



PANTHEON
RESOURCES PLC

Investor Presentation April 2021



PANTHEON RESOURCES PLC

Disclaimer

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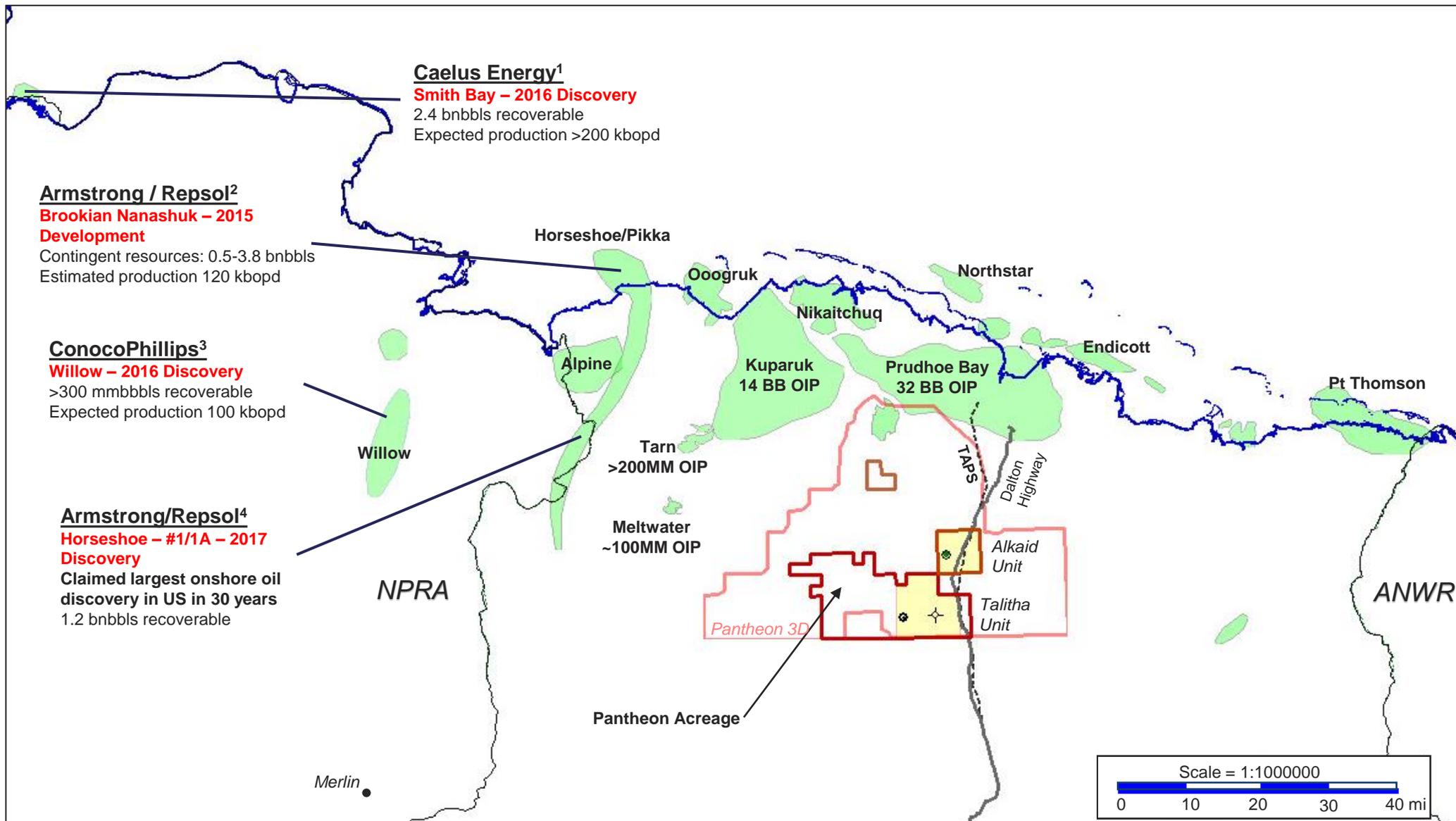


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- Competent Person’s statement: **Michael Duncan** has sufficient experience relevant to the style of mineralisation and type of deposit under consideration, and to the activity which he is undertaking to qualify as a Competent Person in accordance with the guidance note for Mining, Oil & Gas Companies issued by the London Stock Exchange in respect of AIM Companies, which outlines standards of disclosure for mineral projects. **Michael Duncan** consents to the inclusion in this Presentation of the matters based on his information in the form and context in which it appears.



- Introduction to Team
- Why Alaska?
- Pantheon's strategic acreage position in Alaska – location, location, location
- High Level Overview
 - Implications from Talitha #A
 - Why did we persevere with the Kuparuk at Talitha #A?
- Technical overview
 - Introduction to VAS
- Wrap up & Q&A

PANTHEON RESOURCES PLC Pantheon North Slope Acreage Position





Talitha #A Well

1. Spudded well seeking to confirm 4 target horizons. **Confirmed 5 oil bearing zones**
2. Spudded well seeking to confirm 2000ft hydrocarbon column. **Confirmed 3700ft – all oil bearing**
3. Talitha #A validated pre-drill estimate of 1 Billion barrel oil potential. **Upwards revision expected**
4. Talitha #A has:
 - **De-risked** Pantheon's acreage - huge data set gained. **Oil confirmed in all zones**
 - **Increased** confidence - analysis confirms hydrocarbon system present. **>400 samples all oil bearing**
5. Kugaruk zone encountered specific issues – found to be “Oil wet”.
 - Remains a viable target with material resource potential - but needs to be drilled differently
 - Oil wet reservoirs need to be treated differently
 - Shallower zones do not exhibit this characteristic
6. Wellbore in excellent condition – ready for testing this winter
7. External expert analysis confirmed 5 target horizons
8. Drilling cost 1/3 less than budget. **Estimated future drilling costs now much lower**
9. Talitha #A offers tremendous potential



Acreage portfolio

1. Strategically refined over past 2 years
2. Large acreage position - c.160,000 acres, 9+ year lease terms
3. Dominant, high potential acreage adjacent to infrastructure - key differentiator

Other

1. Introduction to Theta West project for the first time – Pantheon’s largest project
2. Introduction to Volatiles Analysis Service (‘VAS’) – a Baker Hughes / AHS product. Utilized at Talitha
3. Drill costs were 1/3 less than budgeted
4. Alkaid project: LKA NPV10 \$595 at a \$55 realized oil price held flat
 - reduced well costs would add >\$200m to NPV

Future

1. Post drill analysis already underway
2. Management resource upgrade estimated late May 2021
3. Farmout process to recommence in a far better environment than 2020



Why did Pantheon persevere with the Kuparuk and not abandon it and move up the shallower horizons?

- >340 million barrel target with exceptional logs and gas chromatograph readings
- A series of operational issues caused delays
- Early decision to open hole test Kuparuk cost time and money
- Once a decision is made to move uphole, not possible to return
- 7 - 10 days prep time to test a shallower zone
- Kuparuk, being an established producer regionally – commercial flow test would lead to resource/reserve
- Too good a target to let go
- VAS analysis confirmed presence of light oil

Talitha A Petrophysical Analysis



TALITHA PETROPHYSICAL REVIEW

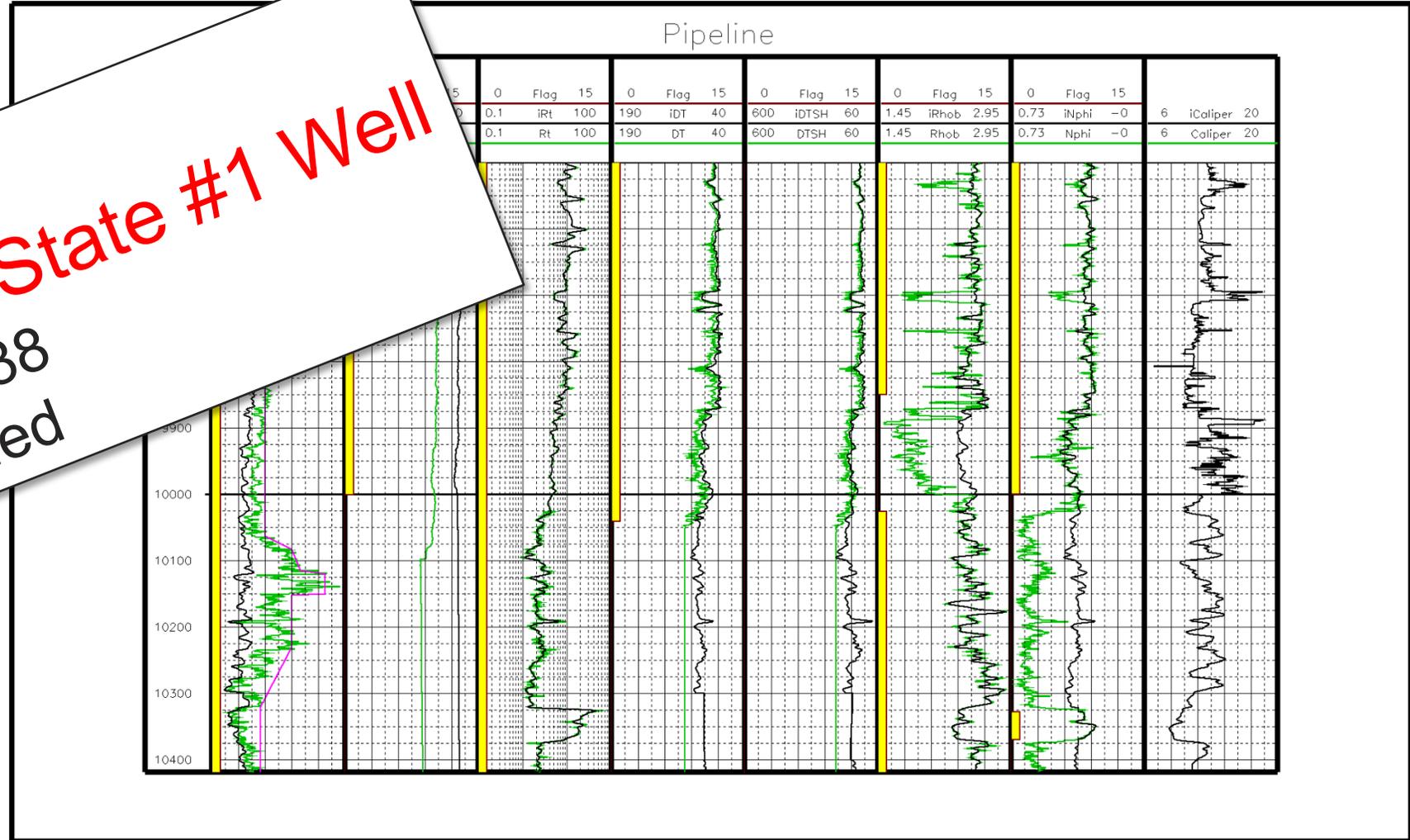
Talitha: Raw vs Edited Curves

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Raw ---
Edited ---

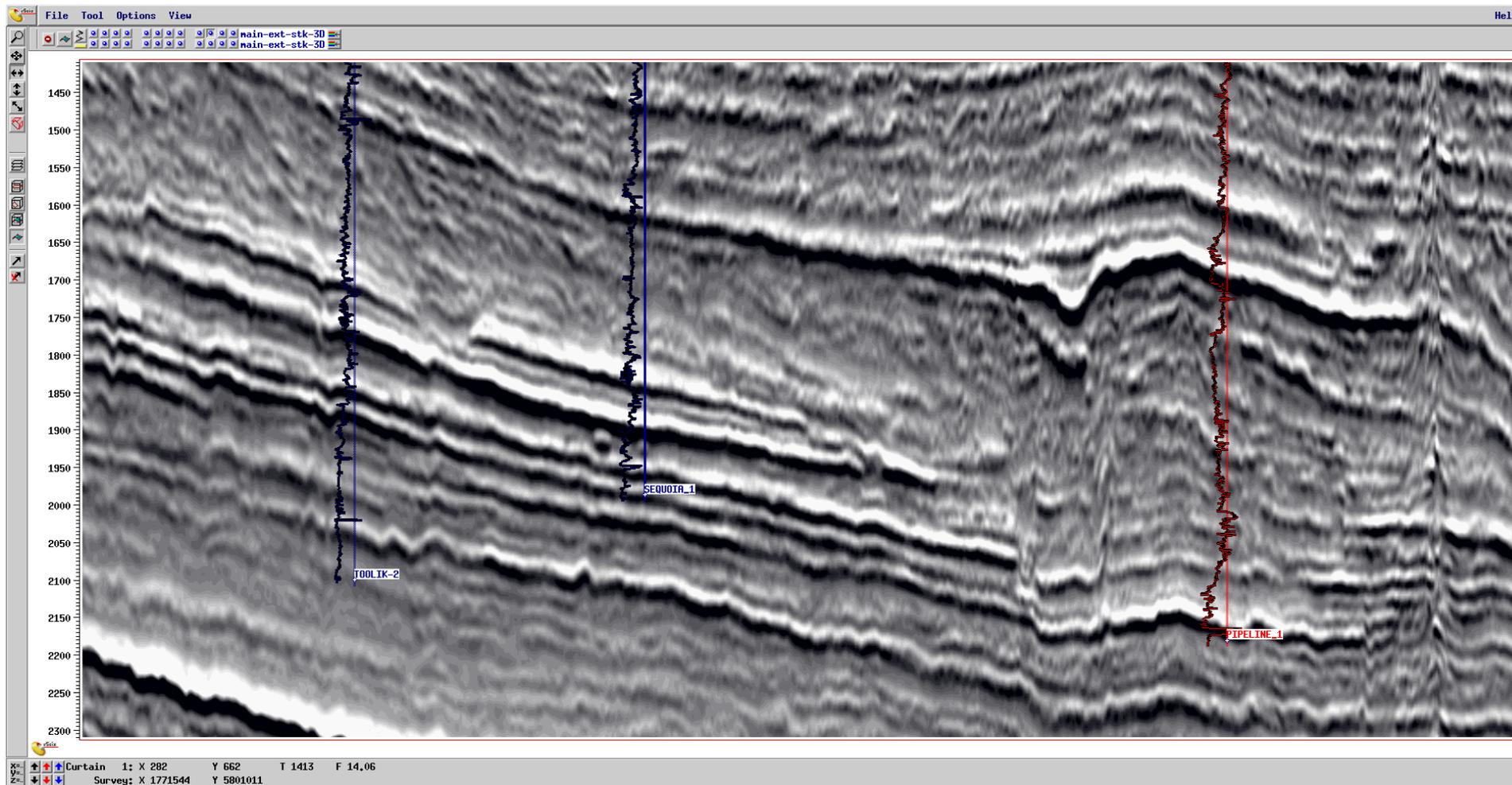
Arco
Pipeline State #1 Well
Drilled 1988
Abandoned



BROOKIAN PETROPHYSICAL REVIEW

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Talitha Development: Arb Line through Pipeline St. #1



