

The background of the slide is a photograph of a vast, arid landscape. In the foreground, there is a field of dry, brownish-yellow grass. A long, silver pipeline runs horizontally across the middle ground, supported by several small, dark metal structures. In the background, there are rugged, brown mountains under a clear blue sky. A large, solid red rectangle is positioned in the upper right corner, partially overlapping the sky and the mountains. The company logo is written in white on this red rectangle.

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# Project Icewine Update January 2015

# Project Icewine Executive Summary

## Project Icewine:

- **Located in a prolific & proven oil-rich province** which hosts the largest oil field complex in the USA: the giant Prudhoe Bay Oil Field on the North Slope of Alaska
- 99,360 contiguous acres onshore Alaska to be awarded Q1/Q2 2015; 10 year leasehold, 16.5% royalty
- Tangiers is Operator with an initial 87.5% working interest; partner Burgundy Exploration (BEX)
- Operational year round access, located on Dalton Highway with pipeline running through acreage
- AAA rated Alaskan State offers up to 85% cash rebates on exploration expenditure (CY2015)

## Tangiers' Objectives:

- Two world class oil plays – both conventional and unconventional targets
  - Independent expert report underway to determine unconventional volumetric potential
- Both oil plays individually NPV positive at current oil prices based on in-house modelling

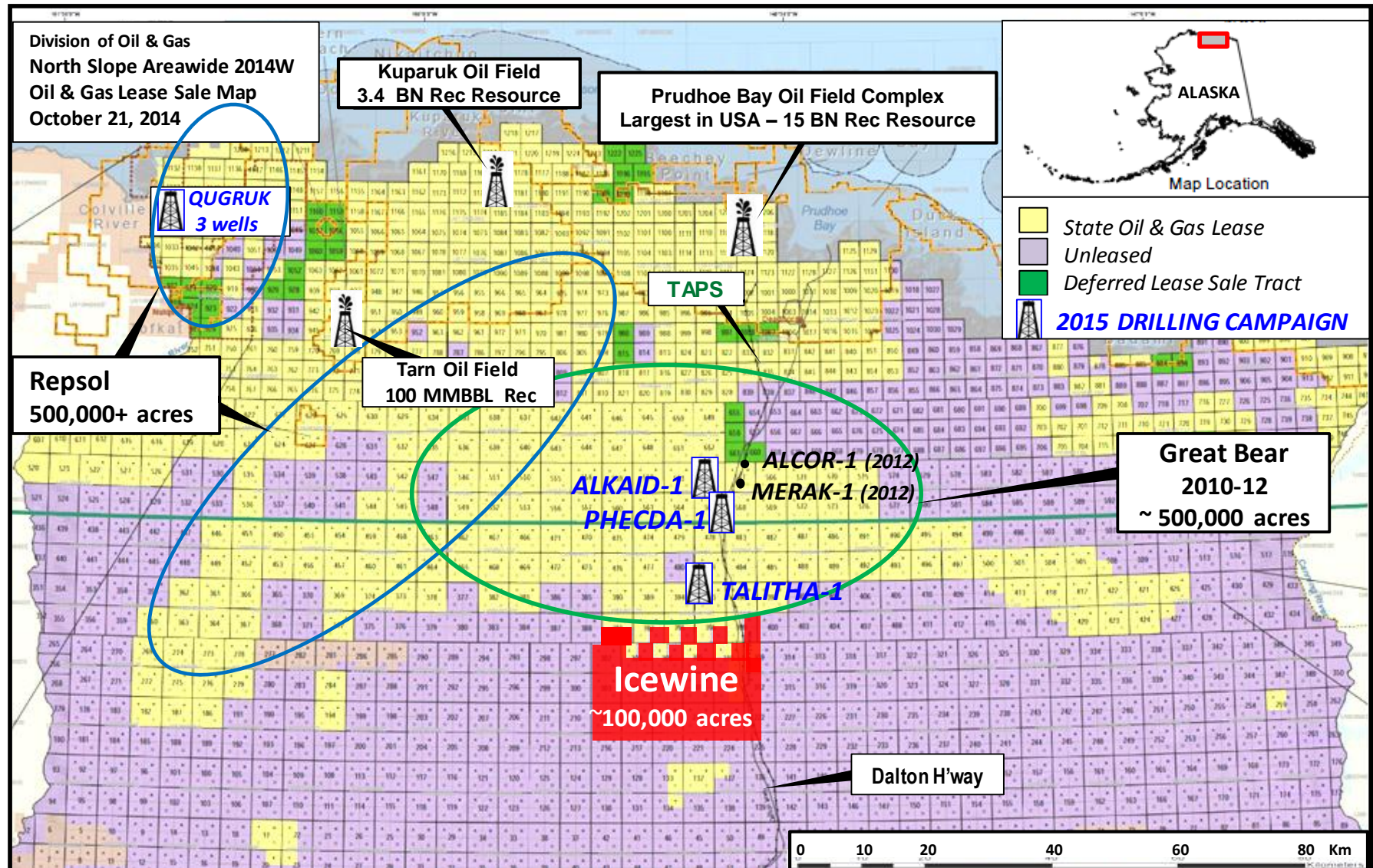
## Tangiers' Strategy:

