House Transportation and Infrastructure Committee
Field Hearing - Charleston, West Virginia
The Charleston, West Virginia Chemical Spill
February 10, 2014

Testimony of Jeffrey L. McIntyre
President, West Virginia American Water

Mr. Chairman, Mr. Rahall, and Ms. Capito,

Thank you for the opportunity to be here today. My name is Jeff McIntyre and I am the President of West Virginia American Water. I have served in this position since March of 2012 and have been with the parent company for nearly 12 years. West Virginia American Water has been serving West Virginians since 1886. Today, approximately 283 employees operate multiple systems and nine water treatment plants, providing water services to 171,000 customers, which include approximately 550,000 individuals or roughly one-third of the state's population. As the steward of a water system that serves more than 300,000 people in the Kanawha Valley, we take our responsibility of providing clean, safe water very seriously. It is our #1 priority in every decision we make.

West Virginia American Water and our parent company, American Water, are proud of our environmental record. At the national level, based on current information from the U.S. Environmental Protection Agency (USEPA), American Water performs 20 times better than the industry average for compliance with drinking water quality standards and 150 times better than the industry average for compliance with drinking water reporting and monitoring requirements. American Water's water quality performance is also seen in how few drinking water notices of violation (NOVs) are issued to its over 300 drinking water systems nationwide. If American Water's systems had performed like the average drinking water system in the U.S., they would have received over 525 drinking water NOVs in 2013. Instead, American Water received six drinking water NOVs as a company nationwide, and none of those NOVs was issued here in West Virginia.

I would like to give my sincere and heartfelt thanks to the West Virginia Department of Health and Human Resources, the West Virginia Bureau for Public Health, and the West Virginia National Guard, as well as the other agencies, companies, and subject matter experts who were our essential and capable partners in the wake of the Freedom Industries chemical spill.

The Freedom Industries Chemical Spill

I am including a timeline but would like to provide highlights in my testimony.

On January 9th an undetermined amount of 4-Methylcyclohexanemethanol (MCHM) leaked into the Elk River from an above ground storage tank at a Freedom Industries facility, located about 1.5 miles above our Kanawha Valley water treatment plant.

We first learned of the Freedom Industries spill from the West Virginia Department of Environmental Protection. We then took immediate steps to gather more information about the chemical, augment our treatment processes in the Kanawha Valley plant and begin consultations with federal, state, and local public health officials.

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After our water quality team determined that the augmented treatment process was not fully removing the chemical, we reached a joint decision with the West Virginia Bureau for Public Health to issue a "Do Not Use" order to all customers of our Kanawha Valley system.

As of January 9th the Kanawha Valley system had experienced a significant number of line breaks caused by extreme cold associated with the polar vortex followed by warming weather. Because of the line breaks and customers running their tap to prevent freezing, system storage was low and losing water even though the water treatment plant was running at near full capacity. Our best judgment, based on these circumstances, was that shutting down the plant would quickly result in the loss of the entire distribution system, meaning no water would have been available for any purposes. Further, starting the plant back up after the chemical leak was stopped or contained, then replenishing and re-pressurizing the entire Kanawha Valley distribution system would have taken more than a one month even under optimum conditions. After considering the existing circumstances and potential options, we and the West Virginia Bureau for Public Health determined that the best course of action was to keep the water treatment plant running and institute the "Do Not Use" for several critical reasons:

1. In addition to loss of water for drinking, cooking and bathing, a shutdown would have quickly resulted in the loss of basic sanitation capabilities for approximately 300,000 people;

2. A shutdown would also have quickly resulted in a loss of fire protection (*e.g.*, no water pressure to fire hydrants and sprinkler systems) in the 9 counties we serve;

3. We had no way, at that time, to determine or estimate the duration of the chemical spill or resulting plume that would affect the water treatment plant; and

4. Shutting down the plant, losing the system, then re-starting it would have been a prolonged, difficult process, keeping customers out of water for any use for a substantially longer period of time than the actual period that the "Do Not Use" order was in place. Restarting after system loss would have required us to use chlorinated water to disinfect pipes that had been depressurized and exposed to air, flush that chlorinated water, and refill and re-pressurize this highly complex system with approximately 1,900 miles of mains, more than 100 water storage tanks, and 179 pressure zones.

On Jan. 10, the West Virginia Bureau for Public Health received guidance from the U.S. Department of Health and Human Services Centers for Disease Control and Prevention (USCDC) and confirmation from the USEPA that a maximum level of 1 part per million (ppm) of MCHM would be protective of public health. From the initial spill until today, we have conducted extensive and continuous testing of water in the impacted areas, including the river's raw water, finished water leaving the Kanawha Valley plant, and hundreds of points throughout the distribution system.

