

2020 Honorable Mention

South Wastewater Treatment Plant

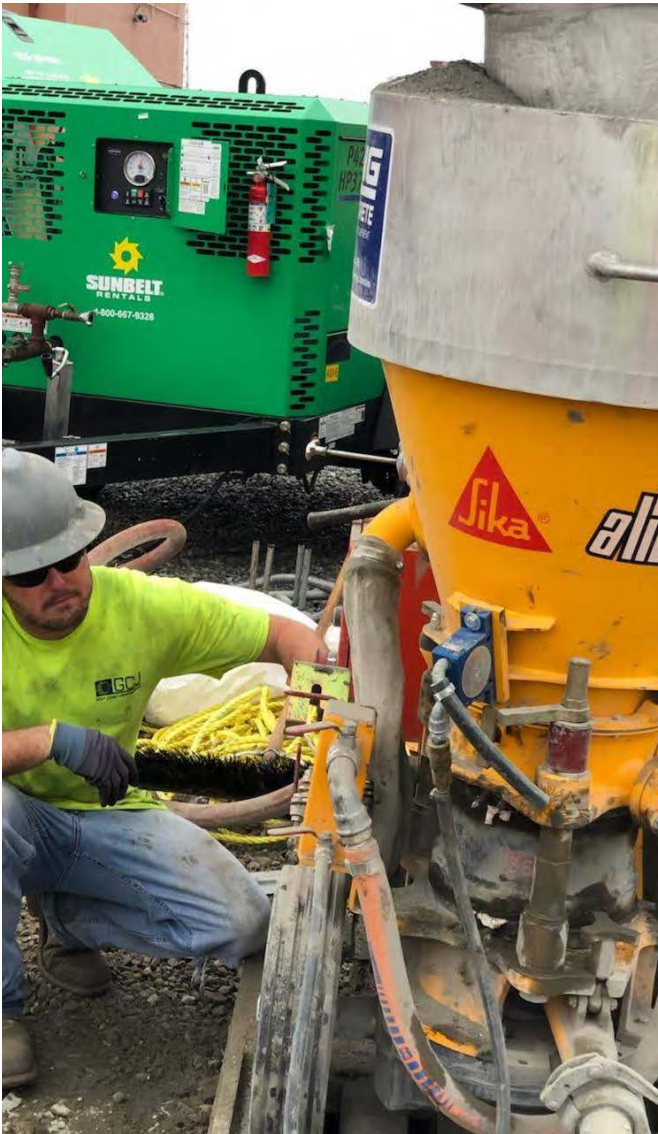
Junction Box Rehabilitation, Baton Rouge, LA

By Spencer Tuell



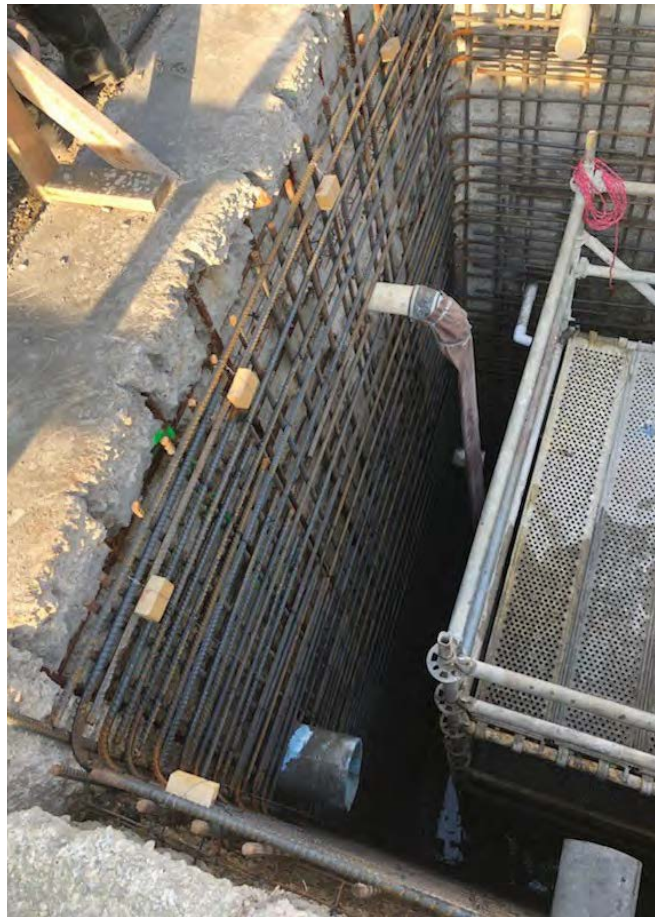
In early September of 2019, Gulf Coast Underground (GCU) received a call from the City of Baton Rouge and their construction manager, Jacobs Engineering Group (JEG). There was an issue at the South Wastewater Treatment Plant that would require a unique contractor skillset to properly repair. The problem was that the cast-in-place influent structures receiving 65 million gallons (246 ML) of sewer flow daily, were corroding and needed to be repaired quickly.

