



# Maximize Production & Profits In The Canadian Oil Sands

Asset Optimization can sustainably  
increase volume and margins by 10-20%

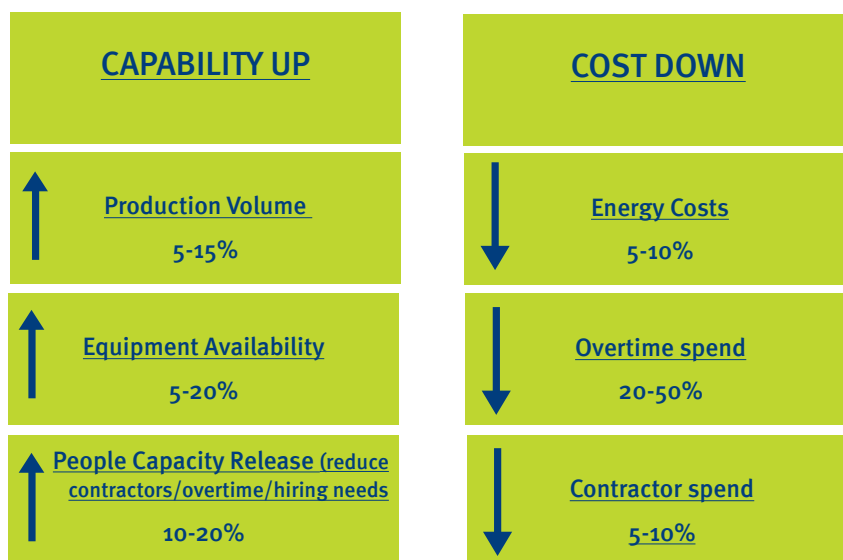
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There are many reasons the Canadian Oil Sands attract billions in capital investment each year... Vast proven reserves. Proximity to the U.S. market. Growing global demand for energy, 84 per cent of which will be met by fossil fuels over the next two decades.<sup>1</sup> A prosperous, politically stable host country. Provincial authorities working with the industry to make the Oil Sands a more competitive and environmentally acceptable source of energy supply.<sup>2</sup>

Yet with the compelling positives come inherent challenges. Producing synthetic crude from the bitumen sourced in the rugged Canadian wilds is inherently difficult. And expensive. As such, Oil Sands producers may be more sensitive than conventional producers and refiners to shifting prices for crude. A number of Oil Sands projects were delayed or cancelled during recent global contractions in energy prices.<sup>3</sup>

The good news? There's a wealth of untapped opportunity to increase production and profits in the Oil Sands. Within months, major producers can substantially and sustainably add hundreds of millions of dollars in revenue, while also growing margins by double digits. The key? Asset Optimization.



Asset Optimization – maximizing production capability while minimizing costs – is a mostly untapped opportunity in the Oil Sands. Figure 1 highlights key gains that can be realistically attained within months, then sustained year after year to deliver ongoing ROI.

## See the Opportunity

In recent years of higher commodity prices, Asset Optimization has not been a high priority in the Oil Sands. In this rugged and remote setting, producers face mammoth challenges just to establish and run large-scale operations. High energy prices rewarded rapid ramp-ups. The customary goal in the Oil Sands was to quickly achieve large-scale production, often at the expense of operating efficiency. At the same time, managers have faced unconventional safety and environmental concerns as well as a shortage of skilled labor.

It is no surprise, then, that many Oil Sands operations leak production and profits. Underutilization of assets. Excessive energy consumption. Costly unbalanced workflows. High labor costs. Wasteful downtime... All are heavy drags on operational performance. As oil prices decline, operating efficiency assumes greater importance. Pressures for efficiency will be compounded as producers are compelled to spend hundreds of millions on environmental compliance. As sites mature, current sub optimal operating practices and work force behaviors will become more and more embedded in the culture and hence much more difficult to change. As such, the winners in the Oil Sands will be those who move now to produce more synthetic crude oil, at a lower cost, safely.

Through systematic pursuit of Asset Optimization, the typical Oil Sands producer can sustainably increase volume by 10% or more within 12-24 months, while simultaneously improving profit margins 10-20%. Well executed Asset Optimization initiatives are cash positive in the first year. They then provide ongoing benefit streams, which in large operations can translate into hundreds of millions of dollars of bottom line gains.

The essence of Asset Optimization is maximizing production capability while minimizing the costs of maintaining that capability.

### Maximize Production Capability

- Ensure major assets are available and utilized
- Minimize unscheduled production shortages (breakdowns, lack of material, process upsets)
- Reduce the cycle time of planned maintenance outages
- Synchronize operations to maximize output

Equipment failures are endemic in the Oil Sands. The remedy is an intense focus on Overall Equipment Effectiveness (OEE).

Maintenance is often the ripest and lowest hanging fruit in OEE. Typically, Preventative Maintenance (PM) suffers, while mechanics focus on fixing broken equipment. This priority seems appropriate given that leaving a large asset out of commission might cost the company more than \$100,000 an hour. Our experience has been, however, that the urgency to fix broken equipment perpetuates low equipment availability. When management stops pulling personnel off PM to complete fire fighting-type equipment repairs, the need for such repairs drops dramatically. What typically had been a precipitous downward spiral – unscheduled repairs, resulting in less PM, resulting in more unscheduled repairs and even less PM – can turn into an upward spiral that increase meantime between stoppage anywhere from 40% to 70%.

