Indago Energy Limited

Hydrocarbon Dynamics

ASX: INK

Investor Presentation

August 2017



Not for distribution or release in the United States

Indago Energy Limited

Hydrocarbon Dynamics

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Indago Energy Limited

Corporate Summary

Hydrocarbon Dynamics

ASX listed - Energy focused

Board & Management	
Stephen Mitchell	Chairman
Don Beard	Non-Executive Director
Ray Shorrocks	Non-Executive Director
Nick Castellano	Executive Director
Allan Ritchie	Executive Director
Doug Hamilton	Business Development Manager & CEO Upstream

Capital Structure	
Cash:	$1.5M (as at 30 June 2017)
Share Price:	$0.075
Issued Cap pre Rights Issue:	130.7m Shares
Market Cap pre Rights Issue:	$9.8m
Debt:	$0
Performance Rights	80m
Options	40m

Shareholder Summary	
GXB Pty Ltd	7.3%
Lowell Resources Fund	5.1%
Morgan Stanley Australia	4.8%
Nick Castellano	4.1%
Wheelbarrow Investments	3.8%
Stephen Mitchell	3.4%
Total	**28.4%**
Top 50 Holders	~70%

Rebuilding Initiatives
New Board & Management
Name Change (formerly Pryme Energy)
Capital Reconstruction (1:10)
Sale of Low Impact Projects
Acquisition of Hydrocarbon Dynamics

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Capital Raise

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- 1-for-3 Non-Renounceable Rights Issue at 7.0cps to raise $3.05 million.
- Board and management to participate in Rights Issue

Indicative Timetable:

Event	2017
Announcement of the Entitlement Offer	Monday 31 July
Shares traded on an "ex" entitlement basis	Wednesday 2 August
Record Date for eligibility to participate in the Entitlement Offer	Thursday 3 August
Despatch of Entitlement Offer Booklet and Entitlement and Acceptance Form to Eligible Shareholders	Friday 4 August
Entitlement Offer opens	Friday 4 August
Entitlement Offer closes	Thursday 17 August
Securities quoted on a deferred settlement basis	Friday 18 August
Shortfall (if any) announced to ASX	Monday 21 August
Settlement of New Shares under the Entitlement Offer	Wednesday 23 August
Issue of New Shares under Entitlement Offer	Thursday 24 August
New Shares commence trading on a normal settlement basis	Friday 25 August

Note: Timetable is subject to change

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Use of Funds

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- Use of funds from the Rights Issue:

Upstream Project Acquisition and Appraisal	$1.0m
North & South American Business development	$0.4m
Business Development - Outside Americas	$0.2m
Manufacturing & Facilities	$0.1m
Working Capital	$0.8m
Royalty	$0.3m
Cost of Issue	$0.2m
Total	$3.0m

Indago's HCD Technology in Paraffin

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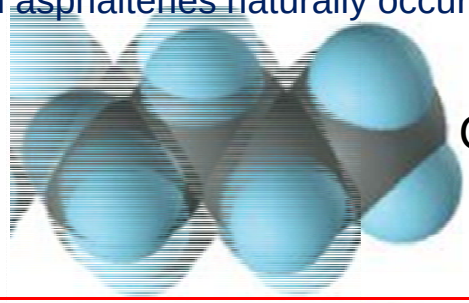
HCD Multi-Flow™, is a small, specially engineered carbon-based molecule that disaggregates & reliquefies the large agglomerations of waxes and asphaltenes naturally occurring in waxy and heavy crude oils.

