## Jonathan Witte

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Good afternoon. My name is Dr. Jonathan Witte [ph]. I live right here in Everett, and I practiced medicine right up the street here for over 30 years until retiring several years ago. I've also been a long-time member of Washington Physicians for Social Responsibility which is a non-profit, nonpartisan organization which is concerned about various issues that pose threats to public health including those related to the environment.

As mentioned by others, tar-sands oil is heavier than conventional crude oil and as a result, has a capacity to sink in water when spilled, making effective clean up response extremely difficult if not impossible. I agree with previous speakers that Washington's current oil spill contingency plan rule does not adequately address this issue and more stringent protections are required to protect our state from the unique risks posed by the transport and storage of this type of oil.

As a healthcare provider, I am particularly concerned about the multiple adverse health effects that can result from oil spills. Some of these effects are due directly to the acute injury sustained as a result of such things as fires and explosions. While others involve acute and chronic health problems caused by exposure to the toxic chemicals in the oil itself and other effects due to -- present in the water included from the spills.

Crude oil is a complex mixture of thousands of chemical compounds. Many of which are toxic to human health and the environment. These include but are not limited to things such as benzene, ethylbenzene, toluene, xylene, polycyclic aromatic hydrocarbons, cadmium, and mercury. Some of these compounds are quite volatile and readily enter the atmosphere where they can easily be inhaled while others can be absorbed directly through the skin and still others enter the body indirectly as the result of the ingestion of contaminated water and seafood.

Once in the body, they may be stored in fat where they can remain there for years. They can also dissolve in cell membranes and enter the mitochondria and cell nuclei where they have the potential to cause damage to various organ systems. These include but are not limited to problems with the endocrine disruption, acute and chronic respiratory disease, a variety of cancers and birth defects just to mention a few.

While the adverse effects to physical health from oil spills are multiple and diverse, they also affect mental health, causing problems such as acute and chronic anxiety, post-traumatic stress disorder, and depression. So because of the unique problem posed by the spills of tar-sands oil due to its ability to sink and submerge in water, more stringent cleanup protocols are required.

Prompt and aggressive responses to such spills are needed to make sure that any released oil is captured soon after it occurs. If this does not happen, there is a likely to be very difficult if not impossible to prevent the adverse health consequences caused by the spills. Water pollution may last for years with the potential of long-term contamination of drinking water along the Columbia River and disruption of various food sources including fishes, shellfish from the Columbia River, and the Washington coastlines.

I, therefore, urge you to enact more stringent requirements for dealing with potential spills of tar-sands oil to protect the health in the residents of our state. Thank you for your consideration.