

Project Name

Water System Investigation
Chinhae, South Korea

Client / Owner

U.S. Navy, Pacific Division, Pearl Harbor, Hawaii

Year Completed

1996

Project Description & Firm's Responsibility

Water source, treatment, and distribution are concerns at this military installation. Because of a recurring water quality problem concerning metal corrosion and plant operations, an engineering investigation was performed to determine the cause, extent, and remedy for the immediate and long term. Work included field investigation on the cause of abnormal metal pipe corrosion and failure in the Navy's water distribution system; tests on drinking fountains for the occurrence of high concentrations of lead and copper exceeding the U.S. Safe Drinking Water Standards; evaluation of the water treatment plant for process optimization; and a survey of the water infrastructure for sanitary operating conditions. A water vulnerability assessment and contingency plan for water contamination emergency response was also part of the scope of services.

Field investigation involved sampling and testing drinking water samples for various water quality constituents using portable laboratory kits; evaluating data for corrosion characteristics and corrosion control measures; and recommending alterations to the water treatment plant and infrastructure to enhance operating reliability and purveying potable water to U.S. personnel stationed at the base.

Recommendations included piping modifications at the treatment plant to afford unit process operating flexibility and redundancy for reliable operations, changes in well field pumpage, construction of an auxiliary tank to serve as a backup raw water storage tank and clear well, and alterations to the chlorine disinfectant injection system. These measures have been implemented, making the base water system operations more reliable and effective in providing compliant drinking water quality and quantity.

