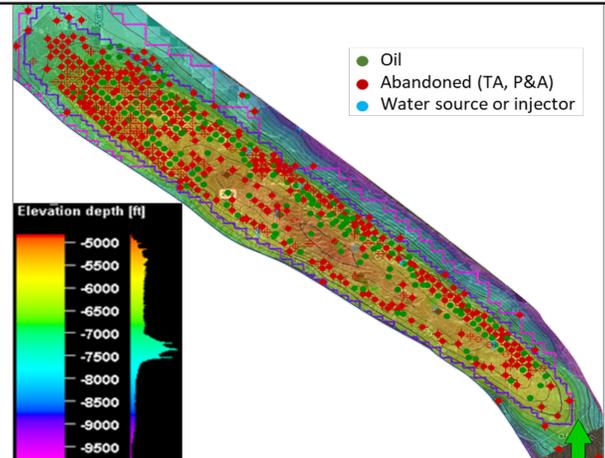


# SpeedWise Reservoir Opportunity Identifies Remaining Production Inventory in a Mature North American Field

## RESULTS

- SRO identified three potential opportunity inventories utilizing low, mid, and high case models to provide a range of the asset's value in only 6 weeks. This allowed the asset team to pivot their expectations and operations based on the outcomes of each opportunity.
- Fast and consistent opportunity identification of every potential infill and every zone in existing wells for behind pipe potential.
- More than 90% reduction in time and cost vs. the existing opportunity catalog update workflow.



Structure map of an elongated anticline showing current well status. Most of the ~830 total wells were already plugged and abandoned (P&A), with only ~20 active producing wells scattered along the crest.

## APPLICATIONS

SpeedWise® Reservoir Opportunity\*

## CUSTOMER

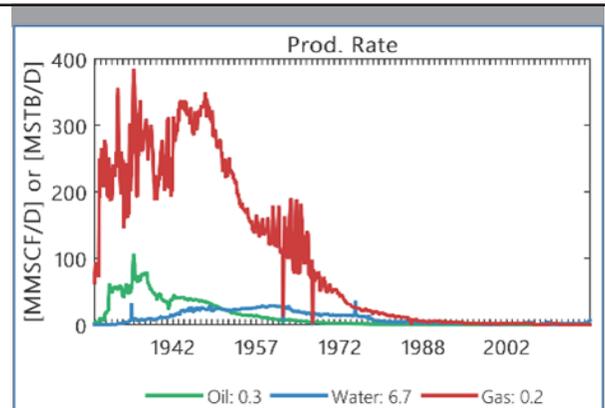
Mid-sized Operator in the United States

## CHALLENGE

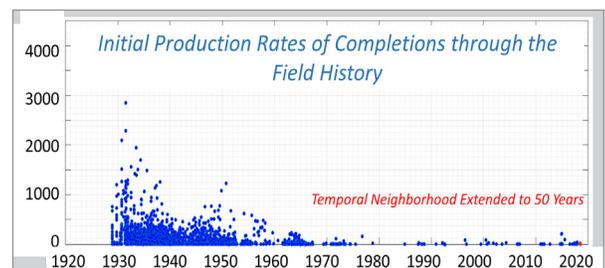
The asset is a mature field with a 90-year development history of Tertiary siliciclastic sandstone reservoirs. There are 830 wells that have produced from 5 main reservoirs, with the field's peak production around 107 MMBL/D in the 1930s.

There were unique challenges in identifying the remaining oil due to a lack of understanding of the reservoir's vertical and lateral continuity, sparse recent data to estimate current reservoir conditions, and uncertainty regarding the current fluid contacts among stacked sands. Additionally, there were 20 zones within the 5 reservoirs, each with a unique gas-oil and oil-water contact that had evolved over time. The past ten years had seen minimal development activity, which made it difficult for the asset team to assess the current status of the field.

There was a need to identify a comprehensive list of any remaining opportunities to inform decisions regarding whether or not to maintain the asset.



Field production history shows peak field oil production of 107 MMBOPD in 1935, with current production only ~300 BOPD.



Historical initial production (IP) rates of zone-specific completions (production allocation results).

\*US Patent Pending

**SOLUTION**

The asset team utilized SpeedWise Reservoir Opportunity to identify recompletion, reactivation, and vertical sweet spot opportunities in the field.

