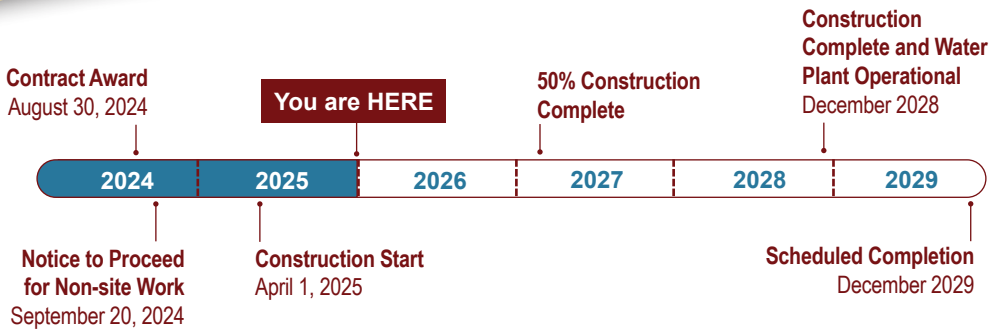
SAN JUAN LATERAL WATER TREATMENT PLANT

DESIGN-BUILD CONTRACT UPDATE

December 2025



TIMELINE

PROJECT COMPLETION (COST BASIS)
17%

DESIGN PERSONNEL INVOLVED
252

LABOR HOURS TO-DATE
83,228

From Raw Water to Tap: The Complex Piping System Behind the San Juan Lateral Water Treatment Plant (SJLWTP)

Have you ever wondered how water moves through a treatment plant before it reaches your tap? An extensive network of piping is required at the SJLWTP, to move the various flow streams essential for producing drinking water. The plant includes 42 distinct flow streams, ranging from raw and treated water to process water, hot and cold water, air, chemical feeds, drains, and sampling lines.

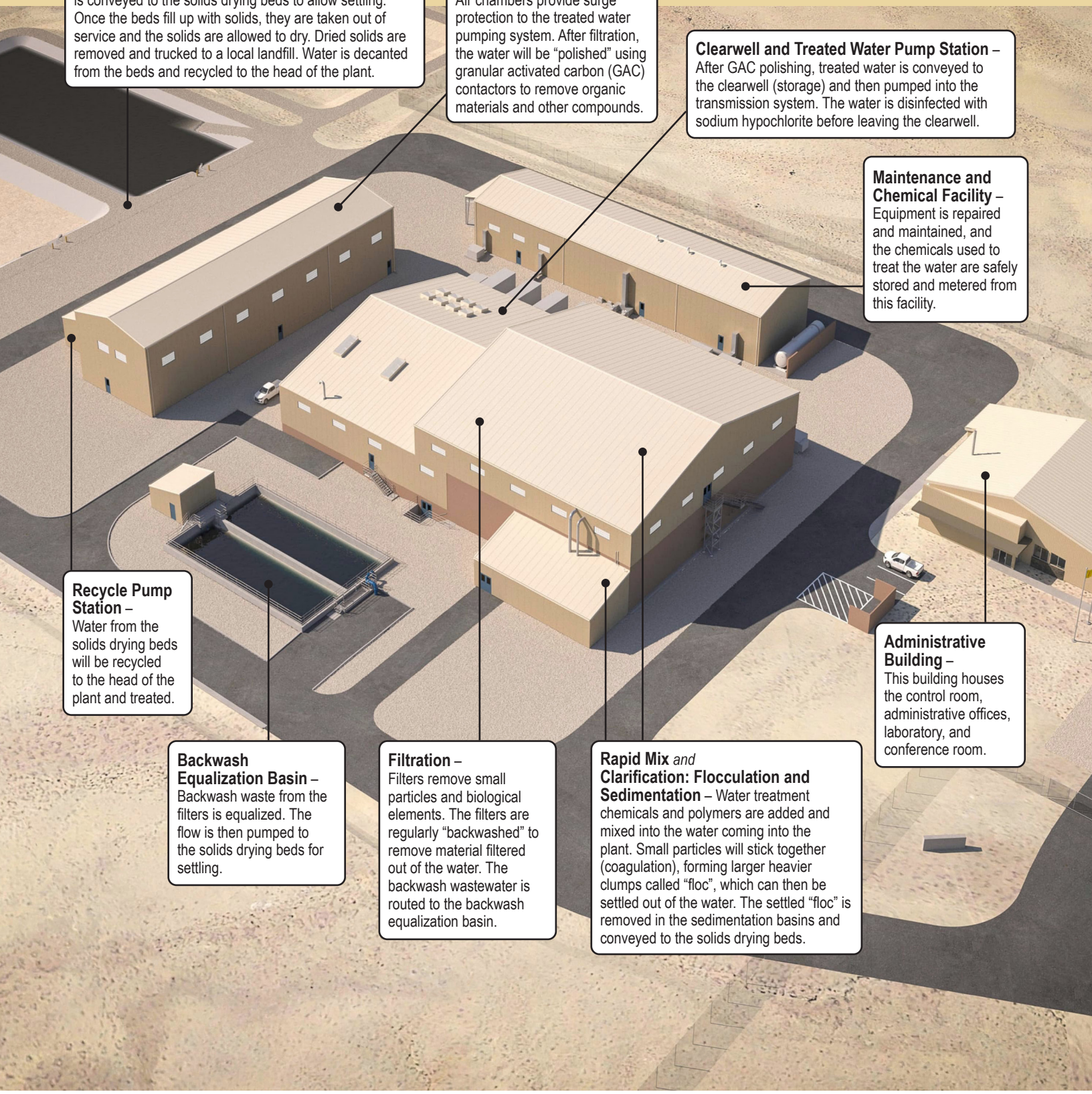
In total, The SJLWTP contains more than 48,500 feet (9.25 miles) of pipeline and over 70 percent of the pipe is made of polyvinyl chloride (PVC). Pipe diameters range from 1/2 inch to 42 inches, and design pressures vary from 10 to 400 pounds per square inch (psi). For comparison, typical household tap water pressure is between 40 and 60 psi.