- Leverage state rebates through drilling & 3D seismic acquisition to de-risk shale play & mature conventional targets
- Retain maximum exposure to upside through farmout whilst minimising shareholder dilution
- Leverage peer activity on neighbouring leases north of Icewine:
  - Oil discoveries across both play fairways in adjacent Great Bear acreage to North (2012)
  - Great Bear drilling 3 wells to test both plays **commencing Q1 2015**



# Project Icewine: Location Map

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# Alaska vs Rest of North America: Conventional Resource Potential

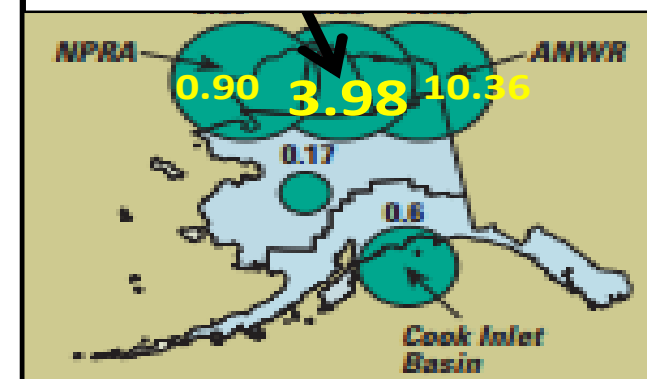
- Central North Slope ranked No 1 for remaining conventional oil potential (3.98 BN barrels excluding Alaskan Reserve Areas)
- >50% of this potential is in the Brookian sequence targeted by Tangiers (2.1 BN barrels)
- Historically underexplored due to:
  - poor seismic coverage
  - limited access due to 5 month drilling window\*
  - majority of land is not close to infrastructure\*
- Less than 500 exploration wells (Wyoming 2/3 size of Central North Slope with >70,000 exploration wells)
- Significant uplift in recent exploration success based on wells located using 3D seismic

**\*Tangiers' Icewine Project located on the only major highway with year round operational access**

## Mean Assessment of Technically Recoverable Conventional Resources (USGS 2013)

Rank	Top Ten Provinces (excluding Reserve Areas in Alaska)	Mean Undiscovered Recoverable Conventional Oil (BBL)
1	<b>Central North Slope</b>	<b>3.98</b>
2	Eastern Great Basin	1.56
3	Gulf Coast	1.48
4	Ventura Basin	1.06
5	Michigan Basin	0.99
6	Los Angeles Basin	0.98
7	Permian Basin	0.75
8	Southern Alaska	0.6
9	Central Coastal	0.49
10	San Joaquin	0.39
	The Rest	3.7
	<b>TOTAL</b>	<b>15.98</b>

