

State Water Resources Control Board

Division of Drinking Water

October 30, 2017

Mr. Fidel Alas
Board President
Palo Alto Park Mutual Water Company
2266 Glen Way
East Palo Alto, CA 94303

Dear Mr. Alas:

2017 SANITARY SURVEY FINDINGS Palo Alto Park Mutual Water Company, Water System No. 4110020

This letter is in regards to the October 11, 2017 sanitary survey of the Palo Alto Park Mutual Water Company (PAPMWC) water supply, treatment and distribution system. Ms. Van Tsang and I of the Division of Drinking Water (Division) conducted the inspection in the presence of Ms. Niambi Lincoln, Ms. Katherine Loudd, Ms. Jacqueline Lewis, Mr. Jabari Loudd, Mr. Wilfred Loudd,, Mr. Michael Ward, Mr. Mike Frietas and other Board members. We also had the opportunity to discuss with Ms. Kate Elgin and Ms. Joanne Jarin with the San Mateo County Environmental Health (County) regarding PAPMWC's Cross Connection Control Program (CCCP). During the inspection, system facilities including Wells 02, 03, 05, 06 and 07; chlorination facility; the 350,000 gallon and 11,500 gallon storage tanks; and the two booster pumps were visited. The following items discussed during the inspection and noted below require your attention and response. Please respond in writing by **November 30, 2017**.

Compliance with Iron and Manganese Standards

Permit Amendment 1 to the Domestic Water Supply Permit No. 02-88-006 was issued to the PAPMWC on June 29, 2007 to allow the operation of Well 07 using a blending treatment strategy for iron and manganese compliance. The iron and manganese concentrations used to determine the blending strategy were based on water quality samples taken on November 11, 2006 from the wells and are noted below.

Well #	Flow Rate , gpm	Iron, mg/L	Manganese, mg/L
2	125	Nondetect	0.059
3	600	Nondetect	0.015
5	340	Nondetect	0.020
6	325	Nondetect	0.011
7	350	0.480	0.068

FELICIA MARCUS, CHAIR | EILEEN SOBECK, EXECUTIVE DIRECTOR

Since the issuance of the amended permit, the iron and manganese concentrations from all five wells have increased above the values obtained from the November 11, 2016 sample. As such, the factors used to establish the operation modes identified within the amended permit are no longer accurate. Furthermore, the iron and manganese samples collected at the blend point (Primary Station Code 4110020-007) for compliance have exceeded their secondary maximum contaminant level (SMCL) of 0.3 mg/L and 0.05 mg/L, respectively, on the following dates:

PS Code	Source Name	Chemical	Sample Date	Result, mg/L
4110020-007	Well Blend Iron/Manganese	Manganese	10/21/2008	0.58
4110020-007	Well Blend Iron/Manganese	Manganese	1/20/2009	0.56
4110020-007	Well Blend Iron/Manganese	Manganese	10/20/2009	2.6
4110020-007	Well Blend Iron/Manganese	Manganese	12/17/2013	0.66
4110020-007	Well Blend Iron/Manganese	Manganese	9/16/2014	0.66
4110020-007	Well Blend Iron/Manganese	Manganese	9/15/2015	0.75
4110020-007	Well Blend Iron/Manganese	Iron	10/21/2008	3.3
4110020-007	Well Blend Iron/Manganese	Iron	6/16/2009	12
4110020-007	Well Blend Iron/Manganese	Iron	4/5/2016	7.4
4110020-007	Well Blend Iron/Manganese	Iron	4/12/2016	3.4

The repeated exceedances at the blend point demonstrates that the current operation mode is not an effective and reliable treatment strategy for iron and manganese compliance. Therefore, PAPMWC must proceed with an alternate treatment system that removes the iron and manganese from the source water. As the manganese concentrations from both Wells 02 and 07 and iron concentration from Well 07 exceeds their respective SMCLs, treatment must be provided to both wells. We understand that PAPMWC is exploring possible treatment solutions and we look forward to working with you on the treatment selection, design, installation, operation, maintenance and monitoring of that system. Please provide to the Division, by **November 30, 2017** an action plan with significant milestones and timeline to install the iron and manganese removal system.

