Trinidad Oil Report

In this report...

2  Opening up the Throttle!
5  Range Resources
6  The Licences
8  The Value Proposition
Trinidad is located on the southeast corner of the Caribbean Plate and within the Eastern Venezuelan Basin. Together these structures constitute one of the largest oil provinces in the world with over three billion barrels of oil produced to date. Trinidad is the larger and more populous of the two major islands making up the nation of Trinidad and Tobago, which derives 44% of its GDP from oil and gas production. Lying just 11km from the north eastern coast of Venezuela, home to the world’s largest oil reserves, Trinidad is the southernmost island of the Caribbean.

Human settlement in Trinidad dates back some 7,000 years, with the earliest settlers coming from north-eastern South America around 4,000 BC. First contact with Europeans was made by Christopher Columbus in July 1498 during his third voyage to the New World. Before the voyage, Columbus promised to name his next discovery after the Blessed Trinity he worshipped. Whilst off the southern coast of Trinidad his lookout Alonzo Peres reported sighting three hills. Believing a miracle had occurred, Columbus promptly named the island ‘Isla de la Trinidad’, Spanish for Island of the Trinity.

Spanish rule over the island ended when the Spanish Royal Governor, Don José Maria Chacón, surrendered the island in February 1797 to a fleet of 18 British warships under the command of British General Sir Ralph Abercromby. This historic event also sparked British interest in a black bubbling lake, the eventual understanding of which would prove to be the foundation underpinning Trinidad’s future economy.

Pitch Lake, now known as the world’s largest natural asphalt deposit, is believed to lie at the intersection of two faults, allowing oil to be forced up from deep deposits. Interestingly, the lake was discovered 260 years earlier by Sir Walter Raleigh, who, after his release from the Tower of London heard of a ‘City of Gold’ in South America and set off in pursuit of it. En route he stopped off in Trinidad, where he discovered Pitch Lake near La Brea, putting its asphalt to good use by re-caulking his boats with it.

Such were Pitch Lake’s peculiarities that Abercrombie later arranged for Dr Nicolas Nugent to study the lake and report back his findings to The Geological Society. When published four years later, little was made of these until 1855 when a geological survey of Trinidad was commissioned with particular reference to Pitch Lake. When published, the survey, ‘A Report on the Geology of Trinidad’, generated interest regarding the possibility of obtaining oil from the pitch and from the formations surrounding the lake.

Opening up the Throttle!
Trinidad and Tobago Revs Up Oil Production
Drilling of the World’s First Successful Oil Well

In 1857 the American Merrimac Oil Company made attempts to distill oil from the pitch of the lake but its focus was quickly overtaken by the historic drilling of the world’s first successful oil well to a depth of 280 feet at nearby La Brea. Despite the well’s initial promise, the company failed to produce commercial oil and soon went into liquidation. Unrewarded for its historic achievement, Merrimac’s demise led to an evaporation of local interest in Trinidad’s oil.

In 1866 an Englishman, Walter Darwent, discovered and produced oil at Aripero four miles east of Pitch Lake. The following year Trinidad Lake Petroleum Company drilled another successful well at La Brea. Efforts to commence production from these wells were abandoned following Darwent’s untimely death from yellow fever. As a result, interest in Trinidad’s immediate oil prospects waned again, even though the discoveries pointed firmly to the prospect of the island becoming an oil producing province at a time when the world was facing a shortage of whale oil.

Enter Randolph Rust: Vision and Persistence Launch Trinidad’s Oil Industry

It was not until 1881, when British entrepreneur Randolph Rust arrived on the island, that oil fever in Trinidad was to reignite once again. By this time, Benz had already developed the internal combustion engine and Britain was busily adding to its 6,000 miles of railways. Initially side tracked by an unsuccessful search for gold in British Guiana, Rust knew that industrialisation needed oil to lubricate the wheels and fuel its future. Spurred on by the developing US oil industry and Darwent’s earlier exploration work he embarked on a quest that would prove instrumental in shaping Trinidad’s oil future.

