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May 26, 2019

VIA EMAIL: holly.mullen@slcgov.com

Holly Mullen, Communications and Engagement Manager
SALT LAKE CITY DEPARTMENT OF PUBLIC UTILITIES
1530 South West Temple
Salt Lake City, UT 84115

Re: Fourth Comment by Kurt A. Fisher on 4th Avenue Well Chemical Treatment Plant
Supplemental note on sodium hypochlorite and seismic risk

Ms. Mullen:

It occurs to me that my letter of May 24 regarding seismic risk and the need to design the chemical treatment plant building to resist a 7.0 magnitude earthquake did not properly describe the failure modes. The first seismic risk letter suggested that the connections to storage tanks would fail.

Additionally, the proposed chemical treatment plant is located in area that is at high risk for ground liquefaction during a magnitude 7.0 earthquake.¹ During liquefaction ground water mixes with surface soils resulting in 1) pooling of water on the surface and 2) liquefying the ground so it no longer supports buildings. In a 7.0 magnitude earthquake, the chemical plant building could structurally fail and puncture the sodium hypochlorite tanks. A liquid chemical would then flow and mix with ground water that has pooled at the surface. Whenever a large volume of sodium hypochlorite and water quickly mix, a chlorine gas cloud results. During a catastrophic earthquake event, residents that live within the immediate neighborhood and first responders should not be burdened with also dealing with a toxic chlorine gas cloud as they digging their neighbors out of the rubble of their homes.

The proposed chemical plant building design is intrinsically inconsistent with the surrounding residential neighborhood. A magnitude 7.0 resilient design would have a larger bulk and be even more inappropriate. These factors weigh to moving the chemical building to the April 2019 Hansen, Allen and Luce Option 2c site, making the structure larger and more resilient to terrorist and seismic failure, and spending the increased public monies to do so.

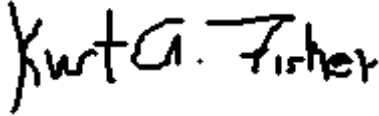
¹ Bartlett, S. F., Hinckley, D. W., and Gerber, T. M. (2016). Figure C-1 in: Liquefaction-Induced Ground Displacement Hazard Maps for a M7.0 Scenario Event on the Salt Lake City Segment of the Wasatch Fault Zone, Salt Lake County, Utah. Salt Lake City, Utah. (url: <http://www.civil.utah.edu/~bartlett/ULAG/Liquefaction Maps Text.pdf>).

Proposed Fourth Avenue Well Drinking Water Chlorination Facility

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I hope the above information contributes positively to the DPU's decision-making process. Please feel free to contact me with respect to this matter by the means listed above. As always your cooperation is appreciated.

Very Truly Yours

A handwritten signature in black ink that reads "Kurt A. Fisher". The signature is written in a cursive, slightly slanted style.

Kurt A. Fisher

Kaf