Levels of MCHM in the river's raw water and the plant's finished, treated water have been at less than the USCDC designated "protective of public health" level (1 ppm) since January 13.

On January 15, based on additional guidance from the USCDC, we issued another advisory for pregnant women to consider an alternative drinking water source until the chemical was at a "non-detect" level throughout the water distribution system.

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On January 17th, Freedom Industries filed for Chapter 11 bankruptcy protection. West Virginia American Water, on behalf of itself and its customers, objected to certain parts of the filing on the following grounds: that the chemical supplier was (1) concealing its true ownership, (2) using a proposed emergency loan to put creditors at a disadvantage, and (3) generally failing to provide the bankruptcy court with sufficient financial information about matters such as Freedom Industries' insurance coverage.

In its bankruptcy filing, Freedom Industries suggested that a water main break had contributed to the hole in its above ground chemical tank. That suggestion is wrong for several reasons: First, to our knowledge, the first report that "water was flowing" on Freedom's property came from the West Virginia Department of Environmental Protection on Monday, January 13, four days after the chemical spill. Second, my understanding is that our personnel went to the Freedom site on January 13 after getting this report and our leak detection equipment did not detect a leak on our main. Third, we have also been informed by the West Virginia Department of Environmental Protection that a flow of water exists at the Freedom Industries' site that originates at an artesian spring from which water flows at a rate of about 10 gallons per minute.

On January 18, following extensive, around-the-clock testing throughout the system, the last area under the "Do Not Use" order was lifted. We will continue to flush the system and test water at designated locations, determined jointly by West Virginia American Water and the West Virginia Bureau for Public Health, until MCHM levels are non-detectable (less than 10 ppb or 0.01 ppm) at all designated sampling locations throughout the distribution system.

On January 21, fully twelve days after the MCHM spill, Freedom Industries informed the West Virginia Department of Environmental Protection of the presence of a second chemical in the spill: a proprietary mixture of glycol ethers known as PPH. Since this disclosure, a group of chemists, researchers, regulators, health organizations and commercial laboratories including: the USCDC, the USEPA, the U.S. Department of Health and Human Services Agency for Toxic Substances & Disease Registry, the U.S. Health and Human Services National Institutes of Health, the West Virginia Bureau for Public Health, the West Virginia Department of Health and Human Resources, the National Guard, the Mid-Atlantic Technology, Research & Innovation Center, the Research Environmental Industrial Consultants Inc., DuPont, the Dow Chemical Company, and West Virginia American Water have collaborated in the development of a method of detection for PPH at the parts per billion level. Even at this minute detection level, only two samples out of 300 samples that have been tested have shown any trace of PPH, and both of those samples were taken after all customers were already under the "Do Not Use" order.

I would like to underscore West Virginia American Water's focus during the Freedom Industries chemical spill and aftermath:

1. Safety is our #1 priority. Throughout this event, our primary focus has been and remains the safety of our customers and employees.

2. Continuous sampling, testing, and treatment is critical. During emergency events like this one, we evaluate the source water entering the system, treat it as deemed necessary or appropriate, and take additional corrective or protective measures--such as "boil water" advisories and "DO NOT USE" orders such as the one that was implemented here--if necessary. For example, we have performed

more than 2,500 analyses since the Freedom Industries chemical spill. We also operate as part of the emergency response team alongside local, state, and federal authorities.

3. Our present objective is no detectable MCHM in the distribution system water. As noted above, we are continuing to flush and sample water throughout the distribution system until there is a non-detect level of MCHM (less than 10 parts per billion) at all of the sample locations.

4. We are partnering with local, state and federal officials. We remain fully committed to working with federal, state, and local authorities to provide information, address concerns, and protect our customer's tap water.

5. We strive to provide our customers with nothing less than clean, safe drinking water. We will work with the state health authorities to assure our customers in the Kanawha Valley that their water is both clean and in full compliance with all applicable Safe Drinking Water Act standards and requirements.

Aiding Our Customers

I would like to share with you some of our efforts to help customers affected by the Freedom Industries chemical spill.

When emergency response efforts began following the chemical spill on Jan. 9, West Virginia American Water immediately deployed 14 water tankers and 6 truckloads of bottled water to assist as bulk water distribution sites, including 16,000 gallons of bulk water from Pennsylvania American Water. I particularly want to thank Pennsylvania American Water and its employees for their support and contribution to our efforts. We also purchased two additional 7,000 gallon bulk tanker trailers, which arrived on January 30 and were made available on February 1 after being licensed, having undergone food-grade washes and distribution headers manufactured.