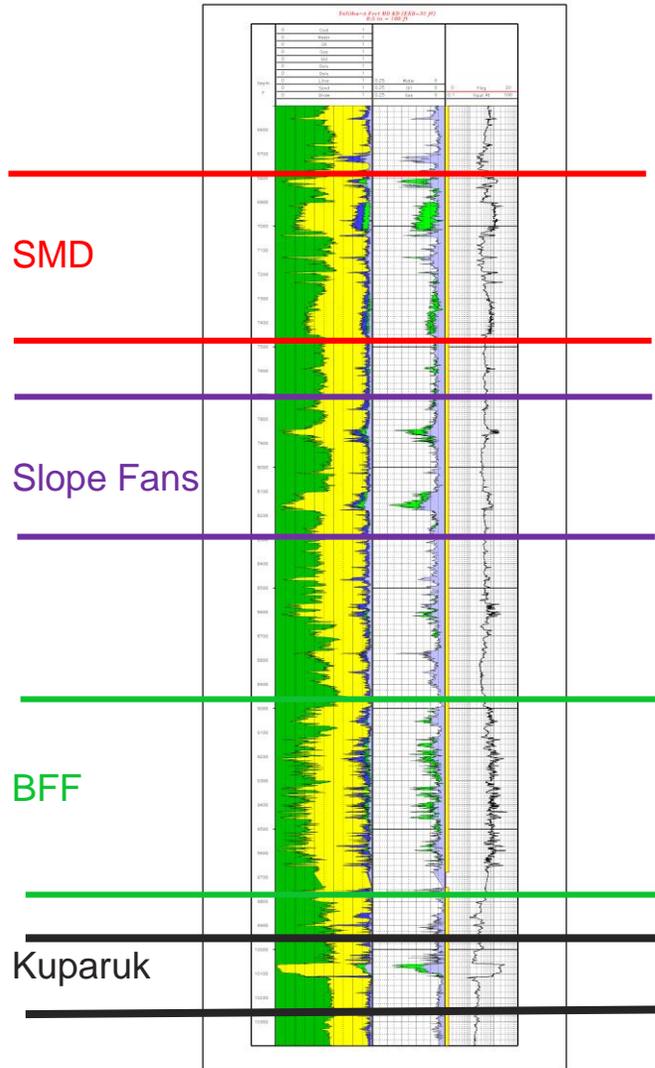
2000 ft
hydrocarbons



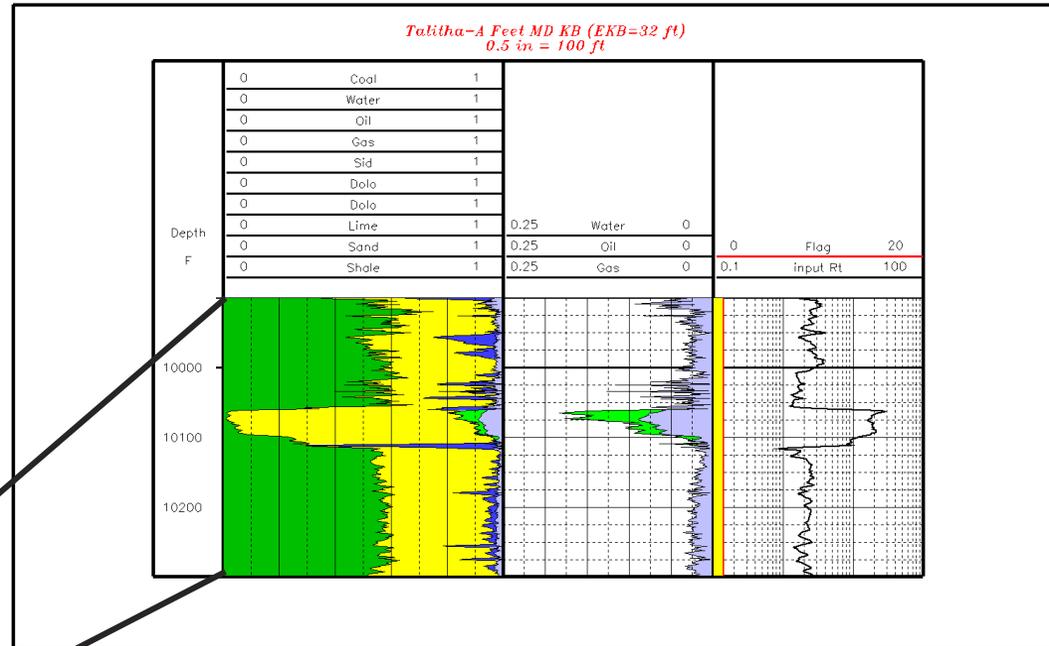


PANTHEON RESOURCES PLC Talitha-A Pay Interval

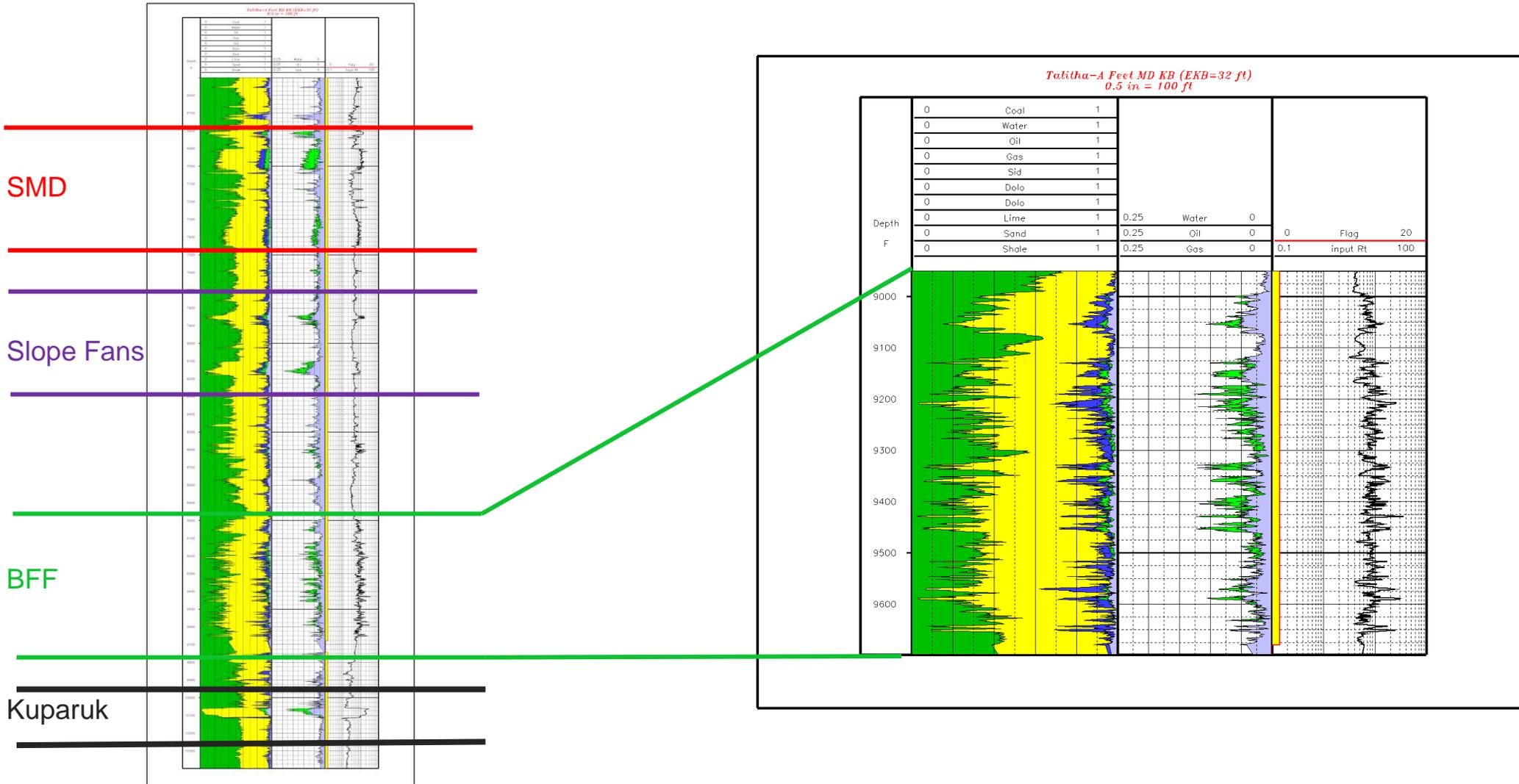
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Kuparuk Pay Interval



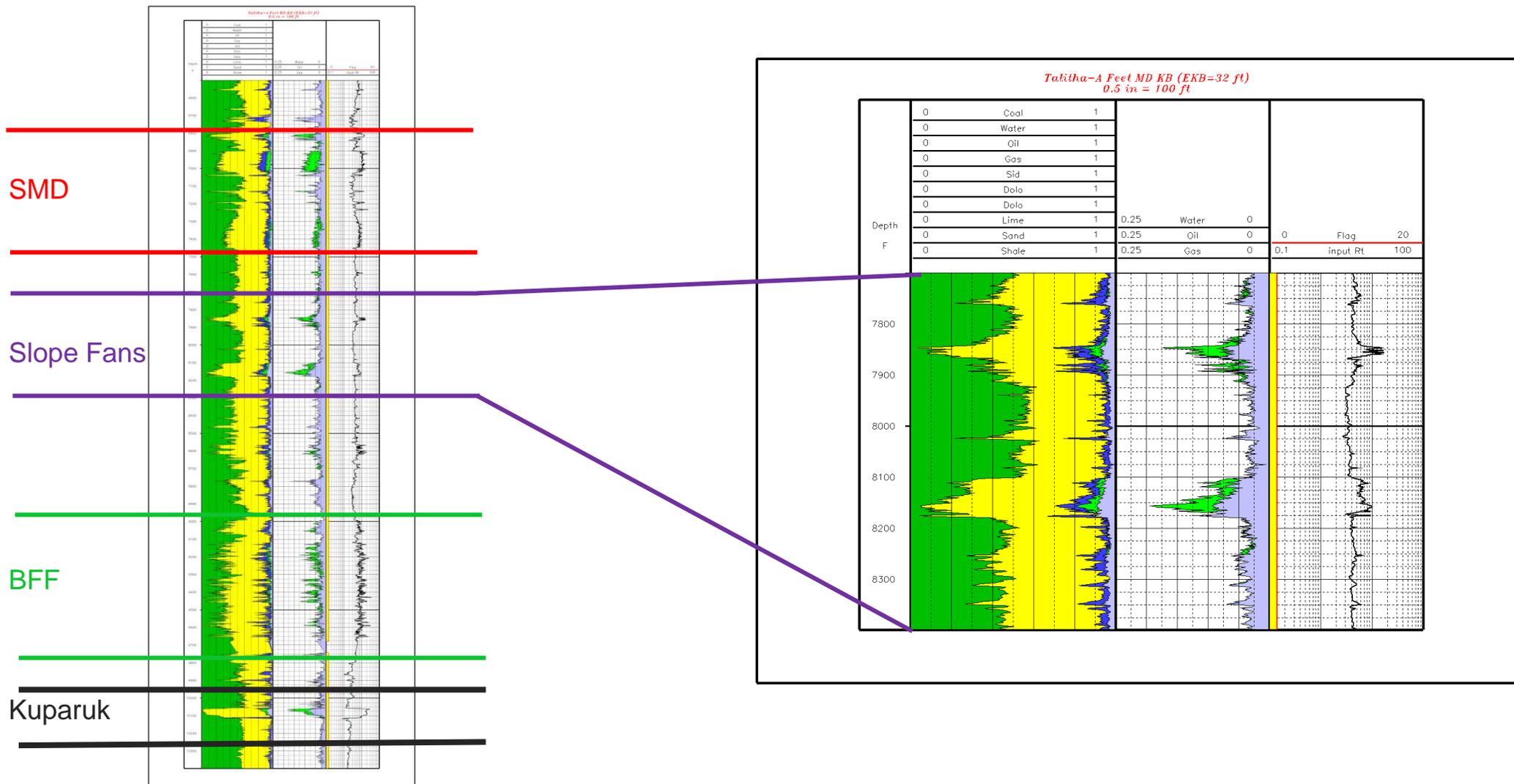
PANTHEON RESOURCES PLC Theta West Basin Floor Fan



PANTHEON RESOURCES PLC

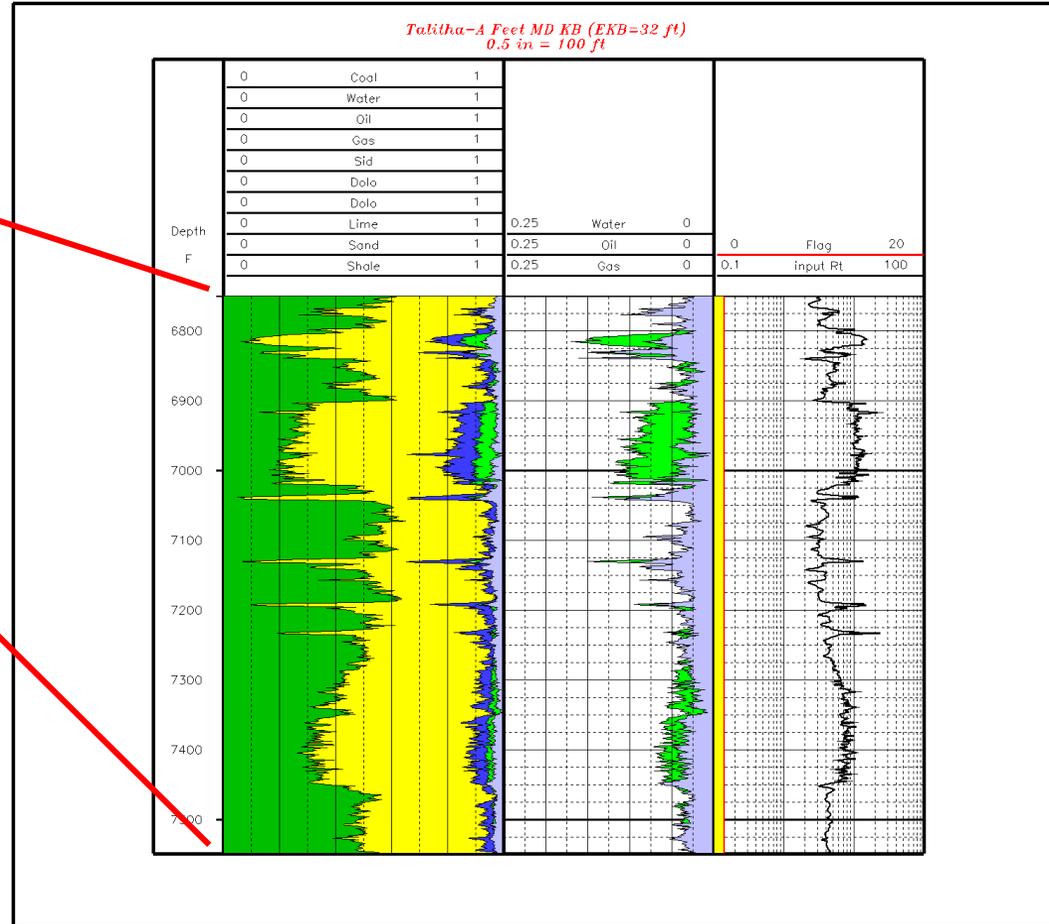
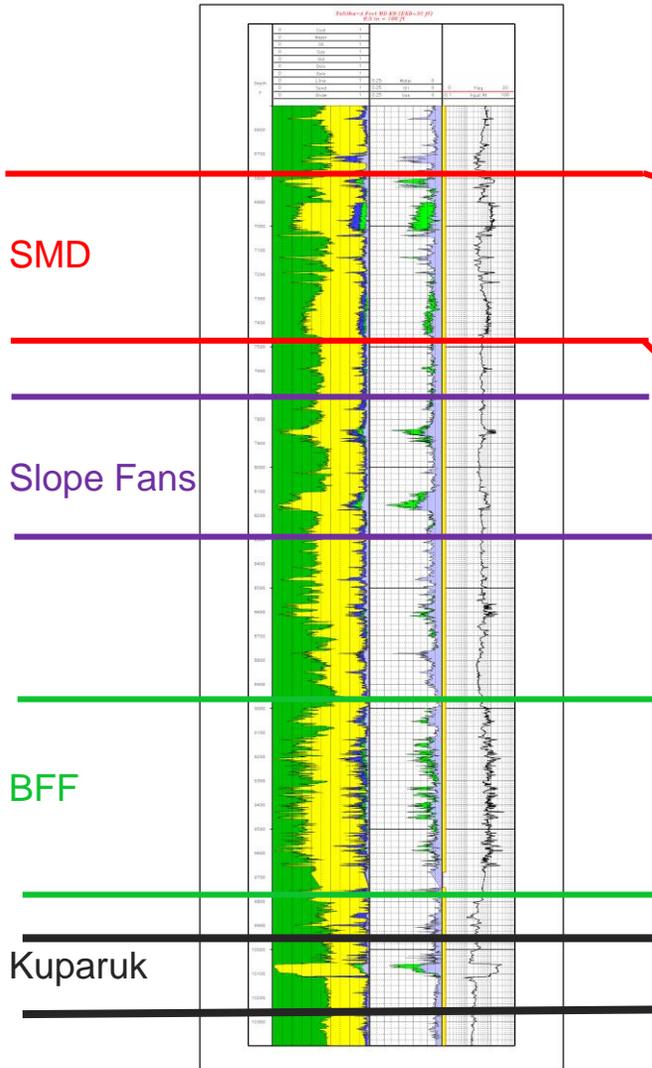
Slope Fans

