber immediately.

SPEAKER SHARKEY:

Have all the members voted? Have all members voted? Members please check the board to make sure your vote is properly cast. If all the members have voted, the machine will be locked and the Clerk will take a tally.

Will the Clerk please announce the tally.

THE CLERK:

Senate Bill 237 as amended by Senate "A" and "B"

Total Number Voting	147
Necessary for Passage	84
Those voting Yea	128
Those voting Nay	19
Those absent and not voting	4

SPEAKER SHARKEY:

The bill, as amended, passes in concurrence with the Senate.

Will the Clerk please call Calendar 441.

THE CLERK:

Calendar 441, favorable report of the joint standing committee on Judiciary, Senate Bill 252, AN ACT CONCERNING THE OFFICE OF THE CHILD SUPPORT SERVICES.

SPEAKER SHARKEY:

Representative Abercrombie.

REP. ABERCROMBIE (83rd):

Thank you, Mr. Speaker.

I move for the joint committee's favorable report in concurrence with the Senate --

SPEAKER SHARKEY:

If we can pause for a moment until we have the bill on the board.

Go. Thank you.

REP. ABERCROMBIE (83rd):

I move for the joint committee's favorable report and passage of the bill in concurrence with the Senate.

SPEAKER SHARKEY:

S - 676
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Thank you, Senator. Thank you very much. Thank you. Okay. At this time I'd ask if there's any points of personal privilege? Seeing one, oh, that was fast. Okay.

Senator Looney.

SENATOR LOONEY:

Thank you, Mr. President. Good afternoon.

THE CHAIR:

Good afternoon, sir.

SENATOR LOONEY:

And ready to get under way. I have a number of items to mark. The first tow that I'll mark will be the first two orders of the day.

The first item, Mr. President, is on Calendar page 37, Calendar 120, Senate Bill 237. That should be the item taken up first. And the second item, Madam President will be under Matters Returned From Committee, Madam President.

Calendar page 36, Calendar 99, Senate Bill 202. Those will be the first two items and then we will mark additional items thereafter. Thank you, Madam President.

THE CHAIR:

Thank you, sir. Madam Clerk.

THE CLERK:

Senate Calendar Monday, May 5, page number 37, Calendar Number 120, Bill Number 237.

THE CHAIR:

Thank you.

Senator Meyer, good afternoon, sir.

SENATOR MEYER:

Good afternoon, Madam President. I do move acceptance of the Joint Committee's Favorable Report and passage of this fine bill.

THE CHAIR:

Motion is on acceptance and passage. Will you remark, sir?

SENATOR MEYER:

Yes, Madam President. We have a strike-all amendment, and I'm going to ask the Clerk to kindly call it. It's LCO 4911.

THE CHAIR:

Madam Clerk. That's okay. Take your time. The Senate is going to stand at ease for a moment.

(Chamber at ease.)

At this time, while we are standing at ease, would you like to just invite, introduce somebody in the Chamber today? Would you do that, Senator, please?

SENATOR MEYER:

Thank you, Madam President. My great wife is here and I'm so pleased that she came today. She's been a part of all that we do. She's generally awake when we get home at 2:00 a.m., so I'm so pleased to have her here, particularly as we bring out the fracking waste bill.

THE CLERK:

It's great to see you here, too. Thank you very much.

SENATOR MEYER:

Thank you, Governor.

THE CHAIR:

No problem. Are we ready? Senator, could you give us that number again, please?

SENATOR MEYER:

Yes. It's LCO 4911 of Senate Bill 237.

THE CHAIR:

4911. Madam Clerk.

The Senate is back in order.

THE CLERK:

Senate Amendment LCO 4911 and Schedule "A" and offered by Williams, Looney, et al.

SENATOR MEYER:

And, Madam President, I do move this amendment.

THE CHAIR:

Hold on a moment. We've got to get everything on the machine, okay? Okay.

SENATOR MEYER:

I do move the amendment, and ask your permission to summarize.

THE CHAIR:

The motion is on adoption. Will you remark, sir?

SENATOR MEYER:

Colleagues, you'll recall the history of this bill a bit. We had two bills before the Environment Committee after receiving a lot of scientific evidence that fracking waste is extremely toxic, full of radioactivity, bromides, toxic metals, lawsuits coming in Pennsylvania because of contamination of water from fracking waste.

And as a result, there were two bills before the Environment Committee. One was to ban fracking waste in Connecticut and actually the majority of the Environment Committee supported a ban.

But other people felt that we should take a more moderate approach and that is to have a moratorium on the entry of fracking waste into Connecticut until DEEP had been able to study fracking waste and had been able to provide us with regulations.

The Governor supported that kind of an approach. The Department of Energy and Environmental Protection supported that kind of approach, and so we have created today in Senate Bill 237 a very strong moratorium concept.

And what this bill does in essence is, it puts a moratorium on fracking waste coming into Connecticut or being treated here or being disposed of here until the Department has provided regulations and those regulations have been approved, adopted by the Department and approved by our Regulations Review Committee.

And that cannot happen for more than three years. The bill has an explicit provision that no regulations will actually come into effect, which could end the moratorium before July 1, 2017.

The bill goes on to provide that after the regulations have been adopted and approved by Regs Review, that there will be a permitting process, which is the normal permitting process that this agency uses.

The bill also provides from experience in other states, that the moratorium will include de-icing materials. Deicing materials are very heavy in bromides that have been used in some states, but the effect has been toxic because particularly in the State of Pennsylvania because of the Marcellus Shale, there's been heavy fracking there and efforts have been made to use some of the fracking waste as a de-icer, but the fracking waste used as a deicer got into the water stream and it led to a lot of lawsuits.

The bill also finally provides for a direction for DEEP to obtain information so that we are fully informed about a substance that appears to be highly toxic, but about which Connecticut does not yet have its own information. So you will see in one of the subsections that there's a direction to obtain information.

So in essence, that is the bill. There is, Senator Fasano and I are offering a small technical amendment, and I'm going to ask the Clerk --

THE CHAIR:

Senator, we can't do that until we adopt Senate "A."

SENATOR MEYER:

All right. I'll hold off the amendment. Thank you. Happy to answer any questions.

THE CHAIR:

Will you remark on Senate "A"? Senator Chapin, good afternoon, sir.

SENATOR CHAPIN:

Good afternoon, Madam President.

Madam President, I have some questions to the proponent, through you, please.
THE CHAIR:

Please proceed, sir.

SENATOR CHAPIN:

Thank you, Madam President. As I recall, as you mentioned there were two bills dealing with fracking before the Environment Committee and if memory serves me correctly, Senate Bill 237 was a strict prohibition and I can't remember the House bill number, but that was, I think, the language more resembles what we have before us. Is that accurate? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Yes, through you, Madam President to Senator Chapin. Senator, that is accurate. 237 was the original ban bill that is now the moratorium bill.

THE CHAIR:

Senator Chapin.

SENATOR CHAPIN:

Thank you, Madam President, and again, through you, did the other bill die? I guess I'm trying to understand why we're taking the one that was I think what some people would say is the stronger version and making it more of a regulatory, prohibition through regulation rather than an outright prohibition?

Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, to Senator Chapin. Yes, the ban bill, the moratorium bill actually was a House bill and after conferring with advocates of both Republican and Democrat, we decided to go with the Senate bill first, so we put the House bill onto the Senate Bill 237. That's the history of what happened.

THE CHAIR:

Senator Chapin.

SENATOR CHAPIN:

Thank you, Madam President. And again, through you, when we're talking, I see Section 1 of the amendment before us is a definition section, and I remember

during our discussion in the Environment Committee, some concern about hydraulic fracturing, or fracking, I think they're used interchangeably.

Well, let me ask that. Are those two words used interchangeably? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

There is in line 16 a definition of hydraulic fracturing. I'm not sure I understand your question.

THE CHAIR:

Senator Chapin, would you reframe it please?

SENATOR CHAPIN:

Thank you, Madam President. So when we say fracturing, we're also saying fracking? It's meaning the same thing? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Yes. In answer to Senator Chapin, the answer is yes.

THE CHAIR:

Senator Chapin.

SENATOR CHAPIN:

Thank you, Madam President. And again, through you, there was some discussion about fracking that takes place for the drilling of water wells for the purposes of drinking water, fracking that may take place to install geothermal systems, heating and cooling systems. I think they do fracking to, lateral fracking underneath highways and things to run cables.

Are any of those included in this bill, or are they excluded? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Yes. Through you, Madam President, Lines 16 to 21 make explicit exclusion of those other things. The hydraulic fracturing we're talking about in this bill relates solely to the fracturing of shale under which is natural gas.

So we're not looking at the question of drilling wells or geothermal facilities of any kind. We're totally talking here about natural gas and the fracturing of shale that holds natural gas.

THE CHAIR:

Senator Chapin.

SENATOR CHAPIN:

Thank you, Madam President. And again, through you, I heard you say that during this moratorium that would run until July 1 of 2017 that the Department of Energy and Environmental Protection would be studying, I guess the fracking waste itself.

Is there a provision in the bill that directs them to engage in such a study? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Yes. Through you, Madam President, there is a section. It starts at Line 108 that deals with the ability to do some research and a limited amount of fracking waste under secure conditions will be permitted into Connecticut for the purpose of studying

fracking waste and for the department to get a better handle on the toxicity issues with respect to this material.

So that will be actually three different people, or companies could apply for these research studies of fracking waste, and that, together with the directive of the department to obtain information, we're going to know a lot more about fracking waste in the next few years.

THE CHAIR:

Senator Chapin.

SENATOR CHAPIN:

Thank you, Madam President. And again, through you, under those three allowances, are they somehow limited in, I guess it would be gallons, or could it be large tanker trucks or does the Amendment before us speak to any gallonage or restriction on the amount?

Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Yes. Through you, Madam President. We did. We were concerned about too much fracking waste coming into the state for this research study and therefore, we put a limit of 330 gallons per request, per the three requests, so we made an exception for any one particular study that could have up to 500, but no more than 500 in one study and the others are no more than 330 gallons. And that 330 gallons was established or based upon the science that that amount would be needed in order to make a study with scientific integrity.

THE CHAIR:

Senator Chapin.

SENATOR CHAPIN:

Thank you, Madam President. And again, through you, what would happen if nobody comes in with any request to study it? Is the agency planning on studying it on its own because it would seem if we're setting up a moratorium for three years and they haven't taken a look at the components of fracking waste and nobody has come in and asked for any research opportunities, are they planning on engaging in that sort of investigation after the three years is up or in the meantime? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

And in answer to Senator Chapin's good question, first of all, as I mentioned before, there's a directive to the Department to gather information, so that provision in the bill says, and I'm quoting, in implementing the provisions of this section, the commissioner shall request information, including but not limited to whether and to what extent any anti-icing or deicing product is or may be derived from or contain waste from hydraulic fracturing, and it goes on to set out the information that could be required.

The department in conversations, I think you've been part of those conversations, Senator Chapin, the department has indicated that it will be actively acquiring information in order to determine the toxicity of fracking waste and the byproducts of fracking waste.

THE CHAIR:

Senator Chapin.

SENATOR CHAPIN:

Thank you, Madam President. And again through you, as I read the bill I guess we could, if we use the amendment before us in general terms, it's really a two-part Amendment.

One dealing with fracking waste and the other dealing with fracking byproducts. Is that accurate? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

That is true. There is a reference to, particular reference in the bill, through you, Madam President, to deicing products from fracking waste. That's the most specific reference to a byproduct.

THE CHAIR:

Senator Chapin.

SENATOR CHAPIN:

Thank you, Madam President. And again, through you, and keeping along that line of thinking that it is somewhat two separate issues, it's also my understanding as I read through the amendment, that the moratorium would prohibit the agency from putting regulations forth prior to July 1, 2017, specifically for the treatment of fracking waste, yet to undergo any sort of an investigation or permitting process through the regulatory process on byproducts, there is no moratorium on the byproduct side. Is that your understanding as well? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Yes, through you, Madam President. There is a very explicit moratorium with respect to deicing material and that is the byproduct about which we have the most information because of the contamination it's caused, particularly in the State of Pennsylvania.

We're not sure yet what other byproducts may develop from fracking waste, if any.

THE CHAIR:

Senator Chapin.

SENATOR CHAPIN:

Thank you, Madam President. And again, through you, so the moratorium on the deicing type products, which I believe is in Section d, starting in line 76.

SENATOR MEYER:

That's correct.

SENATOR CHAPIN:

That doesn't fall within the moratorium that extends to July 1, 2017, as I read that section. It appears to me that those regulations, there is a moratorium, but only up until the time that those regulations may be submitted for adoption by the Regs Review Committee.

Is that correct? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, the, starting on line 76 the bill is clear that there will be no sale or purchase or treatment of deicing materials coming from fracking waste in the state of Connecticut until, and line 79 says the commissioner has adopted regulations and those regulations have been approved by our Regulations Review Committee.

So to answer Senator Chapin's question, Madam President, the de-icing byproduct of fracking waste is subject to the moratorium.

THE CHAIR:

Senator Chapin.

SENATOR CHAPIN:

Thank you, Madam President. Again, I'm not sure what I'm missing here. It really does appear to me that Section b again, dealing with fracking waste and not fracking byproducts sets up a moratorium until July 1, 2017 and then regulations can be submitted, and as I read it, when we get to Section d where we're talking about a moratorium on those byproducts, it doesn't appear that that July 1, 2017, dictates how long the moratorium will be.

The only thing I'm reading in that section prohibiting the use and sale of byproducts is simply we need to have regulations adopted, but I don't see where those regulations on the byproducts are prohibited from being submitted to the Regs Review Committee prior to July 1, 2017.

As I read it, they could be submitted as soon as the Agency can put them together and go through the UAPA process. Are you interpreting that differently? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Yes. Madam President, the, what we are trying to do with the section on de-icing was to make any sale, purchase or treatment of de-icing products subject to regulation and those regulations having been approved by us through our Regulations Review Committee.

There is no time limit set with respect to that, to the de-icing byproducts.

THE CHAIR:

Senator Chapin.

SENATOR CHAPIN:

Thank you, Madam President. Can you tell me whether or not anybody knows conclusively whether we have any fracking waste or fracking byproducts in the state of Connecticut today? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, and I'm just looking at our wonderful Legislative Liaison Rob LaFrance here and he is shaking his head as he has before, and other members of DEEP have said that we have no knowledge whatsoever of any fracking waste currently being in the state of Connecticut.

THE CHAIR:

Senator Chapin.

SENATOR CHAPIN:

Thank you, Madam President. And again, through you, so even though we can't find any fracking waste in Connecticut or byproducts that are being used, I guess we could consider this a preemptive action. Is that fair to say? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, it's a preemptive action, but the preemptive that it's got a very strong premise.

You know, as the, about a week ago the New Haven Register did a lead editorial, the headline of which says, I'm reading it. Dangerous fracking waste needs to be kept out of Connecticut, and that article, as well as other literature, indicates that we're probably not in so much danger of fracking waste

coming to us from Pennsylvania because it's a long way and an expensive trip.

But in November of this year, Governor Cuomo of New York is supposed to make a decision as to whether or not New York will hit the Marcellus Shale and produce a lot of fracking waste.

New York being so close to us, and close by the way, to your Senate District, Senator Chapin, we do think that we're endangered, as the New Haven Registers suggests, by action by New York that could come as early as November.

THE CHAIR:

Senator Chapin.

SENATOR CHAPIN:

Thank you, Madam President. And again, through you, so there's, in your, through the testimony, you have no reason to believe that fracking will be taking place in Connecticut. The concern is that the fracking waste will be coming from out of state into Connecticut either to be treated or to be used as a byproduct?

Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Yes. Through you, Madam President.

Madam President, we don't have any natural gas in Connecticut that we know of. The Marcellus Shale goes through West Virginia, Pennsylvania, Ohio and New York, but not Connecticut, so we don't think we have any natural gas that could be the subject of fracking here.

What we're concerned about is this toxic fracking waste coming in here from another state.

THE CHAIR:

Senator Chapin.

SENATOR CHAPIN:

Thank you, Madam President. And again, through you, are we aware whether the adjoining states to Connecticut prohibit fracking waste and its byproducts? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, Pennsylvania has enacted increasingly strong regulations with respect to fracking waste because of the contamination of their water.

New York is considering legislation to do that, which I imagine will be any fracking in Connecticut would be subject to that.

So Pennsylvania has acted. We think New York is about to act.

THE CHAIR:

Senator Chapin.

SENATOR CHAPIN:

Thank you, Madam President, and I thank the gentleman for walking through the amendment with me, certainly for my benefit but I hope for the benefit of everybody in the Chamber.

Madam President, I rise in support of the amendment before us somewhat reluctantly and I say reluctantly because if I said that I heard from 200 constituents in my district on this issue, that would not be an exaggeration, and they all support a complete prohibition.

I had been asked on a number of occasions to co-sponsor this very bill and knowing how this building can work sometimes, sometimes people co-sponsor things that take a sudden turn in a direction that they don't like, so I chose to wait to see what was going to happen with this very bill number. Much easier to co-sponsor a bill than to un-cosponsor a bill.

However, in those discussions I've had with constituents on whether a prohibition kind of a prohibition versus a regulatory scheme for fracking waste, I have always been mindful of the fact that this could be considered, I think half a loaf and I think a lot of people would agree that half a loaf is better than no loaf.

Again, I can appreciate the measured approach. I think those who involved in the discussions as to how to craft this language before us today did so in a very thoughtful and measured manner.

Again, I know I will probably have constituents that aren't very happy at the end up the day that we end up with a regulatory process and not the outright prohibition that they had wanted, but as I said, I think that regulating it is better than doing nothing at all so I stand in support of the amendment before us. Thank you, Madam President.

THE CHAIR:

Thank you. Will you remark? Will you remark? Senator Witkos, good afternoon.

SENATOR WITKOS:

Good afternoon, Madam President. A great day to be here today. The clock is ticking.

I rise to support the amendment as well, and I do have some concerns that I wanted to kind of flush out just for those folks back home that don't want me to support the bill. I want to make sure that I'm very clear as to why I am supporting the bill.

So, through you, Madam President to Senator Meyer, a few questions.

THE CHAIR:

Please proceed, sir.

SENATOR WITKOS:

Thank you. Through you, Madam President, to Senator Meyer, so most of this issue regarding fracking was the result of the discovery of the Marcellus Shale. Is that correct? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, that is true with respect to the northeast.

THE CHAIR:

Senator Witkos.

SENATOR WITKOS:

Thank you. Are we aware of, have there been any issues while the Marcellus Shale is relatively new found in the New England area as in the states that you described earlier, while there's other states that may, we've been fracking for a while, we meaning the country, or private use.

Do those states currently have any type of a moratorium or have they, oh, I'll stop at that question (inaudible).

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, I have not made a study of the other states, except I have learned that Pennsylvania has regulated fracking waste because of the contamination problems that have come in that state.

I do not know what Ohio has done or Virginia has done. As I mentioned to Senator Chapin, New York is in the process of doing some regulation. That's the extent of my knowledge.

THE CHAIR:

Senator Witkos.

SENATOR WITKOS:

Thank you. I wrote down a comment when you were answering Senator Chapin to say that in New York, Cuomo is set to make a decision soon. Excuse my ignorance in not following New York, what's happening there, but is that the decision whether to continue a ban on fracking, or what is the decision that Cuomo will be making? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, the decision that I understand New York is going to make through its Governor is whether or not to start a fracking of the Marcellus Shale within the State of New York.

Right now, New York has a ban. Realizing that natural gas, the cost of natural gas to customers if about one-half the cost of heating oil, New York is starting to re-look at this resource it that we don't have and therefore, it has become a very lively subject in New York as I understand it, that the Governor is going to make a recommendation sometime in November with respect to whether New York will reverse its current ban and will take advantage of this cheaper energy resource.

THE CHAIR:

Senator Witkos.

SENATOR WITKOS:

Thank you. And through you, Madam President, is there a ban, is that (inaudible) incline or indeed legislative action or executive action to cease the ban? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, I have not read the New York legislation on this, but certainly it's been reported and there have been conversations that it does have a current ban that can be lifted.

THE CHAIR:

Senator Witkos.

SENATOR WITKOS:

Thank you. And through you, Madam President, I know in our state we, a few years ago, maybe last year, we passed the Comprehensive Energy Strategy Plan and we're moving toward trying to get homeowners to a cheaper, cleaner fuel and natural gas as well and there's a lot of investment going on in that direction.

Will this ban have an impact or create an impediment for Connecticut's Comprehensive Energy Strategy Plan? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, you know, this is just hypothetical, but I would think that if New York does continue its ban and not lift its ban, and we don't know which they're going to do, but if it does continue its ban, I think our danger is far less that we'll be getting fracking waste in Connecticut, because I just, most economists and people who have studied this issue say it's very expensive to move fracking waste long distances, and therefore, we don't think that fracking waste is going to come from Pennsylvania or Ohio or West Virginia.

We do think it could well come from New York, but we want to be ready. This bill is before us today because we want to be ready to protect our citizens.

THE CHAIR:

Senator Witkos.

SENATOR WITKOS:

Thank you, and I understand that, but my, I guess the question I'm looking for the answer to it is, if we enact this ban --

SENATOR MEYER:

Moratorium.

SENATOR WITKOS:

-- moratorium, for X number of years, does that impact our ability to participate in the legislation we already passed through the Comprehensive Energy Strategy Plan? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, I'm sorry, I don't understand the question.

THE CHAIR:

Senator Witkos, can you reframe your question, please.

SENATOR WITKOS:

I will.

THE CHAIR:

Thank you.

SENATOR WITKOS:

Thank you. If part of our Comprehensive Energy Strategy Plan we passed in the last Session or two years ago, I don't recollect when it was, determined that we would be able to move more of our residents to a cleaner, natural fuel, get away from oil based, which is to a natural gas base, and if part of our thought process was, we will be getting natural gas from Pennsylvania, Ohio and New York, and we can't control what New York does, but if they continue with their ban and our plan, does that impact our ability to get what we want to get done here in our state to our residents? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, Governor Malloy has been very aggressive in trying to facilitate natural gas coming to Connecticut. We have been using only about 25 percent of our energy for natural gas, where the other northeastern states are 40 to 50 percent natural gas, which is far less expensive than home heating oil.

And so, we are through pipelines and incentives and discussions, some of which we've had in, and Environment Committee's had, many of which the Energy Committee had. We are trying to put a real push behind this cheaper energy source, natural gas.

So if New York decides to go with natural, with fracking natural gas, I would think that would help us, but there are plenty of other supplies now of natural gas that we're getting coming from other states.

THE CHAIR:

Senator Witkos.

SENATOR WITKOS:

Thank you. And my understanding is that pipelines will have to be built based on the number of places that would change over and to get the, we can't produce natural gas here in Connecticut. We've got to get it someplace else and ship it here.

And if part of the pricing were based on New York entering into the market, I think that's going to negatively impact us if they are no longer in the market and the gas is being shipped from a further distance away.

So we said that fracking won't come, travel that far from Pennsylvania or Ohio because it probably costs too much money to send, transport it either by rail or by freight on our roads, and that's what we don't want to have happen by this bill being before us.

But yet, if our Comprehensive Energy Strategy is built on the fact that our neighboring state New York produces natural gas and it's a shorter distance, we can get it cheaper, you know, I'm wondering how, as a region, how that's going to impact us.

And while we can only control our own destiny, many times in this Chamber we do things on a regional basis because either we don't want to go it alone or things happen in our region similar to and I'll name like a couple. Like when we put sulphur in our gasoline and we did a GMO labeling bill, they were trigger marks to say well, if it's done regionally, then it's going to make sense for us to participate in it because we act in a region.

So I guess to get to my question, the long way around was, if we pass this bill as amended, it's not going to negatively impact our ability to move our residents to a conversion to natural gas. Is that correct? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Yes. Through you, Madam President, our intent is to encourage more use of natural gas in Connecticut by our constituents. This bill does not relate to that.

This bill relates instead to a byproduct that we call fracturing waste that comes from natural gas, and that's to protect our citizens, what we think we need to regulate and have a moratorium on until we do that regulation.

THE CHAIR:

Senator Witkos.

SENATOR WITKOS:

Thank you. And that's, I guess, and I agree, but does that impact our state in a negative way if we are the benefit of the product, but yet we're not responsible for the byproduct where the states that produce it benefit by the product but have to deal with the byproduct.

So how does that, can they charge and they meaning whoever produces it, can they charge us if you were to say, or have you heard, a fee for not accepting the waste of the product that we're actually receiving.

So we get the good but without the bad is kind of what I'm getting at. Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, Governor Malloy last week made a very significant statement in answer to the Senator's question, and he said that the states which do have natural gas get a great benefit from having that resource, and that they should have the responsibility for that resource as well as the benefit.

And when he said that, he referred to, in effect, to this bill saying that we shouldn't have to accept the responsibility of a toxic poison like fracturing waste when we don't have the benefit of the resource itself, mainly natural gas.

So we're drawing a very strong line between the two. We don't have the benefit. We shouldn't have to have the responsibility for dealing with the toxic material.

THE CHAIR:

Senator Witkos.

SENATOR WITKOS:

Thank you, Madam President. Well, I would respectfully disagree with that comment because this is the exact reason why we're switching people over to natural gas because we were receiving the benefit that it's a lot closer to Connecticut. Prior to the discovery of the Marcellus Shale it wasn't financially viable to ship it from the gulf coast or out Midwest here because it just, cost-wise it didn't lend itself.

But now that there's 100 year supply apparently that was found in New England, or in our region, the distance traveled that you have to force the gas through is less, so it makes it more economically viable, so we are receiving the benefit without the negative end of it, and that's my concern.

Have you heard from, well, let me back up. Through you, Madam President, who regulates this type of entity with the gas? I think it's at federal level. Through you.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, it's not my stick, but I believe it's regulated by FERC, the Federal Energy Regulatory Commission.

THE CHAIR:

Senator Witkos.

SENATOR WITKOS:

Thank you, Madam President. And being a former member of the Energy and Technology Committee, I knew that when we had congestion problems in our state on the electrical grid down in the southwest corner of the state, we got charged a surcharge because of congestion problems, and that was administered, given to us by FERC.

Now, is it, have you heard anything about anything being discussed at the FERC level saying, if you're going to be a recipient of this gas from, of gas, and you're not willing to take the byproduct of that, you will be, you might be receiving a charge? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, I've been no party to any such conversation or implication.

THE CHAIR:

Senator Witkos.

SENATOR WITKOS:

Very good. And so, that's a concern of mine, then. Knock on wood. I think we're in a great position that we're receiving a clean, more efficient fuel cheaper, without having to deal with the negative stuff that the other states have to do with. Knock on wood with that one.

But I'm just concerned as we move in that direction in the future, if the other states start complaining to FERC or file, I don't know how it works, do they open up a docket, are you aware of, and then somebody could file a complaint? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, I don't, this is beyond my pay level. I don't understand necessarily the federal regulatory process except that it doesn't work very well.

THE CHAIR:

Senator Witkos.

SENATOR WITKOS:

Unanimous on that, Madam President. Thank you. And I apologize for that question. I was kind of getting my arms around how the whole process works.

So how, if it does at all, is there anything that on a regional basis where we currently have, and I think it's through the federal DOT where they say, placarding of vehicles and you have to have, you know, if it's flammable, you have to have a picture of flame. If it's hazardous, you have a picture of something that's atrocious, you have a picture or something.

And I believe it's a standardized thing across the United States so any first responder if there was an incident could readily recognize that, and I think those regulations died how these types of materials

are transferred or moved along our interstate highway system.

Is there anything that, I have to think of how I want to ask this question. Can a state individually determine, which is what we're trying to so, say we're putting up a road block or a border patrol saying that particular product is not allowed in our state? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, Senator Witkos is raising an issue that the Environment Committee has often encountered, and that is when we have put restrictions on toxic chemicals we've been told, as for example, bisphenol-A, or pesticides, we've been told that that could be a violation of the Interstate Commerce Clause.

In the ten years that I've been here with passage of much toxic chemical legislation, we've never been sued for that, so I think the opinion, the legal opinion and constitutional opinion we're getting is, in the absence of specific federal preemption, we the states have the ability to regulate these kinds of toxic chemicals, and I'm a major supporter of that as the Senate Chair of the Environment Committee.

THE CHAIR:

Senator Witkos.

SENATOR WITKOS:

Thank you, Madam President, and I co-sponsored the bisphenol-A and previous pesticide but that's sale. This is, we're permitting something to travel through our state and so that's why there's a difference in my mind. And I don't know if the Motor Carrier Association, I don't know the answer to that, or did they testify at the Environment Committee.

So can we put a roadblock up saying, you're not allowed to, we really can't sell it here or transfer it in our state, but we're not even going to allow you to pass through our state to get to a place that will legally allow it to be sold or transferred. So that's kind of where I wanted to go with that question. Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, it's a good question and it was a question that the Environment Committee considered and we talked to our LCO at length about, and you will see in this bill that the prohibition pertaining to this bill with respect to fracturing waste does not include transportation.

In other words, we had to look at the question whether or not Pennsylvania might be shipping fracturing waste from Pennsylvania to Massachusetts through the State of New York, through the State of Connecticut, and we do not prohibit that interstate transportation because the legal advice we were given was that could interfere with the interstate commerce.

THE CHAIR:

Senator Witkos.

SENATOR WITKOS:

Thank you, Madam President. Thank you very much for that answer. It had gone through the building and I don't serve on Environment, so I had to ask the question to get there.

But was there ever an earlier version that said you can't go through the State of Connecticut, through you, Madam President. I just want to know, was the rumor mill, the information coming out valid or not? Through you.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, there was an early version this winter of this bill that I think did have a reference to prohibition of export or import. I think it used the word export or import. We struck that on our lawyers' recommendations.

THE CHAIR:

Senator Witkos.

SENATOR WITKOS:

Thank you, Madam President. so if I may, and I'm glad to hear that and that's why I'm glad I'm going to be supporting the bill.

So this amendment, the bill as amended basically says that nowhere in the state of Connecticut can you store hydrofracted byproducts, basically that's it. Is that correct? In a nutshell? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, the actual prohibition and moratorium language is in line 41 and 42 of the bill and let me read it just for clarity. Quoting, no person may accept, receive, collect, store, treat, transfer or dispose of waste from hydraulic fracturing. So that is the moratorium that we have if this bill passes.

THE CHAIR:

Senator Witkos.

SENATOR WITKOS:

Thank you. And just for clarification purposes, when I first heard of the bill, I had some concerns because, and I know there's an injunction for wells or water purposes, because that's how many people that for instance, the mountains and the ledges up here that is the only really good way to open up a line to receive water.

Is the reason why that's exempt is because it's my understanding, well, is it the same process for mining for water as it is for mining for natural gas? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Yes, Madam President. We were concerned here that if we were not careful with our language, we were going to be prohibiting fracturing that's used for other good purposes, and so the focus, the clear and sole focus of this bill is on the fracturing hydraulic, means water under pressure with chemicals that focuses on hydraulic fracturing of natural gas, not on the fracturing of other substances.

THE CHAIR:

Senator Witkos.

SENATOR WITKOS:

Thank you. But does it use the same process that you, I mean, you get a machine going down, twisting, fracking, I guess, using water to open up a crevice, however many feet down in the earth. Isn't that one and the same? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, I confess. I'm not really knowledgeable on this subject, but from what I have read, there is hydraulic fracturing in some instances with respect to minerals and with respect to crude oil.

This bill does not attempt to regulate or have a moratorium on those kinds of activities.

THE CHAIR:

Senator Witkos.

SENATOR WITKOS:

Thank you. And my understanding, and I may be wrong, and if one of your sources could confirm or not. The process is the same. The difference is the depth at which you would frack, whereas most well water, drinking water only go down X feet and you have to go down such a larger depth to hit natural gas, and I don't know if that's the case or not.

So I was trying to say, if the process is bad, why, I would like to continue using it for water purposes, why would we allow it? Because I will tell you from building my house, as the machine was, it looked like an oil drill going up and down and, you know, I saw the heads on\ the drill spinning and it was just done with water, and as the thing came out of the hole, it looked like there was a big glob of cement that was lava flowing out. I'm assuming that was minerals and other things that are contained within the earth until they found, hit a water source underneath the earth and got enough adequate pressure and I got my water line in there from the house, or the well.

And I don't know if, I didn't ask the guy at the time. I didn't ask him well, do you have in with that water, or is it high pressure water, or is it the same process for fracking for natural gas. I wish somebody had answered that during the public hearing process because for curiosity sake, what's the differentiation between the two?

But that's all the questions I have for Senator Meyer, Madam President. You know, I do stand in support of

the amendment before us, and I'll go back to the example I just gave a few minutes ago when I did the well to my house, and my wife's family has a whole bunch of acreage and they said, well, pick out a spot where you want your house and you can build it there.

And we didn't know where to go and it's a back lot. We said, well, we're going to bring services. We definitely knew we had to be on a septic system, but we said, how are we going to get water because we're going to be, we live on the side of a mountain and it's going to be tough and it's going to be expensive.

We had a dowser come out and he walks in and he walks up to a tree and he snaps a branch off and pulls the green leaves off, pulls it out and he starts walking around the woods. What are you doing? He said, I'm looking for where you're going to drill for your well, and I said, I don't believe that. How would a stick being held in your hand get a point to where water is and I told my wife, I can't believe we're paying for this. I said, a fool's born every day.

And so, he called me over. He says, Kevin, come over here. Hold onto this stick. It doesn't work for everybody but I want you to hold onto this stick as tight as you can. So I held onto the stick and literally, it bent in my hand. And he said see, there's water under here. It drives itself toward the water and I was so surprised at that and I'm like, okay.

So when we hired the guy to come in and put in our well, sure enough, right on that exact spot, he only went down like 75 feet and we live on the side of a mountain and there was water coming out. He said, you've got great water pressure and now you're good to go.

And so, I'm always concerned that, you know, who knows what's happening down in the earth and a commodity such as water. It's so precious that we have to be concerned about it and when folks get up and talk about you know, the negative impact of things and oh, it's (inaudible).

Well, growing up I'd never seen, we didn't have all these health issues that it seems like we have nowadays. I don't know if it's, we haven't had the ability to diagnose it as early, but there just seems to be so many health issues, what we eat or what we drink, and why should we allow these things to happen when we can easily prevent those, and I think that the ban, not a ban, but the moratorium gives us the opportunity to say, this natural gas is good for the residents of the state of Connecticut. It's going to allow them to continue on with converting to natural gas from oil (inaudible) very expensive oil-based product to natural gas. That in turn will save them money.

The folks, especially in an urban area where it's high density. We happened to see, if you look at Operation Fuel, a lot of those monies from Operation Fuel go to urban areas to help folks to stay warm in the winter, and if you can save money by making a product cheaper but still get the same results, I would think that's certainly that we would definitely want to support.

So we're bringing in natural gas. We certainly are the benefit of a product that unfortunately, some states, you know, they're dealing with the byproduct and I understand that might be difficult.

You know, we had years ago, and we still have, I think, two towers up for nuclear in our state, and guess what? We dealt with the byproducts of nuclear waste and we still haven't resolved that on how to deal with that and if it got loose the radioactiveness, how it could harm our citizens.

So why wouldn't we take the measures ahead of time, the preempting thing. We don't know enough about the byproduct waste in hydraulic fracturing to say, well, we don't care. You could store it over here once you build a couple rental units and I'll rent it out and I'll just throw it in there and forget about it.

I want to thank Senator Meyer and the Environment Committee for moving the bill forward. I think it doesn't close the door. I think it says, take your time. Study the issue. Find out if there are harmful

side effects, because in our area of the country it's so new.

While we may have had natural gas down in the coastal region, down the Gulf Coast and out in the Midwest, this is the first time in the past ten years or so up in this area. And I will tell you that I've heard some horror stories in Pennsylvania where all of a sudden now farmers are saying, hey, bring in a well here, you know. Take whatever you can for a certain dollar amount. Not that it's greedy, but we've almost become poor stewards of our land. We used to say that the farmers were the best stewards of the land because they know the land inside and out and know when to plant vegetables, know when to plant fertilizer and switching the different crops to make it the most fertile land that they can.

But now, it seems like it's dollar signs popping up and they're turning over their farms to natural gas. I've heard of explosions in communities and there is, you know, from what I understand there's no regulations as to where some of these things are being built. They're being built close to schools, elderly housing complexes, nursing homes.

And to do that, and put the most susceptible citizens of our society, the young and the old so close to this, I just don't think it's right because we don't know what kind of an environmental impact that this will have on them.

We're taking the right steps in the state of Connecticut, so I'm supporting the amendment. I think that it doesn't shut the door. I think it says we're going to take baby steps. We want the natural gas. Let's go full steam ahead. Get the natural gas, get the pipelines built, bring this to Connecticut, make things cheaper, cleaner, more fuel efficient, but in doing so at the same time, don't bring your waste here because we don't want it.

We'll study it in the two years. I think, just one quick question with the change, I didn't see it. Through you, Madam President, the moratorium is for a two-year period that's upon passage, two years from that date? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, under the bill, there can be no regulation until July 1, 2017, so that's a little bit more than three years moratorium and then after those regulations are adopted, if they're adopted by July 1, 2017, then there will be another period when the moratorium will continue as the Legislative Regulations Review Committee considers the proposed regulations proposed by DEEP.

So, actually, the moratorium in actual fact will be more than three years.

THE CHAIR:

Senator Witkos.

SENATOR WITKOS:

Thank you. I have a couple questions then on that. So, no regulations can be developed until July 1, 2017? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, actually, regulations could be developed and DEEP has indicated they're going to be working on it. They just cannot submit any regulations to our Regulations Review Committee until July 1, 2017.

DEEP has indicated that they're going to be working on this, quite quickly and as I mentioned before to Senator Chapin, the bill does have an information section for DEEP to acquire information to know how to start to work and draft regulations.

But the regulations cannot be adopted until July 1, 2017.

THE CHAIR:

Senator Witkos.

SENATOR WITKOS:

Thank you. And if the regulations speak to, they arrive at the Regulations Review Committee, and there's always conversations prior to them arriving on the desks of the Legislators that are on the Regulations Review Committee, at their first meeting if they so chose, they could adopt the regulations presented to them by DEEP and move forward from that point. Is that correct? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, that is correct.

THE CHAIR:

Senator Witkos.

SENATOR WITKOS:

And through you, Madam President, the Regs Review Committee, do they have the authority to extend the timeframe? I know this legislative body said, 2017, they're going to get the regs. Does the, and that will be voted on by both Chambers of the General Assembly and signed by the Governor to become law.

So say, August 1, 2017, Regs Review meets and can that group of, I think it's either six or twelve Legislators decide on their own, and say well, we're going to keep the ban, a moratorium for two more years. Do they have the authority to do that? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, I do not know the answer to that question.

THE CHAIR:

Senator Witkos.

SENATOR WITKOS:

Thank you, Madam President. I thank Senator Meyer for that answer, and I don't know the answer either. I would think that that wouldn't be the case. I think that the only time it would be extended while they were negotiating the specifics of the regulations. Thank you for the answer, Senator Meyer.

I know that because they take, the Regulations Review Committee takes this very seriously. I know that we've had some issues with Regs Review on another issue regarding the regulation of wind power in the state of Connecticut with the Siting Council and we finally saw the adoption, I think it's some good regulations on moving that forward.

I know I had an issue with one of my hometowns where one of the largest, would have been the largest commercial wind generation facility in the state of Connecticut, was trying to get something passed and we didn't regulate wind at that time, so we had passed through the Committee to start regulating wind power generation and it went back and forth between the Connecticut Siting Council and the Attorney General's office and finally went to Regs Review.

And I think it got sent back three or four times and I know that group does their due diligence on making sure that the legislation speaks to everything it should, so I think that's the right Committee to review anything that has to do with the hydraulic fracturing and I look forward to supporting the bill

at the conclusion of our debate today. Thank you, Madam President.

THE CHAIR:

Thank you. Will you remark? Senator McLachlan.

SENATOR MCLACHLAN:

Thank you, Madam President. I stand for the purpose of questions to the proponent of the amendment.

THE CHAIR:

Please proceed, sir.

SENATOR MCLACHLAN:

Thank you, Madam President. And thank you, Senator Meyer for your work on this topic. We had a brief discussion about this in the Judiciary Committee and I thought it would be more appropriate to flush out some more details here on the floor of the Senate, and that's probably a good idea because it's changed since then.

I wonder if you could share with us, how long has hydraulic fracturing existed in the United States? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, actually the Judiciary Committee was considering a different bill and Senator McLachlan and I debated a bill that had an outright total ban on fracturing waste in Connecticut, and I think that bill passed the Judiciary Committee like a vote of 35 to 5, something like that.

With respect to your question about how long have we had hydraulic fracturing in the United States, I don't know. I'm sorry, Madam President, I don't know the answer to that question.

THE CHAIR:

Senator McLachlan.

SENATOR MCLACHLAN:

Thank you, Madam President. Well, it's my understanding that it's somewhere around 50 years, but I don't know the exact time either, but I believe it is a substantial period of time.

And through you, Madam President, to Senator Meyer, the Marcellus Shale touches Pennsylvania, you mentioned West Virginia and western New York. What is the distance from the Marcellus Shale to western Connecticut? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, my understanding is that from the most distant point of the Marcellus Shale to New York, I don't know the answer for Connecticut, is about 550 miles.

THE CHAIR:

Senator McLachlan.

SENATOR MCLACHLAN:

Thank you, Madam President. And so, I thought I heard you say earlier that the likelihood of waste byproduct traveling that distance was highly unlikely because of the cost and the distance. Did I hear that correctly? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Yes. Through you, Madam President, I did, because what people who do hydraulic fracturing like to do is to take the waste, put it in trucks and take it to wells where it can be recycled. That's the principal activity as I understand if of hydraulic waste. It's to recycle it and then bring it back and use it again for example in the State of Pennsylvania as again, a hydraulic pressure fracturing system.

The people who are knowledgeable with whom I've talked about it said that it's just too expensive to come from the State of Pennsylvania all the way to Connecticut. They can find other places in either Ohio or New York or within Pennsylvania itself, but not Connecticut.

THE CHAIR:

Senator McLachlan.

SENATOR MCLACHLAN:

Thank you, Madam President. So I thought that the concern here was being driven by a perception by some that fracturing waste could find its way to Connecticut, but I'm not hearing that in this discussion. Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Yes. Through you, Madam President, in answer to the question of Senator Chapin, I pointed out that we are very concerned about New York. I think Senator Chapin's district being right on the border of New York would be endangered if and when New York lifts its ban and New York is considering lifting its ban.

We've been told that the Governor is going to make a statement and decision on that as early as this fall.

THE CHAIR:

Senator McLachlan.

SENATOR MCLACHLAN:

Thank you, Madam President. Thank you, Senator Meyer. The process that you described, I believe being employed in Pennsylvania for the fracturing company to take waste and bring it to another site for recycling, what is the distance between the original site and the recycling site? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, I don't know enough about that to really answer that adequately. I don't know. Obviously, I've been told from an economic standpoint the shorter the distance the better because of the cost savings. But how far are these transporters willing to go, I just don't know the answer to that.

THE CHAIR:

Senator McLachlan.

SENATOR MCLACHLAN:

Thank you, Madam President. Thank you, Senator Meyer. The research that I've done was that it is advantageous for them to do it either on site or very close to the site in which they are generating the waste from hydraulic fracturing.

And so, through you, Madam President, the Marcellus Shale in the State of New York appears to be primarily in western New York, though I see it touches one of the larger state parks. In fact, the most recent part of the Marcellus Shale takes up a good part of the Adirondack State Park if I'm not mistaken.

And so assuming that they would never allow, I'm assuming and I may be wrong, they would never allow activity of that nature in a state park, if you go further west of that, through you, Madam President, how far is that to western Connecticut?

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Well, if you look for example, through you, Madam President, at Onondaga County, which is sort of in the center of New York, I speak as a former New Yorker as you know, the distance from the center of New York, Onondaga County to Connecticut would be a distance, I would estimate of about 150 to 200 miles.

THE CHAIR:

Senator McLachlan.

SENATOR MCLACHLAN:

Thank you, Madam President. Thank you, Senator Meyer. I suppose that could be the right answer and as an estimate I'm sure that's fine. In any case, I think it's a lengthy distance and my point is, is there some number that tells us we're safe?

For instance, if the nearest shale operations that employ hydraulic fracturing is perhaps going to be in Webster, New York, and that's some four or five hour drive by tractor trailer to western Connecticut, is it safe to say that for instance, Massachusetts or Rhode Island or Vermont is safe from this problem because of the further distance? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, I'm not sure that I really can answer that but the fact is that we have the less exposure the farther we are from the source of the fracking. But when you're talking about central New York and I'm looking at a map that my aide has just provided me of the Marcellus Shale, it

actually goes further east toward Connecticut than I thought it did.

And as Senator McLachlan pointed out it includes the Adirondack Park, but it also goes south of the Adirondack Park into central and eastern portions of the State of New York.

So the distances are not that far, but these are economic factors that will be taken into consideration. I don't think it's proper for me to hypothesize about them.

THE CHAIR:

Senator McLachlan.

SENATOR MCLACHLAN:

Thank you, Madam President. Thank you, Senator. I guess maybe I looked at this same map or a similar map that was available to us on Google through the EPA and the most eastern point of the Marcellus Shale in the State of New York is, as I could pinpoint, Oswego, New York. I'm not sure that's the town you just told us about and if you plot that to New Milford, Connecticut, that's about 250 miles, so it's a five-hour tractor trailer trip from the Marcellus Shale.

And I guess the point I'm trying to make, Senator Meyer is, I don't think we're in shot of that type of problem. I may be wrong, but I'm sensing that. If you look at hydraulic fracturing operations across the country, they don't travel that far with their waste because they want to recycle it and bring it back to the original site.

So it doesn't seem economically feasible or make much sense for them to do that and you know, I understand everyone's concern about the potential damage that waste can cause, but I really would like to be realistic in the discussion about this topic of how likely it is to come here, and based upon sheer mileage, I don't see that happening.

Are you aware of other states where they travel a long distance with their fracturing waste? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, I am not, Madam President, aware of the distances that are traveled. But again, this bill is being offered to the Legislature and to the people of Connecticut in order to avoid what many people feel is a danger to our security and our safety and our health.

And you could say, Senator McLachlan, better safe than sorry, and I think it's a little problematic to hypothesize as to whether New York is too far or too near on the question of this poison.

THE CHAIR:

Senator McLachlan.

SENATOR MCLACHLAN:

Thank you, Madam President. Thank you, Senator Meyer. Actually, I think it's our job to hypothesize because we don't have science and we don't have anything to compare to, so it's important for us to do that.

SENATOR MEYER:

And through you, Madam President, Senator McLachlan is correct, and that's why we have presented a bill that's a moratorium and a regulation rather than an outward ban. And that's what the Governor really asked us to do, realizing that this science is not yet completed, at least within the knowledge of us here in Connecticut.

Instead of doing it as a ban, as I had initially recommended, we're taking a more moderate approach. You heard Senator Witkos speak to that. It's really an incremental type of approach.

THE CHAIR:

Senator McLachlan.

SENATOR MCLACHLAN:

Thank you, Madam President. Thank you, Senator Meyer. In your discussion with Senator Witkos, you said that there is fracturing for good purposes and I wonder if you can explain what you meant by that?

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Yes. Through you, Madam President. I, you know, just in terms of own reading as a history major in college and afterwards, I have read about fracturing that fracturing is used, fracturing the earth surface is used to capture certain minerals, to capture certain crude oils, maybe for gold, I don't know, but the fracturing for natural gas is something that generally, according to the material I've read, is a little bit different because that fracturing gets beneath the shale into the natural gas below it, is often actually a mile deep in the surface of the earth.

So this is a deeper penetration plunging into the earth's surface than would be for example if you were trying to reach aluminum or bauxite or coal. This is a very deep penetration into the earth.

THE CHAIR:

Senator McLachlan.

SENATOR MCLACHLAN:

Thank you, Madam President. Thank you, Senator Meyer. Yes, it's my understanding that most deposits of this nature are deep into the earth because they're far below water sources.

It's my understanding that when they drill for oil or natural gas they tend to be drilling far below traditional levels of water and that they have certain safeguards to protect the water resource as they go through that level of the earth into the lower levels where the minerals and natural gas are found.

So through you, Madam President to Senator Meyer, are you familiar with the Environmental Protection Agency's study of the potential impacts of hydraulic fracturing on drinking water resources? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

I'm not, through you, Madam President, I'm not familiar with the details of that report. I understand, I've heard about the report but I'm not familiar with it.

But just in answer to Senator McLachlan's suggestion about a federal report, you know, our experience in Connecticut has been that the federal government has been very slow to react with respect to toxic chemicals and I think it's very much in the interest of our state that we be aggressive here and move and not wait on the federal government.

The federal government for example, hasn't even made a definitive statement about electronic cigarettes. We're still waiting on a whole bunch of things from the EPA that are not coming and I'm recommending to this Circle that we not wait on the federal government.

THE CHAIR:

Senator McLachlan.

SENATOR MCLACHLAN:

Thank you, Madam President. And through you, Madam President to Senator Meyer, in fact, this study that I

referred to; which I read, do you know if the people who have assisted you in writing this bill have read this report? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

I'm just looking at, through you, Madam President, just looking at the Legislative Liaison for DEEP and he indicates that his office has not read the report.

THE CHAIR:

Senator McLachlan.

SENATOR MCLACHLAN:

Thank you, Madam President. This report is the latest progress report, was released by the EPA in December of 2012. This has been underway for two years. Their draft final report is due this year. They have scientists across the country and apparently across the world studying this issue very carefully.

There are a number, it's a very impressive report. And so if you don't have time to read the report, please read at least the Executive Summary of the report, which I believe is only seven pages. And in the Executive Summary, Senator Meyer, I just want to share with you and the Circle some of the things that are being done now that you're in this legislation asking our local environmental regulators to take on this responsibility when it's already being done.

And that is that they're looking at water acquisition, what are the impacts of water and ground surface and surface waters as it relates to fracking.

They're looking at chemical mixing, what are the possible impacts of hydraulic fracturing fluid surface spills on or near wells.

They're looking at well injection, the process, what are the possible impacts of the injection and fracturing process on drinking water resources.

They're looking at flow back and produced water, again, related to surface spills.

And here's some of the important part of it is, they're looking at waste water treatment and waste disposal, what are the possible impacts of inadequate treatment of hydraulic fracturing waste water on drinking water resources.

Now this report describes 18 research projects under way to answer these research questions. This, it boggles the mind, with all due respect, Senator Meyer, that the federal government and literally hundreds of people are studying this right now and our government in Connecticut is wanting to write laws without even reading the report.

With all due respect, I think that is short sighted. The analysis of the existing data is coming from multiple sources. They're looking at hydraulic fracturing activity in 24,925 wells. Their additional data they are researching is on chemicals and water use, what they're actually pumping into the ground and there's 12,000 well specific chemical disclosures on frack focus.

Now, I'm assuming that the advocates of the legislation before us are familiar with frack focus and certainly they're familiar with the Ground Water Protection Council and the Interstate Oil and Gas Compact Commission. These are both pro and anti-fracking organizations that are sharing their study information with the Environmental Protection Agency and the EPA is weighing what's real and what isn't, I guess.

And then there's a panel of experts. Now, you referred to, we have a pretty good expert right here at Yale University. I believe you referred to, and I know that expert has chimed in on other chemical type topics here at the State Capitol.

But they're also looking at state spill databases in Colorado, New Mexico, Pennsylvania, and the EPA is reviewing scientific literature and probably one of the most important things is that, last year they put out a call to scientists for peer review. So maybe we even have a scientist right here in the state of Connecticut who has chimed in on this. I don't know. We should know, but I don't have a list of who they are.

In a separate research project, and this will be of interest to you because you talked about these particular chemicals in your opening statement. They're studying the concentrations of bromide and radium in public water supplies to see what's the impact. This is an amazing undertaking and it's taking a while to do it because it's so extensive.

The laboratory studies are focused on identifying potential impacts of inadequately treating hydraulic fracturing wastewater and discharging into rivers. I mean, they threw a very wide net when they decided to do this study and we're going to get the draft report this year, but we don't know what's in it yet.

Finally, existing analytical message for selected chemicals are being tested, modified and verified for use in this study and for other studies they plan to do in the future outside of this initial report.

At this time, as you properly stated, the EPA has not made any judgment about the extent of exposure to these chemicals when used in hydraulic fracturing fluids or found in hydraulic fracturing wastewater or their potential impacts on drinking water resources.

But this was their progress report. I assume the draft report that's due this year is going to answer that question.

But if we as Legislators should rely on scientists for these questions, it seems like this is the third or fourth time in the last couple of years I've stood up and said, can we please ask the scientists before we play scientists in the Legislature. Can we just get their opinion first?

I understand there's a lot of stories out there. There was even a move about it. I get that. But now we're going to have definitive, unbiased, although the natural gas industry may not feel it's unbiased, but the Environmental Protection Agency is looking at the history of this hydraulic fracturing in multiple states where it's been occurring for years. If I'm not mistaken Texas is probably one of the oldest states that has undertaken this type of activity and we're going to see very carefully from those states what's happened.

The peer review process they talk about in their progress report is very important because obviously some of the most knowledgeable people about the effects of hydraulic fracturing work for the hydraulic fracturers.

If you're looking to be a chemical engineer today, rest assured you can find a very good job with the natural gas and oil industry right out of school, so they get the best of the best working as scientists.

But it appears that the federal government and some of the finest schools across the country have some pretty tremendously brilliant scientists studying this issue.

So, Madam President, this is premature. Once again, it's premature. In a matter of months, Senator Meyer, the Connecticut Department of Energy and Environmental Protection regulators, all the advocates for tight regulations on fracking waste, all of the politicians who are concerned about this issue, and even the Governor of New York perhaps before he makes his decision as Senator Meyer said is anticipated in November, is going to have a draft report from the Environmental Protection Agency that is definitive.

It's no longer going to be hearsay, because people have been shouting at each other on this topic for years.

Now, I'm not calling into question at all that somewhere along the line there have been some nightmares on this topic. I don't dispute that. But when you're talking about waste, look at what happened

in Stamford last week. I mean, mistakes happen. Problems happen.

So yes, we should be prepared for an onslaught of fracturing waste coming to New England, but if you look at other parts of the country that are already in this business, they don't travel that far with their waste. And the Marcellus Shale is not in Connecticut.

So Madam President, I'm going to continue listening to the debate on this topic, but I fundamentally have a difficult time understanding why the Legislature insists on jumping in to a topic to regulate something without having the information.

How can the authors of fracking waste moratoriums, regulations not be intimately familiar with what the Environmental Protection Agency has already produced? It's 278 pages. We should be studying that first before you push a button on this bill.

Perhaps maybe we should wait a couple, three months, or whenever this draft report is available and even if it's just a draft report we know that in that draft report the Environmental Protection Agency is going to ask, or is going to answer Senator Meyer's biggest question. His lack of support, his lack of trust in the Environmental Protection Agency may not be unfounded. I don't dispute how he feels about the EPA and federal regulators on this topic and other environmentally sensitive topics, but a decision from them is imminent on how to proceed.

And this Legislative Body should wait for the scientists to tell us what's the best way to proceed. It may not be a moratorium. Maybe it's something more stringent which was one of the other proposals. That's for others to decide after the scientists tell us what they found.

So, Madam President, at this point I'm very uncomfortable with the bill and I will continue to listen to the debate. Thank you.

THE CHAIR:

Will you remark? Senator Boucher.

SENATOR BOUCHER:

Thank you, Madam President.

Madam President, I actually rise to support the amendment and the bill. I do believe that it is a very good example of when two sides come together and reach a compromise that tries to accomplish the original goal of the bill while not producing a negative outcome, particularly in the economic condition that the state is in right now.

Many of us, if not most of us, are highly sensitive to the issue of a possible pollution and an impact on our public health, particularly in the water, that we have particularly in a state that has a great deal of towns where the water supply comes from personal wells.

I'm particularly sensitive to this issue because I actually grew up from the age of five until after college in the Town of Naugatuck and half of that time living right next to the Naugatuck River, very close to the spillage of the Naugatuck Chemical Plant. It originally was a town that was supported in great measure and had a great public education system because of the very large corporate partner and that was Uniroyal.

With time things changed. We learned a great deal more about pollution. I can tell you that I personally experienced and saw the different colors of chemicals that would flow through that river on a daily basis. People didn't even, weren't aware of what type of chemicals those were and the air could be cut with a knife on any given day.

And so many of the residents there, who knows, at this stage of their life what other health negatives could be there. And as a result, when I was serving in the House some years ago and the very controversial issue about shutting down the City's six coal plants in Connecticut came up to a vote, I ended up becoming the deciding vote and it was very, very difficult to do, particular at that time. I was representing one of those coal plants and you would get phone calls by the employees there who were very concerned about their

livelihood and their jobs and it was a very, difficult, difficult decision to be made, as are so many of the decisions that we make here.

So at the same time that I support this bill and I supported the closure of the City's six power plants, Connecticut had some of the highest energy costs in the country. It is often cited as one of the things that this is pointed to, it's one of the difficulties of continuing to conduct their business here or even locating here.

We are also embarking in an interesting period where we're becoming more energy independent as a country. That's a very, very good thing, very good thing. It may very well be that soon we are becoming the net exporter of energy rather than importing it from so many other places, so that drive to reduce costs to provide energy at a time when energy is driving everything and so much of what we do is dependent on that energy source.

So many of our towns, I'm sure so many of yours right now are asking for gas lines to be extended into their municipal buildings or even into their homes if they can, and that becomes difficult unless a good number of people sign up for that. So there's a great demand that is there.

So on one hand we're looking very much to supporting, extending natural gas for our state and its residents but on the other hand the byproducts of producing that is very, very controversial.

But, you know, towns really then could actually gain more funds that they're using right now for those high energy costs to supply our classrooms with more resources, to help our police, fire and social services as well.

I however, do believe that we can accomplish both. We actually can promote natural gas but do it safely and that's why this is, this compromise is a very good idea. It's, from what I've been learning in reading up on this, I understand that actually that fracking was being used in the oil well production back in the 1860s and then later in the 1940s, late forties, I

guess we embarked on hydraulic fracking as well and that in doing so in the seventies it actually became much more popular and was really extended outside of our borders in Canada and Germany and the UK where we know that they have some very serious power issues as well.

And I am going to ask a couple of questions if I can, if I may do so to the proponent of the bill, because the good Senator knows a great deal more about the ramifications of this process.

THE CHAIR:

Please proceed ma'am.

SENATOR BOUCHER:

Thank you very much. I understand from what I read that 90 percent of this fracking process is composed of water and that 9.5 is composed of sand and just 5 percent has about 13 other type of chemicals that are involved in that. Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Yes, through you, Madam President, that's roughly the components that I have heard as well. Part of our problem with understanding the small amount of chemicals is that most companies have treated them as trade secrets and what this bill tries to get at those trade secrets to find out what the components are so that we know the level of toxicity.

THE CHAIR:

Senator Boucher.

SENATOR BOUCHER:

Thank you very much, Madam President. That would be helpful to all of us I'm sure, that is of concern. And speaking of that, the process that is used in the

opponents of hydraulic fracking point to certain risks and I wonder if you could give us a few more details about those risks. One of them would be, and I'll name a few, but the first one that comes to mind is the environmental risk including the contamination of groundwater and the depletion of fresh water. Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Yes, through you, Madam President, and this is in answer to Senator McLachlan's points as well. When we held a public hearing on this bill, we did have scientists who did testify.

For example, Dr. David Brown, retained by the Environmental Human Health Nonprofit here in Connecticut. Dr. David Brown is a public health toxicologist at Yale and he testified to answer your question, Senator Boucher, as follows, I'm quoting.

A study in 2012 of over 1,300 births found 25 percent lower birth weights when mothers were living near active hydraulic fracking drill sites, and then he goes on to talk about other toxicity issues.

But lower birth weights, other endocrine effects, carcinogens, particular carcinogens from the high radioactivity found in fracking waste.

I think the reason why this bill has so many sponsors is the information that I know you perceived as well as I, that indicates a huge amount of toxicity from this stuff of which perhaps the most dangerous is the high degree of radioactivity that could cause cancer. So birth weight, endocrine, cancer, those are the things that have been cited to it.

THE CHAIR:

Senator Boucher.

SENATOR BOUCHER:

Thank you, Madam President.

Madam President, other issues have been cited, such as the noise pollution. Now, how does that impact public health in your view? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Well, I think, through you, Madam President, Senator Boucher really answered the question. Noise is a form of pollution and the noise of hydraulic fracturing in neighborhoods as people try to make a profit from this activity, has caused, has become really a public nuisance and we're hearing that in Pennsylvania and other parts of the country. So noise pollution is a factor.

THE CHAIR:

Senator Boucher.

SENATOR BOUCHER:

Thank you, Madam President.

Madam President, also the depletion of fresh water. How would that occur through this process? Through you, Madam President.

Senator Meyer.

SENATOR MEYER:

Madam President, the experience that we've read in Pennsylvania indicates that when fracturing waste or any of its byproducts, such as de-icing materials have been used, these materials, these waste materials have filtered actually into water streams and have contaminated drinking water, and that's led in Pennsylvania to a number of lawsuits. The lawyers are happy with that.

But it is, that is perhaps the biggest danger is to our water stream and particularly to our potable water from these wastes.

THE CHAIR:

Senator Boucher.

SENATOR BOUCHER:

Thank you, Madam President. For sure, that is a great concern, and I do believe fresh water and our food supply are some of the. two most important things that may be affecting our rates of cancer and other health issues that have come to the forefront for sure.

I wonder if the good Senator can talk a little bit about the increases in seismic activity, mostly associated with deep injection of disposal of flow back, which is producing the brine through the hydraulically fractured well that has become actually an international concern and has brought about some international scrutiny. Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, I have also read about the seismic effect about fracturing but I don't have any more specific details about it than what the little bit I've read.

THE CHAIR:

Senator Boucher.

SENATOR BOUCHER:

Thank you very much, Madam President. It appears to be of such concern that apparently the international community have some countries doing both. They're either protecting the activity of fracking, or they are suspending or even banning it, which again, a

thorough review, study and research in this would be very helpful.

It would appear, as we saw, that other countries really got into this process much, much earlier than we have here in the United States and have been using it for some time and that they are moving forward, most notably, the United Kingdom it appears.

The United Kingdom, interestingly enough has actually lifted their ban and instead, they're choosing regulations instead of outright prohibition, and in fact the European Union is in the process of applying regulations to permit it, for it to take place, so we can understand the great conflict that the Europeans would have.

Such small countries, such high demand for energy, lack of natural resources of their own, having to import it, whereas the United States and Canada are actually in a very enviable position of actually having both the need and they have also a great deal of natural resources.

So I believe that embarking on, rather than the outright, position seems to be the tack and the direction they are going. But it's important, obviously, for us to be functioning on two tracks.

One on exploring, possibly even say for methods for the extraction of natural gas, but also in finding ways that we can do this in a safe way, and knowing even more clearly what the byproducts are. Those areas, other .5 percent of what's being used in this if those, how toxic are they? Are there alternatives that are safer? Can we find other means?

I think all of this even speaks even further to the fact that we really haven't come far enough. There's been a great deal of effort being made for alternative fuel sources, but not far enough. Even our own, I think, flirtation here in Connecticut with fuel cell technology that was gaining some measure of support had a lot of support, I know on my end, that produced water, H20 as a byproduct.

Some even showed that they could drink that residue from fuel cell technology and so it's very important, I think in discussing this that we also not forget and lose our focus on trying to look into other methods of producing energy, which is going to be even more critical as time goes on as our technology improves, as it grows, as it becomes more sophisticated that this topic controversial as it is, will follow us I think, for some time to come, that we have two masters here.

One for more energy, affordable energy so that businesses can be conducted, and on the other hand to make sure that our residents, our towns and cities are as safe and pollution free as possible, because we do see, and a good example is Naugatuck, Waterbury, many other towns that have gone from very thriving, healthy, vibrant communities, to losing their mainstay industries that have left those cities really in serious economic trouble for decades to come.

Thank you very much, Madam President.

THE CHAIR:

Thank you. Will you remark? Will you remark? Senator Kelly.

SENATOR KELLY:

Thank you, Madam President. I rise in support of the underlying bill, which I voted for in Judiciary, but I had a couple of questions, through you, to the proponent of the amendment just to clarify some points.

THE CHAIR:

Please proceed.

SENATOR KELLY:

Thank you, Madam President.

Senator Meyer, I see in the initial part of the amendment that the fracking activity currently would be allowed under RICRA, which is a federal statute

that came into existence as part of the Environmental Protection Act dealing with hazardous materials similar to CIRCLA. There was CIRCLA and there's RICRA>

So if I understand correctly, this activity, the hydraulic fracking and radioactive material would not be outlawed by RICRA, through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, I'm not sure I know the answer to that question. One of the things we're trying to do in this bill is find, put this in the regulatory process of hazardous materials so that we have a regulatory process to do this. I don't think I know the answer to your question, but I can consult with staff for a minute and try to answer it if you'd like.

THE CHAIR:

Would you like?

SENATOR KELLY:

Yes, Madam President.

THE CHAIR:

The Senate will stand at ease for a moment.

(Chamber at ease.)

The Senate will come back to order.

Senator Meyer.

SENATOR MEYER:

Madam President, in answer to Senator Kelly's question, my understanding after talking to staff is that this bill will have the effect of applying RICRA

in Connecticut, so RICRA will become part of our regulatory process in Connecticut.

The current exemption will be dropped and the application of federal RICRA will be something we'll be doing here in Connecticut.

THE CHAIR:

Senator Kelly.

SENATOR KELLY:

Thank you, Madam President. So I'm a little bit confused. RICRA is not applicable in Connecticut? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

No. Through you, Madam President, I'm advised by our staff that current law is that we're exempted from RICRA in Connecticut and the effect of this bill, hold on a second.

THE CHAIR:

The Senate will stand at ease.

(Chamber at ease.)

The Senate will come back to order.

Senator Meyer.

SENATOR MEYER:

Thank you, Madam President. Again, I'm informed, and I apologize that I didn't know the answer to this legal question, but I'm informed that we, Connecticut was delegated responsibilities under RICRA and that there was an exemption for the regulation of natural gas and that we will, by this bill, be removing that

exemption for natural gas so that natural gas will come within the RICRA regulations.