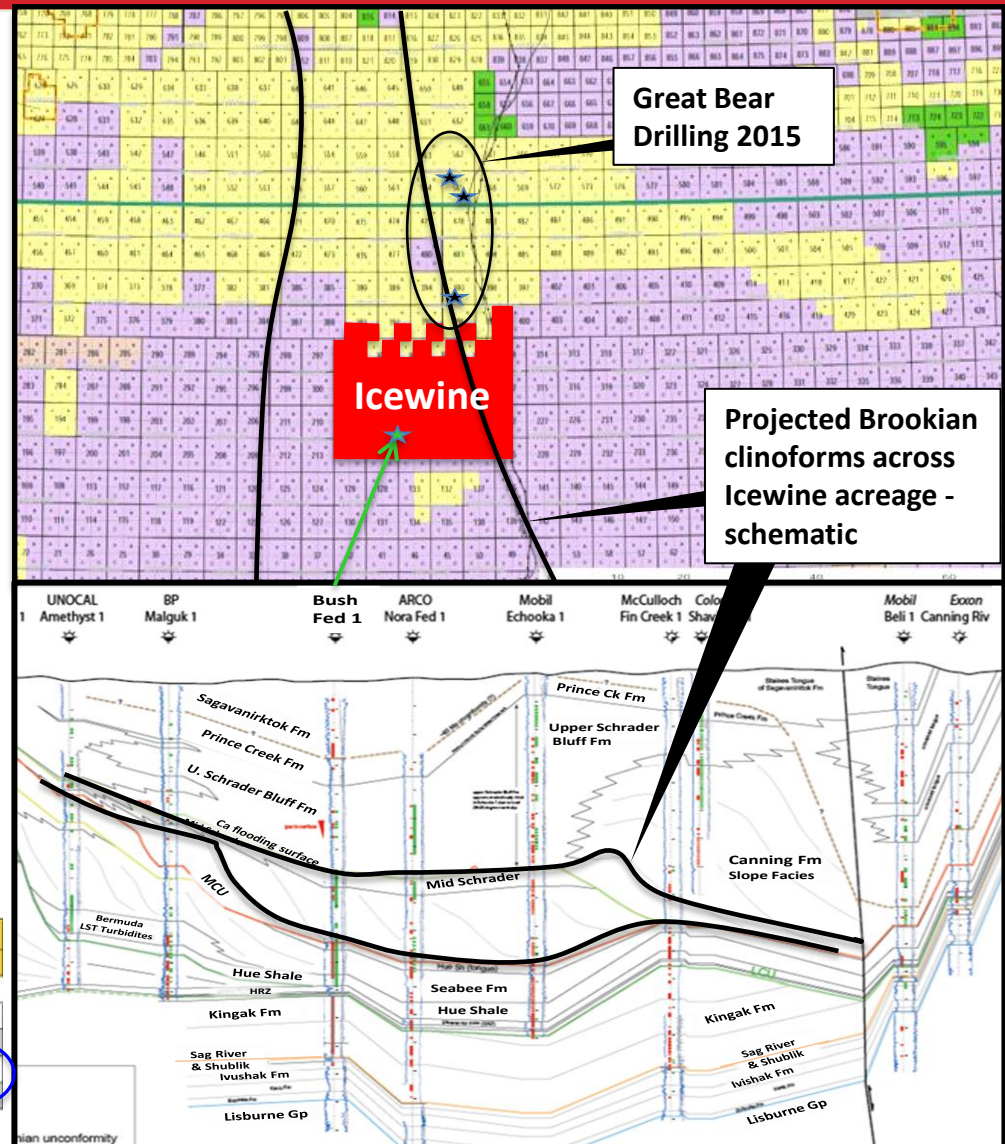
## Central North Slope





# Project Icewine: Brookian Clinoform Locations

- 1.6 Billion barrels of undiscovered oil estimated in Brookian clinoform conventional traps (USGS 2013) \*
- Clinoform play fairway:
  - Ranked No. 2 in it's own right against top 10 US provinces (refer Slide 4)
  - Reservoirs – shallow shelf, channel, fan through to turbidite deep water sands
- Several stacked sand rich Brookian clinoforms developed across Icewine acreage
- Majority of conventional reservoirs on the Slope are “filled to spill” due to presence of multiple and prolific high quality source rocks



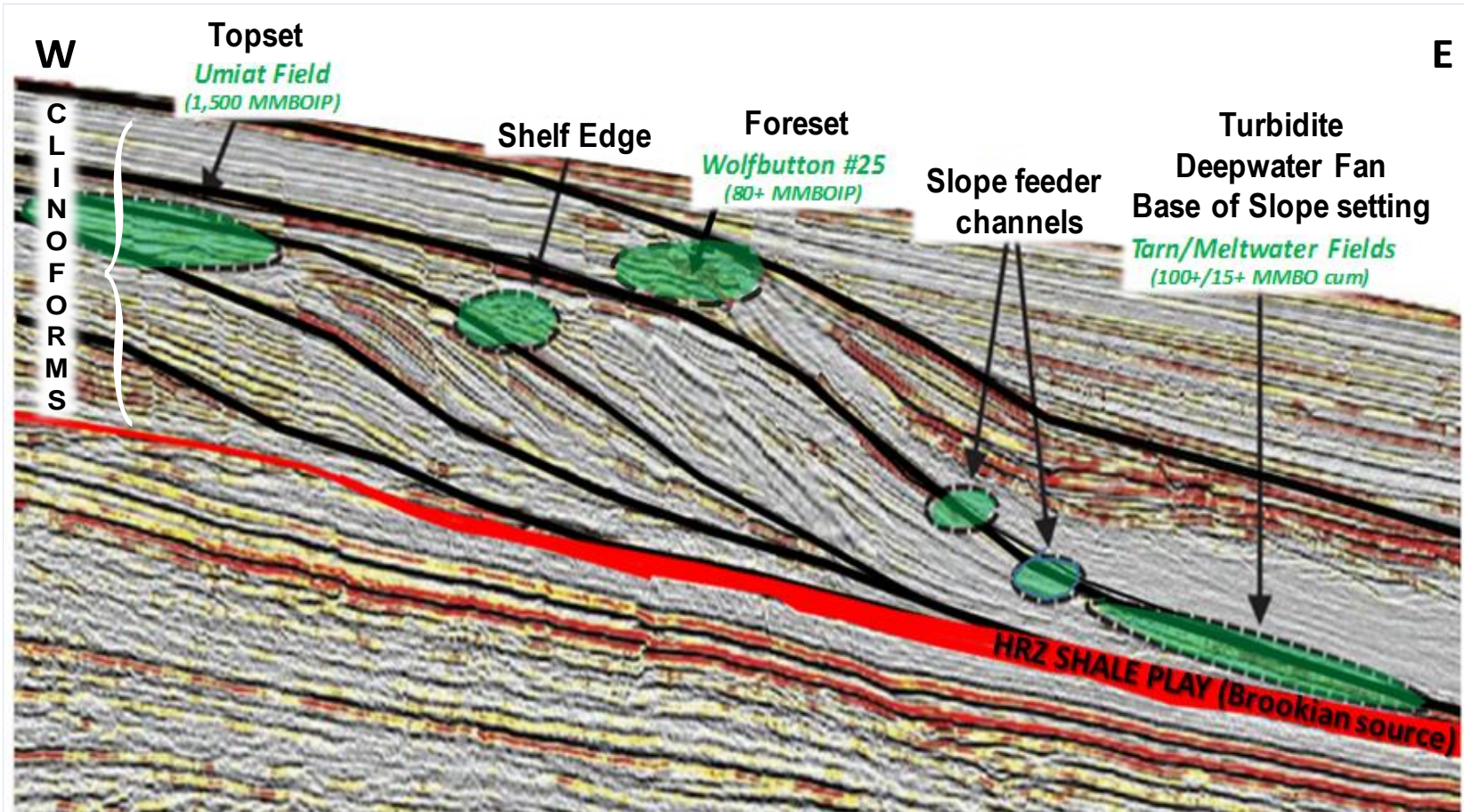
*	Assessment Unit	Accumulation type	Oil (MMBO)			
			F95	F50	F05	Mean
BROOKIAN STRATIGRAPHIC UNITS						
Brookian Topset	Oil	190	417	772	441	
	Gas					
Brookian Clinoform	Oil	810	1561	2668	1626	
	Gas					

