
RIO LINDA/ELVERTA COMMUNITY WATER DISTRICT



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Evaluation of Source Capacity Requirements and Options January 11, 2008

On November 19, 2007, the California Department of Public Health (CDPH) issued Compliance Order No. 01-09-07-CO-004 (Compliance Order) to the Rio Linda/Elverta Community Water District (District). The Compliance Order requires the District to correct ongoing water supply and water pressure problems. The Compliance Order imposes a service moratorium directing the District not to add any new service connections or issue any “will serve” letters to potential water users. (The Compliance Order can be viewed at the District’s website at: www.rlecwd.com.)

This service moratorium is currently in effect and will remain in effect until CDPH determines that the District has addressed nine *directives* identified by the Compliance Order. The District is actively working with CDPH to comply with these directives. Directive 6, due January 31, 2008, requires the District complete a study that evaluates a) how much additional source capacity and/or storage capacity is needed, and b) the options for providing additional source(s) of supply and/or storage facilities to remedy the water supply and water pressure problems. As the first milestone report required by the Compliance Order, this study will include a cost comparison of these options, a discussion of recommended solutions, and a proposed schedule for implementation.

The District has completed a draft of this first milestone report. A summary of the source capacity requirements and options discussed in the draft report are summarized below. The District is also addressing other directives within the Compliance Order; these efforts are also summarized below under Current District Activities.

Background

The District relies on groundwater as its primary source of water supply. The District has installed 11 municipal wells between 1957 and 1993. Since 1993 the District has lost a portion of its groundwater supply due to problems at three wells: in 1999 production capacity at Well No. 2A was reduced due to sanding problems; in 2006 Well No. 3 and Well No. 5 were removed from service because of arsenic levels that exceeded new and more restrictive Federal drinking water standards that went into effect January 2006.

During the summer of 2007 the District received complaints of low-pressure, especially within the District’s service area east of Dry Creek. In response to these reports the District took pressure readings in September 2007 at select locations within this area and observed readings below 20 pounds per square inch (psi) - the minimum safe pressure mandated by CDPH. It is these low-pressure observations that triggered the Compliance Order subsequently issued by CDPH.

Current District Activities

The District has already taken steps to mitigate the water supply and water pressure shortfalls. These actions also contribute to meeting various directives of the Compliance Order, as noted.

- The District has adjusted all chemical metering pumps to insure a minimum disinfectant residual of .5 mg/l at the system entry points and a minimum of .2 mg/l through-out the distribution system. (Addresses Compliance Order Directive 1.)
- The District observed locations experiencing low water pressure and has documented those locations. (Addresses Compliance Order Directive 2.)
- The District is currently logging pressure in eight different locations around the distribution system. The District is in the process of implementing flow logging at all well/pump sites. (Addresses Compliance Order Directives 3 and 4.)
- The District is developing a rehabilitation plan for Well No. 3. The reactivation of Well No. 3 could add up to 500 gallons per minute (gpm) in capacity. Blending and/or other treatment measures will be implemented to keep arsenic levels below new Federal drinking water standard. (Addresses Compliance Order Directive 6.)
- The District has raised the operating pressure in the east side of the distribution system, where the majority of low water pressure issues occur. (Addresses Compliance Order Directive 6.)
- The District is finalizing an Interim Support Agreement with Sacramento Suburban Water District to provide capacity/pressure support, (on the east side), through at least 2009. (Addresses Compliance Order Directive 6.)
- The District submitted the draft study (summarized below) to CDPH on December 31, 2007. (Addresses Compliance Order Directive 6.)

The District will be continuing these activities and initiating other activities towards fully mitigating the water supply and pressure problems and meeting the CDPH Compliance Order. The District will provide updates of all activities at Regular Board meetings held monthly. The District will discuss these activities and the draft report required to meet Directive 6 at a Special Meeting to be held at the Depot/Visitor Center on January 22nd, 2008 at 3:00 p.m. The CDPH will also be in attendance to explain the Compliance Order and to address any questions or concerns of the community members.