THE CHAIR:

Senator Kelly.

SENATOR KELLY:

Thank you very much, Senator Meyer. So when we look at this exemption if you will with regard to fracking, it is limited to a prohibition on natural gas fracking? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Yes, through you, Madam President, actually the earlier drafts we're not clear on that. It looked like fracturing was going to be, hydraulic fracturing was going to be prohibited for other activities and in the definition part of this bill and in other sections, we made it expressly clear that this only applies to the hydraulic fracturing of natural gas.

THE CHAIR:

Senator Kelly.

SENATOR KELLY:

Thank you, Madam President. And you know, I do apologize if I'm asking questions that have already been asked and answered. I was out of Chamber for a few minutes with a fourth grade class from my district that came up today and so I wasn't here for the entire debate. So in regards to if these questions have been asked and answered, once again, I do apologize but I do want to get a couple of points through because I did support, once again, the bill in Judiciary and I want to make sure that the bill does what I hope it will do.

When we look at fracking, some of my questions have been answered. I just wanted to preface it in that regard.

So when we look at fracking itself, and we produce fracking waste that is considered hazardous, what is it that makes it hazardous? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

The science on the subject indicates that the hazard or toxic material of fracking waste comes from a combination of radioactivity, bromides and a variety of toxic chemicals.

THE CHAIR:

Senator Looney.

SENATOR LOONEY:

Thank you, Madam President. Appreciate the yield from Senator Meyer. Since we have some pressing business in terms of tributes to retiring members to attend to, would ask that this bill be passed temporarily and will then, we will return to it post haste.

THE CHAIR:

The bill will be passed temporarily. Will you proceed, sir.

SENATOR LOONEY:

Thank you, Madam President. And at that this point, I would like permission for a point of personal privilege.

THE CHAIR:

Please proceed, sir.

S - 677
CONNECTICUT
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SENATOR LOONEY:

Yes, thank you. Also, Madam President, for a change in marking. There is an item on the foot of the Calendar, Calendar page 50, Calendar 259, Senate Bill 107. If that item might be removed from the Foot and marked passed temporarily.

THE CHAIR:

So ordered.

SENATOR LOONEY:

Thanks, Madam President. If we might stand at ease for just a moment.

THE CHAIR:

The Senate will stand at ease.

(Chamber at ease.)

Senator Looney. The Senate will come back to order.

SENATOR LOONEY:

Yes, thank you, Madam President.

Madam President, if we might return to the item that was passed temporarily earlier, and that was the matter under debate at that time before our introductions and discussions in celebrations of the careers of our retiring members today, and that was Calendar page 37, Calendar 120, Senate Bill 237.

If we might return to that item, Madam President. I would yield to Senator Meyer.

THE CHAIR:

Senator Meyer, will you accept the yield, sir?

SENATOR MEYER:

I will, Madam President, thank you. And we're continuing with our entertaining of Senate Bill 237

and this is an act, you will recall, colleagues that puts a moratorium on fracking waste coming into Connecticut and then it will be regulated.

So when we left off I think Senator Kelly was asking questions and making a couple of comments.

THE CHAIR:

Senator Kelly.

SENATOR KELLY:

Thank you, Madam President. And I believe where I left off at that time was, we were talking and I mentioned that I was out of the Chamber at that time and these may have been asked prior, but you know, what is hydraulic fracking?

And what I'm really looking at is, what are the materials that are used? Obviously water, but what else is introduced into the hydraulic frack? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Yes, through you, Madam President. Hydraulic fracturing consists of high-powered pressurized water plus chemicals, and plus bromides. As I said before, the chemicals have often been kept as a trade secret and one of the things our agency is going to try to discover is what's in those chemicals.

It appears that at least some of the chemicals are toxic because they cause contamination to drinking water. So, that's in substance what we know about it. A lot of this bill will deal with research and information so that we get a better handle on exactly the components of fracking waste.

THE CHAIR:

Senator Kelly.

SENATOR KELLY:

Through you, Madam President, so is that, I noted in the amendment that there was some discussion with regard to disclosure. Are you trying to get at the disclosure so that there wouldn't be withholding of information because it's a trade secret? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, we've covered this all at great length before Senator Kelly came into the Chamber, but just to repeat. There's a section in this bill that relates to information gathering and in fact it's a mandate that the commissioner gather information in order to assess the toxicity of these materials.

THE CHAIR:

Senator Kelly.

SENATOR KELLY:

Through you, Madam President, but one of the purposes of that disclosure is to get at the issue as to what is exactly being mixed with the water in the hydraulic frack to look at toxicity in the byproduct, if you will? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

That's correct.

THE CHAIR:

Senator Kelly.

SENATOR KELLY:

Okay. Are there any natural hazardous wastes that result from the fracking activity? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

I'm sorry, Madam President, I don't think I know what natural hazardous wastes are.

THE CHAIR:

Senator Kelly, would you reframe your question?

SENATOR KELLY:

Certainly, Madam President. And I apologize for not being clear. I guess what I'm looking at is the hazardous material that is present in the byproduct, is that always introduced as part of the hydraulic frack, or is it sometimes the result of, as we do this fracking, I'm going to say, it's released in the process from natural elements that you're engaging as part of this process? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, the extent that I understand the question, the answer would be that 90 percent, as Senator Boucher explained, 90 percent of the components are water. The other 10 percent consists of other things, and maybe as Senator Boucher pointed out, only about 1 percent, 1.5, .5 percent she said actually are the toxic chemicals we're concerned about.

THE CHAIR:

Senator Kelly.

SENATOR KELLY:

Okay, and that .5 percent, is there a way to maybe prohibit those elements from coming into Connecticut without prohibiting the whole conduct? In other words, can you frack without that? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, that's the purpose of this bill. The purpose of this bill is for our agency to have several years to examine these materials and decide whether some are toxic, some are not toxic, whether some of the components can be separated from the others and be safe for the citizens of Connecticut. That's, this is, we're in its infancy in the state of Connecticut with respect to these materials.

THE CHAIR:

Senator Kelly.

SENATOR KELLY:

Thank you, Senator Meyer. So one of the purposes here is to do that research, put the moratorium on so that we have a better idea of what's actually happening and then can approach the issue in a more cautious manner? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, you recall we dealt at length with this issue and the answer is yes.

THE CHAIR:

Senator Kelly.

SENATOR KELLY:

Thank you, Madam President. In Section c of the amendment it talks about a permit, and at one point it says that such permit shall be required even if such collection or transportation is undertaken by a person whose principal business is not the management of such wastes.

Now, that to me means that, you're going to have, if I want to transport this waste, I'm going to need a permit. Does it also require an additional permit for somebody who's already permitted to transport this waste? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Just give me a second.

THE CHAIR:

The Senate will stand at ease.

(Chamber at ease.)

The Senate will come back to order. Senator Meyer.

SENATOR MEYER:

Through you, I'm informed by a representative of DEEP that if you already have a permit, another permit will not be required, but if you don't have a permit, you will be required to get a permit under the standards set by this legislation.

THE CHAIR:

Senator Kelly.

SENATOR KELLY:

Thank you, Madam President. Moving on, and I thank you for that area.

On the anti-icing product, do we right now allow fracking byproducts to be spread on our roads as an anti-icing agent? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, I imagine that our towns use a lot of different de-icing materials. What this bill says, starting in line 76 is, that if you want to use de-icing materials that come from hazardous waste, you're not going to be able to do it until DEEP has done a regulation and that regulation has been approved by our Legislative Regulations Review Committee.

THE CHAIR:

Senator Kelly.

SENATOR KELLY:

So with regards to anti-icing presently, or let me scratch that.

With regards to anti-icing, we're going to put a moratorium and/or prohibition to say that if you're going to use that, it cannot have fracking waste until such time as DEEP issues regulations on that activity? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

That's correct, Madam President.

THE CHAIR:

Senator Kelly.

SENATOR KELLY:

Thank you, Madam President. Now, with regards to those regulations, I understand that the regulations have to be submitted not before July 1 of 2017, which I imagine is to enable the department to get the proper information, research, so that we can address this in a cautious manner, but not later than July 1 of 2018 they have to come up with the regulations.

Is that for the exemption on the hazard, being it deemed hazardous waste as well as the anti-icing. Is it the entire statute or bill? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, as we discussed before earlier this afternoon, there is no particular time structure concerning the adopting of regulations for the de-icing materials.

THE CHAIR:

Senator Kelly.

SENATOR KELLY:

And once again, Senator Meyer, I do appreciate if I'm going back over past material. I do thank you for your patience with regard to that.

Now, and you may have answered this one, too, so bear with me. With regards to the regulations, let's say DEEP doesn't get those back by July 1, 2018, or let's start with that one, through you, Madam President, what happens?

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Hydraulic fracking waste will not be allowed in Connecticut. The moratorium will continue unless and until DEEP adopts regulations and those regulations are approved by Regs Review Committee.

THE CHAIR:

Senator Kelly.

SENATOR KELLY:

Thank you, Madam President. And I understand if they've submitted the regulations to our Regulations Review Committee and, you know, that Committee doesn't adopt them, I can understand that the moratorium would continue.

But let's just say, because in my first term, I was on Regulation Review and I know that there's many agencies that while they're required to bring regulations to Regulation Review, don't always do so, or they don't do so in a timely manner.

What is there available to the Regulation Review Committee or to this Body to compel DEEP to bring those regulations forward so that they meet the July 1, 2018 deadline? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, DEEP is very much committed to this bill, is committed to the research and study of hazardous waste materials and to fracking waste in particular. So they have made statements to many of us in the Circle that they intend to move expeditiously here, that they will not be waiting until 2018, but they will be immersing themselves in research and study of fracking waste before then and

bringing as soon as a bill permits it, which would be July, I'm sorry, July 2017, a bill to Regs Review.

So, you know, I'm not going to be here then. You may or may not be, but they have, that is the statement of intent by this agency and in some concern, many Legislators, to be sure that they did move on this because the agency is understaffed, we set a date here by which they must do that, which is the one mentioned July 2018.

THE CHAIR:

Senator Kelly.

SENATOR KELLY:

Thank you, Madam President, and thank you, Senator Meyer, for answering my questions. I do, I know I've set it a number of times. I do apologize for missing the -- but I do appreciate your apt explanations to answer these questions so that I will be better informed on the amendment.

Madam President, at this time, I have no further questions with regard to the amendment. Thank you very much.

THE CHAIR:

Thank you. Senator Frantz.

SENATOR FRANTZ:

Thank you very much, Madam President. I appreciate that. I do have a few questions for the proponent after a quick statement about my support of any effort to do what we can for the environment in all respects.

And as we said during your farewell speech, speeches, you are a true leader in this field and that's a good thing because those of us who really care about the environment but don't necessarily know a lot about a particular set of chemicals or a particular procedure can turn to you because if you don't know it yourself, you at least run into the experts who probably know exactly what the details are with respect to a complex

set of chemicals in the case that we're talking about today, fracking waste liquids.

And what I'd like to do is, through you, Madam President, ask a few questions of Senator Meyer.

THE CHAIR:

Please proceed, sir.

SENATOR FRANTZ:

I know you've been on your feet a lot today, Senator and you're up for much more? Much least, don't fight the (inaudible). We like that. We like a lot of energy, Senator, that's one of the things.

Could you run through, through you, Madam President, could you run through the history of fracking? I had a couple of summer jobs where I actually was working for an oil exploration company and it was primarily oil and any of the gas that we discovered was always by mistake. We never used any fracturing processes or anything like that. Could you run through the history as best you know it of fracturing?

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, I don't know the history. All I know is that hydraulic fracking we're told, started sometime in the 1800s, the middle 1800s and other than that, I don't, I'm not your person to tell you about the history of hydraulic, I think you're talking about hydraulic fracturing. This bill relates to hydraulic fracking of natural gas but you know, I think it's a statement of fact that hydraulic fracking began in the 1800s, mid-1800s, I'm told.

THE CHAIR:

Senator Frantz.

SENATOR FRANTZ:

Thank you. Through you, Madam President, for the Circle's edification, hydraulic fracturing involves a technique of injecting liquid down with much more sophisticated material than they used to use in the earlier days of hydraulic fracturing back in the 1800s and certainly when I was looking for oil back in the late 1970s, early eighties, any kind of fracturing hydraulic fracturing that was taking place at that point was pretty primitive in that it did use sand.

Are you familiar with some of the newer additives to hydraulic fracturing liquid?

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, I am you know, just a student of what I have read and I'm told now that current hydraulic fracking uses not only water at a high pressure, but also bromides, salt, sand, and chemicals, which appear to be toxic because of the contamination they cause to drinking water. What those chemicals are remains a trade secret as far as we know.

And one of the things we're trying to do with this bill is get to be able to answer the question, the good question you're answering, you're asking, by getting the information from those companies that are producing hydraulic fracking chemicals. That's a good part of what this bill is all about.

THE CHAIR:

Senator Frantz.

SENATOR FRANTZ:

Thank you. Through you, Madam President, is it fair to say that since we know based on your statement, that some of these chemicals are protected by trade secrets, they may be patented in many cases, that there are a variation, there are variations on hydraulic fracturing fluid and there may be half a

dozen; maybe 100 different types of that kind of fluid out there?

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, as a matter of hearsay, that's what we're told. I don't have any personal knowledge about the different type of chemical.

THE CHAIR:

Senator Frantz.

SENATOR FRANTZ:

Thank you. Through you, Madam President, do you think it's possible that there could be an environmentally friendly fracturing, hydraulic fracturing fluid product out there?

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Yes, Madam President. That is what much of this bill is about is to find that out. We had a choice as I said earlier in the debate on this, between banning fracking waste on the one hand and regulating on another and the Governor and DEEP chose the, doing the regulating of it because it may be after we've studied it and got the information that this bill requires there will be some fracking waste, some byproducts, particularly, that may be perfectly safe for the citizens of Connecticut.

So this bill is in part not just a moratorium, but it's in part an investigation and a research.

THE CHAIR:

Senator Frantz.

SENATOR FRANTZ:

Right. Thank you, through you, Madam President, for that answer. And could you, Senator Meyer, give us a little bit of background on how this, these sets of chemicals are analyzed and how it can be determined that they might be hazardous to human beings, to water table. Do they use spectrometers? Do they taste it? How do they do that testing? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, a little bit beyond my pay grade, but the staff is telling me that they do use just what you said.

THE CHAIR:

Senator Frantz.

SENATOR FRANTZ:

Through you, Madam President, saving the tasting it and trying to figure out what's in it part? You might have not heard that, because I said you use spectrometers and the like to try to figure out exactly what kind of chemicals are in there and/or maybe they taste it and figure out what's in it.

SENATOR MEYER:

The DEEP representative is telling me that they're going to use spectrometers, so.

SENATOR FRANTZ:

The former, not the latter. Got it. Thank you.

THE CHAIR:

Senator Frantz.

Senator Meyer.

SENATOR MEYER:

But this, you know, clearly through you, Madam President, this is an area of science and clearly science is advanced to a point that we can analyze these materials and determine whether or not they're toxic, and secondly to what degree they're toxic and then what they're toxic on.

THE CHAIR:

Senator Frantz.

SENATOR FRANTZ:

Through you, and it's a point very, very well taken, Senator and I appreciate that.

You know, I want to say, I really appreciate your patience in answering all of these questions. I think it is important for all of us to understand this process, the chemicals, and everything in it that might be hazardous to our health and the health of children and animals and the environment in its entirety, so I want to thank you for that.

The question I had through you, Madam President, continuing on in informing all of us about hydraulic fracking waste, you touched upon the sort of universal science before, having to do with the generic hydraulic fracturing waste chemical.

Can you just, because I think I was out of the Chamber, can you just in a nutshell kind of sum up what's the worst part about it? You had mentioned, I think, there was plutonium involved potentially and some other chemicals related to plutonium. Is that correct?

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, from the studies that we've had and from the literature, the most significant component of fracking waste is radioactivity and the high rate of radioactivity, which could cause cancer, and I cited a study that was brought to the Environment Committee by Dr. David Brown, a public health toxicologist who found that there was a dramatic change in birth weight of babies of mothers who lived adjacent to hydraulic fracking.

THE CHAIR:

Senator Frantz.

SENATOR FRANTZ:

Thank you. Through you, Madam President, thank you for that answer as well.

The reading that I had of the federal guidelines or federal regulations on this, and I'm scratching my head about this, maybe you can set me straight, they say unequivocally that hydraulic fracking waste is not a hazardous waste product.

Now, common sense would tell you that this is probably not accurate but why is the federal government saying that when it's probably not the case, but we're addressing that we don't know enough about and you know at the end of the day I'm going to probably be for this, but I think the concept of trying to ban something before it's actually even a problem with an extremely low probability of it becoming a problem because the distance between us and New York and Pennsylvania. Can you set the record straight, Senator? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, I'm not sure, set the record straight on what? May I ask to rephrase the question?

THE CHAIR:

Rephrase, please.

SENATOR MEYER:

Sure. The question is, the federal government says that hydraulic fracking waste is not, and I'm quoting this, not hazardous waste.

And we're here dealing, and we're here dealing with the potential of a very hazardous waste product. How can there be such a difference?

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Well, through you, Madam President, our understanding is that the federal EPA has not yet made any actual findings. They are in the process of looking at it.

Senator McLachlan in his extensive questions established the fact that there were studies going and that perhaps the federal EPA will reach a result in a year and we don't have to do that work.

Obviously, our department will take into account any findings made by the federal EPA so we don't have to duplicate the work, but right now, you know, the Environment Committee heard substantial evidence through scientists and others, and others being like over 100 witnesses, that fracking waste is toxic and that's why we're taking the precaution of doing a temporary moratorium and a regulation. So that's about as much as I can answer your question.

THE CHAIR:

Senator Frantz.

SENATOR FRANTZ:

Thank you, Madam President. And thank you, Senator for that answer. That is very helpful.

A procedural question, through you, Madam President, for the Senator and that is, when the federal government comes out, the EPA comes out with their findings, do we always at DEEP, and do we always perhaps legislatively consider that the highest and best answer that we can get on a particular issue and consider it you know, biblical and that we should follow that finding?

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Well, we would, through you, Madam President, we would like to think that DEEP would give the highest answer, but the Committee and advocates felt that we needed a check on the agency and that's why this matter will actually have to be approved by the Legislature through our Regulations Review Committee.

And you know, this is very significant that one agency should not be making this without some oversight and we will have oversight over this through this bill.

THE CHAIR:

Senator Frantz.

SENATOR FRANTZ:

Thank you. Through you, Madam President. Suppose we come up and this is purely hypothetical. Suppose we end up in a situation where the federal government, EPA says, you know what? The following 75 hydraulic fracking waste products are fine. They are totally fine. They don't harm the drinking water as long as you process it in the following way, you're going to end up with pure water and pure bromide and you can use the bromide as fertilizer for example.

Would we at that point, do you think we would revise the discussion or do you think we'd still just continue to try to ban this stuff going forward?

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, you're asking a pretty hypothetical question, but I will answer hypothetically. I think that we in Connecticut don't have a lot of confidence in the federal EPA, even though it's got a marvelous administrator who used to be our commissioner.

And therefore, unless Congress preempts this as a federal matter, preempts the states from acting, I think that we will be doing our own review and I think that's a good thing for our constituents that we do that.

I would assume, again I'm speaking hypothetically because I think your question is hypothetical, I do think that a presumption would be given in favor of any findings by the federal EPA, but I would hope that we would have what you might call a second look.

THE CHAIR:

Senator Frantz.

SENATOR FRANTZ:

Thank you. Thank you for that answer. Through you, Madam President, an additional question, shifting the focus to the states up in the northeast in particular, are we in a competitive environment with the other states surrounding us to try to ban the importation and processing of hydraulic fracking waste?

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

We learned in the last month that Vermont has actually banned fracking waste, and I think your question is, for those states that have not banned it, are we

competitive with them? I don't know. You're asking, if I understand your question, you're asking are we going to be competitive in using fracking waste as an economic activity?

It's sort of going to be, depends on what our agency finds, how it regulates this. It may ask the Legislature to do a ban. It may say that certain byproducts of fracking waste that are perfectly fine, and not a, you know, no danger to our safety or health.

That's what this bill is all about is to find out those answers.

THE CHAIR:

Senator Frantz.

SENATOR FRANTZ:

Right, thank you, And through you, Madam President, that is helpful and I guess what I'm trying to get at is, if all of the states are in a competition to be the first to ban fracking waste and you have potentially Maine and you have Vermont already. New Hampshire, I don't know what they're going to do but it's certainly a possibility there, Massachusetts as well and Connecticut, of course. New Jersey I think is half way, three quarters of the way there. I think they're waiting the Governor's signature on that bill at this point and so the bigger picture issue that I'm trying to get at is, if we all in the northeast who are great beneficiaries of natural gas, especially because from an environmentalist point of view, which I think most of us have around this Circle, it's a great step in the right direction.

It burns very, very clean. It's affordable, et cetera, et cetera. It doesn't come without a cost and this fracking waste treatment is definitely part of the cost, but if we force it on the states that produce it, and we don't give them a competitive advantage being able to spread it out at least a little bit, are we not being fair to them?

And so I guess I'm asking for your subjective opinion as to what your thoughts are on that subject? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, that is a, Senator Frantz is raising an issue that we definitely talked about. CBIA for example, and I see its representative in the Gallery, Art Brown, has said in substance to some of us that if we're going to get the benefit of the lower cost of natural gas, as you point out, or lower cost in home heating oil, if we're going to get the benefit we should take some of the responsibility, and that responsibility should be taking fracking waste, even if it's toxic and dealing with it.

That's an argument I think that maybe you're suggesting now, that you should not get the benefits, cost benefits, without taking the responsibility.

Governor Malloy in a very clear statement last week that I heard, said you know, you pointed out that the initial benefit of natural gas is from the states that have it and can sell it and get a financial benefit, and his point was, they should deal with their own, they should have the responsibility for any poison coming out of this, out of the profits and benefits they're getting, and they shouldn't make other states take this stuff.

So that's the other side of it. But what we're going to find out in a very few years is whether or not there is a safe, economic activity that can be had from this whole area of the waste coming from fracking natural gas.

THE CHAIR:

Senator Frantz.

SENATOR FRANTZ:

Thank you. Through you, Madam President, that's a very good rebuttal to the original line of reasoning that the cost ultimately should go back to the producers who are benefiting economically from us. So I appreciate that.

Following up on the whole economics issue behind the industry of hydraulic fracturing and natural gas production. Do you know, what would be the closest drilling site using hydraulic fracking procedures and the products to the western border or the northern border, for that matter, of the state of Connecticut? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, you recall we talked at length about that earlier today. Maybe Senator, you were out of the room, but we looked at the map of the shale, Marcellus Shale in New York and we talked about the distance from that Marcellus Shale to the Connecticut border and I think I had estimated at about 150 miles.

THE CHAIR:

Senator Frantz.

SENATOR FRANTZ:

Thank you, and I appreciate that answer and I do apologize for being out of the Chamber for one point of a little bit longer than I was hoping to.

So 150 miles. I just did a rough back of the envelope calculation, this being an ordinary liquid with maybe some extra elements in it, it's probably about seven pounds per gallon and that means that that is as heavy a material as you can find to transport. A hundred fifty miles when you're transporting something that's that dense and it's liquid, you have to have specialized trucks for it, especially if it's something that could be considered slightly hazardous or maybe very hazardous, require special equipment and

I'm just wondering if you know whether the economics would even remotely work bringing it from say 130, 150 miles away to a place in Connecticut?

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, I think Senator Frantz, when you were out of the room, I, sort of a hypothetical question in many ways, but I think I gave my own opinion that because of cost factors, I don't think we're in danger of fracking waste coming in from Pennsylvania.

But you know, the economists that we talked to, the Environment Committee's talked to and people we've heard from have said that it's very expensive to transport fracturing waste for the purpose of recycling it and that the closer to the source of the natural gas the better, and therefore, I think the advocates of this bill after hearing about the toxic dangers of fracking waste, felt we should be safe rather than sorry and that New York is close enough to our western border and as Senator Chapin's Senate District that we talked about earlier this afternoon that we would, we should legislate this now.

THE CHAIR:

Senator Frantz.

SENATOR FRANTZ:

Thank you, and in fact the 36th Senate District is on the border of New York as well.

SENATOR MEYER:

Yes.

THE CHAIR:

Through you, Madam President. The next question I have, is there an alternate form of liquid to use for

hydraulic fracking on the drawing board anywhere? Have you heard that from anybody?

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, I don't know if there are any alternative liquids available now.

THE CHAIR:

Senator Frantz.

SENATOR FRANTZ

Thank you. Okay. I'm done with my questions for you, Senator. You get a well-deserved break for standing on your feet for such a long afternoon, and thank you for your explanations and your answers to the questions.

While, at the end of the day I will probably be on board with this bill once it's fully amended and presented to the Circle way late tonight. I am probably going to be in favor of it but I do want to qualify that and I might as well do it right now on the overall package that this bill will be in a few hours from now.

And that is, we probably shouldn't be in the business of legislating against something, banning something before it's a problem, before it's an imminent problem. We've had this discussion, I think over the GMO grass seed issue as well.

It's great to be proactive as opposed to being reactive, which is what we get accused of all the time, but I think it's even more intelligent to be proactive when you know there's a real problem out there, you know.

You see the fracking stuff starting to migrate toward us because they figured out a more efficient way to transport it or the killer bees coming up from South

America, you know. You see them coming. It's a very real bidding time for legislation to keep them out of the borders of Connecticut, because it's a little bit of a Pandora's box once you open that up. You'll be legislating from now until kingdom come, a lot of things that aren't necessarily worth spending much time on.

I'm not saying this is an initiative that doesn't deserve our focus. It certainly does. Anything that could potentially harm the environment, even incremental, we need to spend time focused on.

But the point is, you know, at this point, if we continue to do this and we do other bills that proactively ban things, especially since we don't know everything we should know about a particular product, then we might as well be banning the sky from falling and telling Chicken Little to you know, go home and close the door and lock it.

The important thing that we as a Legislative Chamber have to keep in mind is that we have to be fair about all of these issues and we have to kind of keep things focused on the here and now as opposed to the hypothetical.

When we get into the hypothetical where we don't have the facts in front of us, especially when they're probably going to be available in the not too distant future as per Senator McLachlan's comments before about the study, the federal study or studies that are being completed now. There's going to be a tremendous amount of information out there and I think it sets us up to be unfair, not necessarily with respect to this particular issue, but unfair to industries, the individual small business, people who are looking for jobs if we go to legislate things that we don't know enough about proactively. It's just one of those things that will always be an issue for me.

So once again, Senator Meyer, thank you for your work on this bill. I will, in all likelihood be in favor of it and I appreciate the answers that you've given to me tonight and for all of your time on it. Thank you, Madam President.

THE CHAIR:

Thank you. Will you remark? Senator Kissel.

SENATOR KISSEL:

Thank you, Madam President. Great to see you.

THE CHAIR:

Good to see you, sir.

SENATOR KISSEL:

Just some questions, through you to the proponent of the amendment.

THE CHAIR:

Senator Meyer, do you want to prepare yourself? Senator Kissel, please proceed.

SENATOR KISSEL:

Sure, thank you. First of all, I want to thank Senator Meyer for bringing this amendment forward. As anyone can see, I'm one of the co-sponsors of the amendment. I want to thank Senator Meyer for including me as one of the co-sponsors and commend him for his efforts regarding this. I think it's important.

I do have some questions to establish some legislative history and them I'm probably just going to speak probably at length a little bit on the bill, but hopefully during this period of time folks are in various rooms discussing plans for the rest of today and this evening.

First of all, it was brought to the attention of some of my constituents that I was supporting this moratorium, some folks came up to me and they asked me a question and I was struggling a little bit for the answer.

And they said, well, how can Connecticut have a moratorium on hydraulic fractured waste? Wouldn't

that run afoul of the Interstate Commerce Clause of the Constitution?

And so, through you, Madam President, I'm just wondering, what is the legal ground that the state is relying on in sort of banning this substance and how does that not run afoul of the Interstate Commerce Clause?

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Yes, through you, Madam President.

Senator Kissel is asking a good, legal constitutional question. Our counsel, our LCO, Brad Towson advised us that it would be a violation of the Commerce Clause if we prohibited the transportation of fracking waste through the State of Connecticut, and therefore, an earlier version of this bill was amended to take away any reference to transporting, exporting or importing to avoid that interstate.

With respect to the waste as a product, Connecticut as you know, and you've done a very effective job on this, Connecticut has definitely restricted or banned in some instances, chemicals that we determined were toxic to the people of our state, bisphenol-A would be one example. Lead would be another. Cadmium would be another. Pesticides in grades K through 8 would be another and we have, while some parts of the chemistry industry have opposed our effort to do that, the fact is that we never had a legal challenge, so we believe that we're entitled to protect the citizens of Connecticut with respect to toxic chemicals.

THE CHAIR:

Senator Kissel.

SENATOR KISSEL:

Thank you very much. And through you, Madam President, just again for purposes of legislative

history, I note that this amendment, which becomes the bill in Section, in the definitional Section Number 8 says transfer and I'm just wondering how the term transfer would not necessarily include transportation through our state.

In other words, if a train is coming up from the south and you know, I can actually see the train tracks from the front of my house and I can actually see the Connecticut River from the front of my house, so they run along the River, would transfer in this amendment entail a train that brought carloads of this waste on a trip to Canada from decoupling those car loads in Hartford and then backing up another engine to those and then moving them up the line. Is that considered a transfer? Through you, Madam President.

SENATOR MEYER:

No. I don't believe it is. Transfer is used in this bill in a much more limited sense, through you, Madam President, Mr. President and that it, is means just transferring hydraulic fracturing waste from one vehicle to another, and would not incorporate the kind of transportation that you're referring to that might indeed invade the Interstate Commerce Clause.

THE CHAIR:

Senator Kissel.

SENATOR KISSEL:

Thank you very much. So when you say, through you, just to be clear on this, let's say tractor trailer trucks, could someone, some company bring tractor trailer trucks of hydraulic fractured waste into their tractor trailer truck lot, perhaps let them sit there for 24 hours and then hook them up to another cab and then have that cab continue to bring them out of the state.

Or, is the only thing that we are allowing is someone entering the state and then going right through the state but they're not allowed to stop in the state? Through you, Mr. President.

THE CHAIR:

Thank you. Senator Meyer.

SENATOR MEYER:

Through you, Mr. President, I think the, we have to be very specific on this and look at the language of the bill.

The moratorium is on starting on line 41, it says no person may accept, receive, collect, store, treat, transfer, or dispose of waste from hydraulic fracturing. So that is the crux of the prohibition here, the moratorium here and intentionally as we talked before, does not refer to transporting across the state of Connecticut that might be a violation of the Interstate Commerce Clause.

THE CHAIR:

Senator Kissel.

SENATOR KISSEL:

Okay. So through you, Mr. President, so in reading the definition of transfer, rather than how, quote, you know, one of the ways I look at transfers, I'm picking up this pamphlet and I'm transferring it from here point A to point B.

But this transfer seems to be a different definition of transfer that is more geared to changing the composition of the hydraulic fractured waste. It speaks in terms of the physical chemical composition.

So when we're saying we're banning the transfer here in Connecticut, it doesn't really have to do with transportation. It has to do with taking these substances and re-processing them somehow into some other product. Through you, Mr. President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Yeah, as a matter of legislative intent, I think that the Environment Committee had in mind here a situation where citizens of Connecticut could be exposed to the toxicity of this waste, if this waste was transferred say from a train to a truck within the state of Connecticut, something in which the waste would actually, people would be exposed to this waste that we believe is toxic. So it's that kind of transfer that we're trying to inhibit.

THE CHAIR:

Senator Kissel.

SENATOR KISSEL:

Thank you very much. I appreciate that answer and that's a terrific answer for a point of legislative history.

I'm sorry. Stand at ease for a second?

THE CHAIR:

The Senate will stand at ease.

(Chamber at ease.)

SENATOR MEYER:

Excuse me.

THE CHAIR:

The Senate will come back to order. Senator Meyer.

SENATOR MEYER:

I didn't get the question, I'm sorry.

SENATOR KISSEL:

No, I waited until you were done.

THE CHAIR:

There was no question.

SENATOR KISSEL:

Saw that you were speaking to Committee. Through you, Mr. President, another question for points of creating the legislative history.

THE CHAIR:

Please proceed, sir.

SENATOR KISSEL:

Once upon a time being lucky enough that my constituents have blessed me and watching some of these farewell speeches it's going to get harder this week before it gets easier, but my constituents have been very kind enough to bless me with being able to serve them for 22 years of this Chamber and for a couple of those years I served on the Regulations Review Committee and my recollection is that on Regulations Review, we have the ability to go to a department and say, we don't like those regulations. Go back and reformulate them.

But I'm just wondering. This bill anticipates that at some point, regulations will be developed and that they have to pass the approval process of the Regulations Review Committee.

And so my concern is that I have seen people in the past never accept regulations. They just keep sending them back to the department over and over and over because until there was, maybe they got moved off that committee because they were just not happy with whatever the particular regulations were touching.

So is there a mechanism where we can make sure that this review that I believe is just by the Legislature, can't go on ad infinitum? Through you, Mr. President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Mr. President, we entertained that possibility and we've got a conscientious agency here in DEEP, but it is one that doesn't have all the staff in the world to move expeditiously, and therefore at the request of a number of Legislators, we put in a provision starting in line 61 that the commissioner can submit the regulations to Regs Review no later than July 1, 2018.

Your next question, Senator Kissel appears to be, through you, Mr. President, appears to be what happens if they don't do this by July 1, 2018? Well, you're talking about an agency in effect violating a law of the state. I think that would be highly unlikely, but it's my opinion, this may be personal, that under this bill if they didn't do it by July 1 of 18, the moratorium would continue unless and until those regs had been adopted by the agency and approved by the Legislative Regulations Review Committee.

THE CHAIR:

Senator Kissel.

SENATOR KISSEL:

Thank you very much. And through you, Mr. President, actually, and this is probably my personal perspective. I have less concern with the Department of Energy and Environmental Protection than I do with ourselves, sometimes, pushing things back into the agency because for whatever reason, we may not like one specific portion.

And again, not having served on Regs Review for two years, I did see that happen. It just was not automatic that regulations submitted to that committee would be approved and sometimes agencies, to their great consternation would have to come back two or three or four times.

So, if the Legislature continues to push back proposed regulations to the Department of Energy and Environmental Protection, for purposes of legislative history, would it be safe to say that the moratorium would continue in effect as long as it takes until

those regulations were approved by the Legislature? Through you, Mr. President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Yes, through you, Mr. President, that is my opinion as a sponsor of this bill.

THE CHAIR:

Senator Kissel.

SENATOR KISSEL:

Thank you very much. Now, I've learned a lot listening to most of the debate this afternoon and not having served on the Environment Committee ever, I guess I have to start working on that one at some point in the future, if God willing my constituents are kind enough to re-elect me and I am running for re-election because I love this job, and serving my constituents and the people of the state of Connecticut.

But, one thing I did learn is that apparently hydraulic fractured waste is incorporated in certain products being used now and those being de-icing products. I don't know if there's other. Well, actually, let me ask the question.

I've learned through reading the amendment and listening, that de-icing seems to be a major product. I'm just wondering is this hydraulic fractured waste being incorporated into any other products that we're aware of right now? Through you, Mr. President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Mr. President, we don't understand whether there are not any other byproducts. We do know that there's de-icing. The department advised the Environment Committee that they believe that the de-icing materials coming from fracturing waste are toxic, that they've caused water contamination in the State of Pennsylvania and therefore, what this bill does is, it subjects the use in Connecticut of de-icing from hydraulic fracturing waste to the same regulatory system and approval system by Regs Review that actual hydraulic fracturing waste is subject to.

THE CHAIR:

Senator Kiseel.

SENATOR KISSEL:

Thank you very much. And through you, Mr. President, do we have people in the Department of Energy and Environmental Protection that are monitoring the utilization of hydraulic fractured waste as far as it being incorporated into products, and I can't imagine what it might be, but sometimes there's road products. Sometimes there's shingles, who knows? It's pretty much what somebody can come up, and I'm sure if this is a byproduct of something that's going on, I'm sure there's some folks that would like to turn lemons into lemonade somehow.

So my question through you, Mr. President is, are we assured that there's some folks over in our Department of Energy and Environmental Protection monitoring the practices of industry regarding the waste from the hydraulic fracturing that's going on in the country? Through you, Mr. President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Mr. President, to Senator Kissel. That's what this bill is all about. It's to direct this agency to make that study to discover what products other than de-icing exist and what are toxic and not toxic and it

sets up a whole information gathering system and a research section of this bill as well to find that out.

Right now, as the representative of DEEP just told me, they don't have enough, much knowledge about it. But that's what this bill is going to do.

THE CHAIR:

Senator Kissel.

Thank you very much. Through you, Mr. President, is there any fiscal note attached to this, because if they don't have a huge knowledge base, I'm just wondering whether we're asking them to do it within available resources or if we've committed maybe some resources so that they can go hire some folks that have expertise in the field? Through you, Mr. President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Yes, through you, Mr. President, the fiscal note says, I'm reading, says the amendment, and that's what we're talking about here, strikes the underlying bill and its associated fiscal impact. So, the Office of Fiscal Analysis has found that there is no fiscal impact from this bill.

THE CHAIR:

Senator Kissel.

SENATOR KISSEL:

Thank you very much. And through you, Mr. President, does the good Chair of the Environment Committee, given his expertise and the public hearings regarding this and his contact with representatives from the Department of Energy and Environmental Protection feel confident that the Department is able to handle this

additional responsibility within their available budgetary resources? Through you, Mr. President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Mr. President, we've had extensive meetings with DEEP and with the Governor's office concerning this bill, and in each instance, the Governor's office indicated that it will motivate the agency to do the work and the representatives of the agency have indicated that they look forward to doing this work on an expedited basis.

THE CHAIR:

Senator Kissel.

SENATOR KISSEL:

Thank you very much, Mr. President. That's very nicely put. I'm wondering what, when the Governor's office motivates an agency to do something, what that actually entails, but I'm guessing that it's probably some very direct orders to the commissioner and the commissioner's staff.

Just getting back a little bit to 30,000 feet and I know there was an extensive colloquy between Senator McLachlan and Senator Meyer regarding this, and I caught most of it.

But again, not having sat through the public hearings regarding this, Senator Meyer has referenced Marcellus Shale a lot and I'm just wondering, my understanding is the closest this shale is to us is probably somewhere in the middle of New York State.

Let me just take a step back. It's my understanding the closest that any of this hydraulic fracturing that may be occurring or possibly occur is about 130 miles west of our western border, somewhere, wherever that would be in the heart of New York State? Through you, Mr. President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Mr. President, earlier today on several occasions I gave the estimate, having been a former New Yorker myself, as I looked at the map of the Marcellus Shale and I looked at the border, the western border of Connecticut, I made a guesstimate that it was around 150 miles.

THE CHAIR:

Senator Kissel.

SENATOR KISSEL:

Thank you very much. Now let's say that that's the eastern edge of where this Marcellus Shale is. How pervasive is this shale? How far west and is it like one giant area or is this, are there pockets so that if one looked at a map, one would see, you know, various islands where this shale is? Through you, Mr. President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Mr. President, we do have a map of the shale, the Marcellus Shale, and it basically goes in a diagonal from northern New York down through Pennsylvania. It hits the eastern part of Ohio and goes down through Pennsylvania into West Virginia, and that, my aide might show you the map so you can confirm what it looks like.

SENATOR KISSEL:

Thank you.

THE CHAIR:

Exhibit A.

SENATOR KISSEL:

Let the record note that the good Senator did provide me with a map, but it actually does spur a few more questions.

Through you, Mr. President, I've also just heard through watching television that --

SENATOR MEYER:

Why did I do that?

THE CHAIR:

Pardon? In watching a lot of programs regarding this, it's my understanding, and it doesn't necessarily comport with the map, that although maybe it does, is that a lot of the hydraulic fracturing is also occurring in Canada and I'm just wondering if that's an area that's creating an awful lot of waste as well? Through you, Mr. President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Mr. President, I have no personal knowledge in that regard.

THE CHAIR:

Senator Kissel.

SENATOR KISSEL:

Thank you very much. Does Connecticut, through you, Mr. President, does Connecticut reap the benefits of the hydraulic fracturing that's occurring in the States of New York and Pennsylvania and Ohio and West Virginia? Through you, Mr. President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Mr. President, my understanding is that our natural gas is being derived in part from those states exclusive of New York, which is not fracking natural gas at the present time.

THE CHAIR:

Senator Kissel.

SENATOR KISSEL:

Thank you very much. And it's my recollection from previous discussions on this bill, that I believe Senator Meyer indicated that Governor Cuomo is still determining whether New York will actually even allow fracturing, hydraulic fracturing in the State of New York? Is that correct? Through you, Mr. President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Mr. President, I believe that's correct.

THE CHAIR:

Senator Kissel.

SENATOR KISSEL:

Thank you very much. That actually concludes my questions for the good Senator, so I just want to speak on the underlying bill itself.

My understanding as to what is going on regarding hydraulic fracturing to derive natural gas is that it poses a huge environmental concern in those areas where it's being done.

While one might say that hydraulic fracturing at, I think I've heard as much as a mile down, how could that possibly pose a threat to the environment on the ground. Senator Meyer has stated numerous times in response to various questions that the ground water is most at risk and in reading the bill and in listening to the debate this afternoon, now going into this evening, it's not necessarily what one would guess the hydraulic fracturing waste to be.

It's not that the ground water is simply getting muddied up or that small fine grain mineral particulates are causing a problem.

From reading the bill and listening to the debate, there's an element of ionization. There's an element of radioactivity that is being released when the enormous pressure that the hydraulics has brought to bear to burst the shale and release the gas.

My guess is that those pressures that those jets have as a consequence, also the ability to release those ions from the molecules that are down there and creating that level of radioactivity that is problematic.

When, and I hate, you know, my mom was born in Philadelphia, Pennsylvania and so I visit there very often and I have relatives down in the Pennsylvania area to this day, and cradle of our liberty, beautiful city, Philadelphia.

But as one proceeds west in the great State of Pennsylvania, the topography changes and one can almost recall the movie Nothing but Trouble. If you go back to that movie a couple of decades ago, Dan Akroyd, Chevy Chase, Demi Moore and others, John Candy, the late John Candy, it has a visualized depiction of Pennsylvania that would make your hair curl and I think it's based upon a lot of reality.

I mean, it is not unusual for sink holes to develop in certain areas of Pennsylvania and that poor state now dealing with this, it's unbelievable.

If one goes back and for example reads, and I've only read portions of it because it's a huge amount of

pages, but Ida Tarbell's, the History of Standard Oil. Well, as one perceives, one gets a, she starts off with a very great account of oil in the United States and you might wonder, you know, why Pennzoil? You know, we're familiar with that, Pennzoil.

Well, Pennsylvania was the very first state where oil was discovered in the United States up in the northwest corner of that state. The Colonial settlers finding it pooled right on the top of the ground trying to figure out what they could do with it.

Indeed, if one follows the development of oil in the United States, a lot of interesting characters, some of which may be forbears of our colleagues right here in the Circle. But why Standard Oil is called Standard Oil is because they were having a difficult time figuring out specifically kerosene as to its properties and sometimes it would just explode and cause huge amounts of damage. Sometimes it wouldn't perform accurately and so one would wonder, you know, why in the middle of the 19th century, you know, why was there initially such a huge and this is us, whaling industry?

Well, whale oil was far more reliable and so for a few decades that was the preferred fuel until some folks, including John D. Rockefeller came up with his engineers and chemists with a procedure to standardize the composition of kerosene and make it reliable, essentially supplant the whale oil industry and that's why we get such an utterly non-creative but highly depicted name such as Standard Oil, because they had a standard that could be relied upon.

Then of course, the rest of what old John D. did, pretty much interesting history of mergers, conglomerations, threatening individuals, but the net result was a huge fuel base for the people of the United States at a time when we really needed fuel.

And all these things are connected together, just like right now we're in a different era and I don't know who the John D. Rockefeller is out there right now, but I'm sure there are some behind the hydraulic fracturing that is going on throughout Pennsylvania and West Virginia and parts of Ohio and I'm sure

they're putting a full corps press on in the State of New York trying to get Governor Cuomo to say okay.

There's no easy answer when it comes to our reliance on various energy sources. Probably the best rule of thumb would be trying to conserve and looking at that side of the equation as opposed to trying to find huge amounts of new energy sources.

Some people have felt that the renewables would be the panacea and the savior, solar, wind. I'd like to include hydro power. I've never understood how somehow hydro is distinct from solar and wind because if you have a reliable river system, to me while it's not necessarily, quote, unquote, renewable, it's to some extent never ending, as long as mother nature is continuing to feed that river, so it's good to harness that as well.

But none of those are the be all and end all when you look at the totality of the developing and developed the nation's need for fuel of some sort.

And so for a long, long time we've had a great reliance on oil. Say, let's give oil its due for about a century at least. And to a great extent we've done well as a nation in creating the fuels that we use.

I believe it to be a fact that the largest provider of oil to the United States is the United States. We did, though, if one goes back and recalls one's history, we have gone through periods of time where, for example, the oil producing nations, OPEC being their organization would cut back, causing severe fuel shortages.

I was just a little kid, but I do remember in the early seventies cars lining up to get gasoline. I can't imagine how horrible that must have been during that period of time, depending on your license plate number you would be either an odd or an even day, but those things have happened and we've done well to avoid that.

The problem we have with our oil supply right now in the United States in my view, two fold. First, we

are, we had, are creating so much oil in the United States, but we have not concurrently expanded our pipeline for a variety of reasons, so we're relying extremely heavily on rail transportation of crude oil and if you continue to ratchet that up, accidents are going to occur.

It wasn't that many weeks ago I was reading the paper and I saw some huge accident west of us where just tons of these cars loaded with oil jumped the tracks and leaked and then burned, and one can imagine the environmental devastation that that has done to wherever that accident happened and it's happening more and more.

The other problem that we have with our oil supply and this is what's tied into this is that we have decommissioned a lot of our refineries, and you need both. You need the supply, but you need the ability to refine it. It doesn't help if you have huge amounts of supply if you don't have the ability to turn that crude into something that the public not only wants, but needs, and it's always amazing to me that you have, you know, North Atlantic Crude and Sweet Texas Crude and how they define it. And I would have these images of these folks down there when they would strike the big gusher and I don't know. Sweet Texas Crude. You taste if it's sweet, but it's probably sweeter than the North Atlantic Crude.

It's probably got a different composition because it has a different chemical base, based upon what plant decomposed millions of years ago.

So we have in my view, this bottleneck when it comes to oil, which we've relied upon for decades and decades and decades because while on the one hand we have new sources and we're utilizing not pipelines, but rail lines for its transportation.

We also, unfortunately, don't have the refining capacity that we once did. And so when you put those two things together that undermines our ability going forward to cut ourselves loose from foreign sources of oil, not the least of which is the one that's being touted in Canada and we're dragging our feet in creating that giant pipeline to bring that Canadian

oil straight through the middle of our country and one wonders why we're being so dilatory regarding that.

I can understand the political expediency of President Obama not wanting to alienate his environmentalists going into the last election cycle, but that has now come and gone and he will not be seeking re-election under our Constitution, so hopefully some of those impediments will evaporate.

So at this point in our nation's history with the pressures brought to bear on the oil industry, lo and behold, what have we found? We've found hydraulic fracturing creating an abundance of natural gas.

But everything has a price. Everything has a price. It's almost like Ying and Yang or Karma and the Universe. I mean, even if you drink too much water it can act as a poison on your body.

And so, to the extent we now are looking to natural gas to fill the void that heretofore had been provided by oil, and we tout its wonderful aspects such as that it burns cleaner, to some degree is easily transported, although for parts of my district it's not readily available. The cost to put in pipelines to people's homes is not negligible at all, and in fact even with the Governor's efforts to expand natural gas here in Connecticut as a cheaper fuel for homes, as a cheaper alternative, one still has to grapple with the cost associated with that especially in rural or mountainous areas where there may not necessarily be an easily accessible trunk line, and also typically those gas lines are located along our roadways and so, when you dig up one of our roadways, when you replace it, it has to comport with applicable state or federal regulations. So it's not as easy as people think.

And people might look at this amendment, which becomes the bill as perhaps a disconnect and I have had individuals come up to me and say, you know, you're on this amendment, Senator Kissel, and I go, yes, I am. Yes, I am. How be so? Because I am concerned about hydraulic fractured waste coming into Connecticut and if I just, you know, we can call it fracking or hydraulic fractured waste, but if I tell people it's

radioactive waste, that's much more easily understood because people still remember Three Mile Island and the dangers that are posed by melt downs such as Fukushima in Japan or Chernobyl in Russia.

In fact, I was watching a program the other day, I don't know if anyone else in the Circle may have watched this, but on Animal Planet station they have river monsters. I enjoy watching River Monsters, it's pretty cool. Some of the fish that this guy catches are amazing.

And so, just last week River Monsters was on. It was Monday. We didn't have Session last Monday and I was watching it and he was trying to get his arms around the Loch Ness Monster. If you're going to go after river monsters, that's probably the biggest thing you can go after is the Loch Ness Monster.

And what was interesting about the program, and I have been to Loch Ness, believe it nor not. It is gorgeous. I did not see any monsters, but you can tell through the ripples that sometimes your mind might play tricks on you, but yes, indeed, I did look for the Loch Ness Monster once upon a time. The nearest town to Loch Ness where I was, was Drumnadrochit, and then I walked down the road to Castle Urquhart, which most folks may recall from a Scooby Doo episode, but I was actually there.

The reason I reference River Monsters and Loch Ness is that when they did sounding of the Loch, one of the things they noted was a very thin layer on the bottom. Part of this inquiry was to determine whether the Loch had enough oxygen and plant life and things like that to sustain a fish and b) something as large as the Loch Ness monster and amazingly, at the bottom of the Loch, there was his microscopic layer of radioactivity. Not enough to affect life in the Loch. But where did it come from? It was the fallout from Chernobyl. Amazing. Amazing.

So these things are all interconnected. So we're dealing with radioactive waste. Let's all be very clear about this, radioactive waste. But what's the disconnect? The disconnect is that we have a Governor, Governor Dannel Malloy pushing the expansion

of natural gas here in Connecticut to help consumers and he has charged the Department of Energy and Environmental Protection with moving this process forward, and he has charged Public Utility Regulatory Authority with moving this project forward, and he has urged utilities throughout the state of Connecticut to help move these goals forward, all laudable.

But my constituents come up to me and they say, Senator Kissel, your name is on this amendment. I've read your quotes in the paper. I've heard you discuss this issue on the radio, saw you on CT-N in Committee. Doesn't that sort of go against what the state's trying to do.

One the one hand you're saying, no waste in our state. Go away. Don't want it. But on the other hand, you want to get the benefits of natural gas and natural gas expansion and I would say yes. If you're going to look at it that strictly, perhaps there is a little bit of a disconnect.

But I would posit this as an answer to those concerns. Where there is money to be made, people will try to make money. If we expand our ability to utilize natural gas, they will come. In other words, manufacturers, developers, those responsible for hydraulic fracturing creating more supply of natural gas are not going to sit down around their board tables and say, hey, look at that state of Connecticut. Who are they? They don't want our waste. We're not going to sell them natural gas. They're never, ever, ever, going to do that.

They're going to sit around their corporate board tables and they're going to say, who cares? We weren't going to ship it there anyhow. The closest we can even come if Governor Cuomo gives us the green light is 150 miles and the cost to transport to Connecticut, those guys will kill us with their environmental regulations anyhow.

We were never going to go there. You know those sink holes down in Pennsylvania? Perfect. Do you ever go by the railroad tracks on occasion, see them from your car? Maybe you're at an at grade crossing. The train goes by. Do you ever see those incredibly long

railroad cars, one another with just garbage and refuse? I've seen that. I've seen it go, I don't think they're coming from Connecticut. My guess is they're coming from like Massachusetts or somewhere up north, but they're going down and they're going west, and do you know why?

And I learned this a few years ago on Program Review and Investigation when we looked at, are we meeting our goals for recycling as a state and what are we doing with our solid waste and you now, should we continue pushing for creating energy from waste and things like that, was that these states think completely different than us.

You see, we're about this evening talking about keep your hydraulic fractured waste to yourself. We don't want it. Now maybe four years from now, July 1 of 2018 we'll have regs promulgated and probably sometime after that Regs Review will sign off on that, so I really don't see anything happening until 2019 as far as us accommodating hydraulic fractured waste.

But, those giant trainloads, car after car after car after car after car with refuse and debris and you know, like they tore down entire subdivisions and threw them into these rail cars, garbage. They're going out, they're not going that far. States like Pennsylvania and Ohio actually encourage waste to be brought to them to be buried in gigantic landfills in some of these huge sink holes. Now, I haven't driven out there to see anything like this, but I can imagine what it looks like because again, I referenced that movie, Nothing but Trouble, mid eighties, Dan Akroyd, Demi Moore, John Candy, Chevy Chase. Rent it. No place to rent movies any more. Go to your library. Get it on line. Send away to Amazon. Maybe in Target, $5.

But anyhow, it's a great movie, it's a funny movie but they have these wonderful visions of what Pennsylvania is like in that part that we don't visit. There's no Liberty Bells out there in the middle of that part of Pennsylvania. Apparently, it's pretty toxic and the mistakes that they've made, they've sort of given up on certain parts of their state.

Now I'm not picking on them and if anybody out there is listening to this or watching this from Pennsylvania, beautiful state, love that state, my mom was born in Philadelphia, a lot of family in Pennsylvania. Actually, I've had the tremendous honor of taking about corrections issues at the most recent NCSL, National Council of State Legislatures' annual meeting a couple of years ago in Philadelphia.

But I've also heard, and this is sort of smarmy and I apologize, it's not me, because I don't agree with it, but I did go another conference at John Jay University in their legal department, John Jay University, heart of Manhattan, I think it's like upper west side, though I'm not completely familiar with east side, west side in Manhattan.

But anyhow, highly regarded and they had a guest speaker and he was very smarmy and he was picking on Pennsylvania and he said, you know what Pennsylvania's like, and I couldn't believe this, but I will tell you, his attitude about Pennsylvania. Philadelphia and Pittsburgh with Alabama stuck on its side in between. Now that's mean, and first of all it's mean to the people of Alabama because that's assuming that they're bad and I don't know anybody from Alabama that's bad.

But it was a reference and I think it was probably around the time that President Obama was saying something about the middle of Pennsylvania like they just like their guns and bibles or something like that, so I think he was trying to like, tag into that, again, that whole Manhattan sort of world view that we know it all, nobody else does. Very unfair. Very unfair.

But the point is, there are portions of Pennsylvania that are in such ecological decline that they look to supplement their income as municipalities and as counties by enticing northeasterners, send us your waste.

So on philosophical grounds you might think that there's a disconnect between this moratorium on hydraulic fractured waste and our initiative as a state to expand the utilization of natural gas both

residentially and commercially, but I don't look at it that way at all.

I don't think that Connecticut was ever on the radar of any large scale producer of natural gas as a waste destination. I think this helps us, makes it very clear, but even without this, my guess is that those companies have very bright people that are looking at maps and Connecticut is a highly regulated state when it comes to the environment. Why? We're small. We don't have a lot of these resources and we have got to protect that with which we have.

Now, there's been some books written lately and I hope they're incorrect in their conclusions, but we talk about the world's growing need for energy on a large scale, and what I mean by that is, we have to look at this in its proper context is that, it used to be, and some would say, social justice dictates that it's fair, the developed world and the third world and the developing countries were sort of having a hard time picking up any fee.

That has changed. We know that. Books written. The world is flat. Highly competitive and our competition for energy now is not our colleagues in the developed world, and I use these terms with a little bit of caution because I, quite frankly not sure how politically correct they are right now.

But typically when one thinks of the developed countries one thinks of United States, Canada, Europe, Russia to some extent, Russia. But we used to sort of discount two giants, giants, China and India. Big mistake. Big mistake.

China's economy is about to surpass the United States in the next few years. That's not me. I think that's economists. And as their economy grows, what that means is that their desire for precious energy resources will continue to grow.

I don't know about you, but a lot of my constituents and I remember my dad when I was growing up, used to be dang, made in Japan. Remember that? 1960s, everything was made in Japan. Not everything.

But a lot of the inexpensive, easily manufactured items. Transistor radios. Then all of a sudden something changed. Try to find some inexpensive gadget or gizmo made in Japan. Hard to find nowadays. Made in China. In China.

In fact, some of my constituents, it's almost a game, find something that's not made in China. How happy is that? Of course if it's Taiwan or India, you know, until you see the U.S. of A, well, it makes you wonder. Because we can't continue to send all our dollars out and just get junk in. Stuff that we don't need.

But if I'm China or India, or one of the other developing countries, I want to grow my middle class. Now, are they fair countries? No, I don't think they're fair countries.

Remember back, the protest, it used to be Peking. Now it's Beijing, but the capitol of China. Remember that one guy that went up to the tank? If you paid any attention to the news at that time you remember that one guy going up like to the front of the tank and pointing his finger. I don't know, but my guess is that after that guy was off camera I think they killed him. That's just me, but I don't think they tolerate dissent real well.

And we saw all these young people protesting, Red Square, a big picture of Mao in the background and then all of a sudden, sort of like a news blackout, and all of a sudden all those young people were gone. Now do I think that they all got killed? No. Do I think that many of them were removed to very bad places? Yes.

So China still to this day does not have a great human rights record, and we file our protests and things like that, but I have hope because with their capitalism, and they have made a philosophical decision to embrace capitalism, with that, as a consequence of that, they are creating a middle class.

It may not be the middle class that you and I are used to, but they are creating a middle class and with that comes stability. And if you have a middle class, you

want them to participate, but they still have got a long way to go.

And here's an example. I had reference a guy pointing to the tank and the protests several years ago in Beijing and I hope he went home and everything was okay or he was smart enough to like duck and change how he looked or something. You know, once you get away maybe you can change your ID. Hopefully, they didn't like zoom in with some super high powered lens and say, oh, we know who that guy is. We'll just get him at some point.

But let's zoom forward. Not that long ago there were horrible earthquakes in the center of China and in one of these times a school, this is so heartbreaking, a school fell apart and killed all these kids because the idea was, stay inside, don't run out, and what occurred was that this school was built so shoddily that it couldn't withstand even a little tremor and these little kids got killed.

And so the parents were ripped, and who wouldn't be? Because they thought they were getting solid school A, and they got shoddy school B because county commissioner in China was getting graft and getting money on the side or something like that. It was corruption.

See, in dictatorships it's corruption. Not always, but it seems prevalent at least in that instance.

And so the public, the moms and the dads protested legitimately, but after a while, the government said enough is enough and shut those parents down and those parents lost their kids, so that country has still got a long way to go, but it has kept, while keeping its totalitarian nature as far as dissemination of information and ruling its people, and letting them be free to an extent, it has made a calculated economic decision to embrace portions of the free market.

How, you know, I was watching this thing on 60 Minutes not that long ago where they were looking at President Obama's failed energy initiatives. It was pretty disappointing. Now maybe I'm a little biased when it comes to President Obama, but he had given tens of

millions of dollars to companies to create, you know, super duper batteries, everybody would have electric cars and all these things. I mean, huge amounts of subsidization with our tax dollars.

And then these companies just went out of business, you know, solar arrays, stuff like that. And so the fact that they failed and went bankrupt and out of business, doesn't mean that they disintegrate and leave the face of the earth. Typically what will occur if it's a bankruptcy is that a trustee will take over and then there will be sales, either in total or in piece meal.

And the crazy thing, the heartbreaking thing of this 60 Minutes story was that China, China was buying up all these businesses at a fire sale price.

So we put in tens of millions of dollars in these energy initiatives to create solar arrays or super duper batteries or all these other kinds of high tech wonder things. They don't materialize or they don't materialize in a way that is profitable so as to sustain the businesses and this is looking at in the best light possible because I do think some people padded their pockets with some of our tax dollars, but hey, I don't work for the U.S. Attorney's office, so I'm not involved in bringing cases against some of these folks and I wish there were more.

But the heart of the story is that China came right up and bought all these things out and what was great was in this particular 60 Minutes story, the person who was doing it then went up to this guy, this Chinese investor and says, does this seem fair, and he goes, we're playing by your rules. Hey, we're playing by your rules. Hey, Mr. and Mrs. America, if you want to put billions of dollars in energy high tech and it fails and then you sell it and then we come up and we buy it, don't blame us. We offered the most. Now it's ours.

And you know what they do? Either they turn it around or they're happy to take it piece by piece and ship it back home. So with the solar array place, I think they just were happy to just own it, strip it, create no jobs because they've got other plants in China

doing the same thing. Take it off the market. One less competitor. Take everything you can from it. Leave it a skeleton. Guess what? Most of it was bought and paid for by U.S. taxpayer anyhow. Such a deal.

So that's the world that we're living in right now. Very highly competitive energy market where it's not just a developing, developed countries, rather, that need and rely upon a finite number of energy sources, but we have this voracious growing appetite by two huge super powers of the future and I predict that to be China and India, by virtue of, if nothing else, huge populations.

I sort of dwelled a little bit on China, but let's go down to the sub continent of India. We all know, we have bills in the building, General Law Committee. I'm trying to get a hold of someone to fix my computer and the person I'm getting is in India.

Hundreds of people losing their jobs because their jobs are being transferred to India if they're in telemarketing or if they're in information technology or if they're dealing with one aspect of a corporation or another.

So yeah, China doing tons of manufacturing you out of India where jobs are being shipped because they can be done much more profitably, less expensively.

Now some folks would tout the fact that, well, you know, it's easier to get 24/7 service because our night is their day and they just supplement what we do heré in the United States, and I understand. I understand business motivation when it comes to some of these things. I get it.

Of course, in the long run, you know, we can't shoot ourselves in the foot, you know. In the long run, looking for profit doesn't mean that we need to impoverish the majority of our fellow citizens because they don't have decent paying jobs. See, that's very shortsighted.

Wall Street may reward that today. Wall Street may reward that tomorrow Wall street may reward that a

year from now. But where will that put us 10 years from now?

How about this? Telemedicine. Why can't I have a battery of extraordinarily highly qualified physicians in India reading radiographs, x-rays, telling us what their deal is, sending it back? Just as much quality? Half the price. What does that do to all of us? What does that do to the folks here in Connecticut?

So that's the world that we live in. Highly competitive. And again, India, voracious appetite for energy.

So on the one hand, part of me wants to say, wow, it's great that we are developing energy resources here in the United States. It is fabulous that we have at least created a way to extract more precious natural gas for our own businesses here in the United States and how great is it that these resources are located near the areas that they're most in need of.

But, at what price? So let me circle back to the book that I was referencing about 20 minutes ago. What it says is that, take this world where energy is a huge commodity, whether it's solar, wind, hydro, natural gas, oil, propane, wood, wood chips, wood pellets, however you want to get your energy.

People understand geopolitics. People understand the politics of energy. We have seen, unfortunately, wars fought, if not solely over energy issues, primarily over energy issues.

Say what you want about some of these wars in the Middle East, but I think that oil comes into play a little bit here and there. Maybe it's me, but you got the same human rights problems in the heart of Africa. You just don't see the military resources being dedicated to the Congo. But Kuwait? That's a different story. Right?

So, what's the next precious item according to the author of this book that I had referenced now almost 25 minutes ago? It's water. Water. See water over there? Senator Welch is holding up water. Water.

You see, water is just as precious as oil or natural gas or those other energy resources. We just don't fundamentally grasp that just yet because right now we look at water as if it's never ending and quite plentiful. But it is a finite resource just like everything else, and we have a tremendous capacity to mess that up.

Now I know that we are extremely conscious of that here in the state of Connecticut. We map out our water table and it's a huge issue. It's a huge issue in my district. If something bad happens and some of these wells get contaminated, I have that in some of my towns. I think we've gotten our arms around it, but in some portions of my district because of believe it or not, you would think that with our history of farming tobacco and other agricultural products that it would be the pesticides.

We've heard Senator Meyer talk at length regarding pesticides. We don't like pesticides. Don't use the Roundup.

The well water contamination in my district in talking to the folks from the Department of Energy and Environmental Protection, not the pesticides. You know what it was? And this is not like just one town. This is different areas. Apparently it's the solvents used on the farm equipment.

Now, I don't know what they were doing in the forties, fifties, thirties, but they were spraying these tractors with something. People lubed up. That sank into the ground year after year after year, the rain brought it down, brought it down and all of a sudden these solvents are creeping into people's well water and you know what happens? The state comes in and says you can't drink this and the people go, well, what am I supposed to do? And quite often the state has taken on the responsibility of providing bottled water.

Well, bottled water is okay to drink. Not so good if you want to take baths and do your dishes or take a shower, so these folks looked for solutions, and depending where the residences have been, I've had to fight, a fight that I've been happy to take on for my

constituents, but to try to get the state to help fund the extension of town water to some very difficult areas because these poor people have been drinking bottled water and living off of bottled water provided by the state for four or five years, an untenable situation through no fault of their own.

And I'm proud to live in a state where eventually we do step up and take responsibility to help these folks out. Those are great success stories. Nothing's glamorous. You're not going to get a huge, occasionally there's some headlines when the bonding's finally authorized. So it's great if you can help 10 people out on a street that lost their water supply.

But, boy oh boy, you realize real quick how precious that is if all of a sudden it becomes an issue. Here's another one. You know, we had Hurricane Irene and then we had that sort of like three days before Halloween or Easter, Halloween storm, and for some reason, this is a couple years ago and you know, we had a late canopy. The trees for whatever reason, going into the end of October, that fall, and pretty much only that fall, they were just clinging to the trees.

At that time, I was digging into why that occurred and it had something to do with the amount of rainfall throughout the entire summer and going into that fall, but it was either too much or too little, or whatever it was, caused the trees to want to hold on to their leaves longer than normal. So when you couple that with the fact that we had snow way earlier than normal and it was heavy snow, because it wasn't that light, dry snow. It was that heavy, water bogged down snow, couple that with the canopy and then you had what we all remember as like, you know, the great power outage that just devastated an entire municipalities. Freaky. Weird. Hard to predict, you know, year to year.

One can debate, you know, a few days before, but the reason I reference that is that the power outage, and we'll set that aside, but people's wells needed the power to trip them and get them to operate, and what I didn't realize is that if so many days went by and those wells weren't energized, then they became not

necessarily contaminated, but they needed to be decontaminated.

