



**100% working interest in two giant oil and gas fields on Alaska's North Slope, containing Recoverable 2C Contingent Resources of 1.7 billion barrels adjacent to both the Trans Alaska Pipeline System and the Dalton Highway leading to lower infrastructure costs and shorter lead times to production.**

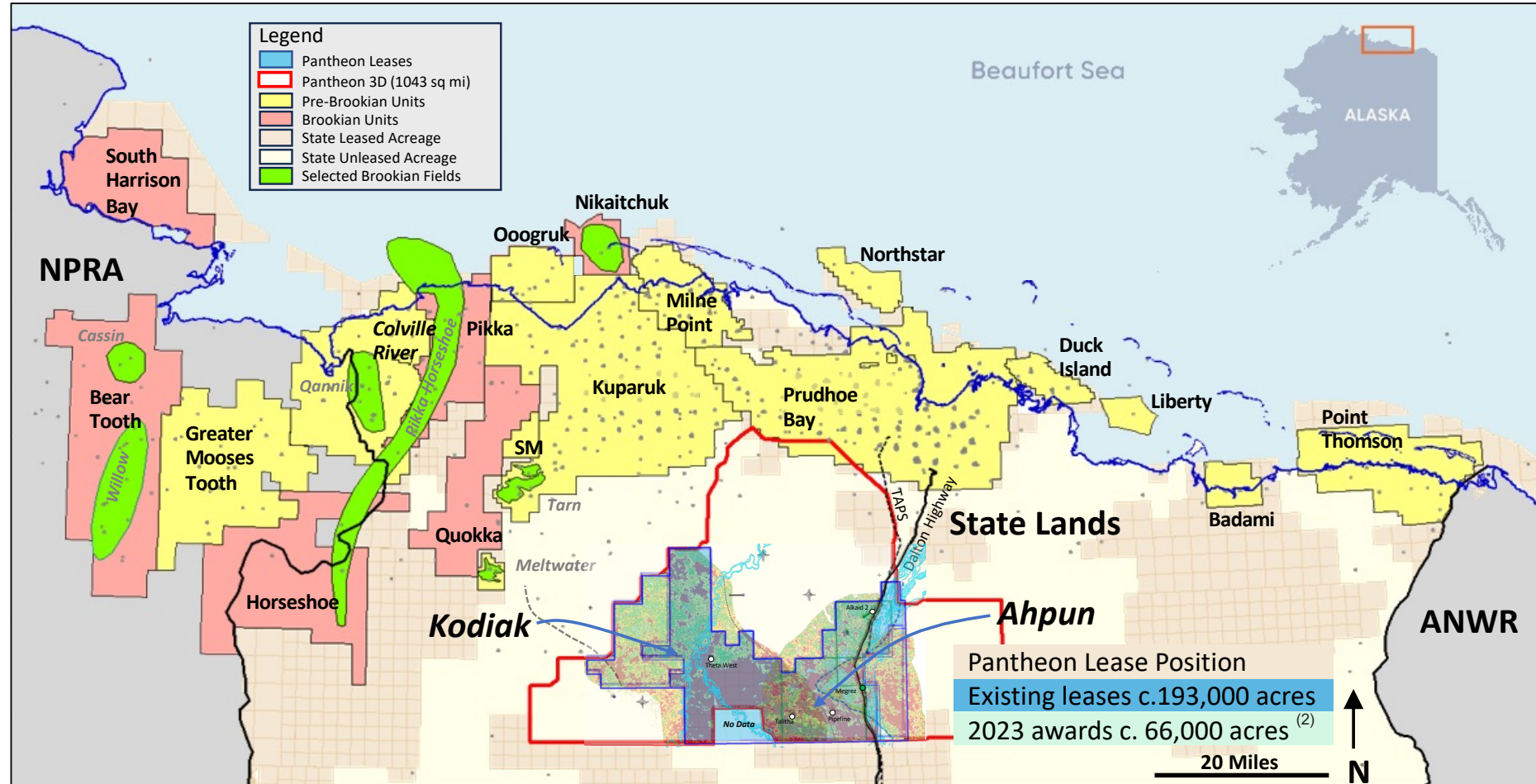
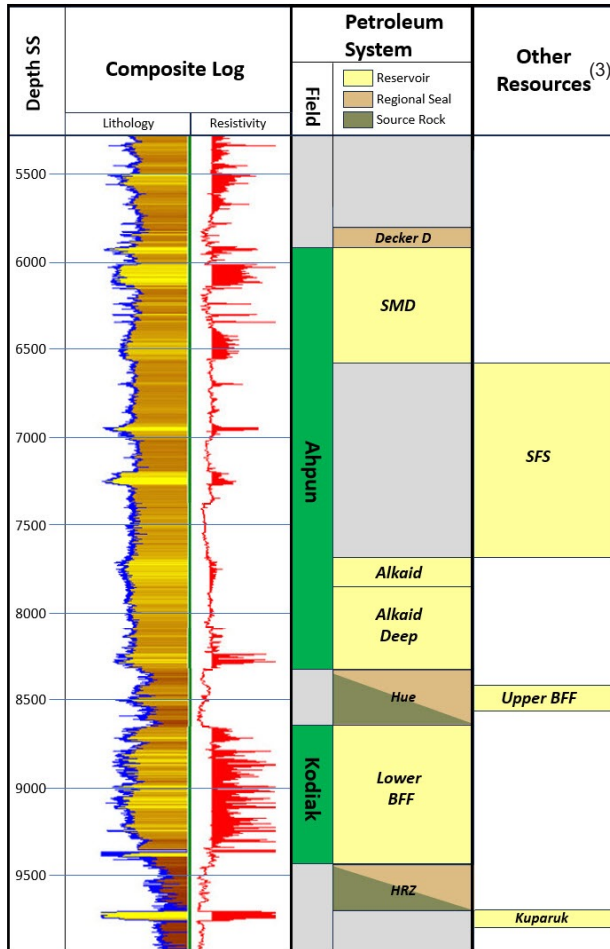




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# Pantheon's North Slope Fields: 2C Recoverable 1.7 Bbbls <sup>(1)</sup>

## Plus Ahpun (Eastern Topset): >600 million bbls Prospective Recoverable Resource



<sup>1</sup> NSAI 2024 best estimate for Kodiak c. 1.2 Bbbls, Company estimates for Ahpun c. 480 mmbbls