In 1895 Rust heard of oil seepages at Aripero and in the forest of Guayaguayre. His investigations found that Darwent’s old Aripero well had sprung to life and was oozing oil. At Guayaguayare he sighted around 25 acres of land comprising pools of oil, an experience which transformed Rust’s interest in oil, into one of an obsession.

After teaming up with a Chinese immigrant and local businessman, John Lee Lum, and acquiring a 50 square mile concession over their oil prospects, the pair went on to drill a successful well near Darwent’s original one. With little local interest in oil, the duo self-financed the next 4 years of dogged but unproductive exploration.

Then in 1902, with their funds exhausted, financial support was obtained from Canadian sources, resulting in the formation of the Oil Exploration Syndicate of Canada. This is believed to be the first example of direct foreign investment into the energy industry.

Commencing operations in May of that year, the company struck oil at its first attempt just seven weeks later. Despite developing a number of producing wells, the venture was cut short by the refusal of shipping companies to carry the light, low flashpoint oil produced. Whilst the syndicate’s various discoveries had not yet proven to be of commercial value, they were sufficient to encourage the government to engage eminent British petroleum geologist Edward Cunningham-Craig, to map Trinidad’s geology, with the specific objective of identifying prospective oil fields.

The resulting survey highlighted a prospective area near Point Fortin, where a number of subsequent shallow producing wells were completed in 1908 by percussion drilling, and from which oil flowed in a sustainable manner. Between 1909 and 1912 some 57 companies were registered in Trinidad to explore for oil but financing field operations still remained a problem. By this time, the British Admiralty had converted most of its fleet to oil burners and, keen to secure reliable future oil supplies, used its considerable influence to encourage stable funding for Trinidad’s future oil production. Soon after, Shell subsidiary, United British Oilfields of Trinidad, took over the operations of Trinidad Oilfields Limited, ushering in significant foreign investment. Randolph Rust was later to state that his greatest satisfaction was to have played a part in securing abundant fuel for the navy of his motherland, in the land of his adoption.
Trinidad’s Recent Oil Production: Overdue for a Much Needed Turnaround

Oil production has fallen markedly since 1980, to around 135,000bopd in 2011. Such a fall in a country’s oil output might conjure thoughts of some nasty underlying afflictions, be they political strife and interference, fast depleting reserves or even a protracted war. However, for Trinidad the reasons for decline and the absence of a much needed rebound were in reality much more benign.

From 1980 oil prices declined for each of the next 5 years, culminating in a further 46% fall in 1986, covering a period known as the 1980s Oil Glut. This resulted in a number of multinational companies retreating from Trinidad, leaving the state-owned oil company, later to become Petrotrin, with over 5,000 inactive wells and a large amount of expensive and idle equipment. In a bid to rejuvenate the industry, the government issued a mandate that land based fields, uneconomical to produce from during the oil glut, should be leased or farmed out to independent operators in a bid to augment oil production. This policy has served the industry well since but is still to reach its fullest potential.

An Abundance of Oil: Just a Shortage of Development and Drilling

In addressing the Chamber of Industry and Commerce in 2012, Minister of Energy and Energy Affairs, Kevin Ramnarine, summed up the problem behind Trinidad’s flat oil production, opening his speech with the following. “Many of us here today know that oil production has been in steady decline since 2006. Not for a lack of oil but for a lack of development and a lack of drilling.” In his speech the Minister went on to praise the efforts of the lease and farmout (FO) operators, describing their operations as an unmitigated success and noting their contribution to total oil production had reached a 22 year high.

Despite rapidly increasing natural gas reserves, added to recently by BPTT’s one trillion cubic feet discovery in its Savonette Four well, prominent economist Dr Dhanayshar Mahabir believes the nation needs to dramatically increase oil output. Mahabir believes revenues from oil rather than gas will have a greater revenue impact on the economy and the government’s objectives; cautioning that gas is still a low priced commodity, the market for which will not be helped by the development of large-scale shale gas in the US.

