



PHYLLIS L. MURDOCK, DIRECTOR

MARK A. LUNDBERG, M.D., M.P.H., HEALTH OFFICER

WWW.BUTTECOUNTY.NET/PUBLICHEALTH

ENVIRONMENTAL HEALTH DIVISION

September 7, 2010

Gran Mutual Water Company  
Attn: Kevin O'Shea  
P.O. Box 31  
Nelson, CA 95958

**TO: GRAN MUTUAL, PWS #04-00008**  
**RE: ROUTINE SANITARY SURVEY**

An inspection was conducted on August 31, 2010 at the Gran Mutual Water System. Present during the inspection was Kevin O'Shea, Certified Distribution Operator, who provided helpful assistance. The primary purpose of the inspection was to perform a routine sanitary survey of the water system.

The inspection identified the following areas requiring attention:

1. Complete within one month:
  - a. Complete and submit to this Department an updated Bacteriological Sample Site Plan and Emergency Notification Plan.
  - b. Submit to this Department monthly meter reading data for at least the past year.
  - c. Submit 2010 Backflow Protection Device Test Reports.
2. This Department recommends the following:
  - a. Submit to this Department any records pertaining to the rehabilitation of well site #1.
  - b. Installing meters at individual homes so as to monitor well production versus individual homeowner usage.

If you have any questions regarding this letter, please contact me at (530) 538-6773 or at the below address.

Sincerely,

Elaine McSpadden, REHS  
Butte County Division of Environmental Health

Enclosure: Technical Report, 2010 Chemical Monitoring Schedule

**BUTTE COUNTY  
ENVIRONMENTAL HEALTH DIVISION  
Small Water System Technical Report**

<b>System Name:</b> Gran Mutual Water Co.	<b>System Number:</b> 04-00008
	<b>Inspector:</b> Elaine McSpadden, REHS
<b>Permit Holder:</b> Gran Mutual Water Company	<b>Person(s) Contacted/Position:</b> Kevin O'Shea, Certified Distribution Operator
<b>Date of Inspection:</b> August 31, 2010	<b>Last Annual Inspection:</b> November 8, 2007

**A. INTRODUCTION**

1. **Permit Status** – First permit issued March 1982. An updated permit was issued August 2007.

**Is the permit up to date?** Yes

**List data sheets on file:**

Sample Siting Plan (1997), Small Water System Permit Information Report (2003), NorthStar Engineering Report (2007), Emergency Notification Plan (1997), Bacteriological Sample Site Plan – GWR Addendum (2010) and Well Data Sheet (DWR).

2. **Changes in System**

**Since last annual inspection:** Well station #1 was rehabilitated. Upgrades included rebuilding well #1, installing new security fence around well station #1, and installing *Watchman Security System*.

**Planned future changes:** Continue to make positive changes and upgrades as needed so as to comply with California Drinking Water Standards.

3. **Consumer & Production Data**

**Number of service connections:** 109 (at build out). Currently there are 92 active service connections.

**Number with meters:** 0

**Approximate population served:** 225

**Water produced during recent 12 month period:** Unknown at this time; awaiting meter reading data.

**B. SOURCE DATA**

Sources	Status	Capacity	Comments
<b>Groundwater</b>			
12" steel cased well, 711 ft deep	Active - Primary	400 gpm	60 hp submersible pump
12" steel cased well, 639 ft deep	Active – Backup	400 gpm	50 hp submersible pump; 8" sleeve installed 2007

**Discussion & appraisal (i.e., does source capacity comply with Waterworks Standards?):** According to the *Engineers Report Update* in 2007, Gran Mutual's maximum day demand (MDD) at buildout would be approximately 643,200 gallons per day (gpd). The peak hourly demand (PHD) at buildout would be approximately 40,200 gallons per hour (gph). The water system is capable of producing a total of 936,000 gpd which exceeds the MDD for buildout by about 30%. Additionally, the water system has a total of 190,000 gallons in storage volume. The storage capacity should meet the MDD, however, this system supplements required storage capacity with additional source capacity.

The water system complies with waterworks standards. No complaints have been received regarding lack of water pressure or shortage of water.

**C. TREATMENT****1. Surface Water Sources: N/A****2. Groundwater Sources**

**Is continuous disinfection provided?** No

**Describe facilities:** N/A

**If disinfection is not provided, are provisions & connections for emergency chlorination provided per ODW guidelines?** See below.

**Discussion & appraisal:** A chlorine injection unit has been installed at the new well to allow for treatment of well water prior to entering the storage tanks. Chlorine residual can be measured and recorded automatically as the water leaves the tanks to ensure that adequate free chlorine levels are maintained in the distribution system. Currently the Mutual water company does not plan on continuously chlorinating the water but has installed the system to chlorinate in case of emergency.

**3. Other Treatment or Blending Facilities**

**Describe facilities & parameters treated/blended (i.e. iron, &manganese, fluoridation, nitrate, corrosion control, organics, etc.)**

N/A



4. **Describe Records Maintained of Treatment:** N/A

**D. TRANSMISSION FACILITIES**

**Describe transmission facilities:** See Distribution System below.

**Discussion & appraisal (include low head lines):** See below.

**E. DISTRIBUTION SYSTEM**

**1. Pressure Zones-Description**

Two storage tanks, existing bolted steel 85,000 gallon water tank and new welded steel 105,000 gallon water tank provide a total of 190,000 gallons storage volume. This storage volume exceeds the minimum required for the subdivision and serves primarily as reserve storage for fire protection and peak hourly usage. The tanks are plumbed in parallel so that given the need one can be taken off-line and still maintain system functionality. Both storage tanks are interconnected and attached to both the gravity system and through piping to the pressure system as well.

