

TREATMENT TRAIN REMOVES 1,2,3-TCP AND NITRATES CREATING CRUCIAL CONNECTIONS IN MONTE VISTA WATER DISTRICT

BACKGROUND

In June 2020, Monte Vista Water District (MVWD) was awarded a \$3.4 million grant from California's Department of Water Resources to help fund the Plant 30 Wellhead Treatment Project – the largest infrastructure project the district has undertaken in its 93-year history. The project aims to improve water quality for stricter regulations, which includes treating for 1,2,3-Trichloropropane (TCP), a man-made ingredient in pesticides applied to farm fields from the 1950s to the 1980s.

The treatment system was a two-step process with granular activated carbon (GAC) pretreatment to specifically target 1,2,3-TCP followed by ion exchange (IX) technology to remove nitrates. Through a design-bid-build between consulting firm, Hazen and Sawyer, and the general contractor, J.F. Shea Construction, Inc., Aqueous Vets® (AV®) was selected as the most technical and competent vendor, uniquely suited to help throughout the design, manufacturing and contracting phases.

PROJECT DETAILS

AV designed six (6), two-vessel GAC systems with carbon steel pipe modules, including site pipe that connects to both the GAC Systems and the new IX systems, forming a "treatment train" for both 1,2,3-TCP and nitrates. The GAC Systems were divided half coal, half coconut carbon, enabling the district to run a full-scale comparison to determine which performs best in their water system.

PROJECT LOCATION

Montclair, CA

PROJECT TIMEFRAME

Aug. 2022 – April 2022

AV SCOPE OF WORK

\$2,700,000

GENERAL CONTRACTOR

J.F. Shea Construction

PROJECT TYPE

Design, Manufacture,
Install

PROJECT PHASE

Complete

END USER

Monte Vista Water
District

DESIGN ENGINEER

Hazen and Sawyer

CONTACT AV SALES

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KEY GAC SYSTEM DESIGN & OPERATIONAL PARAMETERS	VALUE
Number of Systems/Vessels per System	6/2
Operating Configuration	Parallel/Lead-Lag
Carbon Capacity/Volume per Vessel ft ³	594
Media Type	Coal/Coconut
Design Flow Rate (Overall/per System)	4,000 gpm/667 gpm
Hydraulic Loading	8.5 gpm/ft ²
Empty Bed Contact Time per Vessel	6.66 Minutes
Underdrain	Septa/External Ring Header
Overall System Height to Top of Pipe	17'-10"

AV PROJECT SCOPE

AV designed, manufactured, delivered, offloaded and assembled six (6) PF 10-820 GAC systems for drinking water, meeting NSF 61 standards.