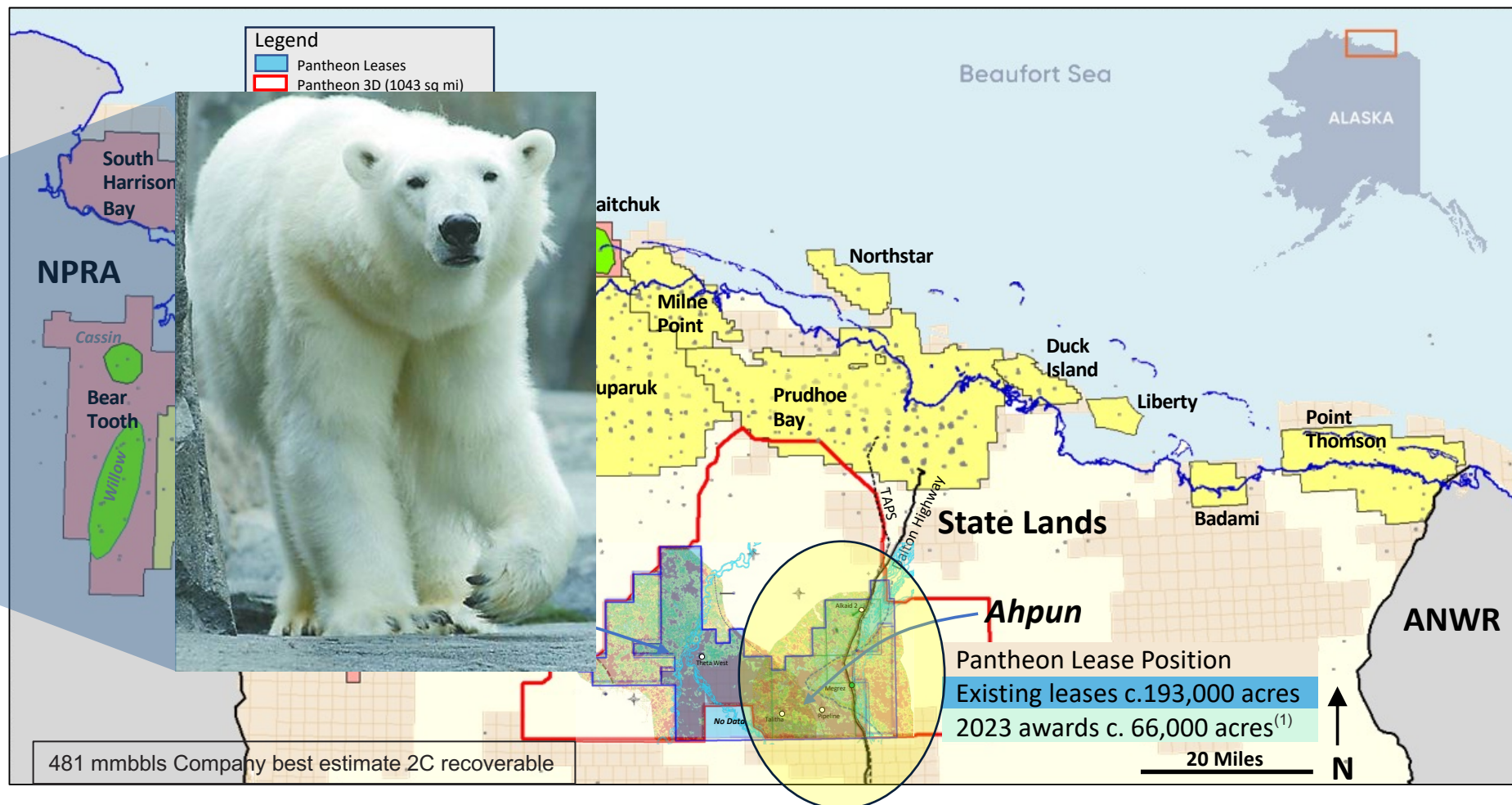
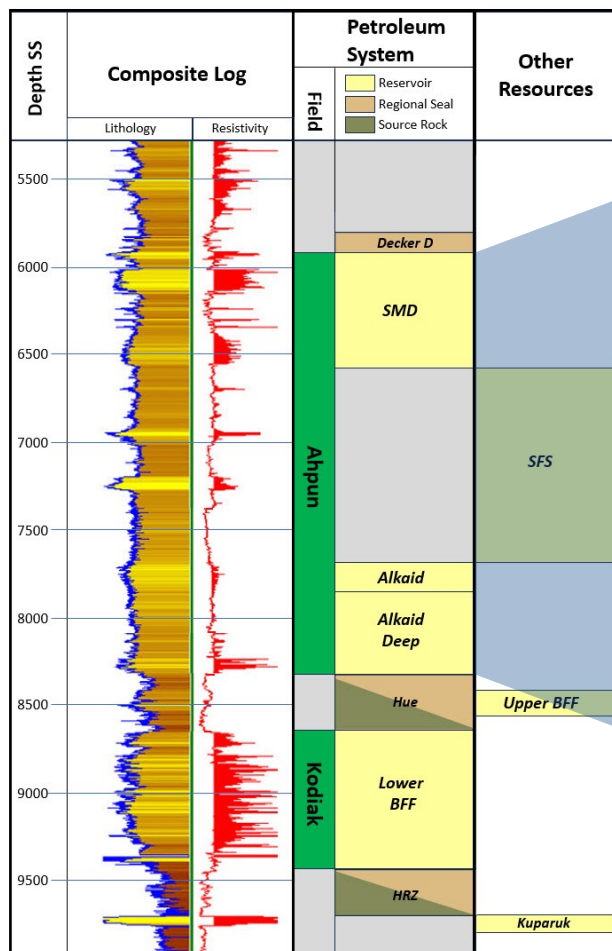
<sup>2</sup> Pantheon was the successful bidder for these leases. The Company paid an initial 20% deposit to the State of Alaska with the remainder payable on official award of the new leases which is anticipated this quarter

<sup>3</sup> Upper and Lower Slope Fans, Upper Basin Floor Fan and Kuparuk contain a combination of Contingent and Prospective Resources that have not yet been evaluated



