



Eagle Plain Hydrocarbon Exploration: Operational Plans and Objectives of Northern Cross (Yukon) Limited



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Our mission

“Create value by exploration and development of oil and natural gas resources”

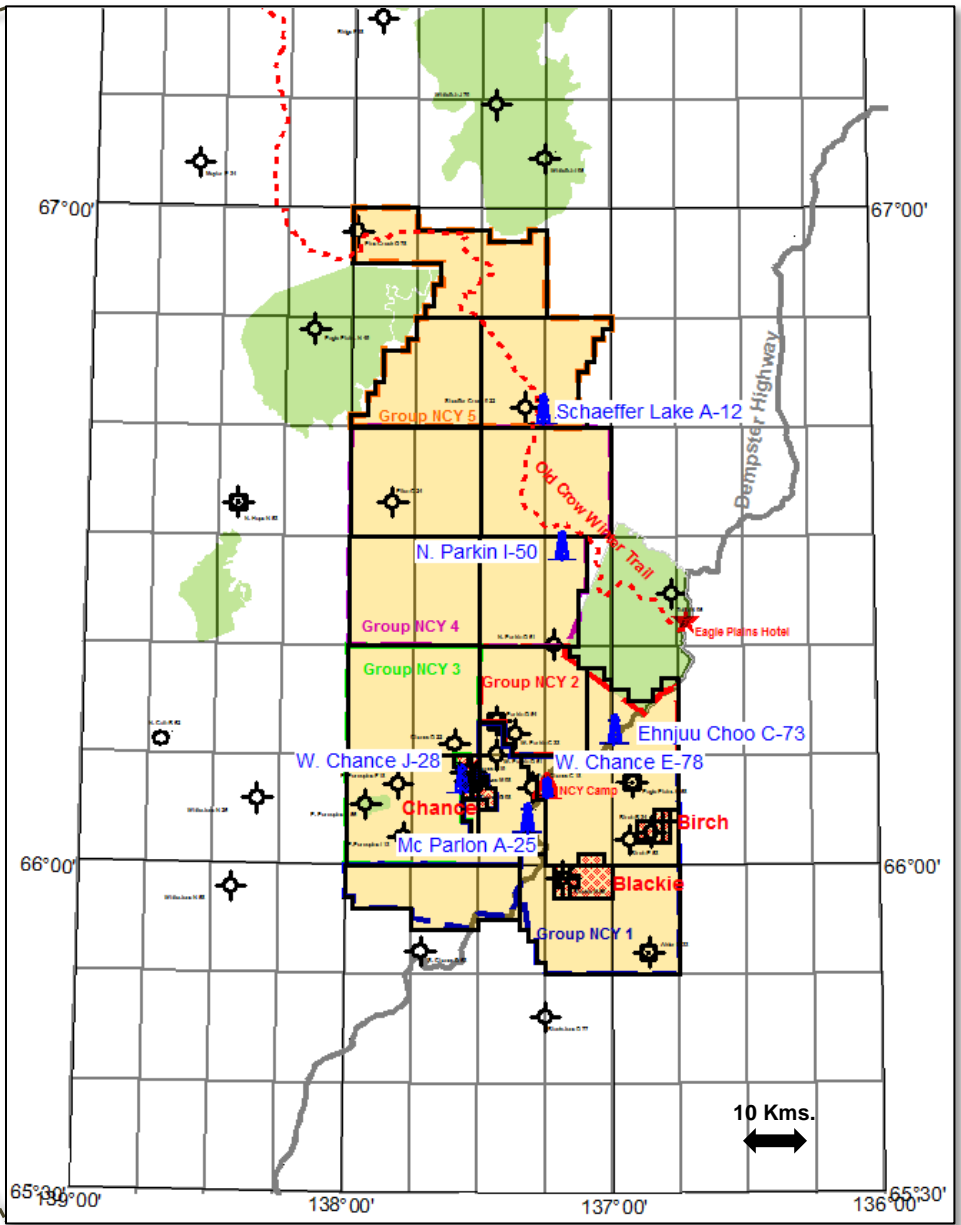
Our activities will benefit the communities that we operate in as well as our shareholders

Eagle Plain has the largest oil and gas potential of any onshore Yukon sedimentary basin

