

**CASE
STUDY**



**PROJECT
SNAPSHOT**

PROJECT OWNER

Renewable Water Resources (ReWa)

CONTRACTOR

Vortex Services - Southeast Division

PROBLEM

The subdistrict needed manhole lining services to rehabilitate 215 of its manholes.

SOLUTION

Spray-applied Quadex® GeoKrete® geopolymer and QM-1s Restore® structural liner mortar to seal and restore the manhole structures.

CONTACT

Braden Roth
Vortex Services
broth@vortexcompanies.com

Manhole Rehabilitation in the Sewer Subdistrict of Greenville, SC

SUBDISTRICT SEARCHES FOR MANHOLE REHABILITATION (LINING) SOLUTION

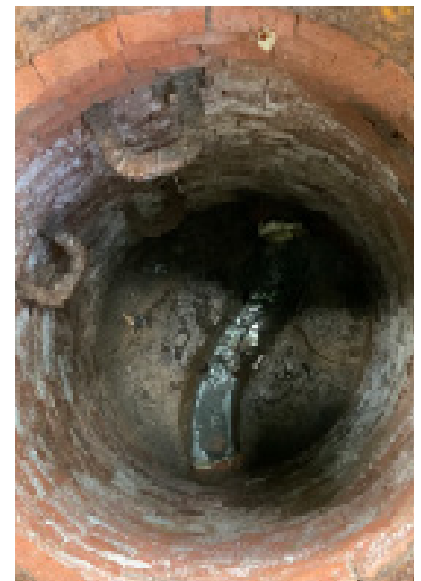
**VORTEX
PRODUCTS &
EQUIPMENT
USED**

- 1 GeoKrete®
- 2 QM-1s Restore®
- 3 sprayMASTER® Trailer



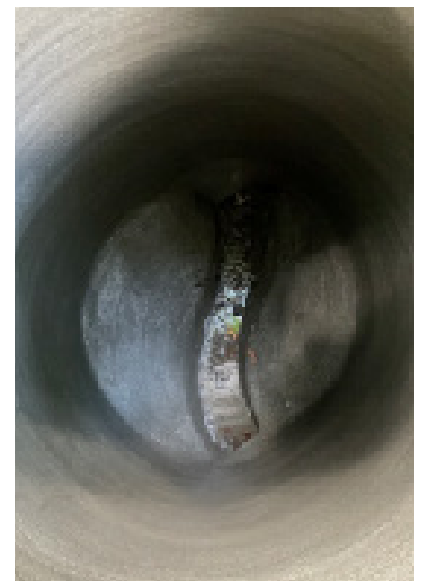
THE CHALLENGE

Renewable Water Resources (ReWa) is the main sewer provider for the subdistrict of Greenville, South Carolina. In 2021, the subdistrict was experiencing problems with its manhole structures that would require extensive rehabilitation. That year, ReWa selected Vortex Services for its annual manhole lining contract because of the crew's reasonably priced bid and unintrusive proposed rehabilitation methods. The subdistrict originally requested the use of calcium aluminate cement for this two-year-long project but allowed the team to replace it with QM-1s Restore® structural liner mortar because of its strength properties.



THE SOLUTION

The Vortex Services team got to work in April 2022, assessing all 215 structures with CCTV inspection cameras to get a sense of their condition. The manholes, which were between 4' - 6' in diameter and totaled around 1,500 vertical feet, were in decidedly rough shape. To repair these declining assets, the team first pressure washed each manhole and then spray-applied them using Quadex® GeoKrete® geopolymer. This unique geopolymer helps restore an asset's structural integrity and prevent it from falling prey to corrosion in the future. Next, the crew used QM-1s Restore structural liner mortar to further protect the manholes.





CASE STUDY



The team ran into some challenges throughout this project, including difficulties accessing easements, night work that necessitated traffic control, and manholes located in low noise areas. When working in these low noise areas, the crew applied GeoKrete geopolymer and QM-1s Restore mortar by hand rather than spray-applying with the rig (Vortex sprayMASTER® Manhole Rehabilitation Trailer).

THE RESULTS

The Vortex Services team completed this manhole rehabilitation project within the subdistrict's timeline. ReWa has been satisfied with the crew's lining efforts and has since renewed its rehabilitation contract with Vortex Services for another four years.



IMPACT

1 ReWa originally requested the use of calcium aluminate cement for this project but allowed Vortex Services to replace it with QM-1s Restore® structural liner mortar due to its strength properties.

2 Successfully completed the job despite facing difficulties accessing easements, dealing with night work that necessitated traffic control, and having to apply GeoKrete® geopolymer and QM-1s Restore mortar by hand in low noise areas.

3 ReWa has since renewed its rehabilitation contract with Vortex Services for another four years.