Fewer than 5 carbon atoms

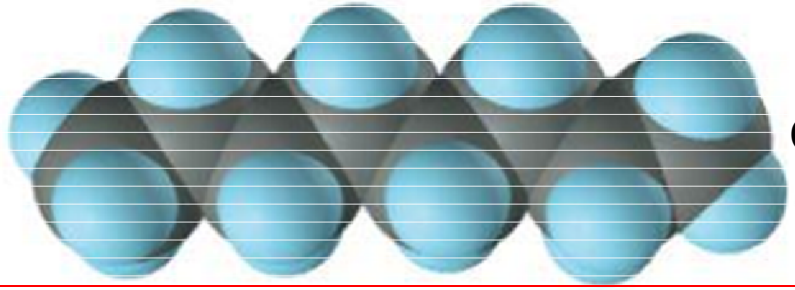
Gaseous at room temperature



C_4H_{10}

5-15 carbon atoms

Liquid at room temperature

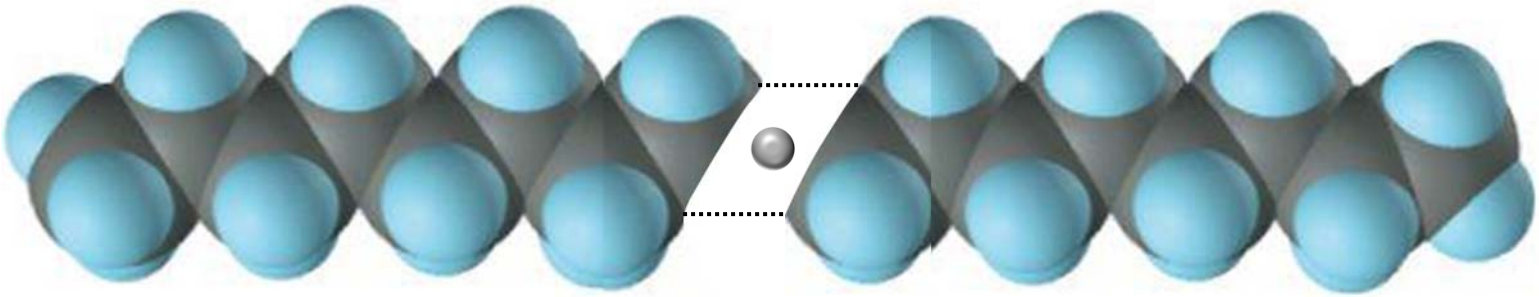


C_8H_{18}

HCD Multiflow molecule

>15 carbon atoms

Solid at room temperature



$C_{16}H_{34}$

The paraffin now passes into the liquid phase at room temperature

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HCD's Proven Technology

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HCD Multi-Flow™ has the following impacts:

- Lowers the pour point of paraffinic crudes
- Lowers the viscosity of heavy crude oils, allowing reduced cost transportation
- Lowers the amount of heat required to mobilise heavy oils thereby reducing costs
- Lowers pipeline and production equipment corrosion rates
- Breaks oil and water emulsions, reducing BS&W levels lowering costs
- Increases production rates by reliquefying paraffin in the reservoir
- It provides a clean and green, cost-effective solution to the production, transport, storage and refining of heavy oils

Opportunities in Heavy Oil Fields

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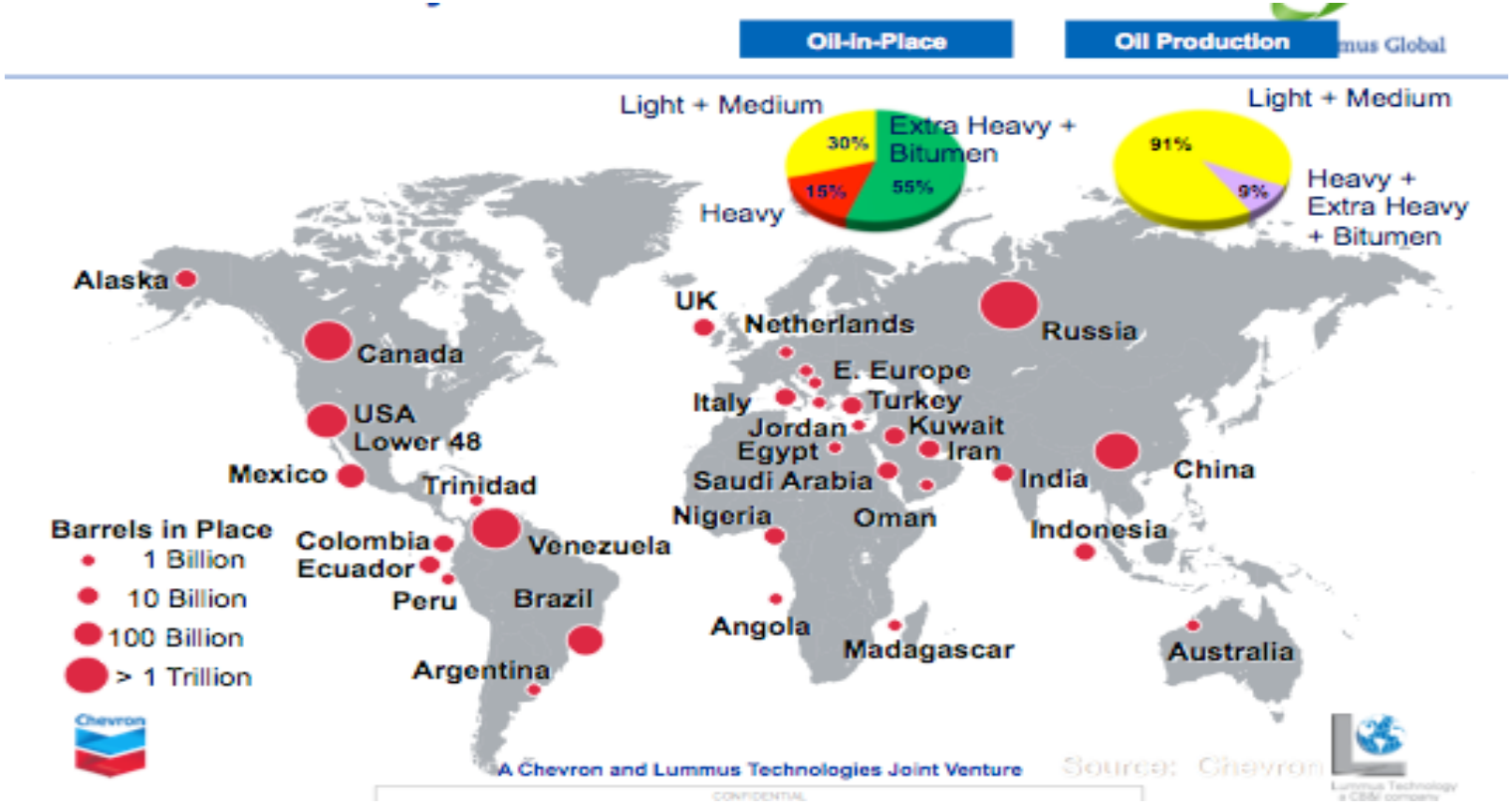
According to the US Geological Survey, the world's current heavy oil reserve estimates total approximately 1.1 trillion barrels of oil. The Western Hemisphere has about 70% of this resource's technically recoverable reserves.