Source: USGS 2013

Source: Alaska Division of oil and gas 2012, Decker 2010

# Project Icewine: Brookian Clinoform Play Schematic

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- Seismic schematic illustrating clinoforms and the range of Brookian stratigraphic, combination stratigraphic/ structural plays anticipated to extend into the Icewine acreage
- Stacked clinoforms – eastward progression of shelf edge during Brookian deposition across Icewine acreage



# Project Icewine: Conventional Central North Slope Plays

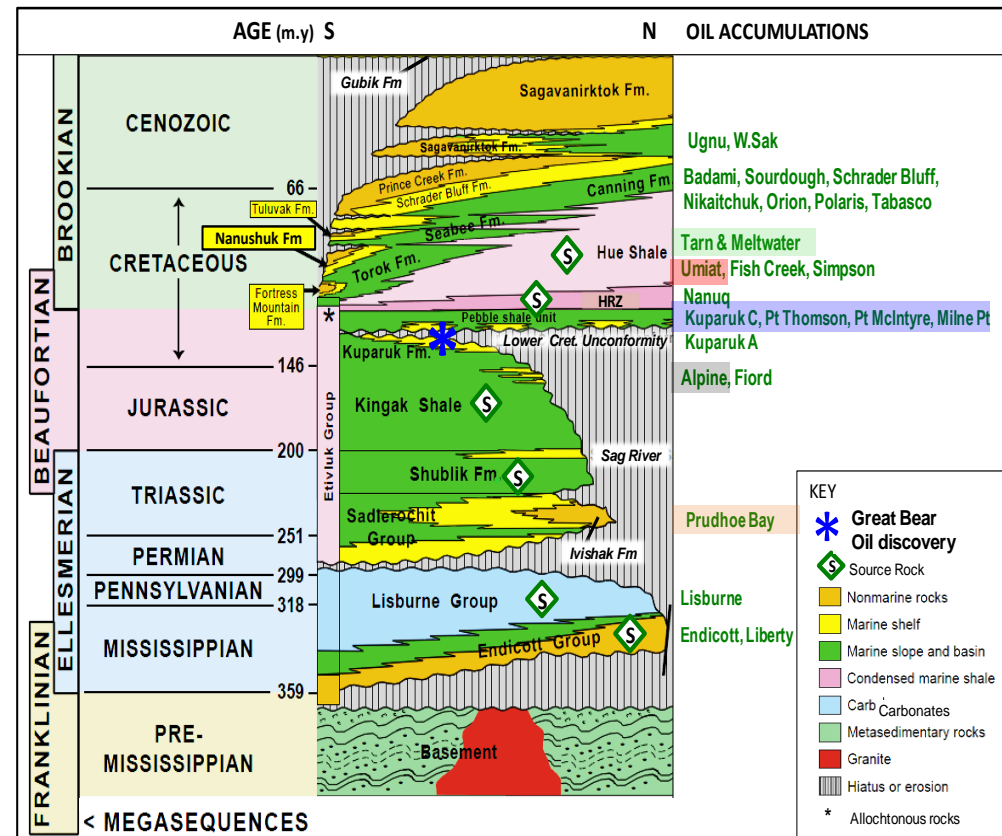
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## Brookian Clinoform Plays:

- Delta Topset Play
  - Shallow marine to non-marine sandstones e.g: Umiat Oil Field
- Brookian Turbidite Play
  - Slope & deep water sands
  - e.g: Tarn & Meltwater Oil Fields
  - Light oil sourced by HRZ shales

## Beaufortian Plays:

- Transgressive Sands
  - Kuparuk Fm shallow marine sands
  - Kuparuk (U) Oil Field: > 2 BNbbls OOIP
  - \* Oil discovery in Great Bear wells 2012
- Shallow Marine Shelf sands
  - e.g. Alpine Oil Field: 430 MMbbls reserves



## Ellesmerian Plays:

- Structural and unconformity related:
  - Sands - Ivishak Fm
  - e.g. Prudhoe Bay Oil Field Complex

## Icewine Conventional Play Fairway Focus:

- Brookian Turbidites
- Beaufortian transgressive sands
- Beaufortian shelf sands

# North Slope Conventional: Early Exploration

## Exploration drilling campaign North Slope, Colville High 1982 – 2000:

- Nine conventional oil accumulations discovered and/ or evaluated; the majority were secondary objectives with a combined OOIP greater than 5 BN barrels
  - An 85% success rate was reported by Phillips & Anardarko (2001) in their NPRA exploration campaign
  - Results were considered indicative of the future prospectivity potential across the North Slope
  - All of the successful wells were stratigraphic traps
  - 3D seismic mapping & amplitude analysis was pivotal in identifying & maturing the stratigraphic plays  
*(Hudson et al 2006)*