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PANTHEON RESOURCES PLC Shelf Margin Deltaic

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Volatile Analysis Service (VAS)

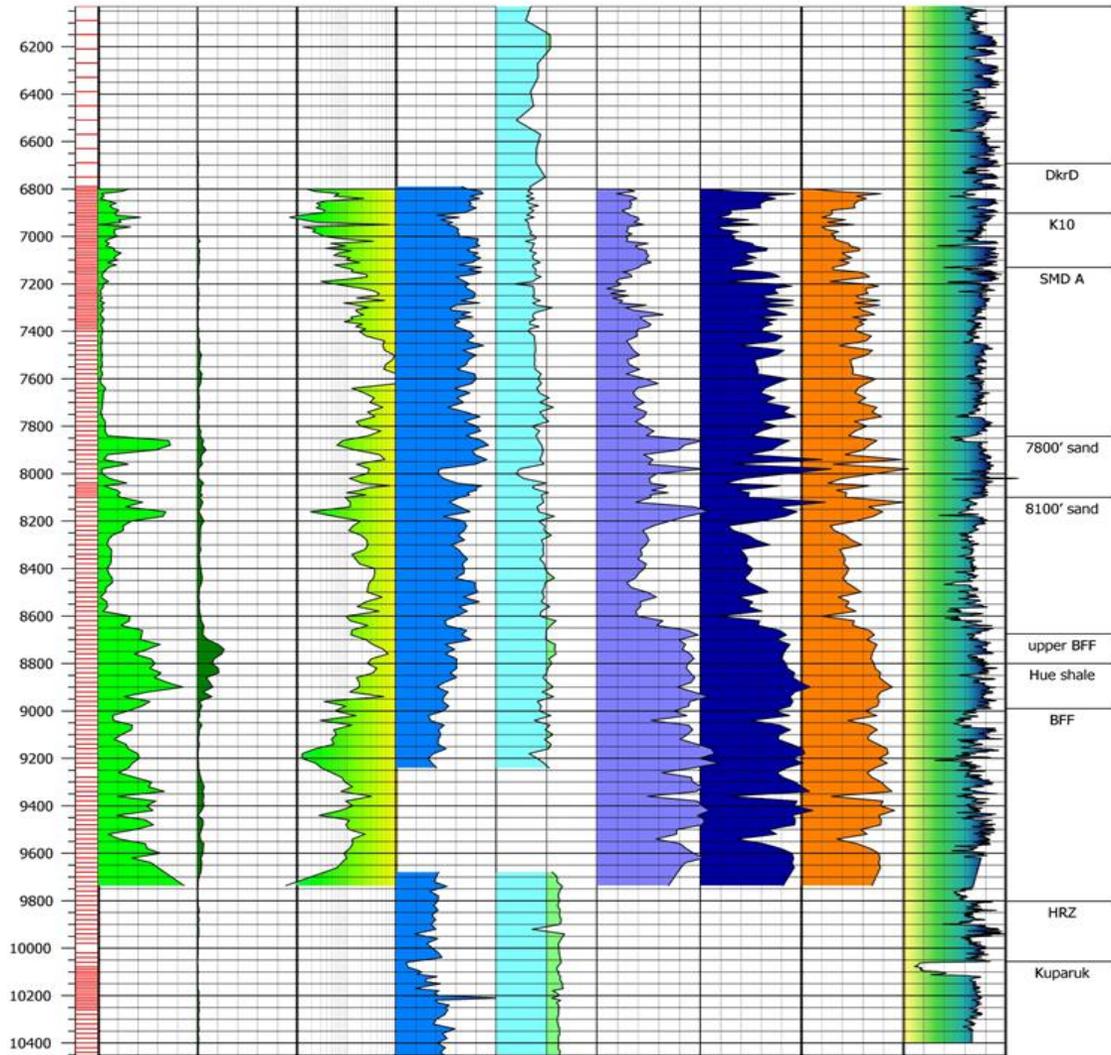




In making interpretations of VAS and other logs, our employees and associates will give the customer the benefit of their best judgment. But since all interpretations are opinions based on inferences from electrical, analytical, and other measurements, we cannot, and we do not, guarantee the accuracy or correctness of any interpretation. We shall not be liable or responsible for any loss, cost, damages, or expenses whatsoever incurred or sustained by the customer resulting from any interpretation made by any of our employees or associates.

Baker Hughes 

Depth (ft)	Samples	Oil Volume Sealed at Well	Oil Volume Lab Loaded	Oil Volume Sealed vs Lab	Water Volume Trend	Hydrophobic Character	Gasoline Range Measured API	Paraffins vs Naphthenes	Whole Oil API Prediction	Gamma Ray	TOPS
		ppm/vol 0.0 1000.0	ppm/vol 0.0 1000.0	Ratio 0.01 1.00	Counts 50 150	Index 0 1	Degrees API 50 70 40	Mole % 80	Degrees API 20 50 0	API Units 0 100	



Note the sampling frequency – comprehensive and high density
 Red dashes are sample depths

Highlights:

- VAS analysis was independent from GBP predrill prognosis

- Every sample (416) had oil in 3700 feet of strata below the DkrD shale

- Sealed vs Traditional oil volume indicates mobile oil (lag time greatly effects volatile retention in traditional samples)

- Decreasing water volume with depth ties to increasing oil saturation

- Hydrophobic character indicates transitioning “reservoir wettability” and “relative permeability” from water to oil below the HRZ source rock

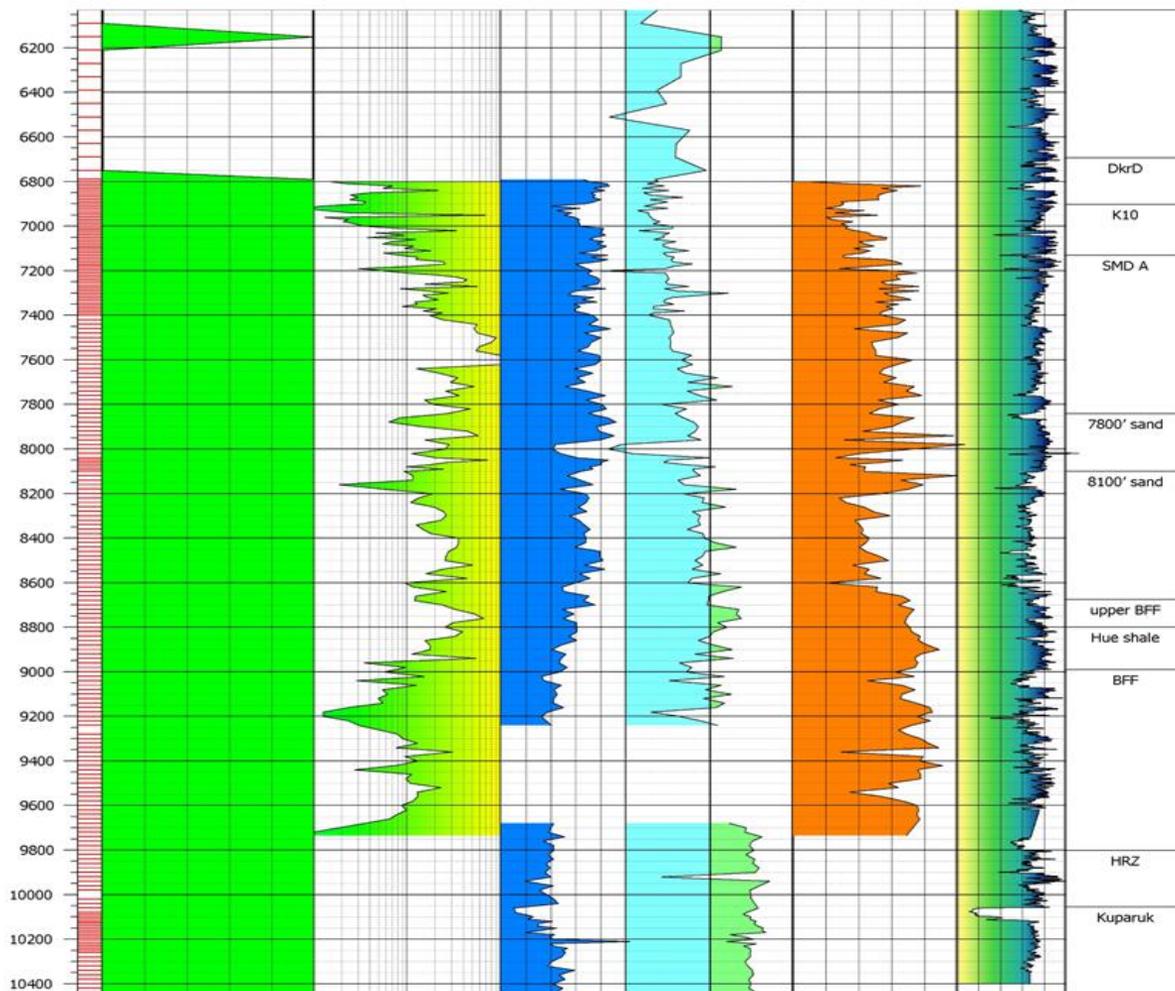
- Gasoline Range and Paraffin/Naphthene Ratio indicate light whole oil in the 35 – 42 api range. Talitha Kuparuk oil is 42.3 api. Alkaid oil (nearby) is 35.8 api.

Wellsite cuttings sampling



Sealed at well – vessels & Traditional bagged sample

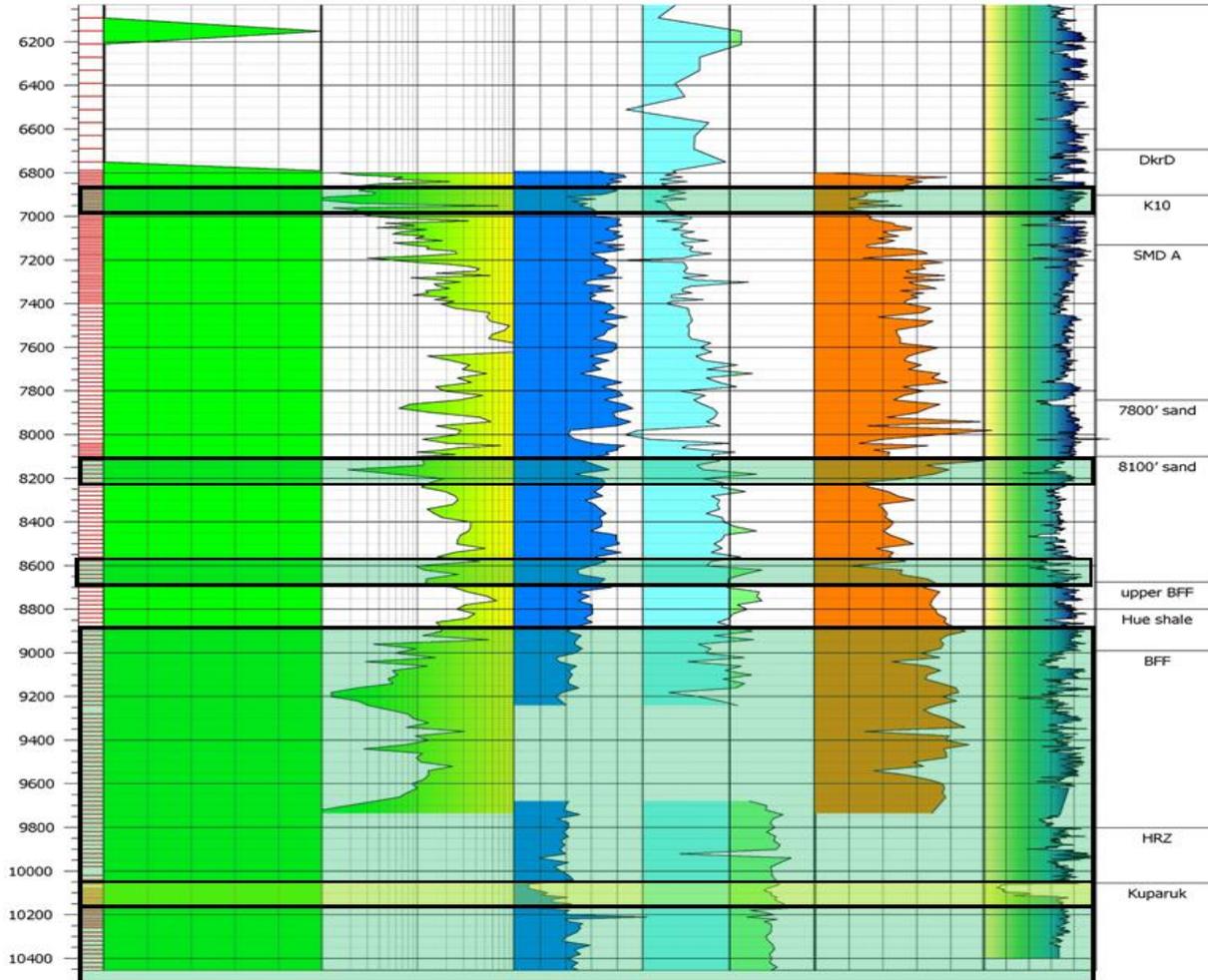
Depth (ft)	Samples	Cuttings Oil Documented Depths	Oil Volume			Water Volume Trend	Hydrophobic Character			Whole Oil API Prediction			Gamma Ray	TOPS
			Better	Sealed vs Lab Reservoir	Worse		H2O	Wetting	Oil	Heavy	Oil	Light		
			0.01		1.00	High 50	0.25		0.75	20		50	0	
			0.0	Oil = 1		Low 150							100	



The Game Changing Results:

- Every sample below the DkrD shale had oil – this speaks to the extraordinary Petroleum Systems we are exploiting
- Every predicted reservoir interval and two new zones are charged with light, mobile oil in the 35 – 42 api range
- Transitioning “reservoir wettability” and “relative permeability” from water to oil below the HRZ source rock into the Kuparuk is new data that will be incorporated into future drilling, testing and completions.