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Application from Well bore to Refinery

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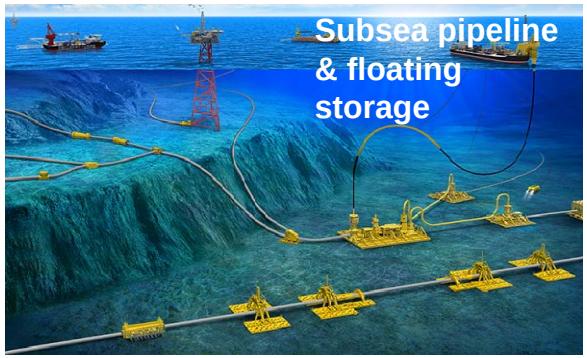
HCD Multi-Flow™ has application through the entire hydrocarbon production stream



Multi-Flow
green tech molecular disaggregation

... and its environmentally friendly

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Applications and Benefits

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Key product applications and their benefits:

- Ensures successful and economic flow in onshore/offshore pipeline and oil gathering lines that transport heavy or paraffinic crudes

- Increases oil production and recovery rates and thus economics in both on-shore and offshore wells in fields producing heavy or paraffinic crudes

- **HCD Multi-Flow™** reduces the need for costly workovers and chemical or heat treatments to remove paraffin or asphaltene deposition on production tubulars & oil flowlines

- **HCD Tank Clean** separates oil, water & sediment without the need for human intervention in tank cleaning. Enables the sludge to be converted to crude oil that can be sold which significantly changes the economics of tank cleaning programmes

- **HCD Multi-Flow™** also improves crude quality in all applications by lifting the API Specific Gravity and separating water by breaking water-in-oil emulsions, resulting in a higher price for the crude at the point of sale

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Non-Toxic and Environmentally Friendly

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The safety rating of **HCD Multi-Flow™** in the HMIS is exceptional. No personal protection is necessary when handling the product and there are no health hazards.

Multi-Flow
green tech molecular disaggregation

HEALTH	0
FLAMMIBILTY	1
REACTIVITY	0
PERSONAL PROTECTION	

0 = Minimal Hazard
1 = Slight Hazard
2 = Moderate Hazard
3= Serious Hazard
4= Severe hazard





Pipelines Success: Puteri Platform

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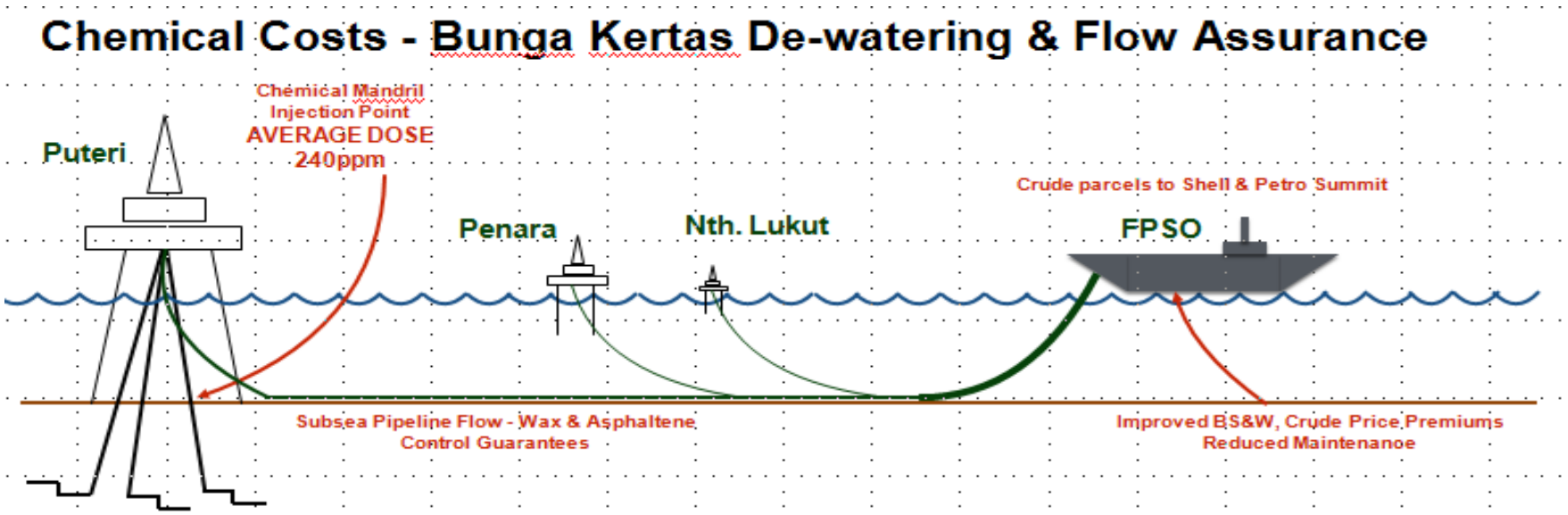
Puteri platform is part of a $2bn offshore Malaysian development owned by Petronas that included a US$400m pipeline. The field is estimated to have produced up to 17,000 bod.

