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## Operating Rumaila in a \$50-barrel world

Ariel Flores, Rumaila General Manager

*General Manager Ariel Flores recently spoke at the Iraq British Business Council. Below is a transcript of his speech, in which he explains Rumaila's journey over the past seven years and how the operation has learnt to operate in a \$50-barrel world.*

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## Note from Ariel

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**Good Morning esteemed guests and delegates. It is an honour to be invited here today by the Iraq British Business Council and to share our experience with all of you.**

BP, and Rumaila in particular, have a long-standing relationship with the IBBC, along with a shared vision for the continued development of Iraq.

My name is Ariel Flores and eight months ago I was given the honour of becoming the Rumaila Operating Organisation's General Manager.

As an engineer, being given responsibility for managing one of the largest and most important fields in the world is one of the greatest privileges you can be given.



## A super giant oilfield

Rumaila is one of the world's largest oil fields, delivering around one third of Iraq's oil production. The field is vast, with 14 Degassing Stations and 10 Cluster pump stations, a staff of around 7,000, and an additional estimated 22,000 people working as contractors.

In 2010 the Rumaila Operating Organisation (ROO) was formed as a partnership between the South Oil Company of Iraq, the State Oil Marketing Organization, BP and PetroChina under a 20-year Technical Services Contract which has since been extended until 2034.

At ROO's inception the oil price was hovering around the mid \$90s and our mission was to

transform the operation to deliver a major increase in production.

This we duly did: and, alongside the immediate day-to-day work of increasing oil production in the short to medium term, we developed plans that included building modern greenfield facilities that could eventually take production from 1 million to 2.1 million barrels a day. But when the oil price fell to \$30/barrel SOC and MoO requested we delay some of those options, taking a more pragmatic approach to optimise the existing brownfield facilities, a change in strategy which is a testament to Rumaila's organisational agility.



## A common set of values

The key to our growth as an organisation composed of individuals from many different backgrounds and nationalities is a common set of values; what we call The Rumaila Way.

In my career, I have found that when times are going well, such as when the oil price is high, we can easily lose sight of our core values and

their true importance to our company and its culture. However, when times are difficult, it is at this point that our values serve as a road map to guide us in making hard choices.

These core values are driving our efforts and have brought out the best in this united team for the benefit of Iraq.



## A safe operation is a reliable operation

In those early days of ROO, when BP and PetroChina joined forces with SOC, we set about laying the foundations for future success.

Safety became our number one priority. Every possible measure was taken to ensure the safety and wellbeing of everybody working in Rumaila. We made significant investments in this regard and the outcomes have been considerable.

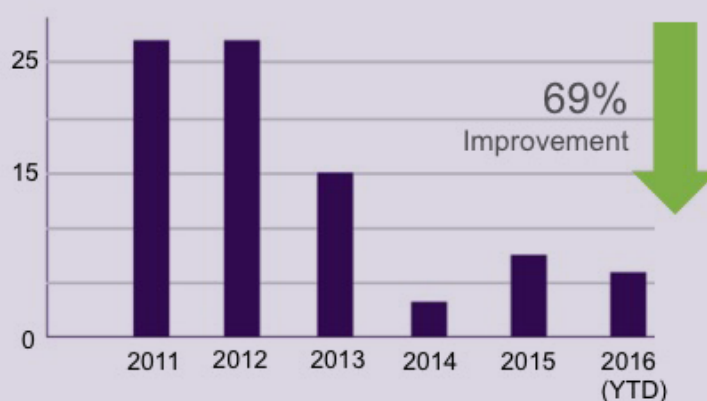
Since 2011, we have seen a 69% reduction in high potential safety incidents – a near miss incident that if it were not for luck could have equated to a fatality.

Among our efforts in improving Safety, I

would like to highlight three which had an outsized impact:

1. We developed a fit-for-purpose Control of Work system underpinned by training for our local staff to introduce a safer and more robust implementation of safety barriers to our field operations
2. We engaged our local contractors through a mix of incentives and expectations to drive safe practices and embed the principle that safe operations make solid business sense
3. We implemented a disciplined and systematic facilities maintenance plan which addressed our highest risk areas

High Potential Safety Incidents 2011-2016



## Operating in a \$50-barrel world

With a continually safer environment we have a more reliable operation, which has been a foundation for growth.

I am proud to say that despite all the challenges, we have been able to continue to increase production today, to just over 1.4 million barrels a day on an annualised average.

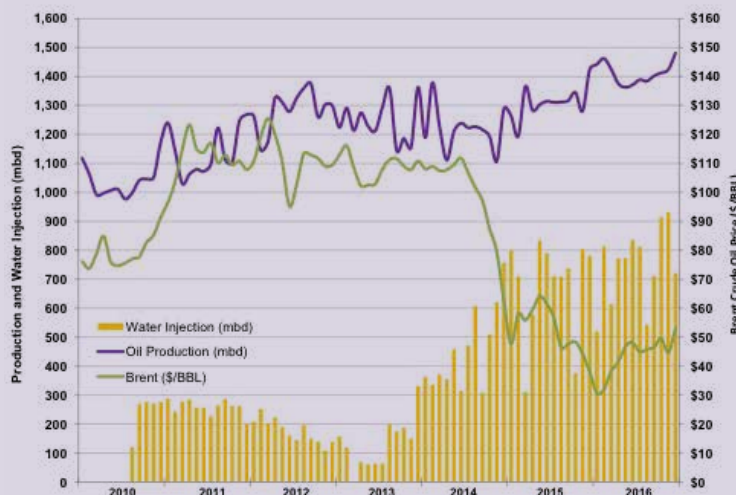
Achieving this level of Production, a third more than in 2010, requires significant growth, particularly once you factor in the field's base decline rate of around 17%, which equates an annual reduction of around 200,000 barrels per day.