The Geologic Survey of Canada's median estimates of resource potential are:

- 6,000 Bcf of conventional natural gas; does not include unconventional**
- 450 mmbbls of conventional crude oil**

Northern Cross (Yukon) Ltd. is using new geological and geophysical interpretations and modern exploration concepts to assess resource opportunities that have not been evaluated in the past at Eagle Plain



- ~1.3 million Net Acres
- 5 wells proposed to retain all land
- Assess BOTH unconventional and conventional potential
- Each well is INDEPENDENT and adds value

 NCY Land  First Nations Lands

Near Term (2012/13)

- Land Retention 2 Phases, 2 Rigs:

- Phase 1 - Patterson Triple Rig : South Area - 4 wells:

- McParlon A-25 **DRILLING**
 - E. Chance E-78 **COMPLETED**
 - West Chance J-28 **WINTER 2012/13**
 - Ehnjuu Choo L-73 **SPRING 2013**

- Phase 2 - NCY Single Rig: North Area - 2 wells:

- Schaeffer Ck. A-12 **WINTER 2012/13**
 - N. Parkin I-50 **WINTER 2012/13**

- Initial assessment of conventional sand/carbonate and unconventional shale prospects
- Validate Amplitude Versus Offset (AVO) seismic interpretation
- Exploration program will satisfy remaining work commitments under existing exploration permits of about \$18 million

Long Term (Beyond 2013)

- Establish resource base to support development for domestic and export markets
- Development/Exploitation priority based on results of first phase of exploration drilling



Eagle Plain Historic Database: Land, Wells & Seismic

NCY Land

~1.3 million net acres

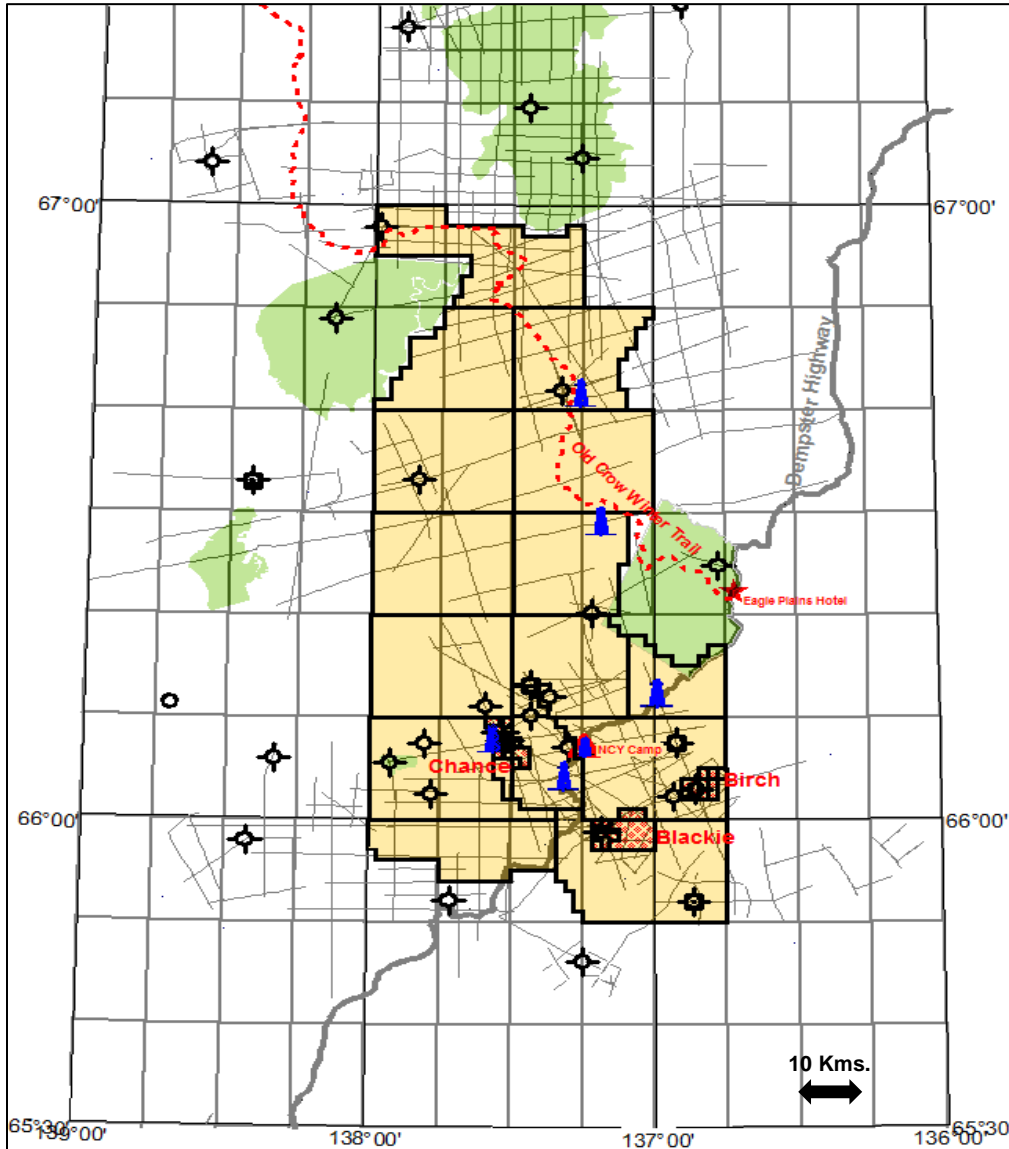
- 3 SDL's: Chance, Blackie, Birch
- Initial permit term expiries: 2013/08/31