The plant uses 10 different kinds of pipe materials, including stainless steel, PVC, steel, reinforced concrete, and copper. Regulations require color-coded piping to clearly differentiate between flow streams and ensure proper identification throughout the facility.

Designing and engineering these piping systems requires expertise in fluid mechanics and material science. Engineers must consider pressure changes, turbulence, and other hydraulic factors to ensure safe and reliable piping systems. Each pipe and connection plays a role in delivering clean drinking water to the end user.

For more project information, employment opportunities, and contacts, visit **www.SJLWTP.com**

San Juan Lateral Water Treatment Plant Facility Rendering



Solids Drying Beds – Floc solids from the clarification process and water from the Backwash Equalization Basin is conveyed to the solids drying beds to allow settling. Once the beds fill up with solids, they are taken out of service and the solids are allowed to dry. Dried solids are removed and trucked to a local landfill. Water is decanted from the beds and recycled to the head of the plant.

Air Chambers and GAC Filtration Facility – Air chambers provide surge protection to the treated water pumping system. After filtration, the water will be "polished" using granular activated carbon (GAC) contactors to remove organic materials and other compounds.

Clearwell and Treated Water Pump Station – After GAC polishing, treated water is conveyed to the clearwell (storage) and then pumped into the transmission system. The water is disinfected with sodium hypochlorite before leaving the clearwell.

Maintenance and Chemical Facility – Equipment is repaired and maintained, and the chemicals used to treat the water are safely stored and metered from this facility.

Recycle Pump Station – Water from the solids drying beds will be recycled to the head of the plant and treated.

Backwash Equalization Basin – Backwash waste from the filters is equalized. The flow is then pumped to the solids drying beds for settling.

Filtration – Filters remove small particles and biological elements. The filters are regularly "backwashed" to remove material filtered out of the water. The backwash wastewater is routed to the backwash equalization basin.

Rapid Mix *and* **Clarification: Flocculation and Sedimentation** – Water treatment chemicals and polymers are added and mixed into the water coming into the plant. Small particles will stick together (coagulation), forming larger heavier clumps called "floc", which can then be settled out of the water. The settled "floc" is removed in the sedimentation basins and conveyed to the solids drying beds.

Administrative Building – This building houses the control room, administrative offices, laboratory, and conference room.