A customer was operating a large subsea oil and gas project in the Gulf of Mexico when a methanol umbilical to a subsea well failed. A line was jumped from another subsea well to the first well to treat it with methanol, causing the second well to be shut-in because it could not buck the high pressure of the first well. The only solution to get the second well back online was to commingle with a third higher pressure well.

This presented a problem because the high asphaltene content of the third well was incompatible with the condensate from the gas well. This issue became evident when the customer tried to flow the wells together without inhibitor and filled the HP separator with asphaltene solids.

After considering several options, the only solution that did not involve losing production was to chemically inhibit the asphaltenes from precipitating. Lab tests indicated the best chemical solution was a FATHOM™ certified asphaltene inhibitor for subsea applications. Baker Hughes personnel agreed to perform lab tests to find an effective treatment protocol. Further optimization identified the most suitable production ratios to help minimize asphaltene deposition.

The FATHOM subsea-certified asphaltene inhibitor proved highly effective at preventing asphaltene precipitation in the HP separator. Chemical treatment rates were lowered through optimization using MILLIPORE® filter data on the incoming subsea line. Full production was restored to the well that had been shut in because of the umbilical failure.

This case history is presented for illustration purposes only as the results may vary between applications.