In order to deliver this growth we have focused on increasing water injection to

address the declining reservoir pressure in the Northern part of our field which has depleted after 60 years of extracting oil, gas, and now water. As a result of this focus, our Cluster Pump Stations now have 20 pumps available for the first time in Rumaila's history, pumping over 800,000 barrels of water per day into our reservoirs.

This water has been treated at the enhanced Qarmat Ali Water Treatment Plant, and with the recent addition of a new state-of-the-art water filtration system the plant's capacity will soon increase by 1 million barrels, allowing it to produce around 2 million barrels of water per day for Rumaila and its neighbouring oil fields.

Rumaila Oil Production & Water Injection 2010-2016



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## Investing in growth

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In order to handle the increased water which is produced along with the oil we are enhancing our facilities by installing new gas and oil separators, Dehydrator and Desalters, water separators and water disposal units, and new storage flow tanks. Combined, this enables us to process better oil quality, with lower salt and water content – which makes the oil more valuable on the open market.

We are also building a brand new Power Plant to help meet the Rumaila Oil field's power needs. This plant will generate electricity from gas captured from Rumaila's own reservoirs – generating up to 235,000kW per day; enough to power the equivalent of over 20,000 Basrawi homes.

All of these carefully selected enhancements are vital to succeed in the long term, but measured and at pace.

### Early Power Plant



### Dehydrators and Desalters



## An array of engineering and digital technologies

A key tenet of Rumaila's progress has been the introduction of an array of engineering and digital technologies.

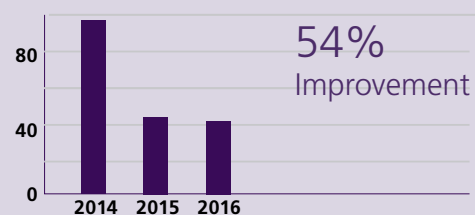
Perhaps the greatest impact on our efficiency has resulted from the introduction of our digital oil field technology, which allows us to collect real-time information about pressure and temperature levels and the corresponding production capabilities from over 250 wellheads. When combined and integrated with other operating data, we have been able to significantly improve our reservoir modelling and forecasting capabilities, enabling a more optimized drilling and workover activity set.

As a result of these efforts over 240 new wells have been drilled and almost 500 wells have been maintained by rig workovers since 2010. In fact, the number of producing wells has increased by nearly 50%.

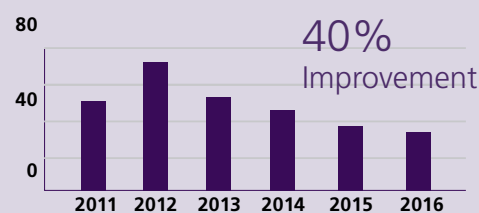
Our delivery and the improved capability of our teams have been optimized further through integrated planning and greater standardization across the field, yielding:

- 54% improvement in drilling and a
- 40% improvement in workovers

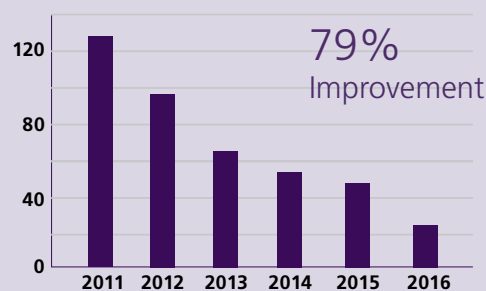
Technologies, Innovation, and Increased Capability have come together to improve the economic outlook for Rumaila, allowing us to put wells on production almost 80% faster and 40% cheaper than in 2011.



Average number of days to drill



Average number of days per workover



Average number of days: Put on Production



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## The future

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Success, however, goes beyond deciding where to invest capital. In the face of budget reductions we must be focused and ensure that we make the most of all our resources, particularly our greatest asset: our human capital.

A large part of my role as General Manager, therefore, is to ensure that our highly experienced expatriate specialists operating in Iraq are doing all they can to support the development of their Iraqi colleagues by transferring decades of expertise gained from managing other supergiant fields from around the world – and sharing it with our Iraqi colleagues to create the next generation of leaders.

As it was at ROO's inception, our mission remains clear: to leverage all aspects of the ROO partnership to ensure we invest responsibly for the benefit of Iraq. And after six years, we understand where and how best to leverage efficiencies.

So we will continue to invest responsibly; in our people, in technology and in critical infrastructure. We will continue to create efficiencies in our operations and make smart choices. And we will continue to invest in our neighbouring communities through our social investment programs.

Thank you