System Reliability – Infrastructure Improvements

Booster Pumps

The PAPMWC water system relies upon two booster pumps to pressurize the distribution system. As you are aware, one of the booster pump failed around July 2016 and was in repair for weeks. We understand that PAPMWC can generally meet pressure demands with just one pump. However, relying upon a single pump that has aged puts the system at risk of depressurizing and result in a system wide water outage. As such, PAPMWC needs to evaluate the remaining useful life of both booster pumps and develop a Capital Improvement Plan (CIP) to replacing aging infrastructures before they catastrophically fail. Please perform the evaluation and provide a copy of the CIP to the Division by **December 31, 2017**.

Well 03

Well 03 is currently offline due to a failure in the below ground well casing, which also caused sediments to enter the distribution system. The capacity from Well 03 makes up approximately 38 percent of the total production for PAPMWC and is therefore, considered a critical infrastructure of the water system. Please inform the Division by **November 30, 2017** PAPMWC's plan and timeline to either destroy and replace or repair Well 03.

Above Ground Condition of Wells 02, 05 and 07

The above ground features of Wells 02, 05 and 07 are also in poor condition. As seen in figure 1, the well casing of Well 02 has cracked away from the top flange, creating a pathway for contaminants to reach the water supply. Please take immediate actions to seal the opening to prevent the entrance of animals or other sanitary hazards. In addition, please also evaluate the structural integrity of the well casing and make necessary corrections before the well catastrophically fails.

As seen in figures 2 (Well 5) and 3 (Well 7), various above ground components of Wells 05 and 07 are beginning to rust. Please explore options to correct the problem.

Well Building Structures

Groundwater supply wells should be well protect against rodents or other animals. The building structure around Well 02 have separated from the concrete slab, creating an opening at the base of the building (figure 4). The screens on several of the building structures have come loose or fallen off (figure 5). Please secure the buildings to prevent animals from gaining access to the well site.

In addition, chemicals, paint or other solvents should not be stored next to a well site (figure 6). Please immediately remove these containers to prevent contamination of the ground water supply.

Bacteriological Monitoring of Water Main after Installation or Repair

Section 64580 of the California Waterworks Standards (CA WWS) requires newly installed water mains, or water mains that have been taken out of service for maintenance or repair to be disinfected and tested for bacteriological quality in accordance with American Water Works Association (AWWA) Standard C651-05. Samples from new mains must be negative for coliform bacteria prior to the new main(s) being placed into service. AWWA Standard C651-05 states the following:

5.1.1.2 For new mains, sets of samples shall be collected every 1,200 ft (370 m) of the new water main, plus one set from the end of the line and at least one from each branch greater than one pipe length.

5.1.1.3 If trench water has entered the new main during construction or if, in the opinion of the purchaser, excessive quantities of dirt or debris have entered the new main, bacteriological samples shall be taken at intervals of approximately 200 ft (61 m), and the sampling location shall be identified (see Sec. 5.1.3 for sampling location details). Samples shall be taken of water that has stood in the new main for at least 16 hr after final flushing has been completed.

5.1.2.1 For repaired mains that were depressurized and/or wholly or partially dewatered, one set of samples may be required, and depending upon the sanitary conditions, the line may be reactivated prior to the completion of bacteriological testing. Samples shall be collected downstream of the repair site and at

intervals of approximately 200 ft (61 m) within the length of pipe that was shut down. If direction of flow is not known, samples shall be collected on either side of the repair site.

According to the PAPMWC records, water mains were either installed or repaired during four separate incidents since 2016. Bacteriological samples were not collected in accordance with the AWWA Standard after each main activity. As such, it is uncertain if the water quality served to the PAPMWC community was compromised at that time.

PAPMWC is hereby required to immediately notify the Division of all future installation, replacement or repair to your water mains. The notification must include the following:

- Location, size and condition of water main
- Number of customers affected
- Staff and/or contract professionals performing the water main work
- Specific procedures for disinfecting the water main
- Address of the bacteriological sample site(s)

A copy of the bacteriological quality result must be automatically submitted to the Division by the contact laboratory. Enforcement actions may be taken for failure to comply with the disinfection and bacteriological monitoring requirements of the CA WWS for future water main activities.

Customer Complaints

Review of the complaint forms indicate that PAPMWC has received several customer complaints regarding the taste, odor, color, turbidity and/or pressure of the water supplied to the community. The forms however did not discuss the possible cause(s) of these issues, measures taken to address the complaints and results of the actions. Please discuss within the **November 30, 2017** response letter PAPMWC's procedures for responding to and follow-up actions to address all customer complaints. All complaint forms must include sufficient information to demonstrate that the complaints were adequately addressed. Please submit as part of the Annual Report to the Division detail records of all customer complaints.