Historic Wells

- 34 wells tied to seismic
- 21 wells on NCY lands
- Average Depth 2,059m
 - 2 wells > 4,000m
 - 31 wells in 1960's & 1970's
 - 3 wells in 1980's and younger

Seismic

- 265 2D seismic lines
- ~4,300 kms. of TOTAL data



NCY SDL's



NCY Land



First Nations Lands



NCY 2012/2013 Exploration Wells



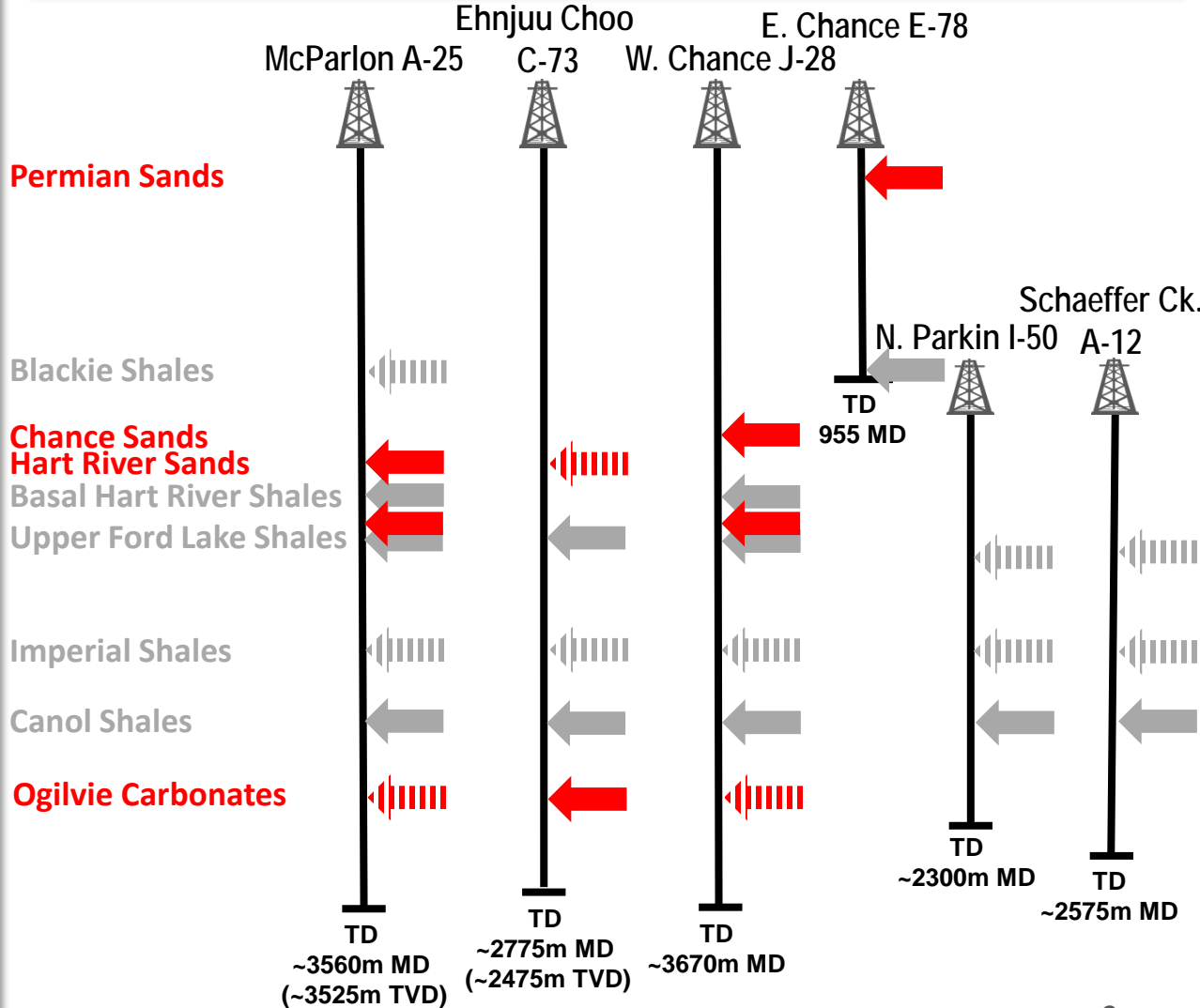
2D Seismic

2012/13 Exploration Program



Eagle Plain Exploratory Drilling Program: Objective Horizons

Era		Period +/- Epoch, Age	Ma	Eagle Plain
PALEOZOIC	Permian	Late	Changhsingian	253.8
			Wuchiapingian	260.4
			Capitanian	265.8
		Middle	Wordian	270.6
			Roadian	275.6
			Kungurian	284.4
		Early	Artinskian	284.4
			Sakmarian	294.6
			Asselian	294.6
	Carboniferous	Pennsylvanian		299.0
				306.5
				311.7
		Mississippian	Bashkirian	318.1
			Serpukhovian	326.4
			Viséan	345.3
Tournaisian			359.2	
			374.5	
			385.3	
Devonian		Late	Famennian	391.8
			Frasnian	397.5
			Givetian	407.0
		Middle	Eifelian	411.2
			Dalejian	416.0
			Emsian	
	Early	Pragian		
		Lochkovian		
		Pridoli		



1. Data Calibration:

- Cut core, collect rock cuttings, mud gas data and wireline log data to calibrate the 2D seismic

2. Conventional Reservoir (Seismic AVO anomalies) Calibration for Reservoir and Fluid:

- Permian and Carboniferous highstand shelf and lowstand fan sand reservoirs
- Ogilvie carbonate reef margin and mid-platform hydrothermal dolomite reservoir

3. Unconventional Gas Shale Assessment :

- Free shale gas and gas desorption analysis; TOC%; shale densities; mineralogical analyses (brittleness); rock mechanics; rock maturity
- Formation pressure and hydrocarbon type assessment
- Post-well, gas, oil and formation water analysis
- Well log objectives: natural frac identification; rock properties measurement; fluid measurement; calibration to core and geochemical analyses

- Northern Cross (Yukon) is focused primarily on *conventional* oil and gas exploration
- Unconventional shale oil and natural gas resource potential in Yukon is a possibility, but this potential still needs to be evaluated
- Natural gas has historically been tested from shale reservoirs in historic wells in Eagle Plain
- Based on information we get from our exploratory wells, we will evaluate the quality and quantity of the resource and then compare that with the cost of production to determine commerciality
- **We do not have plans to frac**
 - We are still at the exploration stage, not at the completion stage
 - Fracture stimulation is a completions method to produce resources
 - Once we know the results of our exploration test wells, we will determine the best way to produce the resources, if we believe there to be commercial viability