## Relevance to Icewine:

- Three significant conventional plays were identified which potentially extend into the Icewine acreage
  - 1) Brookian Turbidite play:** Upper Cretaceous - widespread
    - Predominantly stratigraphic traps often at base-of- slope settings
    - Oil Field Example: Tarn & Meltwater (100 + MMbbls combined reserves)
  - 2) Beaufortian transgressive sands** on the Lower Cretaceous Unconformity:
    - Combination structural/ stratigraphic trap – fault controlled
    - Upper Kuparuk Fm Oil Field Example: Kuparuk River (> 2 BNbbls OOIP), Fiord (50 + MMbbls reserves), Pt McIntyre, NW of Prudhoe Bay, produced > 436 MMbbls since 1993
  - 3) Beaufortian shelf sands:** Lower Cretaceous – Upper Jurassic
    - Stratigraphic trap – often characterised by seismic amplitudes
    - Oil Field Example: Alpine (0.15BNbbls OOIP), Kuparuk River (> 2 BNbbls OOIP)



# High Impact Exploration Activity

## Recent Discoveries neighbouring Icewine

### Great Bear:

**2015 (Jan):** Great Bear commencing three well drilling campaign testing both conventional & unconventional plays: Talitha-1: >3 miles North of Icewine

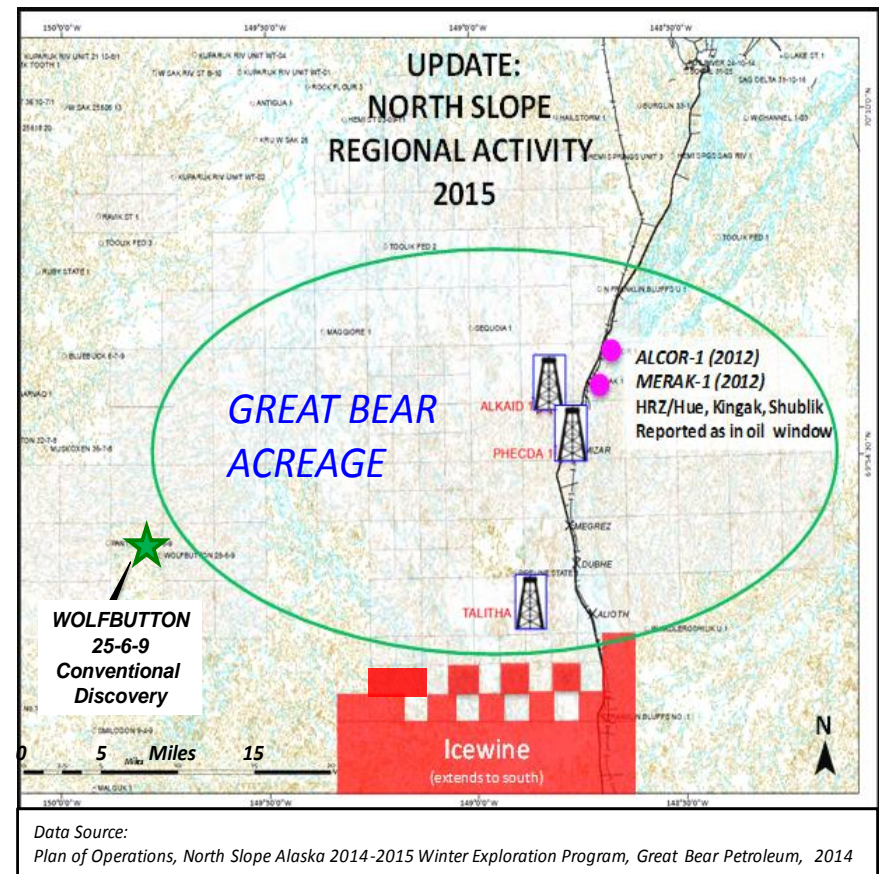
**2012:** Alcor-1 & Merak-1 discovered oil in both unconventional and conventional reservoirs:

- HRZ/ Hue, Kingak and Shublik shales all reported within the oil window
- High TOC, up to 8%, reported in HRZ/Hue
- Conventional oil discovery in the Kuparuk sands (Beaufortian)
- Potential for similar discoveries in Icewine
- 'Sweetspot' liquids rich vapour phase predicted in the HRZ/ Hue Fm across Icewine
- **Wolfbutton 25-6-9: Undeveloped Oil Discovery**
  - Brookian conventional play
  - Nanushuk sands, high porosity regionally 'filled to spill'
  - 109m net pay, 86.6 MMBOIP\*

