February 26, 2021

Mr. Adam Jokerst, P.E.
Deputy Director of Water and Sewer
City of Greeley
1001 11th Avenue, 2nd Floor
Greeley, Colorado 80631

Re: Terry Ranch ASR Project and Groundwater Contamination at the Atlas D Missile Site 4

Dear Mr. Jokerst:

At the request of the City of Greeley, Colorado (City), Daniel B. Stephens & Associates, Inc. (DBS&A) has reviewed documents related to the groundwater contamination at the Atlas D Missile Site 4 (Atlas Site), located west of Cheyenne, Wyoming. The potential threat of groundwater contamination from the Atlas Site reaching the Terry Ranch ASR Project site was evaluated.

Historic activities at the Atlas Site have contaminated groundwater with trichloroethylene (TCE), which is a solvent primarily used as a degreaser and cleaner. In the past, TCE was often disposed of in the environment, allowed to evaporate and seep into the ground, reaching groundwater at some sites. TCE dissolves in water, and if it reaches the water table, it will travel downgradient in the direction of groundwater flow.

The concentration of TCE in impacted groundwater is greatest near the source of contamination (e.g., location where it was disposed of), and as it flows downgradient in groundwater, concentrations tend to decrease. The lowest TCE concentrations are typically detected at the toe (or end) of a plume.

The U.S. Environmental Protection Agency (EPA) has promulgated drinking water standards, or maximum contaminant levels (MCLs), which are intended to protect public health. The MCL for TCE is 0.005 milligrams per liter (mg/L), or parts per million, which is equivalent to 5 micrograms per liter (µg/L), or parts per billion.

At the Atlas Site, groundwater is very impacted near the source area. The plume of contaminated groundwater from the Atlas Site extends downgradient for over 10 miles defined by TCE concentrations that exceed the 5 µg/L water quality standard. The toe (end) of this plume is located approximately 6 miles from Terry Ranch. The contamination is within the High Plains aquifer, and the Terry Ranch ASR Project will store and recover water using a different aquifer, the Upper Laramie aquifer.

TCE contaminated groundwater from the Atlas Site is unlikely to impact the Terry Ranch ASR Project for the following reasons:

- Hydrogeologic conditions are not favorable for the contamination to move towards Terry Ranch. The contamination is within the High Plains aquifer, which is largely absent near Terry Ranch, having been eroded away. The toe of the plume is moving towards the northeast, and Terry Ranch is located to the southeast.

- Groundwater moves slowly, so it would take decades before the contamination could travel the 6 mile distance to Terry Ranch.

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- As TCE moves downgradient in groundwater, concentrations tend to decrease because it begins to break down or degrade and also is diluted by mixing with groundwater. TCE concentrations would be low if the contamination could reach Terry Ranch.

- The U.S. Army Corps of Engineers recently completed a remedial investigation for the Atlas Site, and will continue to monitor groundwater quality. DBS&A recommends that the City review future monitoring reports for the Atlas Site, keeping apprised of the detected TCE concentrations and extent of contamination over time. The City could also consider installing sentinel wells to monitor groundwater quality in the northwestern portion of Terry Ranch, if warranted.

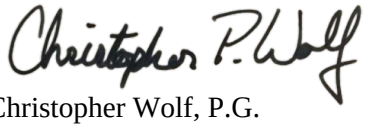
- Wellhead, source water protection, and groundwater management plans should be developed that describe how to monitor, identify, and evaluate threats to groundwater quality. These actions will ensure that the City has time to develop and implement corrective actions for potential threats, if needed.

- Water quality can be managed through ASR project extraction operations, with the recovered water being primarily the water that was injected into the ASR well(s).

The Terry Ranch ASR Project appears to be safe from impacts to groundwater quality related to the Atlas Site. Continued monitoring and assessment of potential threats to groundwater quality need to be evaluated and managed to ensure that the highest quality water resource is available for the project. Please contact me with any questions.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.



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