The City of St. Joseph, Missouri is the county seat of Buchanan County and the eighth largest city in Missouri with approximately 77,176 residents as of 2012. St. Joseph is the central service provider for a seven-county area of northwest Missouri and northeast Kansas with a combined population of over 155,000.

Jesse James Home and Museum St. Joseph, MO

St. Joseph is located roughly 30-miles north of Kansas City, MO and approximately 125-miles south of Omaha, NE. The town has a rich history that includes Jesse James and the birthplace of the Pony Express.

The purpose of the Parkway A Odor Control Project was to address odors originating from the sewer system along the parkway in the vicinity of Mark Twain Elementary School. Chemicals to reduce odors were being added at the Faraon Street Pump Station. The chemical addition proved to not be sufficient to control the problem, especially during the periods of dry weather. (Story continues on the next page)
In the August 2, 2018 issue of the City Link (a publication of the City), the City stated the ECO2 oxygenation system “is both more effective and economical than the current approach in controlling odors.”

The consultant for the Parway A Project was Burns & McDonnell; this is the third project in collaboration with this firm- Colorado Springs, CO and Broomfield, CO- being the first two.

The project details are as follows:

- 24-inch force main diameter
- 10,560-feet force main length
- Over 3 million gallons per day

Results

The resulting ECO₂ system sized specifically for this project and installed at the Faragon Street Pump Station was a 4-ft diameter Speece Cone capable of delivering around 1,600 pounds of dissolved oxygen per day via a carrier stream of only 1,400 gallons per minute (gpm). The side stream pump, which brings raw wastewater from the force main pipe to the Speece Cone and right back into the force main pipe, was only a 12-horsepower pump. Ancillary components included a bulk liquid oxygen storage tank, vaporizer, and other associated oxygen storage equipment. The system dissolves just the precise amount of pure oxygen to maintain aerobic conditions in the entire length of the force main. Only dissolved oxygen is blended back into the force main, no air or bubbles are introduced into the sewer system. The system has been effectively preventing H₂S since 2018.