On January 30, I received a written request from West Virginia Governor Earl Ray Tomblin for additional bottled water resources for the communities we serve. At the time this letter was received, West Virginia American Water had already committed to procuring 20 additional tractor-trailer loads of bottled water at the request of the Governor via a phone call earlier that day. This brought West Virginia American Water's total bottled water contribution to 33 truckloads.

All bottled and bulk water contributed by West Virginia American Water has been and will continue to be coordinated through the state and the West Virginia National Guard for deployment.

We will also provide residential customers with a 1,000 gallon credit to allow them to flush their water system without cost. This equates to approximately ten days of normal water usage for the average residential customer of West Virginia American Water. The maximum water flow through a standard residential 5/8-inch meter is 20 gallons per minute. Flushing guidelines provided by the West Virginia American Water instructed customers to flush for a total of 25 minutes, which would use approximately 500 gallons. The credit being offered accounts for double this amount. In addition, to aid small business customers in this difficult time, a financial credit equivalent to 2,000 gallons will be provided to approximately 5,280 commercial customers. This credit not only recognizes the size of these commercial establishments but also their need for additional cleansing requirements.

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Communicating with Our Customers

Throughout this event, we have striven for transparency and open communication with our customers. To accomplish this, we implemented a number of communication changes.

- We created a hotline for West Virginia customers that was staffed 24/7 by twenty West Virginia American Water employees, including temporary employees, to answer specific questions regarding the lifting of zones.

- To better manage the call volume for our West Virginia customers, we made changes at our national call center in Illinois. Beginning January 12th, we rated the West Virginia calls "#1 priority", along with other water emergencies throughout the country. As a result, the average speed of answer for West Virginia customers from January 12th through January 19th was 18 seconds. This was substantially shorter than the average wait for non-emergency calls outside West Virginia during a period of record cold temperatures throughout much of the U.S.

- We created an interactive web-based map for West Virginia customers to determine when the Do Not Use was lifted for their zone. This map has received more than 2 million views and was extremely valuable in communicating with our customers. It was developed by American Water's Information Technology department in coordination with West Virginia American Water's engineering department in only two days. The map enabled customers to view the status of their zone so they could know when the advisory had been lifted for their area and they could begin flushing. The map was Geographic Information System (GIS)-based, and customers could type their addresses in a search bar to get the most accurate information.

- We had multiple resources managing both our social media outreach as well as our website that housed the interactive lift zone map. We believe these were valuable tools. When comparing activity in the days before the event to the days after, our Facebook average total reach went from about 800 to 62,000. Our website had nearly one million visits during that period.

- We implemented automated calls using information from our customer account database to alert customers of the initial "Do Not Use" order and, later, the status of the zones as the order was lifted.

- We posted on our website instructions for customers to flush their plumbing on the customer's side of the meter.

- We created an infographic on our website to better help our customers understand our complex system of pressure gradients (*i.e.*, zones).

Conclusion

West Virginia American Water has always supported laws and regulations that promote safe drinking water and has an outstanding record of compliance with these requirements. We are committed to working with state and federal officials to protect the public from threats to safe drinking water.

Thank you for the opportunity to appear before the committee.

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Timeline of West Virginia American Water's
Response to the Freedom Industries Elk River Chemical Spill

Thursday, Jan. 9

- West Virginia Department of Environmental Protection notified the Kanawha Valley Water Treatment Plant of the leak from the Freedom Industries facility -- company took immediate action to determine its impact on water sources.

- West Virginia American Water worked with various state agencies to issue a "Do Not Use," order to all customers who receive their water service from this plant (approximately 95,000 customers throughout parts of Boone, Cabell, Clay, Jackson, Kanawha, Lincoln, Logan, Putnam, and Roane counties).

- Interagency team formed and commenced 24/7 response. West Virginia American Water initiated water tanker deployment and purchased truckloads of bottled water for water distribution sites.

- Subject matter experts from DuPont and American Water worked overnight and into Friday to develop a standard method of measuring MCHM in water.

Friday, Jan. 10

- West Virginia American Water continued work with state environmental and toxicology experts to understand the impact of the chemical contamination.
- Laboratories were identified and set up and equipment calibrated while the West Virginia American Water team began establishing a plan for systematic, representative water sampling of the distribution system.
- The West Virginia Bureau for Public Health received guidance from the USCDC and confirmation from the USEPA that a level of 1 ppm for MCHM would be protective of public health.