Due to Paraffin and asphaltene build-up in both the well bore and the pipeline, production had reduced to ~1,000 bod before the field was then shut-in in 2009.

In 2012 the production re-commenced using HCD Multiflow and was returned to production at an estimated rate of `9,000 bod. HCD product was continuously used for 4.5 years.



Success To Date: Puteri Platform

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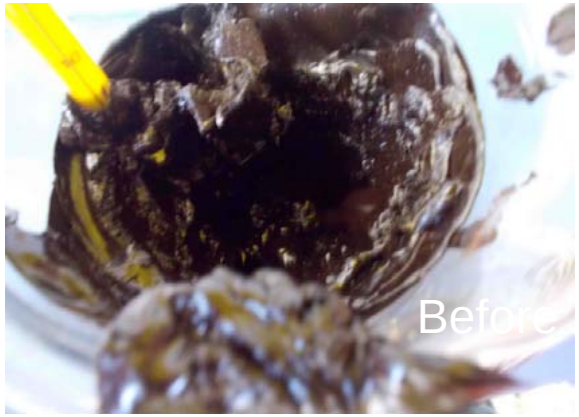
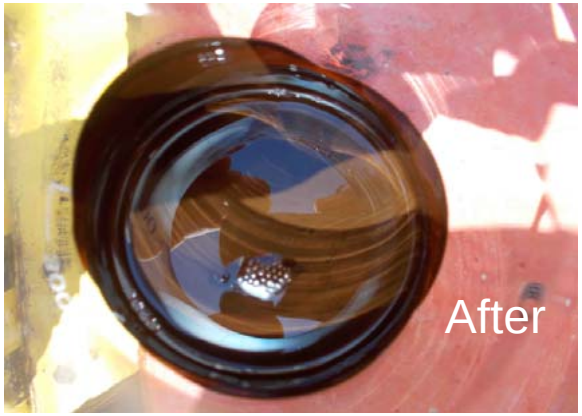
Hydrocarbon Dynamics





- Pour point reduced from 41^{0}C to 32^{0}C that enabled the platform to resume production and resume flow through the pipeline at ~9,000 BOPD
- HCD Multi-Flow™ solution cost average US$0.34/bbl versus competitor's solution average of US$4-7/bbl
- Facilitated restart of Puteri and hence restoration of value to the US$400M pipeline and $2bn field
- Reduction of maintenance on platform heat exchangers
- Oil discounts associated with BS&W eliminated – generating ~US$7m extra revenue /month for Petronas
- Pour point was also reduced in the neighbouring Abu Alpha Field from 36^{0}C to 14^{0}C
- Petronas re-assessing supplier arrangement

Pipeline Successes: Syria, SPC Souedie Field

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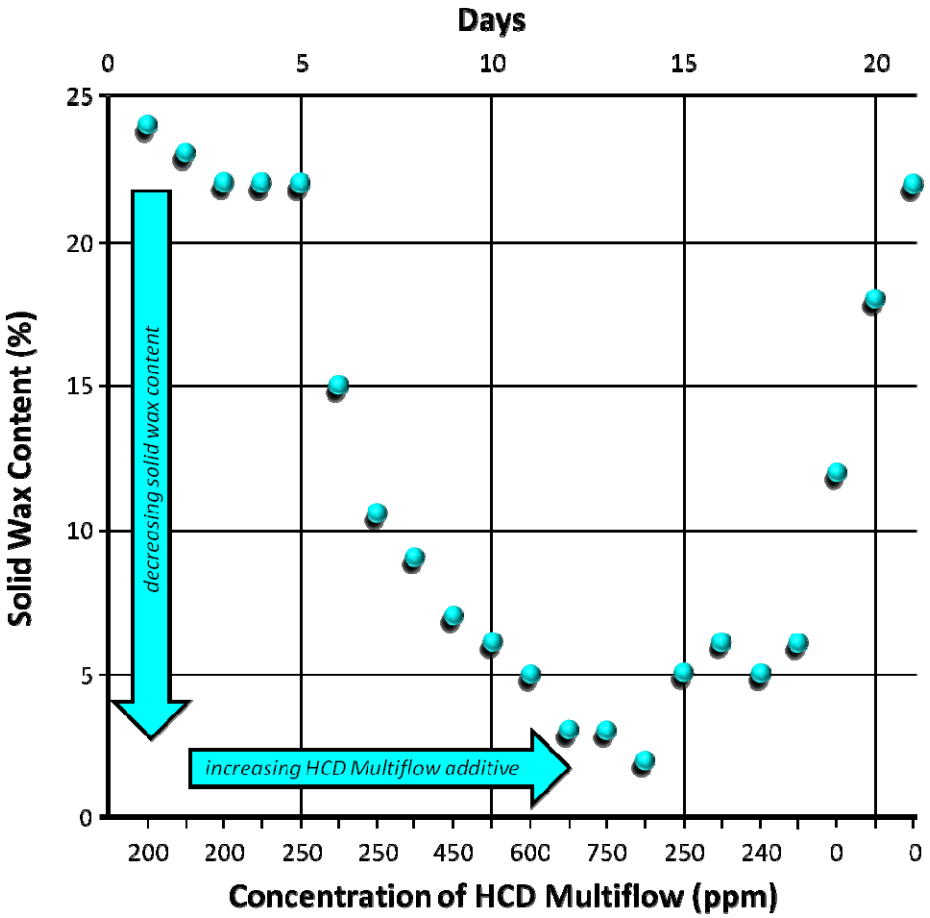
Problem:

- Cold ambient temperatures at surface and high pour point waxy & asphaltenic crudes caused gathering lines and pipeline failures in Souedie Field, Syria
- Oil production was seriously curtailed because wax/asphaltene blocked the lines in winter. The wells had to be shut-in and damaged sections of gathering lines and pipelines had to be replaced in the Spring each year

Solution & Benefits:

- HCD product was injected into gathering lines, liquefying the wax deposition and PP (by as much as 53^0C) ensuring continuous well production & crude flow
- API gravity of treated crude was uplifted from 11^0 to 15.2^0



Production Success: Western Canada

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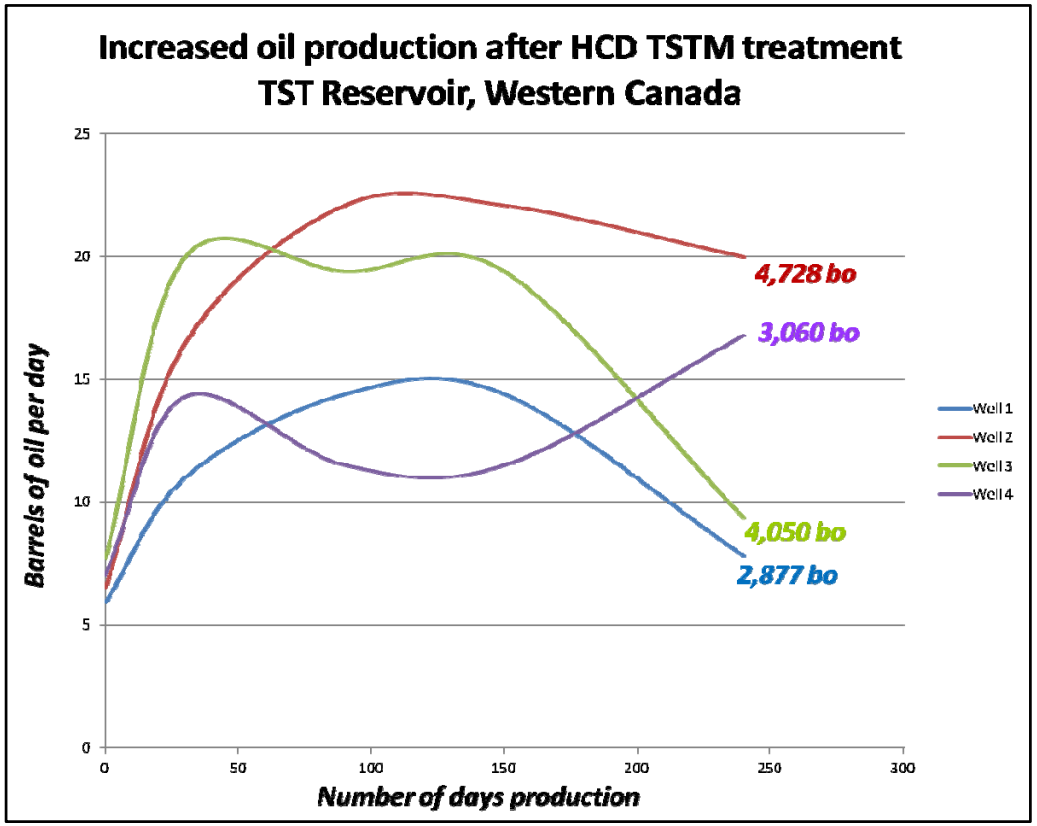
- One HCD Tri-Phase Squeeze increased daily oil production in 4 wells, increases varied from 64-240% and increases averaged 150%
- The production increase was largely sustained for 240 days of monitoring after the treatment
- No asphaltene or paraffin built up in the flowlines for at least 6 months after the treatment.

Well	Before (bopd)	After (bopd)	Increase %
1	5.9	14.4	144
2	6.5	22.1	240
3	7.7	19.4	152
4	7	11.5	64



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Opportunities for Future Applications

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The opportunities for future applications of **HCD Multi-Flow™** are potentially enormous because the technology is directly applicable and beneficial to any area or business involved with the production, handling, storage or transport and refining of waxy or heavy crude oil.

In summary, potential applications include:

- Production in heavy and extra heavy crude oil fields
- Production in paraffinic crude oil fields
- Production in oil sands
- Treating pipelines that transport heavy or paraffinic crude oils
- Treating tanks that store heavy or paraffinic oils
- Treating refinery feedstock by reducing corrosive BS&W levels

Opportunities in Heavy Oilfields in the USA

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States Containing Significant Heavy Crude Oil and Tar Sands Accumulations

