

# CRESTVIEW MUTUAL WATER COMPANY

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## M E M O R A N D U M

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**DATE:** August 10, 2021  
**TO:** Crestview Board of Directors  
**FROM:** Robert Eranio – Consulting General Manager  
**RE:** **Proposed Well #7 / Chlorine Storage Technical Information**

This report has been prepared for review and approval by the Crestview Mutual Water Company (Crestview) Board of Directors. This report responds to the June 25, 2020, fact-finding of the Ventura County Planning Commission stating that: “The proposed periodic delivery and indoor storage of chlorine for Well No. 7 lacks technical information from the Applicant, including information regarding chemical delivery and operational odors to ensure compatibility with the surrounding existing residential development.”

### EXECUTIVE SUMMARY

Since Crestview began using chlorine gas in 1976, later switching to liquid chlorine bleach in 1996, Crestview has not experienced a notice of violation, reportable leak, or spill involving the deliveries, storage, odor or use of chlorine, including where stored in proximity to residential uses.<sup>1</sup> Like more than 150 water systems in Ventura County, Crestview uses Sodium Hypochlorite (NaOCl - 12.5%) as part of the water treatment process to ensure disinfection and safety of the domestic, portable water supply. Because the stored materials are never exposed to air, they are unable to emit any odor. As part of Crestview’s permit process, the County of Ventura, Environmental Health Division (County EHD) conducts annual Haz-Mat inspections to ensure compliance and to identify any potential hazards that need to be addressed. **Crestview has never failed an inspection, including on the most recent inspection on August 9, 2021.**

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<sup>1</sup> It should be noted that Crestview received a Notice of Violation for not completing Annual Haz Mat Training in 2020. However, the training was canceled by the Ventura County Fire Department and the Association of Water Agencies of Ventura County due to COVID. Crestview is currently seeking closure or rescission of that NOV.

## TECHNICAL INFORMATION

**Background.** Water is treated in the United States to comply with the mandates of the federal Safe Drinking Water Act. Treating drinking water for safe use is widely regarded as one of the greatest public health achievements of the twentieth century and takes place around the country each and every day. Providing clean, safe drinking water requires a “multi-barrier approach” that includes protecting source waters from contamination, appropriately filtering and treating “raw water,” and ensuring safe distribution of treated water to consumers’ taps.

Most drinking water treatment involves filtration of solids and disinfection that kills or inactivates germs like bacteria, viruses, and even microscopic parasites. By far, the most common method of drinking water disinfection in the U.S. and abroad is through chlorination, which may also be added to help protect water from microbial contamination during storage or distribution to homes and businesses throughout the community (American Chemistry Council, *Drinking Water Chlorination*, December, 2020). Crestview complies with the guidance of the American Chemistry Council.

Crestview treats its water supply with sodium hypochlorite. The use of this additive to ensure safe drinking water is expressly authorized for this specific purpose and use in California. (California Code of Regulations, Title 22 - Social Security, Division 4 - Environmental Health, Chapter 16 - California Waterworks Standards, Article 7 – Additives, Section 64593). The chemical sodium hypochlorite is similar to household bleach, and is commonly referred to as “bleach.”

**Crestview Storage of Chlorine.** In accordance with all applicable provisions of the California Health and Safety Code, the California Code of Regulations, and Crestview’s Ventura County-approved Hazardous Materials Business Plan, Crestview has maintained a consistent practice of receiving deliveries of chlorine from authorized, expert vendors using only approved storage containers. Crestview stores its delivered chlorine containers within fully secured, enclosed areas at its facilities. The volume stored at each location strikes a best practices balance between a quantity that might increase the attractiveness of vandalism or terrorist threat and the volume necessary to ensure that Crestview can treat its system effectively during times of interruption in the delivery of chlorine. This latter concern has been made real during the current “Force Majeure” that has been in effect since June 2021. During this nationwide chlorine shortage, Crestview was recognized as a source of Mutual Aid and completed an emergency transfer of bleach when some water systems found their on-hand supplies at risk of depletion. Crestview was contacted by nearby water system operators and the local State Water Resources Control Board to determine whether a collective sharing of chlorine might be necessary to maintain all systems safely.

Crestview only purchases and stores chlorine in liquid form, not as a gas, which reduces the safety and security risk from a release. Further, the stored chlorine is never exposed to the air; it is transferred directly from sealed containers on the delivery trucks to fully enclosed storage facilities, and from within those facilities directly into Crestview’s secure water system. As a result of the lack of exposure of chlorine to air, issues of chlorine odor do not arise. The locations and quantities of chlorine storage, volumes, and the distance of each location from a residence are:

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- Well #6 (241 Crestview Avenue). 3,000 gallons of chlorine are stored and maintained at this outdoor, secured location. The storage facility is located at a distance of 350 feet downwind to the closest residence. During the summer peak chlorine season, 3,000 gallons are delivered to this location every 3-4 weeks and have been since 2006.
- Well #4 (6 Alviso Drive). 1,800 gallons of chlorine are stored and maintained at this outdoor, secured location. The storage facility is located at a distance of 26 feet upwind to the closest residence. During the summer peak chlorine season, 1,800 gallons are delivered to this location every 3-4 weeks during summer, and have been since 1996.
- Crestview Office (328 Valley Vista Drive). 600 gallons of chlorine are stored and maintained at this outdoor, secured location. The storage facility is located at a distance of 65 feet upwind to the closest residence. Approximately 200 gallons of chlorine are delivered to this location monthly during summer and have been since 1996.
- Treatment Plant (602 Valley Vista Drive). Up to 2,300 gallons, but currently 300 gallons due to the filtration plant being offline, and are stored and maintained at this outdoor, secured location. The storage facility is located at a distance of 38 feet upwind to the closest residence. Deliveries of chlorine to this location are infrequent, at a rate of 200 gallons every other month during the peak summer months and have been since the fall of 2007.
- Proposed Well #7 (191 Alviso Drive). Crestview proposes to store and maintain 2,000 gallons of chlorine at this indoor enclosed, secured location. The storage facility is located at a distance of 48 feet downwind to the closest residence. Deliveries to this location are expected to occur in the volume of 1,800 gallons monthly during the peak summer chlorine season.

**Ventura County Inspections.** Inspections of each Crestview facility where chlorine is stored are due to occur annually and are performed by the County's Environmental Health Division (EHD). Inspections, however, did not occur during the COVID pandemic. Note also that since Crestview Well #6 is located in the City of Camarillo, and is not within Ventura County, EHD does not inspect this location. The most recent EHD inspection of the Crestview facilities, at the addresses above, took place on August 9, 2021. As with all previous inspections, Crestview passed without notice of violation, incident, or request for any corrective action. When the written report of this most recent inspection becomes available, Crestview will amend this technical information to add the 2021 EHD report as an attachment.

## **CONCLUSION**

In light of the unblemished record of Crestview with respect to its deliveries, storage, odor or use of chlorine, and in light of the equally close, and in some instances, closer proximity to a residence of other Crestview facilities where chlorine is stored, this technical information supports the conclusion that Crestview's proposed storage of chlorine at Well #7 does not present a health, safety or environmental threat to the immediate neighbors of Well #7 or to the larger Crestview community.