\*internal deterministic estimate

### Repsol 2015:

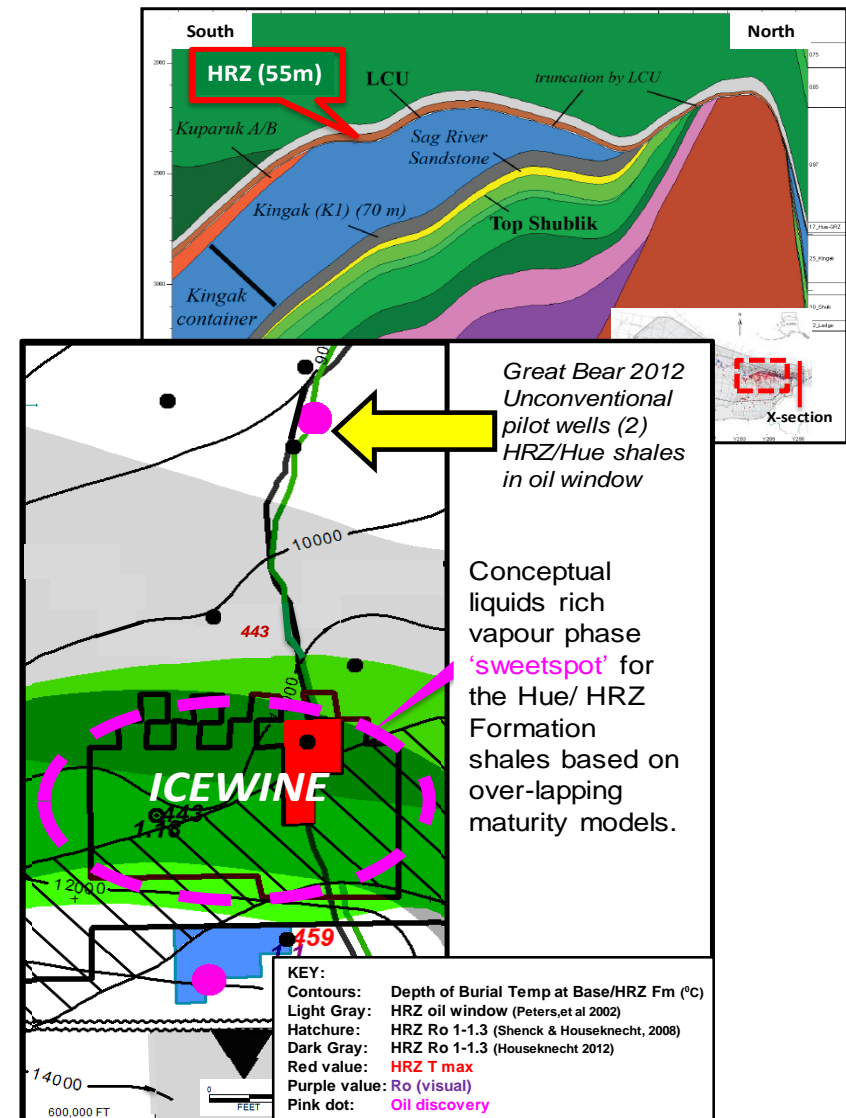
- Brookian Conventional Play
- Three exploration wells planned in the Qugruk area approx.80 miles NW of Icewine (refer Slide 3 this presentation 'Location Map')



# Project Icewine: Unconventional Shale Oil – HRZ

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- **HRZ primary shale oil target in Icewine:**
  - Basal member of the Hue Formation
  - Laterally extensive condensed marine shales averaging 55m thick
  - Predominantly Type II kerogen- sweet & oil prone
  - Exceptional porosity and resource concentration indicated from log analysis
  - 'Sweetspot' liquids rich vapour phase predicted in the HRZ/ Hue Fm across Icewine
- **Additional Upside:**
  - Hue, Kingak and Shublik shales confirmed within oil window from pilot wells in Great Bear acreage
- **Extremely encouraging Great Bear drill results in neighbouring acreage to Icewine:**
  - Good oil shows over 180m in the HRZ/Hue shales
  - TOC levels recorded up to 8%
  - HRZ shales confirmed within oil window
  - Highly brittle shales – suitable for 'fracking'





# Project Icewine: Unconventional Shale Oil Summary

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- Three prolific and proven source rocks on the North Slope within the Icewine acreage
- Primary Unconventional Objective:

1) HRZ shale within the Hue Formation (Cretaceous)