In other words, the water wasn't potable. I guess it was contaminated to some extent and that created a huge issue because when the power came back on, they couldn't get their water immediately because someone had to go out there and decontaminate their well.

And believe me, set aside getting the power back on and everything else related thereto except this, this is the point I want to make. And it's what your mom and dad told you when you're growing up. You never know how precious something is until it's gone.

And that's why I'm happy to support the amendment that becomes the bill because it protects that natural resource, which we may take for granted, but which is so precious and if it's gone, it is hard to recover and that's our water supply.

So for those reasons, Mr. President, I am happy to stand in strong support of the amendment, happy to be a co-sponsor of the amendment and feel that our public policy is not inconsistent in wanting to protect our precious water supply while at the same time recognizing that commercial interests will make sure that we get the natural gas that we so desire, that I think the process of a moratorium rather than an outright ban makes more sense.

I think that in 2018 going into 2019 the promulgation of regulations so that we know what the rules are going forward is appropriate, and again, I commend Senator Meyer and members of the Environment Committee for working hard on this issue.

For those reasons, Mr. President, I'm happy to support this amendment and would urge my colleagues to support it as well. Thank you.

THE CHAIR:

Thank you, Senator. Will you remark further on the amendment? Will you remark further? Senator Markley.

SENATOR MARKLEY:

Thank you very much, Mr. President, and I, too, rise in support of this amendment and in support of some of the comments that Senator Kissel made, though I wouldn't attach myself to every single one of them.

I want to say that I have supported this ban, which is controversial throughout the Capitol, I believe and maybe in my own Caucus particularly, since it was first proposed and I guess I'd say something that I've said before, I've alluded to before in other bills, which is, I'm tremendously distrustful of the many chemicals that are in our environment now that come at us from all different directions and concerned about the effects that they may be having on us and skeptical about our ability to actually make solid conclusions about the effects that these chemicals might have.

And I have to say something, I joke with my colleagues sometimes about feeling like an old man and talking about when I was a kid, but I am at that point in my life where I can look back 50 years now and remember the events of 50 years ago quite clearly.

And I'd have to say in particular, it seems to me that there's been a plague of cancer that has grown tremendously in my lifetime, grown in numbers, grown in virulence, grown in variety, grown in the age of onset, childhood cancers that I think were a thing unknown when I was a child myself and I can't help but think that it's because of the things that we've introduced into our environment, not particularly, not necessarily any one particular chemical, but possibly the combinations of the interactions that no scientists could ever entirely understand.

And I'd say in my own hometown of Southington, we had, we've had several areas of town that were poisoned over the years by the introduction of chemicals. In particular, out in the northern part of town what was once open fields where a chemical recovery business operated for many, many years, with a pond where the refuse was stored and treated, with always assurances that everything was under control, and as always is the case the assurances were fine until they weren't fine any longer.

Then in very short order the company was gone out of business and the town and the federal government were left with the poisons which remained, poisons sufficient to close one of the important wells we had for our own public water supply in Southington, and other such cases of destroying the land, threatening the water supply and putting things into our local environment that could be very hazardous to us.

The result of that is that I am very wary of accepting anybody's waste, a waste of any kind for any purpose that we don't have to accept. I don't, I think that our state can aspire to higher commercial functions than becoming a repository for waste. I don't think it's a good use of our natural resources. I don't think it's the best use of our human resources, either, and I feel that ultimately it's a threat and a thing that we won't regret until we've done it and can't undo it, and too many of these things we have done and have never been able to undo.

And finally, I'd say, in answer to something that some of my own colleagues have said about this, that because we receive the benefits of the processes, which make energy available to us, we then should be obliged to take on some of the poisons that are released in the production of this energy supply. I would say that the places, which produce this energy have profited from the production of that energy. Certainly they have boom economies in North Dakota right now and I think it's certainly an improved economy in those parts of Pennsylvania to which Senator Kissel was alluding, t hat once upon a time dependent on coal and now may benefit from natural gas.

But let them have both the profits and the perils and let us keep our own land as pure as we can keep it and purer than we find it perhaps at this time. We put a lot of money into cleaning it up. I'd like to see us keep it clean.

And I guess I'd say, again, that that to my mind is a conservative position, that the things that are good, the things that are natural, ought to be maintained as such and should not be risked unless we're very sure

of what we're getting and what we're getting into in the course of undertaking those risks.

I have a little more I want to say about energy policy in general, and not too much more, but if I might, I have a couple of questions for the sponsor of the amendment, which are pretty straightforward questions, I suspect questions he may have answered in the course of his afternoon, but having praised him for his patience in answering questions earlier, I'll invite him, through you, Mr. President, just for, I think just three quick questions.

And the first one is, for my own edification, I wonder if the procedure for the storage of waste, of this fracking waste could be explained briefly to me. In other words, how is it kept and what is the ultimate disposition of this waste? Through you, Mr. President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Mr. President, we don't actually of course store any fracking waste in Connecticut and there is no fracking waste in Connecticut as far as we know, and this bill will put a moratorium on it.

But my understanding of how fracking waste is stored, it's stored in wells and very often within the wells it is immersed in clean water and try to decontaminate it and then recycle it, recycle the fracking waste. It goes back on the truck and goes back to the area that's doing the actual fracking of the shale.

So we've been concerned about, we actually have three wells in Connecticut that could be used for recycling of fracking waste and at the public hearing on this bill, people who were familiar with those three wells told us their concern because of the availability of these wells to store, your word, and recycle. So that's about as much as I know about storage of fracking waste.

THE CHAIR:

Senator Markley.

SENATOR MARKLEY:

Thank you, Mr. President. That's just what I was looking for in terms of an explanation.

And let me ask you a second question on something that's come up in the course of the conversation, which is the transportation of the fracking waste, through you, Mr. President.

Is it, I assume we're talking about trains and trucks and I ask the good Senator, through you, if there's anything else that I'm missing there?

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

As far as I know, through you, Mr. President, fracking waste today, at least in the northeast, is done by truck, tanker, actually, because it's a liquid, so it's done by truck tankers and we had to deal with that issue in this bill because our LCO pointed out to us that we would be violating the Interstate Commerce Clause if we actually prohibited the transportation of fracking waste across the state of Connecticut.

And so in the bill you'll see there's nothing that refers to transportation or exporting or importing. We're not going to be able to interfere with fracking waste that's going say, from Pennsylvania to New Hampshire.

THE CHAIR:

Senator Markley.

SENATOR MARKLEY:

Thank you, Madam President and thank you, Senator Meyer.

And finally, I've heard discussion of the possibility of this waste being used for road de-icing and I would just ask, through you, Madam President, if Senator Meyer is aware of any other potential commercial use for this waste?

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Yes. Through you, Madam President, and good evening. Nice to have you back.

THE CHAIR:

So great to be here.

SENATOR MEYER:

Really?

THE CHAIR:

Yeah.

SENATOR MEYER:

What was the question?

SENATOR MARKLEY:

I would say, I was wondering if there was any other commercial use for the waste besides the possible use to de-ice the roads as has been mentioned.

SENATOR MEYER:

Yes, through you, Madam President, I have talked to our agency about that and you'll see that the bill deals with one product of fracking waste and that is de-icing materials, but we do not have any information right now about any other byproducts of fracking waste and so we're not really, at this point in this bill,

regulating any other byproducts because we don't know if any exist.

THE CHAIR:

Senator Markley.

SENATOR MARKLEY:

Thank you, Madam President, and thank you, Senator Meyer for those answers. And I'll just say a few more words generally, about energy policy without going through the history of the process.

I'll say about the history of the process, you know. It is one of the great stories in American history, the development of the petroleum industry and the impact that it had on us. And it's funny to think back to the fact that once upon a time we were sending men out on ocean voyages to catch whales, to get the sperm oil out of the whales, which was the main source of the oil for illumination, and it was to replace that oil produced by whales that petroleum was first put to use here in the United States in the mid nineteenth century.

And as Senator Kissel mentioned, initially in Pennsylvania, which is why we have Pennzoil and Quaker State and so forth and oil that was practically bubbling right out of the earth. I mean, there were areas in Pennsylvania that were essentially marshes because the oil was so close to the surface, and it was not immediate, but within not too many years that with the development of the internal combustion engine a greater use, a greater demand, an almost insatiable demand for that oil was created and enormous supplies of the oil were found of course in Texas and Oklahoma and other places throughout the United States and throughout the world in the Middle East above all.

And it might be one of the great facts of the 20th century, the sudden availability of an extremely cheap and efficient form of energy, and I think it's a fact that has fooled us in a certain way.

We have had 100 years of a kind of an economic boom that has been fueled by energy that was very, very

easy for us to get at and what happened as a result of that is we have restructured the whole way that we live.

Remember that a suburb is something that never existed in human history until the 20th century. You lived in the city. A few people lived in the city. The vast majority of the people lived in the country but no, there was no intermediate zone and there was no great transportation system to move people from one place to another.

With that transportation came the spreading of our residences across the landscape and it's so much a part of our society that I don't think we can see how unusual it is.

But we have just about squeezed, in my opinion, the toothpaste out of this particular tube. We have used up the oil, a great percentage of the oil which is easy for us to get at, and the very fact that we're engaged in a process like fracking shows that we're down to getting the last bit of it out.

We're very ingenious, but I think we kid ourselves if we think that there's a replacement for the petroleum that we found so easily and which we depended on, we have depended on so heavily.

And I think that again, in the sense of speaking about being conservative, I think one thing you'd say if you're conservative is, I'd just as soon not use up the last bits of something. I'm not in a hurry to say, okay, we've got the last barrel out of the ground and we've put it into the back end of our SUV. I would almost feel better if I knew there was a little bit of it left, because I think we're at a point in our history where we're going to have to transition back to a more traditional structure for our society.

And I think part of that will be the resurrection of our cities. The cities didn't exist there by chance. The cities existed where they did because there was power in the form of water power to run mills. There was transportation. There was a natural transportation system, and that's why all the cities ended up where they did.

And I think the other thing about it is that I think some of us have discovered, I think the rising generation has discovered the advantages to city life, that a city doesn't have to be a grim place. A city doesn't have to be unsuccessful, that a city can be a vibrant, social place.

And I think that the day is going to come when the trend to the suburbs will really reverse itself and that we might go back to closer to where we were and in doing so, use much less energy than we're currently using.

I think if we're wise, we will move in that direction under our own power and if we're not, events will force us in that direction.

But I don't believe there's a miracle solution. I don't think we can count on science to come up with a fuel cell or a solar panel or a wind turbine or anything else which is so efficient that it can replace this marvelous petroleum product that we have depended on for so long.

So, I'm saying if we know the resource is limited, I hope we don't use up the final drops, and if, in getting those last drops off, we produce hazardous waste, I certainly hope we don't bring them to the state of Connecticut and for that reason, Madam President, I will be supporting this amendment. Thank you very much.

THE CHAIR:

Thank you. Will you remark? Will you remark? Good evening, Senator Welch.

SENATOR WELCH:

Good evening, Madam President. Welcome back. We've had a very interesting and informative debate over the last few hours. Senator Markley, I thank you for your comments and also Senator Kissel I think had a lot to say. I think now affectionately known as JK1.

I rise to support this bill, or this amendment, I guess I should say. When you talk to constituents, when you hear from people about this issue right now in Connecticut, you really hear one of two things.

One is, you absolutely have to ban this stuff, it's horrible stuff. We can't let it into our state.

And the other side is, what are you guys doing in Hartford? You're trying to solve a problem that doesn't exist yet because there is no fracking waste in Hartford and it's, you know, Connecticut, and it's not going to come any time soon.

And those are really the two sides, and what we have here, I think is a happy, I shouldn't say happy, I think a well thought out meeting. I've done a lot of mediations in my life. I still do mediations. I participate on either side, and sometimes I'm the one actually mediating, and there's a saying in the mediation industry and that is, when nobody's happy you have a good deal, and I think either sides of those equation that we just talked about aren't really jumping up and down about the amendment we have before us.

But this amendment really is, I think, a measured response to a problem that if we're not facing now we might well be facing in the future, and I don't think I need to go into the parade of horribles that potentially exist with some of this waste because I think Senator Markley and Senator Kissel both underscored what some of the potential problems are, and they both, I think went in thoughtfully to the history we're experiencing the humanity today of all sorts of problems with cancers, allergies and everybody scratching their heads saying, how is this happening? Where is this coming from?

Now we can't definitively say it's coming from fracking waste, but it's in essence a question that needs to be answered. How bad can this stuff be and that's exactly what we're going to hopefully had an answer within a few years and a response as to how to deal with this waste.

I heard a lot about the Commerce Clause question. It was something that was essentially a concern of mine. I have, sitting here listening to this debate, at least come up with one hypothetical that might potentially cause a problem. I don't think it's something that we need to address with legislation before us, but I think it's something we need to be sensitive to because if a lawsuit were to come down the road and we haven't necessarily addressed the potential of the situation, we might have a problem with this law.

And although the bill no longer mentions transportation or transporting through, we do have a definition of transfer and that definition of transfer means to move from one vehicle to another or to move from one mode of transportation to another. So, I think on its face is fine. I can conceive of a situation where, let's say some of these chemicals are coming through Connecticut either on rail or on truck and something happens. The truck breaks down. Rail breaks down. We need to get a new engine. We need to get a new rig in. We need to essentially move the fracking waste from one vehicle to another or move it from one mode of transportation to another.

God forbid that's ever going to happen, but on the remote chance it does, that company could run afoul of the statute that we have before us, therefore, there might be a legitimate challenge to the statute that we have before us. Nonetheless, I don't think it's anything we can fix today.

With that said, I do have one question for the proponent of the amendment.

THE CHAIR:

Please proceed, sir.

SENATOR WELCH:

Thank you, Madam President. As I understand the bill, we are imposing a moratorium. The moratorium is going to last for a finite period of time and during that finite period of time DEEP is going to essentially do one of two, or three things.

They're going to eliminate, they're going to deal with the issue of hazardous waste in statute, in regulation.

They're going to ensure that any radioactive materials that may be present in waste from hydraulic fracking do not create, or will not reasonably be expected, et cetera and then require disclosure of composition.

Now, I've tried to give some thought to the answer of this question and I'm not sure that I have it, but under the three charges we give DEEP, will DEEP be able to kind of come back and through the regulations, essentially ban fracking waste in the state of Connecticut? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, the intent here is not a ban. The intent here is to find out what is toxic and what may not be toxic and under what circumstances there's a danger to the citizens of Connecticut, and therefore to regulate it.

Madam President, I think Senator Welch knows that there was a bill to ban this fracturing waste and we made an ultimate decision that we were not going to ban at this time because we didn't know enough about it. Therefore, we were going to research it, study it and put a moratorium why we did all that.

So the spirit of the bill, Senator Welch is not to ban it, but to regulate it and to prepare regulations that are in the letter and spirit of the three paragraphs, three numbers here that you referred to starting in line 41.

THE CHAIR:

Senator Welch.

SENATOR WELCH:

Thank you, Madam President. Thank you, Senator Meyer for that answer. That's kind of what I was reading into it. I did get a little bit concerned about the section on radioactivity, whether or not the language we have in there would allow DEEP to actually impose a ban themselves. I didn't see it, but it was a concern so I'm very glad to hear that what we're saying today is essentially that's not within the purview of what we're asking DEEP to do.

We're asking them to regulate this, not ban it, and so I appreciate that answer. Thank you, Senator Meyer.

That was the only question that I had for you. Again, Madam President, I think this is a good solution to understanding what the potential problems are and coming up with even further remedies to make sure that the people of the state of Connecticut be open space, the lands of the state of Connecticut, our water supply as Senator Kissel and Senator Markley talked about, remain intact, remain in potable situation so that we can continue to use it, use it healthfully and not have any adverse effects.

So thank you, Madam President. I appreciate the time.

THE CHAIR:

Thank you. Will you remark? Senator Kane? McLachlan for the second time.

SENATOR MCLACHLAN:

Thank you, Madam President, for the second time. If I may, a couple of questions to the proponent of the amendment.

THE CHAIR:

Please proceed, sir.

SENATOR MCLACHLAN:

Thank you, Madam President.

Senator Meyer, I've been listening carefully to the debate this afternoon and evening, and there's a question that I have as it relates to specific language in the bill that refers to, in line 47 to eliminate the exemption in the state's hazardous waste management regulations and then it refers to federal regulation. That federal regulation 40CFR Part 261.4(b)5.

Through you, Madam President, that particular federal regulation is where you and I were talking earlier about EPA stating that hydraulic fracturing wastes are not hazardous wastes. And so, could you tell me, what is the impact of the language at Lines 47 to 51 in the amendment?

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Okay, through you, Madam President. The federal CFR reference here is to a federal regulation that regulates different forms of energy, crude oil, natural gas and so forth, and right now the, what would be fracking waste is exempt from that regulation.

And what this bill does in part is, it eliminates that exemption so that fracking waste and natural gas will be subject to the Connecticut's hazardous waste management practices.

I think earlier today you may have been in the Chamber. We explained and I was helped by staff in this, that our hazardous waste regulations in part emanate from the federal government and we adopted, we adopted those regulations in Connecticut, but those regulations actually exempt different forms of energy including natural gas and this bill if it's passed and signed into law would end the exemption so that it would be, fracking waste would be subject to the regulations.

THE CHAIR:

Senator McLachlan.

SENATOR MCLACHLAN:

Thank you, Madam President. Thank you, Senator Meyer. Senator, can you share with us where else in state regulation and statute that we eliminate whatever federal regulation applies as it regards to environmental protection? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, I'm informed by our good staff person that we do that exemption with respect to hazardous waste, we do it with respect to air quality as another example of where we've done that.

THE CHAIR:

Senator McLachlan.

SENATOR MCLACHLAN:

Thank you, Madam President. Thank you, Senator.

THE CHAIR:

Thank you. Senator Kane.

SENATOR KANE:

Thank you, Madam President. Appreciate you calling on me. We know that this discussion has been ongoing for a good portion of the day. Unfortunately, I was out of the Chamber for some of that and was unable to get a lot of it.

But this issue came to me in my own district when Representative O'Neill and I held a town hall meeting, open house, whatever term we typically use in this Body when we hold in office hours in our own district, and out in Roxbury we had a full house, and I would

say we probably had 75 or 80 people come to town hall to talk about legislative issues, the budget, taxes, you know, the kind of things that all of us tend to relate to and tend to have conversations with our constituents.

But a large group of people, mostly from the Town of Washington, a large group came and wanted to talk about fracking and fracking waste and the original bill that was before the Environment Committee and I learned a great deal that evening from advocates of this bill and since then have had many conversations with people on both sides of the aisle, especially members of our Caucus.

And of course I've had conversations with some lobbyists and some advocates and it's been quite an interesting experience and education.

Still not 100 percent clear on everything in the bill and of course in the underlying Amendment that we've been debating for a good period of time, so if I may, through you, I'd like to pose a couple of questions to Senator Meyer if he'll indulge me.

THE CHAIR:

Please proceed, sir.

SENATOR KANE:

Thank you, Madam President.

Senator Meyer, it's certainly, we know we're on an Amendment that is changing the underlying bill and moving away from just a total ban, which was suggested in the committee process to this moratorium that we're going to debate now.

Is, and I understand that I think it's 2017 is the year that DEEP, the Department of Energy and Environmental Protection will come back with some kind of study. Correct me if I'm wrong on that part and the reason being, is that because this currently is not an issue in the state of Connecticut? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, I don't understand what the issue is he's talking about.

THE CHAIR:

Senator Kane, will you reframe?

SENATOR KANE:

Thank you, Madam President, I will. Meaning a) the issue of fracking number one, and number two, the issue of fracking waste? Through you.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, I've been asked that question for four hours today and is the Chair ruling that I have to answer it for the fourth or the fifth time?

THE CHAIR:

Sir, I'd ask you to answer it as best as you can, as quick as you can.

SENATOR MEYER:

Because the repetitiveness of this debate is becoming shocking here with the time that we need to help the people of the state of Connecticut, so I will answer it again.

THE CHAIR:

Thank you, sir.

SENATOR MEYER:

Wondering about the purpose and motivation of these repeatedly same questions.

THE CHAIR:

I don't think you answer the motivation, sir.

SENATOR MEYER:

This bill comes to us, Senator, because of high scientific evidence as acknowledged by most of the members of the Circle including members of your party, that fracking waste is highly toxic. It's a carcinogenic. It interferes with birth. It interferes with endocrinology that has caused water contamination, at least in the State of Pennsylvania and it's something that we should regulate. That's the basis.

THE CHAIR:

Senator Kane.

SENATOR KANE:

Thank you, Madam President. When I stood up, Senator Meyer, I mentioned that although this has been a lengthy debate that has taken place, I was not necessarily in the Chamber for that entire time, so when I asked the question it's not that I choose to be repetitive with you. I do not. I literally just mentioned that I held a town hall meeting in the Town of Roxbury with Representative O'Neill and 75 to 80 people showed up and a good majority of them were there on this issue, on fracking.

So I listened to my constituents. I listened to the advocates. I listened to lobbyists. I listened to members of our Caucus and I stood here and I asked the question that I thought was important to me and my constituency.

You know, and then quite honestly, sir, you didn't answer my question because my question was, is the issue of fracking and fracking waste an issue in the state of Connecticut? I didn't ask about chemicals. I didn't ask about what it does to children. I didn't

ask any of those things. I just asked if it was an issue in the state of Connecticut. Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, the answer to the question is yes.

THE CHAIR:

Thank you, sir.

Senator Kane.

SENATOR KANE:

Thank you, Madam President. So there is fracking that takes place in the state of Connecticut? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Through you, Madam President, the answer is no.

THE CHAIR:

Senator Kane.

SENATOR KANE:

And is there fracking waste being deposited here in the state of Connecticut.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, the answer to that is no, as far as we know.

THE CHAIR:

Senator Kane.

SENATOR KANE:

So my initial question was, is it an issue in Connecticut and you said yes and when I said do we have fracking you said no, do we have fracking waste, you said no. So maybe you could explain to me the issue then? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, I think I explained to Senator Kane a few moments ago that this is an issue because we want to be safe rather than sorry. If this material comes into Connecticut from New York as could happen this fall, we would be, we believe we would very likely be endangering the health and safety of the residents of Connecticut and that's based upon extensive studies of fracking waste that shows it's toxic in a number of respects.

First, because it's radioactive. Secondly, because it has extensive bromides in it and third, because the metals have become toxic. So for all those reasons, we're trying to regulate this through a moratorium process, and that's why it's an issue in the country, including the State of Connecticut.

THE CHAIR:

Senator Kane.

SENATOR KANE:

Thank you, Madam President. And so the change in this bill through the amendment does not create a ban as to what the underlying bill sought. It is now a

moratorium on the issue so we can study it or DEEP can study it until 2017 and I believe they have to come back to the Regulations Review Committee, if I'm correct, and I serve on the Regulations Review Committee, so I'm curious as to how the Regulations Review Committee will act upon the report from DEEP. Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, I, the bill really speaks for itself, but the last part of the question by Senator Kane is, what will the Regulations Review Committee will do, I'm sure they'll act responsibly and they'll look at the recommendations of the regulations that have been approved by DEEP and they will decide whether or not to approve those regulations. It will give us the safety of a second chance by the Legislature through its Regulations Review Committee and I think that kind of oversight makes good sense.

THE CHAIR:

Senator Kane.

SENATOR KANE:

Thank you, Madam President. No, I obviously I know that. I just wanted to understand if regulations will be put forth by the agency, will it conclude that a ban is necessary or we still don't know that because their studying of this issue still needs to take place? Through you, Madam President.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, I'm going to ask you to rule that question out of order. That's been asked and answered and is confusing both.

THE CHAIR:

The Senate will stand at ease for a moment.

(Chamber at ease.)

Senator Meyer.

SENATOR MEYER:

As annoying as it is, let me try to answer it.

THE CHAIR:

Thank you, Senator Meyer.

SENATOR MEYER:

For maybe the tenth time. What the bill does is, it creates a regulatory process, a regulatory process that we use a great deal in our state, and that regulatory process starts with a study and research by our relevant agency here, the Department of Energy and Environmental Protection to determine whether or not hydraulic fracking waste and the byproduct of de-icers and any other byproducts with which we're not familiar now, whether any of those are a danger to our citizens either from radioactivity or from any other injurious result or effect of these materials.

And the bill directs DEEP to arrive at those regulations by no later than July 1, 2018 and the bill also says that there will be a moratorium on it doing those regulations until July 1, 2017.

So the citizens of Connecticut are protected for the next three years while the agency is looking at this issue. When and if DEEP approves its regulations, it will then submit them to our Legislative Regulations Review Committee and it will do what it has done for a long time and that is review, approve or modify or amend the regulations by the agency.

And what the framers of this bill are trying to do and the Environment Committee is trying to do is have some legislative oversight. While we have confidence in

DEEP, we want to be sure that there is some legislative oversight and the Legislative Regulations Review Committee has the expertise, we believe, to review with confidence, these regulations.

So the question then has become, what if Regulations Review does not approve, well the clear implication of the bill is that the moratorium will stay in place until regulations have been adopted by the agency and approved by Regs Review.

And you know, the Connecticut General Assembly is in Session every year and if developments occur which might happen in this emerging field, we will be able to adjust within a rule of reason, and that means, that seems to make some sense.

And so, Madam President, what there is in this bill is a balance, and it's a concept of better safe than sorry. The Governor and the Environment Committee have strongly supported this initiative. We believe that we're protecting the good people of Connecticut in this manner but at the same time we're recognizing that in a regulated manner there could be some positive economic activity here, and we want to preserve that possibility as well.

And that, Madam President, is why the Environment Committee and those of us who are advocating this bill did not go with a ban. We had a choice between a ban on the one hand and a regulation on the other and the ban bill was actually approved, Madam President, by large numbers in the Environment Committee and Judiciary Committee. The ban bill was approved in the Environment Committee as I recall about 25 to 5 and in the Judiciary, larger Judiciary Committee, the ban bill was approved by about 35 to 5. But at the same time we're taking a more moderate approach here, what some people view as a more pro business approach here that will protect the people of Connecticut but at the same time leave open the possibility of something that could be a positive economic activity.

THE CHAIR:

Thank you. Will you remark? Senator Kane.

SENATOR KANE:

Thank you, Madam President. I will. Thank you, Madam President, and I'm sorry that Senator Meyer is annoyed, to use his words of my questioning, but I represent 100,000 people, just like you do, Senator Meyer and I have that opportunity, being a member of the State Senate to ask those questions for my constituents like any other member.

I thank you for answering that question because you finally did by saying that if Regulations Review doesn't approve the regs, then the moratorium continues, and that's actually the answer I was looking for.

SENATOR MEYER:

Madam President, that's an answer I've given for four hours and this Senator not being in the Chamber --

THE CHAIR:

Senator.

Senator Meyer, thank you. Senator Kane.

SENATOR KANE:

Thank you, Madam President. I do believe I have the floor. I did mention that I did have a town hall meeting in the Town of Roxbury and a number of constituents came and spoke to me about this issue and as a matter of fact, I'm a co-sponsor on the underlying bill, so I do believe that this is a good piece of legislation. I will be voting in favor of it, but had some important questions that I needed to have answered and I think it's important to have this type of dialogue when we're passing legislation, so I will be voting in favor of the underlying Amendment and the bill and I thank you, Madam President, for your time.

THE CHAIR:

Thank you. Will you remark? Will you remark? Senator Fasano.

SENATOR FASANO:

Thank you, Madam President.

Madam President, I would yield to Senator Meyer for the purpose of an Amendment that I think he has in the file, which I think he intends on --

THE CHAIR:

I'm sorry. We're on Senate "A," sir.

SENATOR FASANO:

Well, I apologize.

THE CHAIR:

Me too.

SENATOR FASANO:

All right, thank you. I will save it for later.

THE CHAIR:

Thank you. If there's no more comment, Mr. Clerk, will you call for a roll call vote? Oh, hold on.

I made a mistake. We'll try it for a voice vote on Senate "A." All those in favor please say aye.

SENATORS:

Aye.

THE CHAIR:

Opposed? Senate "A" passes. Senator Meyer.

SENATOR MEYER:

Thank you, Madam President.

Madam President, the Clerk is in possession of one small amendment, which is LCO 5103. May it please be called and I be given permission to summarize.

THE CHAIR:

Mr. Clerk.

THE CLERK:

LCO Number 5103, Senate "B" offered by Senators Meyer and Fasano.

THE CHAIR:

Senator Meyer.

SENATOR MEYER:

Madam President, I move it and ask permission to summarize.

THE CHAIR:

Motion is on adoption. Will you remark?

SENATOR MEYER:

Yes. Colleagues, this amendment to Section B of the bill is the actual amending the new language is at the bottom of, is on line 13 and Line 14 and it adds the words as applicable.

And what happened was that when we made fracking waste subject to our hazardous waste management regulations, there was a question as to what part of those regulations related to fracking waste and our LCO said that there were some, that the amount of current hazardous waste management waste regulations were so extensive that there was a question as to what portion of those regs related to hazardous, I'm sorry, to hydraulic fracturing waste.

And so, we added these words so that DEEP as it prepared regulations, would be able to apply the appropriate part of the existing hazardous waste regulations and would give without specificity, would

allow it to make applicable those part of the existing regulations, which would properly relate to our fracking waste materials. So that's the purpose here and I appreciate Senator Fasano bringing it to our attention and I'm pleased to join with him in this proposed Amendment.

THE CHAIR:

Will you remark? Senator Fasano. Good evening, sir.

SENATOR FASANO:

Good evening, Madam President.

Madam President, I want to thank Senator Meyer for, and Representative Albis, for working on adding this language to this amendment to make the bill a better bill. I think this goes a long way and I support the amendment. Thank you, Madam President.

THE CHAIR:

Thank you. Will you remark? Will you remark? If not, I'll try your minds on Senate "B." All those in favor please say aye.

SENATORS:

Aye.

THE CHAIR:

Opposed? Senate "B" passes. Senator Fasano.

SENATOR FASANO:

Thank you, Madam President.

Madam President, I know this debate has been long and I will be relatively short. Senator Meyer, I do not have any questions for you, so you can stand at ease.

Madam President, although I understand fracking material is something we should be concerned about based upon not knowing what it is that's out there, and understanding the significance of that.

But here's the issue that I raise as we look at this issue and go forward. It was only five or six years ago this General Assembly was up in arms because we were going to put broad water in the middle of Long Island Sound. Broad water was a natural liquid, natural gas tanker, if you would, permanently parked in the middle of Long Island Sound and we were afraid of that liquid natural gas being parked there forever with pipelines going to the harbor. Rightly so.

However, there was a, or many Legislators who wanted that to happen because our natural gas prices have gone so high that the ability to provide energy, heat, and electricity to the State of Connecticut was in jeopardy based upon high prices.

And the resolution was to use this liquid natural gas facility. That's how desperate we were six years ago. It was going to happen but for a task force, but for New York and others who got together to fight this, but that was a serious alternative because the price was so high.

Madam President, what has happened between now and then? Energy is the lifeblood of our society. Energy, I would argue, is the lifeblood of humanity at this point. We have computers. We have cell phones. We use more electricity now than ever before.

So if that price goes up, it affects everybody, no matter where you are in the economy, no matter what business you have. So, we need to keep the prices low.

They went out and they figured out one way of doing this is through fracking. I don't know a darned think about fracking. I've heard about it here. I've researched it. I've got a general broad concept, but I don't get it, but I know the results are, it has opened up reserves of natural gas, which will allow us to drop the price of natural gas below that of oil.

So now let's look at our alternatives for energy. We have nuclear, pluses and minuses. We've got oil, pluses and minuses. We've got natural gas, pluses and minuses.

I think we all agree we need something, and I think we don't want to be dependent upon foreign nations and the gas that the fuel pipeline coming through the country, whether that happens or not, there's environmental issues there, but we need energy and we're going to get it, whether we're going to pay a lot for it and not control our destiny or not, we're going to get it.

So I think we have to look at fracking, but we have to look at it in the context of unfortunately, something has to give. Purity as a result cannot work.

We either are going to be dependent upon a foreign nation to give us oil, or we're going to allow the pipeline to go through the center of the country, or we're going to allow to drill oil in areas we may not want to drill, or we're going to allow fracking, or we're going to allow liquid natural gas. We're going to allow something, because if you don't, we're going to have a problem with the high prices that we can't afford and we've seen what happens.

I'm not saying fracking's good. I'm not saying fracking's bad. But what I am saying, the holistic view, we can't look at fracking and say, we don't want it because it's bed. We need to look and say, we don't want it. We don't like it. This is the quantifiable problem, but if we use oil, here are the problems, let's quantify that. If we use nuclear, here's the problems. Let's quantify that.

Hate to say it, we do have to pick our poison. That is the way life is going to be and we have to recognize that. And I know there's a lot of people that it doesn't ring true with. Solar and wind are good energy options, but in all candor, they're not the most efficient, economic options with respect to businesses and high tech.

So, I just throw a word of caution when we look at this. It needs to be looked at, but we have to look at it holistically when this all comes back to us three years from now.

Also Calendar page 20, Calendar 488, House Bill 5222.

Moving to Calendar page 23, Calendar 504, House Bill 5309.

Also Calendar page 23, Calendar 505, House Bill 5484.

And on Calendar page 23, Calendar 506, House Bill 5487.

Moving to Calendar page 26, Mr. President, Calendar 519, House Bill 5375.

Also Calendar page 26, Calendar 520, House Bill 5471.

On Calendar page 30, Calendar 542, House Bill 5378.

Calendar page 33, Calendar 558, House Bill 5459.

And also we earlier today had placed Calendar page 37, Calendar 120, Senate Bill 237.

And one additional item, Mr. President, Calendar page 45, Calendar 158, Senate Bill 209.

So this would be our proposed Consent items at this time, Mr. President.

THE CHAIR:

Seeing no objection, so ordered, sir.

SENATOR LOONEY:

Thank you, and if the Clerk would then read the items on the Consent Calendar for verification so we might proceed to a vote.

THE CHAIR:

Mr. Clerk.

THE CLERK:

On Page 4, Calendar 273, Senate Bill 480.

Page 14, Calendar 435, House Bill 5044.

On Page 16, Calendar 450, House Bill 5371.

Also Calendar 451, House Bill 5373.

On Page 18, Calendar 464, House Bill 5293.

On Page 19, Calendar 471, House Bill 5374.

On Page 20, Calendar 472, House Bill 5380.

Calendar 488, 5222.

On Page 23, Calendar 504, House Bill 5309.

And Calendar 505, House Bill 5484.

Also Calendar 506, House Bill 5487.

And on page 26, Calendar 519, House Bill 5375.

Calendar 520, House Bill 5471.

Page 30, Calendar 542, House Bill 5378.

Page 33, Calendar 558, House Bill 5459.

On Page 37, Calendar 120, Senate Bill 237.

And on page 45, Calendar 158, Senate Bill 209.

THE CHAIR:

Thank you. Mr. Clerk. Please announce the pendency of a roll call vote and the machine will be opened.

THE CLERK:

An immediate roll call has been ordered in the Senate. roll call on today's Consent Calendar has been ordered in the Senate.

THE CHAIR:

Have all members voted? If all members have voted, please check the board to make sure your vote is accurately recorded.

If all members have voted, the machine will be closed and the Clerk will announce the tally.

THE CLERK:

On today's Consent Calendar.

Total Number Voting	35
Necessary for adoption	18
Those voting Yea	35
Those voting Nay	0
Those absent and not voting	1

THE CHAIR:

Consent Calendar Number 1 passes.

Senator Looney.

SENATOR LOONEY:

Thank you, Mr. President.

Mr. President, would move for immediate transmittal to the House of Representatives of Senate bills acted upon today.

THE CHAIR:

Without objection, so ordered.

SENATOR LOONEY:

Thank you, Mr. President.

Mr. President, would yield the floor to members for any announcements or points of personal privilege before adjourning and announcing tomorrow's Session.

THE CHAIR:

Any announcements or points of personal privilege? Announcements or points of personal privilege? Seeing none, Senator Looney.

SENATOR LOONEY:

JOINT
STANDING
COMMITTEE
HEARINGS

ENERGY AND
TECHNOLOGY
PART 2
479 – 705

2014

Connecticut Fund for the Environment

Testimony of:
Save the Sound
a program of Connecticut Fund for the Environment

In Support of

Save the Sound

H.B. 5409 AAC HYDRAULIC FRACTURING WASTE

Before the Energy and Technology Committee

March 4, 2014
Submitted by Leah Lopez Schmalz, Dir. of Legislative and Legal Affairs

Connecticut Fund for the Environment is a non-profit organization that, along with its regional program Save the Sound, works to protect and improve the land, air and water of Connecticut and Long Island Sound on behalf of its 5,500 members. We develop partnerships and use legal and scientific expertise to achieve results that benefit our environment for current and future generations.

SB237

Dear Senator Duff, Representative Reed, and members of the Committee:

Thank you for the opportunity to comment on House Bill 5409, which has a potential impact on the health of Long Island Sound.

Fracking: H.B. 5409

The impacts of fracking and fracking waste disposal are well documented, even if the complete list of toxic chemicals that make up the slurry are not. In Pennsylvania, drinking water supplies have been contaminated so severely in some areas that water must be delivered by truck. Rivers have been decimated as high levels of total suspended solids and toxins choke fisheries, despite attempts to "treat" the waste before discharging it. The truth is that this method of energy production creates billions of gallons of toxic wastewater, but has no proven track record of successfully dealing with this waste product.

Right now fracking waste enjoys a loophole that allows it to escape heightened regulation as a hazardous waste, despite the long list of regulated toxic wastes that it contains. Currently the federal government gives drilling waste and wastewater created from natural gas production a pass. H.B. 5409 seeks to right that wrong here in Connecticut by bringing that by-product into the hazardous waste grouping. This is a necessary first step in protecting Connecticut from the potentially devastating effects of insufficiently regulated fracking waste. H.B. 5409 also adds a much needed report provision that will help the state better understand the magnitude and potential threat to its natural resources.

While these fixes are essential, additional protections are needed. It is painfully clear that the Connecticut Department of Energy and Environmental Protection is underfunded and understaffed. While DEEP has done a good job of creating efficiencies, it is already stretched too tightly; adding the massive responsibility of managing fracking waste is an unreasonable burden to add. Therefore, Save the Sound firmly believes that Long Island Sound and our

groundwater are at risk from contamination until Connecticut takes the additional step of banning the storage and discharge of such waste products.

S.B. 237, while not before your committee today, does just that: protects Long Island Sound, our rivers, and our residents from the devastating effects of fracking waste discharges. Connecticut has made significant investments to ensure our sewage treatment plants have sufficient capacity to treat existing flow and to remove excess nitrogen, and soon, excess phosphorous. Other states have seen that adding fracking wastewater not only affects plants' capacity to treat local sewage by increasing volume, but can also destroy machinery and cause plant operation issues. Worst of all, sewage treatment plants do not currently have the capability to remove all of the toxic chemicals contained in the fracking wastewater—meaning fracking waste "treated" in a sewage treatment plant could still be highly toxic. Allowing wastewater from fracking activities to be stored, "treated," and discharged here is tantamount to signing a blank check to pollute Connecticut's waters, and will undo much of the progress our state has made in returning our rivers, streams and Long Island Sound to healthy, thriving ecosystems.

Connecticut has a long and vibrant history of cutting edge environmental protection. It produced the first comprehensive clean water laws in the country and we owe it to current residents and future generations to continue that legacy. Please do not waste Connecticut. **Please support both H.B. 5409 and S.B. 237.**

Thank you for your consideration.

Sincerely,

Leah L. Schmalz, Dir. of Legislative & Legal Affairs
Save the Sound, a Program of CFE
142 Temple St. 3rd Floor
New Haven, CT 06510
t: 203.787.0646 f: 203.787.024
lschmalz@savethesound.org

Dear protectors of my state,

I'm not sure how to feel about House Bill 5409, because the most important thing is to support a ban of fracking waste in CT. While regulation in theory is good, we cannot allow this hazardous material in. If you pass HB 5409, please also vote for the Environment Committee's SB 237.

We have searched for years for a place to raise our children. Looked at the West Coast, all the sunshine states in the South and ultimately settled on Connecticut because of it's idyllic, pristine forests and lakes.

In Connecticut is were we started our business. And where we found our dream home close to a beautiful lake. We are beyond thrilled of our life in this beautiful land. Until we heard that Connecticut is considering opening it's roads and water treatment facilities to the toxic, radioactive materials of Fracking Waste water. If this dangerous material is allowed to share my roads and if you decide that it's OK for us to take on this liability and the burden of hosting this toxic material in our backyards, our family will absolutely LEAVE this state for another safe haven.

Please reconsider your stand and **vote YES for the bill that will ban fracking waste in the state of Connecticut: SB 237.**

Thank you for listening.
Carmen Abramson
1 Hopkins Rd, Warren, CT 06777

Testimony of Monica Keady before the Energy and Technology Committee in support of

H.B. 5410 AAC GAS COMPANIES' COST RECOVERY OF LOST AND UNACCOUNTED FOR GAS H.B. 5409 AAC HYDRAULIC FRACTURING WASTE

Senator Duff, Representative Reed, and members of the Committee,

Thank you for the opportunity to comment in support of HB 5410, An Act Concerning Gas Companies' Cost Recovery of Lost and Unaccounted for Gas, and HB 5409, An Act Concerning Hydraulic Fracturing Waste. Both bills address problems in the natural gas industry that damage our environment.

HB 5410 creates an incentive for gas companies to repair pipeline leaks that are allowing methane to escape into our atmosphere. Firstly, it's not right that gas companies can charge consumers for escaped gas and, secondly, as gas usage increases, so does the threat to Connecticut's air quality as methane is known to contribute to greenhouse gases.

Currently, natural gas distribution companies are allowed to charge customers for the cost of unlimited "lost and unaccounted for gas," much of which is gas that escapes through small leaks throughout the distribution system. Companies are only required to fix leaks that threaten public safety, and since they can recover the cost of leaked gas, they have no incentive to repair non-hazardous leaks. This is troubling on two fronts:

1. Customers are made to bear the cost of gas they are not using; and
2. Methane has truly dangerous global warming potential—it is 56 times stronger than carbon dioxide over a 20-year period and 21 times stronger over a 100-year period.

HB 5410 would address these problems by limiting gas companies' ability to recover the cost of lost gas, which provides an incentive to fix leaks; over time, this will cut greenhouse gas emissions and reduce the cost of gas. A similar bill has been in effect in New York State since the 1990s; the New York Public service Commission estimates it saves consumers in that state $48 million a year.

I also support HB 5409 which would classify fracking fluid as hazardous waste, closing a loophole in federal law that's allowed it to remain unregulated. The research I've come across strongly indicates that fracking waste is a highly toxic mixture that threatens groundwater quality. The regulatory approach in HB 5409 and similar bill HB 5308 is a positive step, but not sufficient on its own. It would still allow the fluid to be stored and treated in Connecticut. The complete ban in SB 237, before the Environment Committee, is a more comprehensive solution to protect Connecticut's waters and public health.

Connecticut has been a leader in taking care of our fragile environment. Please continue on this path by supporting both HB 5410 and HB 5409. Thank you for your consideration.

Testimony of Barbara McCarthy
Before the Energy and Technology Committee

In Support of
H.B. 5410 AAC GAS COMPANIES' COST RECOVERY OF LOST AND UNACCOUNTED FOR GAS
H.B. 5409 AAC HYDRAULIC FRACTURING WASTE

Submitted by
Barbara McCarthy
March 4, 2013

Senator Duff, Representative Reed, and members of the Committee,

Thank you for the opportunity to comment in support of HB 5410, An Act Concerning Gas Companies' Cost Recovery of Lost and Unaccounted for Gas, and HB 5409, An Act Concerning Hydraulic Fracturing Waste. Both bills address problems in the natural gas industry that damage our environment.

HB5408
SB237

HB 5410 seeks to incentive gas companies to repair pipeline leaks that are allowing methane to escape into our atmosphere. I don't think it's fair that gas companies can charge me for gas I'm not even using. The greenhouse gas potential of methane alarms me and I think Connecticut needs to do more to combat it

Currently, natural gas distribution companies are allowed to charge customers for the cost of unlimited "lost and unaccounted for gas," much of which is gas that escapes through small leaks throughout the distribution system.
Companies are only required to fix leaks that threaten public safety, and since they can recover the cost of
leaked gas, they have no incentive to repair non-hazardous leaks. This is troubling on two fronts:
1. Customers are made to bear the cost of gas they are not using; and
2. Methane has truly dangerous global warming potential—it is 56 times stronger than carbon dioxide over a 20-year period and 21 times stronger over a 100-year period.
HB 5410 would address these problems by limiting gas companies' ability to recover the cost of lost gas, which provides an incentive to fix leaks; over time, this will cut greenhouse gas emissions and reduce the cost of gas.
A similar bill has been in effect in New York State since the 1990s; the New York Public service Commission estimates it saves consumers in that state $48 million a year.

HB 5409 would classify fracking fluid as hazardous waste, closing a loophole in federal law that's allowed it to remain unregulated.: I care about the safety of our wells and aquifers, and don't want toxic fracking waste polluting Connecticut's groundwater. I don't think private gas companies should be able to make Connecticut their dumping ground for toxic waste. The regulatory approach in HB 5409 and similar bill

HB 5308 is a positive step, but not sufficient on its own. It would still allow the fluid to be stored and treated in Connecticut. The complete ban in SB 237, before the Environment Committee, is a more comprehensive solution to protect Connecticut's waters and public health.

Please support both HB 5410 and HB 5409. Thank you for your consideration.

Sincerely,

Bebe McCarthy
27 Cattle Pen Lane
Ridgefield, CT 06877

JOINT
STANDING
COMMITTEE
HEARINGS

TRANSPORTATION
1 – 499

2014
INDEX

have a feeling that Mike Lowdy was behind that, Commissioner, but, you know what I mean, but --

SB34
SB235
HB5289
(SB237) (HB5308)
(HB5409)

COMMISSIONER JAMES REDEKER: Good morning, Representative Guerrera and members of the Committee. Thank you for the opportunity to be here to give you a brief presentation on our snow and ice program, as well as to just give a few comments on the bills before you from a transportation perspective today.

HB5288

I want to start the presentation on our snow and ice program by saying it's all about one thing and one thing only, and that is safety. Safety of our roads, safety of our drivers and second to safety is to keep roads open for business, open for mobility, and those two things guide our program and our deliberations about the work that we do and how we deploy our resources.

We're responsible for 5,700 two-lane miles of roads, or 10,400, you know, miles of roads with 1,400 employees to take care of those, 632 plow trucks, hoping to keep those going every day. It's an old fleet, but we try to keep those moving, a hundred and two loaders. We purchased this year snow blowers after last year's major storm. They've been very effective in clearing some of our bridges, and 205 contractors that we use to augment and supplement our forces during a snowstorm.

Typically, we've got 12 storms with a 20-hour duration and 10 activities with smaller durations, smaller storms, different things that we deal with. That has not at all been the case this year. That average storm of 20 hours has been exceeded in almost every one of the storms. We're up to 15, probably 16 storms coming. Each one has been an extraordinary duration, and this year in particular, extraordinary temperature swings, with

with a shortage this year were able to go to the state contract and add more to it and that supplier had plenty of resources, which was unique in New England, actually. Other states were short, ran out, maybe because they applied more than we do, but we had supplies we could then offer, even to the municipalities that were not part of that contract as part of an emergency support service.

So hopefully that's something, that opportunity might be taken on by others because it is easier to do through the vendor than to try to do it through our garages and distributors, but that's an opportunity.

In terms of best practice I think it's a great idea to talk through that and maybe convene working sessions on, you know, what is each organization doing that is best practice.

REP. STEINBERG: Again, I would encourage you perhaps in the appropriate purchase cycle, to reach out to the municipalities because we all benefit in their adopting your practices and purchasing the materials you're purchasing.

(SB 237)
(HB 5308)

One last question, sort of a wild card. There are a couple of bills before the Environment Committee this afternoon and one in front of Energy and Technology and one in front of GAE, which involves deicing as well and the broader issue on the potential of fracking waste coming into the State of Connecticut.

(HB 5409)

If Governor Cuomo should change his mind about fracking activity in New York, that would bring it to our doorstep. Certainly, since you have a good supply of material that you're happy with, that's one thing, but the industry may be very eager to get rid of as much of this waste as possible, which includes both bromides,

which are very corrosive and also chlorides, which kill off organic material.

Again, to encourage you to share your best practices and your materials, hopefully we could avoid municipalities becoming intrigued by the possibility of getting low-cost or free fracking waste to spread on their roads. I'm hoping that you would also be willing to testify at least the GAE bill in support of not having any fracking waste involved with road spreading in the State of Connecticut.

COMMISSIONER JAMES REDEKER: You know, obviously we don't use that at this point and you know, we haven't considered that, but I understand your point about that and what the potential impacts are.

REP. STEINBERG: Thank you. Thank you, Mr. Chair.

REP. GUERRERA: Thank you, Representative. Representative Sawyer, followed by Representative Morin.

REP. SAWYER: Good morning.

HB 5288 COMMISSIONER JAMES REDEKER: Good morning.

REP. SAWYER: Did you say in part of your testimony, I was trying to listen very carefully, that you are using some high-tech sensors on your vehicles to sensor the road temperature?

COMMISSIONER JAMES REDEKER: I said we use sensors. I don't call them high tech. They're just temperature gauges. But yes, our vehicles are equipped. They know the temperature outside and they know the temperature of the surface of the roadway.

REP. SAWYER: Thank you. I know that New Jersey had gone to that, and that was important.

JOINT
STANDING
COMMITTEE
HEARINGS

ENVIRONMENT
PART 1
1 – 592

2014
INDEX

know, that those steps that this administration have taken and I trust under your new leadership you will continue those efforts and obviously given your testimony around this, I'm just very pleased to see that. I just wanted to make that comment. Thank you.

COMMISSIONER ROB KLEE: And thank you. We're very proud of our efforts on lean and it's truly been something our whole staff from top to bottom has embraced wholeheartedly from all branches. It goes through our Environmental Quality Branch. We just had our fish hatcheries go through an amazing lean event just a few weeks go to really, you know, streamline their business as raising factory fish. So, it's great.

REP. BOWLES: Thank you, Madam Chair.

REP. GENTILE: Thank you. Any additional questions? Commissioner and company, thank you very much.

COMMISSIONER ROB KLEE: Thank you very much.

REP. GENTILE: Next is Representative Steinberg, 136th District.

HB5308
SB237

REP. STEINBERG: Good afternoon, Chairs, Ranking Members and esteemed colleagues on the Environment Committee. You have my testimony so I'm not going to read from it. I'm just going to concentrate on a few points.

So what's the big fuss about fracking waste in the State of Connecticut? We don't have the right kind of shale here to do fracking, so what's the concern?

Well, there's an election going on in New York State this fall as well, and there is concern that after that election, the New York State may also allow fracking activity to occur, which would mean it would bring it right to our

doorstep. And why is that important? Because each fracking well head generates millions of gallons of water, produced water, with all sorts of materials down there, which you'll hear more about today.

And, there are several, three in Fairfield County that I can name, processing plants that might be very interested in the lucrative business of processing this waste water.

The problems we have, have been well documented. I think that the evidence is very clear. There are many materials in that water, whether they're heavy metals, acids, bromides, chlorides, and in the case of the Marcellus Shale, which is underneath New York State and Pennsylvania, samples have found high levels of radioactivity, which is really a new dimension in the fracking waste industry.

So I'm here to testify about the two fracking waste bills. First, I want to commend the Department of Energy and Environmental Protection in taking the courageous step of bringing forth legislation that would characterize fracking waste as hazardous waste, which is to my mind only logical. It's ludicrous that the federal government at the behest of industry would exempt fracking waste from such consideration based upon what we know today, even though there are many unknowns about what's actually in fracking waste because of absence of disclosure.

The bill that DEEP is bringing forward would be a major stride toward putting Connecticut in the forefront of doing the right thing, which is characterizing it appropriately and more importantly, subjecting fracking waste to the rigorous hazardous waste regulations that Connecticut has imposed, which are among the

strongest in the nation and we should all be very proud about that.

Now, I can differ on some of the language. I'm very concerned for example on the deference to the federal statute in the definition of solid waste. You'll see that solid waste in this context does encompass liquid waste as well, which we know is important.

But I am concerned, for example, what if the industry chooses to slightly process some of this waste water and then therefore it can circumvent the ability to characterize it as fracking waste.

Since the industry has had difficulty in truly cleaning the water, and they're trying to recycle as much of it as possible, it's possible that they would use that as a way in which to get the water not subject to these kind of regulations, and I think that's something we need to look at and I've asked DEEP to look into it more carefully to make sure that we have that consideration taken care of as well.

As far as I'm concerned, any byproduct derived from the fracking waste process, as the Commissioner mentioned, from cradle to grave, should be considered hazardous waste until it's been processed in such a fashion that we're very much comfortable that the constituent elements are safe for disposal or storage in the State of Connecticut.

Frankly, I think we have reason to be very concerned that that's actually going to be able to take place. There are a lot of concerns about processing plants, waste water treatment plants in Pennsylvania who won't take fracking waste any more because the bromides, the salts have been corrosive and have damaged the

processing plants and the chlorides have killed off the bacteria, part of the aerobic cleansing process in these waste water treatment plants, so there are real concerns about whether we can handle that in our waste water treatment plants in the State of Connecticut.

The industry I'm sure will tell you that they have this under control. There has been dispute about the science, yet you don't have to watch Dr. Matarese to be very concerned about the constituent elements in fracking waste.

As with most industries, we are obliged to legislate oftentimes based upon bad actors, those who are not behaving appropriately or don't take our regulations seriously.

I submit that because there are concerns about the ability to process fracking waste water and the solid materials, and the fact that DEEP hasn't really answered the question of whether they have the resources to have sufficiently rigorous monitoring. They often delegate to third party consultants to do much of their monitoring work that we are better served by banning fracking waste processing, which is not actually in the bill explicitly and certainly disposal and storage until such time as the industry can give us great confidence.

I don't think we're anywhere near that now. I'll leave it at that in case you have any questions. Thank you.

REP. GENTILE: Thank you, Representative Steinberg. Any questions from our Committee members? Representative Hennessy.

REP. HENNESSY: Thank you, Madam Chairman. So can these byproducts be used? I noticed a flyer that depicts it being used for treatment for

snow removal, treatment on the roads. So could that stuff be used as some kind of product that is sold to the State of Connecticut for some kind of treatment?

REP. STEINBERG: That's a great question, Representative. In fact, earlier today the Transportation Committee was discussing road salts and I asked that question of the Commissioner.

There have been instances where fracking waste material has been used as deicer on roads. You can imagine the concerns, particularly with the Marcellus Shale if there were high levels of radioactivity with a half life of 1,600 years what the impact might be for the run-off of such deicer.

There actually have been instances where the byproduct has been sold or given away to spread on property and you can again imagine the environmental concerns.

We view this primarily as a public health and safety issue, and the concerns we have about the difficulties in processing this, I think give us reasonable cause for alarm about how it might be disposed of.

As I said, they're trying to recycle more and more of this because they're generating billions of gallons of wastewater. They have to find some place for it to go.

We have to ask ourselves the question, what's a more precious resource here? Natural gas energy or our precious water supply and it's a real challenge to figure out what's going to happen to all this wastewater and I think the question you ask is a legitimate concern and there is a bill in GAE that would ban the possibility of it being used as a deicer.

DOT has promised they would never use it, but then we have the municipalities as well, and they're left to their own devices.

REP. HENNESSY: Thank you, and thank you for your testimony.

REP. GENTILE: Thank you. Any additional? Representative Larry Miller.

REP. L. MILLER: Thank you, Madam Chair, and good afternoon. There's about 80 locations throughout the United States where fracking takes place, a lot of it out in the Midwest.

Now, all this water, how do they recycle it? Somehow or other they're recycling it in some way to make it less volatile, less environmentally negative, that will affect our environment.

I'm not sure that we don't use more chemicals that are probably worse than fracking on our major highways, in our ethanol in the gas. There's a lot of stuff that's in all our products that we use.

Now, has anybody come down with cancer from fracking waste, and if so, you know, where, and how many? Is it, maybe that's an unfair question, but I just want to know what the ramifications are for health reasons with fracking material.

REP. STEINBERG: That's a very good question, Representative. You may have read reports of efforts to ship fracking waste in barges down the Ohio River. Much of it is injected underground again, which can be problematic say in the State of Pennsylvania, where you have all those old oil wells. Some of it might get into the sub-strata and affect groundwater and aquifers, so it is a concern, even though

they're getting rid of it, what exactly the implications are.

As far as the health concerns, I think that there's plenty of data, particularly in the State of Pennsylvania as to the health impacts of the fracking process itself, particularly the presence of methane.

As with any carcinogenic track record, it usually takes some years before you start seeing it, and it can always be argued as to what the cause is.

But if we look at the constituent elements, which I believe is your question, there are the knowns and the unknowns. There are the knowns about, as I said, some heavy metals, silicates, acids, but more importantly the bromides and the chlorides plus new combinations that are maybe created because of the intense pressure and the high temperatures involved, which we have less experience with.

And even though Connecticut through its hazardous waste regulations has a great track record in dealing with these things, there is a legitimate question. Have they ever seen both the compounds we're talking about, the quantities we're talking about and more importantly, the radioactivity in these levels.

These create a series of risks that are specific to the health and safety that I think it's prudent for us to err on the side of protecting the individual as opposed to making it available to a few processing plants to make some money on it.

So I think you ask legitimate questions. I think there are too many unknowns and because of that, I think we should be concerned and we should, you know, we should never regulate

trivially. But when it's the health and safety of the people of Connecticut, I think that there's just cause for both the DEEP bill and for considering a ban on fracking waste in the state.

REP. L. MILLER: The fact there's 80 sites. Now, every site is a little different than the other, so it may have less contaminants in it than others. Is that a criteria, for instance, the Bacon area or Marcellus or the ones down in Texas? They're all a little different when it comes to the fracking and the waste that's in there. Is that correct?

REP. STEINBERG: That's absolutely correct and it's not just the 80 sites that you quote. Just in the State of Pennsylvania alone there are literally hundreds of well heads and there's variability, not only within each well head, but maybe periodically in what comes out, so there is a great range.

The problem is, some of the samples have indicated very high levels of what we would consider toxic materials and do we hope for the best, or do we regulate for the worst.

And in this case, because again, it's a health and safety issue, it's certainly an environmental issue with radioactive materials having a half life of 1,600 years, that's not a thing where you can oops and correct it any time soon.

We cannot afford an untoward event relating to one of these wastewater treatment plants where it gets into the groundwater, when it gets into Long Island Sound or ends up in the landfill and then we discover some time later that it had more dangerous levels than we would have anticipated.

REP. L. MILLER: And lastly, if somebody, a couple of guys in Connecticut, a couple of entrepreneurs discovered a method to clean up this waste, would this bill prohibit them from starting an operation here in Connecticut to clean up the fracking waste?

REP. STEINBERG: I love that question because there are evolving technologies even as we speak. One of our concerns is, the wastewater treatment plants in Connecticut may not have those more evolved technologies and we are concerned that the chlorides and the bromides for example, would compromise those wastewater treatment plants.

I think that it is in industry's interest to pursue these new technologies and to prove them out, and obviously DEEP will remain, you know, committed to monitoring what are the best practices in terms of processing waste.

In fact, I would love to see DEEP really hold out and make sure that only those processing plants that are using technologies that are sufficient to do what needs to be done be considered, and if we are not satisfied there should be no such activity in the state.

REP. L. MILLER: I want to thank the Representative for his answers and thank you, Madam Chair.

REP. GENTILE: Thank you, Representative. Representative Moukawsher.

REP. MOUKAWSHER: Thank you, Madam Chair. I was looking at an article that's talking about this issue and you are quoted in it and I listened to your testimony and I appreciate your, you know, raising, you know, our consciousness about this.

I was wondering, there's a quote here you're saying there are processing plants in

Connecticut potentially interested in handling fracking waste.

First of all, is that wastewater? Is that the waste we're talking about?

REP. STEINBERG: As I stated, each fracking well head has millions of gallons of produced water that comes out after they put the water down in the first place.

Industry has been successful in recycling more and more of that, in some cases 50 or 60 percent. But as you can imagine, that still leaves millions if not billions of gallons of wastewater.

There may be some other processing going on that may be some other solid materials but what I think we're focused on right now is the prospect of that produced water being brought to various kinds of wastewater treatment plants for additional processing.

And one of the concerns there is that, first of all, they probably do not have the appropriate monitoring equipment for any radioactivity levels, but it's definitely their natural job is to discharge it somewhere, solids in the landfills, discharge into waterways. That's of great concern.

So we're talking about, one reason it makes it so lucrative is that we're talking about conceivably billions of gallons of water coming into the state. Some of you have seen pictures of tankers lined up for miles coming out of Pennsylvania, looking for some place to take the water.

I'm not so sure I'm excited by the prospect of seeing them lined up on a big hill coming out of New York State on I-84 looking to come into Danbury, something along those lines.

And if we are one of the few states in the area that is willing to process this waste, you can bet that they will find a way to bring it to us.

REP. MOUKAWSHER: Okay, well, my next question was, if it's water we're talking about and there are processing plants in Connecticut, are we talking about municipal wastewater treatment plants? I mean what, or is there some other species of processing plant.

REP. STEINBERG: I'm sure DEEP can explain to you with greater detail than I can. There are private processing entities in the state that process chemicals and other kinds of waste as it is, and so they have experience. They're certified by the state for those activities.

However, I would submit none of them have experience with this particular kind of wastewater and the unknowns that are part of it.

REP. MOUKAWSHER: All right. Yeah, I was just trying to, the processing plant reference. I just wanted to know exactly what kind of plant that was.

I mean, in other words, you're not saying, you're not talking about municipal wastewater treatment plants. You're talking about some industrial facility. Is that correct?

REP. STEINBERG: I can't imagine the prospect of a municipal wastewater treatment plant taking this on and basically endangering its own function and protection for the people that they serve, so I don't think that's a high prospect.

But as I stated, you know, industry is going to be very eager to find some place to send this

waste water, and so I think that the commercial entities are the ones that we need to focus on.

REP. MOUKAWSHER: If I were to, you know, I'll ask DEEP, would they be able to tell me where these plants are or what the possible, you know, locations are in this state for processing? I mean, do you any sense they'd be able to identify that?

REP. STEINBERG: Obviously, first of all we're talking prospectively. No one has applied for a permit application yet in this state, but there are several processing plants because they have dealt with various types of hazardous waste in the past, that would conceivably be most likely interested in doing the processing.

My understanding is there are at least a couple or several in Fairfield County alone. There may be more than that. I don't think we're talking about a lot. We may be only talking about a half dozen across the state, but you know, their location and the volume that they may actually attract has great implications for health and safety.

We've heard stories of you know, accidents and spillage. We've heard rumors of midnight dumping to get rid of the waste water. The more such activity we have in the state, the more vulnerable we are to incidents.

REP. MOUKAWSHER: Okay. Thank you very much.

REP. GENTILE: Thank you. Representative Phil Miller.

REP. P. MILLER: Thank you, Madam Chair and thank you, Representative Steinberg for very thoughtful testimony.

You know, a lot of times as Legislators, we are sort of broadly lay people when it comes to a

lot of things and we tend to learn a lot more as we go on and of course individual members have some expertise in areas of their own vocation, perhaps.

But I just want to ask a couple of very basic questions about fracking or hydraulic fracturing. It's a newer technology and most of these chemicals and compounds when deeply underground within these shale formations as they sit undisturbed are just basically benign, correct?

REP. STEINBERG: Correct. Oftentimes the things we're most concerned about in the produced water that comes out are things that were injected by industry as opposed to naturally occurring, with the exception perhaps of the radioactivity found in some samples of the Marcellus Shale.

REP. P. MILLER: And among the things that are, these are blasted deep underground in horizontal and vertical shafts, I guess, and it's done at very high pressure, which loosens a lot of things and all of this comes up along with the gas that's extracted and it's again, benign when undisturbed, but when it comes to the surface with all these different combinations and concentrations, it's more volatile. Is that your understanding?

REP. STEINBERG: Again, there are certain unknowns and as discussing with the other Representative Miller, great variability from well to well and certainly in different parts of the country.

But yes, many of the concerns are based upon the new combinations of either existing materials or injected materials when they come up not only under high pressure, but it's under high temperature, having, creating new compounds or new concerns, perhaps not all of

which have really been explored in most hazardous waste processing context.

REP. P. MILLER: So I've heard that, I've heard you and others refer to this byproduct that comes back to the surface as water, but it's more of a kind of slurry with some potentially nasty constituent in it?

REP. STEINBERG: Yes. It may be referred to as produced water, but its viscosity may vary and certainly it doesn't look like anything you would consider drinking coming out of your tap.

And there's the issue, which is the processing of that water, to render it not even potable, but safe to dispose of in some fashion is truly problematic.

REP. P. MILLER: Well, thank you very much for your very thoughtful testimony, and thank you, Madam Chair.

REP. GENTILE: Thank you. Representative Sear.

REP. SEAR: Thank you, Madam Chair. As you're sitting in the hot seat I will question you.

Is fracking happening solely in the U.S., do you know, or is this a worldwide or North American operation? Are we at the forefront in doing this?

REP. STEINBERG: That's an interesting way of phrasing it. Certainly we as a nation, because of our desire for energy independence and for its abundance, even if difficult to derive in some cases, the United States has made a bigger commitment perhaps to the use of hydraulic fracturing as a means by which to develop natural gas than perhaps other countries have.

Obviously, there's activity in other places, but since so much of our demonstrated or

projected, and there are, I guess some questions about how much there actually is, but our projected supply of natural gas is caught in those kind of deposits, which require some form of hydraulic fracturing to release.

When we're talking oftentimes about the expansion of natural gas as a major energy alternative in the U.S., we're talking about vetting on hydraulic fracturing as the means by which we're going to derive it.

So yes, we have made it a big vet as a nation. It's wonderful for us to have energy alternatives, particularly that may be a little bit less polluting in terms of a carbon fuel.

One could also argue it's a distraction from really focusing on renewables that are really going to be the long-term solution, this is at best a bridged fuel.