Depth (ft)	Samples	Cuttings Oil Documented Depths	Sealed vs Lab Oil Volume	Movability Reservoir	Trend	Water Volume	Hydrophobic Character	Whole Oil API Prediction	Gamma Ray	TOPS

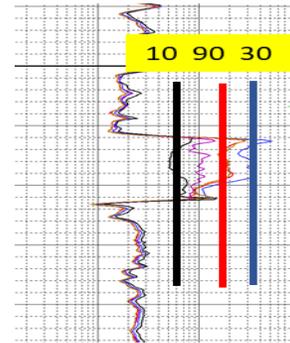
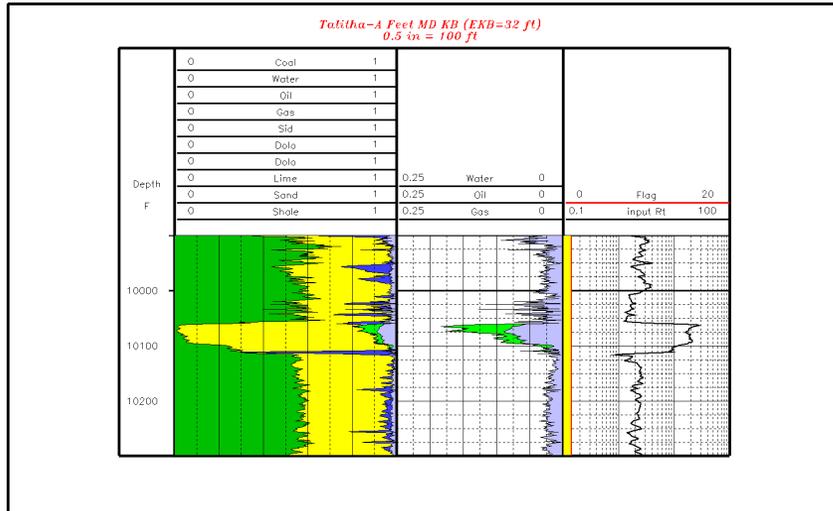


Stacked oil reservoirs over 3700 feet of Brookian Campanian strata

- The highlighted zones are AHS "favorites"
- They include all predrill oil reservoir targets

← New Play

← Play confirming test of Campanian Basin Floor Fan Complex that has been the target of our Leasing over the last 2 years

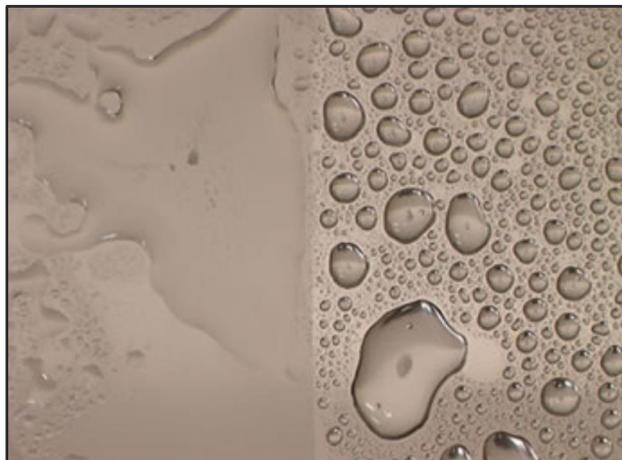


Annulus invasion profile

Volatiles Analysis

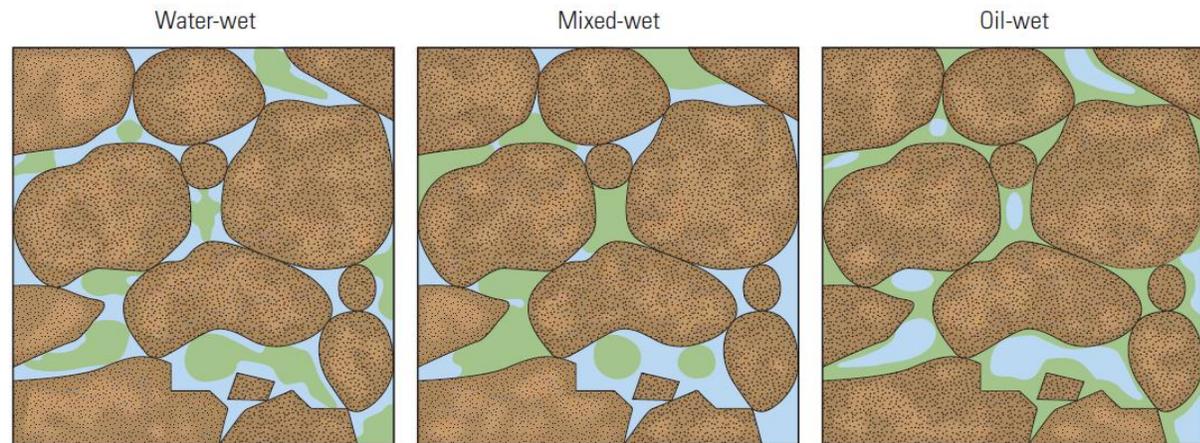


Production performance



Water wet

Oil Wet



Oil Brine (water) Rock grains

Courtesy Schlumberger

PANTHEON RESOURCES PLC Talitha-A Pay Interval

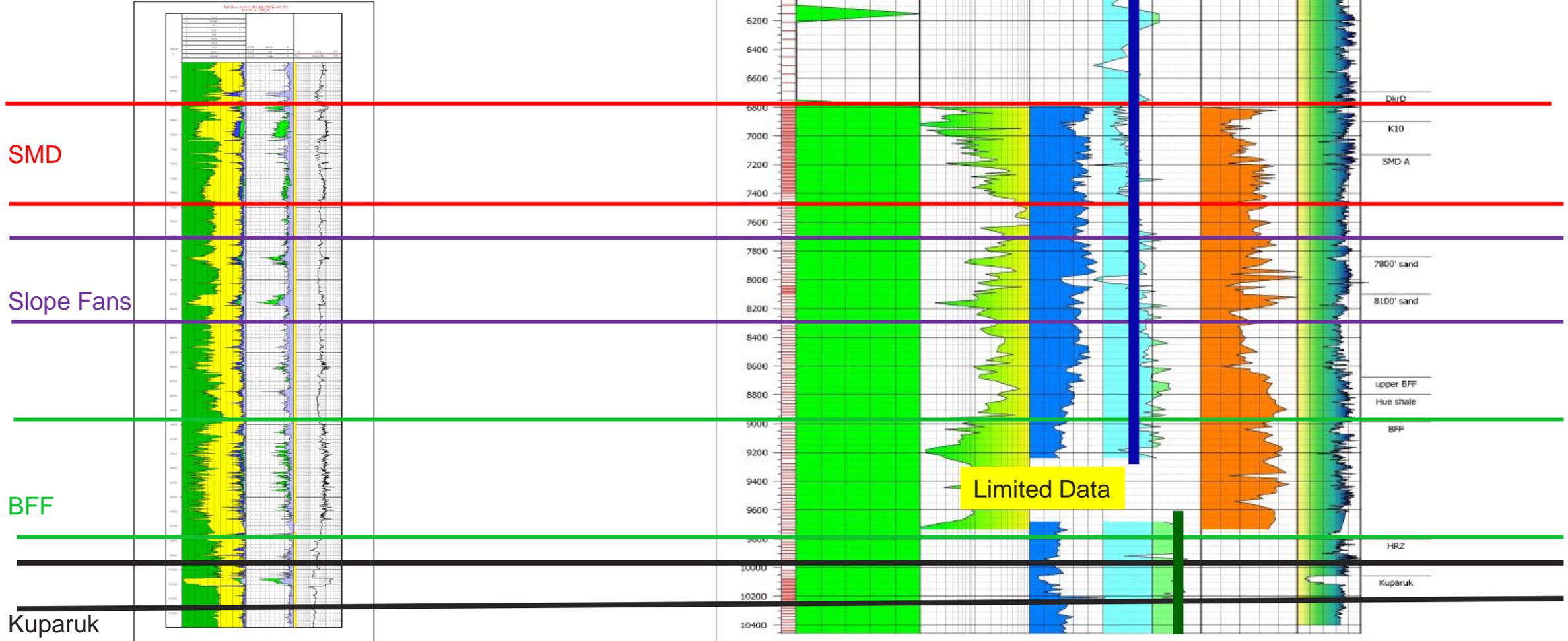
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Pantheon Talitha A
Interpretive Log
VAS Property Log supplied by AHS



Depth (ft)	Samples	Cuttings Oil Documented Depths	Oil Volume	Sealed vs Lab	Movability	Water Volume Trend	Hydrophobic Character			Whole Oil API Prediction		Gamma Ray	TOPS			
							H2O	Wetting	Oil	Heavy	Light			API Units		
		No Oil = 0 0.0	Oil = 1 1.0	Better 0.01	Reservoir	Worse 1.00	High 50	Oil 150	Low 0	0	1	20	Oil	Light 50	0	100



SMD

Slope Fans

BFF

Kuparuk

Limited Data

DkrD

K10

SMD A

7800' sand

8100' sand

upper BFF

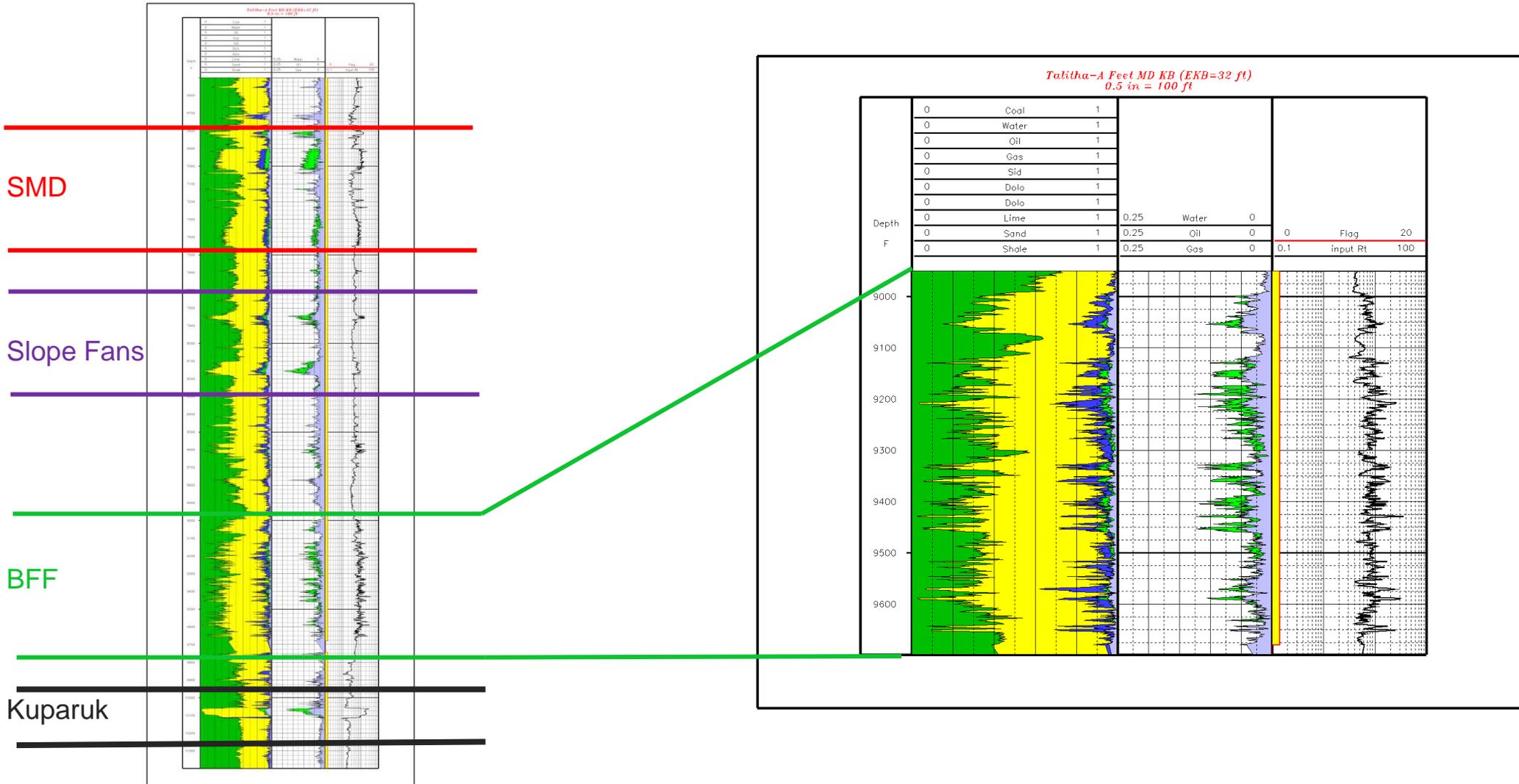
Hue shale

BFF

HRZ

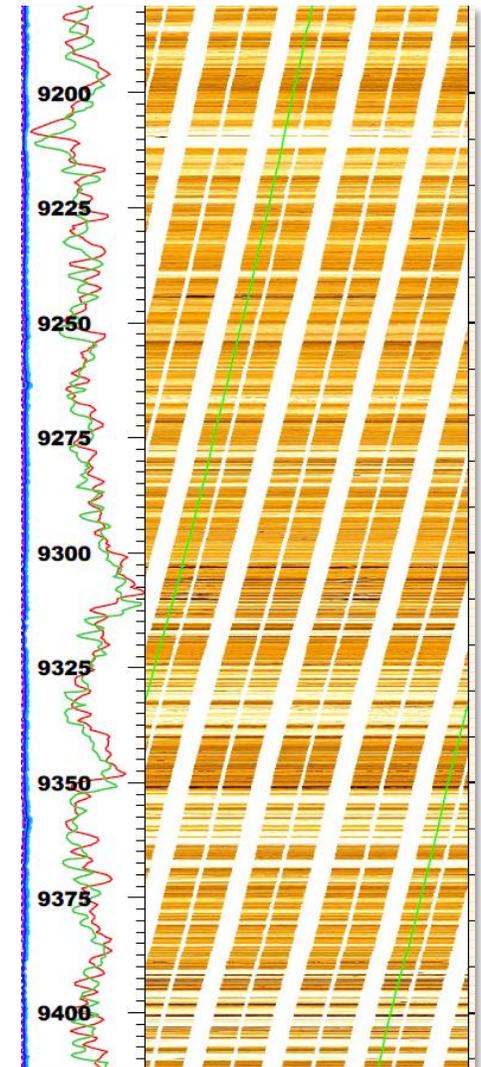
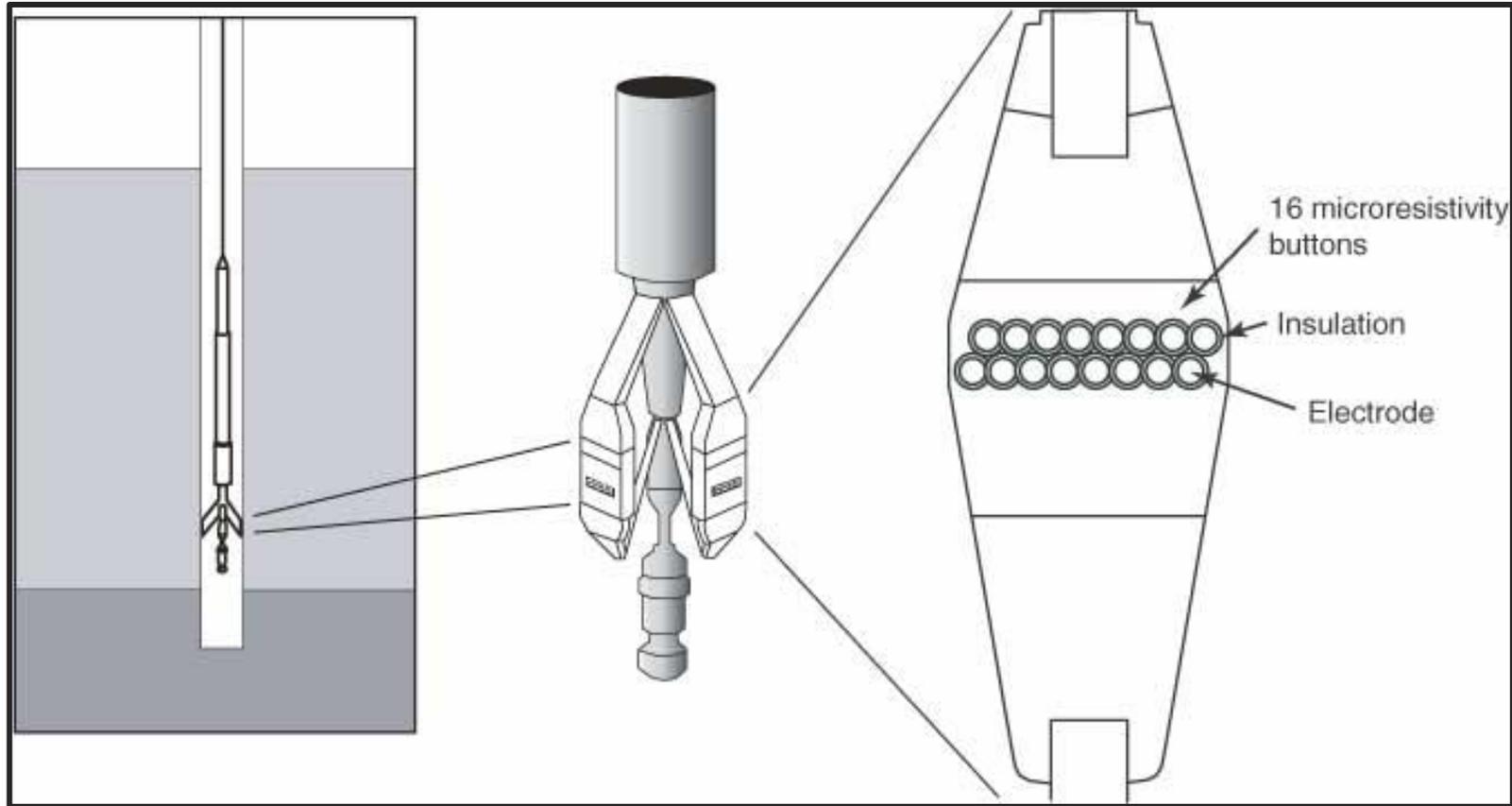
Kuparuk