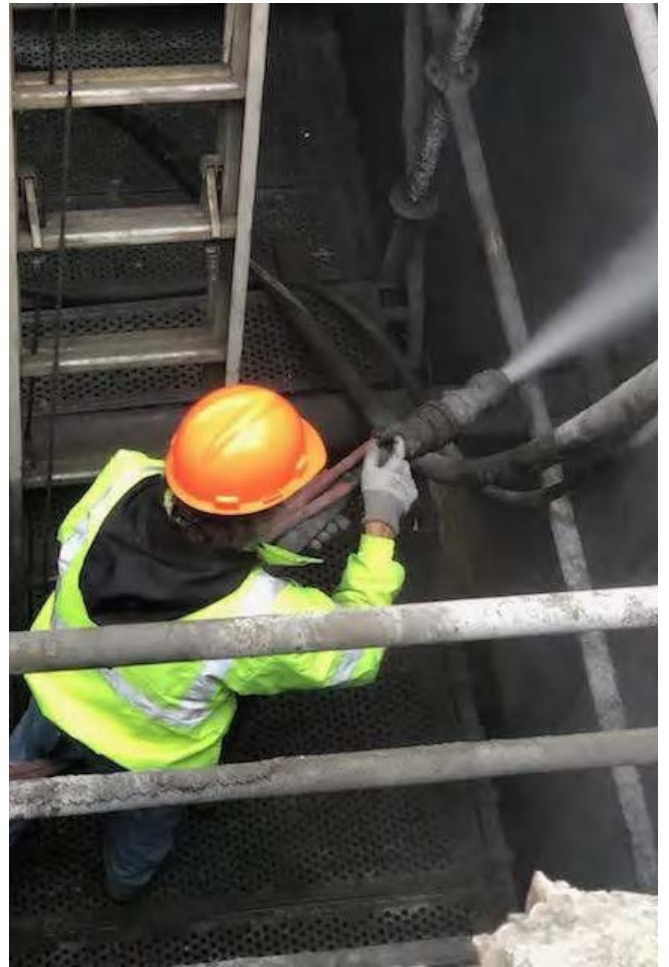
Jacob's structural sub-consultant on the project was Ragland Alderman and Associates (RAA) based in Baton Rouge. Since this project was fast-tracked and design-build in nature, the initial rehabilitation recommendations began with the structures still in service, which limited the feasibility of a full structural assessment. The assumption was



made that the walls had minor structural deficiencies and needed basic shotcrete repair to be followed by the application of an inert coating system, which would prevent future corrosion concerns. As is the case in some rehabilitation projects, once the surface prep hydro-blasting began, the designers and builders realized the structure was in much worse condition than originally assumed.

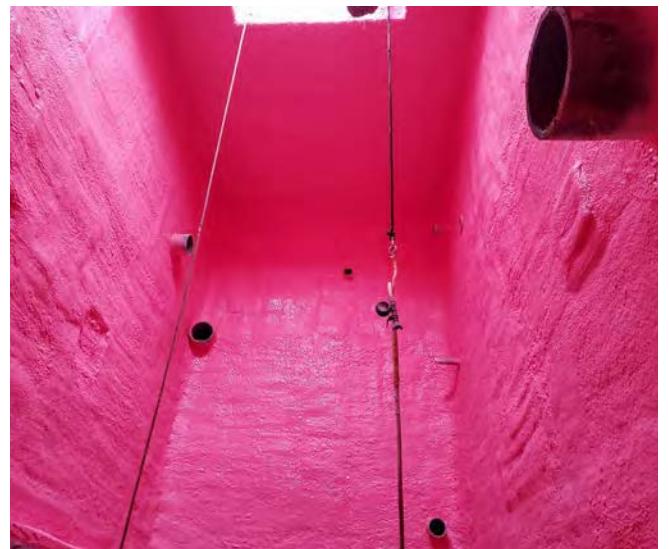
Better Pumps and Solutions (BPS) handled the bypass for the owner, plugging and transferring all 65 MGD to the headworks. Once this was done, it was time for the team to get to work as the cost of running such a bypass is massive. At the beginning of the 40,000 lb/in² (276 MPa) hydro-blasting, GCU, RAA and JEG convened for a meeting onsite to climb into the structure and assess the degree of degradation. It was found that the majority of the inner mat of reinforcing was compromised from years of corrosion in the harsh wastewater environment. RAA quickly revised the structural design to call for the installation of lateral shoring braces to support the compromised walls, followed by full removal of the inner mat of rebar, then replacement with #6





(#19M) bars at 6 in. (150 mm), an application of shotcrete (KPM Industries MS-D1) to restore the wall profile to original thickness, and lastly the application of the protective polyurea coating system.

GCU's management team for this project had collectively over 70 years of shotcrete experience. Mockup test panels were shot to ensure good encasement practices, and



cores were taken to verify physical properties of the dry-mix material. The commitment was made to work a significant amount of overtime and weekends to ensure the overall project time was kept to a minimum. Every day the bypass was running created a huge impact on the owner's bottom line, and in the end, it was the collaborative effort of all parties involved for a successful final product.



Spencer Tuell is a Partner and President of Gulf Coast Underground and has been involved with water and wastewater design and construction since 2005. Spencer is a licensed Professional Engineer in FL, GA, LA, SC, NC and TN, and is an active member in numerous ASCE and WEF organizations throughout the Southeast. Spencer is a graduate of the University of Florida with a Bachelor's Degree in Civil Engineering and a Master's Degree in Civil Engineering with a Construction focus.

2020 HONORABLE MENTION

Project Name
South Wastewater Treatment

Location
Baton Rouge, LA

*Shotcrete Contractor &
General Contractor*
Gulf Coast Underground, LLC*

Architect/Engineer
Jacobs Engineering

Materials Supplier
Sika (KING)*

Equipment Manufacturer
Sika*

Project Owner
City of Baton Rouge

*ASA Sustaining Corporate or Corporate Member