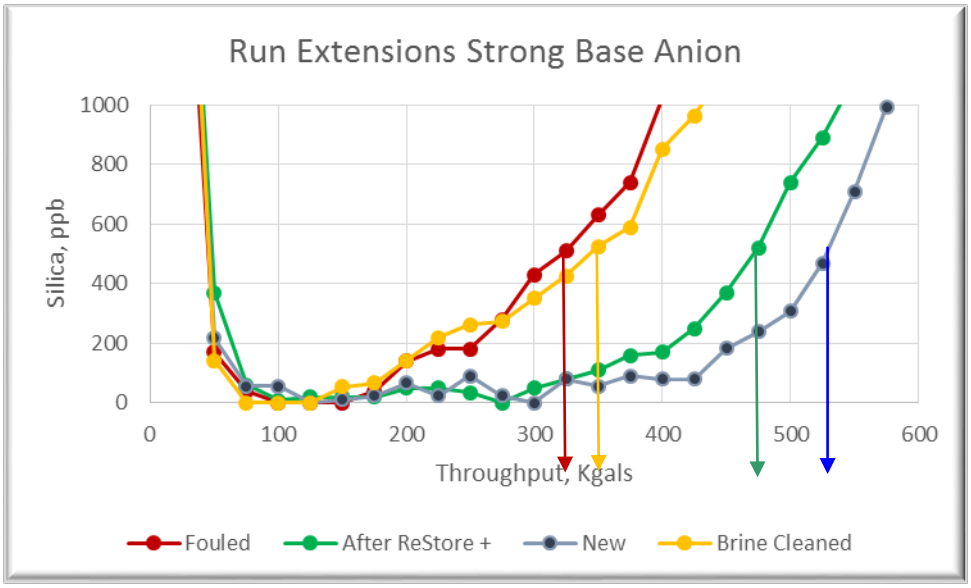
Run Improvement Test: Effect of Brine and ReStore + on SBA Capacity

RTI has developed a sensitive test to measure the increased availability of strong base capacity in organically fouled resins cleaned by ReStore +. Extensive prior testing of resins from field and lab-scale cleanings has consistently shown an increase in operating capacity of the cleaned resins. This new test uses a realistic field dosage of caustic for the regeneration, rather than the very high levels of caustic used in the lab to measure ultimate strong base capacity.

All the test resins were regenerated with a caustic dosage of 6 lbs/ft^3, rinsed to <10 µS conductivity, and then challenged with a solution to measure the strong base capacity of the resins. The graph below shows the test results from the run. The results are expressed as equivalent silica leakages plotted against test volume with ml converted to field-level throughputs. Note the ability of the cleaned resin to treat considerably more solution before reaching breakthrough, which is identified as 500 ppb silica and down pointing arrows.



The fouled resin broke at 325 ml. Brine cleaned resin broke at 350 ml, only an 8% increase in thruput, disproportionate to the labor, cost, and disruption involved. Resin cleaned with ReStore + broke at 475 ml, a 46% increase. New resin boke at 530 ml, a 63% increase in thruput. Factoring in pricing, new resin showed a 17% increase over resin cleaned with ReStore + but at **three** times the cost.

For RTI,
William E. Bornak, Chief Technology Officer November 24, 2015