To account for uncertainty, three sets of inputs with varied cutoffs for net-to-gross as well as variation in the interpreted current contacts (OWC and GOC) were used to frame a range of potential outcomes.

Thousands of candidates were screened and evaluated for each of the three scenarios, and a short list of opportunities was provided to domain experts for final vetting.

**RESULTS**

SRO assessed three potential scenarios and created three corresponding opportunity inventories within the short assessment time of 6 weeks. This provided a range of outcomes for economic assessment.

- Reactivations: 37 / 42 / 99 (various scenarios) opportunities with a total estimated initial oil production gain of 892 / 1,073 / 3,182 BBL/D
- Recompletions: 58 / 81 / 179 opportunities with a total estimated initial oil production gain of 1,744 / 2,202 / 9,328 BBL/D
- Vertical New Drills: 17 / 19 / 21 opportunities with a total estimated initial oil production gain of 513 / 506 / 544 BBL/D

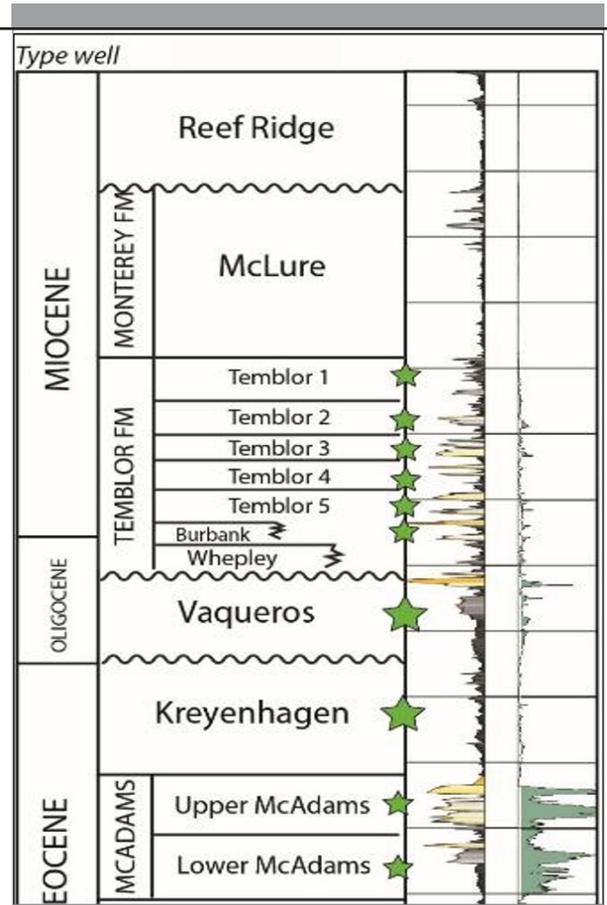
**BENEFITS**

Significant efficiency gains to the existing opportunity catalog generation workflow (more than 90% reduction in time and cost), while also moving from a single deterministic model to the ability to consistently and rapidly evaluate a range of cases so that the downside risk and upside potential could be examined.

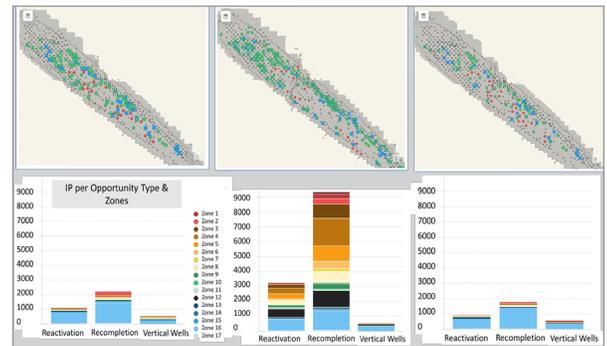
	Previous Workflow	SRO
Completion Time	6 months	6 weeks
Person-Months Spent	24 months	8 weeks
# of Scenarios	1 case	3 cases

**Emerson Automation Solutions**  
 6005 Rogerdale Road  
 Houston, TX, 77072  
 Tel. 281-879-2300

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Stratigraphic column shows a stack of 5 main reservoirs targeted in this field. The evaluation focused on the main reservoir's 20 geologic zones; all have unique gas-oil and oil-water contacts that have evolved through time.



Three scenarios with varied cutoffs for net-to-gross and interpreted current contacts framed a range of potential outcomes (mid case - left, high case - center, low case - right). The sum of their potential initial production (IP) rates are in the bar charts colored by zone.