We had the conversation about natural gas as an energy alternative in and of itself, but I think the question we're asking ourselves right now is, when you overlay the health and environmental impacts, both in terms of the fracking itself and the fracking waste that frankly has to be disposed of in some fashion, it calls into question whether this is a smart vet. Should we abet the farm here in the United States on that prospect?

So I don't think we're necessarily here to have that debate. I really would hope that would happen on a national basis. But to answer your question, yes, we are making a significant bet on natural gas and therefore, hydraulic fracturing here in this country.

REP. P. MILLER: Thank you.

REP. GENTILE: Representative Bolinsky.

REP. BOLINSKY: Thank you, Madam Chair, and thank you, Representative. Your knowledge on this subject is awe inspiring.

I have a question and it's going to sound a little rhetorical because I've asked myself this question on many occasions.

The fracking waste from the extraction of the natural gas. it's coming to us from neighboring states, Pennsylvania and New York primarily, correct?

REP. STEINBERG: Not currently New York, but Governor Cuomo has been vacillating quite a bit in the past few years waiting for studies and the like. Many people believe that as of November he'll make a decision if he's re-elected one way or another, and obviously, New York State is the other state, along with Pennsylvania that really contains most of the Marcellus Shale that we're talking about.

REP. BOLINSKY: But I guess the question, the question I've got that I ask myself is, if we're not extracting anything because our geology just doesn't lend itself to it here in Connecticut, why are we bringing in the waste from other states, and if it's being extracted in Pennsylvania and at some point in time perhaps in New York, why wouldn't it be disposed of at the point of origin. Why does it have to be shipped to a neighboring state?

REP. STEINBERG: I think that's a really good question. I think that we've all read about what's going on in West Virginia, which has very little regulation and it's obviously very important for jobs in the State of West Virginia, but the health and environmental impacts are horrific, in my view.

Pennsylvania, which didn't have really very strong regulations when they started the fracking activity, has experienced a lot of the same problems and now they're changing their laws, and I certainly would expect New York State to have much more rigorous regulations.

But they're having problems getting rid of all the fracking waste. They can only recycle so much of it at this point. The more and more wells, and sometimes there's a well head within a mile of each other. We're talking about hundreds if not thousands conceivably that could be developed on the Marcellus Shale fields, which cover a broad geography.

They each generate millions of gallons of water, produce water in each case. They're trying to ship it to New Jersey. They're trying to ship it to Ohio.

If Connecticut were to make it in any way too easy for fracking wastewater to come here as well, you can bet that they would find a way economically to trek it here.

So I think the question you asked, and I want to address something the industry has put out as well. They claim it would be disingenuous for the State of Connecticut, which is interested in using natural gas for industry and for residences, to reject the fracking waste, and I find that statement incredible.

To think that we have to accept the pollution from another state simply because we are interested in using natural gas as an energy alternative is incredible to me.

I would turn it back and say, it's incumbent on industry to find a way to take care of their own waste, to clean their water. And when they do that, we have a process, maybe we'll

consider, you know, for our economic benefit, doing it in the State of Connecticut. Until that point, it should stay in the states in which it was generated.

REP. BOLINSKY: So what in fact you're saying is that in this, one of the most expensive places in the world to live, we're easy. We're not cheap but we're easy.

REP. STEINBERG: We're not easy yet and it hasn't happened yet. We're here today to talk about how to make sure that won't happen.

REP. BOLINSKY: Thank you so much.

REP. GENTILE: Thank you.

REP. BOLINSKY: Thank you, Madam Chair.

REP. GENTILE: Representative Bowles.

REP. BOWLES: Yes. Thank you, Madam Chair. Thank you, Representative Steinberg for your very eloquent and articulate testimony on this subject. I think it is a matter of grave concern, obviously.

My question has to do directly with the, your familiarity with what other states are doing in regard to outright fracking bans. I believe Vermont has passed such legislation, but particularly in regards to banning or regulating fracking waste into their states, neighboring states in particular, Massachusetts. Do you know what's happening with some of the other states?

REP. STEINBERG: I think you raised two issues, which is the regulation or banning of fracking activity itself versus fracking waste. You mentioned Vermont, I believe. Colorado is also contemplating bans on fracking activity and

there actually is more going on out there certainly than the case in Vermont.

With regard to fracking waste, I am familiar with a number of counties and municipalities within New York State that have gone as far as to ban it.

I know New Jersey was looking at a number of regulations, which apparently Governor Christie chose to veto one of those, concerned about some interstate commerce clause issues, which I think eventually will have to be explored through the legal process.

Many states I understand are concerned about it. I think we're all at different stages. Massachusetts, again, shares a border with New York and I would imagine they'd be very concerned at this juncture with New York State hanging in the balance.

I think that as we begin to educate people about the potential hazardous ramifications, I think this will become much more of a topic of discussion and hopefully will be part of the national debate. I think it's yet to be seen what each individual state will do, but I think the example of Pennsylvania is alarming to many.

REP. BOWLES: Thank you, Representative. Thank you, Madam Chair.

REP. GENTILE: Thank you. Seeing no further questions, Representative Steinberg, thank you. Next on the list is Representative Lesser, followed by Senator Crisco. I believe Representative Lesser is out of the room at the moment, so would Senator Crisco like to come forward?

HB 5044

SENATOR CRISCO: Thank you, Madam Chairman. It's my pleasure to start. I come to speak, my name is

case basis without the presumption, the presumption that horses are inherently vicious.

Favorable action by this Committee would be welcome news for the Town of Bethany and its riding culture. I therefore urge your support and thank you once again for the opportunity to testify in support of House Bill 5044.

REP. GENTILE: Thank you, Senator Crisco. Any questions? Senator Meyer.

SENATOR MEYER: Good afternoon, Senator.

SENATOR CRISCO: Good afternoon, Senator.

SENATOR MEYER: Do you know the genesis of this bill? Was there a lawsuit in which there was a finding that a horse had acted viciously and therefore insurance rates skyrocketed and led to this bill? Do you know? What was the origin of this bill?

SENATOR CRISCO: I recall hearing something about it, but I can't confirm that, Senator. I just know that, you know, my constituents called me and I met with them and they expressed their concern about the issue.

SENATOR MEYER: Thank you.

REP. GENTILE: Thank you. Any additional questions? Thank you, Senator Crisco. Is Representative Lesser in the room at this time? Okay. Again, just for informational purposes, I'm sure Representative Lesser is involved in another meeting, so if he should enter the room, we will alter a little bit from the schedule.

With that, can I call upon Eric Brown?.

HB 5308
SB 237

ERIC BROWN: Good afternoon, Representative Gentile, and members of the Environment Committee. My name is Eric Brown and I'm Director of Energy

and Environmental Policy for the Connecticut Business and Industry Association. I'm here to speak in opposition to both the fracking bills that are subject of the conversation right now. I did submit written testimony. I'll just focus on a couple of points, one of which is, you know, I've heard arguments that we really shouldn't think about this conversation in a broader context of our interest in natural gas, and I want to just say that we think that is flawed thinking.

We think there's a very close nexus and we stand at the precipice as I think Representative Steinberg alluded to, of a transformative moment in Connecticut, in the region, in this country, how long have we striven for energy independence and we're right there.

We have the opportunity. A lot of that opportunity rests on this nation's ability to tap into and utilize these natural gas resources.

Certainly there are challenges, but there are challenges with all activities, and these wastewaters are absolutely manageable. We manage all kinds of toxics and chemical and industrial waste. There's no reason we can't do the same with these.

You have three basic options. One as Representative mentioned, injecting it back into the ground. We're not going to do that in Connecticut, I believe, nor would we support such a method.

But secondly, recycling, and a lot is going on to that. There's been discussion about that possibly taking place in Connecticut and elsewhere.

And the third is treatment, and that is an absolute opportunity, even I referenced in my testimony a study out of the University of California at Berkeley that study these wastewaters and saw that as an opportunity, even talked about incentives for creating recycling of this material, talked about creating general permits for that purpose.

This is not the next biblical plague that many want to make it sound to be, and it's just too important for us to turn our back on it.

Finally, I want to mention that EPA is at the end, coming to the end of a multi-year comprehensive study on fracking and fracking waste, including an intensive look at the wastewaters from fracking.

They've already determined, they've already said that it doesn't merit being treated as hazardous waste and I want to emphasize that what we do here does have implications outside our borders.

If we were to ban this stuff here, or turn it into hazardous waste, you can bet that the advocates in that area are going to go on to the next state and on to the next state and on to the next state.

And what happens if all kinds of states start banning this stuff or making it hazardous waste, which will multiply the cost of that influence. Yes, they're clapping. That's exactly what they want. They don't want natural gas. They don't want to see that transformation.

So I appeal to you to look at this with reason and on a factual basis, and I hope when you hear the horrific stories you're going to hear today, you ask them, are we talking about

wastewater that was transported to a different state, because that's what we're talking about here.

We're not talking about the fracking process. We're not talking about what happened in Pennsylvania. We're talking about potential, how to manage wastewaters that are taken off site and have nothing, and have finished with the fracking process.

So with that, I guess I will just leave it to what's in my written testimony, or try to answer any questions you may have for me. Thank you very much.

REP. GENTILE: Thank you, Eric. Senator Meyer.

SENATOR MEYER: Eric, the Environment Committee decided to raise this bill and hear it today, these two bills, because of what we perceive as scientific evidence that the waste material from fracking are highly toxic, carcinogenic in part, radioactive in part, and have built into the water because of the way the process works of fracking, a whole bunch of contaminants that are actually a danger to us humans, human beings and animals as well.

ERIC BROWN: Sure.

SENATOR MEYER: Now, in your testimony urging us to reject these bills, have you analyzed those scientific studies with respect to the toxicity of the materials or are you saying, we have the power to deal with that toxicity and build a new economy of some kind?

ERIC BROWN: I do. That is what I am saying. There are materials in there that, you know, I think has been discussed, would not probably be appropriate for direct disposal into a POTW, but there are pre-treatment opportunities in Connecticut already. There are wastewaters

that have to be pretreated before they are going to open a treatment and disposal.

So the bromides and the salts and all the things that Representative Steinberg talked about, those are all things that can be managed through the regulatory and permitting process, and that's what we would urge.

We're, our message is not to just do nothing. We agree. These things should be regulated and they do need to be treated in a way that makes them safe for discharge.

But our argument is, that's imminently doable and that is the course of action that we would favor seeing.

Now I noted, the discussion, the DEEP folks said well, they had some changes for the language and I'm interested in seeing that. I know a lot of states have passed bills and are considering bills, basically transparency bills that say, you know, if this stuff is going to come into our state, we want to know what's in it, and that's fine. We do not have a problem with that, either.

But you don't need to treat it as hazardous waste to have that kind of provision. You could have a provision that required characterization and then yes, if it winds up being characterized as a hazardous waste, then that's how it would have to be dealt with.

But just to sort of blanket say, well, you know what? We're just going to call it a hazardous waste automatically, you know, that seems to fly in the face of what EPA thinks is appropriate and certainly would multiply the cost of dealing with this stuff many fold, which of course, works against the goal of

cheaper, cleaner, more reliable energy, which is what natural gas is all about.

SENATOR MEYER: One other question. I hear you. You know, the trust obligation I think, of the Members of the General Assembly is the safety of our constituents in the State of Connecticut, and I think our Committee, probably the whole General Assembly, would be helped if you could put together some materials that would show us how we can safely dispose and deal with these waste materials and therefore avoid injury.

You know, we're not dealing here with something that was created within Connecticut. We're talking about allowing people and companies from outside our state to come in and bring in something that appears to be highly toxic and you're taking a position, a very creative position, I think, that we can deal with it in a way and dispose of these materials in a way that is safe.

And if you can build some, show us some studies or some indications of how that can be done, I think that would be very relevant to the dialogue.

ERIC BROWN: Thank you, Senator. I'll do that, and I would encourage, I did put a length to this University of California at Berkeley study, which is not exactly, you know, the bastion of conservative thought or, you know, home to industrially funded studies, and I think just the flavor of it takes down the temperature on sort of the panic that we're talking about here.

They're obviously concerned about it. They do talk about the constituents, but they don't take the approach that, I think they do take the approach there are challenges, but they

need to be managed and not to just sort of turn our back on it or somehow treat it that it's somehow worse than what we take care of now with all of our industrial discharges.

Good Lord, look at all the nuclear material we have in this state. What would have happened if we banned the importation of nuclear material into Connecticut 50 years ago when practically half our energy comes from it?

So I just think that there's challenges. There's no doubt about it, but let's work to solve the challenges or overcome the challenges and not just say, this is an issue we have to, or natural gas from shale is something we have to turn our back on as a state or a nation.

REP. GENTILE: Representative Shaban.

REP. SHABAN: Thank you, Madam Chairman. The EPA study that I see in your testimony, I'm assuming they did that under the rubric of RCRA on the RCRA statutes or whether or not it was a hazardous waste? Is that correct? Or, how was it done?

ERIC BROWN: No. It's done under a separate initiative. I think actually they were directed by Congress to do it and it's been a number of years in the making and their expectation is there will be a draft out for public comment this year.

And also, I did include in my testimony an attachment showing the Advisory Board that is overseeing that study. That is an extremely impressive group of research universities, including a distinguished professor from Yale. It might be interesting to have him in to talk about his perspective on it.

This is no slouch organization. This is a serious, scientific investigation.

REP. SHABAN: Do we have an understanding, thank you, do we have an understanding of what facilities in Connecticut now may be technically able to treat fracking wastewater?

ERIC BROWN: I don't have an understanding of that. I'm not sure there is one. I really don't think that you know, these trucks that were referred to earlier are going to be rolling in here any time soon, even if there was a facility.

As I said, there's currently a moratorium on large-scale, large volume fracking in New York. So I think we are talking about preparing for something down the road. It's not like they're at the edge of the borders ready to charge in here, so.

I don't know of any. But, I just don't want to preclude the opportunity, perhaps, to have recycling be part of the management solution to this issue.

REP. SHABAN: Yeah, and your back and forth with Senator Meyer I thought was interesting, or I think (inaudible) through the entire discussion, especially with House Bill 5308 dealing with regulating as opposed to potentially banning fracking waste.

To the extent that there's information about the economies of the operation, because this stuff's getting treated somewhere, I think, probably locally you've had some, maybe not enough, you know.

If there's some information that's out there that talks about, you know, what the treatment per gallon price could potentially be.

You know, basically, if there is, this argument's going to be driven, I think, or this discussion's going to be driven in large part

by if in fact there is a new economy, or a potential new economy here in Connecticut to treat this stuff, what kind of dollars are we talking about?

I mean, because if it's de minimis and you know, the recognition is that this stuff's pretty dangerous, well then that kind of, that spins the discussion.

If it's potentially a real industry and some real economy and if it's the kind of thing where some, you know, pre-treatment that some of the privately owned treatment plants that exist now could treat and say, hey, you know, this could generate X million dollars or X number of jobs, that would be good information to have.

So I don't know if you, I don't know if CBIA has those resources?

ERIC BROWN: Well, hang on. Just to be clear. The new economy I guess I was talking about was not so much the opportunity for a new fracking recycling (inaudible).

REP. SHABAN: Yeah, you're talking the energy half of the equation, right?

ERIC BROWN: I'm talking about a whole new way of you know. We've been at the very top or very near the top of energy crisis for a long time and obviously our dependence on foreign oil, all of that could change under this, so, that's more what I was talking about.

REP. SHABAN: Yeah, and I understood that point, but I was thinking it's part of whether you call it a footnote, or --

ERIC BROWN: Yeah, I can let you know. Sure.

REP. SHABAN: -- Part B of this discussion. I mean, because we, you're right. We do treat. I mean there's septage plants all around the state where we treat sewage. We ship sewage in from other municipalities and in fact, out of state.

Some states bring in garbage from out of state and there's ways to do it. They burn it, treat it, bury it, whatever they decide to do and there's an economy related to that, so, to the extent that there's information out there, I think that would be helpful to our Committee.

ERIC BROWN: I'll certainly look into it. Thank you.

REP. SHABAN: Thank you, Mr. Chairman.

REP. GENTIEL: Thank you. Representative Hennessy followed by Representative Moukawsher.

REP. HENNESSY: Thank you, Madam Chair. Hi, Eric, how are you?

ERIC BROWN: Good, thank you.

REP. HENNESSY: Perhaps you're not the person to answer this. I see the lobbyist from Petroleum Industries here and maybe he could address it, but you had mentioned energy independence as basically the reason why we're having this discussion with this new mode of extracting energy.

My question is, how much do we ship overseas of this product and how much is actually enjoyed by Americans?

ERIC BROWN: Well, I think you're right. I think Mr. Devanney who will be testifying later, can speak to that and also to the trends on recycling domestically.

REP. HENNESSY: Okay, thank you.

REP. GENTILE: Representative Moukawsher.

REP. MOUKAWSHER: Thank you, Madam Chair. Good afternoon, Eric.

ERIC BROWN: Good afternoon.

REP. MOUKAWSHER: One of the questions I had I think you've answered. I was interested in, there's been testimony about, you know, possible processing plants in the State of Connecticut that would, you know, if this were not regulated or if we didn't act on this, might, you know, decide to treat wastewater.

I think you said you're not aware of any right now? I mean, I'm not even sure what such a plant would be.

So that in terms of a, you know, to your knowledge, there's no imminent plan by any company to start treating wastewater. Is that what you said?

ERIC BROWN: Not that I'm aware of. I know other states have some facilities that are, as I understand it, pretty much designated to this purpose. They do not discharge to groundwater or surface water. They are basically pre-treatment facilities that are designed to treat this waste in a way so that it can be managed more conventionally, either at a POTW.

But there may be plans. There may even be some here. I just don't know, and others may be testifying later that would know that.

REP. MOUKAWSHER: Okay. The reason I'm asking is, I mean, you know, we're, this, there's a very deep and strong interest in fracking waste and you can see there's a lot of people here that have, you know, a grave concern about --

ERIC BROWN: Sure.

REP. MOUKAWSHER: -- and it is the impression somewhat that this is something that needs to be dealt with immediately, that there's an imminent problem with it and that may or may not be the case.

I don't know that it is, but I did note in your testimony one of the things that you were concerned about was that we are, you know, classifying these wastes as hazardous waste, which in and of itself I think is really, you know, kind of getting ahead of the game in terms of what the actual constituent elements are.

But I also noted that you did not, you were not recommending no action, that in fact, you were saying a prudent course of action would be to require regulations to be developed and permit requirements.

And so, you're not, you know, saying that there should be no regulation, but I think you're really concerned about the hazardous waste appellation for this, and could you just extend that a little bit like what the implications are if we just called it hazardous waste, what would that do?

ERIC BROWN: All right. Well, there's many different levels of regulated waste, special waste and regulated waste and solid waste. Without a doubt, the highest and most rigorous and most expensive form of waste to manage is hazardous waste, and particularly there are even levels within the hazardous waste realm and one of those is the treatment, storage and disposal facilities, which I think is what this bill contemplates, which is even higher than most other hazardous wastes.

Extremely expensive, extremely burdensome, so you know, again, the potential impact of that,

again, not just thinking about our own little state but I think it's, you know, everybody's trying to grapple with this and if that were to somehow take root and become sort of legislatures around the region to say, you know, you don't have to worry about regulations or new regulations and whether (inaudible), we'll just throw it all under the bucket of hazardous waste that cost differential is going to have a huge impact on the cost of natural gas coming from shale deposits.

And again, I believe EPA has said that they didn't feel, at least at this point, pending their study, that the evidence merits these wastes being lumped in just, you know, ad hoc into the world of hazardous waste management.

REP. MOUKAWSHER: Thank you very much. Thank you, Madam Chair.

REP. GENTILE: Representative Vicino.

REP. VICINO: Thank you for your presentation.

ERIC BROWN: Thank you.

REP. VICINO: It sounds to me like Pennsylvania is looking at Connecticut to bring a lot of its waste into here. How come they're not processing it there, keeping it there? Why all of a sudden? Last year we were talking about all the opportunities to bring natural gas here.

If this was such a big opportunity, why are they shipping it out to us? Why don't they just keep it there, treat it, re-use it, figure out what they could recycle it to? Why are they coming here? Is it about profit? Is it about greed? Is it about, what is it all about?

ERIC BROWN: Well, it's not clear that any of it will come here, especially from Pennsylvania.

REP. VICINO: Well, how come they don't want to, how come they're not going to leave it here if this is about energy independence.

ERIC BROWN: How come they're not going to leave it?

REP. VICINO: How come they're not leaving it in Pennsylvania?

ERIC BROWN: In Pennsylvania. Well, again, Steve will speak to that. I think you'll see that the trends in recycling are on the upswing in terms of recycling it near where it's produced, which is a good thing.

My understanding is that the quantity is such now that while those capabilities are increasing, they're not in place to a point where they can handle all of it.

REP. VICINO: But that's a very big state. There's plenty of room to recycle. Why aren't they doing it there?

ERIC BROWN: Well, I think they are doing it there. In terms of their capacity and whether it's growing quick enough and at what point would that occur, at some point meet the curve of what they're producing so they could recycle everything there, I'm not sure. Others may be able to speak to that.

I don't think they're just yanking the stuff, you know, they're not just pulling the gas out of the ground, loading up the trucks and shipping it off to whoever will take it. I think they're trying to handle it as much as they can and again, that's on an increasing trend, but there is excess at this point that they have to do something with.

REP. VICINO: I think they're trying to pawn it off on Connecticut. That's what it sounds like to me. Thank you.

ERIC BROWN: Sure.

REP. GENTILE: Thank you. Representative O'Dea.

REP. O'DEA: Thank you, Madam Chairman. Thank you, Eric, for your testimony.

Just to follow up on Senator Meyer and Representative Shaban. It would be helpful to have some more information on kind of the opportunities that Connecticut might have.

Particularly, I was looking through your testimony and I started to read the report from Cal, the University of California, and you're right. That's not the bastion of conservative thought, so I haven't had a chance to read all of it, but I am reading that.

You know, obviously safety is paramount for our residents, but if you were to tell me or if you were to tell us that this is an opportunity that can have, you know, 1,000 jobs and somewhat of a boost to the economy, once you get over the hurdle of safety, which most of the people here don't believe you're going to be able to get over.

Let's assume for a second that you are able to get over that safety argument for the group of us. You know, what are the benefits? Not just you know, if it's a one job, I don't care if you tell me it's 100 percent safe. I'm not interested.

But if you're talking about, if you can guarantee the safety issue, I'm more amenable to listening to what the opportunities are with regard to this potential.

So just following up on what has already been) said, I'd appreciate if you could us help us with that as well.

ERIC BROWN: Sure.

REP. O'DEA: Thank you very much for your testimony.

ERIC BROWN: Certainly, thank you.

REP. O'DEA: Thank you, Madam Chair.

REP. GENTILE: Thank you. Eric, thank you for your testimony.

ERIC BROWN: Thank you so much.

REP. GENTILE: I believe I saw Representative Lesser walk into the room.

REP. LESSER: Thank you and good afternoon, Representative Gentile, Senator Meyer, distinguished Ranking Members, distinguished Vice-Chairs and honorable members of the Environment Committee.

One, I want to apologize for missing my earlier slot, as this is a busy time of the year as you know over at the Capitol. I want to testify today in strong support of Senate Bill 237 and provide comments with regard to House Bill 5308, both having to deal with the issue of fracking waste.

And I want to just take a second. I'm going to depart from my written testimony which you have to really focus on the critical urgency of the situation that's before us, because other states in our region are moving right now to ban the importation of fracking waste.

Let's be very clear. We, Connecticut could be in the position, Massachusetts is acting, New York is even moving along those lines. New Jersey has passed legislation. Vermont has

done so. We could be left as the only state in the region to not be dealing with this issue if we don't take the opportunity this Session to address this issue.

So first of all, I want to applaud the Committee and the Department of Energy and Environmental Protection for their leadership and farsightedness in seeking to address this issue this year.

As America currently witnesses a record boom in gas production, we're also forced to deal with the difficult dilemma of what we do with the waste.

I want to be very clear. We have considered the issue of cheap gas and the use of gas and expanded gas in this Body. That's not before us now. The question now is, whether or not states can say, we want no regulation of hydro fracking in their state, and, except that we want to export the consequences of that decision elsewhere.

We want to frack. We want no regulations to protect public health, and we want, except that we don't want to have to deal with the consequences that we've already done.

Now the DEEP proposal before you, which I think is laudable, does, seeks to close the so-called Bentsen Amendment to RCRA and subject fracking waste to the same criteria that all other hazardous wastes receive.

I would raise several issues just of concern about that proposal, not that I don't think that is an important and positive step in the right direction, but I would ask several questions.

One, does DEEP have the resources in a stretched agency to fully regulate potentially

millions of gallons of hazardous toxic waste being brought into this state?

Two, are we confident that Connecticut facilities have the ability to adequately process this waste, given that we don't know what's in it?

It really depends on drilling sites. It depends on proprietary chemicals and technologies. It really depends on each individual company.

Three, as I mentioned before, are we going to be in the position, if we act less stringently and less aggressively than other states in the region of being the dumping ground for this waste coming into Connecticut.

And four, do Connecticut first responders have the ability to handle this waste should there be a spill in the state, should there be some sort of disaster, are they going to be able to handle it?

And lastly, and I would defer to any lawyers on this Committee, is this an area by going into RCRA that the federal government is currently occupied?

So those are my concerns, but I believe that both bills are a positive step forward. I think the cleanest, easiest way of addressing this issue is simply to prevent it from coming here in the first place.

Like I said, if you choose to frack in your state, great. I think that is your decision. That is your choice. But if you choose to do so with no environmental regulation and no protections to public health, you shouldn't be able to outsource the consequences of that decision to the people of Connecticut.

So I thank you for your time and I would welcome any questions.

REP. GENTILE: Thank you, Representative Lesser. Any questions? Senator Meyer.

SENATOR MEYER: Thank you, Matt, for your testimony. I don't think we can, as a matter of constitutional law, I don't think we can ban this kind of waste from going through the state.

In other words, coming from New York or Pennsylvania and going through to another state. I think there's interstate commerce clause issues with that, and that's why you'll see that the ban bill does not ban importation as such, for that reason.

That's something we can continue to visit and we can talk to our good LCO about, but, so the ban bill, you know, is referring instead to storage and disposal and maybe some other words need to be added.

REP. LESSER: Thank you, Senator Meyer, and I certainly agree with your assessment and I will defer to your legal judgment, but I would not presume to ask this Committee to enter into any restrictions on interstate commerce. I think it's specifically regarding whether or not companies can bring the waste here for disposal, storage, et cetera. So I think that would be clear.

I would raise just the possibility with regard to interstate commerce and I don't know the answer to this, whether or not we could provide sufficient safeguards to protect first responders in the event of a spill on a Connecticut highway. I don't know the answer to that, and I don't know if that's really the most urgent question before us.

But I am aware of what the intent of 237 is and I appreciate that there's no intent to overstate our interstate commerce limitations.

REP. GENTILE: Thank you. Representative Bowles.

REP. BOWLES: Yes, thank you, Madam Chair. Thank you, Representative Lesser for appearing before us and providing your testimony.

We have already just heard testimony to the effect that fracking wastewater, or fracking waste products are not in fact hazardous and I would just like you to respond. I expect further testimony in that regard. I just would ask your opinion about that particular statement. Thank you.

REP. LESSER: Well, thank you, Representative Bowles for that question, and I apologize. I was at another meeting so I was not able to hear that testimony.

But I can say that based on what we know about what's in fracking waste, that seems like a stretch for several reasons.

One, this is a highly saline waste that contains many different compounds. As I understand it, it contains heavy metals in many instances and of course there are hydro-carbons in there as well, benzene, for example, which is known to be a carcinogen.

So, the biggest concern that I have though, is that a lot of the chemicals that are used are proprietary, that companies are saying that these are trade secrets, the drilling fluids, and that we don't necessarily know what is in it and I think that raises serious questions not only is it safe, but also what is the capacity of our existing hazardous waste processing communities in this state to be able

to handle something that we're not even allowed to know what it is. I would raise that.

And then the last thing is, that there has been some reports that at least in some locations, and my understanding is that the produced fluid, fluid that comes out of the waste sites, varies tremendously in content depending upon the site.

But, in some cases there is also a radioactive component and I think the Committee is well aware of the dangers of radioactive waste.

REP. BOWLES: Thank you, Representative. Thank you, Madam Chair.

REP. GENTILE: Thank you. Representative Moukawsher.

REP. MOUKAWSHER: Thank you, Madam Chair. Thank you for your testimony. You mentioned there's a critical urgency and I think there's, you know, I think there's some truth in that in terms of this being an issue that needs to be addressed.

But I've been trying to, you know, I've asked everybody. You mentioned Connecticut facilities that might take fracking waste. I haven't been able to, do you know of any in the state that are equipped to do this?

REP. LESSER: Thank you, Representative Moukawsher for your question. I don't know how to answer that and the reason is, because as I understand it right now, there is no regulation of fracking waste.

In fact, federal law specifically says that anything that comes out of oil or gas or geothermal drilling operations is by federal law definitions not waste. And so my understanding is that it could be pretty much anywhere in the state.

I think there's certainly lack of clarity regarding the prohibitions that exist in Connecticut law to protect our municipal wastewater treatment facilities and other places from the consequences of fracking waste. So I think I would raise that as a question.

Now, in addition to that, there are a number of licensed hazardous waste facilities in the state. I'm not sure yet whether or not they are prepared to handle the waste, and I think that that's one of the question I raise, is a regulatory safeguard enough, given the uncertainty about what's in this stuff.

But what we do know is concerning and I think it is much easier of this Committee to be out ahead of this issue than responding once those contracts have been signed, once there are folks who feel that they do have an economic tie to this and I'm very sensitive to the economic argument.

And I would just say that however important this waste is for the handful of hazardous waste processors in Connecticut or could be, that the potential environmental consequences to our Long Island Sound economy, to all of our fisheries and to our water supply, I think it would certainly seem to outweigh whatever minimal benefits the state would get from being the region's dumping ground for fracking waste.

REP. MOUKAWSHER: Right. Well, yeah, see that's what I'm trying to get to is that I've read news articles with remarks about Connecticut processing plants and you mentioned Connecticut facilities and you know, and this relates somewhat to how urgent and imminent action, you know, is needed on these and perhaps the extent of our actions.

But so far, I haven't been able to find anybody that could point to a facility in this state that would be able to, that would in some way process fracking waste or be willing to accept it for storage. I'm just looking for that information.

REP. LESSER: Representative Moukawsher, and I appreciate the question. I would say that if you go to the DEEP website there is a list of licensed Connecticut hazardous waste processing facilities in the state. There is a long list. I live in Middletown. I know there's one in Meriden, for example. I don't know specifically whether those sites are about to take fracking waste, but I do know that they are accepting, processing hazardous waste on a daily basis, and I can get you that list. I'd be happy to in very short order.

REP. MOUKAWSHER: Okay, I guess my only other, you know, question is, the previous speaker, Mr. Brown from CBIA, I read his testimony and I questioned him about it.

He's concerned about designating fracking waste in and of itself as inherently hazardous waste because it has implications in terms of you know, how it's handled, the expense of handling it, many different implications.

However, he was not making an argument that we should not be regulating or not, you know, requiring permits or not otherwise stepping in and making sure that we have a regimen that will safeguard our residents.

So I mean, something short of say, just calling it hazardous waste, would that, you know, if there were safeguards and regulations, would you feel that was appropriate?

REP. LESSER: Thank you, Representative Moukawsher for that question. I actually, I would not. And the reason for that is very simple, is because my understanding from the industry is that they're not willing to give this state the clarity to go forward and say, here's what's within each single drilling site in Pennsylvania. Here's what we're using as our proprietary chemical formulas and here's what's coming out of the rocks in that area, the geology of that particular fracking site.

And unless we're having samples that are specific to each drill site, we really don't know what's in each individual shipment of fracking waste. There are many different chemicals used by dozens if not hundreds of different companies that are currently operating, and in some cases it may be not hazardous.

But I think in the vast majority of cases it probably is, and unless we're going to have DEEP agents posted at the borders of this state testing every single truckload that comes in, I think it's safer and also more cost effective to the taxpayers of this state to just err on the side of caution and say that if it's coming out of the ground, if it has been involved in activities that are currently exempted by the Bentsen Amendment, that we should err on the side of considering that to be hazardous and certainly put the burden of proof on the companies to establish otherwise.

REP. MOUKAWSHER: Okay, thank you.

REP. GENTILE: Thank you. Representative Phil Miller.

REP. P. MILLER: Thank you, Madam Chair. Thank you, Representative Lesser for your testimony. You now a couple times referenced the 1988 Bentsen

Amendment, which was put forth by then United States Senator Lloyd Bentsen, also at that time a vice-presidential candidate and a Senator from Texas, no doubt looking to advance the natural gas reserves of his state for sale.

So that exempted fracking waste from the Resource Conservation Recovery Act?

REP. LESSER: That's correct. It said that no matter what comes, what waste products come from gas drilling, oil drilling, or geothermal drilling, that by definition by federal law they are not considered to be hazardous waste regardless of what's in them based on the provisions of RCRA, the federal hazardous waste statute.

REP. P. MILLER: So that effectively removes the plausibility of federal regulation of this?

REP. LESSER: I'm not an attorney, but that's my understanding.

REP. P. MILLER: So then does that obligation or responsibility then fall or rise to individual states?

REP. LESSER: In the absence of federal regulation, yes.

REP. P. MILLER: Okay. Thank you for your testimony and thank you, Madam Chair.

REP. GENTILE: Thank you. Any additional questions? Representative Shaban followed by Representative Larry Miller.

REP. SHABAN: Thank you, Madam Chairman. Thank you for your testimony. Have you undertaken any parallel examination of how and whether the State of Connecticut regulates mine water, you know. They use the water to treat mines and recover certain types of minerals from old what

once was considered exhausted mines. It's been done for years.

And frankly, I don't know the answer to this question, so I was wondering if you took a look at it?

REP. LESSER: No, Representative Shaban. That's an excellent question. I don't know anything about that issue. I'd be happy to do some research.

REP. SHABAN: I will as well and we'll touch base.

REP. L. MILLER: Thank you, Madam Chair. Representative Lesser, Long Island Sound, we have five states that empty their waste treatment plant water into the Sound. Just in Connecticut alone, there's about 144, 150 plants alone in our area, never mind how many Massachusetts, New Hampshire, Vermont, Maine, they all kind of push the water down to the Sound.

Now, is there any way that we can protect the Sound from any wastewater that may be pushed through in some of these other states that have fracking waste in there? Is there any kind of regulations that are attempting to address that?

REP. LESSER: Well, thank you, Representative Miller for that question. I believe right now New York is wrestling as we are, with a number of issues related to both, well in their case, fracking. We don't have any recoverable gas reserves, but in addition to fracking waste, and so I think it's very important to work with New York, which is our main partner in Long Island Sound.

I believe Massachusetts is prepared to take a more aggressive step. I'm not sure what's happening in Rhode Island at the moment.

But yes, absolutely. I think this is a regional concern. It's a regional issue and it is critical that we protect the water of Long Island Sound.

And we've seen in the past what's happened when we haven't done so. It's had an enormously deleterious effect on the water quality in Long Island Sound.

And given the efforts that seem underway and even in the states that do believe in unrestricted fracking, they've started to look very closely at this issue of fracking waste.

And so my concern is, as they come up with more and more restrictions on that, that's going to force that waste elsewhere and I want to make sure that if it is coming to Connecticut that you and myself and the rest of the folks on this Committee and this Legislature know what we're in for.

REP. GENTILE: Thank you. Any additional questions? Representative Lesser, thank you. I'm going to ask a favor. In consulting with my Co-Chair before he left the room, we have in our midst a young lady, 12 years old who has to leave. She's here with her parents and grandparents, so since my Co-Chair and I feel very strongly that our youth should be involved in government process, we would like Fiona Hines to come up and give her testimony to the Committee. I'm sure that it will be quick. Fiona, welcome. We're happy to have you.

FIONA HINES: Thank you for letting me go. Good afternoon, Senator Meyer, Representative Gentile and members of the Environment Committee. Thank you for this opportunity to testify in favor of House Bill 5044 about domesticated horses not being inherently vicious.

Thank you for your time and I hope that my testimony helped you learn more about how wonderful horses are, and I hope that this bill is passed so I can continue working with horses that I love.

REP. GENTILE: Thank you, Fiona. Now, Fiona, I have one question for you. How long have you been working with horses?

FIONA HINES: I have been working with horses around four years now.

REP. GENTILE: Good for you. Any questions? Thank you. We appreciate your being involved in the governmental process.

FIONA HINES: Thank you.

REP. GENTILE: And I thank the Committee and our audience for their indulgence. Chris Phelps, followed by Carmen Abramson.

CHRISTOPHER PHELPS: Thank you, Representative Gentile, members of the Committee. You know every time I testify before this Committee, it seems like I'm forced to testify after a really hard act to follow. What can you do?

SB237
HB5308

My name is Chris Phelps. I'm Campaign Director for Environment Connecticut. We are a member-supported, nonprofit environmental organization here in Connecticut. I've submitted testimony on four bills before you today.

SB67

Our testimony on the bottle bill as you might expect says it's a great bill that you really ought to pass.

We've also testified in opposition to portions of House Bill 5307 regarding pre-booming, but also in support in Section 1(a) of that bill as a good best practice that ought to actually be in statute.

SB237
HB5308

And I'll focus my comments on the fracking issue that's before you currently. I'm not going to read my testimony verbatim. Actually as I listened to the comments so far this morning, this afternoon, there's been a lot that I'd actually like to respond to, and in fact, actually earlier Representative Bolinsky and Representative Steinberg kind of stole the thunder of what I was going to focus on in my testimony, which is the simple fact that policymakers in other states have chosen to allow fracking operations in their states, producing toxic waste in their states.

And that in no, way, shape or form means that the State of Connecticut has any obligation to allow them to pawn off their toxic waste problem onto our communities, our families and our businesses. I agree with that point 100 percent and I think that is part of, something at the heart of the issue here today.

Regarding some of the other issues that have been raised in questions, I know Representative Miller asked the question about harm that's been caused by exposure to the chemicals and the substances in toxic fracking waste around the country.

I've actually provided for the Committee copies, Committee staff have copies of this booklet, Shale Field Stories, which we have worked with folks who live in shale, you know, in fracking country.

It talks about in really vivid terms some of the often horrific health effects that families are dealing with, not just from fracking operations in their back yard, but the waste associated with it. I'd encourage members of the Committee to familiarize themselves with that material. It really is, I think, a compelling story, a series of stories about

what people are dealing with when they're exposed to substances.

Representative Moukawsher asked about processing facilities, and specifically about sewage treatment facilities. In our testimony we are (inaudible) examples of dumping that has occurred into sewage treatment facilities in Pennsylvania and specifically an example where 325,000 people in Pennsylvania were advised not to drink tap water for a week after fracking wastes were dumped into their sewage treatment facility and their water treatment facility because it ended up polluting the Monongahela River.

That's just one example of many from across the country of just that problem occurring when fracking wastes are dumped in that manner.

And you know, my friend Eric Brown from CBIA referenced a study out of the U.C. Berkeley Law School a little while ago during his testimony and I think he talked about it not being exactly a bastion of conservative thought. Actually, I think they refer to Eric as the people's republic of Berkeley if I'm not mistaken.

But I just want to say that I, in fact I know that, because I lived there for a number of years, I want to say that I wouldn't want people to get the impression that that was a pro-fracking study out of the law school. In fact, he did provide a link in his testimony to what I saw and I am familiar with that study.

The specific piece that he was referring to, talking about the recommendation that possibly California could use incentives to incentivize recycling of fracking wastewater on site at fracking operations in that state, which is what recycling of fracking waste means. It

means trying to re-use some of that water stripping out the solid materials.

It was done in the context of California, made in the context of California, a state suffering from the effects of extreme historic draught caused by global warming in part and a state where water supplies are increasingly scarce and often non-existent in some communities.

That was the context in the recommendation that was said. Maybe California shouldn't use fresh water but rather should try to re-use fracking waters as best they could.

REP. GENTILE: Chris, can I have you begin to summarize, please.

CHRISTOPHER PHELPS: That's what I was about to do. So, the final point on that study is, that study also refers to the prospect of increased fracking operations in California in the future, and I'm quoting from the study, alarming.

So I wouldn't necessarily want you to be left the impression that was a pro fact fracking analysis. It wasn't entirely anti-fracking analysis, either. It was an attempt to actually assess the real problem and challenges this issue presents for states such as California in dealing with it.

I'll stop there in deference to the Committee's time. But I'd be happy to answer any questions you might have.

REP. GENTILE: Thank you, Chris. Any questions? Representative Albis, followed by Representative Shaban.

REP. ALBIS: Thank you, Madam Chair. Thank you, Chris, for your testimony. Always great to see

you come in here with a beard on, so, I appreciate that as well.

CHRISTOPHER PHELPS: Yeah.

REP. ALBIS: o, I haven't had a chance to look over the materials you provided to the Committee, but could you just explain briefly what kinds of things these families are facing when they come in contact with fracking and/or fracking waste and how their communities and their counties in their states have dealt with it?

CHRISTOPHER PHELS: Yeah. Well, they're dealing with it on a daily basis in many places around the country. And you're talking about really awfully horrific health effects. Families are often left with no other option but to leave their homes and leave their property and move.

The health effects range from exposure to cancer causing chemicals as Representative Miller was talking about, severe deformities, a myriad of health problems, actually. And one of the reasons for that, you can't just simply point to it and say, they get this form of cancer or they get this disorder.

That frackers use a toxic soup of chemicals, an incredible array of chemicals in the fracking operation. So what people are exposed to encompasses a broad array of substances and the effects they're feeling, the health effects they're encountering are really broad in essence.

People's water supplies are undrinkable in many places. The exposure to the chemicals is causing you know, hospitalizations and severe lasting chronic health effects.

It really is a huge problem, not just for exposure to the fracking operations, again, but also to the effects of fracking waters.

One of the examples we point to in our testimony is that when fracking waste has been brought to sewage treatment plants using chlorine, the resulting mix discharge (inaudible) which is a known human carcinogen into rivers from those streams. So that's just one of the examples of the sorts of things people are exposed to.

And again, it gets back to our fundamental point, which is, this is exactly the sort of toxic waste problem we don't want to bring to Connecticut.

REP. ALBIS: And to get to the second part of my question, how are their local governments and state governments responding to these problems?

CHRISTOPHER PHELPS: Well, I'm going to, Pennsylvania is the state we always end up seeming to talk about, so I'll stick with that. There is an enormous debate ongoing right now about how to deal with that problem in Pennsylvania.

My colleagues at Penn Environment have been living on the front lines of this problem for many, many years. Unfortunately right now, Pennsylvania, the public policy encourages fracking to occur.

If you look next door to New York right now, it's not happening and there's a huge debate about this issue and local communities and counties in New York have done things such as try to prevent the spreading of fracking wastes on roads as deicer just to use one example, and then again, going further afield of course as folks mentioned earlier, Vermont has banned both fracking and fracking waste as just one example in their state to try to prevent this problem from getting there.

To be perfectly, you know, clear for members of the Committee my organization, my peers in Pennsylvania are working to ban fracking, both fracking and of course, the dumping of toxic fracking waste in Pennsylvania at this time and with any luck they'll be successful in the near future.

REP. ALBIS: Thanks. Just one more follow up if I may, Madam Chair. These particular counties in New York State, obviously New York borders Pennsylvania. Have they been experiencing some effects from fracking or fracking waste disposal in Pennsylvania in their own counties?

CHRISTOPHER PHELPS: Oh yeah. Well, they've seen, Pennsylvania already, frackers already have exported wastes from Pennsylvania into other states, including Ohio, New York, New Jersey.

I was reading a story recently about a sewage treatment plant in New Jersey that turned away a tanker full of fracking waste out of concern about possible radioactive particles in that they would not have been able to deal with.

And yeah, in New York that's a big part of the problem, and again, I mentioned just the kind of example of potential, the efforts to use fracking waste as quote, unquote, deicer for roads in New York, and that's basically spreading toxic waste under our roadways.

REP. ALBIS: Thanks, Chris. Thank you, Madam Chair.

REP. GENTILE: Thank you. Representative Shaban, followed by Senator Meyer.

REP. SHABAN: Thank you, Madam Chairman. Thank you for your testimony. I asked this briefly or quickly to somebody else. Maybe you know. What are the treatment options out there for fracking waste?

I mean, typically with, I know I mentioned mine water and then obviously salt water and everything else, you've got reverse osmosis, fault forced filtration, you've got sequencing batch type reactors they use in sewage treatment.

What's the state of the art, if you know, with treating fracking waste?

CHRISTOPHER PHELPS: That is a really good question. My understanding of the term we've heard a lot and I think we've heard already today is recycling for example. We want to recycle these wastes and that's, I'm all for recycling. I'm an environmental advocate.

My understanding of the recycling of fracking waste is that is referring specifically to various processes that try to remove some of the materials, solid materials from the waste water and recycle it in more fracking operations.

That is something that is to my knowledge that occurs at or near the location where fracking is happening. It doesn't make to my mind a lot of sense to be transporting to the State of Connecticut for that processing and then back to Pennsylvania.

Because one of the reasons that in fact companies that have tried to build a business around recycling waste when I was reading an article there was in fact in the Wall Street Journal a few days back actually, have had a hard time doing so, is that it's frankly cheaper for them to use fresh water in fracking wells than to go through the challenge of trying to get the water from fracking operations into a form that they can re-use it.

But that form doesn't mean, to my understanding, removing the toxic materials. It means removing other materials, more solids from it so that they can use it.

In a nutshell, the answer to your question to the best of my knowledge is, the industry doesn't have a really good answer to your question, what do they do with these billions of gallons of this toxic waste they're producing every year.

REP. SHABAN: Well, what's being done with it now?

CHRISTOPHER PHELPS: It's being dumped into, you know, we mentioned it, rivers and streams, to POTW plants, to the best industry's ability they have to try to re-use it to frack more wells. But that only goes so far.

You know, we've seen tanker trucks of this ending up in other states. I just mentioned to Representative Albis, the effort to resell this stuff as deicer for roadways in New York State and other places.

Some of those things sound crazier than others, and I think that just kind of gives you the sense of the idea that the industry has such a volume of toxic waste on its hands here that it doesn't have a lot of ways to get rid of it that really make a lot of sense, and that's a big, that's a problem. I mean, it's a fundamental problem.

REP. SHABAN: Yeah, I've heard you use the word dumping and also recycling, and obviously dumping bad, recycling good. Right? That's fair to say?

CHRISTOPHER PHELPS: Yes, it would be. Unfortunately, I think recycling is a little bit of a euphemism in this context, an unfortunate euphemism for, you know, that

doesn't involve cleaning up the waste. That's kind of the bottom line.

REP. SHABAN: Well, and I asked somebody else this before. You may know with your employer, your interest group. What regulations, if any, exist in Connecticut now dealing with recycled mine water?

CHRISTOPHER PHELPS: Mine water. You know, when I asked earlier, I had my iPad with me. I was quickly trying to look up the answer. Couldn't find the answer. I don't know. I don't know.

REP. SHABAN: Okay. All right, thank you. Thank you, Madam Chair.

SENATOR MEYER: Chris, Eric Brown of CBIA testified that in essence, that we deal here in Connecticut with a lot of toxic industrial waste and this would just be one other toxic industrial waste that we would deal with.

And he said this in opposition to the fracking waste bill that's in front of us. He said there were studies that indicate how to treat and deal with this in a manner that is safe. People are not going to be hurt by this.

Do you have any information to rebut that?

CHRISTOPHER PHELPS: I don't, I'm not familiar with those studies other than industry claims to that effect, in all candor, Senator.

I know he mentioned an ongoing RPA, excuse me, EPA study that I believe has not produced any results to this state or any conclusions to the state, to my knowledge at least.

You know, Senator, we did an analysis. Let me kind of answer it a little bit this way. We did an analysis that was released last October, which is actually referenced in my testimony,

just how much of this waste, and this gets to Representative Shaban's question, too, about the magnitude of the problem.

We estimated that nationwide in just the calendar year 2012, fracking operations produced approximately 280 billion gallons of wastewater, much of it toxic, much of it radioactive from places like Pennsylvania.

You know, we did some quick math and figured out that if you were to dump all that on the front lawn of the State Capitol here in Connecticut it would create a toxic lagoon filling the entire City of Hartford 77 feet deep. It may be a little bit of a silly anecdote, but it also gives you a visual representation of the magnitude of this problem in just one year's fracking operations.

And so the answer is, I mean, partly my answer to your question is a question for the industry, how on earth do you manage that volume of toxic waste, and I think the answer has to be, not very well.

And the experience of people living in states with this toxic waste right now I think would bear that out. That's the best answer I can give you and why we're very opposed to bringing this problem to Connecticut.

REP. GENTILE: Thank you. Any other questions? Representative Phil Miller.

REP. P. MILLER: Thank you, Madam Chair, and thank you, Mr. Phelps for your testimony. You referenced along with previous testifiers about, that fracking waste is exempted under regulations federally of RCRA?

CHRISOPHER PHELPS: Yes.

REP. P. MILLER: And what about the other potential safeguard, the Safe Water Drinking Act?

CHRISTOPHER PHELPS: It is also, yeah, so for instance 5308, I believe, the bill introduced by DEEP testified to by Commissioner Klee earlier deals with the RCRA, Resource Conservation Recovery Act exemption, which is the Resource Conservation Recovery Act for those who don't know is essentially our nation's federal hazardous waste law.

That exemption was enacted in the early nineteen eighties through an amendment introduced by Senator Lloyd Bentsen of Texas and has been in force ever since and ever since for a matter, for the purposes of federal law, oil and drilling waste generally are exempted from being considered hazardous waste.

There are other federal regulations to which they are not exempt, but that specific one they are.

The Safe Drinking Water Act, they are also exempted from, through what is known as the Halliburton loophole enacted in 2005 in the Federal Energy Act of 2005, and that exempted fracking waste, specifically from the federal Safe Drinking Water Act.

REP. P. MILLER: So if I may, Madam Chair.

REP. GENTILE: Uh-huh.

REP. P. MILLER: Apparently there is very little on the federal level to protect us from this, then?

CHRISTOPHER PHELPS: Yes. Yeah. So that's, the bottom line is that, and the EPA even has stated that you know, really going, regulating these materials as hazardous, in their toxic capacity is up to the states, and it really is

up to the states to deal with this problem under current law.

REP. P. MILLER: Well then if there's no ability or little ability for, on the federal level regulation or litigation, and if we do nothing here, what do we have to protect us from pollution?

CHRISTOPHER PHELPS: The fact that we hopefully are far enough away from fracking wells that they won't bring their waste here. Not much, frankly. Nothing in the law. Nothing in regulations, and that's what this is all about.

I think, you know, the bill introduced by DEEP and talked about by DEEP earlier today is a step in the right direction, because at least for the purpose of Connecticut law it would classify fracking waste as hazardous and begin that regulatory process.

I was a little concerned to hear Commissioner Klee's description of maybe some of the changes they're proposing, which, and I have not seen them, but if I understood how he was characterizing it, it would be to change that proposed bill so that waste would be categorized as hazardous based on the representation of the companies bringing them into the state as to what was in them.

I'm not quite sure that's a very protective, that would be very protective of the environment here in Connecticut, but, again, I have not seen their proposals, that proposed change, so I don't want to prejudge it without having seen it yet.

But we have to do something about this problem, and other states are grappling with that exact same challenge.

REP. P. MILLER: Thanks, Mr. Phelps and thank you, Madam Chair.

REP. GENTILE: Thank you. Representative Vicino.

REP. VICINO: Sir, I had a question for you.

CHRISTOPHER PHELPS: Sure.

REP. VICINO: I've heard today that there's several recycling facilities in the state that recycle different kinds of hazardous waste or chemicals.

How exactly do you recycle this product?

CHRISTOPHER PHELPS: Yeah. I have heard that claim that there are potentially facilities in Connecticut that might want to bring, you know, to process this stuff.

I will say, I have not heard specific facilities named or any operator of such a facility saying, oh, yeah, we'd love to bring this toxic waste to Connecticut.

But you know, in terms of that question how is it recycled? My understanding is when you talk about, when the industry talks about recycling fracking waste, they're talking about re-using it in more fracking operations.

So I frankly don't know what they would do with bringing it to Connecticut to recycle it. We haven't found any example of the industry being able to clean the waste and clean the wastewater so that it removes toxic chemicals from it, for example.

REP. VICINO: So what you're saying is they would bring it to Connecticut, recycle it and re-use it wherever it came from?

CHRISTOPHER PHELPS: That would be my understanding what the industry was generally referring to

when they referred to recycling, and I question whether or not the industry would find that economically feasible, so I don't think that's what you would see happening in Connecticut. Bringing it to Connecticut and then send it back to Pennsylvania, economically that would raise the cost of fracking quite significantly, I would assume.

You know, at the end of the day when you look at the states where, so to kind of get to a more practical example, the states where fracking waste from say Pennsylvania is being shipped, it's being shipped to places where it is then being dumped, disposed of in Ohio into deep injection wells, something which is prohibited by law here in Connecticut, which is a good thing.

In New Jersey they've attempted to dump it into sewage treatment systems, for example. In New York as well, as well as trying to use it as a road deicer.

So our experience of what happens when waste leaves Pennsylvania for disposal is just that. It's for disposal, not recycling, re-use.

You know, if you want to talk about recycling, re-use, we did submit testimony on the bottle bill. We'll have to talk about that some day. But I don't think when you talk about toxic waste, recycling and re-use, at least this toxic waste, recycling and re-use is really part of the conversation, unfortunately, quite frankly.

REP. VICINO: Thank you.

CHRISTOPHER PHELPS: Yeah.

REP. GENTILE: Thank you. Representative Bowles.

REP. BOWLES: Yes, thank you, Madam Chair. Thank you, Chris for providing your testimony. Appreciate it and appreciate the analysis you did back in October as well. A little frightening.

But I guess the question I have for you, one of the arguments made for Connecticut to not ban franking waste into the state has to do with the fact that we as a state have taken the step to go ahead and rely on an expanded natural gas pipelines and its infrastructure to go ahead and take advantage of particularly Marcellus and New York shale fracking products, and that therefore it would be disingenuous for us to go ahead and ban the waste from coming into the state.

I would like you, if you could, could you respond to that for the mind of argument?

CHRISTOPHER PHELPS: Sure.

REP. BOWLES: Thank you.

CHRISTOPHER PHELPS: Yeah, that's something we've heard quite a bit, of course over the, over months, actually.

I guess I'd say, I have a couple of responses to it. First and foremost, yes, we buy natural gas. Consumers, businesses, power plants buy natural gas in the state, but I can't point you and no one can point to the natural gas going through a pipeline in Connecticut right now as we speak and say that gas came from fracking or it came from traditional drilling.

The fact of the matter is, yes, we buy natural gas. But that doesn't mean we're also buying toxic waste and it shouldn't mean that we're also buying toxic waste.

As I said to Representative Bolinsky earlier, you know, policymakers in other states have chosen to allow fracking to happen in their states and to produce enormous quantities of toxic waste in the process, as well as natural gas, of course.

That, and because they then sell the natural gas to us doesn't really, to my mind, create an argument for them also being allowed to, also being allowed to palm off, as I said earlier, their toxic waste onto states like Connecticut.

Really, this is a toxic waste issue. It's not an energy policy or a natural gas policy, so the two things are different and are separate.

The reality is that fracking is not the only way to get natural gas, although sometimes this conversation makes it sound as if it is, and you know, that's the answer I have.

Bottom line is, we do buy natural gas. We shouldn't buy toxic waste.

REP. BOWLES: And if, let me just follow up with one more quick question. You know, one of the comments that had been made earlier in testimony was that if we did anything, it would be a knee-jerk reaction, and that in fact that this is not hazardous waste per se.

I would also like you to respond to those two comments, please. Thank you.

CHRISTOPHER PHELPS: Yeah, you know, the experience of people who are dealing with this day in and day out is that this stuff is really hazardous. Hazardous to their communities, to their families and you know, just the sheer magnitude of the problem is, you know, the fact that they're trying to find new places to get rid of it, demonstrates how difficult it is to deal with these waste products.

The fracking waste has been demonstrated time and again to be extremely hazardous and one of the challenges is, because of the exemption from RCRA and other, you know, factors, it's the materials that go into the fracking waste are things that we often don't know about until it's too late and communities have been exposed to them.

REP. BOWLES: Again, thank you, Chris for your testimony. Thank you, Madam Chair.

CHRISTOPHER PHELPS: Thank you.

REP. GENTILE: Thank you. Any additional questions? Chris, thank you.

REP. HENNESSY: I have one.

REP. GENTILE: Oh, I'm sorry. Representative Hennessy.

REP. HENNESSY: Thank you, Madam Chair. So, what I'm hearing from you is that the whole idea of the use of the word recycling is pretty much a misnomer, that there is really no such thing as a recycling process for this hazardous waste. Is that correct?

CHRISTOPHER PHELPS: That's --

REP. HENNESSY: You're saying basically that they're doing is, they're just dumping it.

CHRISTOPHER PHELPS: That's my understanding. Every time I've tried to research the question, what does recycling of fracking waste mean, the only answer I find is re-using it in more fracking, in getting the water cleaned up to the point where it can, but cleaned up removing solids, not the toxics. That's the bottom line.

I've actually, I mean, we have looked for, you know, ways in which the industry actually has successfully removed the harmful components to

make that water ultimately potable again, and we can't find an example. You know, that's the bottom line, and that's a big part of why we are opposed to allowing the industry to begin bringing that material to our state.

REP. GENTILE: Thank you. Chris, thank you.

CHRISTOPHER PHELPS: Thank you.

REP. GENTILE: Carmen Abramson, followed by Evan Abramson.

CARMEN ABRAMSON: Hi. Thank you for this opportunity. I'm here to let you know that I really would like for you to outright ban fracking waste in the State of Connecticut.

We have searched for years for a place to raise our children coming from New York. We looked at the west coast, all the sunshine states in the south and ultimately settled on Connecticut because of its idyllic, pristine forests and lakes.

In Connecticut is where we started our business and where we found our dream home close to a beautiful lake. We are beyond thrilled of our life in this beautiful land until we heard that Connecticut is considering opening its roads and water treatment facilities to the toxic radioactive materials of fracking waste.

If this dangerous material is allowed to share my roads and if you decide that it's okay for us to take on this liability and a burden of hosting this toxic material in our backyard, our family will absolutely leave this state for another safe haven.

Please reconsider your stand and vote yes for the bill that will ban fracking waste in the State of Connecticut, S.B. 237.

And I know that the economy is very important but I also beg you to see, think about the consequences to the public health of the people in Connecticut. If anything happens to the trucks that are transporting this, what is going to happen to us and to our wells? Thank you.

REP. GENTILE: Thank you, Carmen. Any questions? Thank you. Evan. Evan will be followed by Steven Guveyan.

EVAN ABRAMSON: Honorable Co-Chairs and members of the Committee, concerning 5308 AN ACT CONCERNING REGULATION OF FRACKING WASTE and S.B. 237.

As a documentary film maker, I have traveled around the world witnessing communities in various stages of conflict and suffering. Oftentimes the story boils down to two things, water and land.

The most basic of human needs, that of survival, cannot happen without these two resources.

Here in northwest Connecticut we benefit from great open spaces, forests full of animal life and trees, rich bio-diversity, wetlands, lakes, rivers and streams. We have spent the last 30 years cleaning of GE's mess on the Housatonic River and every year more and more former New Yorkers such as myself are calling this little bit of heaven their home.

I have two young children, one who is two and one who is just turning one. Every month, every morning they awake to the pastel hues of sunrise over the mountains, oftentimes we watch the deep red glow of sunset reflect across Lake Waramaug from our living room window.

This is the place my wife and I have chosen to call our home, raise our kids, invest in land and in building community. This is the state we have trusted with our children and their fragile bodies, which are every day growing, absorbing, learning, breathing, seeing and knowing.

Any attempt by the State of Connecticut to bring in the toxic radioactive fracking waste from other states, no matter how strictly regulated, is a recipe for disaster. All this pristine wilderness, vast still lakes and rushing rivers, all these close-knit communities, they would all be at risk of a spill, a crash, a breach of contract, a lack of oversight or a drop of human error.

I urge you, dear Senators and Representatives to support S.B. 237 AN ACT PROHIBITING THE STORAGE OR DISPOSAL OF FRACKING WASTE IN CONNECTICUT. It's a no brainer, and it's the only way to guarantee our protection as citizens and stewards of this planet we walk and call our home.

Pennsylvania doesn't know what to do with this stuff. What makes you think that Connecticut does? There is no known method for storing or disposing of fracking waste, which is foolproof. It always gets into the water, oftentimes it's the drinking water or the swimming water. Everything returns to the earth. Everyone knows this.

I don't know what back room dealings are contributing to the State of Connecticut's proposed fracking regulation. What I do know is that the only way to guarantee the public safety is a full, uncompromising ban.

It's your responsibility as elected leaders to serve the best interests of your constituents.

It's our responsibility as citizens to hold you accountable.

I urge you to vote yes on S.B. 237 for the sake of our children, for your children's water and land.

And I just want to leave you with a few statistics that you might have seen in some of the materials that have been handed out.

In the year 2012 as my colleague mentioned, 280 billion gallons of toxic waste water were generated by hydro fracking in the United States.

Four hundred and fifty thousand tons of air pollution produced in one year.

Two hundred and fifty billion gallons of fresh water used since 2005 to frack.

Three hundred and sixty thousand acres of land have been degraded since 2005.

One hundred million metric tons of global warming pollution since 2005. Thank you.

REP. GENTILE: Thank you, Evan. Any questions? All right. Thank you, Evan. Steve Guveyan, followed by Jen Siskind.

STEVEN GUVEYAN: Good afternoon, Senator Meyer, Representative Gentile, members of the Committee, Steve Guveyan, from the Connecticut Petroleum Council testifying in opposition to both of the hydraulic fracturing bills. I'll summarize our comments on both bills at the same time rather than come up the second time.

HB 5308
SB 237

Our opposition to the Commissioner's bill classifying waste as hazardous waste, that is a very major bill. The EPA has made a specific ruling that oil and gas wastes are not

HB 5308

classified as hazardous waste. They do not reach the level of toxicity.

Hazardous waste, when you look at the weight stream is up at the level here. Many other wastes are at a level down here. You have agricultural waste. You have mining waste. You have oil and gas waste. There are best management practices in place that have been in place for many years, therefore, not a hazardous waste designation.

This bill changes that, so we will get back to the old story of why do we have to have a separate rule for Connecticut when something is clear cut regulated by the federal government?

The special waste designation does not mean oil and gas wastes are not regulated. We've heard a lot of testimony today. The oil and gas waste coming out of a well bore are very heavily regulated by both the federal government and they are regulated by the state government.

We have included in our testimony precisely where in the federal rules it is regulated and as an example, since we've had a lot of discussion here about Pennsylvania, we've given you a breakout of what they do in Pennsylvania as far as permits and plans go. Everything highlighted in yellow is a waste permit plan.

So when people say, you know, it's not regulated, you don't know where it's going to end up, take a look at the requirements. Most plans are signed off by a professional engineer. His license is on the line when he does that.

So it is very regulated and we have seen that in all the states. We don't have fracking here. We're not going to have fracking here.

The question is on, is it possible some of the waste stream could end up here?

We see that as very unlikely. Can't say never, but we see it as very unlikely.

There are three ways of treating what comes out of that waste stream. You either recycle it, send it to a processing plant, or it ends up in an underground injection well.

Number three is not open to us in Connecticut. We've already got bans on all of that. It's much more likely it's going to be recycled and it's most likely it will be recycled on the premises of where the fracturing takes place, which means not Connecticut.

It is unlikely that we will see it here. Nonetheless, if somebody wants to start a business here and treat and recycle waste water, unlikely because of our distance perhaps, there's a cost of getting it here the point was made earlier, but if somebody wants to do that, that is where the action is. It is on what? Treating wastewater, no matter oil or gas waste or somebody else's waste. That is where the action is today in America.

And if somebody wants to open up a business here and you have big companies like General Electric, who were in that business, that should be encouraging. You should not be discouraged. It should not be banned.

Ramifications of the Commissioner's bill if it's classified as a hazardous waste are severe. Right now in Pennsylvania we are recycling 90 percent of all the water that comes out of one of those wells, 90 percent, and knowing where you are as a Committee and where you've been on recycling, we know exactly how you think. The more recycling, the better.

This is classified as a hazardous waste as opposed to a special waste. Boy, the likelihood of being able to recycle is very slim. EPA tells us four percent in the hazardous waste world is recycled. We're at 90. You've put us in a different classification. Our risk is we're going to be down at four.

You ought to cut the use of water and be more careful with water. One would never want a classification of the hazardous waste.

You look at what goes into that well bore and there's been a lot of discussion here this afternoon. What we put in is 90 percent water. It is nine and a half percent sand. It is one-half percent additives.

The discussion this afternoon has made it sound like this is some kind of sludgy, toxic think and from our point of view, nothing could be further from the truth. That half a percent, and we've given you specific examples in our testimony, those are either household goods. Some of them are foodstuff. You can find it a swimming pool cleaner. You can find citric acid in your food supply. (Inaudible) is a bean. You find it in ice cream. A lot of those things are very, very common things.

We then take it out and we want to recycle it, treat it, put it back in and use it again, thereby saving water. The Commissioner's proposal makes that very, very difficult. It becomes a hazardous waste, you can't do that. That is our main point on the Commissioner's bill.

SB237

The second bill is on storage and disposal. You've heard talk, discussion here about dumping and I want to address that very clearly. No dumping in the State of Connecticut. To legally bury something if that

is what is meant when the word dump is used, to legally bury it here in an underground injection well, the DEEP ruled against that. It's been on the books for 30 years.

It is not allowed. We cannot bring that oil and gas waste into Connecticut and somehow bury it legally. The agency will not allow it. We are not and have not ever requested a change in that, nor has anybody else to our knowledge.

It cannot come here. If somebody wants to illegally dump it, read the statute that the General Assembly has passed on illegal dumping, $25,000 a day fine, $25,000 a day. So you're covered if it's illegal. You're covered if it's legal. We don't see dumping as being any kind of possibility here. The question is on retreating, so that we ask there not be a ban on storage, treatment and disposal. If people want to recycle they should be able to. Thank you.