Feedstock shortages are obviously a problem to avoid in any continuous extraction and upgrading process, yet many Oil Sands operations find themselves “bitumen-starved” due to equipment failures, out of synch truck and shovel operations, inadequate work planning, a shortage of trained operators... the list of common gremlins is long. Since 2005, few Oil Sands producers have addressed such disruptions with rigor. In contrast, traditional mining operations typically strive to understand and optimize each step in the process and determine why and where disruptions to work flow occur. Comparable analysis of most Oil Sands operations will find many instances of work not properly planned and scheduled, people not kitted with right parts to do their job, parts out of stock and other preventable problems that interrupt supply of bitumen. There is tremendous power in observation. Even quick and simple studies can reveal that a single operator is working in ways that slow an entire process, or that potholes in one stretch of rough road are damaging trucks and therefore limiting production for the entire operation. Engaging your people in systematic identification and elimination of workflow disruptions rapidly raises volume, and then keeps production at nameplate capacity for the life of your operation.

## Minimize the Costs of Production

- Streamline labor costs (including outside contractors)
- Reduce the variable costs of production (energy, process additives)
- Manage supplier relationships

People are also the key to minimizing costs... not just in the sense that labor is costly in the Oil Sands, but because there is a wealth of opportunities for your people to work smarter. During the headlong expansion into the Oil Sands, demand for skilled labor was so high producers sometimes couldn't secure qualified people at any price. Performance of the people was further compounded by the limited opportunities to instil clear expectations, provide adequate training, coaching, and mentoring to systematically reinforce productive smart workforce behaviors.

As Oil Sands operations mature and the pace of expansion eases, there will be more stability in the workforce and more time to optimize your human resources. Observing how work is currently planned and executed in your operation will reveal readily executable strategies to reduce unnecessary overtime, contractor spend and even costly turnover – thus releasing human resource capacity to apply wherever you most need it.

## Drive Change Where Work Gets Done

Our perspective is holistic – we take your strategic intent fully into account, but our great strength is effecting change “on the ground” where work gets done.

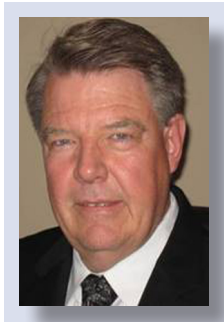


Our approach to Asset Optimization starts with fundamentals. Celerant consultants work side by side with teams out in the Oil Sands to quickly assess what is really happening right now. Then we ensure the right people have the right skills and tools to achieve sustainable and positive change in asset performance. Celerant also works with leaders and managers to help systematically remove constraints and reinforce work behaviors vital to profitably performing at or near nameplate capacity. As people across your operations understand their role in the big picture and are more fully involved and equipped to improve performance, they assume direct, self-sustaining accountability for addressing the root causes of avoidable limits on production and profits.

A paper this brief can only scratch the surface of the myriad untapped opportunities to maximize production and minimize costs in the Canadian Oil Sands. The authors invite your questions and will gladly meet with you to explore the ideas offered above in more detail.

1 Canadian Association of Petroleum Producers (CAPP), “Our Energy Challenge,” [www.capp.ca](http://www.capp.ca)  
 2 Alberta Department of Energy, “Responsible Actions: A Plan for Alberta’s Oil Sands,” [www.energy.gov.ab.ca](http://www.energy.gov.ab.ca)  
 3 CAPP, “Crude Oil Forecast - Interim Update.”

## About the Authors

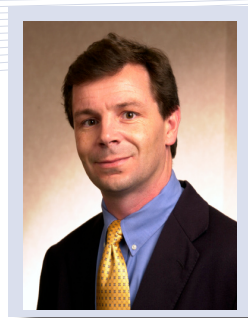


### Sean Harris, Vice-President, Energy Sector, Americas

With over twenty years in business development – predominantly in Professional Services – Sean has led the growth of a number of significant client relationships across the full span of the value chain for the majority of the major operating companies in the energy sector, predominantly in the Americas.

The strength of the relationships that Sean has developed during the course of the past two decades has served as the platform for the continued delivery of measurable, sustainable value to global organizations. Sean resides in Calgary, Alberta (Canada).

Celerant's major capabilities – in particular in the areas of Asset Optimization, Business Performance Management, Organizational Effectiveness, and Integrated Supply Chain Management – have all been instrumental in driving improvements in performance for leading corporations.



### Steve Wilson, Client Partner, Americas

Steve Wilson is a Client Partner with over 15 years consulting experience in the Manufacturing, Energy and Chemicals Sectors. His Celerant experience covers Offshore Oil and Gas improvements in the North Sea, Gulf of Mexico, Pacific Ocean, West Africa and the Middle East, focusing on throughput improvements, unit cost reduction including organizational effectiveness and supply chain management, multiple facility projects to improve output and reduce costs within the chemical industry and most recently performance improvements within the Oil Sands of Northern Canada.

Prior to joining Celerant, Steve held supervisory and managerial operations positions within a European Aerospace industry leader.

We have offices in 12 different countries and we will always go where our clients need us to be. If you want a conversation about the ways we can help change your business for good, you can call us:

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