# Pantheon's North Slope Field Development Assets

## Ahpun – 481 million barrels of marketable liquids

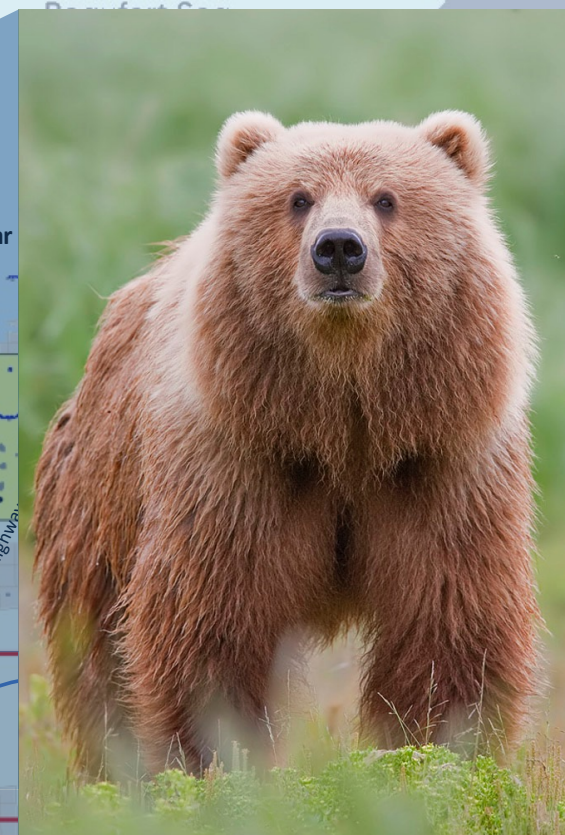
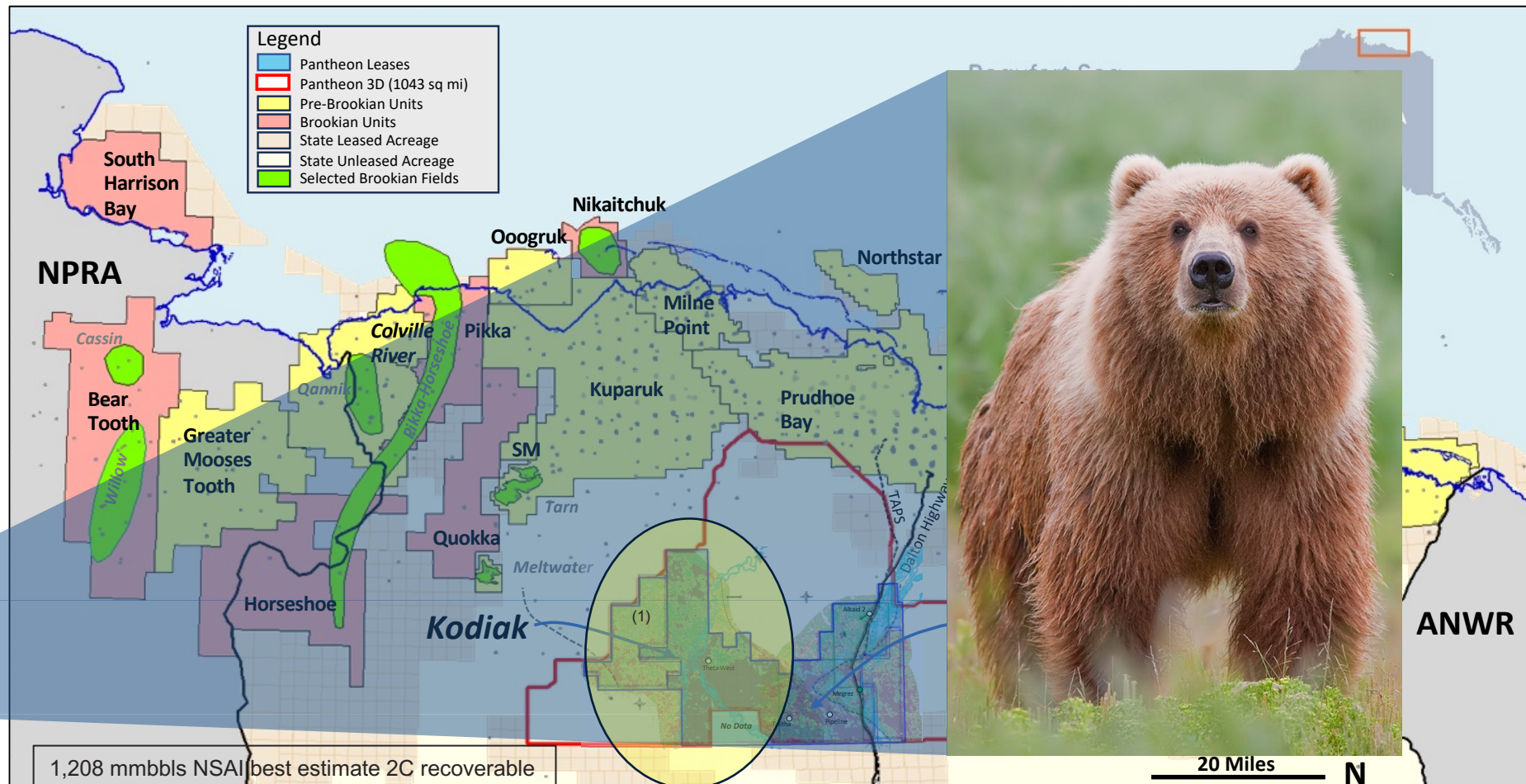
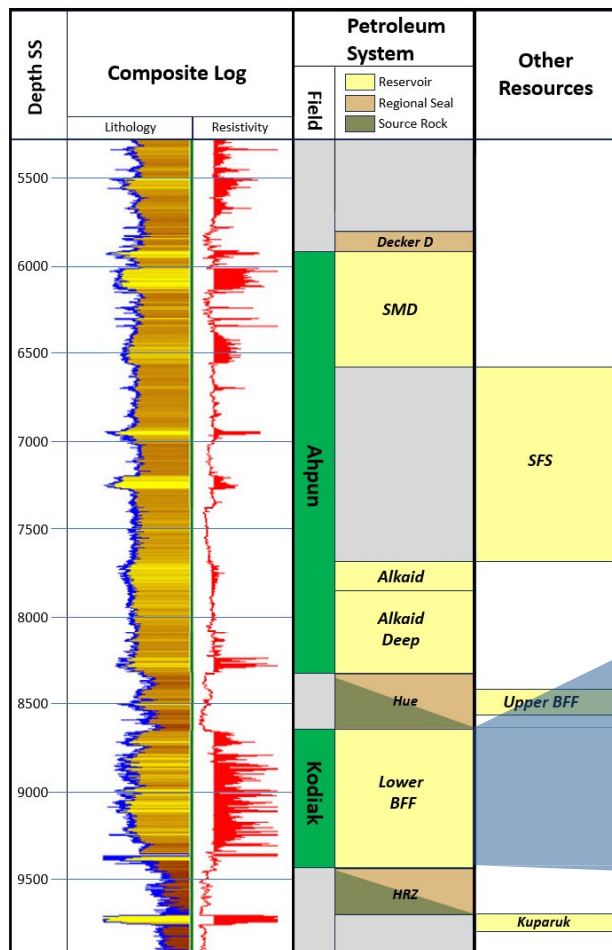


Ahpun field is defined as being all horizons above the Hue shale and below the Decker D, excluding slope fans

<sup>1</sup> Pantheon was the successful bidder for these leases. The Company paid an initial 20% deposit to the State of Alaska with the remainder payable on official award of the new leases which is anticipated this quarter

# Pantheon's North Slope Field Development Assets

## Kodiak – 1,208 million barrels of marketable liquids (NSAI estimate)



ANWR

Kodiak field is defined as being all horizons above the HRZ and below the Hue shale

<sup>1</sup> Pantheon was the successful bidder on c. 66,000 acres of new leases. The Company paid an initial 20% deposit to the State of Alaska with the remainder payable on official award of the new leases which is anticipated this quarter

## Independent Expert Reports for Ahpun Field – work underway

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Ahpun Field (Western Topsets)  
Cawley Gillespie & Associates  
Work underway

Ahpun Field (Alkaid Zone)  
Lee Keeling & Associates  
Expected imminently





## SLB Modeling Confirms 3.7 mmbbl Expected Ultimate Recovery (EUR) per Well Type Curve

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Pantheon has modelled single well level (primary recovery only) for Ahpun Topsets to confirm commerciality

Kodiak modelling (Theta West-1 and updip NW appraisal location) also yield results above commercial threshold

### Company Planning Basis

- Ahpun Field Topsets – 3.5 mmbbl EUR
- Kodiak (Theta West) – 3.65 mmbbl EUR
- Kodiak Updip – 4.56 mmbbl EUR



# Disclaimer

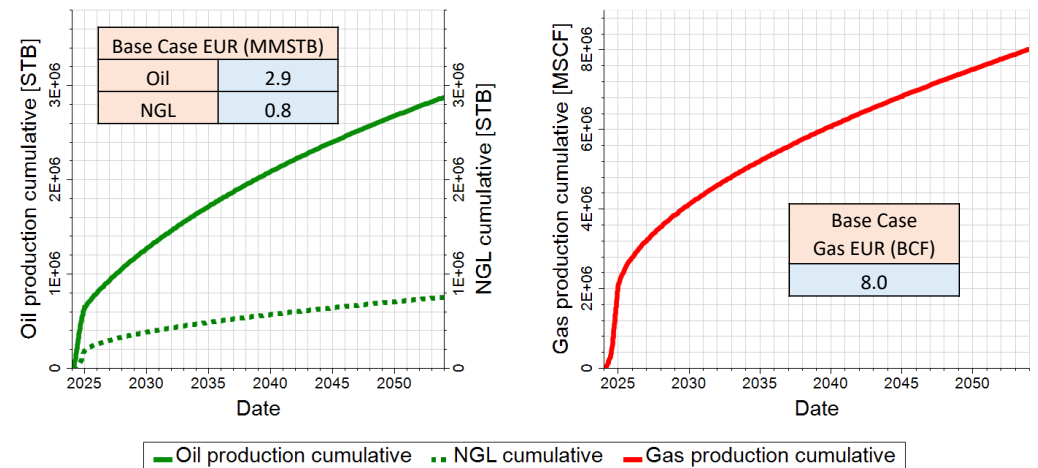
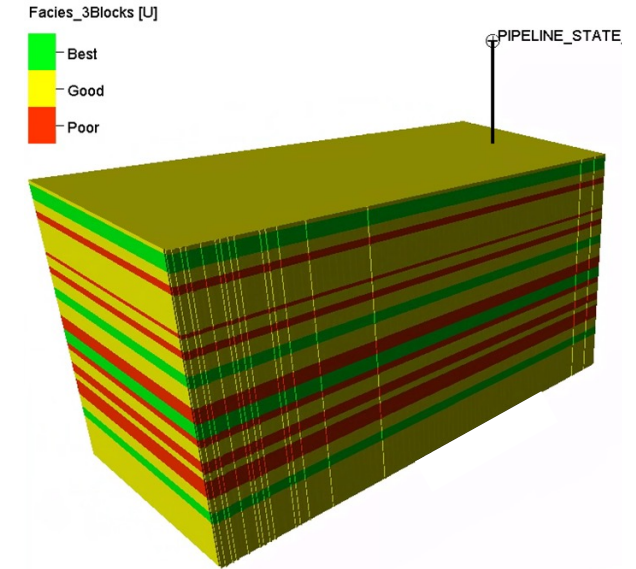
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# Executive Summary