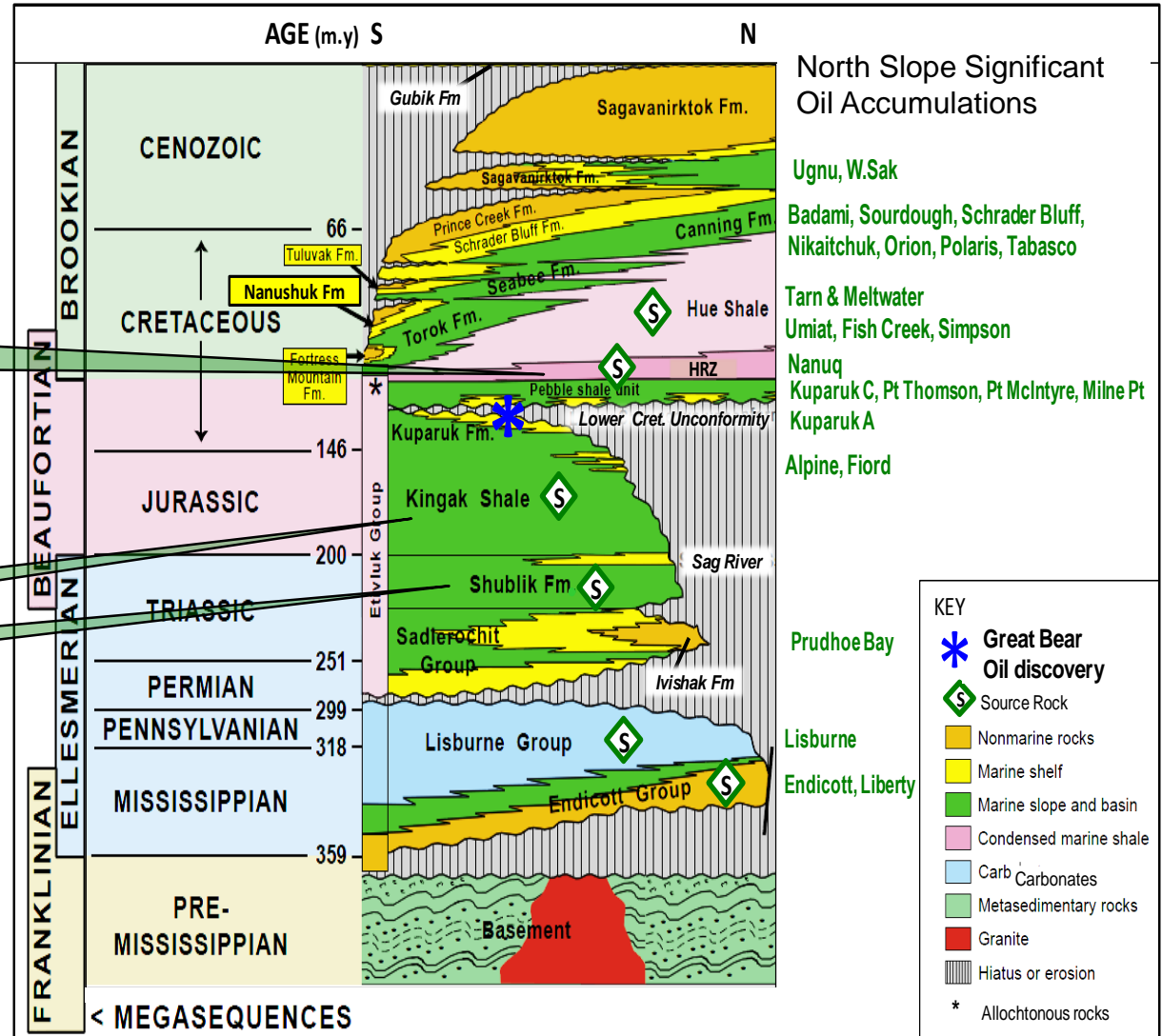
- Upside Hue Shale

Additional Targets:

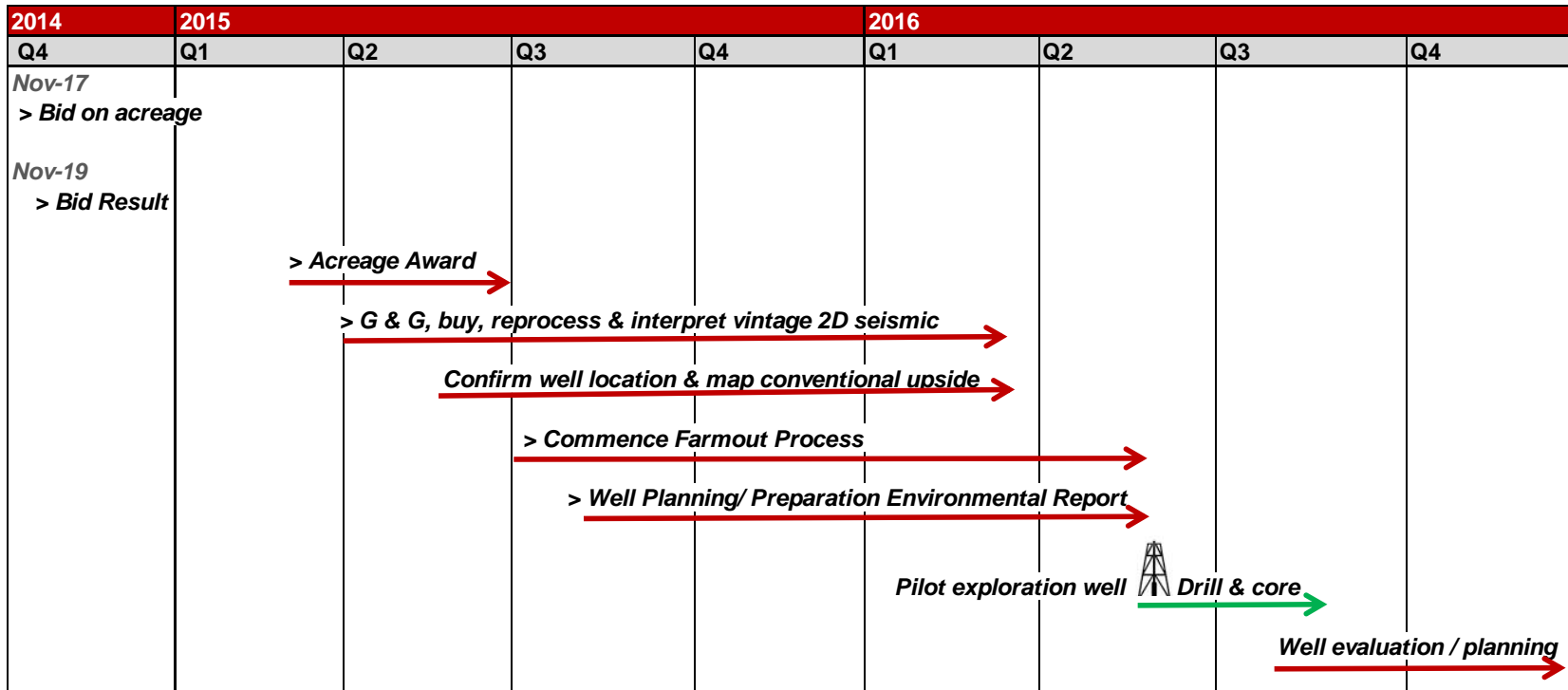
2) Kingak Shales (Jurassic)

