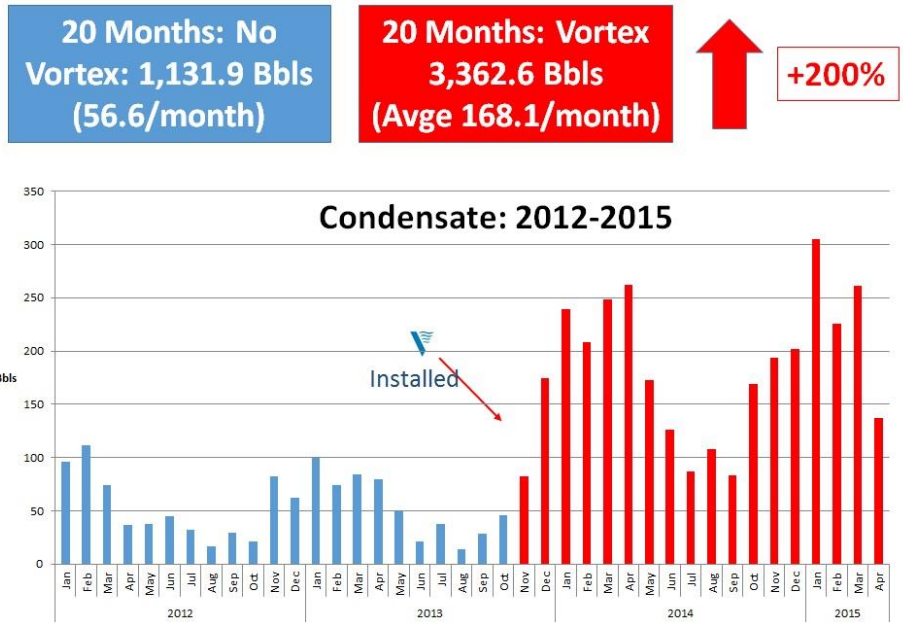
Vortex Tools: Increased Condensate Recovery from Gathering Lines

From 2013 to 2015, a major U.S.-based oil and gas independent installed Vortex tools to increase condensate recovery. Previously, this customer used pigging and drip collectors to capture hydrocarbon liquids, but with changes in elevation, temperature, and declining production, liquids dropped out at low spots in gathering lines, pressures increased, and valuable production was not being recovered. Vortex compared field condensate recovery data both prior to and after the Vortex installation (2012 through early 2015). Comparative data was gathered from two different installations.

Installation #1 was in a declining gas field (1,450 BTU) on a vacuum with mature production (245 MCD/day through 4" and 6" lines). After installing Vortex surface inline (SX-I) tools, the operator had their best liquid recovery months ever on these lines in January and February 2014. Overall, 2014 showed 183% increase in condensate production over 2012 (the last full calendar year without Vortex). The 20-month condensate recovery rate without Vortex was 1,131.9 barrels (averaging 56.6 barrels a month). The 20-month condensate recovery rate with Vortex was 3,362.6 barrels (averaging 168.1 barrels a month). Overall, condensate production increased by ~200% and recovery benefits were better at high temperatures, indicating the Vortex system has a stabilizing effect on the condensate. The summer increase in condensate was 597% and the winter increase was 149% with Vortex installed.



Installation #2 was with richer gas (1,840 BTU), high in condensate, averaging 150-200 MCF/day with four drips in the 8" line. A new, large drip was added near the wellhead (66 barrel capacity) to collect most/all condensate before the meter run. Compression from the wellhead ranged from 6 PSI to 20 PSI. In addition, the customer added a cooler after the compressor (to enhance condensate recovery) and the Vortex tangential liquids recovery (SX-NGL) tool. In *two months*—January and February 2015—Vortex recovered nearly 3.5 times more condensate than in the *three years* previous in drip #5 (270 barrels with Vortex compared to 82 barrels prior). In each application, the Vortex tools (and associated equipment) had an ROI of mere days, lowered the recovery costs, and increased the condensate recovered by up to 3x. These valuable liquids were then sold to create an additional lucrative revenue stream for the operator without any increase in OpEx.