

From: [Bedwell, Heidi](#)
To: [Ernst, Lyudmila \(Mila\)](#)
Subject: FW: Leaks and fires involving fuel (gas and liquid) pipelines
Date: Wednesday, April 3, 2019 11:49:36 AM

From: Adolfson, Andy
Sent: Tuesday, October 23, 2018 11:04 AM
To: fbosone@comcast.net
Cc: Bedwell, Heidi <HBedwell@bellevuewa.gov>; Ripley, Travis <TRipley@bellevuewa.gov>; Nichols, Sean <SNichols@bellevuewa.gov>
Subject: Leaks and fires involving fuel (gas and liquid) pipelines

Hello Mr. Bosone,

Thank you for reaching out with your concerns regarding the Olympic Pipeline, additionally thank you for the steps you have taken in the past to prepare your family, as well as your neighbors, for events that may impact their lives. The Fire Department does it's best to prepare and protect the community, but there will always be the potential for situations that are beyond the scope of our staffing and for these rare events we urge our citizens to prepare in the manner you have.

Leaks and fires surrounding pipelines can be extremely small to horrifically disastrous. We recently saw a natural gas pipeline explosion near Prince George, in British Columbia, which could have had calamitous effects if it had been near a population center. Because the extent of a leak or fire may vary dramatically we gauge our response and actions to the incident. Believe it or not, a fire can be much more desirable than a simple leak as the fire would burn off the product at the site, while a leak may allow the product to flow to a much larger area, creating a much larger explosion/fire hazard and more environmental damage. If we are responding to a pipeline fire, often we will work to control/contain the spread of the fire, instead of trying to extinguish it, and then deal with the leak.

If we are faced with a large fire that we need to extinguish we have several options. Typically the first thing we do is assure the flow of fuel has been stopped. Simultaneously we can initiate fire attack/exposure protection and request additional resources. In most cases, if the fuel stops flowing through the pipeline, the leak stops and the fire burns itself out. Incidentally, these pipelines have sensors that detect when a leak has occurred and will automatically stop the flow of product (my use of the word 'product' refers to anything the pipeline might be carrying – gasoline, natural gas, aviation fuel, etc.).

Each of our engines carries several gallons of foam concentrate. This concentrate is mixed in with the water we pump to produce a solution that does a great job of controlling and extinguishing fuel fires. The concentration is typically about 1% to 3% so the 30 gallons of concentrate each engine carries can go a long way.

Our next major resource are foam trailers. The closest trailer comes from a fire station in Renton

and could be almost anywhere in Bellevue in 15 to 20 minutes. These trailers carry the same type of foam, but in much larger quantities. Seattle Fire Department also has resources we can call in, if needed.

The next asset we would request would be Crash Fire Rescue(CFR) trucks from the local airfields. These resources are located at Renton Airport, King County Municipal Airport (off of I-5 in south Seattle) and Sea Tac Airport. We have had a couple of gasoline tanker fires over the years and, to my knowledge, we have never needed to call in these resources. If we were to request these resources, we would likely get the first CFR truck within 30 minutes, however we would be using the previously mentioned resources in the interim period.

Of course our response will also be impacted by our ability to access the incident (the B.C. explosion is so far in the woods they are building a road so they can get there and make the repairs!) and injuries that may require our more urgent attention. That said, we do have the ability to call in a great number of firefighters and paramedics from partner agencies throughout King County.

As for what citizens should do: move away from the leak. If the leak is a liquid it will pool and flow downhill, so moving up hill and away is the best answer. Leaking gasoline can have its fumes spread horizontally along the ground, but the fumes likely will not move up a hill; it will pool over the leaking fluid and/or move downhill like water flows down a slope. If the leak is natural gas, it will rise in the air and be dispersed by the wind. Natural gas has a specific gravity that is about ½ that of air, so it will rise pretty much straight up, it should not follow along the ground, up a hill.

Sheltering in place can be hazardous as a liquid leak (the liquid itself or the fumes) may propagate towards the structure you are sheltering in. Additionally natural gas will occasionally follow underground cavities and collect in structures (however this is extremely rare). Moving away about ½ mile from the incident site is the best plan. It is also wise to avoid the use of anything that will create heat or a spark when you are evacuating. The chances of this initiating an explosion is very low, but it is a hazard none the less. This means walk, don't drive (unless driving is your only option – thinking about mobility impaired individuals). Don't turn on/off lights or other equipment.

I hope I am answering the questions that concern you. Please let me know if there are any other items I can try to explain. As I stated early on, there are a lot of incidents we can handle as your Fire Department, however we can be overcome. Citizen preparedness is critical for the rare occasions where our resources are out matched. We live in earthquake country, we have some pretty good storms from time to time and certainly a pipeline incident could have a high impact on the community; we appreciate people, like you, who prepare for these extreme situations and are able to help themselves, their families and their neighbors until we can intervene.

Thank you!

Andy

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