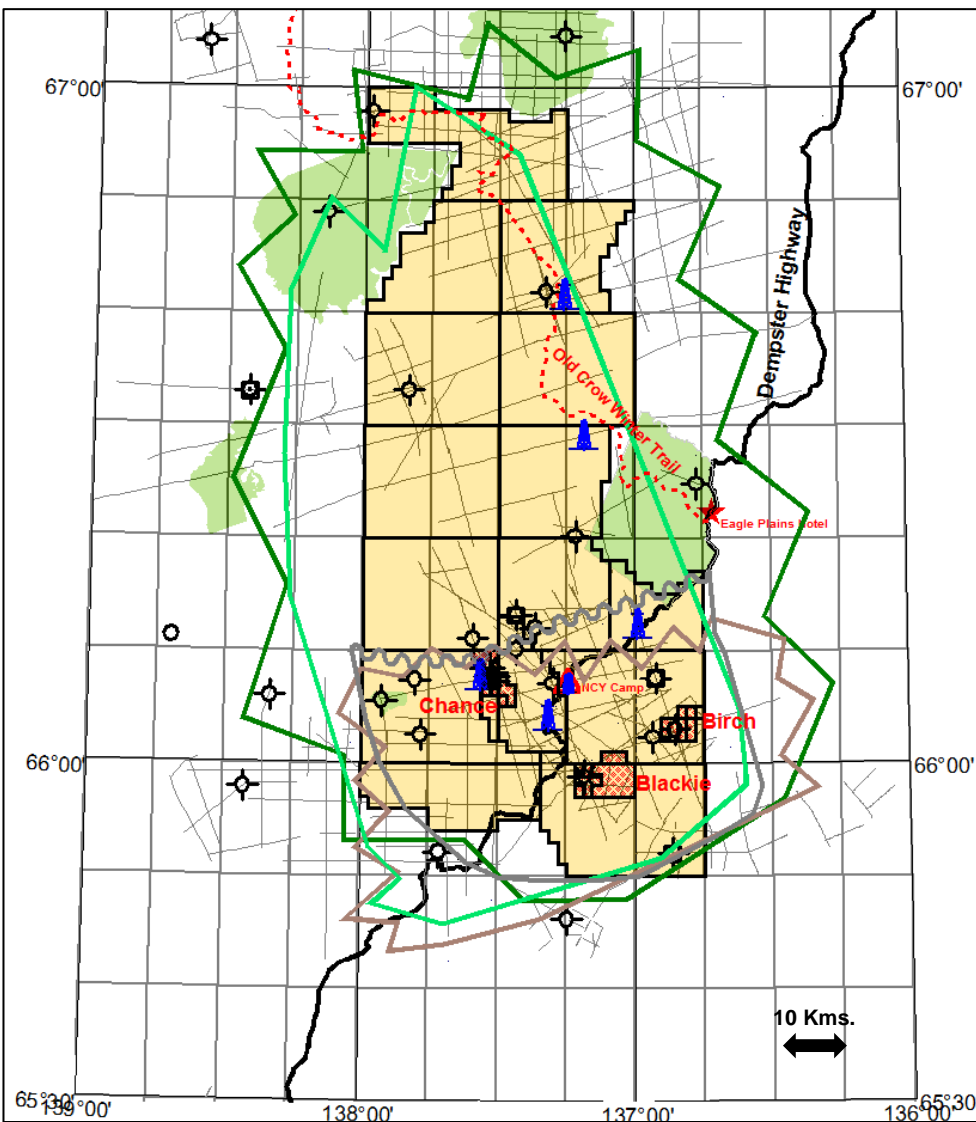
Unconventional Shale Gas

5 Shales to evaluate:

- Carboniferous (3): Blackie, Hart River, Ford Lake
- Devonian (2): Canol, Imperial

Unconventional potential gas in place resource is larger than Conventional gas resource