The pressure system is made up of 6" main lines and serves 37 lots of the Rocky Bluffs Subdivision from a pump house at the tank site. The pump house contains two 15 HP variable frequency drive (VFD) booster pumps (operate lead/lag and alternate) and one 7.5 HP single stage centrifugal pump (backup) capable of pumping approximately 650 GPM at 55 PSI (at the pump house). Additionally there are 4 85 gallon bladder pressure tanks that help to buffer the system pressure. Once all of the lots in the pressure system develop they will draw an estimated PHD of 230 GPM. This number when added to the required fire flow of 500 GPM is close to the maximum capable by the existing booster pumps. As lots in this final phase come on line it will become critical to watch the actual use and potentially provide increased pumping capacity for the pressure system. New flow meters have been installed on the pressure system to quantify the water use.

The gravity system supplying water to the rest of the users (Skansen and Spanish Gardens) is fed through an 8" main line from the tank site running through well site #1 and to the end of Oak Ridge Dr. From here the line is reduced in size to 6" and serves the Bluffs subdivision to the west.

A new Genset 100 KW self-starting generator has been installed at the existing tank site (site of new well). The Genset is sized to provide emergency power to run the new well, existing pressure system pumps, vital system controls, and monitoring equipment. The Genset will be automatically programmed to start itself at the loss of power in the grid. Another back-up generator a Genset 80KW self-starting generator has been installed at the existing well site.

## **2. Mains**

**Describe:** According to the water system file, the distribution system is comprised of PVC pipes and ductile iron pipes. The distribution system installed in 1961 is nearing the end of its useful life. It is probable that within the next 10 yrs to 15 years the original system installed in 1961 will need to be replaced. Leaks and ruptures should become more common as the pipes deteriorate. It is recommended that this area of the distribution system is watched closely. Additionally it would be a good idea to have the existing pipes physically inspected to determine actual wear and perform preventative maintenance.

**Discussion & appraisal of leak history, construction standards, water & sewer line separation practices, & lead pipes:** According to information obtained on site, water and sewer lines have been kept separate. If the water and sewer lines crossed, the water line was installed above. No lead pipes have been used. No leaks were noted during the inspection.

## **F. WATER QUALITY & MONITORING**

### **1. Bacteriological Monitoring**

**Description of program:** Monthly analysis is required to be conducted at a state certified lab in conformance with Title 22, California Code of Regulations, Section 64421 et seq. Water samples are taken at points designated on the Sample Siting Plan.

**Is the sampling plan current & approved?** A current sampling plan is required.

**Controlling factor is population or service connections?** Service connections.

**Number of samples per month or week required?** One (1) per month  
**MCL violations in past year?** The water system violated the MCL in June 2010.

**Discussion & appraisal:** The water system is currently in compliance with the Total Coliform Rule.

### **2. Chemical Monitoring program:** Monitor the chemicals as indicated on the Chemical Monitoring Schedule.

### **3. Additional Monitoring-Description of program (Physical quality of distribution system, corrosion, lead monitoring, etc.):** The water system must comply with the Lead and Copper Rule.

## **G. OPERATION & MAINTENANCE**

## 1. Planning & Personnel

**Are system improvements made in accordance with the Waterworks Standards?** Improvements must be made in accordance with the California Waterworks Standards whenever applicable.

**Does the utility have up-to-date distribution system maps &/or schematics?**  
A schematic is available in the file.

**What is the minimum grade requirement?** A certified D-1 operator is required for the system.

**Tabulate certified samplers**

Name	Title	Grade
Kevin O'Shea	Owner, Water Utility Professional Services	D1

2. **Cross-Connection Control Program:** There are three double check valves installed on irrigation mains and one RP device installed at well site #2. All assemblies must be tested at least annually. Test reports submitted December 2009.

3. **Complaints-Discussion & appraisal of complaint program:** All complaints are placed in the correspondence section of the water system's file. All complaints are investigated to determine validity and resolved accordingly. No complaints have been received in the last year.

## 4. Emergency Response

**Is an up-to-date emergency notification plan on file?** An update plan is required.

**Discussion & appraisal:** A current ENP will be submitted.

## 5. Main Disinfection Program

**Describe main disinfection program including, methods, contact time, chlorine residual, bacteriological tests, records & compliance with AWWA specifications?** At this time continuous chlorination is not required. If necessary, the system must be disinfected as per AWWA standards.

## 6. Valve Maintenance Program

All valves are to be maintained in good repair. Valves are exercised regularly throughout distribution system.

7. **Flushing - Describe flushing program including information on deadends & record keeping:** A once per year flushing program of the fire hydrants has been implemented.

**Approximate number of dead ends:** Unknown.

**Flushing Valves** Fire hydrants serve as flushing valves.

**Discussion & appraisal:** No complaints have been received for a lack of flushing.

## **H. OVERALL SYSTEM APPRAISAL**

The water system has been in existence since 1965. The expansions have occurred to support growth of development in the area. The department will continue to work with the water system to meet the requirements of the Safe Drinking Water Act.

Report prepared by: \_\_\_\_\_  
Signature Date