- The Pipeline State, SMD zone, layer-cake model (1 x 2 miles) has been built with facies, porosity, permeability, net-to-gross ratio, and water saturation, based on the information provided by GBP.
- Horizontal well with 10,000 ft lateral length is defined with frac data:
  - Frac height = 250 ft; Frac half-length = 179 ft; Frac conductivity = 165 md-ft
  - Cluster spacing = 25 ft; Cluster efficiency = 80%
- Production constraints are imposed on simulation cases:
  - Liquid rate < 5,000 STB/D; Gas rate < 10,000 MSCF/D
- Reservoir simulation with the SMD fluid, based on the sensitivity parameters, generates a range of oil, NGL\*, and gas EURs:
  - Oil EUR: 1.1 ~ 5.6 MMSTB      NGL EUR: 0.5 ~ 1.3 MMSTB
  - Gas EUR: 4.9 ~ 13.9 BCF
- The base case simulation gives the oil, NGL\*, and gas EURs:
  - Oil EUR: 2.9 MMSTB    NGL EUR: 0.8 MMSTB
  - Gas EUR: 8.0 BCF



\* NGL: 95 bbl/MMCF, provided by GBP

# Illustrative Ahpun Topset (West) and Kodiak Type Well Economics

## Single well yields IRR >100% at all prices above \$60/bbl ANS



### Illustrative examples - Per well modelled economics

#### Ahpun Topsets EUR 3.5 mmbbls

ANS price per bbl	NPV @ 10% \$000's	IRR
\$60	\$43,872	>100%
\$70	\$57,052	>100%
\$80	\$70,232	>100%
\$90	\$83,412	>100%

#### Kodiak - Theta West EUR 3.65 mmbbls

ANS price per bbl	NPV @ 10% \$000's	IRR
\$60	36,398	>100%
\$70	68,226	>100%
\$80	100,055	>100%
\$90	131,884	>100%

#### Kodiak Updip EUR 4.56 mmbbls

ANS price per bbl	NPV @ 10% \$000's	IRR
\$60	48,811	>100%
\$70	83,328	>100%
\$80	117,845	>100%
\$90	152,361	>100%

Principal assumptions and management estimates (Outturn may differ from assumptions)

- ANS prices have been discounted by 10%, No revenues for natural gas
- Combination of TAPS tariff and shipping to US West Coast estimated at \$7.50/bbl
- 1 injection well for every 3 production wells
- Production wells costed at \$17 million and Injection wells costed at \$15 million
- Well pads and production facilities estimated at \$50 million for 20 well pad
- State profits tax at 35% after payout (4% minimum tax rate prior to payout). No Federal Taxes



## Prospective Resources in Conventional Reservoir

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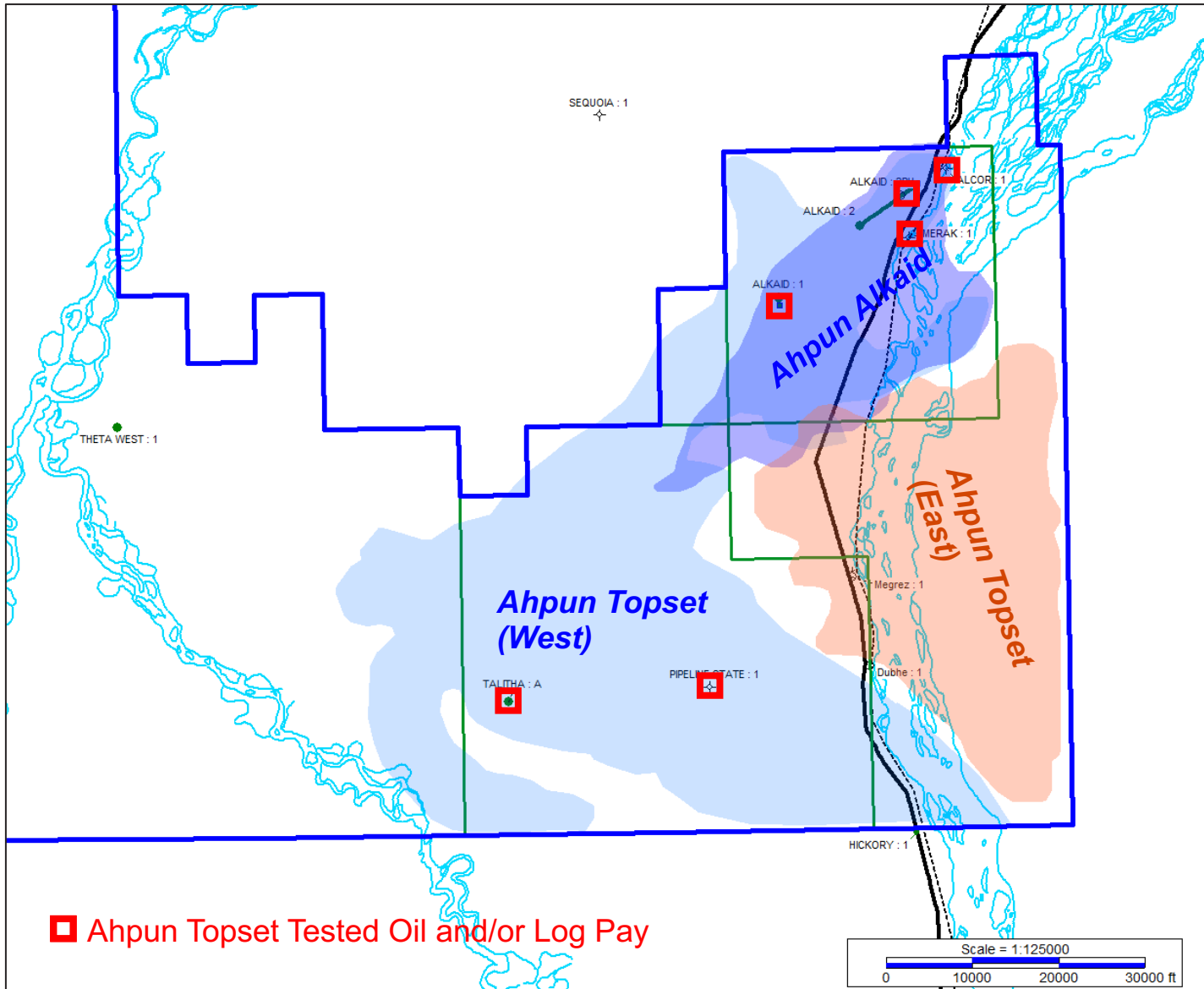
### Ahpun Field (Eastern Topsets)