With over 40 years’ experience in the local petroleum industry, eminent geology consultant, Dr Krishna Persad, is seen by many as the world’s leading expert on the petroleum geology of Trinidad and Tobago. Dr Persad believes another 2 to 3 billion barrels of oil is yet to be found, in addition to about 1 billion barrels of already identified P3 reserves. On top of these estimates, Dr Persad reckons an additional 3 billion barrels is potentially recoverable using enhanced oil recovery methods. Based on his estimates, Dr Persad believes sufficient oil exists for at least another 100 years of production.

Meanwhile, the oil and gas industry has experienced a good start to 2013 as improvements in the global economy have prompted both the US Energy Information Administration and OPEC to raise their forecasts for global oil demand in 2013. The SPDR S&P Oil & Gas Exploration & Production ETF (XOP) has gained over 6 per cent year to date and prices for Brent crude have gained approximately 10 per cent year to date, hitting a 10 month high in February of over US$118 a barrel.

Trinidad and Tobago boasts a GDP per capita of around US$24,000, about 44% of which is derived from its energy industry. Moving forward, a key opportunity to increase GDP is to rev up the nation’s oil production. As Energy Minister Ramnarine has stated, there is no shortage of oil in the ground and the fastest way to tap into it is to strongly encourage and support independent operators as they strive to further increase their contribution to total oil production.
Trinidad is fast becoming the central pillar around which Range Resources executes its future global oil and gas strategy. Range has been operating in the Land of the Hummingbird for only a short time and, like this small industrious bird, has been working at a busy pace since. Found above the three ships of Columbus on the national crest, the hummingbird has the biggest heart of any bird comparative to its size, an endowment in common it seems with tough and resilient junior oil and gas operators such as Range Resources. For Range and the hummingbird, the application of focussed and vigorous activity is designed to expend one form of energy in the pursuit of another. For the hummingbird it is all about nectar; for Range it is about driving sustained, company changing increases in daily Trinidadian oil production.

Range Resources is a dual listed (ASX/AIM) oil and gas explorer and producer, with its primary focus firmly on Trinidad. In June 2011 the Company successfully acquired from SOCA Petroleum the right to purchase a 100% interest in a Trinidad holding company. The two wholly owned subsidiaries of this holding company held production licences for three blocks in producing onshore oilfields in Trinidad. The acquisition’s assets also included a fully operational local drilling company with 6 drilling rigs and a number of swabbing and production rigs, allowing Range to undertake its work programs knowing rig access is secure. Illustrative of its intent, the company has since doubled the pre-existing workforce on its licences to 260, with plans to further increase this to 350.

Importantly, the licences provide existing production and established infrastructure, as well as significant opportunity to expand reserves. The production licences contain independently assessed P1 reserves of 17.5m barrels of oil, P3 reserves of 25.2m barrels, and an additional 40.5m barrels of unrisked best estimate prospective resources. Trinidad provides Range with a low risk-low cost environment, highly profitable development opportunities, and significant exploration upside.

Both the Ministry of Energy and Energy Affairs and state owned Petrotrin proactively seek and support foreign direct investment to further grow its industry. In a key strategy to arrest declining oil production, The Ministry and Petrotrin are currently offering a land based oil bid round, the first since the late 1990s, providing Range with the opportunity to add further to its high quality local acreage.

The company’s timely seizing of opportunity in Trinidad significantly shifts its focus away from a heavy reliance on exploration, paving the way to growing oil production and potentially setting the company up to fully fund its future activities. Range has successfully arrested pre-existing declining daily oil production, increasing this by 120% since its arrival. Daily oil production crossed the 1,000bopd mark in July 2012 and is targeted to increase to 5,500bopd by the end of 2015.