Areas with significant **Heavy Oil** accumulations

Areas with significant **Tar Sand** accumulations

www.norwestcorp.com

NORWEST QUESTA ENGINEERING

Opportunities in SW Texas Heavy Oil Play in the USA

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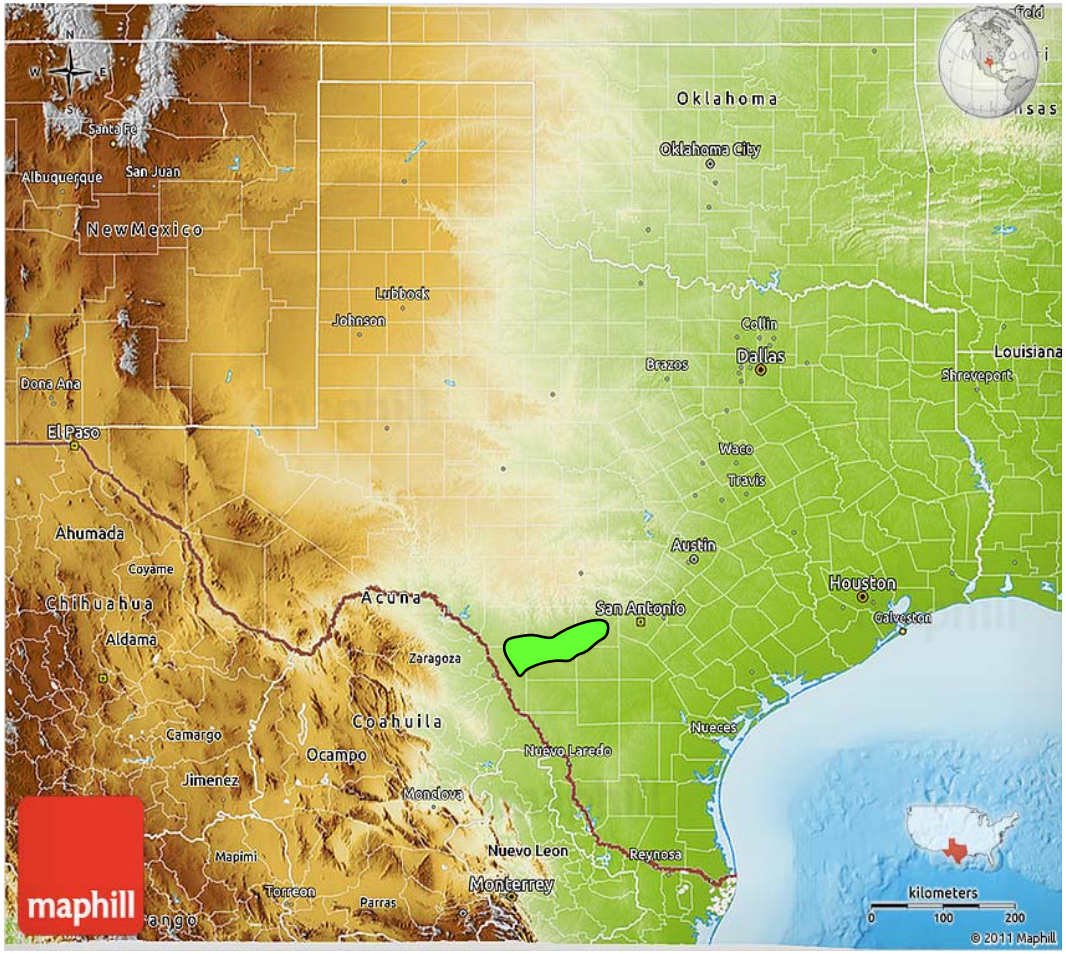

Heavy Oil Play in SW Texas has many fields with large volumes of viscous heavy oil in place.

Very modest production when major oil companies tested Steam Flooding, Fire Flooding and other EOR technologies back in the 1970's and 1980's.

The reservoirs are sandstones at target depths from 300-1000 m.

Porosity ~23% & Permeability 30-1000 md.

-2 to 22^{0}API gravity.

Reservoir temperature: 50^{0}C Degrees F
Reservoir pressure: 750 psi

Play-wide viscosity can vary from 100's to million's centrepoise.