REP. GENTILE: Steve, thank you for your testimony. Any questions? Representative Vicino.

REP. VICINO: Sir, I had a question for you and I've been asking it over and over. As we recycle it, what can we do with it? You talked about 90 percent of it going back. What about the other ten percent? Is there any way to re-use it in any of our industries, or what exactly happens to that?

STEVEN GUVEYAN: Ninety percent means that ninety percent of the water going in and coming out is being re-used, recycled. Ten percent, probably ten percent of the operators out there, or ten percent of the operators' gallons, they're just sending it to an underground injection well, or it's going to a treatment plan, POTW, publicly owned treatment works, or a commercial

treatment plant. That's where it would be going.

It's not as if that separate ten percent is just sitting over here on the side and nobody knows what to do with it, underground injection well, or treatment facility.

REP. VICINO: So that other ten percent, we can't use that in any other kind of material, or where does it actually end up when it's all recycled?

STEVEN GUVEYAN: It ends up being re-used in another well.

REP. VICINO: What about the rest of it that we're not re-using?

STEVEN GUVEYAN: Okay. We keep re-using that over and over and over until the point comes we can no longer do it. At that point it goes into an underground injection well, not in Connecticut. It's not allowed here, so it could go into a New York, Pennsylvania or Ohio injection well. It cannot come here. It's already on the books on that. It cannot come here.

REP. VICINO: Then how come they're not using this material right in the same states that have produced it? Why do they need Connecticut to recycle this when it seems like it would be more cost effective to do it right at the producer?

STEVEN GUVEYAN: Absolutely right. You are absolutely right. It is more cost effective to do it on the premises, and that is what, you know, the bigger companies, the major oil companies, the major natural gas producers, that is what they are doing.

Pennsylvania allows, Pennsylvania does not require recycling. We find it to be a most

effective way of using water resources. It means we need less fresh water, less expensive for us, you're already right there on the premises, you don't need extra trucks going back and forth. That's the way to go.

You can't make everybody do that. Got a couple of little guys out there, they don't want to do it.

REP. VICINO: So why do they want to bring it to Connecticut? What's the economic benefit to Connecticut, being that no one's processing it now. It's more cost effective to do it where it's produced. Why come here? Can you give me that answer?

STEVEN GUVEYAN: First of all, unlikely it's going to come here because of the distance involved and the cost involved.

If somebody were to come up with a way to treat water that would make it look good, better than it is, find a way to turn it into drinking water, and if that happened to be in Connecticut, it happened to be in western Connecticut, then you know, it's a possibility.

We see the chances of that being very slim because the point is, you're much better off treating it on the site rather than putting it in a truck, trucking it 100 miles and then trucking it back. The odds of that are slim.

Nonetheless, if somebody finds a way to do that, find a businessman willing to do that and he can make that work, more power to him.

REP. VICINO: Thank you.

REP. GENTILE: Thank you. Representative Hennessy.

REP. HENNESSY: Thank you, Madam Chair. So this devastating form of energy production, how much

of this energy goes international and how much stays here and helps Americans?

STEVEN GUVEYAN: Overwhelmingly, it stays here.

REP. HENNESSY: Overwhelmingly.

STEVEN GUVEYAN: There are a handful of permits that have been approved to take natural gas, convert it to LNG, liquefied natural gas and export it, a handful. There was huge demand in this country, I mean, look at the Governor's plan last year. We are responsible to try to meet the needs of the Governor's comprehensive energy strategy.

The utility numbers that we saw from last year in the state, Connecticut Natural Gas, Southern and Yankee showed almost 18,000 conversions from oil to natural gas. The demand here is huge. And it's not a different story when you look around in Rhode Island, Massachusetts and other states. There are a lot of conversions going on.

So the demand is here. We overwhelmingly see the natural gas staying here.

REP. GENTILE: Thank you. Steve, thank you for your testimony today. Jen Siskind followed by Nancy Alderman.

JEN SISKIND: Good afternoon, Representative Gentile and members of the Committee. I'm here today to ask you to support Senate Bill 237 and protect Connecticut from the damaging effects of fracking waste.

There are speakers who are coming behind me who will talk about the toxins, so I'd like to skip through and mention that the unknown nature of fracking wastewater makes disposal and transportation very dangerous. Tanker trucks

are the primary method of transporting fracking wastewater for treatment and disposal.

I visit family members several times a year in Pennsylvania. My family is, to put it bluntly, currently being fracked. I can tell you firsthand that the roads and the highways are now completely overwhelmed with industrial-size trucks. There are times when driving, that there are more industrial-size trucks and tanker trucks surrounding you on the road than there are passenger cars.

The exhaust and ozone problems are extreme, as is the noise from braking systems. This industry operates 24/7 so trucks are congesting the roads day and night.

I shared in my testimony with you some photos of wastewater trucks on location at a treatment facility in my family's town of Williamsport, Pennsylvania and I brought one today here, you'll see that on your online testimony when you get a chance to look at it and the six copies that are here, and I've got one copy here that's blown up, and I'd like to ask you to please pay close attention to these photos because a picture is worth a thousand words.

Examine them carefully for the puddles, the streaking, the dark staining that appears where the hose lines are and in the vicinity where the trucks are parked. Spillage appears to be an issue under normal operations, potentially putting both the workers and the surrounding environment at risk, and this is a best practices, right now, what I'm showing you in these pictures. This is what the industry has for best practices.

And it appears that it's still not enough to prevent spillage and contamination. Accidents can happen coming here to the State of

Pennsylvania, from Pennsylvania here to Connecticut and I'm concerned that if an accident happens that the downstream flume is going to be of severe hazard to residents in the area, both to the air quality and the contaminants.

Accidents and spills --

REP. GENTILE: Jen, we need you to summarize.

JEN SISKIND: -- are inevitable. I'd like to give you one last quote from a civil environmental engineer at the University of Pennsylvania. They plainly speak, the potential pathway is an accident, a spill or a leak, that's something that happens. There is nothing you can do about it. The danger of bioaccumulation of the radium will eventually end up in fish and that is a biological danger.

And concerning the disposal, once you have a release of fracking fluid into the environment, you end up with a radioactive legacy.

Dr. Jackson, who researched radioactive contamination in Blacklick Creek is quoted to say, when asked if local citizens should be concerned about fracking waste, if I lived there, I would be concerned about wastewater and wastewater products.

The public should be concerned. Anything they can do to reduce the amount of public wastewater exposure they should be doing.

And here in Connecticut we can reduce that by passing Senate Bill 237. Thank you for your time. Appreciate it.

REP. GENTILE: Thank you, Jen.

JEN SISKIND: And I'd be happy to answer any questions.

REP. GENTILE: I don't see, any. Thank you

JEN SISKIND: Okay, thank you. And on behalf of the 14,000 Food and Water Watch members, I'd like to say thank you for your time.

REP. GENTILE: Thank you for your patience. Nancy Alderman, followed by Ellen Weininger.

NANCY ALDERMAN: Good afternoon, Linda Gentile and members of the Committee. Environment and Human Health is, I'm President of Environment and Human Health.

Environment and Human Health is only in favor of a complete ban on allowing fracking waste from coming into Connecticut. Therefore, Environment and Human Health only supports Bill, S.B. 223 AN ACT PROHIBITING THE STORAGE AND DISPOSAL OF FRACKING WASTE IN CONNECTICUT. (SB 237)

Fracking is a method of extracting natural gas from deep in the ground by injecting a mixture of water, sand and chemicals under high pressure into dense rock formation such as shale in order to crack the rock and release the gas.

If a state decides it supports fracking for natural gas, and that state receives the profits from that endeavor, then that state should either deal with their own waste or find a state that thinks radioactive toxic fracking waste is desirable, and that should never be Connecticut.

If you choose to have a dog and you gain pleasure from that dog, your neighbor should not to have the dog's waste on their property, especially if the dog's waste is toxic and radioactive.

In Pennsylvania alone, there are currently 6,000 drilled and active fracking wells. A

typical natural gas well takes between two and five million gallons of fuel to frack. Of that, ten to fifty percent of the toxic fluid returns to the surface.

The returning fluid not only contains the toxic chemicals that went down, but when it comes up it now has salt, arsenic and radioactive materials that it picked up from deep inside the earth.

The Institute for Energy and Environmental Research in Pennsylvania reports that Marcellus shale deposits found in much of the fracking waste consists of radium 226, which has a half-life of 1,600 years. Radium is a carcinogen and poses a significant threat to human health. Radioactivity should never be released into the environment in an uncontrolled manner warns a white paper by Evan White.

Because oceans covered much of the earth, the waste fluid that comes back from deep underground not only contains radioactivity and arsenic from the rock, but it now contains salt. Because of the salt content, some states have spread it on roads as deicing material and have therefore released the radioactivity into the environment.

As the oil and gas industry --

REP. GENTILE: Nancy, please summarize.

NANCY ALDERMAN: I've got one sentence. As the oil and gas industry works to find more and more places to dispose of their toxic waste, and as places become harder to find, Connecticut becomes very vulnerable.

And I do want to say that the Ohio citizens are beginning to react because they've had so many earthquakes, small ones, due to the injection wells and they are, as a ground swell, Ohio is

beginning to think, wait a minute, and that's been a major disposal site.

So I just want to say as Ohio starts to perhaps say no, where are they going to go? They have to go somewhere. Where are they going to go?

So David Brown in our group, and he's a public health toxicologist goes into Pennsylvania about once every two weeks to work with the sick people from fracking and anyway, he has been funded to sort of deal with what is going on in that state and he comes back to our group and he talks about it.

REP. GENTILE: Nancy, thank you. Any questions? Thank you for your testimony.

NANCY ALDERMAN: Thank you.

REP. GENTILE: Ellen Weininger, followed by Marty Mador.

ELLEN WEININGER: Okay. Okay. Good afternoon Chairs and esteemed members of this Committee. Thank you for the opportunity to address you. I've submitted testimony as the Educational Outreach Director of Grassroots Environmental Education, which is a science-based nonprofit that is, works closely with medical experts, leading medical experts and scientists in the field of environmental health.

I submitted extensive remarks so I just really would like to make just a few points here. A lot has been said earlier. We, Grassroots Environmental Education supports both bills, but with some concerns that both of the bills don't go far enough supporting the storage and disposal in S.B. 237, should include other stronger language including handling, processing, treatment, application and disposal and other language.

I'm looking at the hazardous waste bill as a good example of taking the lead among states in this country to classify this waste properly, not as a standalone in place of S.B. 237.

It's been said already that there's no way to control the certain harm if the door is open to a convoy of leaking trucks carting radioactive waste across Connecticut roads. But I do want to say, this is not a Democratic issue. This is not a Republican issue. This is a public health issue.

This is not about being opposed to fracking or in favor of fracking. This is about protecting Connecticut families from highly contaminated radioactive waste.

There simply is no safe disposal option. There simply is none. You've heard already about the high levels of radium, particularly in the Marcellus shale and the long half-life. Radium 226 is linked to bone, liver and breast cancer. It's decay product is radon, which we know is a leading cause of lung cancer in non-smokers and I would like to address the fact that the Commissioner said that we would treat this waste as any other hazardous waste.

This is not any other hazardous waste. Naturally occurring radioactive material is a term that's used when this kind of radioactive material would be underground but when it's brought up into human environments and transported, it is technologically enhanced, naturally occurring radioactive materials and there are no guidance documents, no federal guidance documents --

REP. GENTILE: Ellen, I'm going to ask you to summarize.

ELLEN WEININGER: I'm wrapping up. And the NRC and the EPA provide no federal regulations for TENORM as it is called for this kind of waste in the oil and gas industry. We have no experience with this. This is not any kind of hazardous waste. We don't know the materials that are in it, but we do know some of the information and there are heavy metal, there are (inaudible) chemicals, neuro-toxins and highly radioactive materials that have a synergistic effect when combined, and we do not know enough about the public health risks associated with that.

REP. GENTILE: Ellen, thank you for your testimony. Marty Mador, followed by Carolyn Shaw.

MARTIN MADOR: Good afternoon. I'm Martin Mador. I'm the Legislative Chair for the Sierra Club in Connecticut. Before I get to fracking, the two minutes on fracking, I want very quickly mention two other bills and let me just say doing it this way should get you folks home six minutes earlier than you would have gotten home otherwise, so think of me tonight when you leave.

HB 5307
SB 237
HB 5308

S.B. 67, the expansion of bottle bill. We have always supported the bottle bill. We continue to support the expansion of it, the juices and teas and other beverages, which are not yet included. Yes, we hope single stream is going to help bump up our recycling rates, which are way too low, but residential recycling is never, ever going to capture litter out there in parks and forests and sporting events and so on.

It is the economic incentive of the bottle bill to collect those bottles and get them recycled is important. We'd like to see the full expansion done.

Number two, 5307, the booms for oils for refueling. We feel the booms are protective. They have protected us for over 20 years. The best way to solve a problem is to do everything you can to make sure it doesn't become a problem. That's what the booms do.

We feel they're a very important element in protecting our marine waters and the Sierra Club strongly advises leaving those booms in place, so we recommend rejecting 5307.

SB237
HB5308

Now, two minutes on fracking. Let me start by saying very rarely, rarely, my good friend Eric Brown and I will disagree on something. Let me read a sentence from his testimony.

It is also clear to us that taking a knee-jerk reaction such as banning these wastewaters in Connecticut are simply classifying them as a hazardous waste would reflect poorly on our state, casting us as the haven for environmental extremism.

I couldn't disagree with that statement more. I think being proactively saying we have something that's absolutely toxic and many people will talk to you about that. I won't. Making sure that this does not become a problem for us is exceptionally good policy. We're nipping a problem before it becomes a problem. That's really what we ought to be doing here.

Okay. DEEP has been an effective agency in many, many ways. We have a tremendous amount of respect for the agency and the people who are there.

However, it has historically been underfunded. It continues to be underfunded. In fact, it's getting worse, not better, and more issues every day get added to the agenda. Issues

don't get, never resolved. The agenda of DEEP always gets larger and larger.

If we go with 5308 we're adding another item to an agency's agenda, which is already overburdened, so any expectation that DEEP is going to adequately protect us from the hazards of these fracking wastes, given what they're already supposed to do is just simply not a realistic agenda.

So Sierra Club cannot support 5308. We want the ban along the lines of 237. One other quick point and I'll be done.

Fifty years of doing environmental work has taught us that the best way to handle environmental problems is to internalize the cost of pollution to the operations that are producing the pollution in the first place.

That's the very best way to do it. Make sure that the polluter is responsible for paying for the costs of the pollution he may cause. Do not let those costs be hoisted on to society.

That's why the consequences of doing fracking operations has to be handled by the guys who are creating this problem in the first place and those are the fracking operations in Pennsylvania. I don't want to duck responsibility for it, but this is what economic theory for decades has taught us. Internalize the cost of pollution to where the pollution is being treated, and that really means handle it where we're doing the fracking in Pennsylvania. Don't export the problem to Connecticut. And I will stop there.

REP. GENTILE: Thank you, Marty. Any questions? Appreciate your testimony.

MARTIN MADOR: Thank you.

REP. ALBIS: Okay. Okay. Got you. That is, if you can send that to the Committee I think that would be very helpful for us.

MARGARET MINER: I will, yes.

REP. ALBIS: Thanks, Margaret. Thank you, Madam Chair.

REP. GENTILE: Thank you, Margaret. Any additional questions? Margaret, appreciate your time.

MARGARET MINER: Thank you.

REP. GENTILE: Is Tom Swan in the room? I don't see him. Lauren Hughes.

LAUREN HUGHES: Good afternoon, Representative Gentile, members of the Committee, thank you for the opportunity to testify before you today. My name is Lauren Hughes, and I'm the Policy Director at Grassroots Environmental Education.

I am here to testify in support of House Bill 5308 and Senate Bill 237. For the past several years now, much of our work at Grassroots has focused on issues surrounding shale gas extraction, and in particular focusing on the public health impacts in making those known to both the public and lawmakers.

Of special concern is the waste of both liquid and solid that is generated in these drilling operations. As has already been stated the Marcellus shale is particularly high in naturally occurring radioactive material, and therefore the waste also contains these particles.

To better examine this potential exposure, Grassroots commissioned a report by Dr. Ivan White, Staff Scientist for the National Council

on Radiation Protection, and I can provide more copies of that report for your review.

Dr. White identified the many pathways for this radiation to migrate through air, soil and water. His findings demonstrate that regulating fracking waste protects groundwater, surface waters and food supply is simply not possible.

To protect the health of Long Islanders, Nassau and Suffolk Counties have passed laws prohibiting the treatment of fracking waste at wastewater treatment plants, an extremely important action, as some of these facilities were identified to the nearest state DEC as potential disposal sites.

Lawmakers went further and prohibited the application on these wastes to roads and real property, including landfills.

Westchester County has the same protections in place. These measures were put in place based on public health concerns, but also to protect Long Island Sound, the wonderful resource that we share with the State of Connecticut.

We look now to the Connecticut General Assembly to prohibit fracking waste disposal to protect its citizens and also to preserve this body of water that is so important to the economies of both states.

It may be worth noting that large portions of downstate New York utilize natural gas for home heating and cooking. Regardless of that fact, officials were willing to prohibit fracking waste from their jurisdictions because of the serious health risks associated with it.

Lawmakers have found time and again that the common sense approach is to prohibit fracking waste in all forms and for all purposes. The

cost of banning fracking waste is minimal, far less than the expense of the regulatory program.

State and local entities may lack expertise in handling these materials and would therefore be unable to adequately protect the public.

For these reasons, Connecticut should ban the storage and disposal of all fracking waste. Indeed, I would encourage this Committee to extend the language in Senate Bill 237 to also include prohibition on acceptance, processing, application and treatment to ensure fracking waste is kept out of the state completely. Thank you.

REP. GENTILE: Thank you, Lauren. I see Mr. Swan is in the room with us. You're next.

LAUREN HUGHES: Thank you.

REP. GENTILE: Thank you.

TOM SWAN: Thank you very much. Good afternoon. I'll try to be quick. I know it's been a long day already. My name is Tom Swan. I'm the Executive Director of Connecticut Citizen Action Group.

On behalf of CCAG's over 20,000 member families, I want to thank you for raising Senate Bill 237 AN ACT PROHIBITING THE STORAGE AND DISPOSAL OF FRACKING WASTE IN CONNECTICUT, 5308 AN ACT CONCERNING THE REGULATION OF FRACKING WASTE and Senate Bill 67 AN ACT CONCERNING THE INCLUSION OF JUICES, TEAS AND SPORTS DRINKS UNDER CONNECTICUT'S BOTTLE BILL.

I know that this is 5308, but I'm going to start with 237, the ban bill. Fracking waste is toxic. The industry won't even tell us what's fully included within the chemicals that they use to frack.

The people who say we can regulate it, they could be economically beneficial, remind me of the former Governor of New York, Hugh Carey, who in my youth when he said that he would drink a glass full of PCBs to prove that they were safe. That was not a wise idea then, and leaving the door open to toxic fracking waste for economic development reasons is just as bad today.

We would like the language tightened to include treatment and discharge being banned, and think it would be a good idea to look at last year's bill for possible language.

We support 5308 AN ACT CONCERNING THE REGULATION OF FRACKING WASTE as a companion bill to S.B. 237, but not as a stand-alone bill because we believe it could enable waste in Connecticut.

As a companion or a combined bill it would have a framework for dealing with waste transported through the state but not allowing the very toxic waste to be stored here.

Finally, I want to express our strong support for S.B. 67. The bottle bill has been arguably the most effective solid waste reduction law Connecticut has ever passed. Expanding it to include juice, teas and sports drinks is not only fair, it is smart environmental policy.

The industry will be making the same old, tired argument why the sky will fall if you pass it. It didn't fall when we passed the original bill. It won't do it again. Please pass it.

Thank you very much for your consideration.

REP. GENTILE: Thank you. Questions? Representative Bowles.

REP. BOWLES: Thank you, Madam Chair. Thank you, Mr. Swan for your testimony, specifically around 237. And it seems like this is, there is another case developing here where there seems to be some corporate disdain, industry disdain for what has been termed environmental extremism in regard to opposition to importing fracking waste from out of state into this state despite what have been numerous concerns expressed.

And again, I'm concerned about the characterization that this is a knee-jerk reaction that we're having, so there's a, you know, a certain tenor that's been established that basically this isn't a problem, and I think the most significant thing I'm hearing and you know, there may be some validity to it, is that by us, the State of Connecticut, particularly through the regulatory bill, declaring the fracking waste to be hazardous it has some economic, significant economic detrimental effects on the gas industry, particularly the fracking industry, per se.

Could you just respond to that, please? Thank you.

TOM SWAN: Well, I think there's a couple points that you raise and one is that trying to discredit advocates on behalf of our families and our communities' health is being extremist.

I think that's been an industry tactic that's been utilized since the beginning of the environmental movement and continues to this day.

We see it being driven more strongly now nationally by groups like the (inaudible) Brothers and many people within the petro-chemical and oil industries and we've seen where when they've been successful what that's

been bringing about, whether it's the recent sludge in West Virginia, the recent sludge in North Carolina, the activities in Louisiana, across the board when the extraction industries related to energy are able to frame the debate and try to marginalize people pushing for just sound policy that's environmentally and community friendly.

If they're successful at that, we've seen the negative impacts, and we're seeing it every day, where you look at what's happening particularly in those states.

I'll try to remember the second part of your point. But within this, I think we're at a roadmap toward a much better future in terms of energy production environmentally, whether it's bringing the investments that we have made in conservation and energy efficiency to the investments in renewable energy and how we're seeing the cost curve go there.

I think it's going to be wise for us to continue to move down that path and not become the garbage pail for the gas industry, and that's really what the proponents are trying to turn Connecticut into proponents of accepting this waste, is we're the garbage pail or the oil and gas industry, and that's really what I think the voters will understand and community members will understand.

REP. BOWLES: Thank you, Mr. Swan. Thank you, Madam Chair.

REP. GENTILE: Thank you. Any additional questions? Thank you, Tom.

TOM SWAN: Thank you very much.

REP. GENTILE: Robert Wood. Robert is followed by Jerry Silbert.

ROBERT WOOD: Madam Chair, esteemed members of the Committee, my name is Robert Wood. I am the founder and President of a company called Air Well Water. We are located in Pawcatuck, Connecticut and our focus is drinking water. Thank you very much for having me here today.

The reason I'm here today is, I'm here today in opposition of S.B. 237, and the reason for that is, right now we're focused on drinking water supply as a company. We've done some pretty amazing things with that.

We can take any raw water in the river, excuse me in the world, such as lake, a river, a stream, and in fact, make clean and safe drinking water.

We're not focused on the oil and gas industry, but in looking at water situations throughout the world, and specifically heavy metals, various chemicals and water supply, we started looking at ways to, in fact, make drinking water. This naturally segued into the periphery of the oil and gas industry and we in fact have done testing, not in the State of Connecticut, but outside of the state, with partners that we have in fact used our process and gotten some very compelling results of dealing with fracking and the fluids and produce water.

If S.B. 237 were to go through, innovative companies like Air Well Water would be prevented from working with the materials. It can be said that the language in the bill regarding storage would, in fact, prevent us from even working with the smallest samples such as gallons or even pints.

Again, there is something to be said for everything that has been said today and it is an issue that does require attention. But

again, it is innovative companies such as ours that are on the forefront that are small enough to respond to changes and are small enough to in fact, come up with the ideas that in fact, can become the future.

Looking ahead, we have developed a financial model. We have developed a recycling model, and it has a lot to do with turning a new page.

I applaud the Committee here for looking into this very carefully, because it is something to be looked into carefully. But at the same time, Connecticut already has the facility in place to deal with a lot of materials that are handled in this state. We're known for our innovation. We build submarines, aircraft, chemicals, chemistry, some wonderful things here.

At the same time, looking toward the future, I would again, really, really ask that the Committee really look into the feasibility of looking into the future of letting Connecticut be a leader in innovation as it has been and looking into the future of waste and disposal.

The model of the past is something that needs to be improved, and we looked upon this. It would be evaporation ponds, huge ponds that are essentially open air where these chemicals would be dried out in the air, moved from pond to pond and it's inefficient. It's perhaps questionable in some of the practices, but at the same time it was how it was done.

We have an opportunity here now to completely turn a new page with respect to protecting the environment, with respect to creating industry innovation in Connecticut and jobs and revenue.

The model is fantastic and in terms of our solution, it's not as though we're proposing to

put a depot in the State of Connecticut. If it made sense and it could be done under the guidance of the law --

REP. GENTILE: Robert, could you summarize, please.

ROBERT WOOD: Yes. The summary of this is, there are new models available. It's companies like our own that are out there working on it and we ask that we still be allowed to work with such substances within the state so we don't have to leave the state and go to places such as Louisiana, Texas or anywhere else.

And thank you very much for your time today.

REP. GENTILE: Thank you for yours. Representative Shaban.

REP. SHABAN: Thank you, Madam Chair. Similar questions I was asking before. What are the methods --

ROBERT WOOD: Sure.

REP. SHABAN: -- because I was asking, is it RO is it distillation? Is it forced filtration?

ROBERT WOOD: Yeah. The common methods were literally, dig a hole in the ground, evaporate it, I mean. It got a little better. Let's start lining the ponds and then let's start putting fences around them. Still, there is more to be done.

One of the issues is, taking it and boiling it. For instance, Halliburton has huge boilers. They're able to do that. But what we use is, we use ozone gas, and not specifically, it's not a panacea, it's not a one-size-fits-all, but in specifically looking at the problem from both a chemistry basis and looking at the chemistry in separating various stages, we're able to do this.

We deal with salts through ion exchange, The next step would be dealing with heavy metals and dealing with the specific gravity of the (inaudible) substance with ozone. We're allowed to drop, we're able to drop solid (inaudible) suspension, collecting those and putting those off for re-use or further solid recycling.

We are able to float petroleum products, recover those and re-use those and then re-use what's left in the middle of it.

Further studies right now are getting us to the point where we're starting to extract water out of this, and part of what we're trying to do is preventing water to be used. It is a fact that millions of gallons of water are used in wells. It's also a fact that we're running out of water. We need to protect this, and that's what we're focused on, is how can we create a sealed system where we essentially will bring in materials, process them, but then sell back that processed material to the industry.

This could also be done on a voucher program where we would have depots throughout various geographical regions and again, understanding the chemistry of these regions, it is different in regional case, but not in every case.

And fundamentally, we found that there is a limit of what we find in this substance to clean up, that it's not endless.

REP. SHABAN: Has your company been treating fracking wastewater to date?

ROBERT WOOD: We have not treated it on the volume that the industry would like, but we are planning a field test for this spring in Pennsylvania. We have done the laboratory and we have done it successfully and both our

science and our chemistry tells us that it is completely scalable.

REP. SHABAN: Have you treated mine water? I keep asking the same question.

ROBERT WOOD: Mine water, we're looking at mine water simply because we're looking at it in Latin America now, doing some work down there. There's a lot of mining, arsenic and heavy metals and so forth.

One thing ozone does very well, other than biologicals in terms of elimination is dealing with heavy metals. It oxidizes, makes it into precipitation and then from there we're able to filter and/or remove them.

REP. SHABAN: So once you get the stuff to bleed out of the water, whatever, what do you do with it then? Is it just treated like any other solid waste?

ROBERT WOOD: It's interesting. The solid wastes are used as a couple of things. Right now we're able in the laboratory to get down to about 90 percent of recoverable substance. This substance can again be used in the exploration or drilling process.

The ten percent, or the other byproducts that are left are solids that would effectively be dealt with commonly. For instance, the salts could be either put into industry or dealt with in solid waste or so forth. But the other byproducts are actually used in agriculture. They're used in fertilizer and so forth.

We're not focused on that, but we would obviously partner with a company or engage companies that would complete the chain, if you will.

REP. SHABAN: Do you have any clue what the economies are in this, like would it be X cents per gallon?

ROBERT WOOD: Yes, I do.

REP. SHABAN: What would that be?

ROBERT WOOD: Essentially, right now the going rate varies and it varies somewhat. Dealing with a barrel, which is a 55-gallon barrel with about 40 gallons of volume in it, it's about $2.85 to resell back to the industry.

Now that's in the (inaudible) formation, which is North Dakota, South Dakota and that area. The economy does shift a little bit, but again, it's based upon scarcity of water, and what the existing water, what the chemistry is.

I mean, do you have to remove chlorides? Is this water ready to use?

REP. SHABAN: We've heard a lot of testimony about some concerns that you're not quite sure what the magic formula is with some of the fracking companies on the way in. How do you solve that problem, or can you?

ROBERT WOOD: There is no magic formula per se, but there is a way of looking at it in stages and again, there is a general conformity of science, you might say, or of chemistry, but it's our ability to take things in stages.

For instance, without going into too much in terms of trade secrets in a public forum, let's just say that we go through stage one, two, three and four. Based upon the chemistry of the second job, we may take stage two and put that first, move four where three was and so forth and start moving the stages around.

But again, it's dealing with chemistry and it's dealing with our ability as a small company to look at it very quickly and very intensively, whereas large corporations are governed by committees and policy and legal departments and really don't have the ability to move as fast as a small innovative company does.

REP. SHABAN: Thank you for your, thank you, Madam Chair. Thank you.

REP. GENTILE: Thank you. Representative Bolinsky. I'm sorry, Representative Sear, Bolinsky and Moukawsher.

REP. SEAR: Thank you, Madam Chair. What about the radioactive component?

ROBERT WOOD: Sure. The radioactive components are not found in every sample. They are inherent to formations of granite, I mean, very active in the northeast and so forth, especially, I would say areas of western Pennsylvania. But it is a particle. It does emit a wage and it's a harmful wave, but it is a particle and this particle is a filtration process.

It would have to be dealt with in terms of radioactive disposal, but again, it would, we already to that with reactor waste, medical waste and so forth, and again, we're not solving that area of the problem, but we can isolate that area of the problem and have experts or professionals that deal with that now, deal with that as well.

REP. SEAR: So in your current business model, you're set up, is it the technology you're developing? Or is it, you're in Pawcatuck?

ROBERT WOOD: Yes, sir.

REP. SEAR: Or is it the physical location in Pawcatuck where you would do that, or are those both the same?

ROBERT WOOD: No. We're not proposing to do it in Pawcatuck, per se, not even the State of Connecticut, per se. We are developing technology in our laboratory. We work with ozone gas there for drinking water, and every water that comes into our shop for a new project, we analyze thoroughly and we learn more and we start affecting our technology to hopefully increase its ability to work with water.

REP. SEAR: Thank you.

REP. GENTILE: Representative Bolinsky.

REP. BOLINSKY: Thank you, Madam Chair. I don't have a question because my question was about the radioactivity as well. So thank you very much.

REP. GENTILE: Thank you. Representative Moukawsher.

REP. MOUKAWSHER: Thank you, Madam Chair. You're currently, what you're pointing out is that if we were to create storage or disposal of fracking, you wouldn't be able, fracking wastewater, you wouldn't be able to test it or to work with it to determine how to, you know, have a process that would make it re-usable.

ROBERT WOOD: Oh, no, sir. We indeed have. We have received reports. They're very hard to get. We had to go through a lot of non-disclosure and agreements and so forth, but we do analyze everything that comes in. We are aware of the ingredients in a lot of the fluids.

REP. MOUKAWSHER: But I mean, your concern is that you wouldn't be able to continue to do your business if --

ROBERT WOOD: That's right, sir.

REP. MOUKAWSHER: -- we prohibit any, you know, possession really, or storage of fracking wastewater. Is that correct?

ROBERT WOOD: That is correct. That is correct.

REP. MOUKAWSHER: Okay. And the other thing, I mean, we've heard a lot of discussion about the elements or the constituent elements of fracking wastewater and you addressed the radioactive portion that in fact there is some. We've also been told there are endocrine disrupters and benzene, and there are chemicals apparently that are part of the injection.

Is that, could you just give us an idea when you're looking at fracking wastewater what is in it? What could be in it?

ROBERT WOOD: You now, there are acids in it, there's (inaudible), there's other substances, they're putting in metal shavings at times, things like that. It essentially is very acidic and a lot of total dissolved solids, very high amounts of those.

But again, our process is able to affect the chemistry of it, effectively rendering things inert and other things becoming solid.

REP. MOUKAWSHER: And the other, in the 5308 bill that we're talking about regulating, a lynch pin of it is that we are going to declare fracking wastewater a hazardous waste. Just, if we did that, how would that affect your business?

ROBERT WOOD: We would have to respond to it, obviously. I mean, we would have to work under the guidelines. It may make it more difficult, and at the same time we feel as though, you know, gasoline is hazardous. Heavy metals can be hazardous. Many of the things here that we have to be concerned about are already in play in our environment and our society, in our commerce and I feel as though we are experiencing up here as a state and as innovators and as an economic power house to do something about that, to really have great oversight, to be careful with it.

I mean, we have a lot of industry here that deals with chemistry and we're on our rivers, and they're good citizens and we would expect no less than the same out of anybody, whether it's ourselves or any other company doing it.

REP. MOUKAWSHER: Okay, and among other, I guess objects of your business, I mean, working with fracking wastewater, you're looking into means of disposing of, recycling it, repurposing it. Is that part of your business model to do that?

ROBERT WOOD: It would be. We're still exploring from a research level and we're looking at the model, and we're doing a pilot test.

But what we're seeing is creating a closed loop, basically having an operation commit to X amount of water going in. That water will be mixed with fracking chemicals. It will come out. It will be processed and sold back into the system, and eventually that will no longer be possible, we would keep filtering things out. The concentrations may increase as we start getting generational into each one of the refinements.

But, at the same time, we're seeing a closed loop, and if out of necessity, right now

there's not enough water. If you go to west Texas, some of these water pipes run for 60 miles, trying to get water from a water source in order to provide water for wells.

So the industry is going to be forced to deal with this. We're not looking at it from an oil and gas perspective. We're looking at it from a drinking water perspective because that's what our company is focused on and we see that our efforts in oil and gas being helpful in protecting the general water supply, which we feel is part of the public trust.

REP. MOUKAWSHER: So when you say closed loop, you're talking about re-using the same --

ROBERT WOOD: Yes.

REP. MOUKAWSHER: -- water over and over again.

ROBERT WOOD: Correct.

REP. MOUKAWSHER: Thank you very much.

ROBERT WOOD: Thank you, sir.

REP. GENTILE: Thank you. Representative Phil Miller. Oh, I'm sorry, Representative O'Dea, followed by Representative Miller.

SB237

REP. O'DEA: Thank you, Madam Chairwoman. Thank you for your testimony. If one of the, if the bill was to pass preventing use of the fracking water or storing it in Connecticut, that obviously would adversely impact your business.

But what's the minimum amount that you would need to continue testing, to use your research on site of where there --

ROBERT WOOD: We're doing small batch testing. The first test we did was 16 ounces. It was a pint, and we said, well, let's just see if this is even feasible. It was feasible. We got

great results. We said, you know what? Let's go to five-gallons now.

The amount we would use would be under 100 gallons at a time, and the lab that we're working now tracks the water coming in. It tracks the disposal of it and everything is in a chain of custody, if you will. So that's how we would expect to work.

We're not talking about bringing in truckloads of this because everything that we do is both scientifically and mathematically scalable. If we can, in fact, create a scale in the laboratory then in the field, then we're on our way to creating an actual working model.

REP. O'DEA: So if, ideally these bills would go away, but assuming they don't go away, if we carved out an exception for your business of 100 gallons or less ==

ROBERT WOOD: Uh-huh.

REP. O'DEA: -- would that be sufficient?

ROBERT WOOD: It would be extremely helpful. It really would. And again, we're not proposing that we set up a depot here. I mean, however, doing business we'd like to if it's possible and done right and correctly. But if there was an exemption for that it would be very helpful. It would keep innovation here in Connecticut because we do get requests to move to Louisiana, to move to west Texas, and frankly, Connecticut's the best state in the union and we have no plans of leaving.

REP. O'DEA: Well, thank you very much for your testimony and we're hoping to keep you.

ROBERT WOOD: Thank you.

REP. O'DEA: Thank you, Madam Chairwoman.

REP. GENTILE: Thank you for that rousing endorsement of our state. Representative Miller.

REP. P. MILLER: Thank you, Madam Chair, and thank you for your testimony. Let me just get this straight. I'm trying to wrap my arms around your testimony.

You want us, if we, you're saying that if we pass this law that it will deprive your company from being able to experiment with this material, which speaker after speaker after speaker has told us is really problematic. Is that right?

ROBERT WOOD: That's correct, yes, sir.

REP. P. MILLER: Okay. My question then, can you do some heavy-duty research in Pennsylvania, where this is originating from and get back to us in a few years and let us know what the results are?

ROBERT WOOD: We would be glad to do that, sir, and it will be more than a few years. This summer, we are, or this spring, I should say, we're planning a field test, a small test. It will be maybe 500 gallons. Let's see how we do. And from there, we could always increase that by simply increasing pipe and pump and the amount of pressure.

But in terms of the years, this industry is moving fast. That we've seen. Two years ago we really couldn't care less about it, frankly, but we see is as impacting both the water supply, but at the same time, we see ourselves in a position to do something about it, and we feel we should.

A year from now we hope to have this in the field and actually a working prototype doing a

million plus gallons per day and that's where we're going with this.

We're looking at on-site treatment where depots would be built adjacent to production areas, but again, it doesn't discount the fact that this model may be able to work here in Connecticut.

And again, we're not here to promote that per se, but we would like to keep working with fracking fluids on a research level and if it does in fact make sense and we do have an impact, then we would like to be able to pursue that.

REP. P. MILLER: Well, thanks. Thanks for answering that. Yeah, I'm floored, to be honest with you. I don't find your testimony to be credible, all due respect. Thank you.

ROBERT WOOD: Thank you.

REP. P. MILLER: Thank you, Madam Chair.

REP. GENTILE: Thank you. Representative Ziobron.

REP. ZIOBRON: Thank you. I'm just coming in, so I'm getting caught up and I took the opportunity to Google you and I'm looking here at an article that talks about your business and your ozone generator and some other things, and your testimony isn't on line, so I wasn't able to read. That's why I did some work of my own and I find it very, very state-of-the-art and very interesting.

I'm just curious, maybe you've already covered this when I walked in. How did you end up at this point, where you actually developed this technology? I'm very curious.

ROBERT WOOD: Sure. It was organically. You know, I grew up in southeastern Connecticut as a young

man. My dad was in the Navy. I became an Eagle Scout here, swam the rivers, canoed the lakes and really, really am fond of Connecticut.

However, in the last 30 years for the most part I've been in California. I was in technology out there. I got out of technology at 40, bought a farm and in a rural community called Leona Valley, ran for town council, was elected and became in charge of water issues for our community.

And when I was there, not only did I find that Los Angeles County was in trouble with the water, but the western states were. Then it went further to the western world and the whole world.

And right now, 1.8 billion people as we speak, don't have access to clean water. So eight years ago I started working on solutions. Four years ago, I decided to relocate from California, come back to Connecticut that I love so much, and set the business up here and started really working on things and really, really getting into drinking water.

We've developed a technology that's in the world now working, and we're doing business in Guatemala. We're starting to do business in Africa and also in the Philippines and southeast Asia.

We work with drinking water. Our ozone-based purifier is stronger than chlorine. It's 3,000 times faster by nature. It's much more effective and it basically will eliminate 99.9 percent of biologicals.

We take river water, or lake water. We provide drinking water for a few humanitarian projects throughout the world. So we started looking in

Latin America and we started getting waters from mining operations, both industrial and private and so forth, and individuals.

A lot of arsenic, other metals and so forth, so we started applying and leveraging our technology in order to determine if we, indeed, could start working with chemicals.

Well, the good news is, ozone is actually very effective with chemicals. It completely destroys all hydro-carbons. It will render it inert. Irons and so forth it will convert to CO2, which is harmless. Other things such as lead, such as copper, other metals and so forth, it destroys.

It even eliminates round up, which is really, really big right now because it's being used in agriculture and it's starting to become a problem.

So that's how we got here. So we started looking at the chemistry and we said, we're handling tougher and tougher problems. Well, the call came in from the oil and gas industry one day and said, what can you do for our situation?

So we started, finally got to the point where we started receiving analysis on what their water situations were, and started saying, you know, it's not a market we're counting on. We want to work with humanitarian, however, we are seeing a use for our technology.

We don't have a complete answer. We would be handing off part of the issue in partnership with other companies, but we do have compelling results that we've already achieved in the lab.

REP. ZIOBRON: Well, thank you very much. It's very helpful. Thank you, Madam Chair.

REP. GENTILE: Representative Shaban.

REP. SHABAN: Thank you, Madam Chair, for the second time. I was doing the same thing because I didn't see your testimony on line, so I bounced around the Internet here and I see some compelling articles about your business. You're running out of room because you're about to hire 200 employees.

How many employees do you have now?

ROBERT WOOD: We were as high as 17, sir, last year. We're down to 11 right now. We're finding that the best way for us to move quickly right now is to establish in our markets is to partner with companies and outsource.

We were also looking into funding from the State of Connecticut. We were a start-up, so we weren't quite ready for that. We do still have the aspirations to be a large company and to employ many people and that's something of a gift that I want to give back to Connecticut for, you know, having the impression as a young man on me, and being the state that it is, and I really am sincere about that.

REP. SHABAN: What's the main market share, maybe you can tell me for Air Well? Are you doing mostly desal? Are you doing mostly --

ROBERT WOOD: We're doing mostly, our current market and our primary market is humanitarian. We're working in Guatemala right now and we're about to, we just created a partnership in Africa to bring our products there this summer and it's water purification.

And it's again, taking any fresh water source and turning it into drinking water.

Now particularly to fracking, fracking does have a salt or a chloride issue as well, so we

started looking at frackish water for a lot of coastal areas, specifically the Lagos area of Nigeria and we started working with salts, again using another component alongside of ozone, and from there we're able to deal with frackish water.

So we started focusing on that area and saying, what can we do with salts, and how can we remove them and we have a modular line of purification products. We start adding them together. They can do lots of different things.

REP. SHABAN: Yes, you've actually anticipated my next question. I'm assuming it can be modularized, and the reason I know a little bit about this, I have friends who are in the RO business and they're doing the same thing you're doing. They're traveling all around the world doing mining water, desal, making dirty water into fresh water in remote regions of South America. Friends of mine all around the world have a good time at it. But the ozone generator is something new to me.

Is it just, you're talking salts. I mean, is it taking potassium chloride and beating it up, or is it just a sodium chloride or --

ROBERT WOOD: The ozone has nothing to do with salts. We're actually getting into ion exchange, so we're dealing with ions and that's how we would effectively deal with salts.

REP. SHABAN: Thank you, Madam Chair for the second time. This is an interesting technology. Thank you.

ROBERT WOOD: Thank you.

REP. GENTILE: Thank you. Any additional questions? Thank you, Robert. Appreciate your time.

ROBERT WOOD: Thank you very much. Thank you.

REP. GENTILE: Dr. Silbert, followed by Ellen McCormick, followed by William Cook.

JERRY SILBERT: Good afternoon, Representative Gentile, honorable members of the Committee. My name is Dr. Jerry Silbert, and I'm Executive Director of the Water Shed Partnership. I'm speaking in support of S.B. 237, which is a ban on tracking waste, but I'm coming at it in a slightly different way.

I certainly, as a physician, understand the toxicity and the central health effects of this and the potential for contaminating our water supplies and that's certainly important.

But really, aside from the economic issues here, there's an issue of energy policy with respect to these natural gas and its waste products. And aside from the economic issue, this is profoundly a moral issue as it deals with one of the greatest problems facing our civilization and that is catastrophic climate change.

I take it you all are aware of that, but I'm wondering how aware you are that the current policy throughout the world actually, with very few exceptions are shortsighted and totally unrealistic in terms of approaching this problem of catastrophic climate change.

We're already at about 400 parts per million of carbon dioxide. The safe levels really should be about 350. We're still increasing by about two parts per million every year and we're making more carbon dioxide every year than we have done in the previous year.

So if we do not switch to renewable low carbon sources of energy we condemn future generations to a devastated climate, and this is serious.

And I urge you not only to support a complete ban on toxic radioactive tracking waste in Connecticut, and I believe that this Environment Committee, which I've been testifying in front of for almost ten years has done a remarkable job in terms of protecting the environment.

But I urge you to truly inform yourselves of the dire situation we really face and the need for immediate and bold action to prevent catastrophes and perhaps Connecticut can become a leader in this area.

I think the idea of using natural gas may be economically attractive because it's cheaper, but in the long run it is catastrophic. We need to change to renewable, low-carbon sources as quickly as possible.

And I've included a link on my testimony to a relevant paper to back up what I'm saying in terms of the rather dire situation we're facing now and we really have to not deny but face up to it. So that's my testimony and I thank you.

REP. GENTILE: Any questions from our Committee members? Thank you for your patience.

JERRY SILBERT: Thank you.

REP. GENTILE: Ellen McCormick, followed by William Cook.

ELLEN MCCORMICK: Good afternoon, Legislators of our beautiful State of Connecticut. Thank you for this opportunity to give testimony in support of Senate Bill 237 and H.B. 5308.

I am Ellen McCormick, resident of Weston, Connecticut an active participant with GMOFreeCT, and a board member of its parent organization, ConnFACT. That stands for Connecticut Families Against Chemical Trespass.

ConnFACT is comprised of thousands of people who are genuinely concerned about the health ramifications of toxic radioactive and caustic fracking waste coming to our state, and we will of course, be educating them continually about this issue.

As you may recall, we are actively interested in the health of our citizens, and in particular those most vulnerable to toxins, women of child-bearing age and children. By the way, I have slashed and burned probably most of my testimony so this may get a little (inaudible) along the way.

REP. GENTILE: We appreciate that.

ELLEN MCCORMICK: We are here today to ask you to protect us from irresponsible practices that contaminate the air we breathe, the water we drink and the food we eat.

At this point we are inundated with chemicals and we don't need another source of contamination that is completely unnecessary to have in this state. Let's help our state reduce cancer-causing agents to change our designation as one of the states with a very high rate of cancer.

As part of our experience as GMOFreeCT it was enlightening to see how our Representatives listened and learned from us before voting on labeling for the state. You all renewed our faith in democracy. I encourage you now to do the same for fracking waste. Our health rests in your hands.

The distinct possibility of disposing or storing fracking waste here in Connecticut is more than alarming. It's absolutely shocking and I just added the words, pure lunacy comes to mind.

What has received little, I'm going to forget that. You've already said that.

Connecticut is in a unique position right now. We can stop this waste coming from Pennsylvania's Marcellus shale, from being dumped into our state. It has been suggested that we use the salty briny wastewater for deicing our roads in winter or as a dust control product. That would mean toxic, radioactive runoffs during rainstorms into Long Island Sound, our streams, our lakes and would affect our agriculture, children, pets and our real estate values. We would also pollute our air.

Let us please learn from the mistakes of other states or contamination of natural resources and human harm are a certainty. I'm almost done. There is no way to treat, dispose or store toxic radioactive and caustic fracking waste material safely.

What's more, we don't have a proper designation for this particular fracking waste yet. It isn't even considered hazardous waste.

If this toxic waste is allowed to be transported through our state, disposed of into injection wells or wastewater treatment plants, dumped in landfills, or even stored, we will never be able to undo the damage of spills or leaks in our lifetime.

The energy industry's history of accidents is long and without regard for the citizens of any state. Let's keep Connecticut beautiful and healthy. Don't waste Connecticut.

REP. GENTILE: Thank you. I believe Representative Shaban has some questions for you. Don't run away.

ELLEN MCCORMICK: Hello, Representative Shaban. How are you?

REP. SHABAN: How are you? Not so much a question more just a hello.

ELLEN MCCORMICK: Hello.

REP. SHABAN: Nice seeing you.

ELLEN MCCORMICK: Nice to see you.

REP. SHABAN: Ellen's from my town. We spent a good afternoon about two weeks ago crawling through an old farm that just got the state finding and almost froze our toes off.

ELLEN MCCORMICK: We got another grant.

REP. SHABAN: That's excellent. Excellent. And just next time you want to testify, let me know. I'll get you higher on the list. Thank you for coming up.

REP. GENTILE: No one in this room heard that.

ELLEN MCCORMICK: Thank you.

REP. SHABAN: Thank you.

REP. GENTILE: William Cooke. William is going to be followed by Jerry Gourd, followed by Matt Waggner.

SB 237

WILLIAM COOKE: Good afternoon. My name is William Cooke and I'm a lobbyist for Public Health and Environmental Advocacy organizations and I had some really well-prepared comments that I'm not going to bother with.

I want to talk to you about the science. What do we know about the effects of high volume slick water horizontal hydro-fracking?

What I have here is the Digest of Independent Science, independent pure viewed science. It

was put together by grass roots and this document was put together for the governor over in New York who is now looking at this issue and will continue until after his election. Yeah. Let's not even go there.

Earlier, a gentleman mentioned the Environmental Protection Agency, EPA. Well, I think it used to stand for Environmental Protection Agency. I think it currently stands for Eventually Polluting America.

We've heard that the federal government regulates this stuff. Well, what about the Halliburton loophole? I mean, if these guys are okay with you know, this stuff is safe. I mean it's manufactured water.

By the way, in New York nobody even tries to use that term any more. We put a beating on them for that. That stuff is flow-back fluid is the kindest thing you can say. It is highly saline about nine times more so than the ocean. It is highly toxic. If you have flow-back fluid come in contact with your skin, you're going to have some problems. If you ingest flow back fluid, it's probably lethal. It's probably going to kill you.

This stuff is absolutely dangerous. But let's not it call it a hazardous waste. You know, a little hazardous, radioactive, highly toxic, kill you if you drink it. But let's not call it hazardous waste. Let's call it an ice-cream sundae.

Folks, we've been played by this industry for decades. Washington is not serving our interests when it comes to protecting our families from this mess.

Now I've got a question just off that topic. If you bought a flat-screen TV at the big box

store and you were at the checkout spot and they said, whoa, whoa, whoa, you've got to take some hazardous waste with you, would you buy it?

If you were buying a new shirt from Bangladesh and they said, hang on, you've got to take this chemical waste with you, would you buy it?

If you're buying sneakers from Vietnam and they said, hang on, we've got a box of waste here for you, too, would you buy it?

We are buying gas. It is a transactional relationship. For somebody to say because you're using our natural gas you should have to take our toxic radioactive hazardous waste and put it on your roads where your families go, or put it through your treatment facilities.

By the say, this recycling crap is --

REP. GENTILE: William, could you please summarize.

WILLIAM COOKE: Yes. You can either concentrate it or you can dilute it, but you cannot fix it. It is radioactive.

We should say no. We should say no, now. If you do nothing else this Session, protect our families from this. It is coming. Oh yeah, I work in New York, too. Oh yeah, I got a farm that is above the Utica shale formation. If they turn the drills in my state, we will sell our farm. We will leave.

You people are having an emergency. You will not be able to regulate this next year. The industry is coming and they will come in great numbers with huge checkbooks.

Your ability to legislate on this issue I believe is now and only now. Thank you.

REP. GENTILE: Thank you, sir. Representative O'Dea.

REP. O'DEA: Thank you, Madam Chairwoman. Just a short question. You heard some discussion about research --

WILLIAM COOKE: Yes.

REP. O'DEA: -- and exempting up to 100 gallons to do some research on the fracking so that maybe we can do some innovation and some research here to apply it elsewhere. Do you have a problem with that?

WILLIAM COOKE: I'm not a scientist. I'm not a researcher. My concern is public health. My concern is, if you open the door a crack, what will come in?

I think you prohibit it, and then if somebody wants to come to the state and say, hold it, we're working on this little science thing and we only need 50 gallons, you know what? Maybe they should have the opportunity.

But I'm telling you something. The industry has lied to us for decades. We heard from a couple of them earlier today.

Protect our families. Protect your families. I think that trumps everything.

REP. O'DEA: Thank you, Madam Chairwoman.

REP. GENTILE: Thank you. Thank you, sir. Jerry Gourd followed by Matt Waggner.

JEREMIAH GOURD: There we go. I truncated most of what I was going to say in an effort to make the three-minute egg rule, but I am in support of S.B. 237 to prohibit the storage and disposal of fracking waste in the State of Connecticut.

The fact that a branch of a private industry has been granted an exemption so that they have no need to comply with the Clean Air Act of 1970, the Clean Water Act of 1972, the Safe Drinking Water Act of 1974, the Superfund law and nearly a dozen other environmental regulations is unconscionable. It is a foundation for why we have fracking fluid waste.

Hydro-fracking is now done in 34 states, or more than 34 states. This is dated information, and every single event, well, in every state there have been incidents of unintended environmental contamination. This includes groundwater contamination so serious in some cases that tap water has been flammable, and some of you guys have seen these documentaries.

So serious that spawning waters for migratory fish have been completely wiped out and that that strain of migratory fish will no longer exist in America.

I was able, through the Freedom of Information Act, to get some data in 2010 for the formulation of fracking fluid that's composed of 596 chemicals. Three hundred and thirty of those are classified by the EPA as being hazardous material and twelve of those are known carcinogens.

So if you've got hazardous materials going into the ground, mixing with 1.7 million gallons of water, how is that not hazardous material when it leaves the ground? By the definition of hazardous waste, it is hazardous waste.

And to Mr. Cooke's point, just because some legislation called it something else does not change what it really is.

Because we have no technology available to treat spent fracking fluid, despite the efforts of Mr. Wood and others, I --

REP. GENTILE: Please summarize, sir.

JEREMIAH GOURD: -- certainly trust that we, that the State of Connecticut will support S.B. 237 and prohibit the storage of this material in our state. Thank you.

REP. GENTILE: Thank you, Mr. Gourd. Thank you. Matt Waggner.

MATT WAGGNER: Representative Gentile and members of the Committee. Thank you for giving me the opportunity to speak today. My name is Matt Waggner. I'm from Fairfield and I'm here to speak in support of S.B. 237 AN ACT PROHIBITING THE STORAGE OR DISPOSAL OF FRACKING WASTE IN CONNECTICUT.

I'm glad to see your Committee participating in this national dialogue about energy usage and the environmental and economic costs associated with hydraulic fracturing.

This issue is not a hypothetical one. Natural gas is an important part of the state's revised energy policy, but it's important to consider the comprehensive costs associated with every energy source to ensure that Connecticut pursues the best strategy to meet our needs in a sustainable way.

Ultimately, I believe, and actually this is something I heard from Congressman Himes when he was first running for office and it rings true, that the cheapest energy will also be the best for us so long as the costs to health, environmental stability and the future treatment and cleanup of that source are not left out of the equation.

With so much unknown, even about the contents of the chemicals being utilized in the process, establishing a moratorium on this waste is entirely appropriate.

Advancing on this and the related concepts before you today, will demonstrate Connecticut's leadership in the fracking policy and lay the groundwork for a future comprehensive strategy in collaborating with neighboring states or at the federal level.

This is an approach that has worked productively with greenhouse gases, via the Regional Greenhouse Gas Initiative, and I hope that we can continue to work with the like-minded states to continue toward the goal of a sustainable energy economy.

Please support 237 for passage in this Session. Thank you.

REP. GENTILE: Thank you, sir. Okay?

MATT WAGGNER: Thank you.

REP. GENTILE: Hugh Hughes, followed by Henry Talmage. Okay. Henry.

HENRY TALMAGE: Good afternoon, Representative Gentile, members of the Committee. My name is --

REP. GENTILE: It's still afternoon, Henry, so you're okay.

HB5310 HENRY TALMAGE: Yeah. Just checking the date. I'm Henry Talmage, Executive Director of the Connecticut Farm Bureau. I've come before you today to testify mainly on House Bill 5044 AN ACT CONCERNING DOMESTICATED HORSES and also if I run out of time, also proposing Senate Bill 239 AN ACT CONCERNING USE OF PROPANE NOISE

REP. GENTILE: Thank you, Mr. Krause. We appreciate your patience and your testimony.

ROBERT KRAUSE: Thank you.

REP. GENTILE: Lou.

LOUIS BURCH: Thank you, Representative Gentile, Representative Albis, Senator Chapin and the other distinguished members of this Committee. For the record, my name is Louis Burch. I'm the Government Relations Liaison for Citizens Campaign for the Environment.

SB 237

We have over 80,000 members in Connecticut and New York State and we work to protect public health, empower communities and advocate for solutions that protect our natural environment.

Let me start by saying that CCE is opposed to House Bill 5307. It is clear and well known that Long Island Sound is our state's most valuable natural resource and that gasoline spills can threaten aquatic life and public safety and thus need to be contained quickly to prevent devastating impacts to our harbors and our waterways.

CCE is therefore supportive of existing state regulations and urges the Committee respectfully to reject this legislation.

We are conditionally supportive of House Bill 5308. It is well documented that fracking fluids returned to the surface after the drilling process include a virtual laundry list of toxic chemicals that cause brain damage, can affect the endocrine system and can cause cancer and mutations.

The science testifying to that abounds and I encourage members of this Body to reach out and ask for that science if they are so interested in it.

Some of those chemicals include but are not limited to formaldehyde, hydrochloric acid, glycol, ethers, ethyl, benzene and toluene as well as radium 226. I would also add that the radioactivity of flow-back fluids coming from vertical wells drilled in the Marcellus shale have been found by New York State to exceed safe drinking water standards by over 300,000 percent.

Hazardous waste loophole allows gas companies to transport and dispose of toxic fracking waste without treating it as such. Closing that loophole is a critically important step what we feel is insufficient in protecting and enforcing safeguards for Connecticut's communities on its own.

That is why we also support 237, Senate Bill 237 prohibiting the storage and disposal of fracking waste. So there's something very important that has been kind of glossed over, which is, once those materials have been recycled, the salt has been removed, and may not any longer be considered hazardous waste, they can then be used for road spreading and other kinds of brine that's extremely detrimental to our rivers and the health of our communities in their --

REP. GENTILE: Can I have you summarize, Lou.

LOUIS BURCH: Yes, absolutely. And therefore, we are advocating for an all-out ban, prohibition on the disposal and the treatment of hazardous fracking waste and that concludes my comments. I'm happy to take questions.

REP. GENTILE: Thank you very much, Lou. Any questions? Appreciate your patience.

LOUIS BURCH: Thank you.

Connecticut General Assembly

Senate Democrats

Senate Republicans
Democrat Representatives
Republicans Representatives

Who is Your Message for:

As my late mother would say "Get into the 21st Century." The age of oil is over. Fracking is not environmentally sound and in time will become more costly than alternate forms of energy. Why would Connecticut want to bring in fracking waste? We have already compromised our clean air and water, I believe. Do it prove greed that people want to further compromise our environment? The maintenance of clean air and water is the greatest moral and ethical issue facing the people of Connecticut.

Bringing in hazardous waste may add to health care costs as well as other costs to the earth and all the other creatures that human life depends on.

I urge you to prohibit the storage or disposal of fracking waste in CT by supporting S.B. #237.

Name: Dorothy Lovett Buckley
Address: 3 Ferri St HTFD 06105-3232
dorothylovettbuckley@gmail.com
Phone: (860) 523-9291

Friday, February 28, 2014

My written testimony in support of S.B. 237, AN ACT PROHIBITING THE STORAGE OR DISPOSAL OF FRACKING WASTE IN CONNECTICUT.

Submitted by: Jennifer O'Neil Sarwar

Members of the Environment Committee,

Thank you for introducing this legislation. I am grateful to the sponsors of this bill.

First and foremost, I am deeply concerned about the health of my family - my two young 11 and 9-year-old boys and my extended family and friends who live in Connecticut. It's inconceivable to think that our state could be the next dumping ground for hazardous, toxic, and radioactive fracking waste.

Too many American communities in neighboring states have already been affected with air pollution, contaminated drinking water and severe health issues such as cancer. It's time to stop the disposal of fracking waste now!

We need legislation to protect our community water, air and public health.

Please vote **no**, against H.B 5308, An Act Concerning Regulation of Fracking Waste and vote **no**, against H.B. 5307, An Act Concerning the Use of Booms for the Retention of Certain Oils or Petroleum and Revising certain requirements for the registration of radioactive materials.

Please vote **yes**, in support of S.B. 237, An Act Prohibiting the Storage or Disposal of Fracking Waste in CT

Thank you for your time and the opportunity to submit testimony.

Jennifer O'Neil Sarwar

Testimony of Nisha Swinton
New England Senior Organizer, Food & Water Watch
Portland, ME

In Support of S.B. 237
An act prohibiting the storage or disposal of fracking waste in Connecticut

Presented to Connecticut Environment Committee
February 28, 2014

Good afternoon, Chairman Meyer, Chairwoman Gentile and members of this committee. Thank you for the opportunity to submit my testimony. My name is Nisha Swinton. I am the New England Region Senior Organizer at Food & Water Watch. I am submitting this today on behalf of our more than 14,000 members and activists across Connecticut to ask you to support S.B. 237.

Our work on hydraulic fracturing, or fracking, began out of concern over the numerous ways in which shale oil and shale gas development negatively impact public water resources – specifically, contamination from the drilling and fracking process itself, contamination from the toxic waste that is generated in the process, and degradation of lands essential to the provision of clean drinking water.

At Food & Water Watch, the scope of our work on fracking has expanded to beyond fracking's impact on water. We have addressed the dubious claims the oil and gas industry is making to justify expanding the practice. Specifically, we've revealed flaws and hidden assumptions in the mistaken but popular claims that shale gas offers the trifecta: American energy security, broad-based economic growth, and clean energy.

The reality is that shale gas is a false solution, and the generation of vast amounts of drilling and fracking waste is just one of many reasons why.

S.B. 237 addresses the very real threat that drilling and fracking waste poses to Connecticut. This threat is urgent given Connecticut's close proximity to the Marcellus Shale, a 600-mile stretch of natural gas reservoirs buried thousands of feet underground, and the lack of fracking regulations currently in the state. While Connecticut's geological composition make fracking itself unlikely, Connecticut stands the risk of being the last state in the Marcellus Shale region to accept fracking wastewater, allowing natural gas companies to dispose of their toxic waste within the state's borders.

Indeed, Connecticut is in a position to see an influx of fracking waste. Connecticut should however continue its leadership in clean energy solutions, and not serve as a dumping ground for

drilling and fracking waste. Banning the treatment, discharge, disposal, and storage of such waste in the state is a must.

On a fundamental level, the oil and gas industry has a waste problem. Drilling and fracking each new shale well can produce millions of gallons of potentially toxic wastewater and hundreds of tons of potentially radioactive solid waste. Disposal of these wastes poses serious environmental and public health risks.

Currently, most fracking wastewater is injected into deep underground wells in West Virginia and Ohio. However, Ohio's increasing inability to handle all of Pennsylvania's fracking wastewater – due to earthquakes associated with wastewater disposal as well as increased drilling and fracking in the state – underlines the threat to Connecticut.

Fracking waste can contain not only the chemicals used in fracking fluid, but also harmful natural contaminants from deep underground that are carried to the surface after fracking.

- Numerous known chemical additives to fracking fluid are of public health concern, including benzene, xylene, ethylene glycol, and 2-butoxyethanol. Long-term exposure to these environmental toxins can result in nervous system, kidney, and/or liver problems, as well as cancer. Unknown additives may likewise present public health risks, but because these additives are not disclosed it is impossible to know the full threat posed by fracking wastewater.

- Among the highly-variable levels of naturally occurring contaminants present in fracking waste are dissolved solids (including barium, strontium, cadmium, arsenic and various salts), organic pollutants (such as the cancer-causing compounds benzene and benzo(a)pyrene) and radioactive material, such as Radium-226. Low -level exposure to radioactive material results in cellular damage and DNA damage that increase cancer risk.

A 2011 New York Times investigative report examined data on more than 240 Pennsylvania and West Virginia gas wells and found that at least 116 of these wells produced wastewater with radiation levels that were hundreds of times the U.S. EPA's drinking water standard, and that at least 15 wells had wastewater with radiation levels thousands of times the standard.

In addition to fracking wastewater, there is the waste from drilling. Shale drilling waste includes "drill cuttings", which are about the size of coarse grains of sand and are coated in used drilling fluids that can contain contaminants such as benzene, cadmium, arsenic, mercury and radium-226. Dumping fracking waste in landfills could expose workers to harmful levels of some of these environmental toxins. Radium-226 contamination, for example, would persist for more than a thousand years after the landfill closed, ruining the productivity of the land for many generations. Dumping loads of drill cuttings in landfills can also lead to operational problems. Layers of drill cuttings could plug up the flow of landfill fluids, causing spills out the sides of the landfill. Also, landfill linings could be degraded by chemicals in the wastes, likewise resulting a

loss in landfill integrity, meaning leaks of radioactive material and of other harmful contaminants.

Treating fracking wastewater in municipal wastewater plants in Connecticut poses its own set of dangers. Researchers at the University of Pittsburgh tested water being discharged, after treatment, into a creek from a facility in Pennsylvania and found average concentrations of benzene at twice the U.S. EPA's drinking water standard, barium at 14 times the standard, total dissolved solids at 373 times the standard, strontium at 746 times the EPA's recommended level for drinking water and bromide at 2,138 times the level that triggers regulatory reporting requirements under the treatment plant's permit in Pennsylvania.

Connecticut can avoid such costly water pollution with your support for this bill.

Connecticut's wastewater treatment facilities are not equipped with technologies to handle such extreme and variable levels of radioactive material and other contaminants in fracking wastewater. Many of these contaminants simply flow through conventional treatment facilities and get discharged into public rivers and streams. This could contaminate drinking water supplies for downstream Connecticut communities, as well as harm aquatic life in estuaries essential to sustaining Connecticut's recreational and commercial fisheries.

Neither are Connecticut's facilities equipped to handle wastewaters highly contaminated with bromides. During the disinfection (or chlorination) stage of wastewater treatment, bromides can react with organic material to form brominated trihalomethanes (THM). Once formed, THM are difficult and costly to remove from the water supply, and human exposure to THM is implicated in cancer and birth defects.

Finally, the corrosive salts in fracking wastewater – particularly high levels of sodium and chloride – would harm industrial equipment at Connecticut wastewater facilities. Allowing public facilities to accept this waste would add to the already pressing need for costly improvements to public wastewater infrastructure. Citizens of Connecticut cannot afford such added costs.

Banning the storage, treatment, disposal and discharge of drilling and fracking waste would eliminate the risks and costs to Connecticut's public health, public infrastructure and the environment that such waste presents.