PANTHEON RESOURCES PLC Theta West Basin Floor Fan

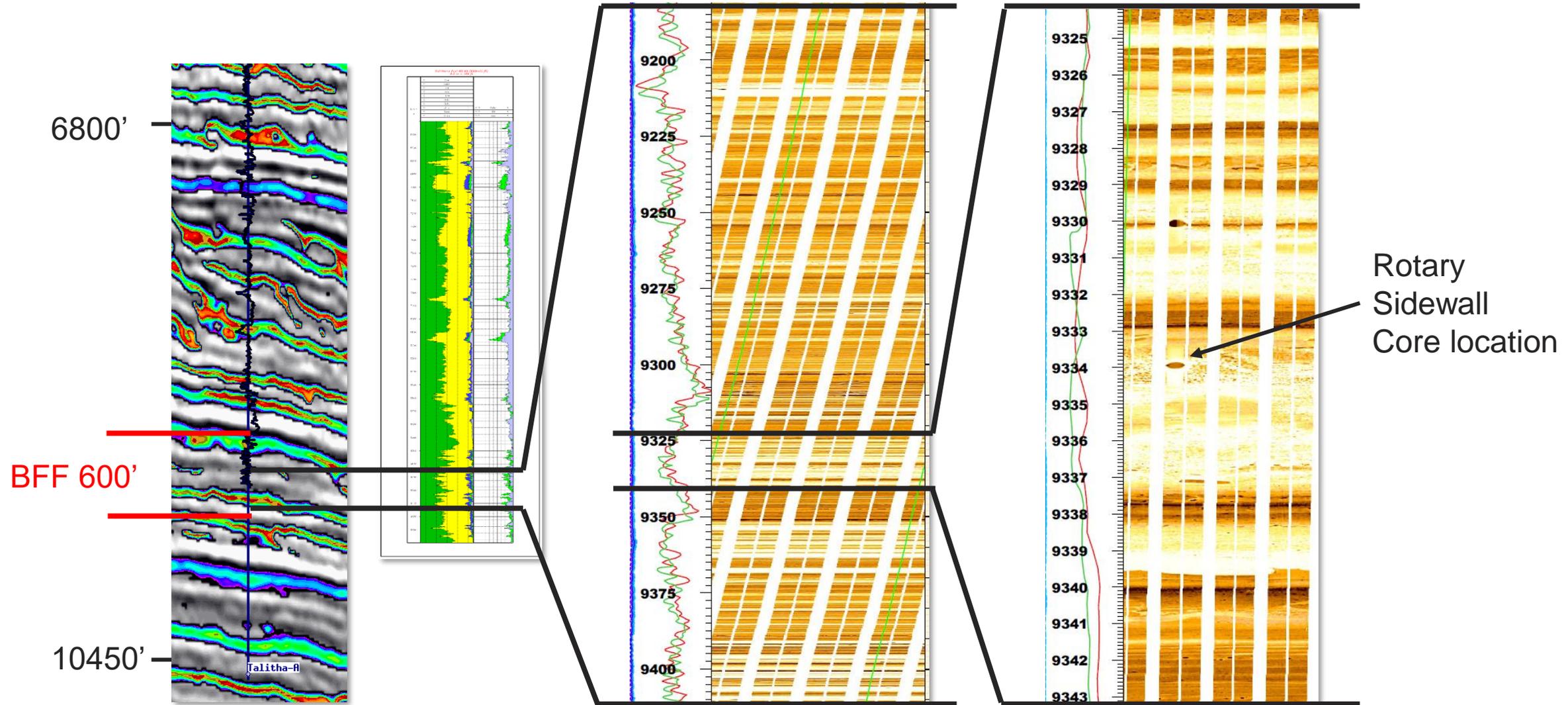


PANTHEON RESOURCES PLC

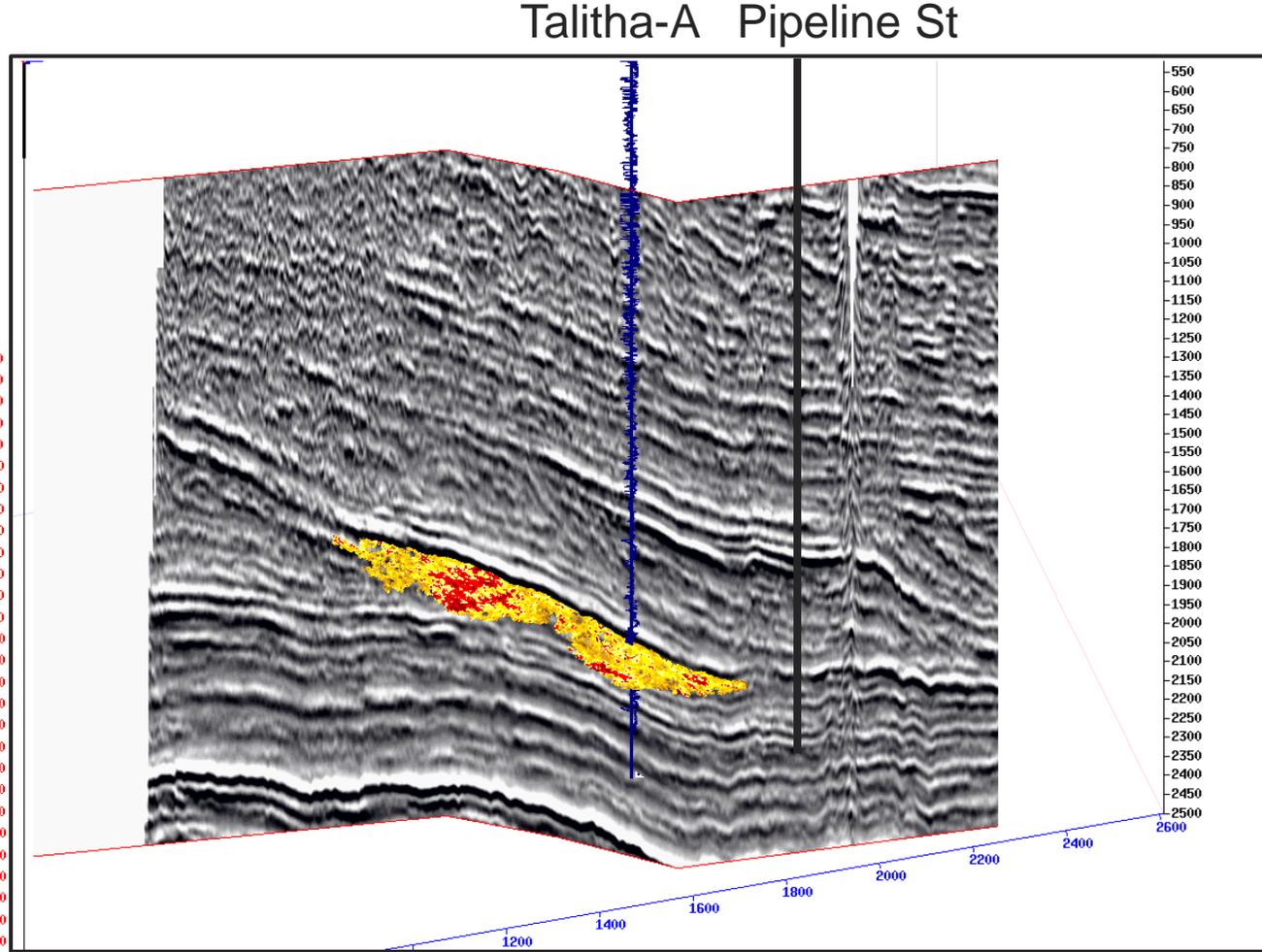
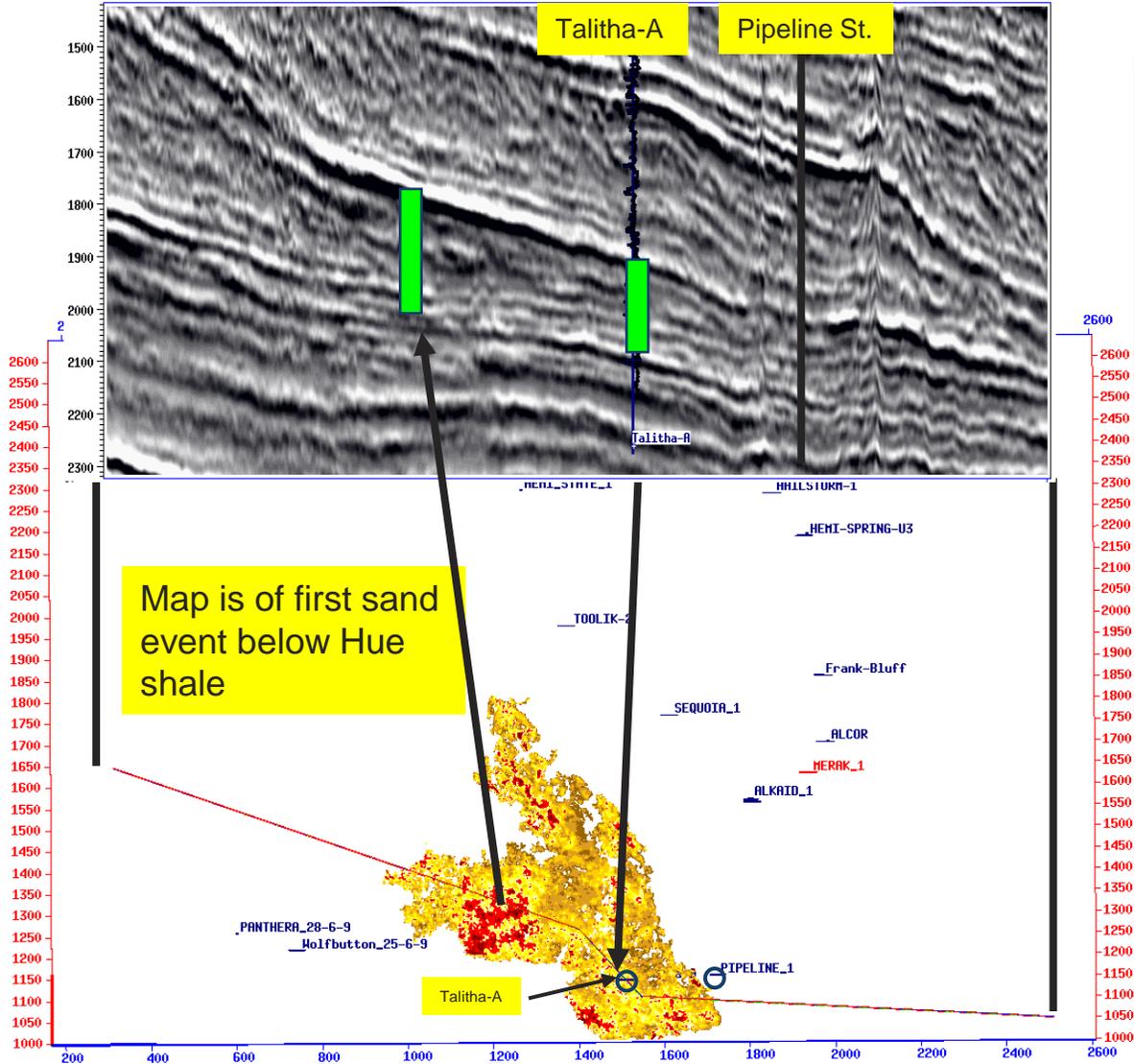
Schlumberger FMS (formation micro scanner)