Define future priorities and completion techniques



Prospect Types Review Conventional Plays

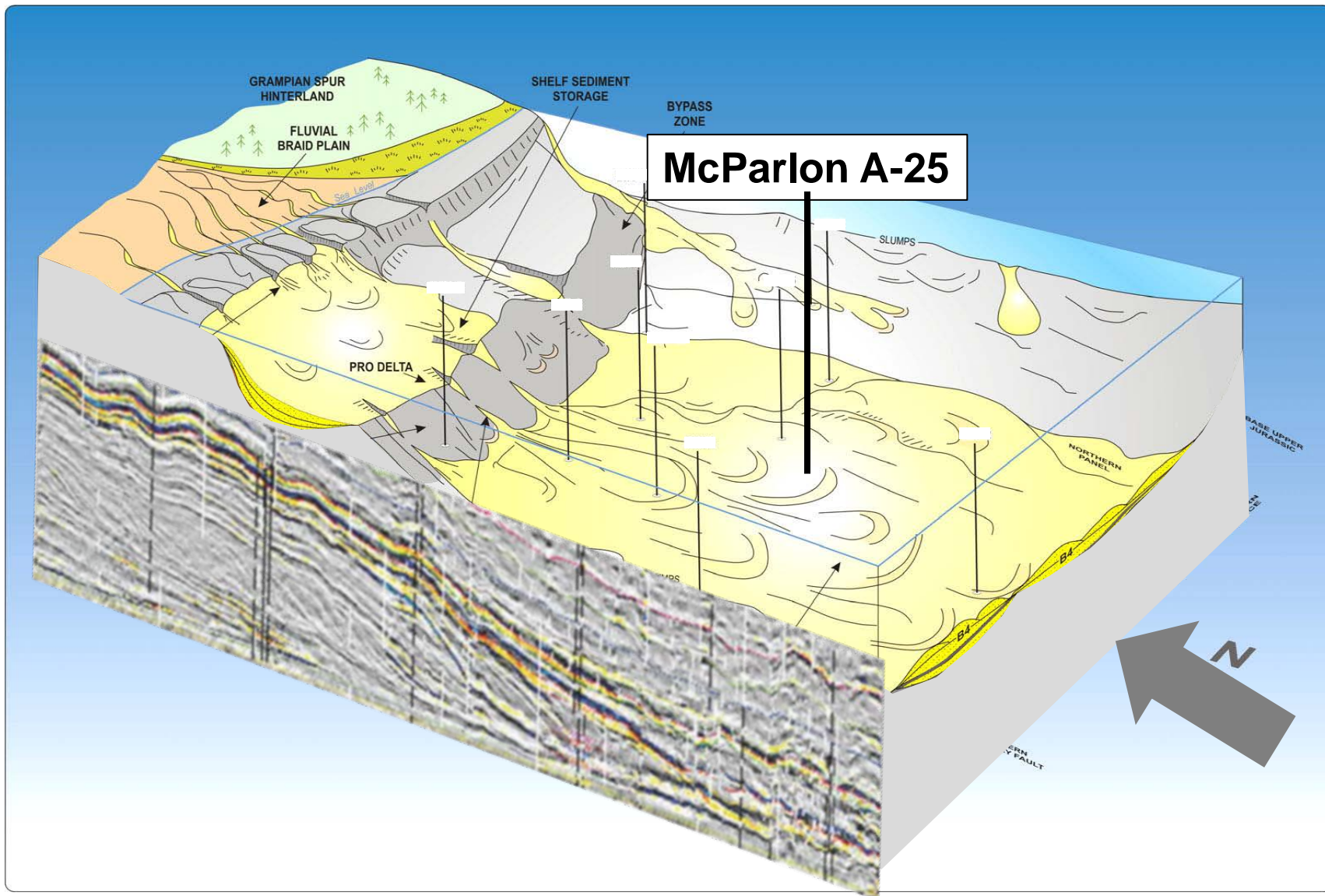
**Carboniferous Lowstand Fan Sands
Ogilvie Hydrothermal Dolomite**



