State of Utah
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Department of
Environmental Quality

Amanda Smith
Executive Director

DIVISION OF DRINKING WATER
Kenneth H. Bousfield, P.E.
Director

January 12, 2011

Roger J. Sanders
Cedar Point Water Company
20 South 850 West #1
Hurricane, UT 84737

Dear Mr. Sanders:

Subject: **Source Capacity Assessment**, Cedar Point Water Company, System #27089, File #08525

You have requested an assessment of the drinking water source capacity of the Cedar Point Water Company and the number of connections that can be supported by this water system for a proposed expansion of the system. Following is the analysis.

Source Capacity

The Division of Drinking Water (the Division) records indicate that Cedar Point Water Company currently has two active wells and four proposed wells. The safe yield flow rates of the two active wells have been established as follows:

Cook Well (WS001)	47 gpm
Jessup Well (WS002)	47 gpm
Total Safe Yield	94 gpm

It has been communicated to us that an outdoor landscaping ordinance requiring xeriscape is or will be put in place. Therefore, outdoor irrigation use will not be allowed by the water system. Based on this information, the outdoor water use is excluded from our calculations. Our calculations show that the combined flow rate of 94 gallons per minute (gpm) is sufficient for serving **indoor water use only** to approximately 169 service connections at the required 800 gallons per day (gpd) per Equivalent Residential Connection (ERC) for peak day demand as specified in *R309-510-7(2)*.

In addition, Well #4 (WS004) which is one of the other proposed wells, has received plan approval for construction from the Division of Drinking Water and has been pump tested with a safe yield that has been determined to be 108 gallons per minute (gpm). **Currently, this well has not been equipped nor has it received an operating permit.** However, if in the future this well is completed and obtains an operating permit, the 108 gpm capacity would be sufficient for

serving indoor water use to an additional 194 connections at the required 800 gallons per day ERC for peak day demand as stated above.

Therefore, **currently the approved source capacity of this system is sufficient for the indoor water use of 169 residential service connections.** If this water system obtains an operating permit for Well #4 (WS004), the system's source capacity would expand to serve the indoor water use for a total of 363 connections. If at any time outdoor use was permitted in this system, the number of available connections would be reduced and the capacity assessment would need to be re-evaluated.

Other Considerations

Independent of this water source capacity issue, other items need to be considered.

Water Rights
We have not received nor reviewed any information with regards to water rights. Nonetheless, sufficient water rights for domestic use for the connections in this water system are necessary. Based on indoor use only, the amount of required water rights for 169 connections would be 76.05 acre-feet at the required 146,000 gallons or 0.45 acre-feet per year per Equivalent Residential Connection (ERC) for average annual demand as specified in *R309-510-7(2)*. In turn, 163.35 AF of water rights would be required to be able to serve 363 connections.

Storage Capacity
Our records indicate that a 1-million-gallon (MG) storage tank (ST003) has been constructed. However, this storage tank currently does not have an operating permit. An operating permit is required before a facility can be used in the system. Typically, a drinking water system is required to have sufficient storage capacity for indoor water use, outdoor water use, and fire flow storage. The volume for outdoor water use is excluded from the required storage volume calculation. The required storage volume for indoor water use is 400 gallons per Equivalent Residential Connection (ERC) as specified in *R309-510-8(2)*. Therefore, the required storage volume for indoor water use for a total of 363 connections is estimated to be 145,200 gallons. The fire suppression requirements are determined by the local fire suppression authority. To accurately calculate the required fire flow storage, we need a letter from the local fire suppression authority addressed to the water system with specific information regarding the required fire flow in gallons per minute (gpm) and duration in minutes or hours. For the purpose of this storage capacity assessment, the assumption of 1,000 gpm fire flow for 2 hours (equivalent to a total of 120,000 gallons) is used for calculating the amount required for fire flow storage. **If the water system obtains an operating permit for this 1 MG tank, this water system will have sufficient storage capacity to meet both the fire flow storage and the indoor water use of the projected 363 service connections (and the current 169 connections).**

Distribution/Transmission Facilities

Our records also indicate that a 12-inch transmission line has been constructed from the 1.0 MG storage tank and that another project for water distribution lines for the Cedar Point Subdivision Phases 1 and 2 has been submitted. Operating permits have not been issued for either of these projects. Furthermore, the project design engineer must substantiate, **with calculations or a computer water model, that the proposed waterline sizes are adequate to provide sufficient water pressure throughout the development for the number of connections that are proposed to be served**, as outlined in *R309-105-9, Minimum Pressure*:

- no less than 20 psi during fire flow and fire demand experienced during peak day demand;
- no less than 30 psi during peak instantaneous demand; and,
- no less than 40 psi during peak day demand.

If you have any questions regarding this source capacity assessment or if I can be of any further assistance please do not hesitate to call me at 435-986-2590 or email pwright@utah.gov.

Sincerely,

J. Paul Wright, P.E.
Southwest District Engineer

JPW

cc: Shauna Benvegnu-Springer, Division of Public Utilities, PO Box, 146751, SLC, UT 84114-6751
Steve Jenkins, Southwest Utah Health Dept., 620 S 400 E, #400, St. George, UT 84770
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