On behalf of the more than 14,000 Connecticut supporters of Food & Water Watch, I urge you to support S.B. 237.

26

From Jeremiah Gourd:

I am in support of SB 237 AAC to **prohibit** the storage and disposal of fracking waste in CT.

The fact that a branch of private industry has been granted an exemption , so they have no need to comply with the Clean Air Act of 1970, the Clean Water Act of 1972, the Safe Drinking Water Act of 1974, the Superfund law and nearly a dozen other environmental regulations, is unconscionable.

In the name of "national energy independence" we are permitting monetary profit for a few, at the expense of environmental contamination that we will all pay for, for generations to come.

Hydro fracking is now done in 34 states and every event has resulted in unintended environmental contamination. This includes groundwater contamination so serious that tap water became flammable, the destruction of spawning waters for protected fish species, and air contamination so severe that it was determined to be the direct cause of human death.

Fracking fluid is composed of 596+ chemicals and more than 12 of these are known carcinogens. These chemicals are injected some 8,000 feet underground in "proprietary" volumes. The chemical mixture is then mixed with 1.7 million gallons of water for each fracking event. The Energy Policy Act of 2005 permits up to eighteen (18) fracking events for a single well and only 1/2 of the so called "Processed Water" (used fracking fluid and water) is extracted for disposal. This is a problem. The other half of this toxic mixture is still in the ground and the liquid waste that is collected needs to be treated and disposed of.

As of February 1st, 2014, there is no known practical way of treating Processed Water from fracking. The proposal is to "store" this hazardous waste until we find a method of treatment, but there is no funding adequate to support the development of this new treatment technology.

Waste fracking water disposal is perhaps the smallest part of the overall problem. If we allow it to happen in our state, we are supporting the industry that has already caused billions of dollars of property damage, and immeasurable wildlife and habitat destruction.

Fracking is now allowed with very limited legal repercussions. Law suits are paid for immediate damages and the practice continues state after state across America.

Stop the madness. Stop the provisions that make fracking (as we know it today) profitable. Stop any provision to store used fracking fluid waste in our State.

JOINT
STANDING
COMMITTEE
HEARINGS

ENVIRONMENT
PART 2
593 – 1065

2014

Testimony of Ellen McCormick of
ConnFACT
(CT Families Against Chemical Trespass)
Before the Connecticut General Assembly
Environment Committee
February 28, 2014
Testimony in support of SB#237
An Act Prohibiting the Storage or Disposal of Fracking Waste in the State of Connecticut

Good afternoon legislators of our beautiful state of Connecticut!

Thank you for this opportunity to give testimony in support of Senate Bill # 237.

I am Ellen McCormick, a resident of Weston, CT, an active participant with GMOFreeCT and a board member of its parent organization, ConnFACT that stands for CT Families Against Chemical Trespass. ConnFACT is comprised of thousands of people who are genuinely concerned about the health ramifications of toxic, radioactive and caustic fracking waste coming to our state.

As you may recall, we are actively interested in the health of our citizens and, in particular, those most vulnerable to toxins - women of child-bearing age and children. We are dedicated to educating the people of Connecticut and our representatives about the health and economic risks coming from toxic

chemicals. We are here today to ask you to protect us from irresponsible practices that contaminate the air we breath, the water we drink, and the food we eat. At this point we are inundated with chemicals and we don't need another source of contamination that is completely unnecessary to have in this state. Let's help our state reduce cancer causing agents to change our designation of one of the states with the highest rates of cancer.

As part of our experience as GMOFreeCT it was enlightening to see how our representatives listened and learned from us before voting on labeling for the state. You all renewed our faith in Democracy. I encourage you now to do the same for fracking waste. Our health rests in your hands.

The distinct possibility of disposing or storing fracking waste here in Connecticut is more than alarming – it is absolutely shocking! There are many horror stories about fracking's impact on people, pets and livestock around the country. What has received little publicity are the chemical cocktails that are used during fracking. They are individually highly toxic, some radioactive, others caustic and when combined can only be more dangerous.

Connecticut is in a unique position right now. We can STOP this waste coming from Pennsylvania's Marcellus Shale, from being dumped into our state. That waste contains radium 226 and radium 228 - with a half-life of 1600 years. This means a leak or spill would be irreparable.

It has been suggested that we use the salty/briny waste-water for de-icing our roads in winter or as a dust control product. That would mean toxic, radioactive runoff during rain-storms into Long Island sound, our streams and lakes and would affect our agriculture, children, pets, and our real estate values. We would also pollute our air.

We cannot allow other states to dump their waste here. With water being the precious commodity it is, we should not be flirting with disaster by polluting our drinking water which could very easily happen.

Let us please learn from the mistakes of other states or contamination of natural resources and human harm are a certainty. There is no way to treat, dispose of or store toxic, radioactive and caustic fracking waste materials safely! What's more we don't have a proper designation for this particular fracking waste. It isn't considered hazardous waste yet.

If this toxic waste is allowed to be transported through our state, disposed of into injection wells or wastewater treatment plants, dumped in landfills, or even stored, we will never be able to undo the damage of spills or leaks in our lifetime. The energy industry's history of accidents is long and without regard for the citizens of any state. Let's keep Connecticut beautiful and healthy!

Don't Waste Connecticut!!

Addendum:

Fracking Waste is on its way
https://webtop.webmail.optimum.net/http/viewattachment?clientId=1393556725102&locale&disp=attachment&accountId&folder=Fracking%20articles%20and%20materials&uid=1&part=1

Radioactive fact Sheet
https://webtop.webmail.optimum.net/http/viewattachment?clientId=1393459955451&locale&disp=attachment&accountId&folder=Fracking%20articles%20and%20materials&uid=54&part=1

Road Sign Flyer
https://webtop.webmail.optimum.net/http/viewattachment?clientId=1393459955451&locale&disp=attachment&accountId&folder=Fracking%20articles%20and%20materials&uid=55&part=1

Attached is a statement by the Concerned Health Professionals of New York in response to the new study by Nagel et al. in *Endocrinology.*
https://webtop.webmail.optimum.net/http/viewattachment?clientId=1393556725102&locale&disp=attachment&accountId&folder=Fracking%20articles%20and%20materials&uid=5&part=1

Consideration of Radiation in Hazardous Waste Produced from Horizontal Hydrofracking:
http://www.grassrootsinfo.org/pdf/whitereport.pdf

Summary Report: Human Health Risks and Exposure Pathways of Proposed Horizontal Hydrofracking in New York State:
http://www.grassrootsinfo.org/summaryreport.pdf

December 17, 2013

Statement by Concerned Health Professionals of New York in Response to a New Study on Hormone-disrupting Contaminants in Water Near Colorado Drilling Sites*

Of the 700-plus chemicals that can be used in drilling and fracking operations, more than 100 are known or suspected endocrine disruptors. Unique among toxic agents, endocrine-disrupting chemicals (EDCs) interfere with hormonal signals, are biologically active at exceedingly low concentrations, and, when exposures occur in early life, can alter pathways of development.

In a two-part study published on December 16 in the journal *Endocrinology*, a team of researchers led by Susan Nagel at the University of Missouri reported a variety of potent endocrine-disrupting properties in twelve chemicals commonly used in drilling and fracking operations. The team also documented potent endocrine-disrupting activity in ground and surface water supplies collected from heavily drilled areas in Garfield County, Colorado where fracking chemicals are known to have spilled. The levels of chemicals in these samples were sufficient to interfere with the response of human cells to male sex hormones, as well as estrogen. Five samples taken from the Colorado River. itself showed estrogenic activity. The catchment basin for this drilling-dense area, the Colorado provides water to 30 million people

These results, which are based on validated cell cultures, demonstrate that public health concerns about fracking are well-founded and extend to our hormone systems. The stakes could not be higher. Exposure to EDCs has been variously linked to breast cancer, infertility, birth defects, and learning disabilities. Scientists have identified no safe threshold of exposure for EDCs, especially for pregnant women, infants, and children.

Contact: Sandra Steingraber, PhD
ssteingraber@ithaca.edu
607-351-0719

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* C.D Kassotis. D.E. Tillitt, J.W. Davis, A.M. Hormann, and S.C. Nagel, **Estrogen and Androgen Receptor Activities of Hydraulic Fracturing Chemicals and Surface and Ground Water in a Drilling-Dense Region,** *Endocrinology* en 2013-1697; doi:10.1210/en.2013-1697

Unless we act, we may soon be at risk here in Connecticut. The potential presence of hydraulic fracturing waste for processing, storage or disposal poses a serious health risk for our citizens and the environment.

DON'T WASTE CT

THE CONNECTICUT FRACKING WASTE BAN COALITION

Dear friends,

The Connecticut Fracking Waste Ban Coalition is made up of organizations and individuals concerned with public health, our environment and our future. We are seeking your support to help keep toxic, radioactive waste out of our state.

Attached is a summary of Public Health Concerns Regarding Oil and Gas Drilling Waste in Connecticut. The summary provides basic facts about gas drilling waste, and why it constitutes a serious public health risk. We believe this threat to our health and our future cannot be successfully managed through regulation. The risks are too great, the possibility of accidents is high and the contamination is permanent.

That's why during this coming session of the Connecticut legislature, we are asking our elected leaders to follow the lead of counties and towns across the country and enact a ***complete ban on fracking waste***.

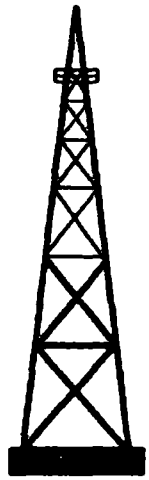
We hope you will ***ACT TODAY*** and join us in supporting this effort to protect the health and safety of all Connecticut citizens. Please consider adding your name to the growing list of organizations and individuals who are working with us. To join our coalition, just send an email to DontWasteCT@gmail.com.

Thank you.

Citizens Campaign for the Environment
ConnFACT
Environment Connecticut
Environment and Human Health Inc. (EHHI)
Food & Water Watch
Grassroots Environmental Education
Rivers Alliance of Connecticut
Watershed Partnership
Sierra Club CT Chapter

Radioactive Fracking Waste

Fact Sheet



1. **Fracking in the Marcellus Shale region will bring significant amounts of radioactive wastewater and sludge to the surface.** *Many areas of the Marcellus shale contain high levels of naturally occurring radioactive material, more than in other regions. Once it is brought to the surface along with the gas, there is no way to dispose of it safely.*

2. **Introducing radioactive, chemical-laden wastewater into water treatment plants will interfere with the plant's ability to process waste; even processed water can contaminate downstream receiving waters.** *Water processing plants have very limited ability to reduce radiation in wastewater; the EPA has found that in some cases dilution did not bring levels down sufficiently. Discharge of radioactive waste into rivers may result in contamination of drinking water for downstream communities.*

3. **Radioactive sludge from drilling sites or water treatment plants will contaminate landfills and "nearby" ground and surface water for thousands of years.** *The half-life of radium-226, the radioisotope commonly found in wastewater and sludge from fracking in the Marcellus shale is 1600 years. So in the year 3612, only half of its toxicity will have dissipated.*

4. **Vehicles transporting radioactive, chemical-laden waste increase the risk of human exposure in the event of accidents.** *Trucks with radioactive or toxic chemical payloads from fracking carry no notice or warnings: police and EMT's will be unaware of danger. In addition, landowners and workers on-site may be exposed to harmful levels of radiation. The EPA has identified this exposure as a significant risk and recommends a program to protect workers.*

5. **Spreading radioactive wastewater on roads exposes drivers, passengers and pedestrians to radiation in air, and may contaminate nearby surface water, land and agricultural fields.** *Radioactive materials do no go away, they continue to spread further.*

6. **Storage of radioactive wastewater in closed containment tanks can result in groundwater and surface water contamination from leaks, spills, corrosion, ruptures or accidental punctures.** *No container will outlast its radioactive contents.*

7. **Natural gas from Marcellus shale contains high levels of radon.** *Radon mixes with the natural gas and stays with the gas as it is transported from wellheads to homes. Exposure to radon is the leading cause of non-smoker's lung cancer.*

Learn more about fracking waste at GrassrootsInfo org

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The road sign nobody wants to see in Connecticut.

Hydrofracking for shale gas is producing millions of gallons and thousands of tons of toxic, radioactive waste, and the gas companies would like to dispose of it in Connecticut.

If toxic, radioactive fracking waste is allowed to be treated, discharged, processed, sold or stored in our state, eventually **it will contaminate our public water supply, our air and our land.** If it is spread in agricultural areas **it will contaminate our food supply.**

That's simply unacceptable!

Naturally-occurring radioactive material (primarily radium-226) has been buried deep underground for millions of years, but hydrofracking brings it up to the surface. The gas itself has high levels of radon, and the chemicalized water, the mud, the drill cuttings and even the equipment itself becomes contaminated with radiation. Getting rid of this waste is a huge problem for the gas industry.

Exposure to radium-226 is linked to bone, liver and breast cancers. Exposure to radon is a leading cause of non-smoker's lung cancer.

Let's keep toxic, radioactive fracking waste out of Connecticut! Contact your state legislators today and urge support for a ban on fracking waste!

Learn more about fracking at GrassrootsInfo.org

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Consideration of Radiation in Hazardous Waste Produced from Horizontal Hydrofracking

Report of E. Ivan White
Staff Scientist for the
National Council on Radiation Protection

Radioactivity in the environment, especially the presence of the known carcinogen radium, poses a potentially significant threat to human health. Therefore, any activity that has the potential to increase that exposure must be carefully analyzed prior to its commencement so that the risks can be fully understood. Horizontal hydrofracking for natural gas in the Marcellus Shale region of New York State has the potential to result in the production of large amounts of waste materials containing Radium-226 and Radium-228 in both solid and liquid mediums.

A complete and thorough analysis of the potential environmental pathways for exposure of people to these radioactive materials is a prerequisite to any regulatory approval of activities involving their extraction, handling, transportation and storage.

> The guiding principle for this work is that ***radioactivity should never be released into the environment in an uncontrolled manner*** because of the potential for exposure from the many potential pathways that exist.

Over the past fifty years, the Atomic Energy Commission (AEC) and the Nuclear Regulatory Commission (NRC) have spent millions of dollars on research that has resulted in computer models of the transport of radioactivity through the environment to humans. These environmental transport and human uptake models, known as "RESidual RADiation," or "RESRAD," are designed to be incorporated into governmental regulatory guidelines to ensure that people are not exposed to levels of radiation and radioactivity that would result in negative health impacts.

In April of 1999, the New York State Department of Environmental Conservation's Division of Solid and Hazardous Materials, assisted by representatives from sixteen oil and gas companies, conducted an internal investigation entitled *An Investigation of Naturally Occurring Radioactive Materials (NORM) in Oil and Gas Wells in New York State*. The report concluded that drill cuttings and wastewater from oil and gas

drilling operations "do not constitute a health risk for the State's residents nor present a potential degradation of the State's environment."

A similarly cavalier attitude towards human exposure to radioactive material pervades the NYS DEC's 2011 Draft Revised Supplemental Generic Environmental Impact Statement (rSGEIS). The document's superficial characterization of radiation risks has prompted warnings from radiation experts, including those at the EPA whose public comments on the rSGEIS reflect deep concerns about the DEC's understanding and appreciation of the actual risks posed by radiation.

The National Council on Radiation Protection (NCRP) is a Congressionally-chartered agency charged with the authority and responsibilty to coordinate public information on radiation protection and radiation measurements. In its 2010 NCRP Report #169, *Design of Effective Radiological Effluent Monitoring and Environmental Surveillance Programs*, we describe the required radiation detection equipment and state-of-the-art modeling approaches for determining radionuclide transport pathways in the atmosphere, surface water, groundwater, and soil. Methods are presented for estimating potential radiation dose to the public and natural ecosystems resulting from releases of radionuclides into the environment.

Based on my experience in assessing potential transport pathways for radiation and a review of the DEC's internal report, I find two serious flaws that must be addressed and corrected prior to any final determination related to hydrofracking in New York State. The first is that the report examined a very different type of drilling than that which is being proposed. The second is that the authors used RESRAD in a limited way, resulting in faulty conclusions.

The 1999 DEC report examines vertically-drilled oil and gas wells in New York State that have been hydrofracked. This is very different from the ***horizontal*** hydrofracking currently being proposed for New York State. Vertical wells of the type measured by the NYSDEC are typically 1500-3000 feet deep with minimal penetration into the Marcellus shale formation. Horizontal slickwater hydrofracking wells, on the other hand, reach depths of 6,000 feet before turning horizontally for an additional mile or so. These deeper, longer wells have a much greater overall exposure to the Marcellus Shale formation and the radioactive materials contained within it, and thus an increased likelihood of bringing that radioactivity to the surface. (See Figure 1)

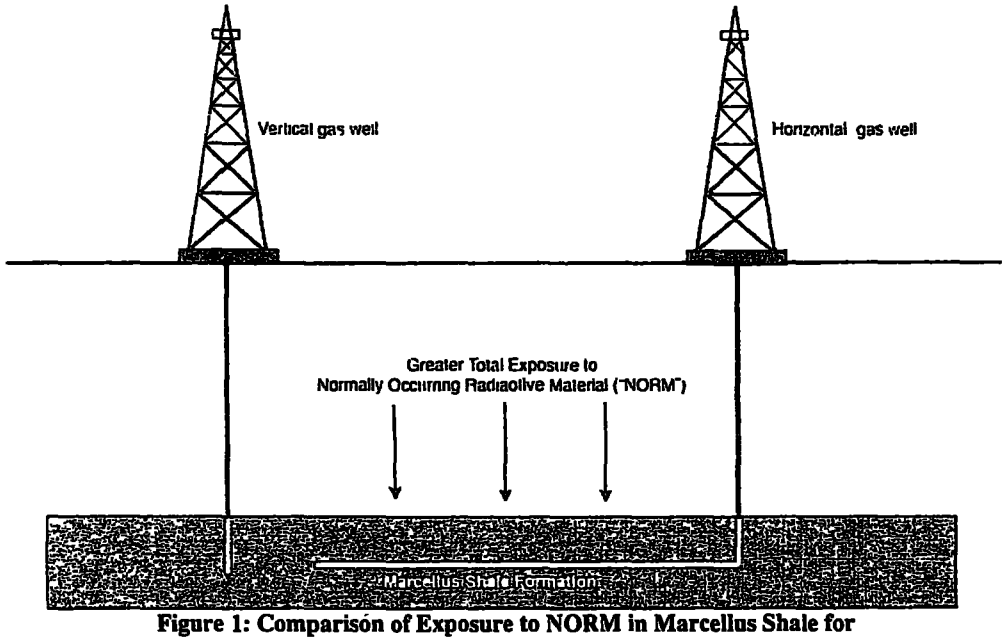

Figure 1: Comparisón of Exposure to NORM in Marcellus Shale for Vertical Wells and Horizontal Wells

The second flaw is that RESRAD was not properly used to determine <u>all</u> of the potential pathways of the radiation. The following diagrams illustrate the potential pathways for radionuclides released into the environment in an uncontrolled manner, in air or in water.

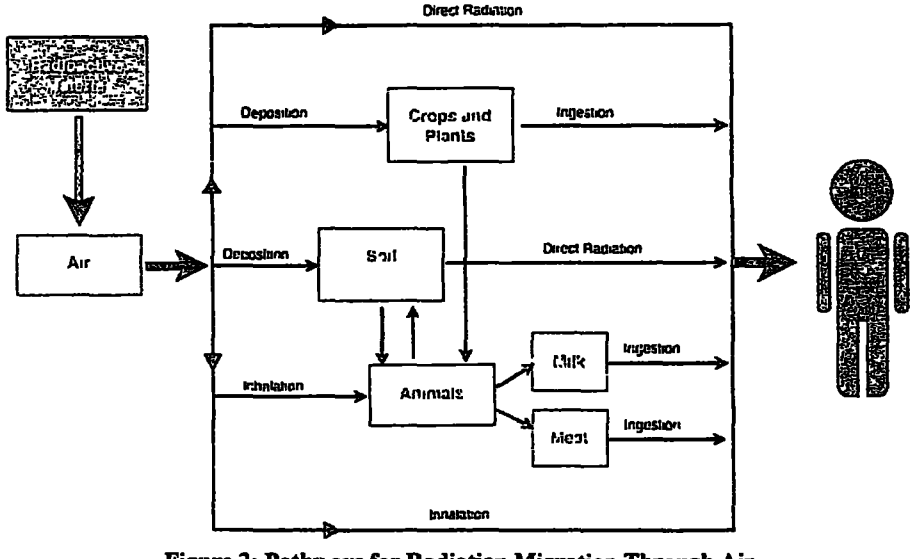

Figure 2: Pathways for Radiation Migration Through Air

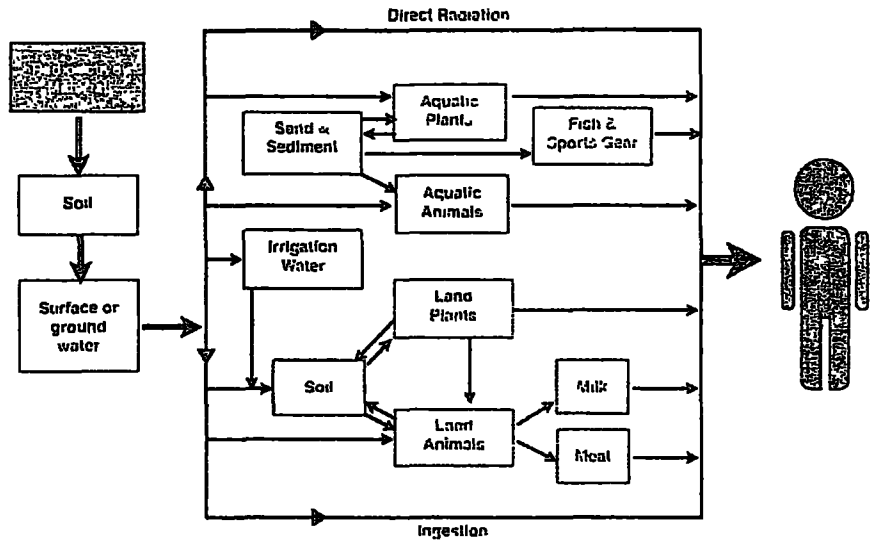

Figure 3: Pathways for Radiation Migration Through Soil and Water

For example, if radioactive wastewater from hydrofracking is spread on a road, there are two possible scenarios involving different pathways.

In one, the radioactive waste is spread on a paved road with a crown. Some of the waste will inevitably run off the road and find its way into a waterway or onto grazing fields or crops with the resulting pathways. The radioactivity in the waste remaining on the road will be resuspended by the traffic into the air with the resulting direct exposure to humans or biota.

In the second scenario, the waste spread on the dirt road is adsorbed by the dirt. When the dirt road dries out. the radioactive waste is resuspended in the dust from the road. The dust particle size and concentration is determined by the weight of a vehicle, the number of tires, and its speed. The dust is inhaled by humans and animals and deposited on the local vegetation, with the resulting pathways as illustrated above.

In both cases the cumulative impact of the radioactive waste will be determined by the amount of radiation contained in the waste, the number of vehicles and humans travelling on the road over years, proximity to residential or commercial areas, the amount of radiation migrating off road into streams or lakes or blowing onto agricultural land, and finally, the total potential dose to affected humans over time.

The radiation dose from a single truck travelling 40 miles per hour on a dirt road in rural New York State may appear to be insignificant, but the cumulative dose from 30 to 40 years of trucks could very easily be significant and needs to be rigorously calculated. Although there is considerable concern for the general population, exposed populations also include those most vulnerable; the old, the young and the ill.

Importantly, the type of radioactive material found in the Marcellus Shale and brought to the surface by horizontal hydrofracking is the type that is particularly long-lived, and could easily bio-accumulate over time and deliver a dangerous radiation dose to potentially millions of people long after the drilling is over.

Under the linear-no threshold hypothesis used in radiation protection, the goal is to limit the total radiation dose to large populations because of the increased probability of health effects. In the current case, the uncontrolled release of hazardous waste could result in the exposure of millions of people over decades.

Moreover, this scenario does not include any analysis of exposures to other hazardous chemicals used in the fracking process, which could have an unknown synergistic effect on the population.

SUMMARY CONCLUSIONS

1. Radioactive materials and chemical wastes do not just go away when they are released into the environment. They remain active and potentially lethal, and can show up years later in unexpected places. They bio-accumulate in the food chain, eventually reaching humans. Under the proposal for horizontal hydrofracking in New York State, there are insufficient precautions for monitoring potential pathways or to even know what is being released into the environment.

2. The NYS DEC has not proposed sufficient regulations for tracking radioactive waste from horizontal hydrofracking. By way of comparison, the nuclear industry has to rigorously account for all releases of radioactivity. No radioactive material leaves a nuclear facility without being carefully tracked to its safe final destination. Neither New York State nor the Nuclear Regulatory Commission would permit a nuclear power plant to handle radioactive material in this manner. (It is important to note that tracking of radioactive materials cannot be accomplished retrospectively; accurate accounting *must* be incorporated from the very beginning to ensure public safety.)

3. RESRAD was made precisely for situations like this, but it must be used properly to produce valid conclusions. Picking and choosing isolated scenarios and ignoring downstream exposures, as was done in the Report, is not a proper use of RESRAD and renders the conclusions invalid. All of the potential pathways over a span of decades as the hazardous material accumulates and the public's body burden build up must be considered to produce a valid RESRAD conclusion. This applies to both radioactive and chemical waste.

4. While this statement deals only with the radioactivity of waste produced by horizontal hydrofracking, the same principles of exposure pathways must be taken into account for all of the toxic chemicals used in the process. The EPA Pavillion Report demonstrates that there are hazardous chemicals in fracking fluid, and a recent review of the EPA report confirmed that it was valid.

E. Ivan White
October, 2012

This report was edited for public release by Grassroots Environmental Education, a non-profit organization.

Summary Report

Human Health Risks and Exposure Pathways of Proposed Horizontal Hydrofracking in New York State

As presented in a meeting with officials from the New York State Department of Environmental Conservation and the New York State Department of Health Albany, N.Y. - October 9, 2012

Participants included David Brown, ScD, public health toxicologist, Southwest Pennsylvania Environmental Health Project; David O. Carpenter, MD, Director of the Institute for Health and the Environment, University at Albany; Ron Bishop, PhD, Department of Chemistry, SUNY Oneonta; and Sheila Bushkin, MD, MPH, Public Health and Preventive Medicine consultant

This report was prepared by Grassroots Environmental Education, a non-profit organization and convener of the meeting.

This document is not intended to be, and should not be construed as, a comprehensive review of all possible public health consequences of gas drilling and fracking operations in New York State, nor are the accompanying citations exhaustive of the available scientific literature

Summary Report

Human Health Risks and Exposure Pathways of Proposed Horizontal Hydrofracking in New York State

1. Horizontal hydrofracking in New York's Marcellus Shale will bring to the surface significant amounts of radioactive wastewater (in the form of both flowback fluid and production brine that flows out of wells during gas production). Levels of Naturally Occurring Radioactive Material ("NORM") are generally higher in the Marcellus Shale than in other shale formations where hydrofracking has been conducted.[1] The extended length of horizontal wells through the Marcellus Shale increases exposure to NORM and consequently increases radiation levels of resulting wastewater.[2] Levels of total radium in the wastewater from eleven existing vertical gas wells in New York averaged 8,433 pCi/l.[3] This figure exceeds by more than 1,000-fold the EPA's maximum contaminant level for drinking water (5 pCi/l for combined R-226 and R-228).[4] Federal law requires only infrequent testing for radioactivity in public drinking water systems. If radioactive pollutants were to contaminate public water supplies, discovery of the problem prior to widespread human consumption is unlikely.[5] Exposure to radium can result in anemia, cataracts, cancer (especially bone cancer), and death.[6]

Pathway: direct exposure of workers handling contaminated equipment and water
Pathway: spills or leaks >public or private water supplies > human ingestion
Pathway: spills or leaks > streams or ponds > livestock > human ingestion
Pathway: spills or leaks > streams or ponds > agricultural use > human ingestion

2. Processing radioactive, chemical-laden wastewater through water treatment plants will increase contaminant loads of downstream surface waters. Publicly owned treatment works (POTWs) typically discharge effluent into nearby rivers, lakes, or bays.[7] Assuming the challenges of reducing radiation and

[1] Rowan, E L., Engle, M A., Kirby, C S , and Kraemer, T F , 2011, Radium content of oil- and gas-field produced waters in the northern Appalachian Basin (USA)—Summary and discussion of data U S Geological Survey Scientific Investigations Report 2011–5135
[2] Personal communication with Elisabeth Rowan, author of the USGS study
[3] Rowan, E L , Engle, M A., Kirby, C S , and Kraemer, T F , 2011, Radium content of oil- and gas-field produced waters in the northern Appalachian Basin (USA)—Summary and discussion of data U S Geological Survey Scientific Investigations Report 2011–5135, p 27
[4] http //water epa gov/lawsregs/rulesregs/sdwa/radionuclides/basicinformation cfm
[5] Environmental Working Group and Physicians, Scientists and Engineers for Healthy Energy, "Ten Problems with New York's Shale Gas Drilling Plan," 13 June 2010
[6] http //www atsdr cdc gov/toxprofiles/tb144 pdf
[7] http //www epa gov/npdes/pubs/pretreatment_program_intro_2011 pdf

chemical contaminants to acceptable levels can be overcome, the resulting discharge of large amounts of effluent barely meeting attainment standards will increase ambient contaminant levels, affecting aquatic life and eventually the food chain. EPA has announced plans to issue standards for wastewater from hydrofracking in 2014.[8] High bromide levels in fracking wastewater are especially problematic since they can react during water treatment to form brominated trihalomethanes, which are definitively linked to bladder and colon cancers and suspected to play a role in birth defects.[9]

Pathway: discharge > marine animals > food chain > human ingestion
Pathway: discharge > chlorination > downstream use for drinking water > human ingestion of carcinogenic disinfection byproducts

3. Radioactive sludge from drilling sites or POTWs will contaminate landfills. New York State permits disposal of radioactive drill cuttings and mud ("sludge") in solid waste landfills.[10] Disposal of the radioactive sludge will result in contamination of the disposal site for thousands of years (the half-life of radium-226 is 1600 years).[11] All landfill membranes fail over time,[12] and leaching or flooding can result in contamination of nearby ponds, streams, or groundwater.[13] Radium-226 emits gamma radiation, which can travel long distances through air, thus raising risks for cancer in surrounding communities. [14]

Pathway: landfill > leakage or runoff > streams or ponds > livestock > human ingestion
Pathway: landfill > leakage or runoff > streams or ponds > agriculture > human ingestion
Pathway: landfill > leakage > drinking water contamination > human ingestion
Pathway: landfill > radium exposure > air > human inhalation

4. Vehicles transporting radioactive chemical-laden waste (liquid or solid) increase the risk of human exposure and/or contamination of the environment in the event of accidents. Trucks carrying wastewater to processing plants or recycling facilities, or carrying sludge to landfills pose a potential threat in the event of accidents. Unlike within the nuclear energy industry, the gas industry is exempt from tracking vehicles carrying radioactive waste. Vehicles carry no warning signs or instructions in the event of emergencies. Police and emergency

[8] http://www epa gov/hydraulicfracture/#wastewater
[9] Boorman GA, Drinking water disinfection byproducts review and approach to toxicity evaluation, Environmental Health Perspectives 1999 Feb,107 Suppl 1.207-17.
[10] NYS DEC Revised Draft SGEIS 2011, Page 5-129
[11] http //www epa gov/radiation/radionuclides/radium html
[12] US EPA Solid Waste Disposal Criteria, August 30, 1988
[13] http://www epa gov/osw/nonhaz/municipal/landfill htm
[14] http://www atsdr cdc gov/toxprofiles/tb144 pdf

responders will not be aware of contents, increasing the chances of inadvertent exposures.

Pathway: direct exposure of drivers, passengers and emergency workers
Pathway: runoff into ponds or streams > livestock > human ingestion
Pathway: runoff into ponds or streams > agricultural use > human ingestion
Pathway: runoff into surface drinking water supplies > human ingestion

5. Spreading radioactive, chemical-laden wastewater on roads will expose drivers, passengers and pedestrians, and contaminate nearby surface water, land and agricultural fields. The most common use of radioactive wastewater from gas drilling is road spreading.[15] Radioactive particles may become airborne as trucks and passenger vehicles travel along roads, contaminating nearby fields, homes, schools and playgrounds. Rain or snowmelt can carry radiation off road surfaces where it can migrate into groundwater, or into nearby streams or ponds used for irrigation or as a water source for livestock.[16]

Pathway: discharge > migration into groundwater > human ingestion
Pathway: discharge > runoff into ponds or streams > livestock > human ingestion
Pathway: discharge > evaporation > airborne particles > human inhalation
Pathway: discharge > evaporation > airborne particles > ponds or streams > agricultural use > human ingestion
Pathway: discharge > evaporation > airborne particles > agricultural land > crops > human ingestion

6. Storage of radioactive, chemical-laden wastewater in closed containment tanks can result in groundwater and surface water contamination. Closed containment tanks sometimes used for storage of wastewater can corrode over time, resulting in leaks, and may overflow or rupture if they exceed capacity.[17] Leachate from landfills is a frequent cause of groundwater contamination.

Pathway: leakage or spill > migration into groundwater > human ingestion
Pathway: leakage or spill > runoff into ponds or streams > livestock > human ingestion
Pathway: leakage or spill > runoff into ponds or streams > agricultural use > human ingestion

[15] NYS DEC "An investigation of Naturally Occurring Radioactive Materials (NORM) in Oil and Gas Wells in New York State," P 32
[16] "Hazardous Waste from Horizontal Hydrofracking," Report of E Ivan White to DOH and DEC, October 2012
[17] http //www epa gov/oust/fsprevnt htm

7. Natural gas from Marcellus shale contains high levels of radon. The uranium- and thorium-containing shale formations from which natural gas is extracted continuously emit radon. This radon mixes with and stays in the gas as it is transported, via pipeline, from wellheads to homes. Whenever natural gas is burned, radon and its decay products are released into indoor air and can be inhaled.[18] According to the US Geological Survey, radon-222 levels in gas samples from the Marcellus region in Pennsylvania ranged from 1 to 79 pCi/L with a median of 32 pCi/L.[19] This figure is eight-fold higher than the EPA threshold for remediation of radon in indoor air (4 pCi/L).[20] Radon exposure is the second-leading cause of lung cancer in the United States and the leading cause of lung cancer among non-smokers.[21] Moreover, the breakdown products of radon include lead, which can settle onto interior surfaces. Lead is a neurological poison with no safe threshold level of exposure. Low levels of lead exposure are associated with cognitive deficits in children and increased blood pressure in adults. Lead is a probable human carcinogen.[22]

Pathway: radon exposure of workers at drill sites
Pathway: consumer use > human inhalation
Pathway: consumer use > breakdown products > lead exposure in homes > human ingestion (hand-to-mouth behavior of children)

8. Use of silica in hydrofracking operations exposes workers—and, possibly, proximate neighbors—to respirable crystalline silica. Hydraulic fracturing sand is 99% silica.[23] Breathing silica can cause silicosis, a progressive, incurable lung disease that reduces the lungs' ability to take in oxygen and which contributes to disability and risk of premature death.[24] Silica dust is also a known cause of lung cancer and a suspected contributor to autoimmune diseases, chronic obstructive pulmonary disease and chronic kidney disease.[25] The National Institute for Occupational Safety and Health has found that worker exposure to crystalline silica during fracking operations cannot be adequately mitigated with personal respiratory protection.[26]

Pathway: handling silica > direct worker exposure
Pathway: dust from handling silica > airborne particles > air currents > human inhalation among residents living near fracking operations

[18] U S Centers for Disease Control, Agency for Toxic Substances & Disease Registry, Case Studies in Environmental Medicine, Radon Toxicity, June 1, 2012.
[19] Rowan, E.L , and Kraemer, T F , 2012, Radon-222 Content of natural gas samples from Upper and Middle Devonian sandstone and shale reservoirs in Pennsylvania Preliminary data U S Geological Survey Open-File Report 2012–1159, P. 6
[20] Ibid, P 4
[21] http //www epa gov/radon/healthrisks html
[22] http://www atsdr cdc gov/toxprofiles/tp13 pdf
[23] NIOSH [1986] Occupational respiratory diseases Cincinnati, OH U S Department of Health and Human Services, Public Health Service, Centers for Disease Control, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No 86-102
[24] http //www osha gov/dts/hazardalerts/hydraulic_frac_hazard_alert.html
[25] NIOSH Hazard Review, Health Effects of Occupational Exposure to Respirable Crystalline Silica National Toxicology Program [2012] Report on carcinogens 12th ed U S Department of Health and Human Services, Public Health Service
[26] E Esswein et al , Worker exposure to crystalline silica during hydraulic fracturing, NIOSH, May 23, 2012,

9. On-site diesel-powered machinery (trucks, compressors, pumps, generators) contaminates proximate air and contributes to the formation of ground-level ozone (smog) that contaminates regional air. Diesel exhaust is composed of vapors, gases, and fine particles emitted by diesel-fueled compression-ignition engines.[27] Exhaust from large numbers of trucks and on-site machinery at fracking sites contributes to the increased production of ground-level ozone. Exposure to diesel exhaust and smog is a known cause of asthma in children and lung cancer in adults. In addition, these air pollutants are linked to bladder and breast cancers, stroke, heart attack, cognitive decline and premature death. In pregnant women so exposed, these air pollutants are linked to preterm birth and lowered birth weight.[28]

Pathway: direct worker exposure
Pathway: airborne particles > humans in proximity to drilling operations
Pathway: airborne particles > prevailing winds > additional humans

10. Flaring operations contaminate air with hazardous air pollutants. Flaring (the practice of burning off the initial flow of natural gas from a new well) releases hydrogen sulfide, methane and BETEX chemicals (benzene, toluene, ethylbenzene, and xylene) into the air.[29] Because many of these compounds are known to cause cancer and other serious health problems, the EPA has banned flaring, but the new rule will not go into effect until 2015.[30] The process also releases radon, a known cause of lung cancer.[31]

Pathway: direct worker exposure
Pathway: airborne particles > humans in proximity to drilling operations
Pathway: airborne particles > prevailing winds > additional humans

11. Diesel transport vehicles contaminate air in rural communities. An average gas well, with multistage fracturing, can require 320 to 1,365 truck loads to transport the water, chemicals, sand, and other equipment—including heavy machinery such as bulldozers and graders—needed for drilling and fracturing. This increased traffic creates a risk to air quality as engine exhaust that contains air pollutants such as nitrogen oxides and particulate matter are released into the atmosphere.[32] In many areas of New York where drilling is proposed, homes and

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[27] Pandva RJ, Solomon G, Kinner A, Balmes JR, Diesel exhaust and asthma hypotheses and molecular mechanisms of action, Environmental Health Perspectives, 2002 Feb 110 Suppl 1·103-12

[28] American Lung Association, "Health Effects of Ozone and Particle Pollution," *State of the Air, 2011*, M C Power et al , "Traffic-related Air Pollution and Cognitive Function in a Cohort of Older Men," *Environmental Health Perspectives* 119 (2011) 682-87, U S Centers for Disease Control. *Summary Health Statistics for U S Children National Health Interview Survey*, 2006 and "Premature Birth," 2010

[29] http //www.hsph harvard.edu/research/niehs/files/penning_marcellusshale pdf

[30] http //www epa gov/airquality/oilandgas/pdfs/20120417presentation pdf

[31] http.//www atsdr cdc gov/toxprofiles/tp145 pdf

[32] OIL AND GAS Information on Shale Resources, Development, and Environmental and Public Health Risks, Report to

businesses are located close to roadways, increasing potential exposures for inhabitants.

Pathway: diesel exhaust > air particles > human inhalation

12. Mixtures of hydrofracking chemicals, interaction of chemicals with NORM and reaction of chemicals with natural materials under heat and pressure may cause unknown synergistic reactions resulting in altered chemical compounds. The ability of synthetic chemicals to spontaneously form new compounds when exposed to sunlight, water, air, radioactive elements or other natural chemical catalysts was first identified in 1943 by engineers at the Rocky Mountain Arsenal near Denver, CO, when 2-4,D - type compounds were discovered in the arsenal's holding ponds.[33] Synergistic catalysis is a new field of chemical study involving the simultaneous action of two chemical catalysts to create a new chemical bond.[34] Potential health risks of resulting chemicals are unknown.

13. Well casing/cement failures will contaminate drinking water supplies. All well casings/cement systems (structures for isolating wells from adjacent areas) will fail over time. Such failures provide migration routes for fracking fluids, methane, and other hydrocrabons, and return fluids.[35] Thousands of previously-drilled oil or gas wells (abandoned, plugged, or operating) penetrate the Marcellus shale in target regions.[36] If gas wells establish connections with natural fractures, faults, or improperly plugged, dry or abandoned wells, a pathway for gas or contaminants to migrate underground would likely be created, posing a risk to water quality.[37]

Pathway: hydrofracking chemicals > migration up through secondary wells > groundwater > human ingestion **Pathway:** hydrofracking chemicals > migration through failed casings > groundwater > human ingestion **Pathway:** hydrofracking chemicals > leach into groundwater > human ingestion

Congressional Requesters by the U. S Government Accounting Office, September 2012, p 33

[33] Walker TR, Ground-Water Contamination In The Rocky Mountain Arsenal Area, Denver, Colorado, Bulletin of the Geological Society of America, June 1960

[34] Allen AE and MacMillan DWC, Synergistic catalysis A powerful synthetic strategy for new reaction development, Chem Sci, 2012, 3, 633

[35] Watson TL and Bachu S, Evaluation of the Potential for Gas and CO2 Leakage Along Wellbores, Society of Petroleum Engineers, Drilling & Completion, March 2009, p 115

[36] Bishop, RE, History of Oil and Gas Well Abandonment in New York, Digest of Independent Science on Hydrofracking, July 2012

[37] OIL AND GAS Information on Shale Resources, Development, and Environmental and Public Health Risks, Report to Congressional Requesters by the U. S Government Accounting Office, September 2012, p 46

14. Health impacts from hydrofracking will disproportionately burden sensitive populations. Children, the elderly and those with compromised immune systems will be more adversely affected by all exposures.[38] Asthmatics and those with cardio-pulmonary disease will be more adversely affected by air pollution.[39] Children and unborn fetuses will be more adversely affected by exposure to endocrine-disrupting chemicals frequently used in hydrofracking fluids.[40] Individuals on medication may experience interactions from exposure to hydrofracking chemicals, silica dust or contaminated water.[41]

Pathway: air contamination > human inhalation
Pathway: food chain contamination > human ingestion
Pathway: drinking water contamination > human ingestion[42]

15. Multiple forms of stress are associated with hydrofracking operations, and these have real and significant health consequences. Increased noise, traffic, community turmoil, concern about water and air contamination, economic boom and bust, fear of radiation exposure, loss of rental housing for low-income families,[43] and the near-perpetual process of hydrofracking can adversely impact the health of local populations. Stress-related symptoms include headaches, nausea, chest pain, insomnia, dry mouth, agitation, abdominal pain, depression, anxiety symptoms, acute stress disorder and post traumatic stress disorder. Traffic-related noise pollution alone raises risk of heart attack and high blood pressure in adults and is associated with cognitive deficits in children.[44]

16. Health impacts related to hydrofracking will significantly increase health care costs in New York—as it has in other states.[45] Costs related to acute effects from hydrofracking operations include doctor visits, laboratory tests, medications, emergency room visits and hospitalizations due to acute medical disorders, acute exacerbations of existing chronic diseases (asthma, chronic obstructive lung disease [COPD], congestive heart disease), exposure to radioactive materials, ingestion of contaminated water, inhalation of contaminated air, traffic accidents involving heavy-duty trucks, and trauma from on-site accidents in a highly dangerous industrial process. Specific areas of concern include but are not limited to:

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[38] http://www epa.gov/region7/air/quality/pmhealth htm
[39] http //www epa gov/airnow/asthma-flyer pdf
[40] Diamanti-Kandarakis *et al*, Endocrine-Disrupting Chemicals An Endocrine Society Scientific Statement. Endocrine Reviews. June 2009
[41] Audouze K, Juncker AS, Roque FJSSA, Krysiak-Baltyn K, Weinhold N, et al (2010) Deciphering Diseases and Biological Targets for Environmental Chemicals using Toxicogenomics Networks PLoS Comput Biol 6(5). e1000788 doi 10 1371/journal pcbi 1000788
[42] Among women of childbearing age. the pathway progresses to transplacental exposure and further exposure through breast milk during lactation.
[43] J Gever, "Special Report Gas Drilling Brings Stress, Social Ills " *Medpage Today*, Dec. 5, 2011
[44] World Health Organization, *Burden of Disease from Environmental Noise*, 2011
[45] Environment America Research and Policy Center, *The Costs of Fracking*, Fall 2012

- **Neurological systems:** developmental disorders involving cognitive, behavioral and psychosocial disorders among children
- **Endocrine disruptors:** affecting hormonal and metabolic processes, leading to infertility, early puberty and other reproductive issues affecting both men and women [46] [47]
- **Immuno-suppressants:** decreasing the immunological defenses of the general population leading to greater vulnerability to existing and emerging infectious agents
- **Mutagens and carcinogens:** leading to a greater incidence of all cancers especially among children, adolescents and young adults
- **Other chemicals** which do damage to the renal systems, gastrointestinal system and cardiac and respiratory systems, as well as skin, eyes, ears, and nasopharyngeal tissues [48]

Quantifiable costs of chronic disease such as asthma, cancer, or heart disease resulting from exposures related to hydrofracking must be calculated, as has already been done for coal. As of 2002, the total annual cost associated with exposure to environmental chemicals for children alone was $54.9 billion.[49]

17. Many health impacts related to hydrofracking may not be evident for years. Medical conditions with longer latency periods such as asthma, cancer and heart disease resulting from exposure to chemicals in air and water will present themselves over time. The developmental effects of endocrine disruption on developing fetuses or small children may not be evident for years. Chromosome damage from exposure to radiation may impact future generations. The full extent of risks associated with shale oil and gas development is unknown, in part, because studies do not generally take into account potential long term, cumulative effects.[50]

18. Local medical professionals in areas where hydrofracking is contemplated are ill equipped to recognize or treat symptoms related to radiation exposures or exposures to hazardous chemicals in water or air. Recognizing the fingerprints of unusual chemical exposures and knowing the possible treatment options is not within the purview of conventional medicine. Diagnosing and treating radiation-related medical conditions is a specialty.

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[46] Colborn T, Kwiatkowski C, Schultz K, Bachran M, (2011) Spreadsheet of products, chemicals and their health effects (excel), TEDX, The Endocrine Disruption Exchange

[47] Finkel ML, Law, A, The Rush to Drill for Natural Gas A Public Health Cautionary Tale (2011), Am J Public Health, Vol 101(5).784-785 (effects of Endocrine Disruptors)

[48] Colborn T, Kwiatkowski C, Schultz K, Bachran M, (2011) Natural Gas Operations from a Public Health Perspective, Human and Ecological Risk Assessment *An International Journal*, 17 5, 1039101056

[49] Landrigan PJ, Schechter CB, Lipton JM, Fahs MC, Schwartz J Environmental Pollutants and Disease in American Children Estimates of Morbidity, Mortality, and Costs for Lead Poisoning, Asthma, Cancer, and Developmental Disabilities, Environmental Health Perspectives, 110 7 July 2002

[50] OIL AND GAS: Information on Shale Resources, Development, and Environmental and Public Health Risks, Report to Congressional Requesters by the U S Government Accounting Office, September 2012, p 32

19. Non-disclosure agreements may obstruct efforts of public health officials to obtain accurate data in areas where hydrofracking is currently taking place. Non-disclosure agreements with private landowners and disclosure exemptions are preventing doctors from being able to effectively treat their patients and protect the public's health.[51] Non-disclosure agreements frequently forbid parties from revealing any information about personal health, air quality, water quality, or even the existence of the non-disclosure agreement itself.

20. Conflicts of interest may affect veracity of scientific findings. Many documents referenced in the DEC's rdSGEIS emanate directly from the oil and gas industry, from consultants paid by the oil and gas industry, or are the results of industry-sponsored academic studies.[52] Financial relationships can create conflicts of interest between researchers' obligations to abide by scientific and ethical principles and their desire for financial gain. Studies have found that industry-funded science can result in findings that benefit sponsors, poor study design, withholding of negative data from publication, and other problems.[53]

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[51] Statement of Jerome Paulson, MD, Director of Mid-Atlantic Center for Children's Health and the Environment, Washington DC, quoted in "Silencing Communities How the Fracking Industry Keeps Its Secrets" Truthout, May 2012
[52] NYS DEC Revised Draft SGEIS 2011, Bibliography
[53] Johnson J, Conflicts of Interest in Biomedical Research, The Hastings Center, http://www thehastingscenter org/Publications/BriefingBook/Detail aspx?id=2156

17

TO: Sen. Ed Meyer and Rep. Linda Gentile, Chairmen,
and Members of the Committee on the Environment
RE: Public Hearing February 28

HB5307
HB5308
SB67

Rivers Alliance of Connecticut is the statewide, non-profit coalition of river organizations, individuals, and businesses formed to protect and enhance Connecticut's waters by promoting sound water policies, uniting and strengthening the state's many river groups, and educating the public about the importance of water stewardship.

Dear Sen. Meyer, Rep. Gentile, and Members of the Environment Committee:

FRACKING WASTE: Rivers Alliance writes in support of RB 237, AAC Prohibiting the Storage or Disposal of Fracking Waste in Connecticut. The intention seems to be to place an outright ban on importing fracking waste into this state. We support at this time a ban, as opposed to relying on regulation, because as yet the components and toxic potential of the return water and process water in fracking for natural gas are not fully identified or understood. Existing treatments are limited and disposal methods raise numerous concerns for health and the environment. Moreover, Connecticut's regulatory resources are already overwhelmed by contamination of water and soil. Even if there were a safe way to manage fracking waste, we do not have the enforcement capability to ensure safe management. Before we consider any waste import, we need to make more progress on cleaning up brownfields, superfund sites, contaminated aquifers, and so forth. We are a small, densely populated state. In zoning law, the parallel situation would be a hardship based on the character of the land. We cannot afford to take in more waste without endangering the health of residents.

We do recommend, however, that the committee consider incorporating precise definitions into the bill, and also review whether the definition by reference to 40 CR Part 261.4 (b)(5) is adequately focused. For example, I am not sure if the present language covers transportation of fracking waste (it probably should); or whether it covers waste associated with geothermal development (probably not a good idea).

Finally, industry has set up a web site (www.FracFocus.org) that is supposed to provide transparency with respect to the chemicals used. Reportedly, there is draft legislation prepared by groups like ALEC to legitimize disposal of fracking waste on the grounds that, with this transparency, states will know what they need to do to protect their citizens. I did not find the site particularly user friendly or adequately informative. It might make a good starting point for

research in some cases. But posting is voluntary, relative quantities are not apparent, proprietary information is withheld, and so forth. There is a Harvard Law School study that is highly critical. The URL is
http://blogs.law.harvard.edu/environmentallawprogram/files/2013/04/4-23-2013-LEGAL-FRACTURES.pdf
There are also dozens of industry responses, if you are short of reading material.

HB 5308, AAC The Regulation of Fracking Waste is commendable in that it clarifies that DEEP has the authority to regulate the waste as hazardous; we support this clarification, but strongly believe that regulation alone in Connecticut at this time will not protect public health and the environment if fracking waste is imported here. We also feel that writing and implementing the regulation would put an excessive financial and general resource burden on the state.

MARINE OIL SPILLS. We do not support the language in HB 5307 relating to the use of booms to contain oil or petroleum spills. Booms are an established containment tool, and the state has a strong interest in protecting the Sound and upstream waters for recreation, fisheries, and wildlife. Contamination of the Sound is recognized as adverse to the state's economic interest. Reportedly, the reason for the proposal in this bill is a safety concern associated with the accumulation of vapor in the area of a flammable spill. If there is evidence of an unacceptable risk to responders and the community, we ask the committee to inquire what precautions are taken in other harbors. An uncontained spill would do serious harm.

BOTTLE BILL EXPANSION: We support RB 67. Beverage containers litter shorelines and water bodies. As someone who counts on Red Bull to survive public hearings, I cannot understand why there's no deposit-and-return on this beverage, but there is on Diet Coke. My town puts out receptacles for deposit containers, with the proceeds going to charity.

Thanks for your attention, and for your hard work on behalf of the environment. We'd be pleased to answer questions or help in any way.

Margaret Miner
Executive Director
rivers@riversalliance.org 203-788-5161 (mobile)
Litchfield CT 06759

Written Testimony of Carmen Abramson, Housatonic Valley 350
Before the Connecticut General Assembly Environment Committee

February 28, 2014

Concerning Senate Bill 237 - AN ACT PROHIBITING THE STORAGE OR DISPOSAL OF FRACKING WASTE IN CONNECTICUT

Dear protectors of my state,

Please support SB 237, the outright ban of fracking waste.

We have searched for years for a place to raise our children. Looked at the West Coast, all the sunshine states in the South and ultimately settled on Connecticut because of its idyllic, pristine forests and lakes.

In Connecticut is where we started our business. And where we found our dream home close to a beautiful lake. We are beyond thrilled of our life in this beautiful land. Until we heard that Connecticut is considering opening its roads and water treatment facilities to the toxic, radioactive materials of fracking waste. If this dangerous material is allowed to share my roads and if you decide that it's OK for us to take on this liability and the burden of hosting this toxic material in our backyards, our family will absolutely LEAVE this state for another safe haven.

Please reconsider your stand and **vote YES for the bill that will ban fracking waste in the state of Connecticut: SB 237.**

Thank you for listening.

Carmen Abramson
1 Hopkins Rd, Warren, CT 06777-1015

Connecticut Petroleum Council
A Division of API

Steven Guveyan
Executive Director

44 Capitol Avenue
Suite 103-B
Hartford, Connecticut 06106
Telephone 860-246-8846
Fax 860-246-6495
Email ctpetroleum@comcast.net
www.api.org

February 28, 2014

Testimony of Connecticut Petroleum Council in Opposition to SB-237
Ban on Storage or Disposal of Hydraulic Fracturing Waste

We express strong opposition to SB-237 which bans the storage and disposal of oil and gas wastes in Connecticut. Current DEEP rules already bar such disposal in Connecticut, so additional legislation is not necessary. A ban on storage means that fracking waste water could not be treated or recycled here, since it would first need to be at least temporarily stored here. We also oppose an overall ban/moratorium of any sort on hydraulic fracturing (HF). As you know, no hydraulic fracturing takes place in Connecticut because our state does not have oil and gas resources, unlike New York, Pennsylvania and Ohio.

The Connecticut Petroleum Council represents a wide range of companies heavily involved in hydraulic fracturing and related activities. Over 60% of the natural gas sold in the U.S. is produced via hydraulic fracturing, and that has greatly reduced the price of natural gas, and to a lesser extent, oil: In July 2008, natural gas hit a record high of $13.58 per MMBTU's; prices this week were about $5.50 per million BTU's, an enormous reduction directly attributable to the huge supply of hydraulically fractured natural gas. Those low prices benefit homeowners, municipalities, manufacturers and the state itself, not just for heating purposes, but because they also help reduce electricity costs (over 40% of the state's electricity is generated by natural gas). Oil produced in the U.S (much of it hydraulically fractured) continues to cost less ($102 per barrel) than non-hydraulically fractured imported Brent crude ($110 per barrel); thereby helping reduce the cost of gasoline and heating oil.

Increased use of natural gas encouraged by the state's newly passed Comprehensive Energy Strategy (CES) is environmentally beneficial. It will reduce sulfur, PM and mercury emissions, and reduce greenhouse gas emissions by 30% compared to oil and 45% compared to coal. It will also reduce imports of foreign fuel, as natural gas continues to displace oil in homes and manufacturing facilities, and coal and oil in electric generating units.

Reasons for Objections

CT DEEP regulations governing the underground injection well program already ban Class II Underground Injection Wells, which means that no oil or natural gas production waste products can be buried underground in Connecticut under any circumstances. (*See*: Sec. 22a-430-8). That rule, adopted in 1984, bans any type of underground injection well in the Class I, II, III or IV category. Fears of oil and gas wastes being "buried" here are unfounded.

Companies may want to enter the business of treating or recycling hydraulic fracturing waste or waste water in Connecticut if and when high-volume fracturing (HVHF) begins in New York, thereby opening a new line of business and potentially bringing jobs here. This bill prohibits that (because wastes cannot be "stored" here, which they would have to be before being treated), notwithstanding the governor's effort to bring new businesses to Connecticut. New waste treatment technologies are emerging frequently: (See Attachment #1 on emerging water treatment technologies, and Attachment #2 on new environmental approaches to HF).

Ban bills such as this one are a back-door attempt to ban the hydraulic fracturing process itself. Similar bills in other Northeast states have been urged by those who want no natural gas exploration or production whatsoever. If those bills were all adopted, there would be nowhere to treat HF waste, which means natural gas from the Marcellus Shale would be forever locked-in, unable to be produced, sold or consumed. (See Attachment #3, for an explanation of how HF works).

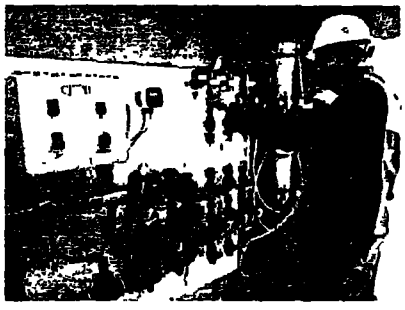
Conclusion

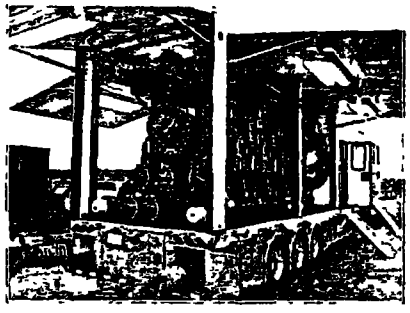
Natural gas and oil derived from shale are true game-changers---anchoring the energy revolution taking place in America today. President Obama said in his 2012 State-of-the-Union address that the U.S. had nearly a one-hundred year supply of natural gas, and that the country needs an all-out, all-of-the-above energy strategy that develops every available source of American energy. In 2013, in his State-of-the-Union speech, the President said that the natural gas boom has led to cleaner power and greater energy independence, and that his Administration will keep cutting red tape and speeding up new oil and gas permits. In 2014, the President said the all-of-the-above energy plan he announced in 2012 is working; it's not just the oil and natural gas production that's booming; that America is closer to energy independence than we've been in decades, and that one of the reasons why is natural gas.

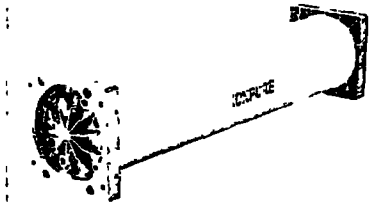
Shale gas currently is being produced in Pennsylvania, West Virginia and Ohio, and oil from shale in North Dakota is now making its way into the Northeast. Hydraulic fracturing has made the U.S. the world's #1 natural gas producer. These "shale plays" are putting downward pressure on natural gas prices nationwide, lowering our greenhouse gas emissions, improving our energy security by making us less reliant on foreign fuel, and reducing our trade deficit. The industry is adding many jobs---high paying jobs---which in turn improve the standard of living for many in the U.S., increase tax revenues to government and boost the economy.

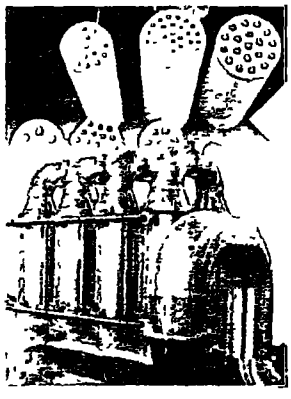
Let's not pass legislation that impedes this progress. Thank you for taking our testimony.

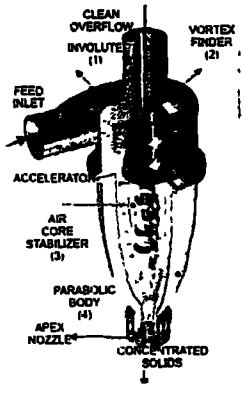
Treatment Technologies

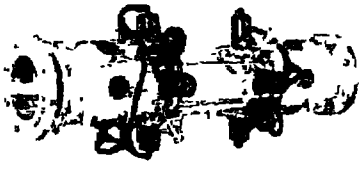










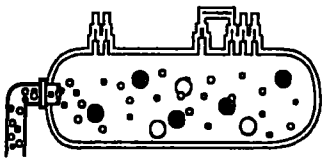


MVR Evaporator, RO, EC . and many more

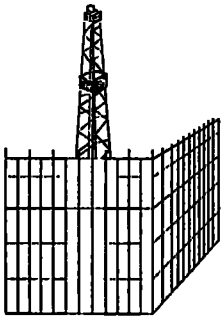
Sources· http.//www apachecorp com/index.aspx

The development of advanced hydraulic fracturing and horizontal drilling technologies has been accompanied by safe and responsible water management strategies, including the reuse of fluids produced during the fracturing phase of well development According to the Penn State Marcellus Center for Outreach and Research, during the first half of 2013 in the Marcellus shale play, 90 percent of the more than 14 million barrels of produced fluids from fracturing was reused. That represents a significant savings in the amount of new water needed for hydraulic fracturing elsewhere It illustrates industry's focus on environmental issues and efforts to reduce energy development's impacts on resources and communities

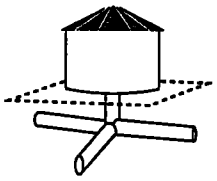
Promote Safe & Environmentally Friendly



Use of aboveground tanks for managing well fluids so that there is limited danger of well fluids getting into groundwater



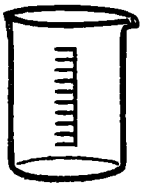
Sound control and surface management allows for safe drilling in close proximity to people



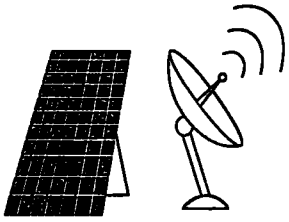
Centralized water management systems that remove trucks from roads

1) Closed loop drilling systems; all drilling fluid stored in steel tanks

2) Whole site liners

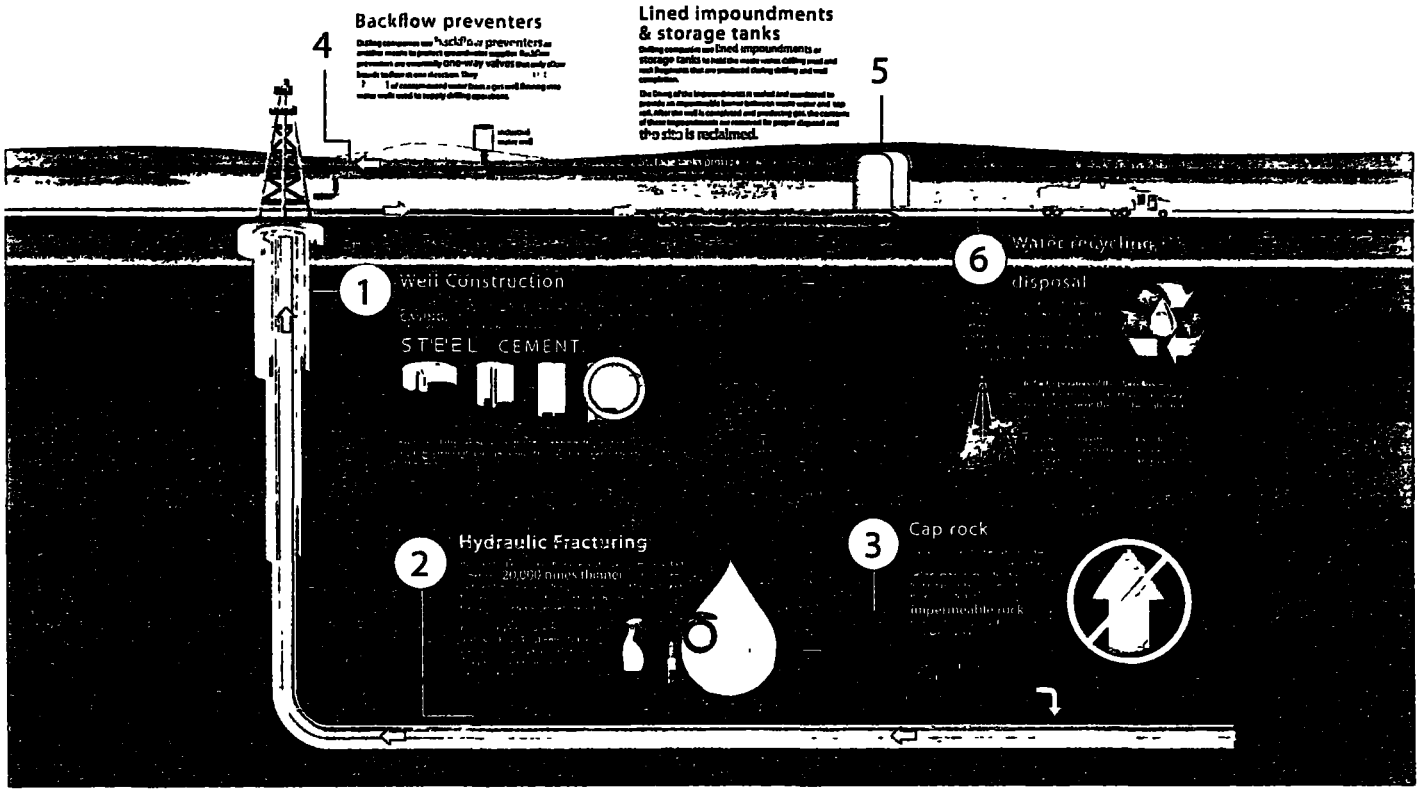


"Green" frac fluids (Example: Environmentally benign components)



Photovoltaic solar telemetry to transmit well date from remote locations to central office (reduces use of diesel fuels)

America's shale energy revolution is built on innovation that produced advanced hydraulic fracturing and horizontal drilling technologies and techniques And that innovation continues, working on ways to make fracking even safer for the surrounding environment. Safe and responsible drilling means site management – from multi-layer surface liners that protect the entire drilling area to closed-loop systems to maintain control of drilling fluids. Safe operating practices and water management are just two areas for which API has developed standards to protect the environment The shale energy surge also is spurring innovation· waterless hydraulic fracturing fluid, methods to decontaminate and recycle water used in fracking and more



Developing energy from shale (and other tight-rock formations) using hydraulic fracturing/horizontal drilling takes four to eight weeks – from preparing the site for development to production itself – after which the well can be in production for 20 to 40 years. A well can be a mile or more deep and thousands of feet below groundwater zones before gradually turning horizontal from vertical. The horizontal portion then can stretch more than 6,000 feet. A single well site (or pad) can accommodate a number of wells.