PANTHEON RESOURCES PLC Theta West Basin Floor Fan

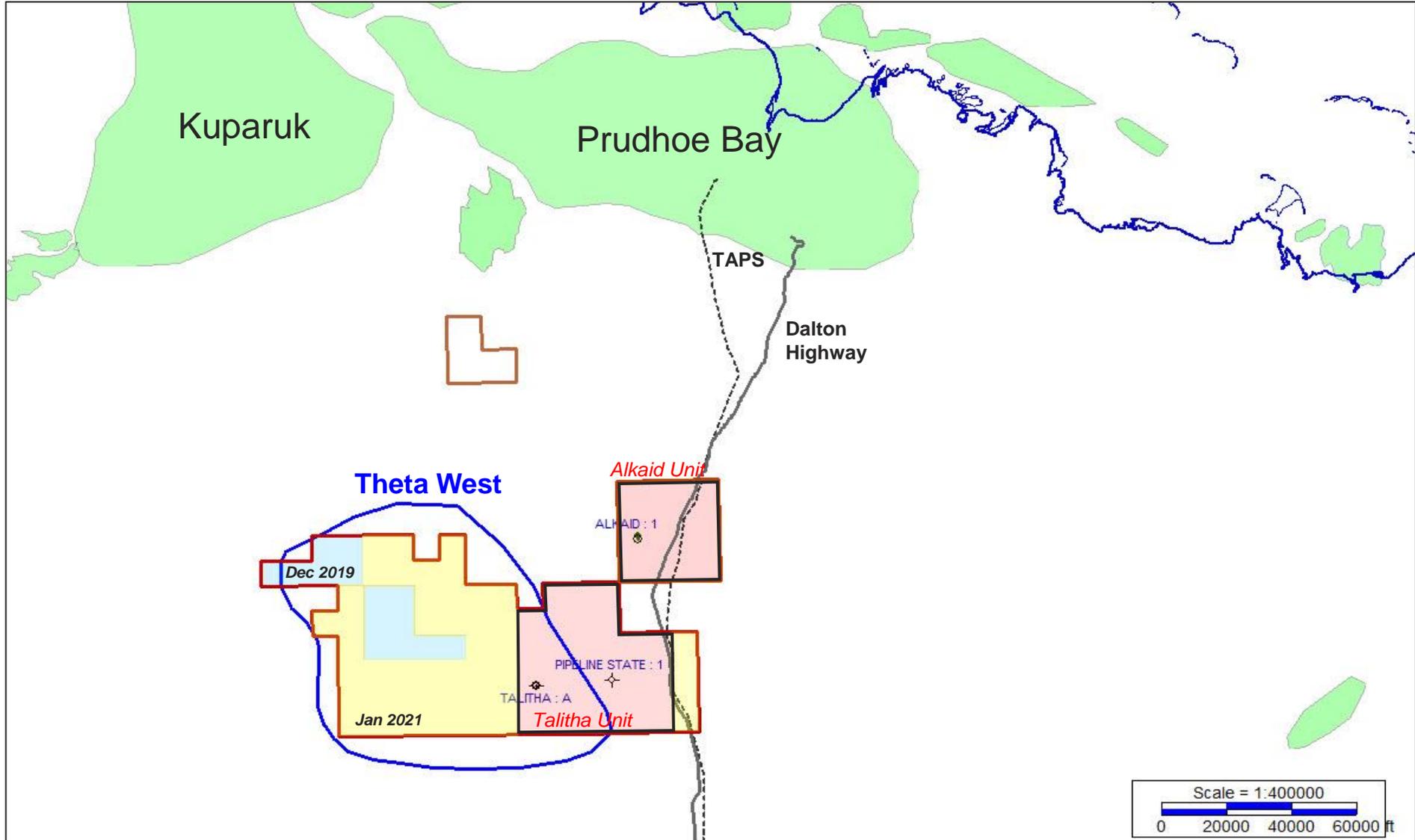


PANTHEON RESOURCES PLC Theta West Basin Floor Fan

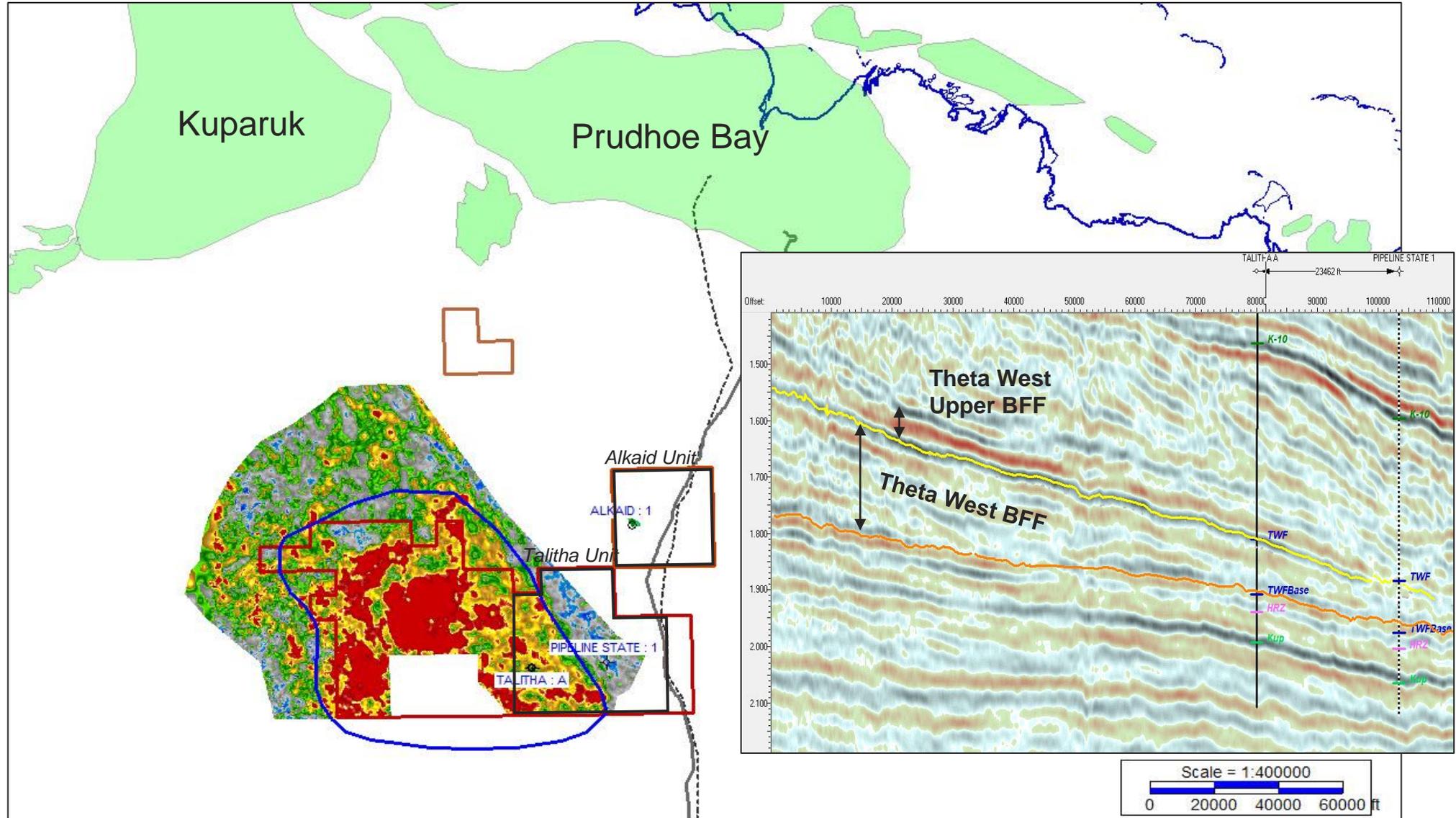


3D view of Theta West Basin floor fan

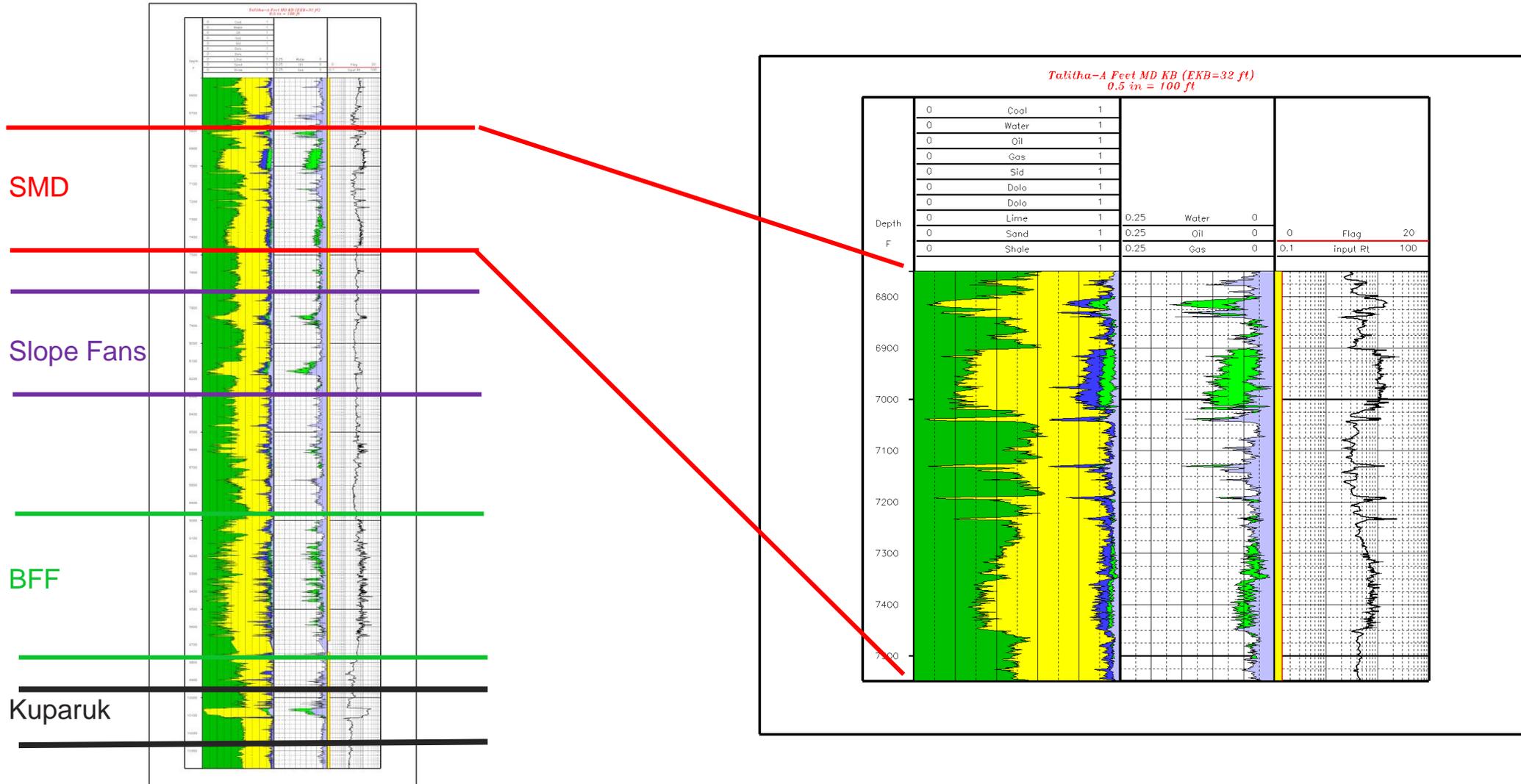
PANTHEON RESOURCES PLC Theta West: Pantheon Acreage



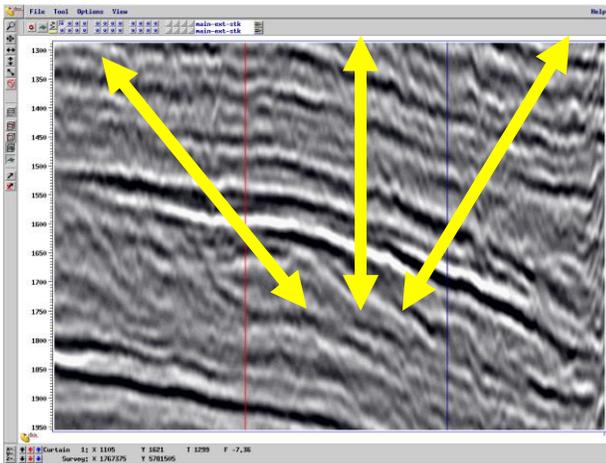
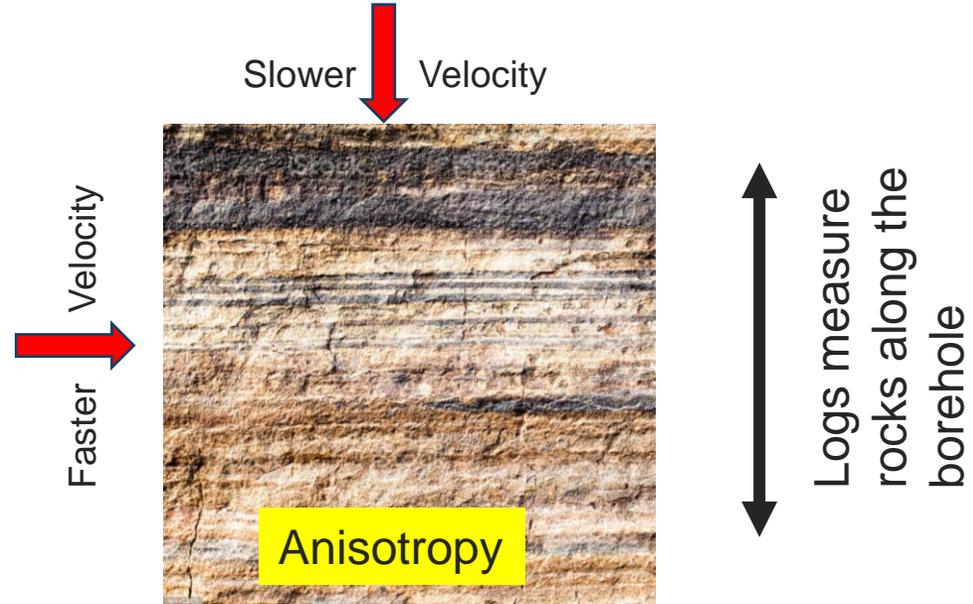
PANTHEON RESOURCES PLC Theta West Upper BFF AVO Lithology Attribute



PANTHEON RESOURCES PLC Shelf Margin Deltaic

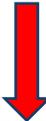


PANTHEON RESOURCES PLC Calibrating Seismic Data to Lithology

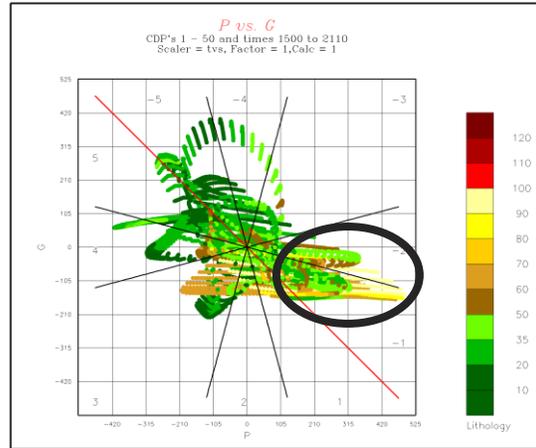
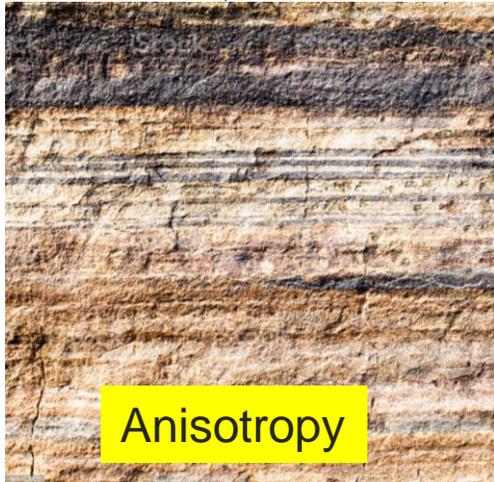