Oil in Place can reach 60mmbbls/section

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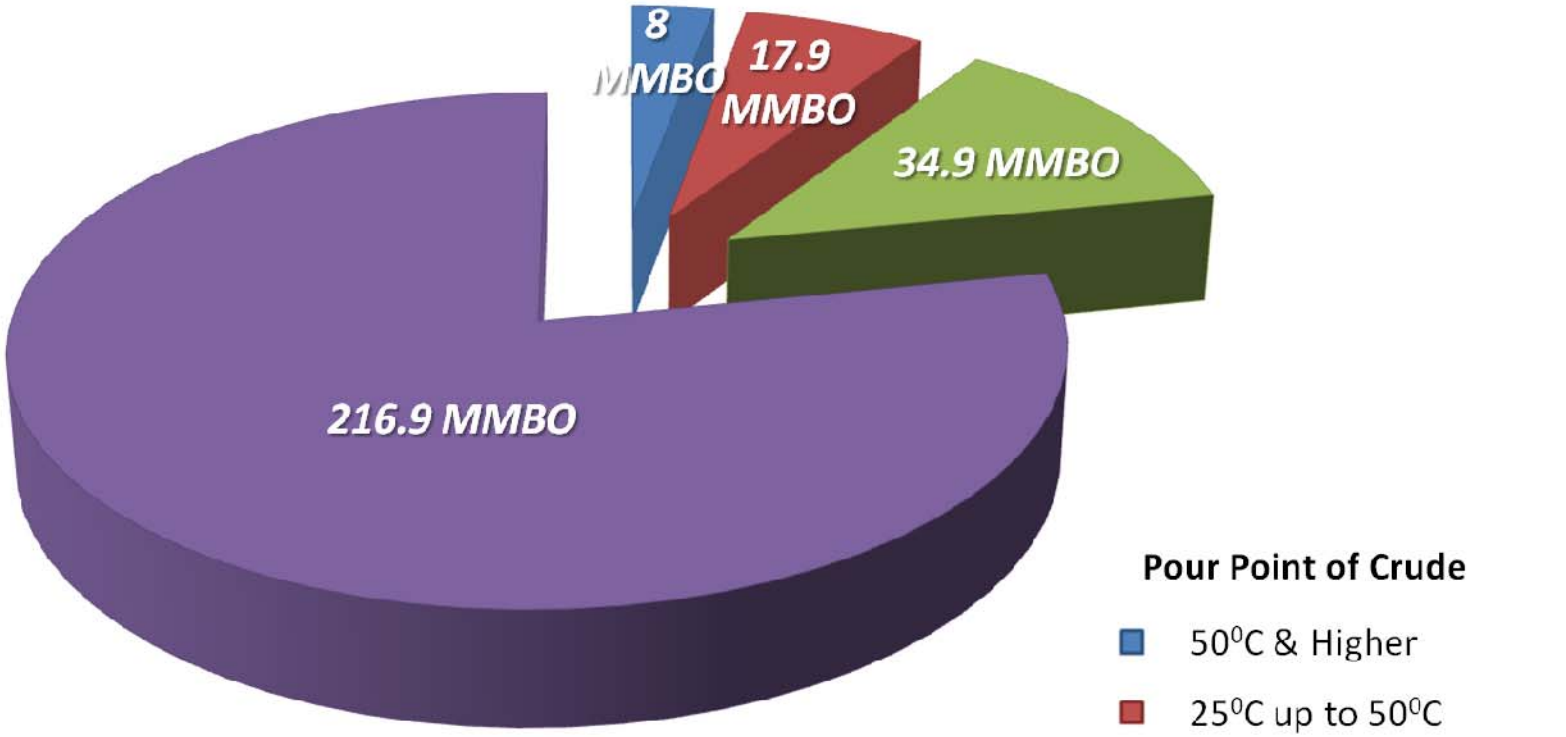
Opportunities in Waxy Oilfields in Texas, USA

Hydrocarbon Dynamics

2016 Cumulative Production of High Pour Point Crudes in Texas



More than 275 MMBO produced in 2016 from 250 fields with high pour point crude

Opportunities in Waxy Oilfields in Utah, USA

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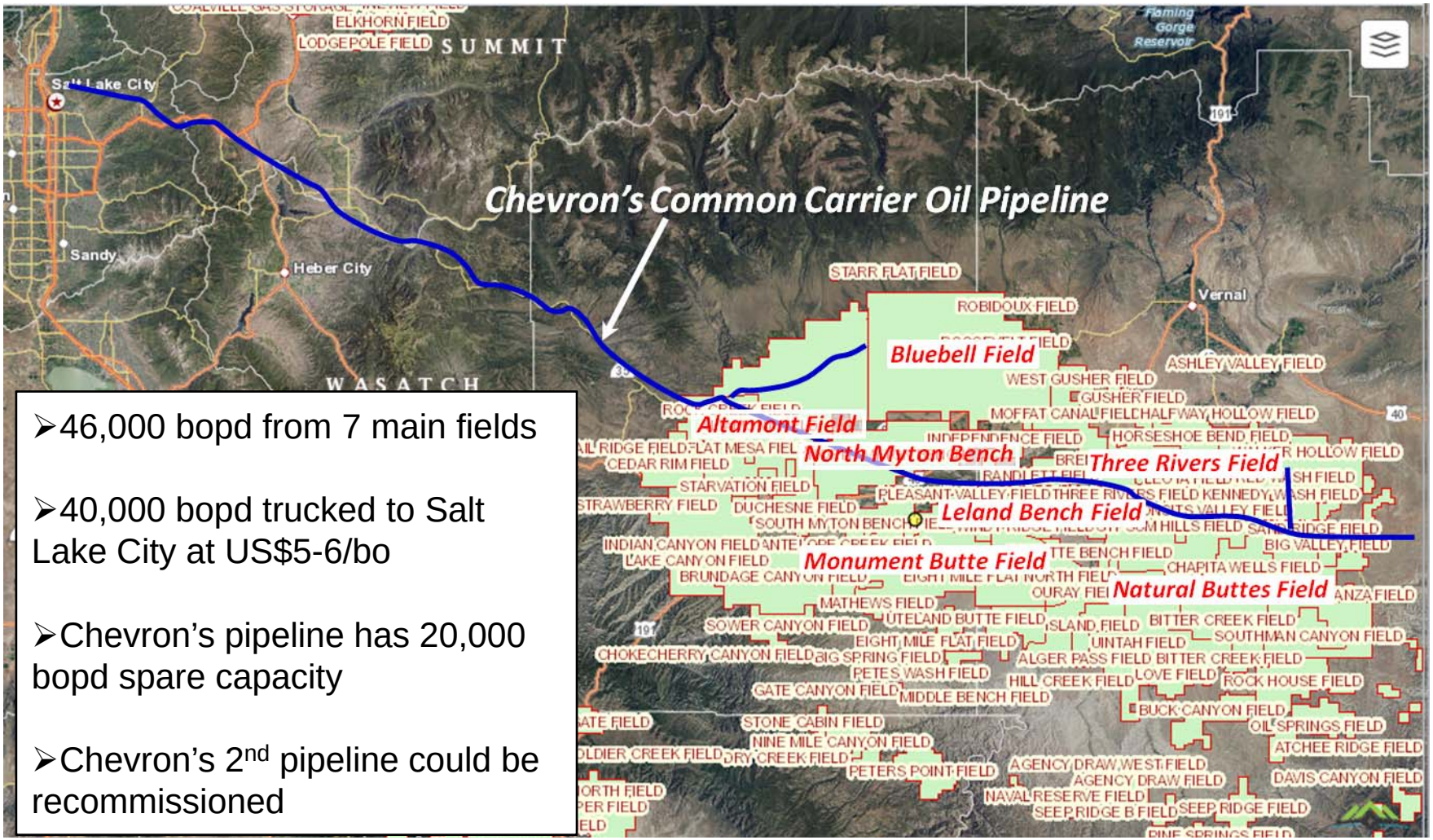
Hydrocarbon Dynamics