3) Shublik Shales (Triassic)

- USGS (2012) estimate: 2 BNBO recoverable oil resources on the North Slope
- DeGolyer & MacNaughton commissioned by Tangiers to prepare a Prospective Resources Report



# Project Icewine Indicative Work Program



- Icewine Acreage to be awarded in Q1/Q2 2015
- Purchase and reprocess vintage 2D seismic
- Geological and geophysical studies including seismic interpretation, confirm well location & map conventional upside
- Well planning - capitalise on generous State of Alaska rebates
- Farm-down campaign to be run in tandem with maturation of Icewine opportunity
- Drill and core vertical pilot well prior to H1 2016 to test source quality and characteristics



# Project Icewine: Summary

**Located in proven, prolific and productive petroleum province which hosts the largest oil field complex in North America**

<b>First Mover Advantage</b>	<ul style="list-style-type: none"><li>• Tangiers and BEX early entrants into developing unconventional shale oil play and Brookian conventional plays on the Alaskan North Slope</li></ul>
<b>Liquids Rich Play</b>	<ul style="list-style-type: none"><li>• Unconventional: Exceptional resource concentration in the HRZ/ Hue shales with potential to generate large oil resource</li><li>• Conventional: 3.98 Billion Barrels of Undiscovered Recoverable Resources in the Central North Slope (USGS 2013)</li></ul>
<b>Attractive Fiscal Terms</b>	<ul style="list-style-type: none"><li>• Excellent fiscal regime, politically stable</li><li>• 10 year primary leases with no mandatory relinquishment</li><li>• 12.5% State Royalty (16.5% including ORRI)</li></ul>
<b>Mature Infrastructure</b>	<ul style="list-style-type: none"><li>• Operational year round access - located on Dalton Highway</li><li>• Trans Alaska Pipeline runs through Icewine with 1.5 MM BOD spare capacity</li></ul>
<b>Generous Tax Incentives</b>	<ul style="list-style-type: none"><li>• Alaskan State Tax incentives on exploration drilling:<ul style="list-style-type: none"><li>• 85% cash refund (2015), 75% (mid 2016) thereafter 35%</li><li>• Seismic: 40%</li></ul></li><li>• Mezzanine funding facility linked to tax incentives</li></ul>
<b>Material Position</b>	<ul style="list-style-type: none"><li>• Large, contiguous 100,000 acre position exceeds hurdle rate to attract oil majors; material 87.5% working interest &amp; operatorship</li></ul>

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**Share Registry:****ASX: Computershare**

Investor Services Pty Ltd

ASX: TPET

**AIM: Computershare]**

Investor Services Pty Ltd

AIM: TPET

**KEY STATISTICS AS AT 5 JANUARY 2015**

Total Ordinary Shares:	452,026,723
Options:	22,525,087
Number of Shareholders:	2,715
Top 20 Shareholders (31.12.14):	36.06%
Price :	A\$0.012
Market Capitalisation:	A\$MM 5.4

**Brokers:****Australia**

Hartleys Ltd

As Corporate Advisor : Mr Dale Bryan + 61 8 9268 2829

**United Kingdom**

RFC Ambrian Limited

As Nominated Adviser: Mr Oliver Morse/Ms Trinity McIntyre  
+61 8 9480 2500

**As Corporate Broker:** Mr Charlie Cryer +44 20 3440 6800



## **Mr David Wall – Managing Director**

4 years experience in strategy and planning at Woodside Petroleum.

6 years experience in financial services industry as small cap oil and gas equities analyst, specialising in African exploration companies.

B. Comm in Management and Finance from University of Western Australia.

## **Dr Stephen Staley – Non-Executive Director**

30 years of energy management and technical experience including with Conoco and BP. Dr Staley was founding Managing Director of upstream AIM start-ups Fastnet Oil & Gas plc and Independent Resources plc and a Non-executive Director of Cove Energy plc.

BSc (Hons.) in Geophysics from Edinburgh University, PhD in Petroleum Geology from Sheffield University and MBA from Warwick University.

## **Mr Michael Evans – Non-Executive Chairman**

Extensive executive and Board level experience with publicly listed companies in the natural resources sector spanning 30 years.

Founding Executive Chairman of ASX oil and gas explorer FAR Limited. Mr Evans is currently the Non-executive Chairman of ASX-listed TNG Limited.

B Bus Curtin University, Chartered Accountant, Chartered Secretary, Governance Institute Australia.

## **Mr Brent Villemarette – Non-Executive Director**

Over 30 years experience in the global oil and gas industry, primarily with Apache Corporation in the US and in Australia.

Also served as Chief Operating Officer for Transerv Energy, an ASX listed oil and gas company.

Reservoir Engineer.

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