Company prospective resource  
(Best Estimate) of c. 600 million bbls



# Ahpun Field Reservoirs

Aggregate Best Estimate Contingent & Prospective Resources > 1 Bbbl<sup>1</sup>



## Ahpun Topset (West)

- Nanushuk analog reservoir
- Internal estimate 2C 404 mmbbls marketable liquids<sup>1</sup>
- Tested oil and/or logged pay in 6 of 6 PANR wells

## Ahpun Alkaid (ZOI)

- IER 76.5 mmbbls recoverable oil<sup>2</sup>
- Discovered oil in Alkaid-1
- Tested oil in Alkaid-2

## Ahpun Topset (East)

- Best Estimate Prospective Resource 609 mmbbls marketable liquids<sup>1</sup>
- Adjacent to TAPS
- Multiple reservoir targets
- Geological Chance of Success 70%
- Keyed off Pipeline State oil discovery well
- Conventional Nanushuk analog topset reservoir
- Younger and shallower topset section
- Expecting significantly better reservoir quality than seen in existing Ahpun wells
- Pipeline State cores predicts at Ahpun Topset (East)
  - porosity in range of 20-25%
  - permeability in range 5-35 mD
- Reported analog Nanushuk poroperm<sup>1</sup>
  - Porosity range: 10-35%
  - Permeability range: 1-100 mD

