

Optimal Plunger Lift Operation

MTRAC® - intelligent, self-adjusting wellhead management system



zedi

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Situation

On the subject wells, the customer had implemented a traditional time-based plunger lift system to manage liquid loading, but wasn't getting consistent production performance.

Critical Issues

- Loss of revenue from non-optimal plunger parameter settings
- Shorter well life using traditional plunger lift operation
- Too much operator time used in day-to-day well management

Customer

- Size: Tier 1
- Region/Field: WCSB - North
- Production: Gas

Customer Requirement

The customer required automated processes to handle the changing well characteristics. They were looking for something more effective than their plunger lift system to optimize production and reduce the need for an operator to manage the well.

What Zedi Provided

Zedi installed an MTRAC wellhead management system that initiated a plunger lift application to control the process. As some of the well's changed, Zedi helped the customer implement different MTRAC applications to suit the wells' transforming characteristics. These included a wellhead compression application integrated with plunger lift; and annular flow with tubing plunger application that maximize production by flowing the casing intermittently within the plunger cycles.

Results

The customer implemented Zedi's MTRAC solution on three of their wells. By adopting an automated plunger lift process, they initially achieved daily production gains of 10-40% in comparison to old plunger controllers and reduced their operator intervention. As the wells' characteristics changed, MTRAC processes continued to optimize production even as the wells declined, prolonging their life anywhere from two to over four years. The immediate production gains were not insignificant, but extending the life of the plunger lift process, and consequently the wells, was the greatest value to the customer.

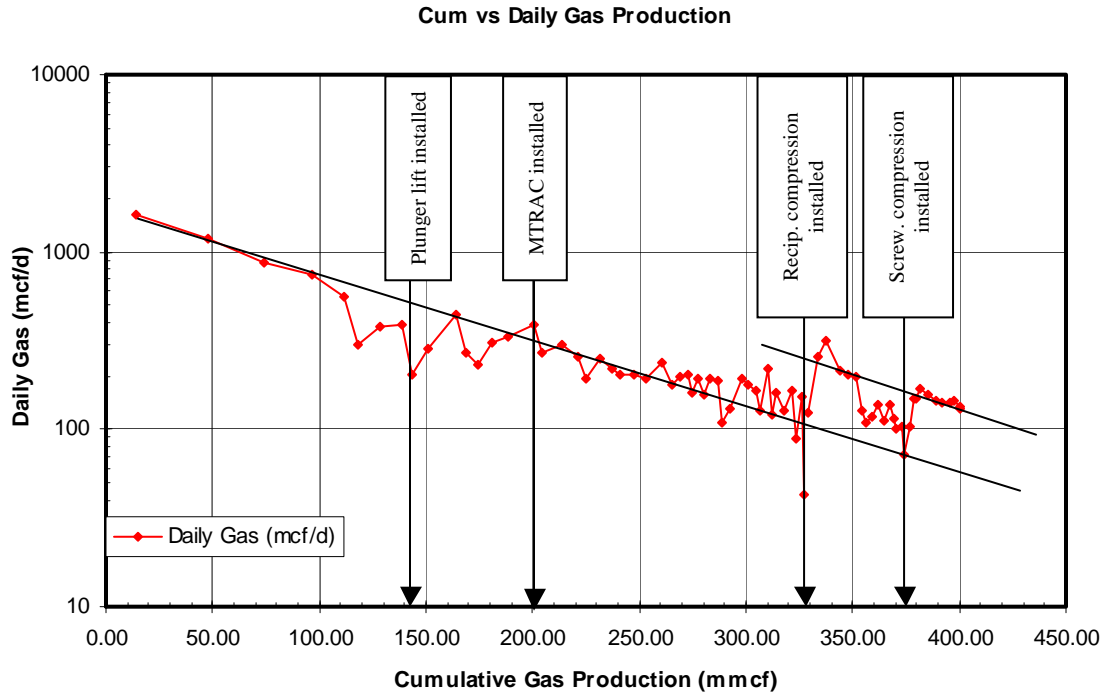
The following table and charts illustrate the production gains, the MTRAC applications used, and how long the system was used at the wells. All wells had 60.3 mm tubing.

Compared to other wells in the area using the old plunger process, these wells demonstrated consistent and extended production with a lower than normal decline rate over the same period.

Table 1 - Well Production Improvements

Before Zedi		With Zedi				
	Zone	Production e ³ m ³ (mcf/day)	Initial Productions Gains e ³ m ³ (mcf/day)	Well life extension	Automation Applications	Current or end of life production e ³ m ³ (mcf/day)
Well 1	Colony	5.4 (191)	7.0 (247)	4 years, 8 months	- Plunger lift (tubing only) - Plunger lift with well site booster compression inte- grated - Annular flow with tubing plunger and integrated com- pression	2 (70) - abandoned due to compression operating costs
Well 2	McMurray & Wabiskaw	4.6 (162)	6.5 (230)	Unknown since well is still producing	- Annular flow with tubing plunger - Plunger lift (tubing only)	3.8 (134) - still operating
Well 3	Sparky	6.2 (219)	7.2 (254)	3 years, 10 months	- Plunger lift (tubing only)	2 (70) - abandoned due to sand production

Example – Well #1 - Colony Zone
“Cumulative vs. daily gas production” with Implemented Applications



For more information on the MTRAC, please visit www.zedi.ca and navigate to Solutions & Products, then Zedi Production Optimization.