

February 8, 2021

To: San Simeon CSD Board and General Manager

Subject: Input for February 9, 2021 Board Meeting – Moratorium Lifting Critical Weak Link – Desalination – Need for Duty/Standby Arrangement

Request that this letter and attachment be included as green sheets for the February 9, 2021 Special Board Meeting Agenda Item 3B.

Relative to update of the Master Plan and use of the Urban Water Management Plan (UWMP) as a guide, it is believed the District needs to move to a duty/standby desalination arrangement, that is, add a second desalination unit for water system reliability.

Continuing operations with a single desalination unit leaves our community's potable water supply at unacceptably high-risk levels. With development and an extended five-year drought period (as used for planning under UWMP guidelines) the community will be totally dependent on its desalination facilities for six or more months a year. In fact, the District is already dependent on this unit as evidenced by its use this January.

In a common duty/standby arrangement the standby desalination unit takes over during periods of maintenance and during any failures/repair of the duty unit. This duty/standby desalination arrangement would be complimented by generator backup and adequate water storage for five to seven days of community use. The ultimate reliability and water security goal would be two wells, two desalination units, and two water tanks. All critical water infrastructure components would have an active/standby or active/active configuration.

As discussed below, the District does not have a water quantity problem and never has had a physical water shortage, it has pumped over 120 acre/ft/year several times and even over 140 acre/ft/year from Pico Creek. It is all about mitigating chloride levels. The critical weak link for development is the lack of second desalination unit. The community is and will become more dependent on its desalination facilities.

Background:

Updating the District's Master Plan and use of the Urban Water Management Plant makes sense. The Master Plan seriously needs a fresh look and review (from a company selected via a fair, competitive selection process). Growth and other estimates related to the waitlist and available land, water usage, etc. was deficient.

Relative to use of the UWMP as a model, there is area of the plan that needs to be given special consideration. It is detailed in Chapter 7 - Water Service Reliability and Drought Risk Assessment.

District's Water Supply

The District's water supply and usage patterns are different from most other communities. The District's wells are never likely to run out of water. Using data from the District's 2014 Groundwater Availability Update, during the most severe five-year drought period, 1987 to 1991, the District was pumping as much as 148.5 acre/ft. from Pico Creek. (see attached spreadsheet)

The point is that water, to the maximum allowed withdrawal limits, can be pumped from the wells because seawater is intruding into the Pico Creek basin to replace fresh water that has been withdrawn. Of course, chloride levels became intolerable. I understand that during the worst five-year drought period they easily exceeded 2,000 mg/liter, well above the normal limit of 250 mg/liter. The chloride levels were so high that the District replaced all the toilets in town and took other conservation measures to bring withdrawals down to 80 to 90 acre-ft. per year. Usage then begins to creep up again to 110 acre-ft. per year and now is sitting around 77 acre-ft. per year.

Even during the worst five-year drought period, the District never ran out of water to withdraw. The problem of course were the extreme chloride levels caused by seawater intrusion.

Drought Risk Assessment and Water Service Reliability

Drought Risk and Water Service Reliability for San Simeon needs to be viewed from a different perspective. It is not a standard situation where a community runs out of well water. It is all about chloride levels.

As the District saw this January the use of the RO/Desalination facility was needed. That facility has become a critical component in the District's water supply chain.

The Urban Water Management Plan in Chapter 7 provides guidance for a Drought Risk Assessment. It is to be based on the lowest precipitation level for a five-year period. In the 2014 San Simeon Groundwater Availability Update, historical data from Cambria was used as a base. Cambria's average rainfall is close to that of San Simeon's. Not perfect data but best available. Reference attached spreadsheet.

The average rainfall during the severe 1987-1991 five-year period was 13 inches/yr. which is maybe 55% to 65% of San Simeon's annual average depending upon the source of annual average number.

Thirteen inches of rain for five years on average is the drought period that would be used for Drought Risk Assessment in a formal UWMP analysis.

Without a formal simulation but looking at the 2014 report, and with development, the District could end up running the RO/Desalination six or more months a year (subject to formal study.)

Need for a duty/standby desalination arrangement.

From a Water Service Reliability and Drought Risk Assessment viewpoint, the critical risk point is the single RO/Desalination unit. With development, the District will become totally dependent for half or more of the year on its RO/Desalination facility. In fact, the District is already dependent on this unit as evidenced by its use this January.

The District needs to move to a duty/standby desalination arrangement, where the standby desalination unit provides desalination during periods of maintenance and during any failures/repair of the duty unit. It could also provide double the desalination capacity in high demand situations where both wells would need to be active, for example, during a fire.

The water study for lifting the mortarium needs to focus on what has become the weak link and highest risk for our community. It is believed that the community with or without development is at risk during

a five-year drought period per Drought Risk Assessment guidelines. Time for maintenance and extended outages/repairs that may occur with a single RO/Desalination unit are not acceptable.

As it sits now, water storage during a desalination unit outage is extremely limited. Presently, the District has 150,000 gallons of water storage. With one new 400,000 gallon tank and present summer peak usage, the District will have maybe 3.5 to 4 days of water storage. That means that repairs to the single RO/Desalination facility will have to be completed in three to four days which is too risky. A duty/standby desalination arrangement is still needed.

Summary

It is understood there are other issues that must be addressed, but as a resident I consider this to be a showstopper.

A formal five-year drought based analysis must be performed with mitigation actions that guarantee the community's water security via a duty/standby desalination arrangement.

Sincerely,

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

Hank Krzciuk
San Simeon Resident