Saturday, Jan. 11

- An interagency team command post was set up at the Kanawha Valley Water Treatment Plant, comprised of West Virginia American Water employees, National Guard members and representatives from the West Virginia Bureau for Public Health, West Virginia Department of Environmental Protection and Kanawha County.
- An interagency water sample collecting and testing procedure based on hydraulic modeling of the water system was confirmed and communicated to all agencies involved.
- West Virginia American Water communicated that flushing and sampling beginning at a central location and moving out to the far ends of the distribution system was expected to take several days.

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Sunday, Jan. 12

- American Water's IT and GIS team developed an interactive online map of the affected service area broken up by pressure zones in preparation for communicating areas that would be cleared for flushing.
- West Virginia American Water announced that the ban would be lifted in a strict, methodical manner to help ensure that the water system would not be overwhelmed by excessive demand, thereby causing more water quality and service issues.
- Customer flushing guidelines were developed by West Virginia American Water and finalized by the West Virginia Department of Health and Human Resources in preparation for the sequenced lifting the "Do Not Use" order.
- West Virginia American Water announced that it would offer customers a billing credit of 1000 gallons, which should be more than enough to flush the average residential home.

Monday, Jan. 13

- "Do Not Use" order lifted for approximately 25,000 customers (approximately 26% of customer and 50-60% of water usage system-wide), including all hospitals except for Boone Memorial Hospital.
- Automated phone calls were launched in coordination with a map for lifted zones. West Virginia American Water established a temporary local 24/7 hotline to provide additional clarification regarding lifted areas.
- The Kanawha Valley Water Treatment Plant's effluent water test results consistently reported non-detectable levels of MCHM beginning this evening.

Tuesday, Jan. 14

- "Do Not Use" order lifted for additional areas. Cumulative total of 48,000 customers (approximately 50%) restored to date.
- An infographic was designed to educate customers on pressure zones and explain why areas were being cleared systematically.

Wednesday, Jan. 15

- "Do Not Use" order lifted for additional areas. Cumulative total of 56,800 customers (approximately 60%) restored to date.
- Around mid-morning, West Virginia American Water received notice that the USCDC was reevaluating its guidance on the level of MCHM that is protective of public health. Recovery efforts associated with lifting additional zones were temporarily placed on hold for a large part of the day until the West Virginia Department of Health and Human Resources received revised guidance in writing.
- This revised USCDC guidance confirmed the 1ppm threshold, but added an extra level of protection for pregnant women. Customers were advised of this new guidance through the media and West Virginia American Water communications.

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Thursday, Jan. 16

- "Do Not Use" order was lifted for additional areas. Cumulative total of 71,000 customers (approximately 75%) restored to date.
- West Virginia American Water issued a statement that lifts would be limited due to excessive flushing activities that diminished water storage needed to move forward with the recovery efforts.

Friday, Jan. 17

- Early this morning, customers in certain locations were advised to not drink and have limited contact with their water until additional water quality sampling data could be verified. Additional flushing and sampling was conducted.
- "Do Not Use" order was lifted for additional areas. By this afternoon, all customer areas had been lifted for flushing except those subject to the morning advisory.

Saturday, Jan. 18

- The re-issued advisory for the remaining areas was lifted. No customers remain on a "Do Not Use" order. The USCDC's guidance for pregnant women remains in place as an extra precaution for pregnant women.
- Interagency team moves into next phase of system testing at the parts per billion (ppb) non-detect threshold of 10 ppb (0.01 ppm).
- All area hospitals except Boone Memorial and the Charleston Area Medical Center Dialysis Unit (for which we are still awaiting final test results), returned samples results of non-detect.

Sunday, Jan. 19

- West Virginia American Water creates an "Our Next Steps" FAQ sheet to address frequent customer questions.

Tuesday, Jan. 21

- Freedom discloses to West Virginia Department of Environmental Protection that a second chemical, "PPH," was leaked with MCHM during the Jan. 9 spill. West Virginia American Water immediately engages MATRIC and Huntington labs to begin developing a protocol to measure PPH in water samples taken both before and after the "Do Not Use" ban was lifted.

Wednesday, Jan. 22

- Labs provide updates on PPH testing. Initial results indicate non-detectable levels, but further testing continues to determine the lowest possible detection limit.

Jan. 22 to present

- West Virginia American Water continues to flush the system and test water at designated locations, determined jointly by West Virginia American Water and the West Virginia Bureau for Public Health, until MCHM levels are non-detectable (less than 10 ppb (0.01 ppm)) at all designated sampling locations throughout the distribution system.

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