Source Capacity Limitations

As required under Directive 6 (a) of the Compliance Order, the District evaluated its need for additional source capacity. The District estimated its total available source capacity and compared this with an estimate of the maximum day demands (*meeting these demands allow the District to meet average summer time demands*), and peak hour demands (*meeting peak hour demands allows the District to maximum summer time demands and meet fire flow requirements*). The District's estimated water demand and estimated available source capacity is as follows:

- Maximum day demand is estimated to be 6,800 gpm
- Peak hour demand is estimated to be 10,200 gpm
- Available source capacity is estimated to be 5,900 gpm

Low-Pressure Problems

To comply with Directive 6 (b) of the Compliance Order, the District evaluated the reported low-pressure problems occurring on the east side of the District. This evaluation is required so that the District can define options that both bring the system into compliance in terms of needed capacity and minimum safe pressure requirements mandated by CDPH.

Hydraulic modeling of the District's system shows that the District's available source capacity cannot maintain adequate pressure levels under peak hour demand conditions within the eastern part of the service area (generally east of Dry Creek). The District determined that this condition occurs because of

limited supply sources in the eastern area (only three wells are present) and limited transmission capacity between the western and eastern area. This information, used together with the additional capacity requirement is used to evaluate options intended to add additional capacity to the District's system where it's needed most under current conditions.

Options for Meeting Requirements Mandated by CDPH

With this study the District confirmed the observed low-pressure problems during peak hour demand conditions are related to the reduced pumping capacity that occurred in recent years. The District has defined options to correct these capacity and pressure problems to meet the Compliance Order issued by CDPH.

To help with this evaluation, the District approached its analysis by assessing what specific options are needed to improve capacity and pressure in the west area (west of Dry Creek), and what specific options are needed to meet the same needs in the eastern service area (east of Dry Creek).

The District's efforts show that by reactivating Well No. 3 and adding Well No. 14, the peak hour demand condition can be met in the west side. By implementing these options the District projects it can meet CDPH mandated minimum capacity and pressure requirements in the west side by the summer of 2009. At this time CDPH would consider a request by the District to lift the new connections moratorium for this area.

To meet peak hour demands in the east side, the District is considering one of three options:

- Add a new well (Well No. 15)
- Add a 0.5 millions gallons storage tank with booster pumping station
- Use the District service intertie with SSWD

All three of these options are adequate for meeting estimated peak hour demand in the east side. The preferred option will be based upon completing a cost comparison and taking into consideration long-term needs. This remaining work is underway and will be completed for the final report.

Plan for Redundancy and Emergency Supply

The Compliance Order mandates that the District "provides a reliable and adequate supply," which to the District means they need to have built-in redundancy in the event a well goes down, and provisions for emergency supply in the event of catastrophic failure, such as a system-wide power outage. To meet the redundancy requirement the District proposes to add an additional well to its system (Well No. 16).

Regarding emergency supply, CDPH suggested the District provides emergency power supply to secure production capability equivalent to average to maximum day demand. Currently, the District has three wells equipped with emergency backup power generators (Well No. 2A, No. 10, and No. 12). These wells are all located on the west side and can meet current average day demand in that area. To meet the CDPH requirements for maximum day demand, the District proposes to add a generator to Well No. 14, scheduled to be on line by the summer of 2009. For the District's east side, there is currently no emergency backup power in place. The District proposes to add a generator to Well No. 11 by summer 2008; this will meet average day demands requirements. To meet maximum day demand requirements on the east side the District proposes to equip the new Well No. 15 with backup power; the District anticipates Well No. 15 coming on line in 2010.

For Additional Information

The District will discuss the draft report at a Special Meeting to be held at the Depot/Visitor Center January 22nd, 2008 at 3:00 p.m. The CDPH will also be in attendance to explain the Compliance Order and to address any questions or concerns of the community members. The Compliance Order can be viewed at the District's website at: www.rlecwd.com. **For additional information** please contact Dee Dillon (General Manager) at 916-991-8891 or Pat Goyet (Operations Supervisor) at 916-991-8892.