<table>
<thead>
<tr>
<th>Date</th>
<th>April 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
<td>A$0.06 / £0.04</td>
</tr>
<tr>
<td>Market Cap</td>
<td>A$150m / £105m</td>
</tr>
<tr>
<td>Code</td>
<td>RRS / RRL</td>
</tr>
<tr>
<td>Listing</td>
<td>ASX / AIM</td>
</tr>
<tr>
<td>Shares in issue</td>
<td>2.45b</td>
</tr>
</tbody>
</table>
The Licences

Morne Diablo

On acquisition, the Morne Diablo onshore licence initially covered 9,300 acres of the south coast of Trinidad but the recently announced addition of a further 3,000 acres to the east, known as Block A, extends the current Lower Forest development area and also adds potential for deeper targets. The licence is subject to a farm-in agreement with Petrotrin, extending for 3 five year periods, and operates under a royalty tax fiscal regime. Historically Morne Diablo produced 7.7MMbbls of oil between 1936–1996, with an additional 2.8MMbbls of oil being produced since 1996.

Multi-productive horizons underlie Morne Diablo, with the majority of current production coming from the Lower Forest and Upper Cruse horizons. The licence hosts more than 300 wells, of which 142 are currently producing, with 26 new development wells being added since acquisition. The licence benefits from full 3D seismic coverage. Development and production has occurred on less than 10% of the licence area, with the remainder having the potential for further development of up to 140 wells over the next 4 years.

Within Morne Diablo a shallow pilot water flood programme over 8 acres commenced in December 2009. This has produced an incremental 35,000bbls from a depth of 150-300ft in the Shallow Forest formation. Range plans to increase the water flood programme up to a total of 80 acres with injection commencing in mid 2013 targeting a production rate of up to 700bopd.

In a February announcement, the company confirmed the prospectivity of the Middle Cruse formation, the deepening of the Quinam 135 (QUN-135) well, resulting in a discovery with 50ft of net pay, with suggested excellent porosities of 21-23%. Seismic data and well control in the area suggest the formation could extend over a wide area. Meanwhile, in the Lower Forest formation, QUN-139 has encountered 70ft of good quality oil sands at 1,300ft plus a further 190ft of lower resistive oil bearing sands. QUN-139 is contiguous with the producing wells, QUN-119 and QUN-129. The QUN-138 well has recently been put into production with QUN-140 and QUN-141 currently drilling, targeting the Lower Forest formation.

South Quarry

The South Quarry onshore licence comprises 3,700 acres of the south coast of Trinidad west of, and contiguous with Morne Diablo. The licence is subject to a farm-in agreement with Petrotrin, extending for 3 five year periods and operates under a royalty tax fiscal regime. Historically South Quarry produced 1.1MMbbls of oil from 1977-1996, with an additional 1.0MMbbls of oil being produced since 1996.

Like Morne Diablo, South Quarry is underlined by numerous productive horizons, with the majority of current production coming from the Middle Cruse equivalent “Quarry 19 Sands” horizons. Numerous oil seeps are present in areas yet to experience significant appraisal work, and Range intends to move a shallower rig from Morne Diablo to South Quarry in Q2 2013 for commencing appraisal of selected oil seeps and the development of an inventory of up to 20 wells. The current programme is targeting all horizons, including a number of wells to be drilled to the semi-exploratory Lower Cruse and the deeper exploratory Herrera horizon. There are currently 80 wells on the licence of which 13 are currently producing. The licence also benefits from full 3D seismic coverage.

Once all 6 drilling rigs are operational, the company will move a medium capacity rig to South Quarry to commence testing and development of the shallow targets identified to date. The programme will involve the drilling of up to 10 wells and, contingent on success, development will continue in a similar manner to that at Lower Forest. In March this year the company announced that both the Morne Diablo and South Quarry licences have now been extended until the end of 2021.
Beach Marcelle

The Beach Marcelle onshore licence comprises 3,500 acres near the southeast coastal corner of Trinidad. The Licence is subject to an Incremental Production Sharing Contract (IPSC) with Petrotrin, extending for ten year periods, and operates under a royalty tax fiscal regime.