Drilling Objectives: Hart River Fm. Lowstand Fan Setting

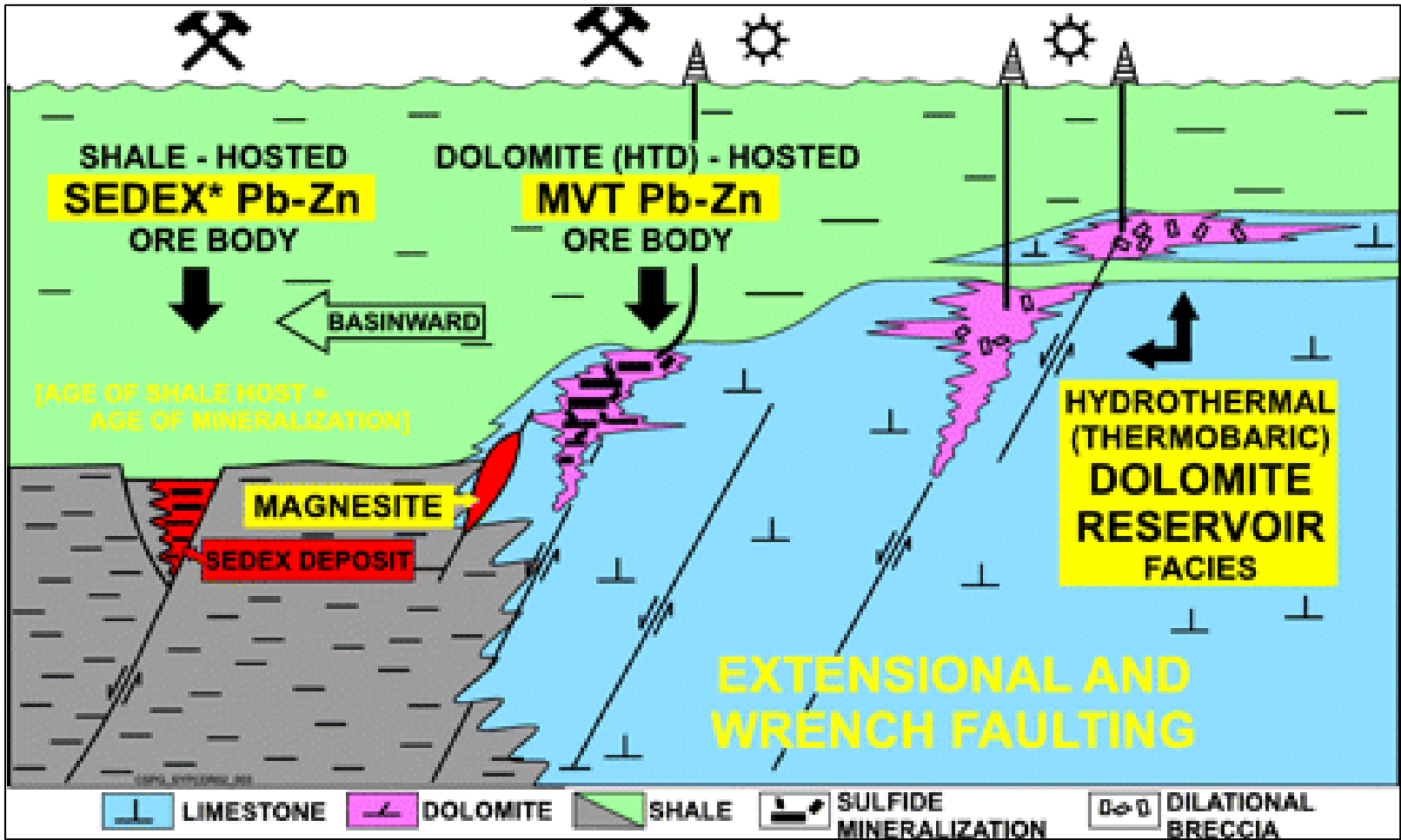
Conceptual Diagram of Carboniferous Shelf to Basin Transition Setting Hart River Fm. McParlon A-25

Adapted From Interpreted Setting of Buzzard Field, North Sea U.K.





Drilling Objectives: Ogilvie Hydrothermal Dolomite



- **Northern Cross (Yukon) Ltd. is at the beginning of an exploration program**
 - **Time to commercial development is contingent on exploration success and is measured in years not months**
- **Northern Cross (Yukon) Ltd. plans to operate in a safe and environmentally responsible manner**
 - **NCY operates under extensive regulations specified by Yukon laws**
- **Northern Cross (Yukon) Ltd. wants to work with Yukoners to build local expertise and share in potential future economic benefits**
- **Long Term Benefits to the Yukon include:**
 - **An emerging oil and natural gas industry in Yukon offers economic diversification and the potential to expand the royalty and tax base for the benefit of all Yukoners**
 - **Successful exploration could displace costly imported fuel**
 - **Potential to diversify energy sources to include clean natural gas**



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