Testimony of

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Good morning Chairman Charbonneau, Ranking Member Eckerty, and members of the Committee, I am Andrew Whelton, an assistant professor in Purdue University's Lyles School of Civil Engineering and Division of Environmental and Ecological Engineering. I appreciate the opportunity to speak with you today at this important meeting.

Over the past 13 years I have worked as an environmental engineer for the U.S. Army, the National Institute for Standards and Technology (NIST), at private engineering consulting firms, and universities. Much of my work has focused on the scientific challenges associated with detecting and investigating drinking water system contamination incidents and returning affected systems to service. My Purdue University students and colleagues have several ongoing projects in this arena.

The West Virginia chemical spill – that occurred one year ago – has direct relevance to Senate Bill 312 being discussed today.

I can tell you from my experience in West Virginia working alongside grassroots organizations testing contaminated drinking water in affected homes[1], helping West Virginians flush out the contaminated water from their homes, personally experiencing the water's acute side effects, and being called in by West Virginia's Governor to assist in the response[2], Indiana is not prepared for a drinking water disaster of this scale – nor are many states across the country.

The West Virginia Chemical Spill

On January 9, 2014, an above ground storage tank owned by a company called Freedom Industries spilled more than 10,000 gallons of a coal processing liquid into West Virginia's Elk River. The incident occurred in the state's capitol of Charleston during the first week of the legislative session. The spilled substance contaminated the region's sole drinking water supply and ultimately traveled more than 400 miles downstream – eventually threatening Evansville, Indiana.

[1] Residential Tap Water Contamination following the Freedom Industries Chemical Spill: http://pubs.acs.org/doi/pdfplus/10.1021/es5040969
[2] West Virginia Testing Assessment Project (WVTAP): http://www.dhsem.wv.gov/WVTAP/test-results/Documents/WV%20TAP%20Final%20Report.pdf

Initially responders thought a single commercial product called “Crude MCHM” was spilled, but almost two weeks after the spill Freedom Industries would disclose that an additional commercial product called “Stripped PPH” was spilled into the Elk River too. The fact was that each of these products contains numerous chemicals; More than 10 different chemicals were spilled from the storage tank and contaminated the water supply.

In Charleston, the contaminated river water passed through the regional water treatment facility and was distributed by West Virginia American Water Company to 300,000 people across nine counties. This prompted the Water Company and Governor to issue an emergency “Do Not Use” drinking water order. Residents were ordered not to use the licorice-smelling water for any purpose except toilet flushing and fire-fighting. This ban lasted up to 10 days in some areas.

The ‘Do Not Use’ order’s consequences were immediate and long-lasting. Hundreds of schools, restaurants, and daycare centers were forced to close. Within hours, bottled water was scarce on store shelves within a 60 mile radius. Medical facilities switched to emergency water supplies and residents started seeking medical assistance at hospitals and their physician offices for chemical exposure symptoms. It has been estimated that tens of thousands of people experienced illness due to using the contaminated water and by following improper guidance issued by the responders directing people to clean out their plumbing systems – when it was not safe to do so.

The spill’s impact was significant; more than $40 million has been spent to repair damages – so far. Small businesses such as restaurants were especially impacted with one incurring costs of $213,000. The long–term health risks associated with contaminated drinking water exposure remain unknown. One year later, some residents refuse to drink the water in their homes, at restaurants, and others have simply moved away.

Lack of Chemical Information Greatly Hindered the Response and Recovery

The lessons offered here are relevant to Indiana, especially the more than two million people that rely on lakes, rivers, and creeks as a public drinking water supply.

1. In West Virginia, the Water Company and government responders did not know what types of chemicals were stored upstream – until *after* the spill occurred.
2. Freedom Industries provided responders inaccurate, delayed, and outright incorrect information about what they spilled. The Water Company and government responders relied upon much of this information for their early decisions.
3. No water or air testing methods for the chemicals spilled had ever been developed – until *after* the spill happened which prevented responders from immediately determining the extent of water system contamination and health risks.

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Because information about the chemicals spilled was not readily available to responders, responders also had difficulty:

1. Determining what chemicals to test for,
2. Estimating whether the water treatment facility had transformed the chemicals into more toxic compounds,
3. Understanding what chemicals were causing the irritating licorice odor,
4. Predicting if water company equipment, pipes, and building plumbing systems were contaminated, and
5. Issuing guidance to cleaning out contaminated plumbing systems without harming the population.

Like many of the state and federal government organizations involved in this incident, the Water Company was not adequately prepared for this event.

1. The Water Company had only one water source for its entire 300,000 population and only 3 hours of drinking water in reserve when the incident occurred.
2. The Water Company assumed they could remove the spilled chemicals from the contaminated river water.
3. The Water Company did not predict that their filters would sequester one of the chemicals which would then leach back into drinking water for (2.5) two-and-a-half months after the spill – exposing the population to low levels of chemical.

Senate Bill 312

Similar to West Virginia, Indiana government agencies and water suppliers do not have the information needed to prepare for or respond to chemical spills that precipitate drinking water disasters – *and* numerous states across the nation are equally unprepared.

Indiana government agencies and water suppliers must have access to water contamination threat information – *before* – an incident occurs and plan for responding to contamination events. Preparation can be accomplished by registering above ground storage tanks near water supplies, identifying their location, detailing their contents, and keeping this inventory current. Water suppliers must also conduct realistic contamination threat and response planning activities based on the lessons learned in West Virginia.

For Senate Bill 312, tank registration as well as threat and response planning could be costly – but making decisions in the wake of a chemical spill without sound data is to gamble the health of our friends, families, and fellow citizens. The items outlined in Senate Bill 312 would arm water suppliers and state officials with critical information needed to better prepare for, respond to, and recover from water supply contamination incidents.

Thank you for the opportunity to speak with you today.

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