With first production in 1902, the Beach Marcelle field has produced 30MMbbls of oil. In the 1960s Texaco successfully carried out water flood enhanced oil recovery (EOR) on the field. Range intends to transfer its water flood EOR experience, gained from the shallower Morne Diablo programme, to the Beach Marcelle licence. The water flood programme will target 4 of 6 individual fault blocks, with the aim of achieving average production in the range of 1 to 1.5MMbbls per annum following initial production. Development is expected to commence in mid 2013 following the receipt of approvals, with first production expected between 18 and 24 months following the commencement of development.

In addition to the water flood EOR work, a technical study of the licence was completed in early 2012, identifying more than 50 infill well locations, along with the potential deepening of 6 old well bores, to test for primary by-passed reserves (4,500ft TD). There are currently more than 236 wells on the licence, of which 13 are currently producing. Pending approvals, the company plans to commence a 40 well work programme and water flood programme targeting the prolific Gros Morne formation and the deepening of 6 wells, targeting production of 150-300boppd.

The Herrera Sands

The Herrera Sands contain the major oil producing reservoirs of the Miocene age in Trinidad’s Southern Basin. With its licences covering the Herrera Sands formation another layer of opportunity is afforded to the company to markedly increase reserves and production. Multiple targets have been identified by 3D seismic survey across Morne Diablo and South Quarry, where independently assessed high estimate prospective resources are estimated at 59MMSTB. As part of its current work programme, the company will drill several wells to the deeper exploratory Herrera horizon.
The Value Proposition

In orienting its global oil and gas assets to nearer term production, Range Resources is firmly focused on the island of Trinidad, where its licences offer considerable potential to materially increase both its reserves and production. Led into Trinidad by seasoned mining and energy entrepreneur, Executive Director Peter Landau, the company’s local affairs are in the safe hands of Walter Cukavac, with 15 years’ experience developing on shore projects in Trinidad. Mr Cukavac is a geologist and geophysicist, whose experience includes previous development work on the company’s current licences. Its local portfolio of exploratory, development and secondary recovery opportunities shifts the company’s previous heavy dependence on exploration to a less risky one. Targeted daily oil production of 5,500bopd by the end of 2015 is expected to provide the company with cash flows more than sufficient to self-fund ongoing local exploration and development activities.

In addition to its core operations in Trinidad, the company holds significant oil and gas assets across the world but with its footprint increasingly gravitating towards the Caribbean and Latin America. In Guatemala, Range recently secured a strategic interest in a near term project through the acquisition of a 19.9% holding in ASX listed Citation Resources and its highly promising Atzam No 4 well, where high quality oil has recently been recovered during testing operations. The strategic holding in Citation also offers a potential spin off vehicle for the company’s 20% working interest in the highly prospective Dharoor and Nugaal Valleys.

In Colombia, Range is earning a 65% interest in the promising PUT 6 and PUT 7 licences in the Putumayo Basin and in Georgia, agreement has been reached on the joint development of the coal bed methane (CBM) and conventional gas potential around the Tkibuli-Shaori coal field in partnership with Georgian Industrial Group. The project contains an estimated contingent resource of some 400bcf of CBM. On the 11th March, the company announced the sale of its Texas assets, with agreement reached on a total cash consideration of US$30m with US$25m payable at closing, plus US$5m in royalty payments from future production.

Late last year, the company announced a debt facility of up to US$25m and recently announced a US$35m debt financing package to develop the Trinidad assets which is due to finalise in early April, erasing any doubts about near term funding. The company has current cash at bank and receivables of approximately A$10m.

Range hit the ground running on arrival in Trinidad, and despite some supply chain difficulties in 2012, is supported by its fully owned drilling subsidiary as it gears up for a rigorous 2013 programme of exploration, development and secondary recovery opportunities. The company is an active participant in the current land based oil bid round and hopes to add further to its local assets. The company has seen its share price recover by about 40% recently and investors might be forgiven for wondering if they have already missed the boat to the Land of the Hummingbird. However a recent buy recommendation by Fox-Davies with a price target of 25p/37c might suggest otherwise.

Successful investment in real estate is said to hinge primarily on location; whilst for oil and gas operators success hinges on management quality. With Trinidad at its core, investment in Range Resources offers both advantages.