PANTHEON RESOURCES PLC Calibrating Seismic Data to Lithology

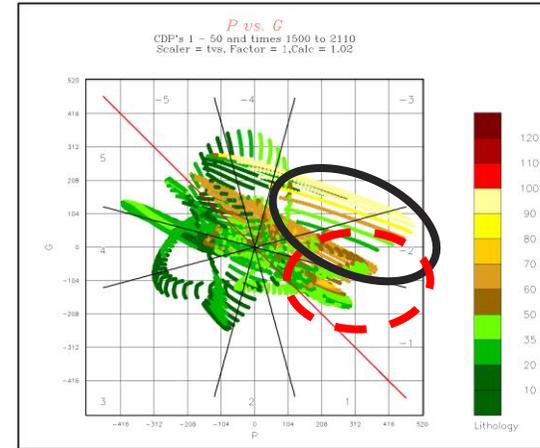


Slower  Velocity

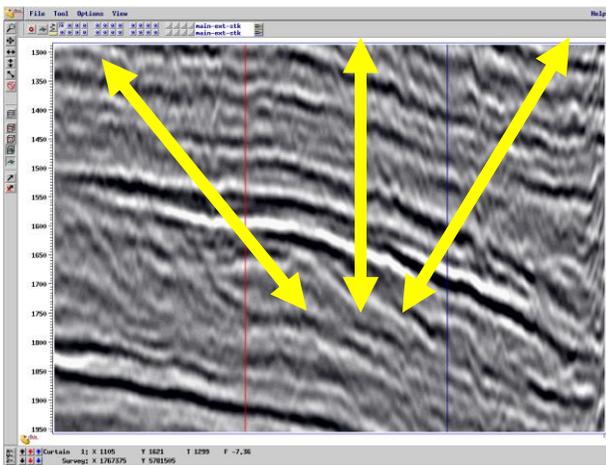
Faster  Velocity



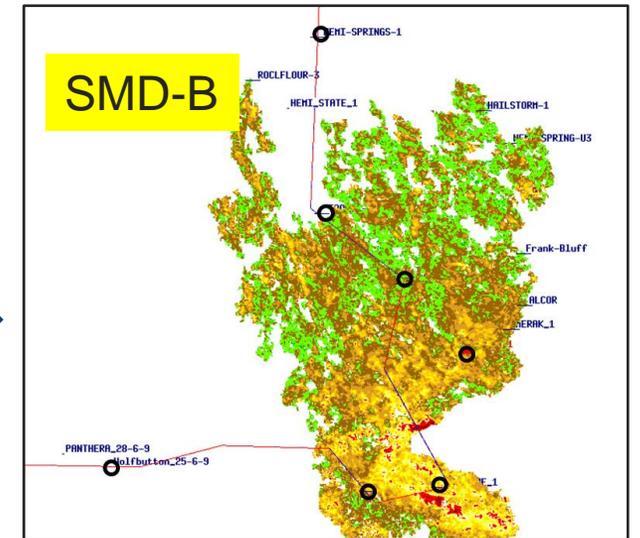
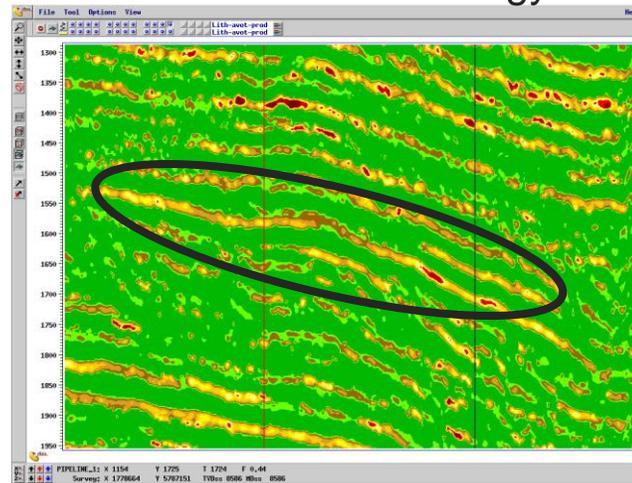
Pre Talitha-A Anisotropy correction



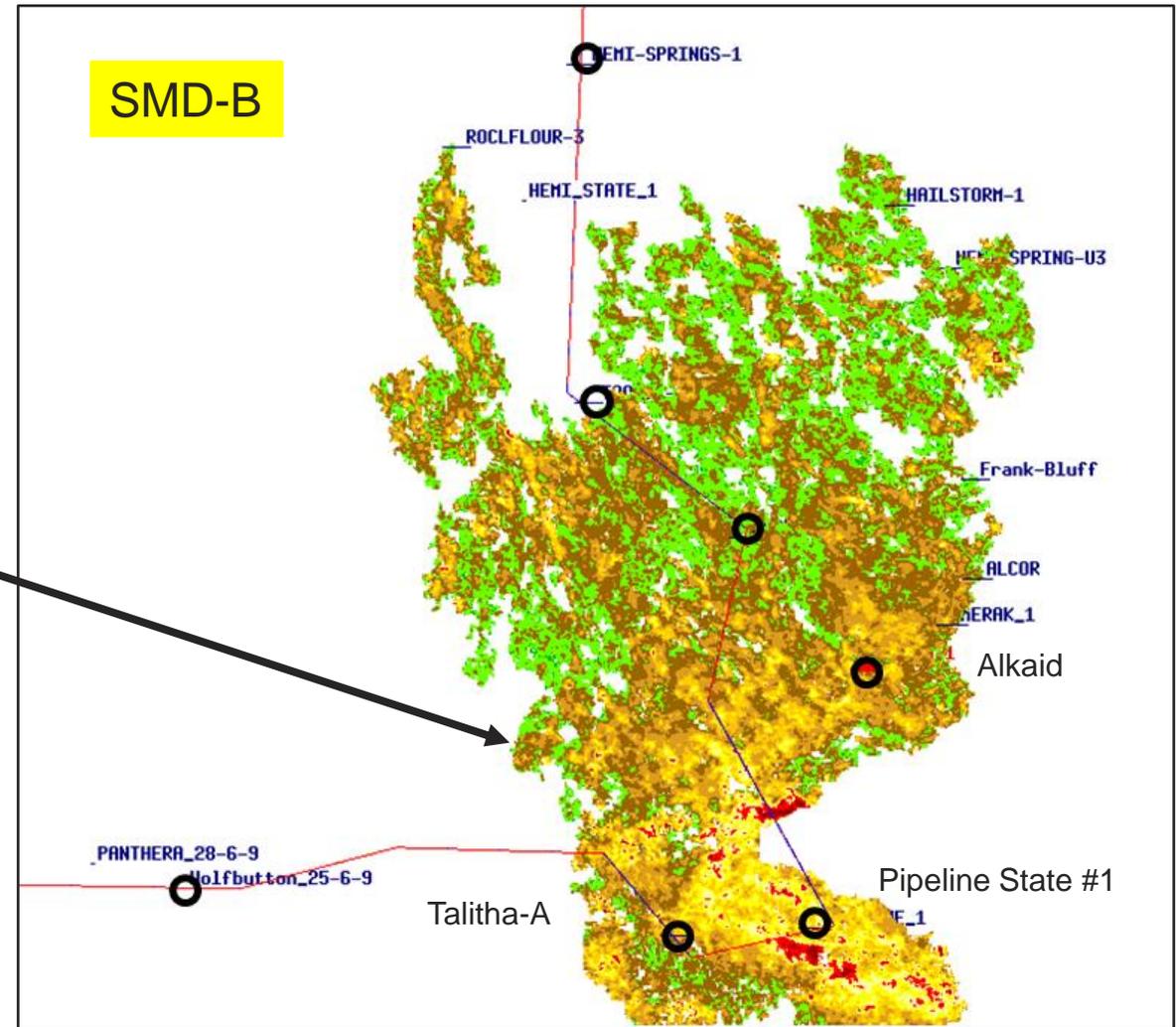
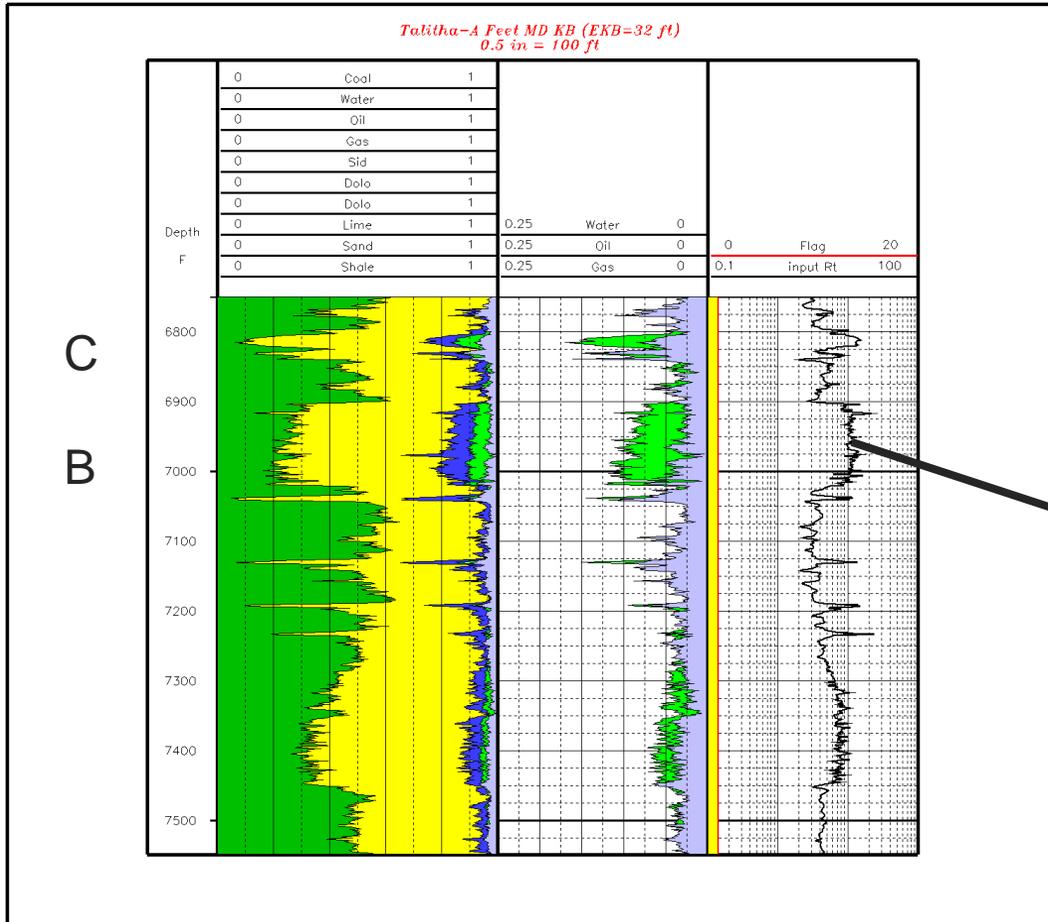
Post Talitha-A Anisotropy correction



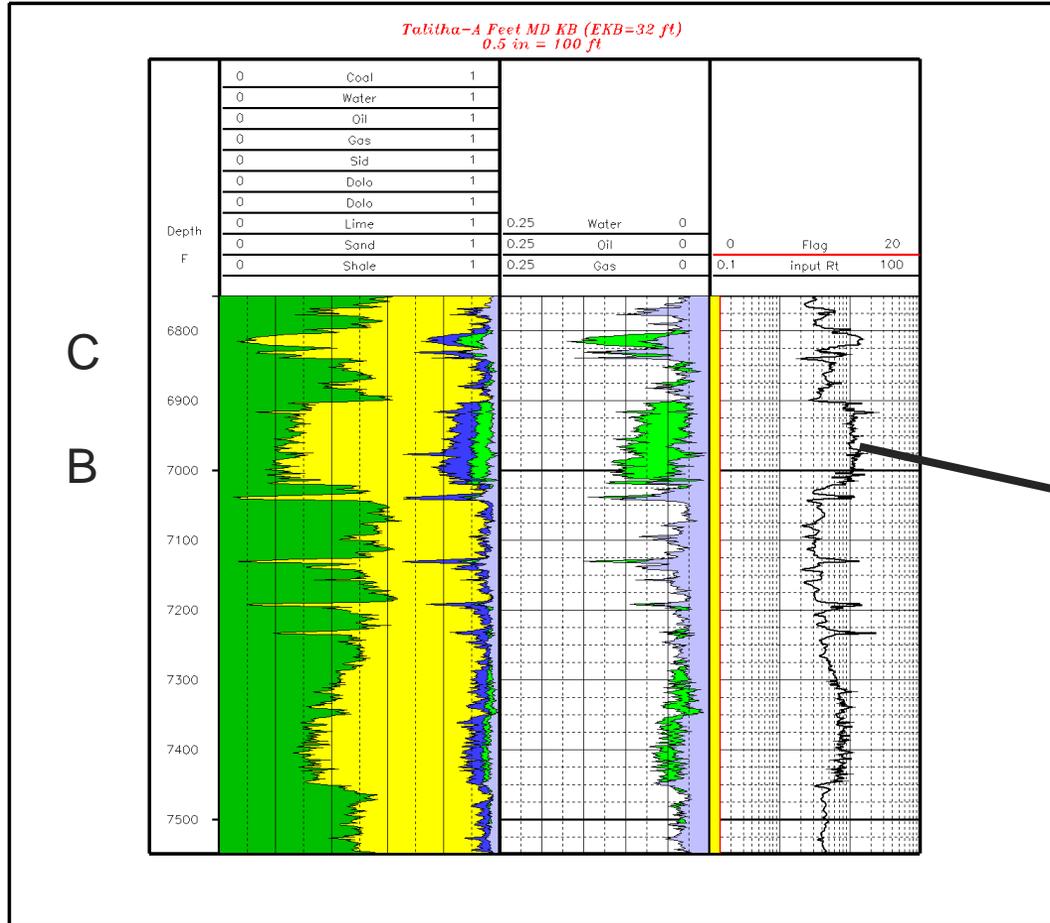
Seismic AVO Lithology



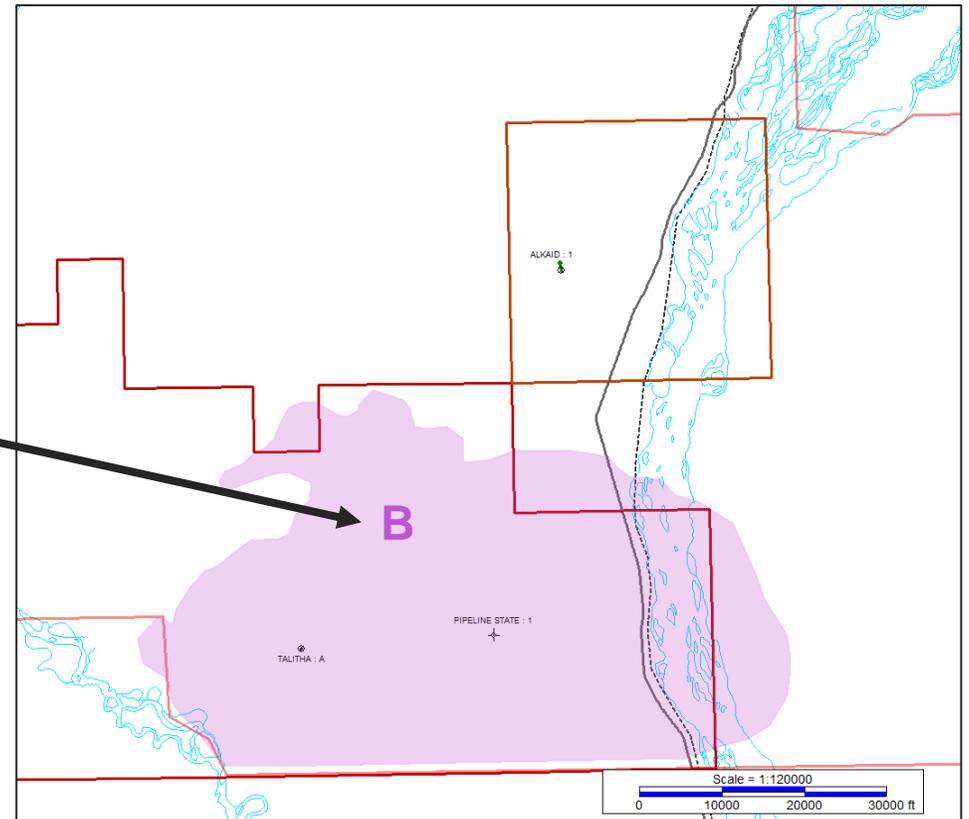
PANTHEON RESOURCES PLC Shelf Margin Deltaic



