

EFFICIENCY OF FILTER/COALESCER VESSELS FOR TRUCK RACKS

GAS PROCESSING PLANT IN THE BARNETT SHALE

A gas processing plant in the Barnett Shale of North Texas has recently added the ability to handle natural gas liquids (NGLs) from trucks. The plant has access to a pipeline to transport NGLs to market in Mont Belvieu for fractionation. The plant is being used as a hub to take in liquids from other plants that do not have NGL pipeline access. They had to build a truck unloading rack to accommodate up to 30 truckloads of NGL product a day. They built two racks to handle two trucks at a time.

They designed the system to have one filter/coalescer per truck rack for a total of 2 filter/coalescer vessels. The trucks can arrive with varying qualities of NGL that contain contaminants such as water and solids. These vessels were designed to remove the particulate and water prior to a charge tank for pipeline injection.

Pentair looked at the current separation elements being used due to issues with element integrity and online life. They were having issues with elements crushing on the outlet. Additionally, they were seeing bypass of the elements because the flat gasket seals would literally blow out. This can be seen in the before picture (bottom left photo and top right photo). Along with the element deficiencies, they were routinely skimming water out of their charge tank which should have been clean with the filter/coalescers upstream.

We have upgraded similar systems many times with great results. After speaking with the plant, they decided to move forward with upgrading both vessels to our Apex® technology on the Inlet side and Compax® technology on the Outlet side. The Apex element incorporates O-ring seals as opposed to flat gaskets to rid them of bypass issues. The Compax technology on the Outlet side fixed any issues with crushing by incorporating a very robust core the element slide over with an O-ring seal. The Compax technology also allowed them to get away from cumbersome hold down nuts.

The system is performing as designed, with improved life over the outgoing technology. Performance of the upgrade has now encouraged the client to look at a similar coalescer elsewhere in the plant that have been causing similar issues.



Flat gaskets still in the vessel before upgrade (should be on elements)



Pentair risers and cores installed



Pentair elements installed



Before upgrade