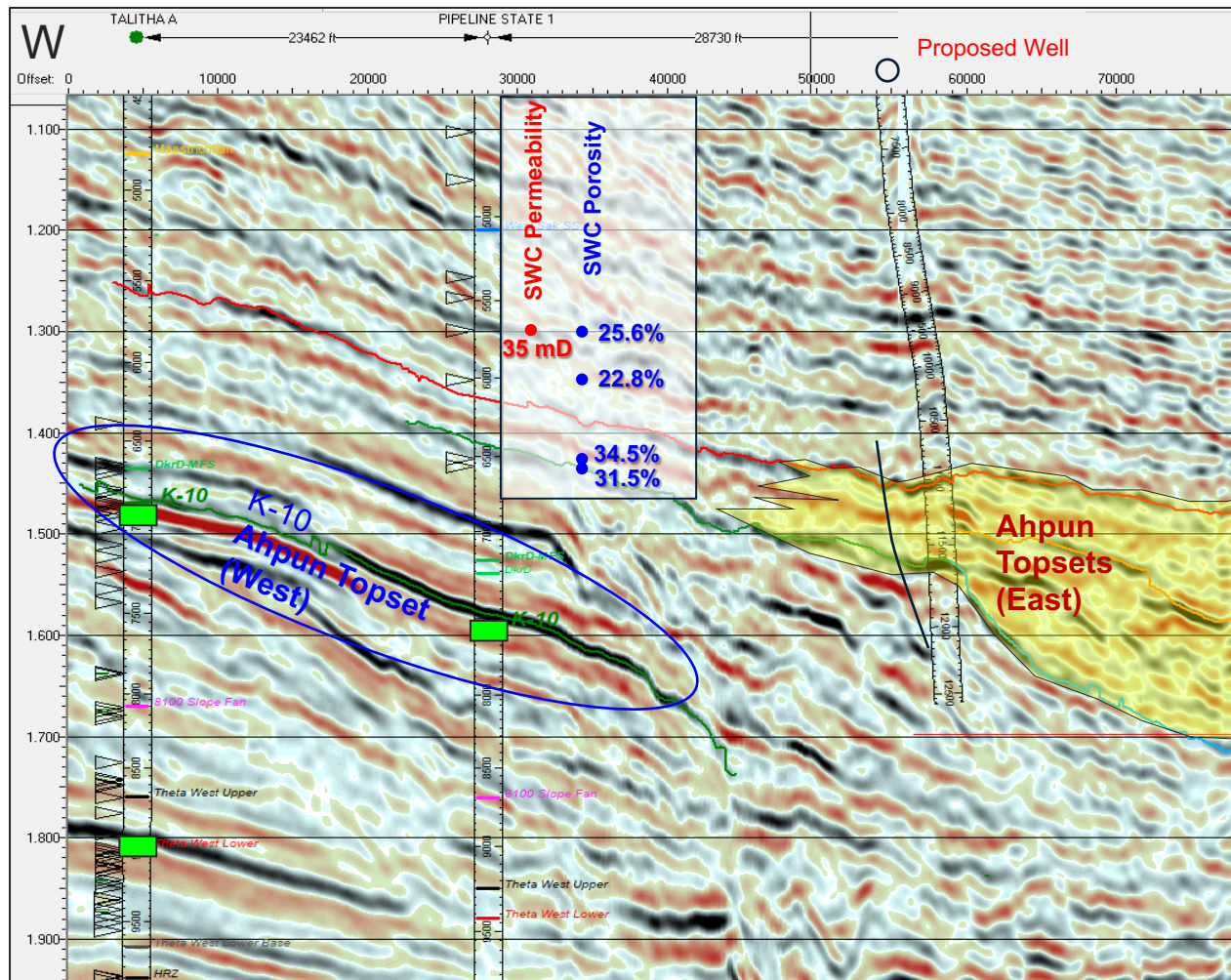
1. Company estimates

2. LKA 2020 IER

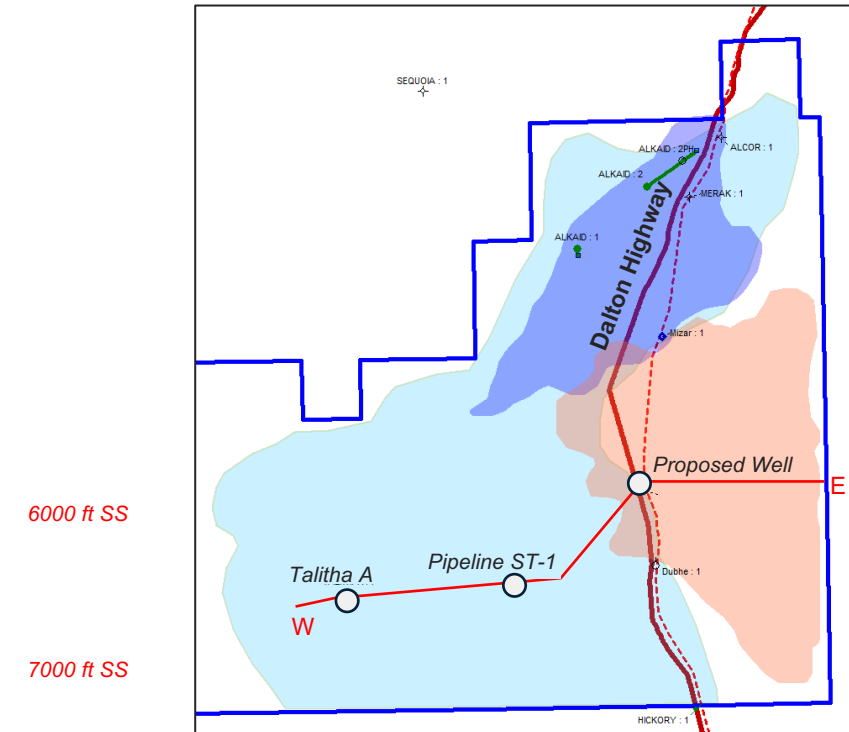


# Ahpun Eastern Topsets

## Conventional Reservoir Developable from Dalton Highway



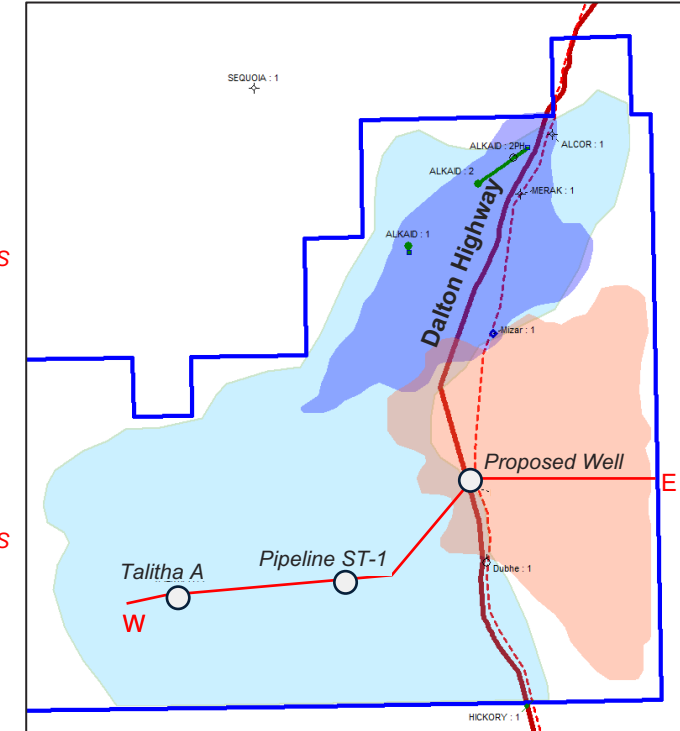
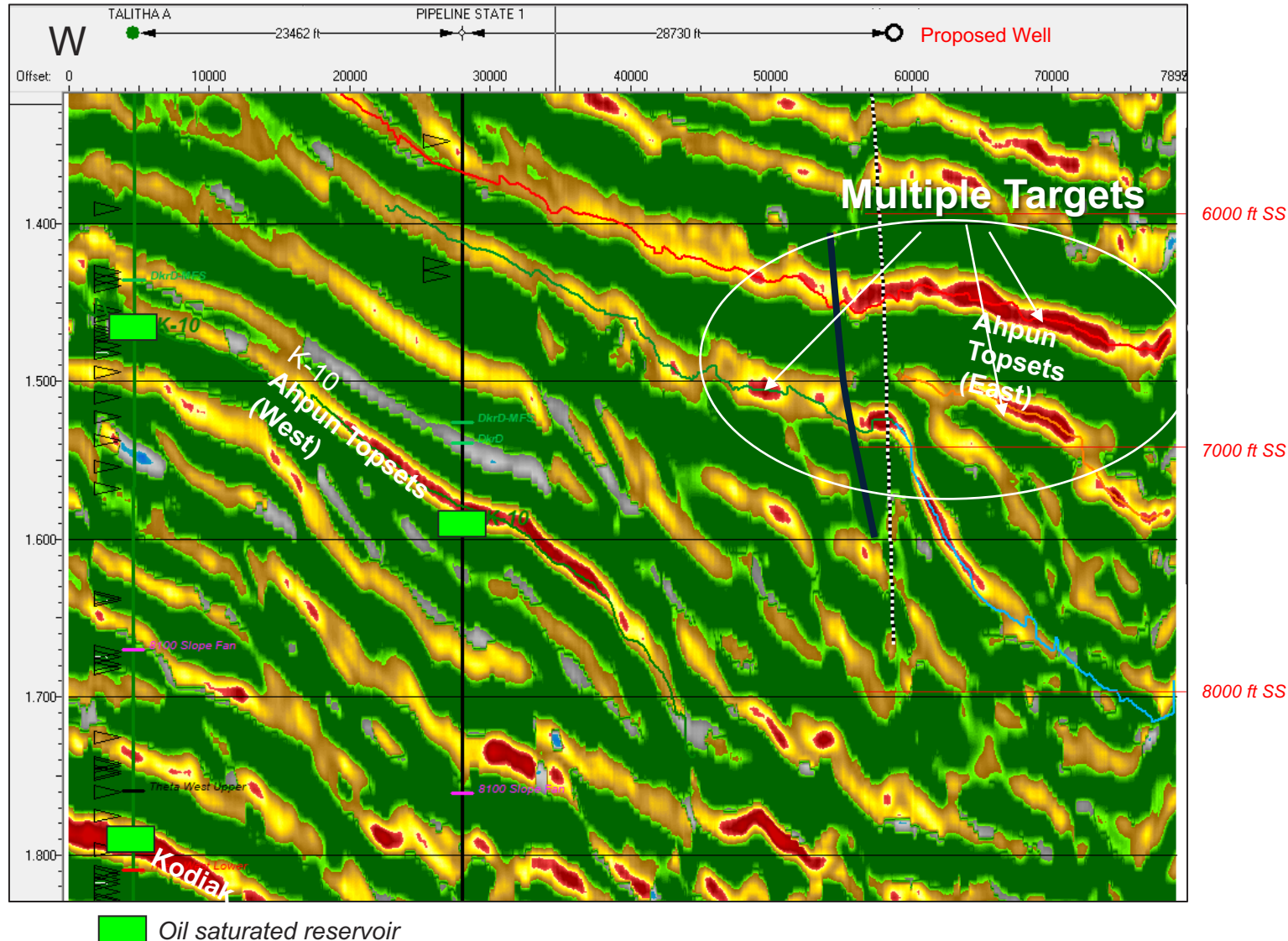
Oil saturated reservoir



- Conventional topset reservoirs
- Offset well Pipeline State-1 core data:
  - Porosities expected 20-25%
  - Permeability 5-35 mD
- Shallower than Ahpun Topset
- Can be developed from Dalton Highway

# Ahpun (Eastern Extension)

Topset AVO Lithology Attribute Response Consistent with Pay in Pipeline State and Talitha



- Seismic attribute response comparable to Kodiak and Ahpun Topset discoveries in Talitha-A and Pipeline State-1
- Can be tested from Dalton Highway with rig mat or gravel pad well
- Additional reservoir potential not yet included in volumetrics estimate