- 46,000 bopd from 7 main fields
- 40,000 bopd trucked to Salt Lake City at US$5-6/bo
- Chevron's pipeline has 20,000 bopd spare capacity
- Chevron's 2nd pipeline could be recommissioned

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Additional Opportunities

Hydrocarbon Dynamics

- **Paraffin Oil Fields** — Caspian Sea and Kazahkstan – 85 Billion BO
  Western Siberia Basin – 120 Billion BO
  Indonsesia – 4 Billion BO
- **Oil Sands** — Athabasca Oil Sands, Canada - 1.6 Trillion BO
- **Heavy Oil** — Orinoco Heavy, Venezuela - 500 Billion BO
- **Asphaltene Problems** — El Furrial, Venezuela - 26 Billion BO +50 TCF

New Business – Potential Impacts

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The oil field chemical market is ~$20 billion/year. HCD is potentially relevant to 50% of this market.

- **Pipeline Applications**. Revenue possibilities are up to $1/bbl treated. A single 20,000 bbl/day pipeline could therefore generate revenue of $7m/year
- **Product Sales to Producers.** Similar revenue objectives of $1/bbl of recoverable oil treated.
- **Self Owned Projects.** Seek to own projects that generate significant reserves and production (initially in North America). Target projects with 10mmbbls recoverable
- **Incremental Production.** Contribute product to producers for share of incremental production and profits
- **Tank Cleaning & Refineries.** Large contract could generate up to $8m in revenue

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Conclusions

Hydrocarbon Dynamics

- Commercially proven products
- Management team assembled with proven oil and gas expertise
- Current focus North America, Brazil, Middle East and China
- Proposals out for tank cleaning and upstream acquisitions/JVs
- Rights Issue to raise $3.05 million

Risk Factors

An investment in Indago carries with it the following risks:

1. General
Due to the inherently uncertain nature of the oil and gas industry, the Indago business carries with it various risks. Shareholders should realise that the value of Indago may fluctuate and that a dividend is not expected to be declared by Indago in the medium term. Whilst Indago will attempt to minimise the following risk factors, many of them are beyond its control. This list of risk factors should not be taken as being exhaustive of the risks faced by Indago. These factors and others not specifically referred to may materially affect the performance of Indago and the value of its shares.

2. Funding Risk
In order to fund the future growth of the Indago business it will be necessary for the Board to consider Indago's potential capital raising needs notwithstanding the funds raised under the current capital raising.

3. Early Stage Risk
The HCD Multiflow business is still at the early stage of its development. This brings with it a variety of potential risks. There is no assurance that Indago will be able to overcome them moving forward.

4. Absence of Revenue Risk
Indago has no current revenue and there is no certainty that product sales will be generated.

5. Demand and Supply Risk
Activities within the oil and gas industry by its nature are risky. The operations of customers can be affected by a huge number of factors, risks, issues and costs. These have a potential flow on effect as far as Indago is concerned, potentially putting strain on its customer and channel relationships. Competitive pressures can impact on Indago's ability to successfully engage with the more established channel partners.

Risk Factors (continued)

6. Competitor Risk
Indago operates in a competitive environment. Its competitors will compete with Indago in relation to products and in relation to sales price. Indago's competitors may seek to reverse engineer Indago's products.

7. Operational Risk
Indago is subject to the usual form of operational risks that apply to an international manufacturing/blending business. These include the potential for industrial disputes relating to labour or product logistics, raw material supply risks and costs, capital costs which may be incurred in the event of increased demand, the hiring of appropriately skilled and secure labour, and geopolitical and government risk.

8. Intellectual Property Risk
As set out above, whilst Indago will own the intellectual property relating to the Multiflow products, it will not be granted access to the formulas and related know-how until completion of the maximum royalty agreement payment in the absence of certain specified exceptions. There is a potential risk which arises simply because these formulas and related know-how are not held directly by Indago.

9. Currency Risk
Indago's revenues are expected to be largely denominated in US dollars, whereas its operating costs are expected to be largely denominated in a combination of US dollars and Australian dollars. As an ASX listed entity, Indago reports in Australian dollars. These aspects mean that Indago is potentially exposed to currency and exchange rate risk.

Contacts

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Hydrocarbon Dynamics

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