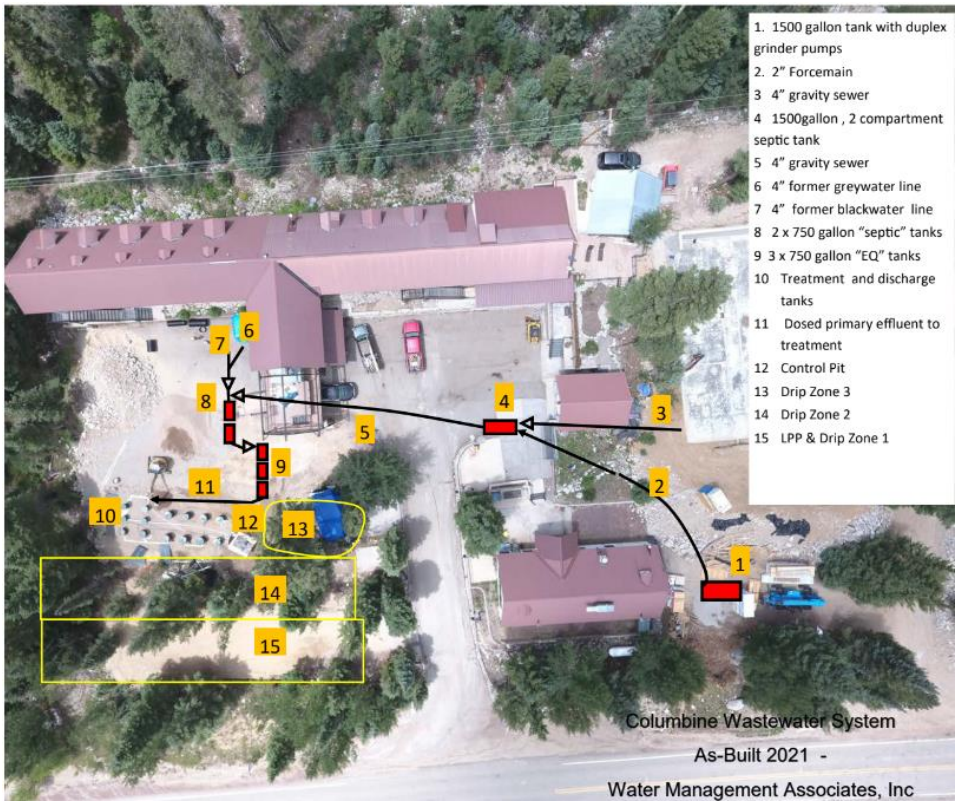
FujiClean USA | **Case Study**

Columbine Inn, New Mexico designed by Water Management Associates



Problem: Columbine Inn is employee housing for 71 residents that work in the Ski Valley of New Mexico. Expansion was needed. Waste Management Associates in Santa Fe was able to design a system using two FujiClean CEN21 models and creative pressurized drainfields to meet the expansion needs.

Design: Overall design for daily flow was drainfield space and legal treatment soil limited due to drinking water well setback regulations and soil texture. Ultimately a 33% reduction in daily flow was needed. To achieve this goal, average daily flow from 2019 was reviewed which resulted in several water leak corrections and low water use fixture installations. Additionally, eliminating waste of inhabitants absence for 40+ hours per week while at work and a strict water use monitoring system to warn residents when water usage was reaching daily maximum (which results in water shutoff), a daily design flow of 2,160 GPD or 30.4 gallons per capita was achieved.

All sewage flows to an upgraded wastewater treatment system. Existing septic and gray water tanks were reconfigured for primary settling and flow equalization. Secondary and tertiary treatment are done in a pair of FujiClean CEN21 systems, each having a treatment capacity of 1,900 gallons per day. FujiClean CEN systems are known for utilizing a small footprint while still providing superior treatment and nitrogen reduction. Tertiary effluent enters final pump tanks. Total residence time for emergency built into the system is 7.6 days.

The drainfield is designed for the site. Accounting for both precipitation and effluent disposal, the system will use shallow discharge disperse over 8,000 sq. ft. This is approximately 40% excess absorption capacity over code. A new drip system was installed per specifications including anti-freeze precautions. Though the drip system could be operated year around, when soil temperatures go below freezing a Low Pressure Pipe (LPP) system will take over automatically. The old gravity drainfield is passively retained to act as an emergency disposal during power outage or some unforeseen problem.

Installation & Operation: Detailed layout, system schematics, and design narratives were produced to facilitate installation and regulatory requirements. In mid-year 2021, the system was installed and has been operating above expectations. As-built drawings and operation documents were generated to aide monthly routine maintenance personnel and document any installation details.

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