Steel pipe known as surface casing is cemented into place at the uppermost portion of a well to protect the groundwater. As the well is drilled deeper, additional casing is installed to isolate the formation(s) from which oil or natural gas is to be produced, further protecting groundwater from the producing formations in the well. There have been no confirmed cases of groundwater contamination from hydraulic fracturing itself in 1 million wells fracked over the past 60 years. Numerous protective measures are in place at well sites, including liners under well pads, rubber composite mats under rigs, storage tanks with secondary containment measures, and barriers to control any potential runoff

000626
FTR

Subject: S.B.237

From: deborah cady (ddcady3013@sbcglobal.net)

To: env.testimony@cga ct.gov;

Cc: ddcady3013@sbcglobal.net;

Date: Thursday, February 27, 2014 4:18 AM

Please protect our state from unforeseen mishap and support S.B.237, the bill that will ban from Connecticut the storage or disposal of Hydraulic Fracturing wastewater. We do not want to be a deep injection dump site for New York.

We don't understand what happens during the process of shooting toxic and hazardous fluid into the ground under high pressure, and we can't guarantee that the wastewater wont leak and pollute ground water or aquifers deep underground, tapped for drinking water in 100 years. The poisoning of our water supply will be irreversible.

Proponents of Natural Gas claim it is a clean energy source. It is not! It's drill pads are often dangerous to live near - just read "The List of the Harmed" which documents exposures to contaminated well water, and Methane gas, VOCs and hydrogen sulfide brought up by the fracturing process.

President Obama says Natural Gas is just a "bridge energy source" until renewable energy sources come on board. Not according to Lou Allstadt, former ExxonMobil executive, who cautions that we must "recognize that Methane emissions disqualify natural gas as a bridge fuel."

Please do not allow that there be a possibility of this waste harming Connecticut in any way.

Sincerely,

Deborah Cady
9D Ambassador Drive
Manchester, Ct. 06042

Ban Fracking Waste in CT, Support SB 237
Testimony to CT General Assembly Environment Committee
Jen Siskind, Local Coordinator, Food& Water Watch
Glastonbury, CT
February 28, 2014

Senator Meyer, Representative Gentile and members of the committee, I am here today to ask you to support Senate Bill 237 and to protect CT from the damaging impacts that toxic, radioactive fracking waste will have on our state and the health of its residents.

Chemicals found in fracking waste are extremely harmful to human health and to the environment. Many are known carcinogens, also suspected carcinogens, known endocrine distrupters and neurotoxins. Toxins in fracking waste also cause kidney, liver, soft tissue and respiratory damage and birth defects.

There are many chemicals used that the industry refuses to disclose. Health is put further at risk as the synergistic effects of combining multiple chemicals are not fully known, nor can it be evaluated while contents of fracking waste are kept secret. We do know that this secret, toxic cocktail has wiped out ecosystems in ponds where spills have occurred.

In addition to man-made chemicals, naturally occurring contaminants and heavy metals that were safely contained in the Earth's crust for millions of years mingle with fracking fluids and are brought to the surface. Toxic wastewater can contain numerous radioactive elements including barium, radon and radium. The safe level of radium-226 in drinking water is 5 pCi/L. Samples of flowback waste and production brine taken by NY State & the US Geological Survey varied widely, but repeatedly tested with radium 226 levels exceeding 10,000 pCi/L.

The unknown nature of fracking wastewater makes treatment, disposal and transportation very dangerous. Tanker trucks are the primary method of transporting fracking wastewater for treatment or disposal. I visit family members several times a year in Pennsylvania and can tell you first hand that the roads and highways there are now overwhelmed with trucks. There are times when driving that there are more industrial-sized trucks surrounding you than passenger cars. The exhaust and ozone problems are extreme, as is the noise from braking systems. This industry operates 24/7, so trucks are clogging the roads day and night.

I've shared with you today some photos of waste water trucks on location at a treatment facility in my family's town. Please examine them carefully and note the puddles, streaks and dark staining near the hose lines and in the vicinity where these trucks are unloading liquid waste. Spillage appears to be an issue under normal operations, potentially putting workers at risk.

Accidents from trucks carrying toxic, radioactive fracking waste would also cause serious challenges for first-responders and Haz-Mat teams called in to clean a spill because they would not know what chemicals were initially contained in the toxic mix or levels of radioactivity. Even if material safety data sheets are available, studies have shown these sheets to be deficient and inadequate in providing complete information. Sampling of truck contents could not adequately assure each load contains safe levels of radiation. Only monitoring every load would do this. DEEP does not have the resources and a third party system would be a weak link, and also require monitoring.

More broadly, the local air quality impact over time would be measureable hundreds of feet down the plume from a spill. Over hours or days, individuals living nearby may breathe in contaminants from the plume. It's not possible to attribute the cause of a given health outcome to such an exposure, but there is no doubt that the exposure history could contribute to the molecular and cellular conditions of diverse diseases.

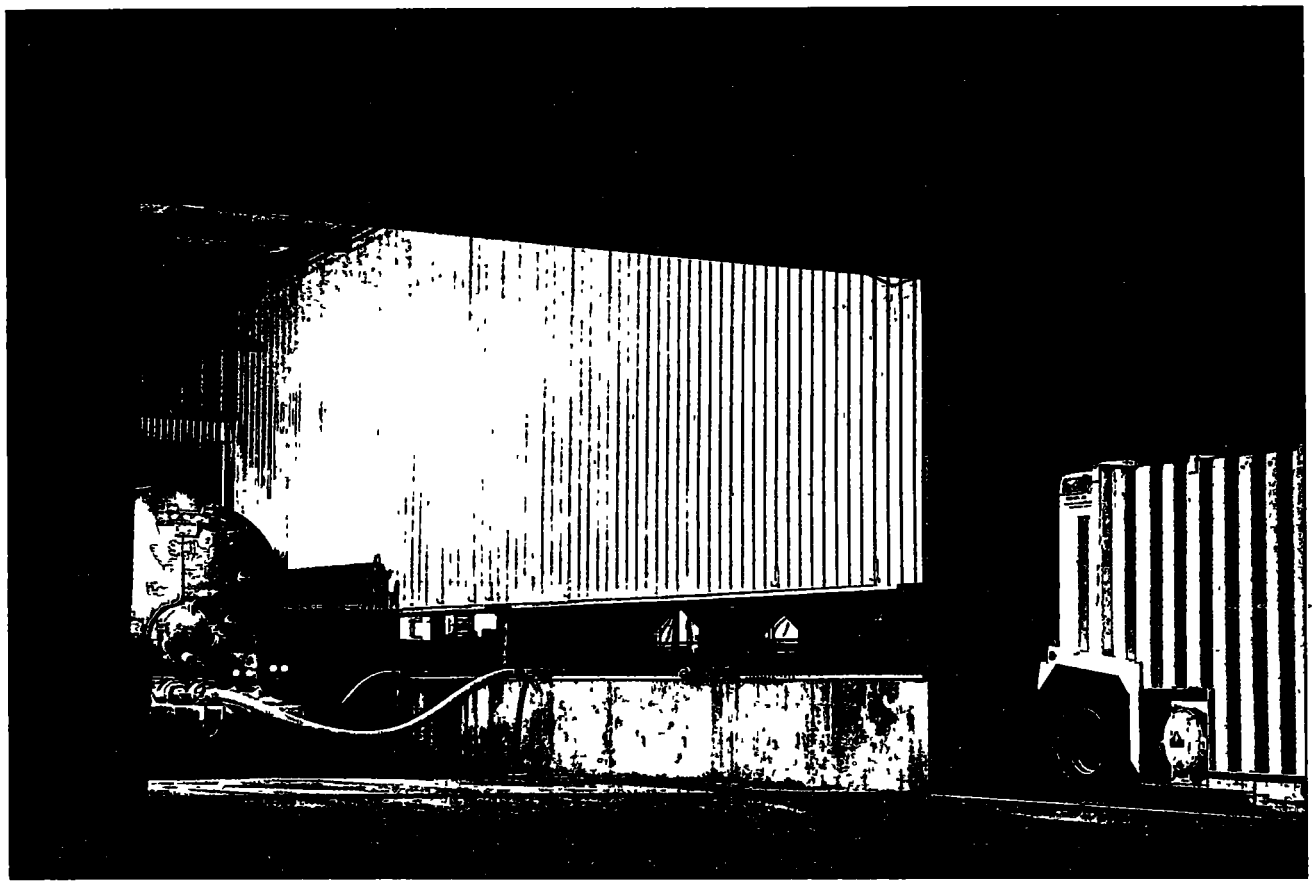
In a tanker accident, these chemicals could spill into storm sewers or run directly into waterways or agricultural areas, further jeopardizing public health and the environment. Accidents and spills are an inevitable consequence of managing a waste stream as vast as that produced by hydrofracking. In discussing exposure to radioactivity, Radisav R. Vidic, a professor of civil and environmental engineering at the University of Pittsburgh plainly states, "The potential pathway is an accident, a spill or a leak...That's something that happens...there is nothing you can do about it."

When a fracking wastewater truck makes it to a wastewater treatment facility, that facility will not know what they are dealing with from one batch of fracking wastewater to the next. This will make it virtually impossible for facilities to know if they are adequately treating wastewater before discharging it.

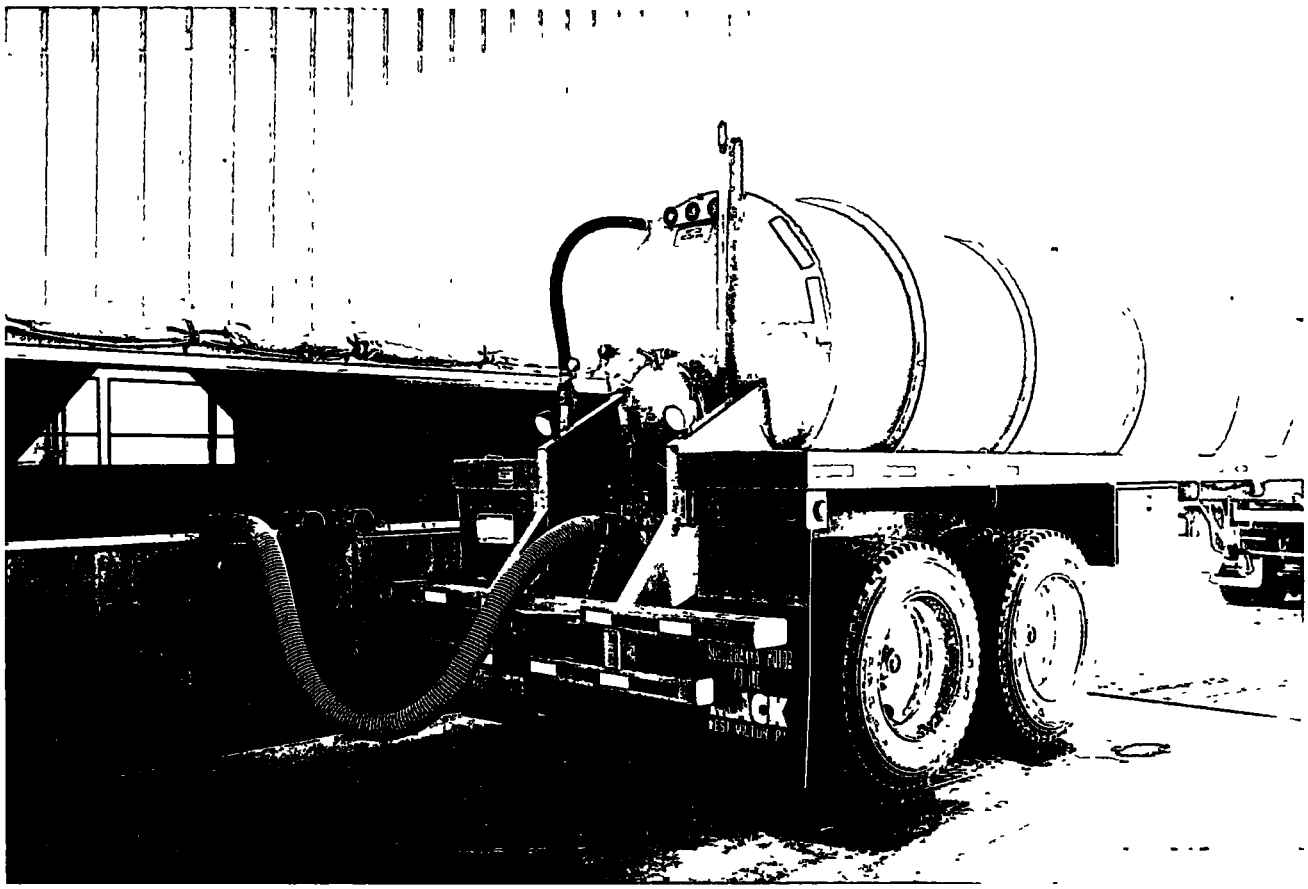
Adequate treatment has not been occurring and that facilities are not equipped to fully mitigate bromides and radioactivity. Studies downstream of treatment plants in both the Allegany River and Blacklick Creek show significant contamination. Levels of radioactivity found in Blacklick Creek are extremely high, qualifying as a radioactive waste site. Quotes from Duke University researchers who completed the study, Drs. Vengosh and Jackson, include, "There's the danger of bioaccumulation of the radium. It will eventually end up in fish and that is a biological danger." "Years of disposal of...wastewater with high radioactivity has created potential environmental risks for thousands of years to come." "Once you have a release of fracking fluid into the environment, you end up with a radioactive legacy." When asked if local citizens should be concerned, Dr. Jackson replied, "If I lived there, I would be concerned about wastewater and wastewater products. The public should be concerned...anything they can do to reduce the amount of public wastewater exposure, they should be doing."

Here in CT, we can reduce our exposure by prohibiting the disposal and storage of toxic, radioactive fracking waste. The issues of shale gas and the by-products of drilling are separate & distinct, and there is no requirement that customers of shale gas accept waste products. On behalf of the more than 14,000 Food & Water Watch members in CT, I ask you to please pass SB 237 out of this committee, and as individual legislators, please co-sponsor this bill and work within your caucus to assure its successful passage this session. Thank you.

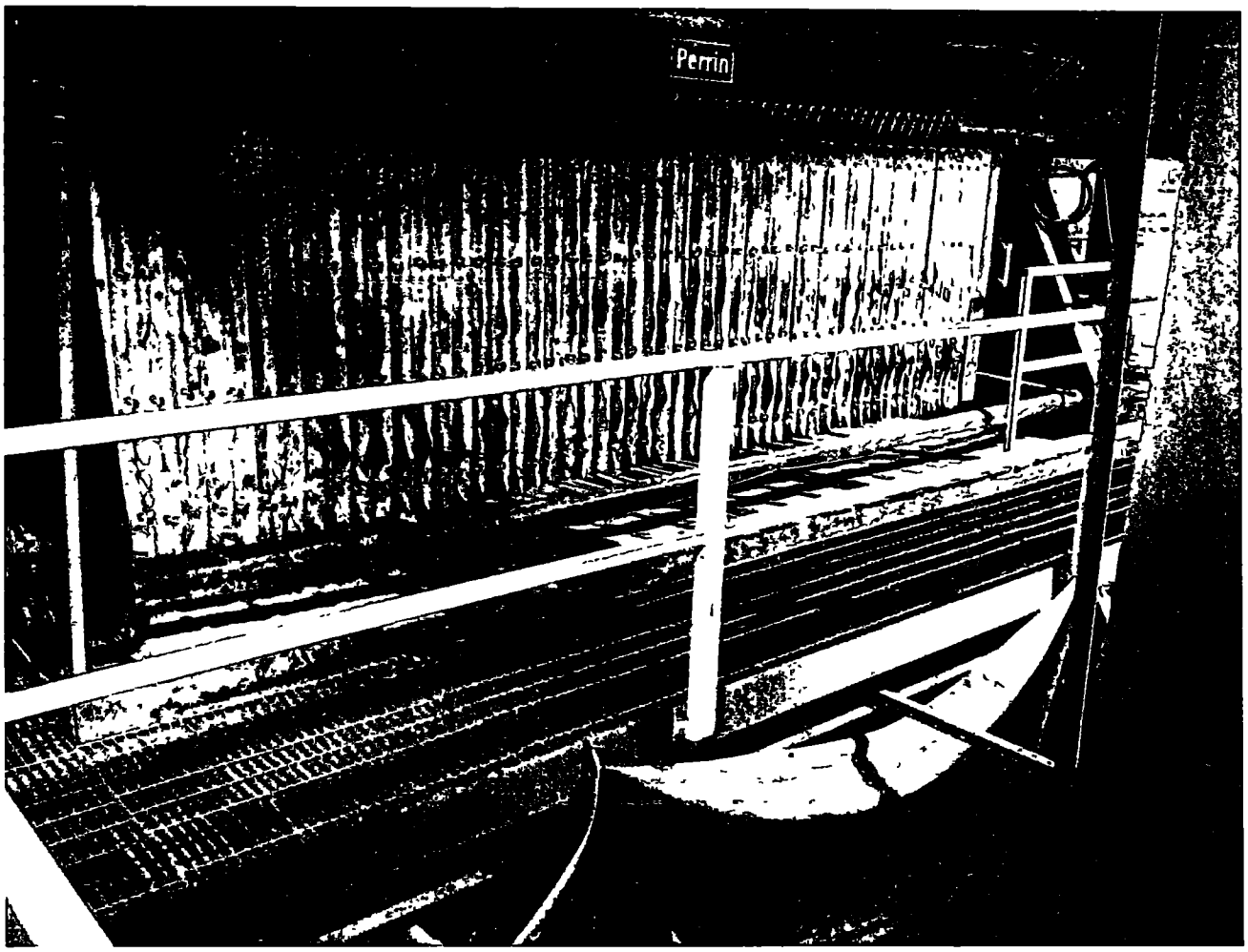
(Photos next 5 pages)



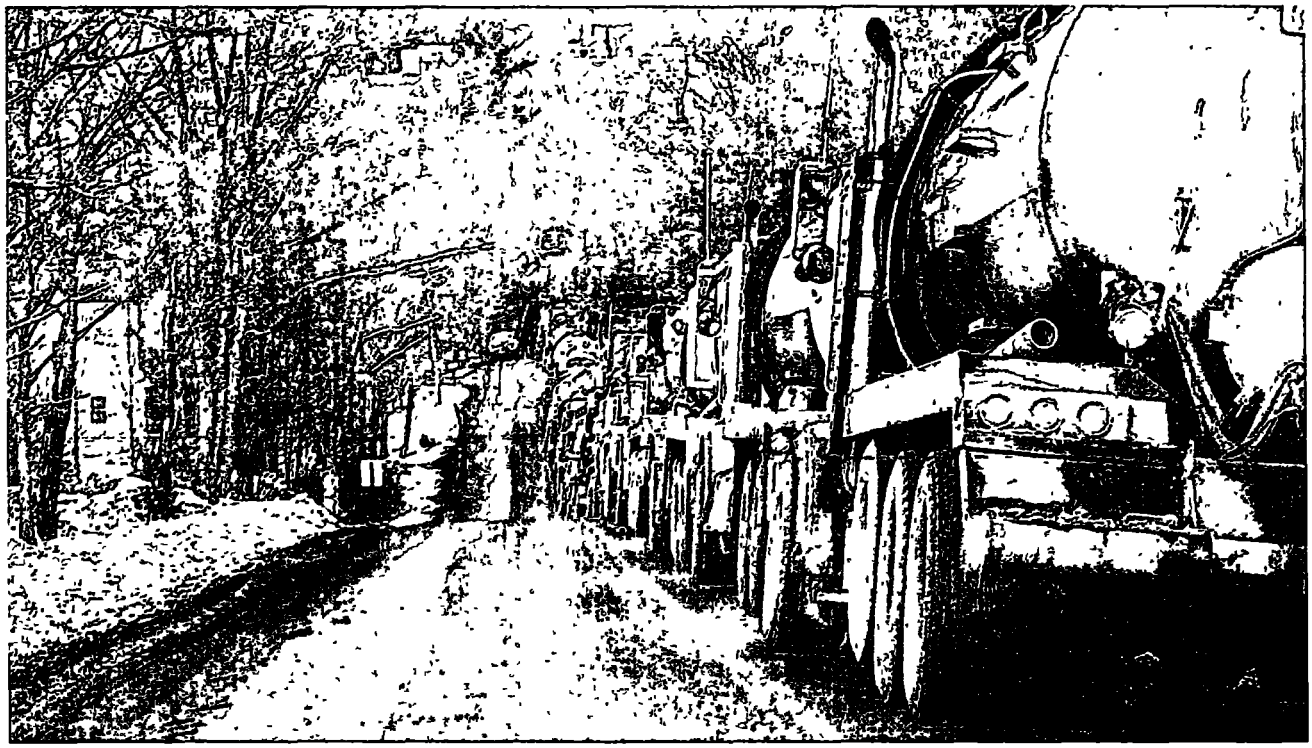
What appears to be spillage at waste treatment facility with dripping near hoses, staining and run-off exiting outdoors of loading dock at bottom right of photo. 1/5



Puddling under truck at waste treatment facility. Photo labeled "unloading operation" and depicts water truck. Though fully screened of solids, water remains contaminated and is not potable. 2/5



Filters are currently being studied by PADEP to evaluate radioactive contamination. CT would be adding these to our hazardous waste landfills should facilities be built in our state. 3/5



Rush hour. 4/5

Don't Waste CT 5/5

Sen. Meyer, Rep. Gentile, and members of the Environment Committee:

Originally from Syracuse, NY, I have had several years to educate myself on the cradle to grave cycle of hydraulic fracturing (fracking) and its effects on public health, the environment and the economy. It is my belief that the allowing out- of-state fracking waste in our state will be detrimental to the welfare of the Connecticut and its people.

Although Connecticut has massively expanded on our use of natural gas, we are not obligated to become a dumping ground for the oil and gas industry. Hazardous waste from out-of-state fracking operations can include hazardous chemicals, including several known carcinogens, as well as radioactive materials that are linked to bone, liver and breast cancer. Without state action, toxic fracking waste from out-of-state drilling operations could potentially be trucked through our communities, sent to our sewage treatment plants, and even spread on our roads.

Please accept this as my formal written testimony in support of SB 237- An Act Prohibiting the Storage and Disposal of Fracking Waste in Connecticut and HB 5308- An Act Regulating Fracking Waste.

I respectfully urge the CGA Environment Committee to protect our state's water resources and public health by passing legislation prohibiting the disposal of hazardous fracking waste in Connecticut.

I look forward to your response as to how you intend on addressing the issue. You may either e-mail me at kmpellizzari@gmail.com or send a letter to:

Kristen Pellizzari
140 Cottage Street, Apt 2L
New Haven, CT 06511

I am a concerned citizen and registered voter. Thank you for your time and your consideration.

Kind regards,
Kristen M. Pellizzari

Testimony of
Environment and Human Health, Inc.
by
Nancy Alderman, President

S.B. No. 237 (RAISED) AN ACT PROHIBITING THE STORAGE OR DISPOSAL OF FRACKING WASTE IN CONNECTICUT.

H.B. No. 5308 (RAISED) AN ACT CONCERNING THE REGULATION OF FRACKING WASTE.

Senator Ed Meyer, Representative Linda Gentile, and Members of the Environment Committee, Good Afternoon:

Environment and Human Health, Inc. (EHHI) is only in favor of completely banning fracking waste from coming into Connecticut. **Therefore, EHHI only supports Bill S.B. 237 - an act prohibiting the storage or disposal of fracking waste in Connecticut.**

Fracking is a method of extracting natural gas from deep in the ground by injecting a mixture of water, sand and chemicals under high pressure into dense rock formations such as shale, in order to crack the rock and release the gas.

If a state decides it supports fracking for natural gas - and that state receives the profits from that endeavor - then that state should either deal with their own waste or find a state that thinks radioactive toxic fracking waste is desirable – that should never be Connecticut.

If you choose to have a dog and you gain pleasure from that dog – your neighbor should not have to have that dogs waste on their property – especially if the dog's waste is toxic and radioactive.

In Pennsylvania alone, there are currently over 6,000 drilled and active fracking wells. A typical natural gas well takes between 2 to 5 million gallons of fluid to frack. Of that, 10 to 50 percent of the toxic fluid returns to the surface. The returning fluid not only contains the toxic chemicals that were in the fracking fluid — but also - when it returns to the surface it contains salts, arsenic and radioactive materials that it picked up from deep inside the earth.

The Institute for Energy and Environmental Research in Pennsylvania reports that the Marcellus shale deposits found in much of the fracking waste consists of radium-226, which has a 1/2 life of 1,600 years. Radium is a carcinogen that poses a significant threat to human health. Radioactivity should never be released into the environment in an uncontrolled manner, warns a white paper by E. Ivan White, a staff scientist for the National Council on Radiation Protection. A U.S. Geological Survey report also shows excess levels of radioactivity in wastewater from the Marcellus shale.

Because oceans covered much of the earth – the waste fluid that comes back up from the deep not only contains radioactivity and arsenic from the rock - but also contains salt.

Because of the salt content, some states have spread the waste on roads as deicing material and have thereby released radioactivity into their environment.

As the oil and gas industry work to find more and more places to dispose of their toxic waste – and as places are harder and harder to find such places -- Connecticut becomes very vulnerable unless it passes a law that bans fracking waste from coming into our state. Fracking waste is capable of harming human health as well as contaminating our environment.

Thank you for your consideration.

Nancy Alderman, President
Environment and Human Health Inc.
February 2014

management and disposal, air emissions, wildlife impacts, surface disturbance and worker health and safety.

In no state in which natural gas is being produced by our members do bans exist on the storage or disposal of hydraulic fracturing waste as provided for in SB 237 or the labeling of such waste as "hazardous" as provided for in HB 5308. There are no commercial quantities of natural gas known to exist in Connecticut so hydraulic fracturing does not occur here In the closest producing states such as Pennsylvania and New York, most waste is recycled on site or at nearby facilities or is disposed of within close proximity.

As a result, it is highly unlikely that any water or drill cuttings associated with natural gas development would be disposed of in Connecticut. Therefore, there does not appear to be a compelling need to ban the disposal of such waste here in Connecticut. ANGA and its members would like to express our concern that enactment of this legislation could be utilized as an example of concern and provide regulatory pressure in other states by creating an air of suspicion that if states like Connecticut are banning the waste, then producing states should also consider similar legislative actions. Such a precedent could have a negative impact on other producing states and, therefore compromise the industry's ability to produce clean natural gas that Connecticut policy makers are relying on under the CES.

Furthermore, HB 5308 would regulate any solid waste identified in 40 CFR Part 261.4(b)(5) as a hazardous waste. This is ironic in that 40 CFR Part 261.4(b)(5) is the provision of Environmental Protection Agency regulations that specifically provides that hydraulic fracturing wastes "**are not hazardous wastes**". The federal government does not deem hydraulic fracturing waste to be a hazardous waste. Nor do the states in which our members are producing natural gas.

As indicated previously, our member companies are subject to a large array of regulations. But such regulations are typically grounded in sound, rational science, rather than an arbitrary proposal that would label all hydraulic fracturing waste as hazardous. There needs to be a more practical consideration of the waste, with a specific awareness of the lack of toxicity to the products. ANGA would be happy to sit with policymakers in Connecticut to determine the best way of regulating hydraulic fracturing waste that is grounded in science, should there come a time that such waste were to ever arrive within the State's borders.

For the reasons stated above, ANGA respectfully urges the Environment Committee to take no further action on SB 237 or HB 5308.

Testimony of Anne Hulick, RN, MS, JD;
Co-Director, CT Clean Water Action and Coordinator of the Coalition for a Safe and Healthy Connecticut.

Before the CT General Assembly's Environment Committee, February 28, 2014 on behalf of CT Clean Water Action and the Coalition for a Safe and Healthy Connecticut

Testimony in support of HB 5038 AAC The Regulation of Fracking Waste and SB 237 AA Prohibiting the Storage or Disposal of Fracking Waste in Connecticut

Good afternoon Senator Meyer, Representative Gentile and distinguished members of the Environment Committee. Thank you for the opportunity to testify today. I speak in support of HB 5038 with conditions and in full support of SB 237 An Act Prohibiting the Storage or Disposal of Fracking Waste in Connecticut.

My name is Anne Hulick, and I am the Co-Director of CT Clean Water Action and the Coordinator of the Coalition for a Safe and Healthy Connecticut (Coalition). I am also a nurse with many years of experience in environmental health. The Coalition is a large advocacy organization comprised of over fifty-five member organizations of health professionals, environmental justice advocates, labor groups, public health professionals, environmental experts, faith based groups, scientists and many individuals across Connecticut that are concerned about the growing body of research linking exposure to toxic chemicals with the rise in serious diseases. Toxic chemical exposure from fracking waste is a serious public health and environmental issue and one we can and should control.

The Coalition supports HB 5038 to authorize the Department of Energy and Environmental Protection (DEEP) to regulate fracking waste as a hazardous substance. However, we strongly believe that the better option is to prohibit fracking waste from entering Connecticut altogether.

We appreciate the intent of HB 5038 to close the regulatory loophole that allows fracking waste to be considered industrial waste as opposed to hazardous waste, however DEEP has limited resources and capacity to track and monitor the disposition of fracking waste in Connecticut. We should not place this additional burden on them. Additionally, even if CT does consider fracking waste a hazardous substance, the many risks that come from just the transportation and disposal of the waste poses a serious risk to the health of citizens and the environment that clearly outweighs any benefits from disposing it here.

Fracking waste is reported to contain many toxic chemicals that are carcinogenic, neurotoxic and disruptive to the endocrine system. They can also be contaminated with high levels of radiation. Clean Water Action strongly believes that the risks of transporting and disposing of fracking waste, despite any short-term perceived gains, is ill-advised. Spills, leaks or accidents expose passengers on

CLEAN WATER ACTION
CONNECTICUT

our roads and the particles in the waste can also become airborne, traveling long distances and inhaled. Fracking waste spills can contaminate our waterways and impact wildlife. Connecticut's natural resources are a vital part of our state's identity and economy and must be protected. I urge you to support SB 237 to prohibit fracking waste from entering Connecticut.

Sincerely,

Anne B. Hulick

Anne Hulick

1010 Vermont Avenue NW, Suite 400 | Washington, DC 20005 2074 Park St, Suite 308 | Hartford, CT 06106
Phone 202 895.0420 | Fax 202 895 0438 Phone 860 232 6232 | Fax 860 232 6334
www.cleanwateraction.org/ct

Testimony of Corey Tucker

Before the Environment Committee

Regarding

S.B. 237 AN ACT PROHIBITING THE STORAGE OR DISPOSAL OF FRACKING WASTE IN CONNECTICUT

H.B. 5308 AN ACT CONCERNING THE REGULATION OF FRACKING WASTE H.B. 5307 AN ACT CONCERNING THE USE OF BOOMS FOR THE RETENTION OF CERTAIN

OILS OR PETROLEUM AND REVISING CERTAIN REQUIREMENTS FOR THE REGISTRATION OF RADIOACTIVE MATERIALS

Submitted by

Corey Tucker

February 28, 2013 Senator Meyer, Representative Gentile, and members of the Committee,

Thank you for the opportunity to comment on Senate Bill 237, House Bill 5308, and House Bill 5307. All three bills have important implications for our ability to protect Long Island Sound and our groundwater from toxic chemicals and petroleum products. I support SB 237 and HB 5308, which would prevent Connecticut from becoming a disposal site for unregulated hydrofracking waste. I oppose HB 5307, which would expose our harbors to preventable oil and gas spills.

I have a well and I'm concerned that my water will be polluted with harmful chemicals that will affect my health. I am not just concerned for myself, but the people of the state of Connecticut and the entire country, our animals and ground water. I do not agree that ships should be coming into our harbors and risk dumping this toxic waste into the sound which could harm marine and bird life. Please keep Connecticut free from toxic dumping waste.

SB 237, AA Prohibiting the Storage or Disposal of Fracking Waste in Connecticut, is strong and common-sense measure that will protect our surface and groundwater from contamination by toxic hydrofracking fluid. While Connecticut's geology isn't suited to this method of extracting gas from the ground, it is used in neighboring states like New York and Pennsylvania. The exact make-up of fracking fluid is unknown because gas companies can claim it as a trade secret, but we do know that used fluid contains not only the original chemicals, but also heavy concentrations of salts, traces of petrochemicals, and toxins that it carries up from deep in the bedrock. Fracking fluid can be five times saltier than sea water, and can contain any of over two dozen known carcinogens and volatile organic compounds. Because of this, fracking companies have a difficult time disposing of this fluid when they are done with it, and have explored shipping to other states for storage, processing it in wastewater treatment plants, and even using it as de-icer on roads. We shouldn't allow our state to be a guinea pig for disposal schemes such as these. Keeping fracking waste out of Connecticut is the only way to protect our drinking water and Long Island Sound.

HB 5308, AAC the Regulation of Fracking Waste, would classify toxic fracking fluid as hazardous waste, closing a loophole in federal law that has allowed it to remain unregulated here in

Connecticut. Enacting this protection is a positive first step, but it alone is not sufficient to fully protect our residents and waterbodies. I urge you to pass this bill along with the companion bill SB 237 to ensure our state does not become the Northeast's designated dumping-ground for toxic fracking waste.

Protecting Long Island Sound from petrochemicals from the shipping industry is also a concern. Currently, ships loading or offloading oils and other petroleum products must put floatable booming around the transfer area to contain any spills. HB 5307, AAC the Use of Booms for the Retention of Certain Oils, would eliminate this requirement, putting natural resources at unnecessary risk. Though spills are infrequent, a major spill in any of our busy ports would be catastrophic to our economy and our environment. The pre-booming requirement is a common sense best management practice that pays immeasurable dividends by keeping our ports open for business and our Sound's waters and wildlife protected.

Please support SB 237's ban on fracking waste and HB 5308's closing of the hazardous waste loophole, and please oppose HB 5307's weakening of protection against oil spills. Thank you for your consideration.

Sincerely,

Corey Tucker

310 Cherry Brook Road

Canton, CT 06019

coreylynntucker@gmail.com

860-478-5593

LEAGUE OF WOMEN VOTERS® OF CONNECTICUT, INC.
1890 Dixwell Avenue, Suite 203
Hamden, CT 06514-3183
203-288-7996 Fax 203-288-7998 www.lwvct.org

CGA Environment Committee

February 28, 2014 Public Hearing

Testimony submitted by Carolyn Bayne, Water Resources Specialist

LWVCT supports state policies and programs which promote comprehensive long-range planning for conservation and development of land and water resources, including enforcement of regulations to improve water quality

Support for:

House Bill 5308: ***AN ACT CONCERNING THE REGULATION OF FRACKING WASTE***
Senate Bill 237: ***AN ACT PROHIBITING THE STORAGE OR DISPOSAL OF FRACKING WASTE IN CONNECTICUT***

Senator Meyer, Representative Gentile and Members of the Environment Committee:

The League of Women Voters of Connecticut appreciates the opportunity to comment today on **House Bill 5308** and **Senate Bill 237**.

Both bills have important implications for Connecticut's ability to protect the health and safety of its groundwater, rivers, streams, lakes, aquifers and Long Island Sound from highly toxic chemicals and other hazardous materials. Safe drinking water is vital to the health of Connecticut's residents, but clean and safe water is also important for our economy; in fact, as recently as November 2013 a synthesis report released by the U.S. Environmental Protection Agency (EPA) highlighted the importance of water to a productive and growing economy.

HB 5308 An Act Concerning the Regulation of Fracking Waste
The League supports **HB 5308**, which authorizes the Commissioner of Energy and Environmental Protection to regulate, as hazardous waste, certain materials that are produced as a result of hydraulic fracturing ("fracking") activities. The League believes that it is critical for state legislators to take action to compensate for a loophole in the federal 2005 Energy Policy Act that exempted gas drilling and extraction from regulatory oversight by the Environmental Protection Agency. We do, however, have concerns that the bill proposes the regulation specifically and only of "any solid waste." While the drill cuttings, sediments, sludge and other solid waste from hydraulic fracturing are highly toxic and should be subject to Connecticut's hazardous waste management regulations, we believe that regulation should extend to drilling fluids, as well as produced and flowback waters associated with this process. In fact, there should first be consensus on what constitutes "fracking waste," including whether or not such material that has been subject to any degree of pretreatment prior to arrival at a treatment facility still meets the criteria for regulation as a hazardous waste. Members of the oil and gas industry who believe that wastewater from natural gas fracturing in Pennsylvania and other states is unlikely to be transported into Connecticut should be reminded that such wastewater is routinely

trucked to underground injection wells in Ohio and to treatment facilities in New York State. Furthermore, if the moratorium on hydraulic fracturing in New York is lifted, Connecticut most certainly will present as an attractive market for disposing of associated wastes, including the wastewater.

In sum, the League supports HB 5308 with the strong recommendation that it include a comprehensive definition of hydraulic fracturing waste and that the language be changed to include oversight of all associated waste and not just solid waste. Although regulation alone of hydraulic fracturing waste is not sufficient to protect our water resources, it is a positive first step.

SB 237 An Act Prohibiting the Storage or Disposal of Fracking Waste in Connecticut

The League supports **Senate Bill 237,** which prohibits any person from storing or disposing of materials produced as a by-product of hydraulic fracturing. However, we would again like to recommend that the language of the bill be strengthened to include the "treatment," and "discharge" of such waste, actions which were included in last year's failed House Bill 6533.

The issue of hydraulic fracturing waste is critical for Connecticut. Several of our neighboring states sit atop the Marcellus Shale Deposit, considered one of the largest fields of natural gas in the world. Pennsylvania alone has more than 6,000 active wells and permits have been issued for nearly 3,000 more. Estimates vary on how many millions of gallons of water are used to fracture each well and what percentage of it flows back, but there is no question that the volume of drilling is overwhelming existing waste-handling infrastructure.

The composition of waste from hydraulic fracturing varies depending on the chemicals used, geographic region where the operation takes place, and how long wastewater has been underground. Several hundred different types of chemicals can be used in hydraulic fracturing, including corrosion inhibitors, surfactants, scale inhibitors, biocides and friction reducers. Under current Pennsylvania law, drillers are not required to disclose the chemicals they use, and most consider it proprietary information and do not. In addition to toxic chemicals, most wastewater from drilling in the Marcellus Shale contains high concentrations of salt, metals, and radioactive materials. These contaminants make disposal of wastewater difficult and expensive. Options include:

1) Reuse in future operations, which is limited by the levels of pollutants in wastewater and proximity of other fracturing sites that might reuse it;
2) Transport to Class II underground injection wells; or
3) Transport to wastewater treatment facilities, where it is subsequently discharged into surface water.

In addition, without a comprehensive set of national standards for the disposal of wastewater, it has been reused in unconventional ways, such as to de-ice some public roads, which New York's State Department of Environmental Conservation permits.

The geography of the northeast makes it difficult and costly to drill injection wells here, but there are processing plants in Connecticut potentially interested in handling the waste from hydraulic fracturing. **The question is whether conventional waste treatment facilities are equipped to properly treat this harmful waste. In fact, most treatment facilities are not designed to handle wastewater with high concentrations of salts or radioactivity that is many thousand times more radioactive than the federal limit for drinking water. As a**

result, radioactivity and chemicals that are known or possible human carcinogens would not be properly removed and could seep into and contaminate drinking water sources.

It should be noted that as Pennsylvania frantically seeks solutions to managing its waste from hydraulic fracturing, other nearby states (Vermont) have banned or are attempting to ban (New York, New Jersey) the importation and handling of this waste. These actions clearly have implications for Connecticut. Furthermore, results of the study ordered by New York State's Department of Environmental Conservation to evaluate the health risks of hydraulic fracturing could be released prior to the 2014 general election and if the moratorium on hydraulic fracturing is consequently lifted, the health and safety of Connecticut's residents and natural resources will be at even greater risk. **Therefore, the League supports legislation that prohibits in Connecticut the storage and disposal of waste from hydraulic fracturing but respectfully requests that the language be strengthened to also prohibit the treatment or discharge of such waste.**

Thank you again for the opportunity to comment upon these important bills.

~~Ed~~ Weiminger
Ellen

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GRASSROOTS
Environmental Education

Main Office 52 Main Street • Port Washington • New York 11050 • T (516) 883-0887 • www grassrootsinfo org
Wainwright House 260 Stuyvesant Ave Rye NY 10580 • 25 Sylvan Road, Westpo, CT 06880

CGA Environmental Committee Public Hearing – February 28, 2014

S.B. No. 237 (RAISED) AN ACT PROHIBITING THE STORAGE OR DISPOSAL OF FRACKING WASTE IN CONNECTICUT.

H.B. No. 5308 (RAISED) AN ACT CONCERNING THE REGULATION OF FRACKING WASTE.

Senator Ed Meyer, Representative Linda Gentile, and Members of the Environment Committee, Good Afternoon:

Thank you for the opportunity to address this public hearing. My name is Ellen Weininger. I am an environmental health educator and public health advocate and the Educational Outreach Director of Grassroots Environmental Education, a science-based nonprofit that works closely with leading medical and scientific experts in the field of environmental health.

Grassroots Environmental Education supports the Environmental Committee's bill to prohibit the storage and disposal of toxic, radioactive hydraulic fracturing waste byproducts in Connecticut and also supports legislation to classify this waste as hazardous. While both of these bills are a step in the right direction, they require more comprehensive language to protect the health and safety of Connecticut residents, and our air, food and water supplies.

We strongly urge the prohibition of the procurement, acquisition, possession, storage, handling, treatment, processing, application or disposal of all treated or untreated oil and gas drilling waste byproducts and their constituents for any purpose in the State including but not limited to the prohibition of the disposal of all treated or untreated oil and gas drilling waste byproducts and their constituents at all wastewater treatment facilities and landfills and the prohibition of the use of all treated or untreated oil and gas drilling waste byproducts and their constituents for road spreading applications, maintenance and construction or for any other purpose.

Connecticut legislators must fulfill their most fundamental responsibility to protect public health and safety and simply outright ban this toxic, radioactive waste from the state. There is no capacity to control the potential for grave harm from toxic, radioactive fracking waste in Connecticut. There is no second chance. This is not a Democratic issue. This is not a Republican issue. This is a public health issue. This is not about supporting or opposing fracking. This is about prohibiting highly toxic and radioactive fracking waste byproducts and their constituents from being accepted in this state for any purpose. This is about protecting Connecticut families.

There is no way to control the certain harm if the door is opened in Connecticut to toxic, radioactive fracking waste. If allowed, convoys of leaking trucks hauling prodigious amounts of toxic, radioactive waste from oil and gas drilling operations will fill Connecticut's roads finally finding a dumping ground for Pennsylvania's vast toxic fracking waste problem.

Highly contaminated radioactive fracking waste byproducts from oil and gas exploration and extraction activities can potentially cause irreversible damage to air, water, soil and food supplies yet there are no safe options for handling, processing, storing or disposing of the billions of

gallons of hazardous radioactive oil and gas drilling waste byproducts that are produced each year.

The Pennsylvania Department of Environmental Protection (DEP) data noted a marked increase in radiation alarms at Pennsylvania landfills between 2009-2012 triggered by waste trucks from hydrofracking wells with over 1,000 of those radiation alarms coming from oil and gas waste. That does not factor millions of gallons of radioactive fracking waste that were handled or disposed of through other means.

Hydraulic fracturing, also known as "hydrofracking" or "fracking", is a technology used for oil and gas extraction from shale formations which involves the injection of millions of gallons of fresh water mixed with hundreds of chemicals and sand forced under high pressure into the well bores to crack open the shale. The fissures created by this fracturing are held open by the sand particles so that oil or gas can be released up the drill shaft.

Ten to forty percent of this highly toxic mixture is returned to the surface with the oil or gas and additional contaminants including volatile organic compounds (VOCs), heavy metals (e.g. arsenic, lead, chromium, mercury), brine 8 times saltier than seawater, and radioactive elements including radon and radium.

The extraction process produces two types of wastewater. Flowback water is the chemically treated fracking fluid that returns to the surface shortly after a fracking operation. Produced water, also known as formation water or fracking brine, is the fluid that comes out of the target drilling formation along with the oil or gas.

Produced water or fracking brine has high levels of chlorides and bromides and contains toxic heavy metals. Produced water from the Marcellus Shale formation could potentially contain high levels of radium-226 and radium-228, which are known carcinogens. Radium-226 has a half-life of 1600 years and is linked to anemia, cataracts, bone, liver and breast cancers and death. Radon, a decay product of radium is considered the leading cause of lung cancer in non-smokers nationwide. Radioactive materials including radium and its decay product, radon, are known to be significantly higher in the Marcellus Shale.

According to a U.S. Geological Survey study, levels of total radium tested in the wastewater from eleven active New York vertical gas wells averaged over 8,400 pCi/L exceeding the EPA's maximum contaminant level for drinking water by more than 1,000 times (5 pCi/L for combined radium-226 and radium-228).

In a 2011 review of federal, state and company records, findings indicated that in a sampling of wells studied in Pennsylvania and West Virginia, reported levels of radium or other radioactive elements exceeded EPA's maximum contaminant level for drinking water by 100 times to more than 1000 times.

Vertical oil and gas wells are typically 1500-3000 feet deep. Horizontal wells reach depths of 6,000 feet before running horizontally for a mile or more providing an even greater overall exposure to shale formations and the radioactive materials contained within it, increasing the likelihood of bringing greater quantities of radioactive contaminants to the surface.

Radioactive materials can migrate through air exposing crops and plants, soil, animals, livestock, food supplies and humans. Radioactive contaminants can also migrate through soil and surface or groundwater exposing sand and sediment, aquatic animals and plants, fish and sporting gear, irrigation water, land plants, animals, livestock, food supplies and humans.

Ivan White, a staff scientist at the National Council on Radiation Protection, a Congressionally-commissioned agency, stated, "Importantly, the type of radioactive material found in the Marcellus Shale formation and brought to the surface by horizontal hydraulic fracturing is the

type that is particularly long-lived and could easily bio-accumulate over time and deliver a dangerous radiation dose to potentially millions of people long after the drilling is over."

Radioactive materials do not dissipate; they spread further.

Radium-226 emits gamma radiation which is known to travel fairly long distances through air, raising risks for cancer in communities.

Naturally occurring radioactive materials (NORM) are distributed through geologic formations and exist undisturbed in nature whether at the earth's surface or below the surface.

However, when NORM are disturbed and transported by human activity to human environments they are considered technologically enhanced naturally occurring radioactive materials (TENORM) increasing potential of exposure that may result in concentration levels above background levels.

Many of the radionuclides found in oil and gas drilling waste and their constituents are not addressed by regulatory guidance documents and negligible information is provided in determining potential of cumulative effects of simultaneous exposure to several radionuclides or potential human and animal health impacts.

The Environmental Protection Agency (EPA) and the Nuclear Regulatory Commission (NRC) do not have established federal regulations that directly govern TENORM waste from the oil and gas industry.

The term NORM is often misused when applied to radioactive material introduced into human environments by oil and gas exploration and extraction operations. Hazardous radioactive oil and gas drilling waste byproducts are generally improperly classified as NORM instead of TENORM which would require special disposal requirements under radioactive waste law.

Synergistic catalysis, a relatively new field of chemical study, is concerned with the ability of synthetic chemicals to spontaneously form new chemical bonds when exposed to sunlight, water, air and radionuclides or other chemical catalysts. The potential health risks of resulting compounds are unknown and pose a public health threat as mixtures of fracking chemicals, interaction of chemicals with radioactive materials and reaction of chemicals with other contaminants under heat and pressure cause unknown synergistic reactions.

All oil and gas drilling waste is classified as "industrial waste" under federal and state laws as a result of special exemptions given to the oil and gas industry, although the waste exceeds the legal criteria for hazardous waste classification. These exemptions eliminate hazardous waste tracking requirements for the handling, storage, treatment and disposal of oil and gas drilling waste.

Exemptions as part of the Energy Act of 2005 include the Safe Drinking Water Act, the Clean Water Act, the Clean Air Act, the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the National Environmental Policy Act (NEPA) and the Toxic Release Inventory of the Emergency Planning and Community Right-to-Know Act.

Fifty-nine scientists attested to the fact that wastewater treatment facilities are not designed to treat chemicals, contaminants and highly radioactive materials produced from hydrofracking operations. High bromide levels in oil and gas drilling waste byproducts are highly corrosive to equipment and can react during water treatment to form brominated trihalomethanes linked to bladder and colon cancers and are associated with birth defects. Once added to drinking water supplies, trihalomethanes are difficult to eliminate.

Vehicles transporting hazardous radioactive hydrofracking waste byproducts increase the risk of

human and animal exposure and contamination of water, air, soil and farmland when accidents, leaks, and spills occur. No special hazardous waste warning signs or emergency instructions are on the trucks placing first responders and residents at risk.

Increased risk of exposure is posed when hazardous fracking waste byproducts and their constituents are used for road spreading applications, maintenance and construction including dust control and de-icing on roads. Distilled waste products into salts may originate from fracking operations, underground storage of methane gas or liquefied petroleum gas well storage operations. Disclosure of ingredients and origins of road application products are imperative.

Truck accidents, spills, leaks, and road spreading applications can expose drivers, passengers, pedestrians, animals and livestock to dangerous pollutants while contaminating nearby surface waters, residential areas, school properties and cropland. Radioactive particles may become airborne as trucks and passenger vehicles travel along roads and can be tracked on tires into driveways and garages and ultimately tracked in on shoes into homes.

Rain and snowmelt carrying radioactive materials can run off road surfaces where it can migrate onto nearby property, farms and into streams, ponds and irrigation systems, leach into soil or seep into groundwater. These numerous pathways of exposure pose increased risk for human and livestock inhalation and ingestion of highly radioactive materials, and carcinogenic and endocrine disrupting chemicals.

Landfill disposal of radioactive sludge from oil and gas drilling operations could contaminate them for thousands of years. All landfill membranes fail eventually and leaching or flooding could result in contamination of nearby ponds, streams, or groundwater. Leachate from landfills is a frequent cause of groundwater contamination.

Storage of hazardous radioactive waste from oil and gas extraction operations in closed containment tanks can result in groundwater and surface water contamination. Closed containment tanks often used for storage of oil and gas drilling waste byproducts could corrode over time, resulting in leaks, and may overflow or rupture if capacity is surpassed.

Agricultural areas are vulnerable to the immediate threat posed by hazardous radioactive oil and gas drilling waste byproducts and their constituents. Mounting evidence reveals livestock illness and death from acute toxicity poisoning from harmful exposures to oil and gas drilling waste byproducts. Reproductive problems in cows and higher rates of stillborn and deformed calves have also been reported.

Presence of highly radioactive materials and other contaminants on farmland and in food products can cause irreparable damage and serious financial impacts. Protection of the quality and safety of food production is imperative for the health and safety of residents and to ensure consumer confidence in food production in this region which could be easily undermined if oil or gas drilling waste byproducts are accepted for disposal at wastewater treatment plants and landfills or applied on roads.

There are also numerous instances of "midnight dumping" by contractors of hazardous radioactive hydrofracking waste byproducts on roads, in ditches and wetlands and other properties.

Potential exposure to toxic chemicals and radioactive contaminants comes at a tremendous toll to human health and the economy. According to Mount Sinai School of Medicine's Children's Environmental Health Center, environmentally mediated disease continues to spiral and take a huge toll on our most vulnerable population, our children. Children are uniquely vulnerable to toxic exposures. Their immature organs and developing bodies make it more difficult for them to detoxify or eliminate toxins. Due to their small size, they take in more chemical contaminants, pound for pound, than adults.

Asthma has tripled in the past three decades and has become the leading cause of emergency room visits, hospitalizations and school absenteeism.

Birth defects are now the leading cause of infant death. Certain birth defects have doubled in frequency.

Developmental disorders such as ADHD, dyslexia and learning disabilities affect one of every six American children. Autism has increased sharply in prevalence and now afflicts one child in 88.

Primary brain cancer among children has increased in incidence by nearly 40% from 1975 to 2004, according to the National Cancer Institute.

Childhood leukemia has increased in incidence by over 40%. Benzene and other solvents are linked.

According to the World Health Organization, environmental exposures are responsible for 35% of all childhood disease and deaths worldwide. The U.S National Academy of Sciences has determined that environmental factors contribute to 28% of developmental disorders.

This all comes at a hefty price to families, schools, communities, health institutions and our society. A recent analysis in 2002 estimates that the total cost of environmentally mediated disease in children alone adds up to over $54 billion annually. This figure does not factor in costs to taxpayers for the adult population impacted by toxic exposures.

Connecticut cannot afford to take these grave and unnecessary risks to our public health and economy. We strongly urge the prohibition of the procurement, acquisition, possession, storage, handling, treatment, processing, application and disposal of all treated or untreated oil and gas drilling waste byproducts and their constituents for any purpose in the State.

REFERENCES:

Consideration of Radiation in Hazardous Waste Produced from Horizontal Hydrofracking by Ivan White, Staff Scientist for the National Council on Radiation Protection: http://www.grassrootsinfo.org/pdf/whitereport.pdf

Impacts of Shale Gas Wastewater Disposal on Water Quality in Western Pennsylvania, R. Jackson, A. Vengosh, October 2013, Environmental Science and Technology: http://pubs.acs.org/doi/abs/10.1021/es402165b

Analysis of Reserve Pit Sludge from Unconventional Natural Gas Hydraulic Fracturing and Drilling Operations for the Presence of Technologically Enhanced Naturally Occurring Radioactive Material (TENORM), A. Rich, E. Crosby, New Solutions, Vol 23(1), 117-135, 2013: http://www.ncbi.nlm.nih.gov/pubmed/23552651

Radium Content of Oil and Gas Field Produced Waters in the Northern Appalachian Basin, Rowan, Engle, Kirby, Kraemer USGS 2011, http://pubs usgs.gov

Respectfully submitted,

Ellen Weininger
Educational Outreach Director
February 28, 2014

2p

Testimony of Tom Swan

Executive Director of the Connecticut Citizen Action Group (CCAG)

ON SB 237, HB5308, AND SB 67

February 28, 2014

Good Afternoon Senator Meyer, Representative Gentile and other members of the Environment Committee, my name is Tom Swan and I am the Executive Director of the CT Citizen Action Group (CCAG). On behalf of CCAG's over 20,000 member families I want to thank you for raising SB 237 AA PROHIBITING THE STORAGE OR DISPOSAL OF FRACKING WASTE IN CT, HB 5308 AAC THE REGULATION OF FRACKING WASTE, and SB 67 AAC THE INCLUSION OF JUICES, TEAS AND SPORTS DRINKS UNDER CONNECTICUT'S BOTTLE BILL.

We applaud you for raising SB 237. Fracking waste is toxic. Industry will not even let us know what chemicals they use in the process. The people who say we can regulate it and that it could be economically beneficial remind me of the Governor of New York in my youth, Hugh Carey, when he said he would drink a glass full of PCBs to prove they were safe. That was not a wise idea then and leaving the door open to toxic fracking waste for "economic reasons" is just as bad today. We would like the language tightened to include treatment and discharge being banned and think it would be good to look at last year's proposal 6533 for possible language.

We support HB 5308 AAC the REGULATION OF FRACKING WASTE as a companion bill to SB 237, but not as a stand-alone bill because we believe it could enable waste in CT. As a companion or combined bill it would have a framework for dealing with waste transported through the state, but not allowing the very toxic waste to be stored here.

Finally, I want to express CCAG's strong support for SB 67. The Bottle Bill has been arguably the most effective solid waste reduction law CT has ever passed. Expanding it to include juices, teas, and sports drinks in not only fair it is very smart environmental policy. The industry will be making the same old tired arguments as to why the sky will fall if you pass this. It didn't fall when we passed the original bottle bill, it didn't fall when you strengthened thee bottle bill and it won't fall again when you pass this bill. Please pass 67 – it is fair, it is smart, and it makes sense.

Thank you for your consideration.

Dear Committee Members.

My goal of attending your meetings tomorrow were dashed today when I learned that I have to be in Boston instead My reasons for going would be to vociferously defend my precious state from being damaged by fracking waste. I have been studying the effects on fracking for many years. I have been so concerned that I have even written a screenplay that includes this important issue

Please consider the extraordinary ecology of our state before you submit it to the dangers of chemicals that will enter our many streams, rivers and wetlands And please remember the ultimate effects on the Long Island Sound. Many, many living things are affected by what enters the water at any given point.

The facts regarding the dangers of the outflows of gas fracked wells are carefully documented It is of supreme importance that you make your decisions carefully with all the facts clearly stated and understood. Too much is at stake, not only for human life, but for all aquatic and land life. Toxic chemicals affect every living organism. There is no amount of horse trading or payoff that is worth taking a chance on our waters.

I beg you to vote to protect our water supply Please support HB 5308 that will close a loophole in Connecticut's hazardous waste regulations that currently overlooks fracking waste. And please support SB 237 that will protect our waters and communities by banning the storage and disposal of fracking waste here in Connecticut.
Also, please vote against HB 5307,

Thank you,

Deirdre Doran
242 Weston Road
Weston, CT 06883
203 454 2629

Written Testimony Submitted to Connecticut Environment Committee Regarding

SB 237—An Act Concerning the Storage or Disposal of Fracking Waste in CT
HB 5308—An Act Concerning the Regulation of Fracking Waste

Friday, February 28, 2014
Paul Hartman – Regional Director, State Affairs
America's Natural Gas Alliance (ANGA)

ANGA is an advocacy and educational organization comprised of America's leading independent natural gas production and exploration companies. The collective natural gas output of ANGA's members is approximately 8.0 trillion cubic feet per year, which represents 33 percent of total annual U.S. natural gas production.

ANGA and its member companies are committed to promoting the growing demand for and use of our nation's vast domestic natural gas resources. In pursuing this mission, ANGA works with industry, government and consumer stakeholders to ensure the increased use and continued availability of our natural gas resources for a cleaner and more secure energy future. We believe natural gas plays an integral role in revitalizing our nation's economy, providing affordable and stable energy to industrial and residential consumers alike. Increased utilization of this cleaner, abundant and domestic energy resource in power generation and transportation will dramatically accelerate U.S. efforts to reduce air pollution.

Connecticut recognized all of this when in 2013, this General Assembly approved the Governor's Comprehensive Energy Strategy (CES). The CES recognized that when used to generate electricity, natural gas burns cleaner than other fuel sources, with less pollutants and no mercury. That is why the CES calls for the expanded use of natural gas, including converting 280,000 homes to gas.

Furthermore, Connecticut, along with the five other New England states, committed to a joint energy initiative designed to bring affordable, cleaner and more reliable power to homes and businesses across New England. This clean energy initiative is reliant on expanding natural gas pipeline capacity to meet Connecticut's goal of providing cheaper, cleaner and more reliable power to Connecticut consumers.

However, the goals and implementation of the CES and the New England energy initiative would be undermined by the passage of both SB 237—An Act Concerning the Storage or Disposal of Fracking Waste in Connecticut, and HB 5308—An Act Concerning the Regulation of Fracking Waste.

Natural gas production by our members is subject to federal, state and local regulations that govern every aspect of our operations. Federal rules governing our activity include the Clean Water and Clean Air Acts and the Safe Drinking Water Act. State regulations include the review and approval of permits for all aspects of drilling activities, such as well design, location, spacing, operation, water management and disposal, waste

management and disposal, air emissions, wildlife impacts, surface disturbance and worker health and safety.

In no state in which natural gas is being produced by our members do bans exist on the storage or disposal of hydraulic fracturing waste as provided for in SB 237 or the labeling of such waste as "hazardous" as provided for in HB 5308. There are no commercial quantities of natural gas known to exist in Connecticut so hydraulic fracturing does not occur here. In the closest producing states such as Pennsylvania and New York, most waste is recycled on site or at nearby facilities or is disposed of within close proximity.

As a result, it is highly unlikely that any water or drill cuttings associated with natural gas development would be disposed of in Connecticut. Therefore, there does not appear to be a compelling need to ban the disposal of such waste here in Connecticut. ANGA and its members would like to express our concern that enactment of this legislation could be utilized as an example of concern and provide regulatory pressure in other states by creating an air of suspicion that if states like Connecticut are banning the waste, then producing states should also consider similar legislative actions. Such a precedent could have a negative impact on other producing states and, therefore compromise the industry's ability to produce clean natural gas that Connecticut policy makers are relying on under the CES.

Furthermore, HB 5308 would regulate any solid waste identified in 40 CFR Part 261.4(b)(5) as a hazardous waste. This is ironic in that 40 CFR Part 261.4(b)(5) is the provision of Environmental Protection Agency regulations that specifically provides that hydraulic fracturing wastes "are not hazardous wastes". The federal government does not deem hydraulic fracturing waste to be a hazardous waste. Nor do the states in which our members are producing natural gas.

As indicated previously, our member companies are subject to a large array of regulations. But such regulations are typically grounded in sound, rational science, rather than an arbitrary proposal that would label all hydraulic fracturing waste as hazardous. There needs to be a more practical consideration of the waste, with a specific awareness of the lack of toxicity to the products. ANGA would be happy to sit with policymakers in Connecticut to determine the best way of regulating hydraulic fracturing waste that is grounded in science, should there come a time that such waste were to ever arrive within the State's borders.

For the reasons stated above, ANGA respectfully urges the Environment Committee to take no further action on SB 237 or HB 5308.

Testimony of Edwin Matthews
Before the
Environment
Committee
Regarding
S B. 237
AN ACT PROHIBITING THE STORAGE OR DISPOSAL OF FRACKING WASTE IN CONNECTICUT
H.B 5308
AN ACT CONCERNING THE REGULATION OF FRACKING WASTE
H B. 5307
AN ACT CONCERNING
THE USE OF BOOMS FOR THE RETENTION OF CERTAIN
OILS OR PETROLEUM AND REVISING CERTAIN REQUIREMENTS FOR THE
REGISTRATION OF RADIOACTIVE MATERIALS
Submitted by
Edwin Matthews
February 28, 2014
Senator Meyer, Representative
Gentile, and members of the Committee,
As a resident of Connecticut, I appreciate the
opportunity to comment on Senate Bill 237,
House Bill 5308, and House Bill 5307. All three bills have important implications for our ability to protect
Long Island Sound and
our groundwater from toxic chemicals and petroleum products
I support
SB 237 and HB 5308,
which would
prevent
Connecticut from becoming a disposal site
for unregulated hydrofracking
waste.
I oppose HB 5307, which
would expose
our harbors to
preventable oil and gas spills.
These harbors are already impaired by pollution and are our precious resource They should be protected from further impairment.

Fracking requires the use of large quantities of hazardous chemicals that the gas companies have refused to identify or subject to oversight by states where they are used The consequences of their use and storage are potentially harmful to our precious water Until they are fully identified and disclosed and demonstrated by reliable science to be safe, they should not be used or stored in Connecticut, nor anywhere else in America

Respectfully, Edwin Matthews, 218 Bee Brook Road, Washington, CT 06794

Testimony of Jen Huddleston before the Environment Committee

Regarding:

S.B. 237 AN ACT PROHIBITING THE STORAGE OR DISPOSAL OF FRACKING WASTE IN CONNECTICUT
H.B. 5308 AN ACT CONCERNING THE REGULATION OF FRACKING WASTE
H.B. 5307 AN ACT CONCERNING THE USE OF BOOMS FOR THE RETENTION OF CERTAIN OILS OR PETROLEUM AND REVISING CERTAIN REQUIREMENTS FOR THE REGISTRATION OF RADIOACTIVE MATERIALS

Submitted by
Jen Huddleston, Middlefield, CT

February 28, 2014

Senator Meyer, Representative Gentile, and members of the Committee,

Thank you for the opportunity to comment on Senate Bill 237, House Bill 5308, and House Bill 5307. All three bills have important implications for our ability to protect Long Island Sound and our groundwater from toxic chemicals and petroleum products. I support SB 237 and HB 5308, which would prevent Connecticut from becoming a disposal site for unregulated hydrofracking waste. I oppose HB 5307, which would expose our harbors to preventable oil and gas spills.

I know that Connecticut is investing heavily in natural gas. This is a mistake. Although natural gas burns cleaner than oil and coal, it comes at a high environmental cost when considering the harmful effects of hydrofracking chemicals upon our precious ecosystem. Please support renewables instead.

SB 237, AA Prohibiting the Storage or Disposal of Fracking Waste in Connecticut, is strong and common-sense measure that will protect our surface and groundwater from contamination by toxic hydrofracking fluid. While Connecticut's geology isn't suited to this method of extracting gas from the ground, it is used in neighboring states like New York and Pennsylvania. The exact make- up of fracking fluid is unknown because gas companies can claim it as a trade secret, but we do know that used fluid contains not only the original chemicals, but also heavy concentrations of salts, traces of petrochemicals, and toxins that it carries up from deep in the bedrock. Fracking fluid can be five times saltier than sea water, and can contain any of over two dozen known carcinogens and volatile organic compounds. Because of this, fracking companies have a difficult time disposing of this fluid when they are done with it, and have explored shipping to other states for storage, processing it in wastewater treatment plants, and even using it as de-icer on roads. We shouldn't allow our state to be a guinea pig for disposal schemes such as these. Keeping fracking waste out of Connecticut is the only way to protect our drinking water and Long Island Sound.

HB 5308, AAC the Regulation of Fracking Waste, would classify toxic fracking fluid as hazardous waste, closing a loophole in federal law that has allowed it to remain unregulated here in Connecticut. Enacting this protection is a positive first step, but it alone is not sufficient to fully protect our residents and waterbodies. I urge you to pass this bill along with the companion

bill SB 237 to ensure our state does not become the Northeast's designated dumping-ground for toxic fracking waste.
Protecting Long Island Sound from petrochemicals from the shipping industry is also a concern. Currently, ships loading or offloading oils and other petroleum products must put floatable booming around the transfer area to contain any spills. HB 5307, AAC the Use of Booms for the Retention of Certain Oils, would eliminate this requirement, putting natural resources at unnecessary risk. Though spills are infrequent, a major spill in any of our busy ports would be catastrophic to our economy and our environment. The pre-booming requirement is a common sense best management practice that pays immeasurable dividends by keeping our ports open for business and our Sound's waters and wildlife protected.