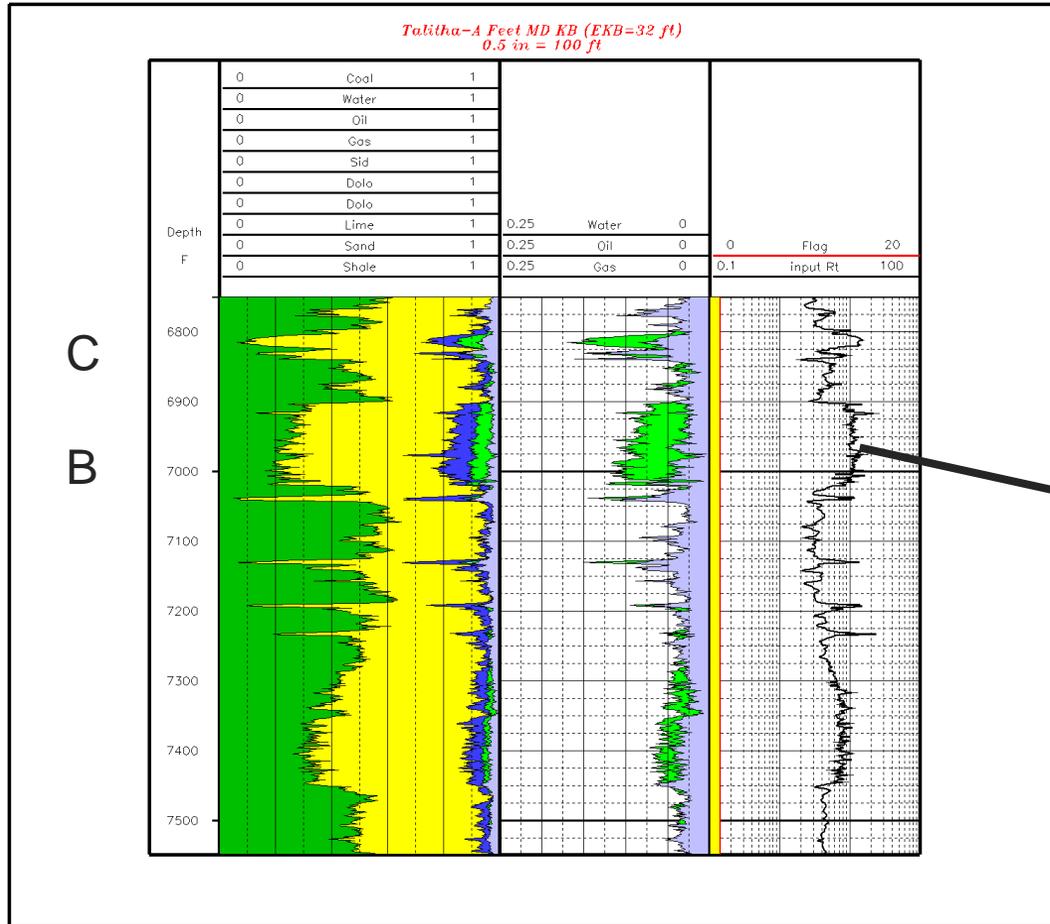
PANTHEON RESOURCES PLC Shelf Margin Deltaic



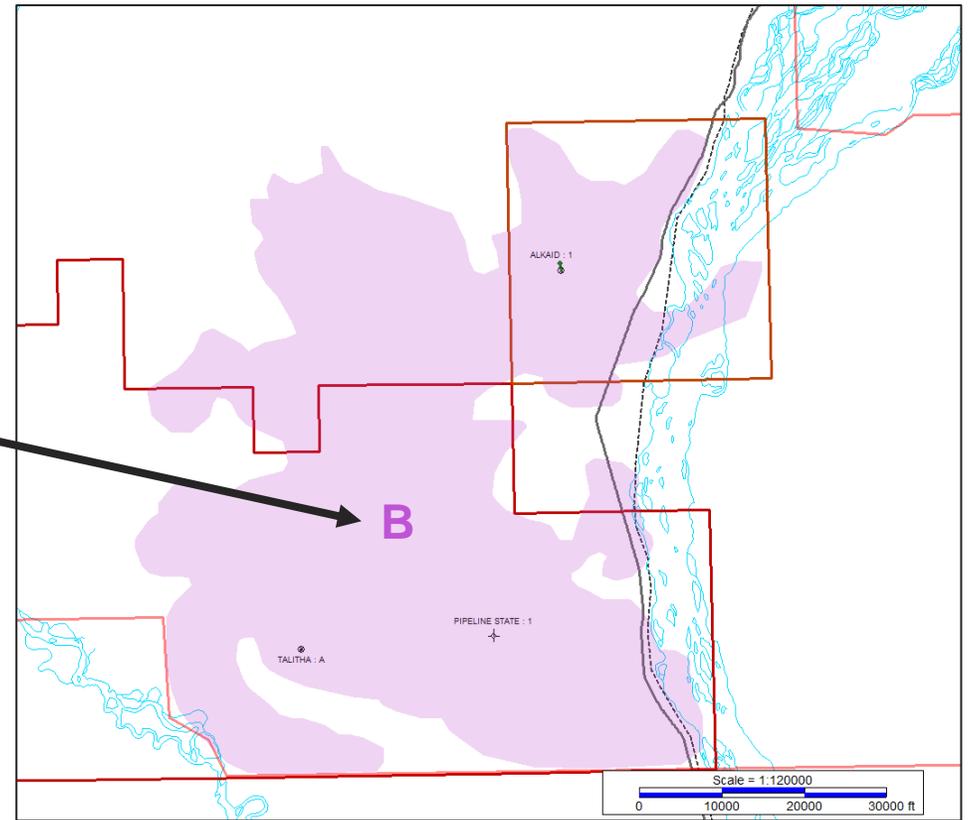
Pre Talitha-A SMD-B Map



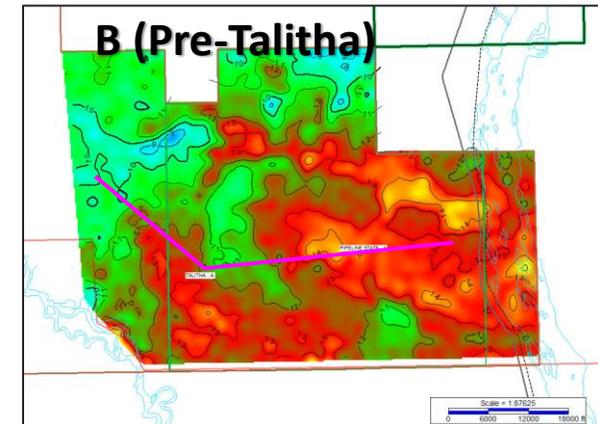
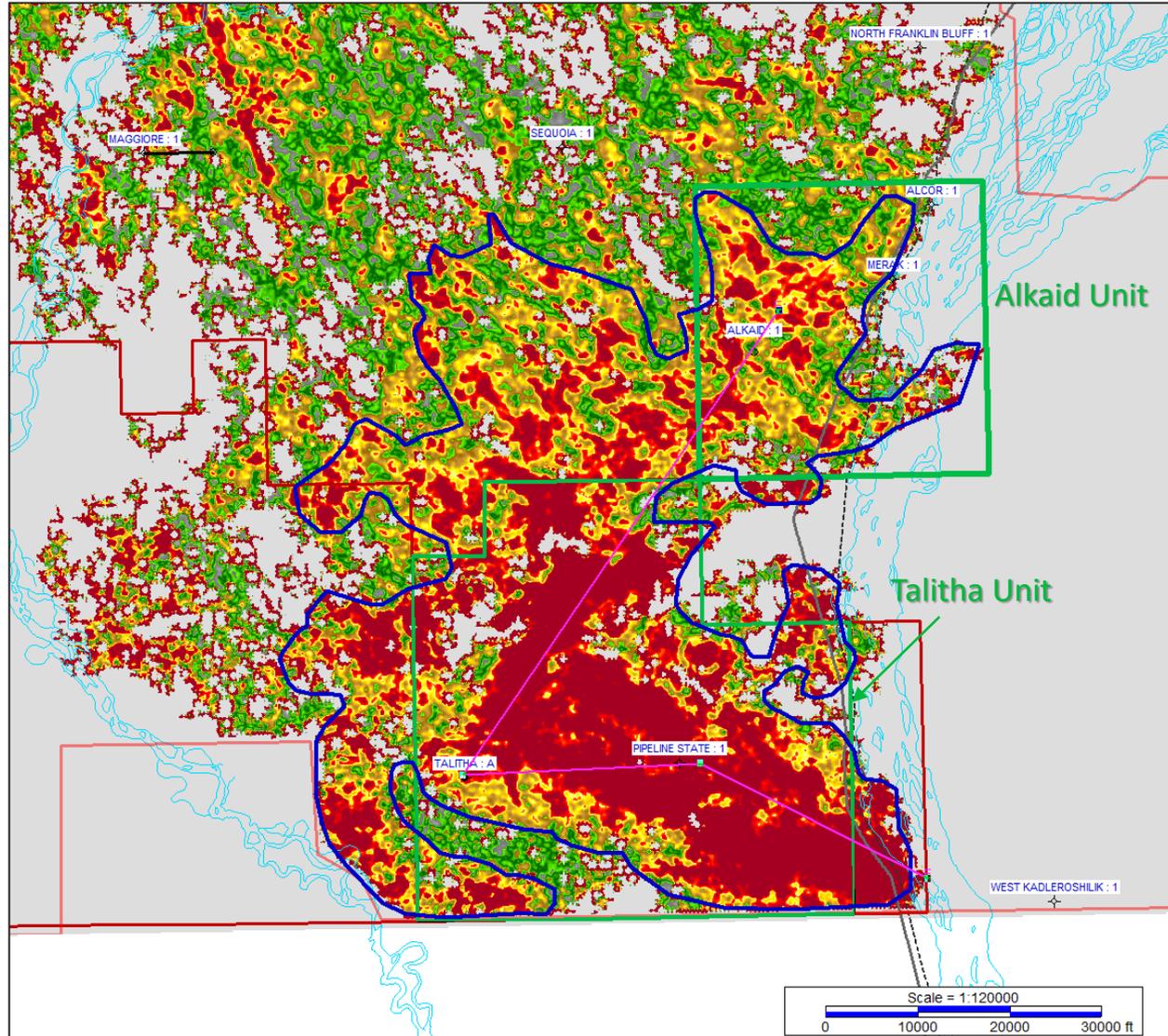
PANTHEON RESOURCES PLC Shelf Margin Deltaic

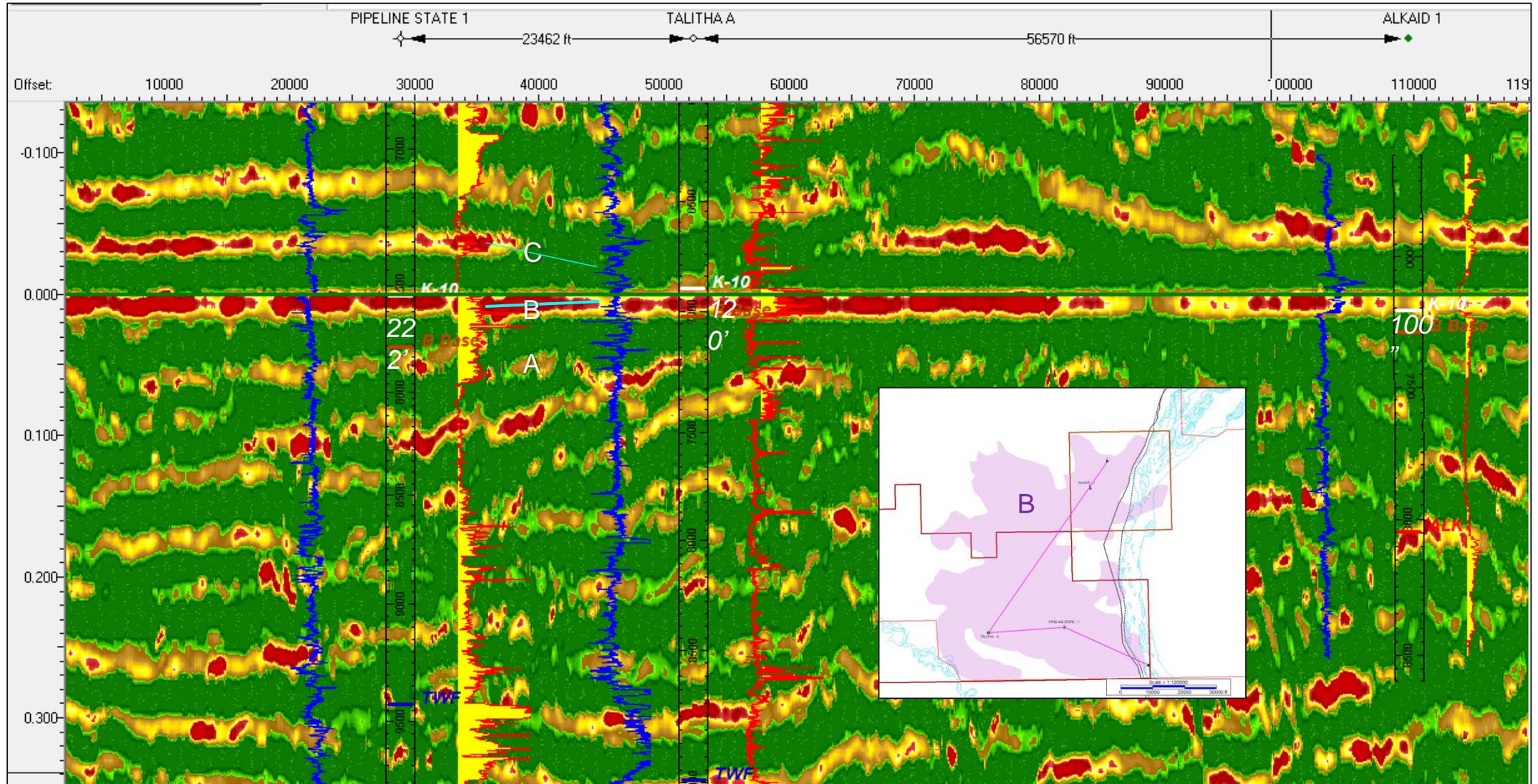


Post Talitha-A SMD-B Map



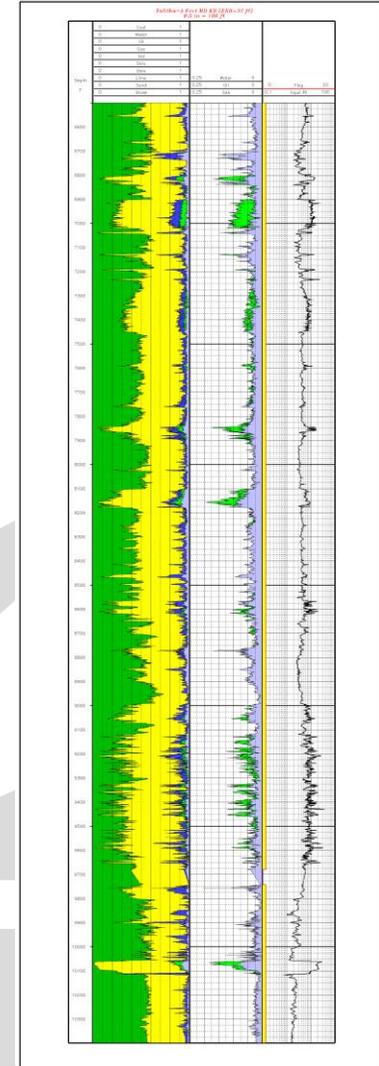
PANTHEON RESOURCES PLC SMD B Anisotropic AVO Lithology Attribute





~~2000 ft
hydrocarbons~~

3700 ft
hydrocarbons





Talitha #A

- Kuparuk was 'oil wet'. Should be treated differentially
- Kuparuk remains a viable target of significant potential
- Management believe Talitha #A validates 1 billion barrels of oil recoverable target
- Management resource upgrade to come
- Talitha #A wellbore is in excellent condition - ready for testing next season
- Enormous volume of high quality data generated
 - Assists farmout discussions
 - Assists future IER resource assessments
- Emergence of Theta West as a giant and new prospect