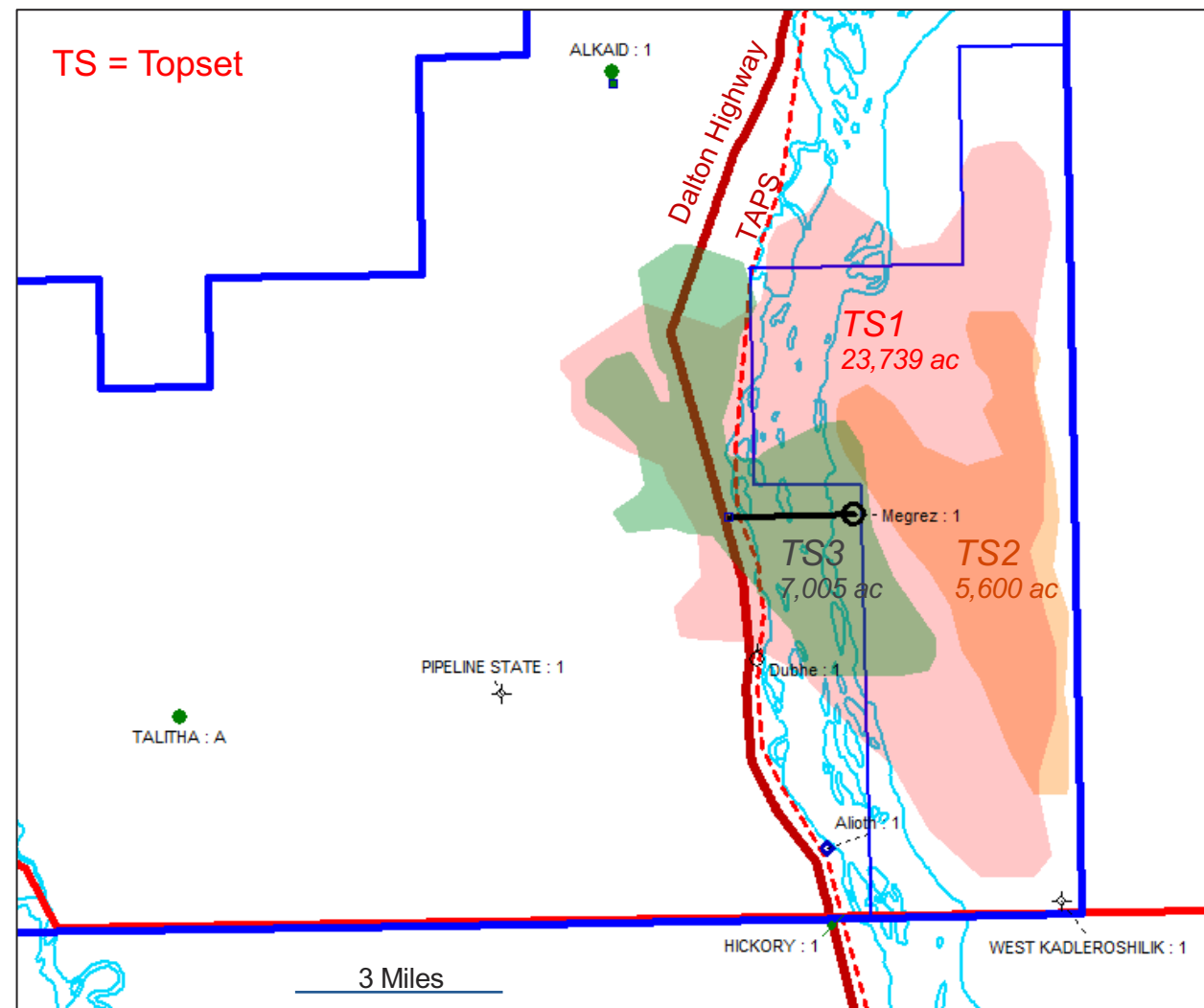
# Ahpun Topset (East) Modeled Volumetrics<sup>1</sup>

Best Estimate Prospective Recoverable Marketable Liquids 609 MMBLS



Estimated Geological Chance of Success – 70%

	Prospective Resources	Gross Recoverable mmbbls	Net Recoverable mmbbls <sup>2</sup>
Oil	Low Estimate	383	331
	<b>Best Estimate</b>	<b>510</b>	<b>441</b>
	High Estimate	687	594
NGL	Low Estimate	73	63
	<b>Best Estimate</b>	<b>99</b>	<b>86</b>
	High Estimate	134	116
<b>Total Marketable</b>	Low Estimate	459	397
	<b>Best Estimate</b>	<b>609</b>	<b>527</b>
	High Estimate	818	708



<sup>1</sup> Company estimates unless otherwise stated <sup>2</sup> Based on combination of 12.5% and 16.67% State Royalty and 1% Overriding Royalty in favour of eSeis

## 2C Recoverable Resource Upgrade to 1.2 Bbbls

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Netherland Sewell & Associates

Kodiak contingent resource  
estimates updated to include  
new leases





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WORLDWIDE PETROLEUM CONSULTANTS

Dallas: 214-969-5401

Houston: 713-654-4950

[www.netherlandsewell.com](http://www.netherlandsewell.com)

[info@nsai-petro.com](mailto:info@nsai-petro.com)



# Kodiak Preliminary Contingent Resources Estimates (include both Updip and Downtip)

## 2024 Update:

	Low	Best	High
NGL EUR, mmbo	299.9	782.1	1,811.6
Oil EUR, mmbo	168.5	425.8	1,029.7
<b>Oil + NGL EUR, mmbo</b>	<b>468.3</b>	<b>1,207.9</b>	<b>2,841.3</b>
Total Shrunk Gas EUR, bcf	2,175.4	5,396.3	11,748.6

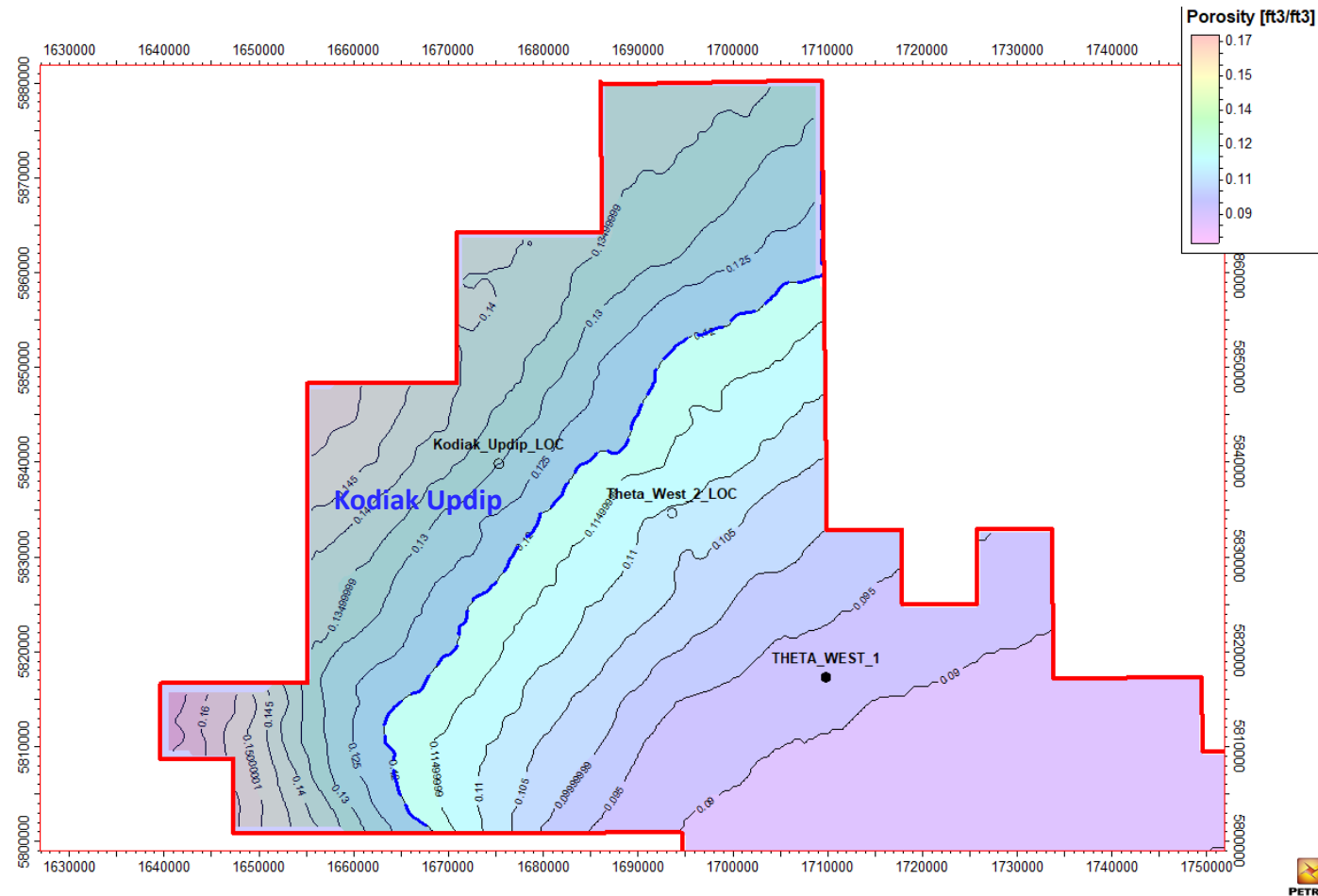
## 2023 Report:

