

July 28, 2015

Marina Coast Water District  
Patrick Breen, P.E., Project Manager  
2840 4<sup>th</sup> Avenue  
Marina, CA 93933

**Subject: The Promontory  
Potable water distribution and waste water collection system**

**RE: Final report and recommendations**

Harris & Associates provided construction inspection for the installation of the potable and recycled water distribution and waste water collection systems for The Promontory project as authorized Owner representative for the Marina Coast Water District.

## **SANITARY SEWER COLLECTION SYSTEM**

### Overview

The sanitary sewer (SS) collection system consists of approximately 680 lineal feet of 8-inch SDR 35 mains, 120 lineal feet of 3-inch SDR35 force main, a lift station and 5 manholes. All elements of the SS system were installed by The Don Chapin Company, Inc. per manufacturer's recommendations and project plans and specifications.

### Testing (reference Appendix A)

After the installation of the manholes, the sanitary sewer was tested following the MCWD specifications in section 15043. The SS system was tested for leakage, infiltration and deflections/obstructions.

- Leakage was tested using hydrostatic pressure against the backflow devices and capped ends (where line were open at the end) on the laterals. The lines were pressurized to 3.5-5.0 psi and let stand for 5 minutes; no visible leakage witnessed during these tests.
- A mandrel (sized according to the chart in 15043.3.C.1) was pulled through each line; no deflections or obstructions were detected.
- Each of the five manholes was tested in accordance with MCWD specification (section 15043.3.D). There was no visible leakage witnessed during the manhole testing.
- The lift station barrel was tested in accordance with MCWD specification (section 15043.3.D). There was no visible leakage witnessed during the manhole testing.

The sanitary sewer piping and manholes passed all the tests in specification section 15043 and was eligible to be placed in service as of 9/17/2014. The final inspection for the lift station generator and pumps was not observed by Harris & Associates; MCWD personnel observed this.

## **POTABLE WATER SYSTEM**

### Overview

The potable water system consists of approximately 480 lineal feet of 16-inch, 1,930 lineal feet of 8-inch, 720 lineal feet of 6-inch and 170 lineal feet of 4-inch C900 PVC piping and 3 meters. The piping was installed per manufacture's recommendations and project plans and specifications. All bell spigot joints, restraints and meter sets were installed by The Don Chapin Company, Inc. and witnessed by the Harris & Associates inspector.

### Testing (reference Appendix B)

The potable water system was tested in accordance MCWD standard specification section 15042. The potable water line was hydrostatically tested in two phases:

- Phase 1 consisted of testing 16-inch line at a pressure of 225 psi for a period 4 hours; the first test failed to hold pressure. After the contractor checked his connections and valves a subsequent test was performed the following day; this test (date 2/26/2014) passed.
- Phase 2 consisted of pressurizing the 8" lines to 225 psi for a period of 4 hours; this test (date 4/2/2014) passed.

Once all services were completely flushed of chlorine the lines were tested for bacteria by a certified lab (Monterey Bay Analytical Services) and witnessed by the inspector. The samples were taken twice in accordance to AWWA and MCWD standards. A total of 48 samples were taken; all 32 samples came back absent of coliform bacteria. The final bacterial testing was performed with the tie in to the existing 14-inch service on 5<sup>th</sup> Avenue on 5/30/2014; the bacterial testing at this location was passing as well.

The potable water system met all criteria and testing limits as required by AWWA and MCWD standards; the system was eligible to be placed in service as of 5/30/2014.

## **RECYCLED WATER SYSTEM**

### Overview

The recycled water system consists of approximately 115 lineal feet 4" C900 PVC piping and 1 irrigation meter. The piping was installed per manufacture's recommendations and project plans and specifications. All piping and meter sets were installed by Quality Landscape Services, Inc. and witnessed by the inspector.

### Testing (reference Appendix C)

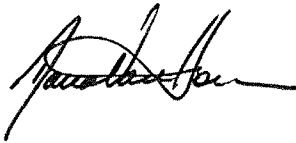
The recycled water line was hydrostatically tested in accordance with MCWD standard specification section 15042. The hydrostatic testing was performed by pumping the 4-inch line to a pressure of 150 psi for a period of 4 hours; the testing passed.

## **RECOMMENDATIONS**

The potable and recycled water distribution and sanitary sewer collection systems detailed above were built in accordance with the MCWD standards and the plans designed by Whitson Engineers (dated 12/16/2013). Based on our observations and the results of the testing performed the systems detailed above were eligible to be place in service as of 5/30/2014. As noted above, we did not witness the final testing for the equipment for the lift station (this was done by MCWD staff) therefore we have no final recommendation regarding this particular element of the system.

Based on the foregoing information, Harris & Associates recommends that MCWD accept and incorporate the sanitary sewer collection system and water distribution system as installed by The Don Chapin Company at the Promontory site effective 5/30/2014.

Regards,  
**HARRIS & ASSOCIATES**

A handwritten signature in black ink, appearing to read "Dana Van Horn", written in a cursive style.

Dana Van Horn, PE  
Senior Construction Manager