Please support SB 237's ban on fracking waste and HB 5308's closing of the hazardous waste loophole, and please oppose HB 5307's weakening of protection against oil spills. Thank you for your consideration.

Sincerely,
Jen Huddleston
jen.e.ren10@gmail.com
2 High Street
Middlefield, CT 06455

Testimony of Liz Van Duyne Before the Environment Committee

Regarding

S.B. 237 AN ACT PROHIBITING THE STORAGE OR DISPOSAL OF FRACKING WASTE IN CONNECTICUT

H.B. 5308 AN ACT CONCERNING THE REGULATION OF FRACKING WASTE
H.B. 5307 AN ACT CONCERNING THE USE OF BOOMS FOR THE RETENTION OF CERTAIN

OILS OR PETROLEUM AND REVISING CERTAIN REQUIREMENTS FOR THE REGISTRATION OF RADIOACTIVE MATERIALS

Submitted by

Liz Van Duyne

February 28, 2013
Senator Meyer, Representative Gentile, and members of the Committee,

Thank you for the opportunity to comment on Senate Bill 237, House Bill 5308, and House Bill 5307. All three bills have important implications for our ability to protect Long Island Sound and our groundwater from toxic chemicals and petroleum products. I support SB 237 and HB 5308, which would prevent Connecticut from becoming a disposal site for unregulated hydrofracking waste. I oppose HB 5307, which would expose our harbors to preventable oil and gas spills.

Please protect our waters from dangerous fracking wastes. Our fragile water systems and especially Long Island Sound are resources that are paramount for natural, economic and recreational uses. If you can't do it for the birds and fish, do it for the people. Our family loves to sail in the Sound and many families swim there as well. The Sound is under so many stressors from climate change to population growth to industrialization along it's shores and watershed. Don't allow it to get worse. We need to find ways to improve the water quality. If you allow tracking waste in CT (especially from other states) we are taking a huge step backward and it will be more expensive to clean up later. I know we need energy but put our efforts into developing cleaner renewables that don't have so many hazardous by-products. Calculate the true costs of the decisions you're going to make from medical and clean-up costs and you will find how expensive it really is to allow fracking waste to be stored or dumped in CT.

SB 237, AA Prohibiting the Storage or Disposal of Fracking Waste in Connecticut, is strong and common-sense measure that will protect our surface and groundwater from contamination by toxic hydrofracking fluid. While Connecticut's geology isn't suited to this method of extracting gas from the ground, it is used in neighboring states like New York and Pennsylvania. The exact make- up of fracking fluid is unknown because gas companies

can claim it as a trade secret, but we do know that used fluid contains not only the original chemicals, but also heavy concentrations of salts, traces of petrochemicals, and toxins that it carries up from deep in the bedrock. Fracking fluid can be five times saltier than sea water, and can contain any of over two dozen known carcinogens and volatile organic compounds. Because of this, fracking companies have a difficult time disposing of this fluid when they are done with it, and have explored shipping to other states for storage, processing it in wastewater treatment plants, and even using it as de-icer on roads. We shouldn't allow our state to be a guinea pig for disposal schemes such as these. Keeping fracking waste out of Connecticut is the only way to protect our drinking water and Long Island Sound.

HB 5308, AAC the Regulation of Fracking Waste, would classify toxic fracking fluid as hazardous waste, closing a loophole in federal law that has allowed it to remain unregulated here in

Connecticut. Enacting this protection is a positive first step, but it alone is not sufficient to fully protect our residents and waterbodies. I urge you to pass this bill along with the companion bill SB 237 to ensure our state does not become the Northeast's designated dumping-ground for toxic fracking waste.

Protecting Long Island Sound from petrochemicals from the shipping industry is also a concern. Currently, ships loading or offloading oils and other petroleum products must put floatable booming around the transfer area to contain any spills. HB 5307, AAC the Use of Booms for the Retention of Certain Oils, would eliminate this requirement, putting natural resources at unnecessary risk. Though spills are infrequent, a major spill in any of our busy ports would be catastrophic to our economy and our environment. The pre-booming requirement is a common sense best management practice that pays immeasurable dividends by keeping our ports open for business and our Sound's waters and wildlife protected.

Please support SB 237's ban on fracking waste and HB 5308's closing of the hazardous waste loophole, and please oppose HB 5307's weakening of protection against oil spills. Thank you for your consideration.

Sincerely,

Liz Van Duyne

Mom in Riverside, CT

Please note that my new email address is

Lizvanduyne@gmail.com

Testimony of Lynette Dimock before the Environment Committee

Regarding

S.B. 237 AN ACT PROHIBITING THE STORAGE OR DISPOSAL OF FRACKING WASTE IN CONNECTICUT
H.B. 5308 AN ACT CONCERNING THE REGULATION OF FRACKING WASTE
H.B. 5307 AN ACT CONCERNING THE USE OF BOOMS FOR THE RETENTION OF CERTAIN OILS OR PETROLEUM AND REVISING CERTAIN REQUIREMENTS FOR THE REGISTRATION OF RADIOACTIVE MATERIALS

Submitted by
Lynette Dimock
February 28, 2013

Senator Meyer, Representative Gentile, and members of the Committee,

Thank you for the opportunity to comment on Senate Bill 237, House Bill 5308, and House Bill 5307. All three bills have important implications for our ability to protect Long Island Sound and our groundwater from toxic chemicals and petroleum products.
I support SB 237 and HB 5308, which would prevent Connecticut from becoming a disposal site for unregulated hydrofracking waste. I oppose HB 5307, which would expose our harbors to preventable oil and gas spills.

My drinking water, along with many families in Connecticut, comes from a well. Our groundwater should not be put at risk to give companies from other states a means to dispose of undesirable fracking waste. SB 237, AA Prohibiting the Storage or Disposal of Fracking Waste in Connecticut, is a sensible measure to protect Connecticut from contamination by toxic hydrofracking fluid.

HB 5308, AAC the Regulation of Fracking Waste, would classify toxic fracking fluid as hazardous waste, closing a loophole in federal law that has allowed it to remain unregulated here in Connecticut. This bill combined with bill SB 237 is an important step in protecting Connecticut's drinking water as well as Long Island Sound and preventing our state from becoming a dumping ground for toxic waste.

Long Island Sound is an important marine environment that should be protected at the highest level. The current requirement to put floatable booming around the transfer area to contain any spills while ships are loading or offloading oils and other petroleum products is an important measure in keeping the Sound's water and wildlife protected.
HB 5307, AAC the Use of Booms for the Retention of Certain Oils, would eliminate this requirement, putting natural resources at unnecessary risk. A spill would be catastrophic to this unique environment.

Please support SB 237's ban on fracking waste and HB 5308's closing of the hazardous waste loophole, and please oppose HB 5307's weakening of protection against oil spills.

Thank you for your consideration.

Sincerely,

Lynette Dimock
sldimock@sbcglobal.net

Testimony of Regina O'Brien/Redding Planning Commission Member, Town of Redding, CT Before the Environment Committee

Regarding

S.B. 237 AN ACT PROHIBITING THE STORAGE OR DISPOSAL OF FRACKING WASTE IN CONNECTICUT

H.B. 5308 AN ACT CONCERNING THE REGULATION OF FRACKING WASTE
H.B. 5307 AN ACT CONCERNING THE USE OF BOOMS FOR THE RETENTION OF CERTAIN

OILS OR PETROLEUM AND REVISING CERTAIN REQUIREMENTS FOR THE REGISTRATION OF RADIOACTIVE MATERIALS

Submitted by

Regina O'Brien, Redding Planning Commission

February 28, 2013
Senator Meyer, Representative Gentile, and members of the Committee,

Thank you for the opportunity to comment on Senate Bill 237, House Bill 5308, and House Bill 5307. All three bills have important implications for our ability to protect Long Island Sound and our groundwater from toxic chemicals and petroleum products. I support SB 237 and HB 5308, which would prevent Connecticut from becoming a disposal site for unregulated hydrofracking waste. I oppose HB 5307, which would expose our harbors to preventable oil and gas spills.

On behalf of the Town of Redding Planning Commission, I am writing to state we support the bills that would help safeguard the land and water we live on and rely on. The residents of Redding depend on wells for their water. In addition, Redding sits on an aquifer system that is key to the water supply of towns along the coast; we have a genuine understanding that towns throughout the state are related to one another through the land and have a responsibility to safeguard these ecosystems for the benefit of all.

We are concerned that fracking waste is not regulated as hazardous waste, and that there is much that is still unknown about its toxicity and negative impact on people and the land. Further, we oppose any weakening of best management practices currently in place pertaining to oil transfers in Long Island Sound; the common sense floatable booms are a basic necessity for safeguarding both our environment and livelihood should a spill occur.

SB 237, AA Prohibiting the Storage or Disposal of Fracking Waste in Connecticut, is strong and common-sense measure that will protect our surface and groundwater from contamination by toxic hydrofracking fluid. While Connecticut's geology isn't suited to this method of extracting gas from the ground, it is used in neighboring states like New York

and Pennsylvania. The exact make- up of fracking fluid is unknown because gas companies can claim it as a trade secret, but we do know that used fluid contains not only the original chemicals, but also heavy concentrations of salts, traces of petrochemicals, and toxins that it carries up from deep in the bedrock. Fracking fluid can be five times saltier than sea water, and can contain any of over two dozen known carcinogens and volatile organic compounds. Because of this, fracking companies have a difficult time disposing of this fluid when they are done with it, and have explored shipping to other states for storage, processing it in wastewater treatment plants, and even using it as de-icer on roads. We shouldn't allow our state to be a guinea pig for disposal schemes such as these. Keeping fracking waste out of Connecticut is the only way to protect our drinking water and Long Island Sound.

HB 5308, AAC the Regulation of Fracking Waste, would classify toxic fracking fluid as hazardous waste, closing a loophole in federal law that has allowed it to remain unregulated here in

Connecticut. Enacting this protection is a positive first step, but it alone is not sufficient to fully protect our residents and waterbodies. I urge you to pass this bill along with the companion bill SB 237 to ensure our state does not become the Northeast's designated dumping-ground for toxic fracking waste.

Protecting Long Island Sound from petrochemicals from the shipping industry is also a concern. Currently, ships loading or offloading oils and other petroleum products must put floatable booming around the transfer area to contain any spills. HB 5307, AAC the Use of Booms for the Retention of Certain Oils, would eliminate this requirement, putting natural resources at unnecessary risk. Though spills are infrequent, a major spill in any of our busy ports would be catastrophic to our economy and our environment. The pre-booming requirement is a common sense best management practice that pays immeasurable dividends by keeping our ports open for business and our Sound's waters and wildlife protected.

Please support SB 237's ban on fracking waste and HB 5308's closing of the hazardous waste loophole, and please oppose HB 5307's weakening of protection against oil spills. Thank you for your consideration.

Sincerely,

Regina O'Brien, RLA (Registered Landscape Architect)

Member, Redding Planning Commission/Town of Redding, CT

Old Town House, 23 Cross Highway
Post Office Box 1028
Redding, CT 06875
203-938-3721
reginaobrienheald@gmail.com

Testimony of Michele Martin
Before the Environment Committee

Regarding
S.B. 237 AN ACT PROHIBITING THE STORAGE OR DISPOSAL OF FRACKING WASTE IN CONNECTICUT
H.B. 5308 AN ACT CONCERNING THE REGULATION OF FRACKING WASTE
H.B. 5307 AN ACT CONCERNING THE USE OF BOOMS FOR THE RETENTION OF CERTAIN OILS OR PETROLEUM AND REVISING CERTAIN REQUIREMENTS FOR THE REGISTRATION OF RADIOACTIVE MATERIALS

Submitted by
Michele Martin
February 26, 2013

Dear Senator Meyer, Representative Gentile, and members of the Committee,

Thank you for the opportunity to comment on Senate Bill 237, House Bill 5308, and House Bill 5307. All three bills have important implications for our ability to protect Long Island Sound and our groundwater from toxic chemicals and petroleum products. I support SB 237 and HB 5308, which would prevent Connecticut from becoming a disposal site for unregulated hydrofracking waste. I oppose HB 5307, which would expose our harbors to preventable oil and gas spills.

I am against the proposed hydrofracking in New York State and every state in the U.S, the continent, the planet, etc. Water is our most precious resource. We must safeguard it from hazardous wastes, including fracking which should be regulated as a hazardous waste. Connecticut would risk so much in the long run, should it allow gas companies to dump their waste in our ground.
I am also concerned about ships spilling oils and other petroleum products in our harbors during loading and offloading could harm marine life in Long Island Sound. We have been effective in cleaning up the Sound and we must continue to protect it.

SB 237, AA Prohibiting the Storage or Disposal of Fracking Waste in Connecticut, is strong and common-sense measure that will protect our surface and groundwater from contamination by toxic hydrofracking fluid. While Connecticut's geology isn't suited to this method of extracting gas from the ground, it is used in neighboring states like New York and Pennsylvania. The exact make-up of fracking fluid is unknown because gas companies can claim it as a trade secret, but we do know that used fluid contains not only the original chemicals, but also heavy concentrations of salts, traces of petrochemicals, and toxins that it carries up from deep in the bedrock. Fracking fluid can be five times saltier than sea water, and can contain any of over two dozen known carcinogens and volatile organic compounds. Because of this, fracking companies have a difficult time disposing of this fluid when they are done with it, and have explored shipping to other states for storage, processing it in wastewater treatment plants, and even using it as de-icer on roads. We shouldn't allow our state to be a guinea pig for disposal schemes such as these. Keeping fracking waste out of Connecticut is the only way to protect our drinking water and Long Island Sound.

HB 5308, AAC the Regulation of Fracking Waste, would classify toxic fracking fluid as hazardous waste, closing a loophole in federal law that has allowed it to remain unregulated here in Connecticut. Enacting this protection is a positive first step, but it alone is not sufficient to fully protect our residents and waterbodies. I urge you to pass this bill along with the companion bill SB 237 to ensure our state does not become the Northeast's designated dumping-ground for toxic fracking waste.
Protecting Long Island Sound from petrochemicals from the shipping industry is also a concern. Currently, ships loading or offloading oils and other petroleum products must put floatable booming around the transfer area to contain any spills. HB 5307, AAC the Use of Booms for the Retention of Certain Oils, would eliminate this requirement, putting natural resources at unnecessary risk. Though spills are infrequent, a major spill in any of our busy ports would be catastrophic to our economy and our environment. The pre-booming requirement is a common sense best management practice that pays immeasurable dividends by keeping our ports open for business and our Sound's waters and wildlife protected.
Please support SB 237's ban on fracking waste and HB 5308's closing of the hazardous waste loophole, and please oppose HB 5307's weakening of protection against oil spills. Thank you for your consideration.

Sincerely,
Michele Martin
Librarian, Greenwich Library
122 E Putnam Ave
Cos Cob, CT 06807
mmichele722@gmail.com
203-832-9503

Position of Susan Michael before the Environment Committee

Regarding:

S.B. 237 AN ACT PROHIBITING THE STORAGE OR DISPOSAL OF FRACKING WASTE IN CONNECTICUT

H.B. 5308 AN ACT CONCERNING THE REGULATION OF FRACKING WASTE

H.B. 5307 AN ACT CONCERNING THE USE OF BOOMS FOR THE RETENTION OF CERTAIN OILS OR PETROLEUM AND REVISING CERTAIN REQUIREMENTS FOR THE REGISTRATION OF RADIOACTIVE MATERIALS

Submitted by

Susan Michael, Durham Connecticut

February 26, 2014

Senator Meyer, Representative Gentile, and members of the Committee,

Thank you for the opportunity to comment on Senate Bill 237, House Bill 5308, and House Bill 5307. All three bills have important implications for our ability to protect Long Island Sound and our groundwater from toxic chemicals and petroleum products. I support SB 237 and HB 5308, which would prevent Connecticut from becoming a disposal site for unregulated hydrofracking waste. I oppose HB 5307, which would expose our harbors to preventable oil and gas spills.

I know that Connecticut is investing heavily in natural gas. This is a mistake. Although natural gas burns cleaner than oil and coal, it comes at a high environmental cost when considering the harmful effects of hydrofracking chemicals upon our precious ecosystem. Please support renewables instead.

SB 237, AA Prohibiting the Storage or Disposal of Fracking Waste in Connecticut, is strong and common-sense measure that will protect our surface and groundwater from contamination by toxic hydrofracking fluid. While Connecticut's geology isn't suited to this method of extracting gas from the ground, it is used in neighboring states like New York and Pennsylvania. The exact make- up of fracking fluid is unknown because gas companies can claim it as a trade secret, but we do know that used fluid contains not only the original chemicals, but also heavy concentrations of salts, traces of petrochemicals, and toxins that it carries up from deep in the bedrock. Fracking fluid can be five times saltier than sea water, and can contain any of over two dozen known carcinogens and volatile organic compounds. Because of this, fracking companies have a difficult time disposing of this fluid when they are done with it, and have explored shipping to other states for storage, processing it in wastewater treatment plants, and even using it as de-icer on roads. We shouldn't allow our state to be a guinea pig for disposal schemes such as these. Keeping fracking waste out of Connecticut is the only way to protect our drinking water and Long Island Sound.

HB 5308, AAC the Regulation of Fracking Waste, would classify toxic fracking fluid as hazardous waste, closing a loophole in federal law that has allowed it to remain unregulated here in Connecticut. Enacting this protection is a positive first step, but it alone is not sufficient to fully protect our residents and waterbodies. I urge you to pass this bill along with the companion bill SB 237 to ensure our state does not become the Northeast's designated dumping-ground for toxic fracking waste.

Protecting Long Island Sound from petrochemicals from the shipping industry is also a concern. Currently, ships loading or offloading oils and other petroleum products must put floatable booming around the transfer area to contain any spills HB 5307, AAC the Use of Booms for the Retention of Certain Oils, would eliminate this requirement, putting natural resources at unnecessary risk. Though spills are infrequent, a major spill in any of our busy ports would be catastrophic to our economy and our environment. The pre-booming requirement is a common sense best management practice that pays immeasurable dividends by keeping our ports open for business and our Sound's waters and wildlife protected

Please support SB 237's ban on fracking waste and HB 5308's closing of the hazardous waste loophole, and please oppose HB 5307's weakening of protection against oil spills. Thank you for your consideration.

Sincerely,

Susan Michael

41 Dunn Hill Road

Durham CT 06422

Joint Testimony of Sam and Jill Callaway
Before the Environment Committee

Regarding

S.B. 237	**AN ACT PROHIBITING THE STORAGE OR DISPOSAL OF FRACKING WASTE IN CONNECTICUT**
H.B. 5308	**AN ACT CONCERNING THE REGULATION OF FRACKING WASTE**
H.B. 5307	**AN ACT CONCERNING THE USE OF BOOMS FOR THE RETENTION OF CERTAIN OILS OR PETROLEUM AND REVISING CERTAIN REQUIREMENTS FOR THE REGISTRATION OF RADIOACTIVE MATERIALS**

Submitted by
Sam and Jill Callaway
February 28, 2013

Senator Meyer, Representative Gentile, and members of the Committee,

Thank you for the opportunity to comment on Senate Bill 237, House Bill 5308, and House Bill 5307. All three bills have important implications for our ability to protect Long Island Sound and our groundwater from toxic chemicals and petroleum products. We support SB 237 which prohibits the storage or disposal of fracking waste in Connecticut. We oppose HB 5308, which would regulate but not prevent Connecticut from becoming a disposal site for hydrofracking waste. We also oppose HB 5307, which would expose our harbors to preventable oil and gas spills.

A few of our concerns:

1. What possible justification can there be to permitting the importation of hydrofracking Hazardous waste materials into Connecticut from out of state? The storage and/or disposal of these materials would pose a serious threat to Connecticut's fragile environment and groundwater supply. Those of us who depend upon that groundwater for our potable water could be seriously harmed. Why is this even being considered?
2. It is the sworn obligation of all Connecticut elected officials to protect the Health, Safety and Welfare ("HS&W") of the electorate. The passage of either HB 5308 or HB 5307 would move the State in the opposite direction.
3. Connecticut should not become a dumping ground for gas companies in other states.
4. We are concerned that ships spilling oils and other petroleum products in our harbors during loading and offloading could harm marine life in Long Island Sound (HB5307)

SB 237 AA, Prohibiting the Storage or Disposal of Fracking Waste in Connecticut, is a strong and common-sense measure that will protect our surface and groundwater from contamination by toxic hydrofracking fluid. While Connecticut's geology isn't suited to this method of extracting gas from the ground, it is used in neighboring states like New York and Pennsylvania. The exact make- up of fracking fluid is unknown because gas companies can claim it as a trade secret, but we do know that the used fluid contains not only the original highly toxic chemicals, but also heavy concentrations of salts, traces of petrochemicals, and toxins that are carried up from deep in the bedrock. Fracking fluid can be five times saltier than sea water, and can contain any of over two dozen known carcinogens and volatile organic compounds. Because of this, fracking companies have a difficult time disposing of this fluid when they are done with it, and have explored shipping to other states for storage, processing it in wastewater treatment plants, and even using it as de-icer on roads. We shouldn't allow our state to be a guinea pig for disposal schemes such as these. Keeping fracking waste out of Connecticut is the only way to protect our drinking water and Long Island Sound.

HB 5308, AAC the Regulation of Fracking Waste, would classify toxic fracking fluid as hazardous waste, closing a loophole in federal law that has allowed it to remain unregulated here in Connecticut. While some feel that enacting this protection might be a positive first step, we disagree, feeling that it would still allow the import of fracking waste materials into Connecticut.

Protecting Long Island Sound from petrochemicals from the shipping industry is also a concern. Currently, ships loading or offloading oils and other petroleum products must put floatable booming around the transfer area to contain any spills. HB 5307, AAC the Use of Booms for the Retention of Certain Oils, would eliminate this requirement, putting natural resources at unnecessary risk. Though spills are infrequent, a major spill in any of our busy ports would be catastrophic to our economy and our environment. The pre-booming requirement is a common sense best management practice that pays immeasurable dividends by keeping our ports open for business and our Sound's waters and wildlife protected.

We urge you to support a total statewide ban on all fracking waste in CT (SB 237) and to oppose HB 5308's closing of the hazardous waste loophole and HB 5307's weakening of protection against oil spills.

Thank you for your consideration.

Sincerely,

Samuel R. Callaway, Jr., and
Jill C. Callaway
23 Magpie Lane
Gaylordsville, CT 06755

Dear Committee Members;

Time is running out for the health of Long Island Sound and the birds, fish, and crustaceans using those waters to live. We have foolishly polluted these waters; we have human-created dead zones in the Sound every single summer. When will we learn?

We must protect this precious body of water. We need HB 5308 to protect Long Island Sound from fracking waste, which is highly, highly toxic. We also need SB 237 so that fracking waste is neither stored nor disposed of in our water-rich, population-heavy state. We do *not* need HB 5307, which seeks to exempt certain entities and situations from protecting Long Island Sound's waters. This is the worst sort of folly for a body of water that is already under stress.

Please do all you can to protect Long Island Sound.

Most sincerely,

Noreen P. Cullen
30 Delmar Rd
Glastonbury, CT 06033
860-633-3276

http://stateofthecoast.noaa.gov/hypoxia/dead_zone.html

Testimony of Shirley McCarthy, MD, PhD
Before the Environment Committee
Regarding S.B. 237 AN ACT PROHIBITING THE STORAGE OR DISPOSAL OF FRACKING WASTE IN CONNECTICUT
H.B. 5308 AN ACT CONCERNING THE REGULATION OF FRACKING WASTE
H.B. 5307 AN ACT CONCERNING THE USE OF BOOMS FOR THE RETENTION OF CERTAINOILS OR PETROLEUM AND REVISING CERTAIN REQUIREMENTS FOR THEREGISTRATION OF RADIOACTIVE MATERIALS

Submitted by Shirley McCarthy February 27, 2013

Senator Meyer, Representative Gentile, and members of the Committee, Thank you for the opportunity to comment

These 3 bills have important consequences in protecting Long Island Sound and our groundwater from toxic chemicals and petroleum products.

I support SB 237 and HB 5308,which protect our state from becoming a disposal site for unregulated hydrofracking waste.

I oppose HB 5307, which would endanger our coasts and harbors to oil and gas spills.

There is no science on the short and long term consequences of hydrofracking. It makes sense that fault lines and ground water are impacted by this technique; only time will tell. In the mean time,CT should protect its citizens, wildlife and geography from this destructive technique and its toxic wastes. Similarly, Long Island Sound is a great resource for non human animals too which must be protected from toxic oil and gas spills. CT is not a dumping ground!!!!

Please support SB 237's ban on fracking waste and HB 5308's closing of the hazardous waste
loophole, and please oppose HB 5307's weakening of protection against oil spills.

Thank you, Shirley McCarthy, MD, PhD
Professor Yale School of Medicine
16 Rockland Park, Branford,CT 06405
Shirley.McCarthy@yale edu

Testimony of:
Save the Sound
a program of Connecticut Fund for the Environment

In Support of

S.B. 237 AA PROHIBITING THE STORAGE OR DISPOSAL OF FRACKING WASTE IN CONNECTICUT

H.B. 5308 AAC THE REGULATION OF FRACKING WASTE

In Opposition to
H.B. 5307 AAC THE USE OF BOOMS FOR THE RETENTION OF CERTAIN OILS OR PRTOLEUM AND REVISING CERTAIN REQUIRMENTS FOR THE REGISTRATION OF RADIOACTIVE MATERIALS

Before the Environment Committee

February 28, 2014
Submitted by Leah Lopez Schmalz, Dir. of Legislative and Legal Affairs

Connecticut Fund for the Environment is a non-profit organization that, along with its regional program Save the Sound, works to protect and improve the land, air and water of Connecticut and Long Island Sound on behalf of its 5,500 members. We develop partnerships and use legal and scientific expertise to achieve results that benefit our environment for current and future generations.

Dear Senator Meyer, Representative Gentile, and members of the Committee:

Thank you for the opportunity to comment on Senate Bill 237 and House Bills 5308 and 5307, each one of which has a potential impact on the health of Long Island Sound.

Fracking: S.B. 237 and H.B. 5308

The impacts of fracking and fracking waste disposal are well documented, even if the complete list of toxic chemicals that make up the slurry are not. In Pennsylvania, drinking water supplies have been contaminated so severely in some areas that water must be delivered by truck. Rivers have been decimated as high levels of total suspended solids and toxins choke fisheries, despite attempts to "treat" the waste before discharging it. The truth is that this method of energy production creates billions of gallons of toxic wastewater, but has no proven track record of successfully dealing with this waste product.

Right now fracking waste enjoys a loophole that allows it to escape heightened regulation as a hazardous waste, despite the long list of regulated toxic wastes that it contains. Currently the federal government gives drilling waste and wastewater created from natural gas production a pass. H.B. 5308 seeks to right that wrong here in Connecticut by bringing that by-product into the hazardous waste grouping. This is a necessary first step in protecting Connecticut from the potentially devastating effects of insufficiently regulated fracking waste. While this fix is an essential one, it is an incomplete solution. It is painfully clear that the Connecticut Department

of Energy and Environmental Protection is underfunded and understaffed. While DEEP has done a good job of creating efficiencies, it is already stretched too tightly; adding the massive responsibility of managing fracking waste is an unreasonable burden to add. Therefore, Save the Sound firmly believes that Long Island Sound and our groundwater are at risk from contamination until Connecticut takes the additional step of banning the storage and discharge of such waste products.

S.B. 237 does just that: protects Long Island Sound, our rivers, and our residents from the devastating effects of fracking waste discharges. Connecticut has made significant investments to ensure our sewage treatment plants have sufficient capacity to treat existing flow and to remove excess nitrogen, and soon, excess phosphorous. Other states have seen that adding fracking wastewater not only affects plants' capacity to treat local sewage by increasing volume, but can also destroy machinery and cause plant operation issues. Worst of all, sewage treatment plants do not currently have the capability to remove all of the toxic chemicals contained in the fracking wastewater—meaning fracking waste "treated" in a sewage treatment plant could still be highly toxic. Allowing wastewater from fracking activities to be stored, "treated," and discharged here is tantamount to signing a blank check to pollute Connecticut's waters, and will undo much of the progress our state has made in returning our rivers, streams and Long Island Sound to healthy, thriving ecosystems.

Connecticut has a long and vibrant history of cutting edge environmental protection. It produced the first comprehensive clean water laws in the country and we owe it to current residents and future generations to continue that legacy. Please do not waste Connecticut. **Please support both S.B. 237 and H.B. 5308.**

Booming: H.B. 5307

Save the Sound **generally opposes HB 5307, the "Spill Bill,"** which would weaken the rules that protect our harbors and Long Island Sound from spills while ships are loading and unloading oil and other petroleum products.

For the last twenty years, Sec. 22a-457a of the Connecticut General Statutes has successfully protected our wildlife, water quality and habitats from the devastating results of oil and gas spills by requiring that vessels transferring such products deploy floating spill retention booms, weather permitting.

Language in H.B. 5307 would change that long standing history. While section 1(a) is a best management practice worth codifying, section 1(b) eliminates the protective booming requirement during the transfer of oil and petroleum liquids with a flash point less than 100 degrees Fahrenheit, a change that would leave Long Island Sound and Connecticut's nearshore areas vulnerable to the impacts from a spill of products like gasoline and kerosene.

We are opposed to any regulatory or statutory attempt to qualify or exclude certain petroleum products from booming requirements, especially absent a fully vetted environmental assessment that quantifies potential ecosystem impacts.

Every effort must be made to control accidental releases of toxic chemicals into the environment. It is well documented that uncontrolled releases of petroleum products, including gasoline, can result in extensive and severe environmental damage. Nearshore areas, where the majority of these petroleum transfers occur, are some of the most ecologically sensitive locations in Long Island Sound. Uncontained spills in and near Stamford Harbor, Bridgeport Harbor, New Haven Harbor or the Thames River could cause extensive damage to shoreline habitats and marine wildlife, particularly to shellfish beds. Booming these petroleum cargo vessels is a precautionary measure that allows officials adequate time to assess and protect environmentally sensitive areas with diversionary booms or to await a helpful change in tide and/or wind to move the accidental release out of the nearshore area and into open waters to evaporate.

Long Island Sound contributes nearly $9 billion to the regional economy every year; protecting it is critical to local businesses and residents. We urge the Environment Committee to uphold the long standing tradition of protecting the Sound's ecologically sensitive areas by rejecting Sec. 1(b) of H.B. 5307.

Thank you for your consideration.

Sincerely,

Leah L. Schmalz, Dir. of Legislative & Legal Affairs
Save the Sound, a Program of CFE
142 Temple St. 3rd Floor
New Haven, CT 06510
t: 203.787.0646 f: 203.787.024
lschmalz@savethesound.org

SB 237 HB 5307
HB 5308

Please vote for these regulatory bills to protect our waters, we've seen evidence from all over the country where fracking is allowed that it poisons the collective well, to actually consider storing the toxic waste that the gas companies will not even disclose the ingredients of is folly as is risking our water to the waste products from petroleum.

History is filled with examples of reassurances that *they* know what to do with waste, that containers are safe from leakage and we know where that has led. Vote for our future, our children's future and the future of the planet.

Sincerely,
Nora L. Jamieson, LPC, Craniosacral
8 Stonemeadow Lane
Canton, CT 06019
860-693-9540
norajamieson@comcast.net

Dear Senator Duff, House Representative Terrie Wood and Governor Malloy -

I urge you to help close the loophole in Connecticut's hazardous waste regulations that currently overlooks fracking waste. I understand that by voting "Yes" to HB 5308 you can achieve this mission.

I also urge you to vote yes to SB 237, a bill that will protect our waters and communities by banning the storage and disposal of fracking waste here in Connecticut. This means I also need you to vote "NO" to HB 5307 so that we can protect our harbors and Long Island Sound from spills while ships are loading and unloading oil and gas.

The usage, storage and transportation of toxic laden fracking waste scares me to no end. We have seen way too many cases of youth and adult cancers in our town (my family included), and can't help but attribute a number of these cancers to the exorbitant number of toxins in our environment. We have to be doing everything in our power to cut down on these toxins. Please, please, please vote to close the loopholes that allow fracking waste to be used on our roads and other places. Please, please vote to ban the storage and disposal of fracking waste here in CT (and beyond, if you ever get the ability). And vote to do everything possible to keep our water clean. Our ecosystem is at a hazardous tipping point. Please do everything in your power to keep it free from toxins.

With heartfelt pleas –

Suzanne Aubrey

Rowayton, CT

36

CITIZENS CAMPAIGN FOR THE ENVIRONMENT

www.citizenscampaign.org

225A Main Street • Farmingdale, NY 11735 516-390-7150
188 East Post Road, Suite #202 • White Plains, NY 10601 914-358-9840
744 Broadway • Albany, NY 12207 518-772-1862
733 Delaware Road, Box 140 • Buffalo, NY 14223 716-831-3206
P.O. Box 661 • Syracuse, NY 13206 315-472-1339
2404 Whitney Avenue, 2nd Floor • Hamden, CT 06518 203-821-7050

Empowering Communities. Advocating Solutions.

Testimony to the CGA Joint Committee on the Environment
Testimony by Citizens Campaign for the Environment
Louis W. Burch, Program Coordinator

HB5308
SB 237
SB 67

February 28, 2014
Hartford, CT

Senator Meyer, Representative Gentile, distinguished members of the Environment Committee, thank you for the opportunity to speak today.

My name is Louis Burch, program coordinator for Citizens Campaign for the Environment (CCE). Supported by over 80,000 members in Connecticut and New York State, CCE works to empower communities and advocate solutions that protect public health and the natural environment. CCE would like to offer the following testimony:

HB 5307- AAC the Use of Booms for the Retention of Certain Oils and Revising Certain Requirements for the Registration of Radioactive Materials (OPPOSED)
CCE is opposed to HB 5307 on the grounds that it would ease regulations intended to protect the Long Island Sound and its sensitive ecosystem from contamination during dangerous oil spills. As an *Estuary of National Significance,* the immense value of this resource cannot be overstated. Long Island Sound is a vital recreational, tourist and economic resource to Connecticut and New York, generating over $8.5 billion in annual revenue for the local economy.

The proposed legislation would amend the current state law requiring booming of ships and barges during the transfer of oil and gasoline. Gasoline spills pose a significant threat to aquatic life and public safety, and need to be addressed quickly to prevent devastating impacts to our harbors and shared waterways. In the absence of booming, gasoline could migrate throughout a water body, making contact with unsuspecting boaters and exacerbating an already serious safety hazard. Booming of gasoline and other petroleum products insures that any spills are contained and can be treated properly.

Containing gasoline spills within a safety boom not only serves to protect marine life by limiting the spread of harmful, highly combustible materials, it also helps ensure that anyone in the vicinity of a spill is aware of the danger and takes appropriate safety precautions. **CCE is supportive of existing regulations requiring booming of gasoline and respectfully urges the Environment Committee to reject this legislation.**

HB 5308- AAC the Regulation of Fracking Waste (CONDITIONALLY SUPPORTIVE)
Hazardous waste products from industrial oil and gas development are toxic, potentially carcinogenic and radioactive, and pose inherent risks to ground and surface water resources, wastewater infrastructure, and most importantly, the health of our communities.

Contaminated fracking fluids that return to the surface during the drilling process can contain a virtual laundry list of toxic chemicals. An independent analysis revealed that of the chemicals used in gas drilling, 50% could cause brain damage, 37% could affect the endocrine system, and 25% could cause cancer or mutations. These chemicals include, but are not limited to formaldehyde, methanol, ethylene glycol, diesel fuel, hydrochloric acid, ethyl benzene, and toluene.[1]

Hazardous waste from fracking operations can also contain high levels of Naturally Occurring Radioactive Materials (NORMs), including Radium-226, which has a half life of over 1,600 years. Radon (a decay product of Radium-226) is the leading cause of cancer among non-smokers, and Radium-226 is linked to bone, liver and breast cancer. The radioactivity of flowback fluids from vertical wells drilled in New York's Marcellus Shale were found to exceed Safe Drinking Water Act Standards by up to 320,500%.[2]

Unfortunately, exploration and production waste from oil and gas fields are exempt from consideration as hazardous waste under federal standards (RCRA Subtitle C). This *hazardous waste loophole* allows gas companies to transport and dispose of toxic fracking waste products without categorizing it as hazardous waste and handling or treating it as such. This process leaves communities vulnerable to exposure to a range of toxic substances, as traditional sewage treatment plants and industrial waste treatment facilities are not designed to remove or treat hazardous waste.

Closing the federal hazardous waste loophole is a critically important step in the overarching strategy to safeguard the health of Connecticut's communities, but it is insufficient to provide adequate protections on its own. **CCE supports HB 5308, and urges the committee to amend the bill to include liquid waste as well as solid waste.**

SB 237- An Act Prohibiting the Storage and Disposal of Fracking Waste in Connecticut (SUPPORTIVE)
The extraction of natural gas using hydraulic fracturing (fracking) produces large amounts of liquid and solid waste that can contain a number of harmful pollutants, including salts; chemical additives, such as ethylene glycol, naphthalene, and sulfuric acid; metals; organic compounds; and other contaminants. These pollutants include chemical additives in fracking fluid, as well as naturally-occurring contaminants that exist thousands of feet below the surface and are mobilized by the extraction process and come up the well along with drilling muds (used as a lubricant during the drilling process), fracking fluids, and the gas itself. Fracking waste from extraction activities in the Marcellus Shale can also contain naturally-occurring radioactive materials (NORMs) such as radium-226 and radium-228.

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[1] Colborn T, Kwiatkowski C, Schultz K, and Bachran M. 2011. Human & Ecological Risk Assessment
[2] NYS Department of Environmental Conservation SGEIS, Appendix XIII

Production brine from fracking can be used on roads for de-icing, dust control, and road stabilization purposes. This waste can run off into adjoining property and ultimately could contaminate rivers, streams, and underground aquifers that feed local drinking water supplies.

Fracking wastewater headed to sewage treatment facilities can carry any of the previously mentioned chemical constituents as well as high levels of salts and radioactive material. Most sewage treatment facilities are not equipped to adequately treat and dispose of this toxic cocktail.

Evidence from Pennsylvania has demonstrated that fracking wastewater can wreak havoc if sent to certain municipal wastewater treatment plants, causing equipment corrosion and water pollution. A 2011 investigative report from The New York Times showed that over a three-year period in Pennsylvania the industry sent more than a billion gallons of fracking wastewater to treatment plants unequipped to handle it, causing the plants to discharge the partially treated wastewater into Pennsylvania's waterways. A study from Duke University examined discharged effluent and downstream water quality from a wastewater treatment facility accepting fracking wastewater in western Pennsylvania. Researchers found increased downstream concentrations of chloride and bromide, and reported that, while radioactive concentrations in effluent were largely reduced, they were not eliminated, meaning that radioactivity could accumulate over time at the point where treated wastewater is discharged. In fact, researchers found that radioactivity concentrations in sediment at the point of discharge were 200 times higher than upstream sediment concentrations.

In addition to concerns around acceptance of fracking wastewater, there have been media reports that some wastewater treatment facilities are currently receiving leachate (liquid that drains from a landfill and can pick up contaminants contained in the landfill waste) from landfills which accept fracking solid waste.

Drill cuttings, sludge, fracking sand, and other waste materials from fracking are sent to landfills for disposal. The contaminants found in fracking are also present in these materials and can lead to concentrated levels of contamination.

The hazardous of fracking waste are clear, and fracking produces millions of gallons of this toxic waste at every well. Connecticut is not prepared to deal with this waste and needs to take action to protect its citizens, communities and natural resources from this hazardous waste. **CCE strongly supports SB 237, and respectfully urges this committee to pass this legislation as soon as possible.**

SB 67- AAC the Inclusion of Juices, Teas, and Sport Drinks under Connecticut's Bottle Bill (SUPPORTIVE)

Connecticut's bottle deposit law was created in 1980 with the goal of incentivizing recycling and reducing litter. The "Bottle Bill" only applied to beer and soda bottles, as these were the most common plastic bottles in circulation at the time. That law was updated in 2009 to include bottled water, but ignored the wide range of juice drinks, sports and energy drinks, and teas that have surged in popularity in recent years.

2074 Park St., #210
Hartford, CT 06106
(860) 231-8842
www.EnvironmentConnecticut.org
www.facebook.com/EnvironmentConnecticut

Written Testimony of Christopher Phelps, Environment Connecticut Campaign Director
Before the Connecticut General Assembly Environment Committee

February 28, 2014

Regarding HB 5308: AAC THE REGULATION OF FRACKING WASTE

Senator Meyer, Representative Gentile, and members of the committee: My name is Chris Phelps and I am Campaign Director for Environment Connecticut. Our organization is a nonprofit member-based environmental advocacy organization working to protect Connecticut's air, water, and natural landscape. We appreciate this opportunity to offer testimony regarding HB 5308, AAC THE REGULATION OF FRACKING WASTE

We have submitted separate testimony on SB 237 supporting a ban on toxic fracking waste storage, treatment, disposal, and discharge in Connecticut. We strongly believe that a full prohibition on such wastes in Connecticut is the best course of action for the state to take in addressing the threat posed to our environment, public health, and economy from toxic fracking wastes.

HB 5308 proposes to define wastes produced by oil, gas, and geothermal drilling activities (note: this is broader than just "fracking waste" as listed in the title of the bill) as hazardous waste for the purposes of Connecticut law. In effect, for the purpose of Connecticut law, this bill attempts to close the infamous "Bentsen Exemption" which exempts fracking and other toxic wastes produced by drilling operations from the federal Resource Conservation and Recovery Act (RCRA.)

We believe HB 5308 is a step in the right direction, but its effect is more immediately relevant to federal law (closing of the Bentsen Exemption loophole in RCRA) than to state law in Connecticut. Fracking operations nationally produce hundreds of billions of gallons of toxic wastewater every single year. (See our analysis in "Fracking by the Numbers" published in October, 2013 and available at http://environmentconnecticutcenter.org/reports/ctc/fracking-numbers.)

Environment Connecticut urges the committee and General Assembly to go beyond the step proposed in HB 5308 and enact a full prohibition on treatment, storage, disposal, and discharge of toxic fracking wastes in our state.

Thank you for the opportunity to offer this testimony on HB 5308.

Sincerely,

Chris Phelps
Environment Connecticut
cphelps@EnvironmentConnecticut.org

State of Connecticut
HOUSE OF REPRESENTATIVES
STATE CAPITOL
HARTFORD, CONNECTICUT 06106-1591

REPRESENTATIVE JONATHAN STEINBERG
136TH ASSEMBLY DISTRICT

LEGISLATIVE OFFICE BUILDING
ROOM 4020
HARTFORD, CT 06106-1591

CAPITOL 860-240-8585
TOLL FREE 800-842-8267
HOME 203-226-6749
E-MAIL Jonathan Steinberg@cga ct.gov

MEMBER
TRANSPORTATION COMMITTEE
ENERGY AND TECHNOLOGY COMMITTEE
AGING COMMITTEE

Testimony Before the Environment Committee on HB 5308 and SB237

I'm here to testify on the two fracking waste bills now before the Environment Committee. I believe these two bills are among the most important pieces of legislation which we will consider this session.

First of all, I wish to commend DEEP for taking the courageous and appropriate action to characterize hydraulic fracturing waste as "hazardous waste," which it so obviously is. Connecticut will be a national leader by closing the loophole created by the federal government, at the behest of the Petroleum Industry. The only word I can think of is "ludicrous" in describing the decision by federal authorities to characterize fracking waste as other than hazardous. This bill will reverse that illogic and subject fracking waste to Connecticut's hazardous waste regulations, among the most stringent in the country.. We need to pass this bill to begin protecting the interests of CT's citizens.

However, I believe that this bill needs to be improved, specifically, to assure that liquid waste is also explicitly included in regulation, not just solid waste. I suggest that the committee adopt language similar to that found in HB5409, which is being considered in the Energy & Technology Committee, which would also cover all fracking byproducts. I'd be glad to elaborate further.

This bill is a great start. But I wish I could say that it is enough. Although DEEP has been dealing with hazardous waste for many years, it has not had to deal with the special, indeed extreme risks inherent with fracking waste, both the new compounds found in fracking waste and, importantly, the alarmingly high levels of radioactivity found in fracking waste samples from the Marcellus Shale deposits, found a short distance away in Pennsylvania and New York State.

There is reason to believe that the department's existing regulations and protocols are insufficient to address these new combinations of dangerous constituent elements. Wastewater treatment facilities, of which there are several in our state which might be interested in the potentially lucrative business of processing or disposing of fracking waste, have no history dealing with such waste and there are serious concerns about the prospect of

a health or environmental emergency. The bromides, or salts commonly found in great quantities in fracking waste, are known to corrode processing equipment, both reducing the effectiveness of processing and the potential of eventually rendering the equipment ineffective. The chlorides found in fracking waste are known to kill bacteria, endangering the aerobic cleansing component found in most wastewater treatment plant technology.

DEEP acknowledges that it only promulgates new regulations *in response* to a specific permit application by a prospective processor or disposal facility. It also admits that it delegates oversight of permittees to third-party consultants. How can we legislators, charged with protecting our citizens' health and safety, have any confidence that processors and DEEP can successfully handle the unknowns posed by fracking waste, particularly in such a manifestly reactive mode? What evidence do we have, from any source, that can give us genuine peace of mind that welcoming fracking waste into the state won't backfire disastrously?

The Petroleum Industry will tell you that it has all this under control. I submit that the industry needs to take greater responsibility for the hazardous waste which hydraulic fracturing creates. Literally billions of gallons of water are contaminated by this process and the industry's track record on truly cleaning the "produced water" coming back up from the fracking wells is spotty at best. Operators try to recycle as much of the water as they can, partially because they're finding it increasingly difficult to find any place that will accept the fracking wastewater they don't recycle.

The industry and others claim that Connecticut's prospective stand on banning fracking waste is "disingenuous." I emphatically disagree. We can accept natural gas as a viable energy alternative for homeowners and businesses but still reject attempts to bring dangerous pollution to our state.

Why would it be disingenuous to require those who create polluted waste to assure that it can be processed and disposed of safely? We all talk about "bad actors," those members of an industry that cut corners or don't take their responsibility to people and the environment seriously enough.

I wish I could say that the Petroleum Industry has policed its own members and that we can trust them to take care of those who leave us all in fear of environmental or health disaster. Instead, the industry invests its money and energy in fighting regulation and denying the ample evidentiary science that identifies the dangers in the fracking process. I'm sure they'll assert – when they testify -- that there's nothing to worry about with fracking waste either.

Until such time as the industry adequately demonstrates that it can control its wayward members and such time that it can show that wastewater treatment facilities have the technologies and protocols – particularly as it relates to the radioactive material found in the Marcellus Shale deposits -- sufficient to assure the public's health and safety, the State of Connecticut has little choice other than to impose a ban on the processing, storage, spreading and disposal of fracking waste. I emphasize "processing" as well, because that word is glaringly absent from SB237 and needs to be included.

Thank you.

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TESTIMONY OF ERIC BROWN
CONNECTICUT BUSINESS & INDUSTRY ASSOCIATION
before the
ENVIRONMENT COMMITTEE

February 28, 2014

Good afternoon. My name is Eric Brown and I serve as associate council and director of energy and environmental policy for the Connecticut Business & Industry Association (**CBIA**). CBIA represents roughly 10,000 companies throughout Connecticut and we are a strong supporter of Governor Malloy's Comprehensive Energy Strategy and its goal of making Connecticut a more competitive state by bring cheaper, cleaner and more reliable energy to our citizens.

This is one reason **CBIA strongly opposes both**:

H.B. No. 5308 (RAISED) AN ACT CONCERNING THE REGULATION OF FRACKING WASTE, which seeks to make Connecticut the first state in the country to regulate wastewater from hydraulic fracturing as hazardous waste; **and**

S.B. No. 237 (RAISED) AN ACT PROHIBITING THE STORAGE OR DISPOSAL OF FRACKING WASTE IN CONNECTICUT, which would prohibit the storage or disposal of these wastewaters in Connecticut

Besides wastewaters, another byproduct of hydraulic fracturing is plentiful, affordable and nearby sources of natural gas. A robust portfolio of North American

fossil fuels combined with expanding development of renewable energy sources has America on the doorstep of energy independence – a scenario only dreamed about a decade ago, a scenario that will transform everything from our economy to our geopolitical and national security priorities around the world. It will make Connecticut stronger, New England stronger and our nation stronger. And it is a sad reality in our view, that this is a goal not universally supported.

We say, let's embrace this once-in-a-generation opportunity and rationally address any challenges that it presents. One of those challenges is managing wastewaters that are the byproduct of hydraulic fracturing

There are three options for managing these wastewaters:

1. Reintroduce the wastewaters back into the ground via underground injection wells

   This technique is used extensively throughout the country. Connecticut however, has strict laws against such discharges and we would not support utilizing this management strategy in Connecticut.

2. Reduce, reuse, recycle

   States where hydraulic fracturing is occurring are working to develop best management practices for reducing the amount of fluids used in the fracturing process. And the use of on-site recycling is also on the rise. A recent study from the University of California at Berkley, recommends that California consider incentivizing recycling of these wastewaters through tax exemptions.[1] They also recommend consideration of developing a general permit for recycling and beneficial reuse in appropriate cases. If California is considering the beneficial reuse of these recycled wastewaters, why is Connecticut considering banning them?

[1] Regulation of Hydraulic Fracturing in California: A Wastewater and Water Quality Perspective, Center for Law, Energy & the Environment, University of California – Berkeley. April 2013, http //www law berkeley edu/files/ccelp/Wheeler HydraulicFracturing April2013(1) pdf. Pg. 41.

3. Treatment and discharge

This also represents a very viable option for Connecticut and other states to effectively manage wastewater from hydraulic fracturing. To be clear, no one is suggesting these wastewaters be directly discharged to surface water or groundwater. In fact, it may well be the case that discharging untreated hydraulic fracturing wastewaters to municipal POTWs is ill-advised. However, if this proves to be the case, there is no reason pretreatment regulations could not be put in place with a special focus on limits for total dissolved solids, chlorides, barium, strontium or other materials often associated with these wastewaters.

EPA study

At the request of Congress, EPA is conducting a study to better understand any potential impacts of hydraulic fracturing on drinking water resources. The scope of the research includes the full lifespan of water in hydraulic fracturing, including extensive investigation into the life cycle of wastewaters associated with hydraulic fracturing and will also explore treatment processes used for reuse of hydraulic fracturing wastewater.

A progress report was released in December 2012 and a draft final report is expected to be released for public comment and peer review later this year.

The research is being guided by members of EPA's Hydraulic Fracturing Research Advisory Panel – a distinguished panel that includes over 30 national experts including nearly 20 of the nation's leading universities (see attached). Among the members is Dr. James Saiers - Professor of Hydrology, Associate Dean of Academic Affairs and Professor of Chemical Engineering at Yale University's School of Forestry and Environmental Studies.

Regulating as Hazardous Waste

H.B. 5308 proposes to address this challenge by labelling hydraulic fracturing wastewaters as "hazardous wastes." CBIA believes this is ill-advised for two reasons. First what constitutes "hazardous waste" is defined in federal statute and Connecticut DEEP relies on that definition for administering the federal program in Connecticut. Having one state modify the definition would again set us apart from state's we compete with as being more heavy-handed with respect to our regulatory climate. Equally as problematic, identifying these wastewaters as "hazardous waste", would exponentially add to the cost of managing it. CBIA continues to urge the legislature to consider the implications of its actions with respect to the impact on our competitiveness and the implications of when we decide to be the "first in the nation" to take action, the implications of other states following our lead. For example, if New York and Pennsylvania should decide to classify these wastewaters as hazardous wastes, the cost of producing natural gas in these states would be significantly escelated – thus raising the cost of the natural gas produced in this manner – thus jeopardizing the opportunity discussed at the outset of this testimony, to reduce energy costs achieve energy independence.

Rational solution

It would appear to us that a prudent course of action for the legislature would be to instruct the Department of Energy and Environmental Protection to develop regulations and permit requirements concerning the treatment (including pretreatment), storage, recycling and reuse of hydraulic fracturing wastewaters.

It is also clear to us that taking a "knee jerk" action such as banning these wastewaters in Connecticut or simply classifying them as a hazardous waste would reflect poorly on our state - casting us as a haven for environmental extremism and as highly hypocritical with respect to our energy policy and the role of natural gas.

Therefore, CBIA strongly urges you to reject these bills and shift your attention to ensuring Connecticut develops reasonable and rational regulations for hydraulic fracturing wastewaters consistent with peer-reviewed science, such as that being conducted by the EPA.

Thank you for this opportunity to comment.

Members of EPA's Hydraulic Fracturing Research Advisory Panel

Dzombak, David A.	**Chair** Carnegie Mellon University	Pittsburgh	PA
Almond, Stephen W.	MeadWestvaco Corporation	North Charleston	SC
Bair, E. Scott	Ohio State University	Columbus	OH
Bloomfield, Peter	North Carolina State University	Raleigh	NC
Bohlen, Steven R.	U.S. Department of Energy	Livermore	CA
Boyer, Elizabeth W.	Pennsylvania State University	University Park	PA
Brantley, Susan L.	Pennsylvania State University	University Park	PA
Bruckner, James V.	University of Georgia	Athens	GA
Davis, Thomas L.	Colorado School of Mines	Golden	CO
DeGeorge, Joseph J.	Merck Research Laboratories	West Point	PA
Ducoste, Joel	North Carolina State University	Raleigh	NC
Dunn-Norman, Shari	Missouri University of Science and Technology	Rolla	MO
Ensor, Katherine Bennett	Rice University	Houston	TX
Faustman, Elaine M.	University of Washington	Seattle	WA
Fontana, John V.	Vista GeoScience LLC	Golden	CO
Goode, Daniel J.	U.S. Geological Survey	Exton	PA
Honeyman, Bruce D.	Colorado School of Mines	Golden	CO
Hufford, Walter R.	Talisman Energy USA	Warrendale	PA
Jack, Richard F.	Thermo Fisher Scientific Corporation	San Jose	CA
Kaback, Dawn S.	AMEC Environment and Infrastructure, Inc.	Denver	CO
Li, Abby A.	Exponent Incorporated	San Francisco	CA
Malouta, Dean	Independent Consultant	Houston	TX
Miller, Cass T.	University of North Carolina	Chapel Hill	NC
Pyrak-Nolte, Laura J.	Purdue University	West Lafayette	IN
Randtke, Stephen	University of Kansas	Lawrence	KS
Ryan, Joseph N.	University of Colorado Boulder	Boulder	CO
Saiers, James E.	Yale University	New Haven	CT
Smith, Eric P.	Virginia Polytechnic Institute and State University	Blacksburg	VA
Tutuncu, Azra N.	Colorado School of Mines	Golden	CO
Westerhoff, Paul K.	Arizona State University	Tempe	AZ
Young, Thomas M.	University of California, Davis	Davis	CA

State of Connecticut
HOUSE OF REPRESENTATIVES
STATE CAPITOL
HARTFORD, CONNECTICUT 06106-1591

REPRESENTATIVE MATTHEW LESSER
ONE HUNDREDTH ASSEMBLY DISTRICT

LEGISLATIVE OFFICE BUILDING
ROOM 4032
HARTFORD, CT 06106-1591

HOME 860-344-1230
CAPITOL 860-240-8585
TOLL FREE 800-842-8267
FAX: 860-240-0206
E-MAIL. Matthew Lesser@cga ct.gov

VICE CHAIRMAN
GOVERNMENT ADMINISTRATION AND ELECTIONS COMMITTEE

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APPROPIRATIONS COMMITTEE
ENERGY AND TECHNOLOGY COMMITTEE
INTERNSHIP COMMITTEE

Dear Senator Meyer, Representative Gentile, Honorable Ranking Members and Vice Chairs and Members of the Environment Committee:

I wish to testify today on the following bills:

HB 5308, *An Act Concerning the Regulation of Fracking Waste*

SB 237, *An Act Prohibiting the Storage or Disposal of Fracking Waste in Connecticut*

I applaud the Department of Energy and Environmental Protection for proposed HB 5308, attempting to extend Connecticut hazardous waste regulations to wastes exempted by the so-called Bentsen Amendment to the federal Resource Conservation and Recovery Act.

It is outrageous that Congress has exempted a vast category of toxic chemicals from meaningful regulation and it is critical that Connecticut act quickly and decisively to protect Long Island Sound, streams and rivers, the public water supply from unregulated fracking waste before it arrives from states in the region. We need to act this session to ensure that fracking wastes do not wind up in storm drains, municipal wastewater treatment facilities, or spread on our roads as a deicer.

This proposal indicates that DEEP takes the potential problems of fracking waste seriously and is intent on ensuring that the same basic safeguards that apply to other toxic wastes applies to fracking wastes.

However, I am concerned that HB 5308 may not go far enough to ensure public health. It is no secret that DEEP's resources are constrained, and there is little to suggest that any Connecticut hazardous waste processing facility has the expertise or the resources to fully handle produced water and other wastes containing a wide spectrum of toxic chemicals, heavy metals, saline products, and, in some cases, radioactive materials.

If other states choose to engage in hydraulic fracturing, they are welcome to do so. However the Environment Committee has the opportunity and the responsibility to send them the message that they cannot export the social and environmental consequences of that decision to their neighbors; instead they should act as true environmental stewards and take responsibility for the entire lifecycle of environmental impact.

The easiest and cleanest solution to this looming and critical public health issue is a simple ban on the storage and disposal of fracking waste. While I will not oppose any efforts to improve the status quo, I would urge the Committee and my colleagues to give strong consideration in particular to SB 237 as the best method of dealing with a growing problem.

In Sec. 22a-148 CGS, et seq. the Connecticut General Assembly has banned possession of sources of ionizing radiation and radioactive materials except in cases specifically authorized by the federal Nuclear Regulatory Commission or by DEEP regulations for specific public purposes. Given that fracking waste serves no public purpose, it should, out of an abundance of caution, be banned from our state.

Sincerely,

Matthew Lesser

I support the following bills:
H.B. No. 5308 (RAISED) AN ACT CONCERNING THE REGULATION OF FRACKING WASTE. To authorize the Commissioner of Energy and Environmental Protection to regulate, as hazardous waste, certain materials that are produced as a result of fracking activities.

***S.B. No. 237 (RAISED) AN ACT PROHIBITING THE STORAGE OR DISPOSAL OF FRACKING WASTE IN CONNECTICUT. To prohibit the storage or disposal in this state of materials produced as a by-product of fracking activities.**

Sincerely,
JoAnne Bauer
Commissioner, Hartford Advisory Commission on the Environment (ACOTE)

Good afternoon my name is William Cooke and I represent environmental and public health organizations that work in Connecticut. I am here to express support for both HB. 5308 and HB. 237. While the legislature deliberates whether or not to adopt these measures I would like to comment on whether or not Connecticut should be accepting this toxic waste or instead working to protect its citizens.

The proliferation of gas production in the Northeast and the Midwest has caused many states to start evaluating how this waste will be handled should it come into their state. This legislature is wise to evaluate how best to protect its citizens and natural resources from what is becoming an overwhelming problem facing the frack gas industry. Gas production creates solid and liquid waste that is frequently radioactive and contaminated with a host of toxic chemicals. Unfortunately, this toxic brew is considered standard industrial waste. If we do not consider it to be hazardous we ignore the reality of what these gas companies are doing.

Both HB. 5308 and HB. 237 provide sensible solutions for addressing waste management from an industry in the Northeast that is looking for cheap and available waste disposal solutions.

Fracking (short for hydraulic fracturing) is a method of drilling for oil and gas that poses serious environmental and public health risks. Fracking uses millions of gallons of freshwater mixed with a cocktail of toxic chemicals to release gas from shale formations deep underground. From Pennsylvania to Texas, communities across the nation have been adversely impacted by industrial fracking operations.

Unfortunately, states without industrial oil and gas development such as Connecticut can still be impacted by the disposal of waste products from fracking. Oil and gas companies often look to other states to dispose of the waste created through fracking operations. Volumes of toxic, radioactive, and caustic liquid waste by-products pose storage, treatment, and disposal problems:

Contaminated *flowback fluids* that return to the surface during the drilling process can contain a variety of toxic chemicals used in the drilling process. An independent analysis revealed that of the chemicals used in gas drilling, 50% could cause brain damage, 37% could affect the endocrine system, and 25% could cause cancer or mutations. The *production brine* that flows out of a producing gas well can be five times saltier than seawater, can contain trace amounts of the chemicals used for fracking, and bring up other naturally occurring contaminants that have been buried underground. The *drill cuttings*, which is the drilled rock removed from the well bore, can by contaminated by naturally occurring contaminants such as radioactivity.

Shale formations can contain high levels of Naturally Occurring Radioactive Materials (NORMs), including Radium-226, which has a half-life of over 1,600 years. Radon occurs naturally as a decay product of Radium-226, and therefore is present in rocks and soils. Radon is the leading cause of cancer among non-smokers, and Radium-226 is linked to bone, liver and breast cancer. Flowback fluid, production brine, and drill cuttings from affected shale formations can be contaminated with high levels of radiation. Production brine from vertical wells drilled in New York's Marcellus Shale was found to exceed Safe Drinking Water Act standards by up to 320,500%.

There is a loophole in federal law that exempts waste from oil and gas operations from being considered hazardous waste, despite the fact that this waste can actually be hazardous! This can result in hazardous

fracking waste being disposed of at traditional sewage treatment plants and industrial waste treatment facilities that are not designed to remove or treat hazardous waste. Inadequate treatment of hazardous waste leaves communities vulnerable to exposure to toxic substances, threatening public health and the environment. Connecticut can impose more stringent disposal requirements for these waste products to close this loophole in Connecticut.

Oil and gas companies sell production brine to states and municipalities as a "beneficial re-use product" to be used as a road de-icer or for dust control. The high salinity content of the brine can adversely impact sewage and water treatment plants and contaminate nearby freshwater ecosystems. Currently, state law fails to protect Connecticut's roadways and shared water resources from road application of hazardous fracking waste products.

From road spreading to sewage treatment facilities to landfills, there are no aspects of Connecticut's environment that is prepared for an onslaught of toxic waste. These are sensible solutions in front of you. Solutions that protect public health, our waters, our farmland, and our communities. I strongly urge you to pass these measures and send a signal to the industry that Connecticut will put the health and well-being of its citizens first.

Thank you for your time today and I look forward to working with you to continue protecting Connecticut's natural resources and people.

OPPOSE HB 5307

SUPPORT HB 5308 and SB 237

Keep CT's environmental protections STRONG

The Page family,

Cheshire CT

HB 5308
SB 237

Fracking waste is toxic and radio active. Connecticut residents DO NOT want fracking waste deposited in our state.

We reject completely any proposal to dump fracking waste here in Connecticut.

NO FRACKING WASTE IN CT!

Lauri Zarin
Kent, CT

HB5308
SB237

Dear Members of the panel,

As CT does not produce gas and it doesn't have fracking within the state, I hope you will approve the ban on importing wastewater from fracking done in other states.

I think the use of fracking has expanded much more quickly than environmental policies about it so people in various parts of the US are suffering from known and unknown problems stemming from fracking. From health and environmental issues to not being able to sell a home because of the location, fracking seems to be causing many problems, partly due to a lack of regulation and understanding of fracking's impact.

Sincerely,

Karen Stickler

192 Somerset St

West Hartford, CT 06110

HB5308
SB237

To all Committee Members:

Please consider all oil industry attempts, present or future regarding storage or processing of fracking waste in Connecticut as unwelcomed complications to our local and state-wide economy and a threat to the liveability within our State.
Thank you.

Sincerely,

James DeCoster
1135 W Broad Street, Apt 16
Stratford, CT 06615

HB 5308
SB 237

Please forward the following to all members of the Environment Committee:

PLEASE BAN TO FRACKING WASTE IN CONNECTICUT

It has become totally evident that fracking and fracking waste are highly toxic, radioactive, thus cause serious health issues. Transporting fracking waste into or through our state is an invitation to disaster if there are any accidents causing spills. Disposing such waste in our state could damage our drinking water supply and contaminate our streams and rivers.

We all need legislation to protect Connecticut from fracking waste.

Thank you,

Edith Schade

Edith Schade, Publisher
Goodale Hill Press
887 Goodale Hill Road
Glastonbury, CT 06033-4043
860-633-4885

CHECK OUR RENOVATED WEBSITE
http://goodalehillpress.com/

HB 5308
SB 237
HB 5307

To Whom It May Concern:

There is no way to adequately treat or safely dispose of fracking wastewater, a toxic byproduct of fracking which poses a huge public health threat. Regulations cannot fully protect Connecticut, which is why we must prohibit fracking waste from entering the state completely. When this waste is hauled long distance over public roads, it poses a huge risk of accidents and spills. This would be devastating to our health and environment in CT. Fracking is too risky for Connecticut and we do not support any measures that would allow such practices.

Thank you,
Elizabeth and Gil Aviles
11 Cobble Lane
Kent, CT 06757

HB5308
SB237

Fracking produces an enormous amount of permanently contaminated highly toxic wastewater. Connecticut should have nothing to do with fracking at all, seeing as it poses a huge public health risk and has been shown in other states to contribute to earthquakes. Please protect CT residents and completely ban all fracking wastewater.

Anna Fabis
24 Leo St
New Britain, CT 06053

Szabo, Todd

From:	Richard Lindsey <lindseyr@snet.net>
Sent:	Wednesday, February 26, 2014 12:33 PM
To:	envtestimony
Subject:	Fracking Waste

HB 5308
SB 237

This may seem like an **elementary** solution.
Why are the drillers and corporations **creating** this waste **mandated** to set up recycling operations as part of the production process ?
Not only would they save on transportation of waste, but they would have the chemicals they use in the fracking to use over again, but also the water to reuse in further fracking ?

Please vote to keep Connecticut waters clean and our land free of fracking waste.
Thank you,
Jerry Jarombek
Riverside, CT

HB 5308
SB 237