Aluminum Concentration from Well 07

The aluminum concentration from Well 07 for a sample collected on August 22, 2017 was 0.720 mg/L, which exceeds the aluminum SMCL of 0.2 mg/L. Section 64449 (c)(1), Chapter 15, Title 22 of the California Code of Regulations states that if the level of any constituent in Table 64449-A, which includes aluminum, exceeds an MCL, the community water system shall initiate quarterly monitoring and determine compliance on the basis of an average of the initial sample and the next three consecutive quarterly samples collected. As such, quarterly monitoring for aluminum must be initiated for Well 07, with the next sample due by December 31, 2017. In addition, aluminum monitoring must also be conducted at the blend point on the same date as the sample from Well 07 to determine the aluminum level served to the community.

Cross Connection Control Program

The PAPMWC currently contracts with the County to administer your CCCP. According to County records, there are currently four backflow devices installed within the PAPMWC system:

- Dumbarton Avenue – Residential connection with private well. Reduced Pressure Principle Backflow Prevention Device (RP) installed at the service meter.
- Palo Verde Street – Residential connection with private well. RP installed at service meter.
- Addison Street – Double check valve assembly (DC) installed on a fire suppression system.
- Wash & Go Laundry – DC installed on a fire suppression system.

It was noted during inspection that a cross connection control survey has not been conducted of all premises for potential health hazard to the public water system. As such, it is uncertain if there are additional private wells within the PAPMWC service area. Therefore, by **December 31, 2017**, please provide to the Division an action plan and schedule to complete the cross connection control survey and install the appropriate backflow prevention devices, as needed.

Records of Hydrant Flushing and Valve Maintenance

PAPMWC is commended for proactively flushing all hydrants located at dead ends every two weeks and the rest of the distribution system once per quarter. In addition, all valves are exercised once a year. The flushing records indicate that the hydrants are flushed for five minutes. Please include the following information on all flushing and valve maintenance records:

- Flushing velocity
- Size of water main
- Condition of hydrant or valve
- Type and size of valve
- Water quality condition at the start and end of flushing – chlorine residual, turbidity and pH
- Name of staff who performed the system maintenance

The records will be reviewed by Division staff during future inspections of the PAPMWC.

Sample taps on Wells

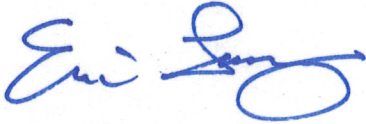
Section 64560(c)(3)(2) of the CA WWS specifies that public water supply wells shall be equipped with a non-threaded sample tap located on the discharge line between the wellhead and check valve. Sampling taps used for obtaining samples for bacteriological analysis shall not have a screen, aerator, or other such appurtenances. Taps should also be protected from potential sanitary hazards, such as animals and outdoor elements. Furthermore, the taps should provide a laminar flow for sample collections, especially for VOC analyses. Please remove the vacuum breaker and threads off the sample tap on the wells. We recommend PAPMWC install a dedicated, protected and down turned gooseneck sampled tap on all wells and at locations used for compliance monitoring.

Succession Planning

It was mentioned during the inspection that Ms. Katherine Loudd will be stepping down as the manager overseeing the operation of the PAPMWC water system and Ms. Niambi Lincoln will be assuming the role. We appreciate the positive working relationship with and assistance provided by Ms. Loudd over the years and wish her all the best in her retirement. We look forward to working with Ms. Lincoln on the many great improvement to the PAPMWC water system.

The Division appreciates the assistance provided by the PAPMWC Board, operation staff, Mr. Frietas, Ms. Elgin and Ms. Jarin during the inspection. If you have any questions regarding this letter, please contact Ms. Van Tsang at (510) 620-3602.

Sincerely,

A handwritten signature in blue ink, appearing to read "Eric Lacy", with a stylized flourish at the end.

Eric Lacy, P.E.
District Engineer
Santa Clara District
Drinking Water Field Operations Branch
Division of Drinking Water

cc: San Mateo County Environmental Health



Figure 1. Well 2 – Opening between well casing and top flange.



Figure 2. Well 5 – Rust on above ground features.



Figure 3. Well 7 – Rust on above ground features.



Figure 4. Well 2 - Opening beneath building structure.



Figure 5. Loose screens on well building structures.



Figure 6. Well 3 – Chemicals stored next to well site.