	Low	Best	High
NGL EUR, mmbo	292.4	647.9	1,366.4
Oil EUR, mmbo	145.4	314.6	647.8
<b>Oil + NGL EUR, mmbo</b>	<b>437.8</b>	<b>962.6</b>	<b>2,014.2</b>
Total Shrunk Gas EUR, bcf	2,151.7	4,465.2	8,822.7



# Kodiak Updip Designation

- NSAI defines Kodiak Updip as area with minimum average properties of porosity of 12%, permeability of .1 md







# Updated Recovery Factor (RF) distributions

## Assigned RF ranges before adding Kodiak Updip (2023 report):

	Low	Best	High
Oil RF	4%	7%	12%
Gas RF	19%	30%	45%

	Low	Best	High
oil RF in Tarn/MW	10%	25%	45%
oil RF in Kodiak Updip (reduced from Tarn/MW due to lower porosity/permeability)	7%	15%	30%
gas RF in Kodiak Updip (increased from Kodiak Downdip due to higher porosity/permeability)	20%	40%	60%

## Assigned RF ranges for the entire Kodiak area (updated for Kodiak Updip using GRV-weighted average):

	Low	Best	High
Oil RF	5%	8%	15%
Gas RF	19%	32%	48%

## Natural Gas Potential: Creating an asset from a liability

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Alaska Gasline Development Corp - proposed agreement could provide non-equity funding capacity on the back of gas sales

Initial In-State pipeline project does not rely upon LNG facilities or other gas supplies. Strengthens economics of subsequent LNG exports

Creating an opportunity for helium development if LNG phase of project proceeds



## Securing Non-Equity Funding & Potential Option for Helium Commercialisation Gas Commercialization Proposal (Subject to Negotiation)



- ✓ **Proposal for Pantheon to sell methane from its associated gas (ie excluding NGLs shipped through TAPS and delivered as ANS crude stream) at a base price up to \$1 per mmBtu at exit to Ahpun Facility<sup>1</sup>**
- ✓ **Minimum 20 year take or pay (ToP) contract would provide borrowing capacity of up to \$250 million at Ahpun FID (50% of Real Post Tax NPV12.5)**
- ✓ **Actively pursuing options with the State of Alaska to reduce gas purchase price in mutually beneficial way**

**<sup>1</sup> Under the proposed terms, this would provide for:**

- 1) *free shipment of any helium produced along with the methane gas,*
- 2) *free offtake of any gaseous residues remaining after liquefaction of methane at the planned AK LNG Project, and*
- 3) *free access to sufficient land adjacent to the liquefaction plant to construct and operate a helium liquefaction plant and associated logistics facilities.*

***There can be no guarantee that acceptable arrangements will be concluded between the parties***





## Permitting an Ahpun Development Project to Provide In-State Gas Major Permits Required for Development to Proceed



Proposed TAPS Hot Tap Location

- FID on In-State Phase of Alaska LNG Project
  - LNG Export, Right of Way and Major Environmental Permits, and Federal Loan Guarantee in hand
- Wetland Fill Permits (Corps of Engineers)
- Unit Development Plan Approval (State)
- State Pipeline Right-of-Way Lease (State)
- Hot Tap Design Approval (Fed DoT/Alyeska)
- Air Quality Permit (ADEC)
- Development Permit (North Slope Borough)

Natural Gas Pipeline Entry at Ahpun Facility Exit



# Helium Potential in Kodiak Field - But No Guarantees!

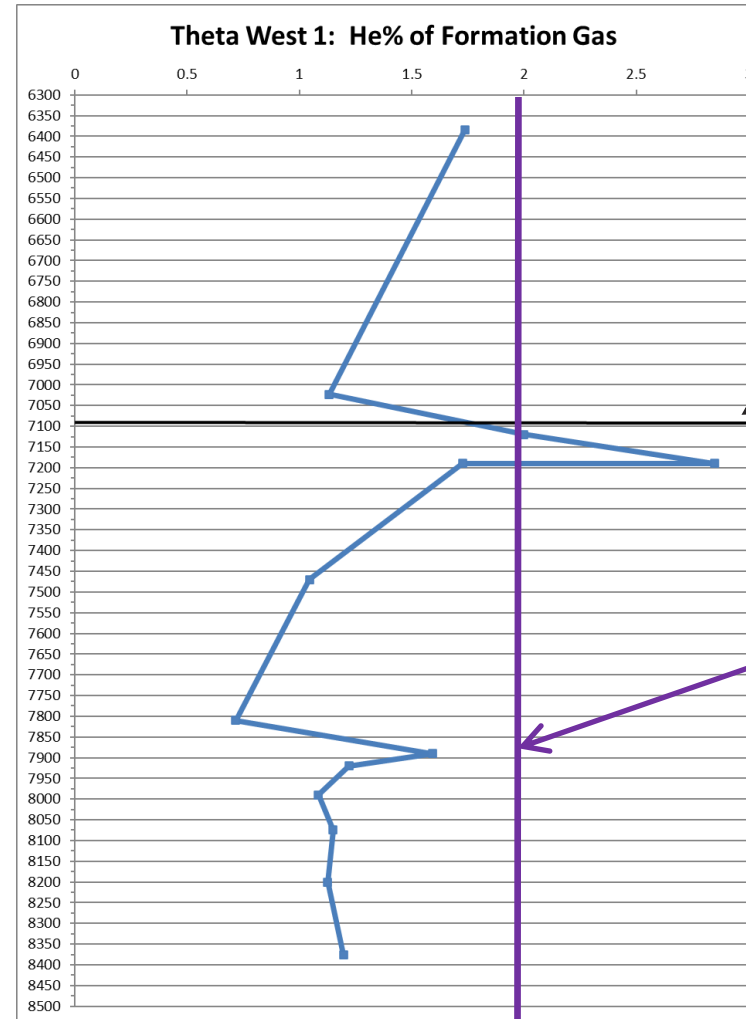
## Advanced Hydrocarbon Stratigraphy (AHS) Analysis on Theta West-1



### Rock Volatiles Stratigraphy of Pantheon's Theta West-1 Well, North Slope, Alaska

#### Conclusions:

1. World Class Petroleum System >1,460 feet of significant oil saturation indicated by 1,460' of continuous oil bearing cuttings.
2. Good Quality and High Abundances of Oil, Reservoirs, and Seals.
3. High Helium documented in 3 sample types:
  - i. Isotubes,
  - ii. Sealed at Well Cuttings, and
  - iii. Lab Loaded Cuttings.



Ultimate Oil Seal @ 7,090 ft

Economic Helium Limit USA Lower 48



### Objective

- Deliver sustainable market recognition of \$5 - \$10 per barrel of 1C/1P recoverable resources by end 2028 by developing Ahpun and Kodiak

### Goals

- Bring Ahpun into production and be ready to supply pipeline spec gas
- Generate positive net operating cashflow within 18 months of start up to fund ongoing develop of both Ahpun and Kodiak

### Infrastructure Requirements to Achieve Financial Self-Sufficiency (Planning Case)

- 17 production & 7 injection wells from Ahpun topsets on initial two pads
- At least 20,000 bpd marketable liquids processing capacity
- Hot tap into TAPS main oil line with potential gas line connection to reduce future gas reinjection well requirements

### Key Activity Update

- Kodiak: **NSAI updated report:** 1.2 Bn bbls into TAPS & 5.4 tcf natural gas
- Ahpun: **SLB development planning** (per well modelling): 3.7 mmbbls into TAPS and 8 bcf natural gas in topsets. IP30 of 4,000 bpd, 2,000 bpd full first year
- **LKA Ahpun Alkaid zone estimate:** to be released when completed
- **CGA Ahpun western topsets estimate:** to be released when completed

1. Company estimates unless otherwise stated. Subject to change.



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# Q & A

