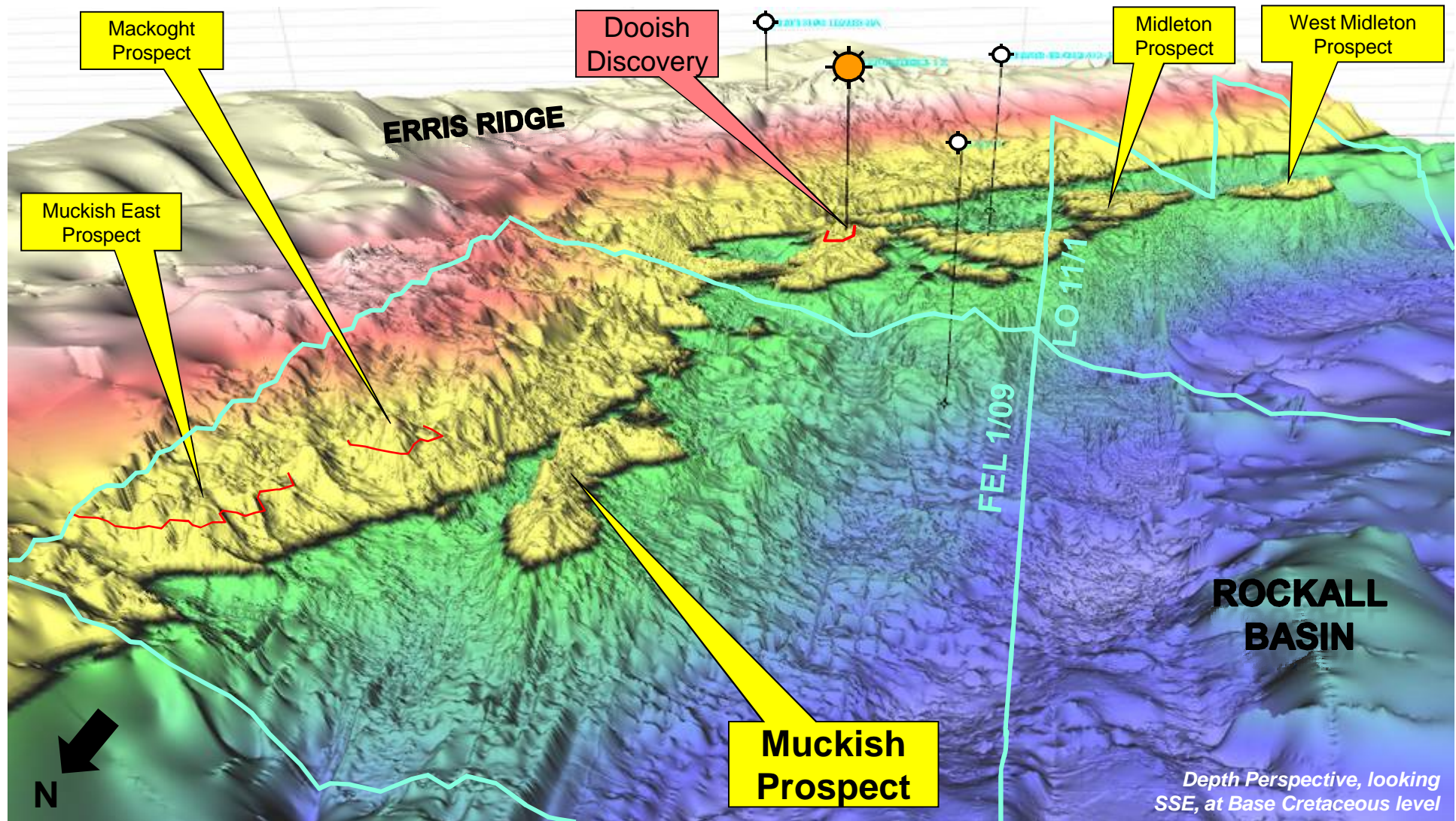


# ATLANTIC IRELAND FARM-OUT OPPORTUNITY

**SERICA**ENERGY

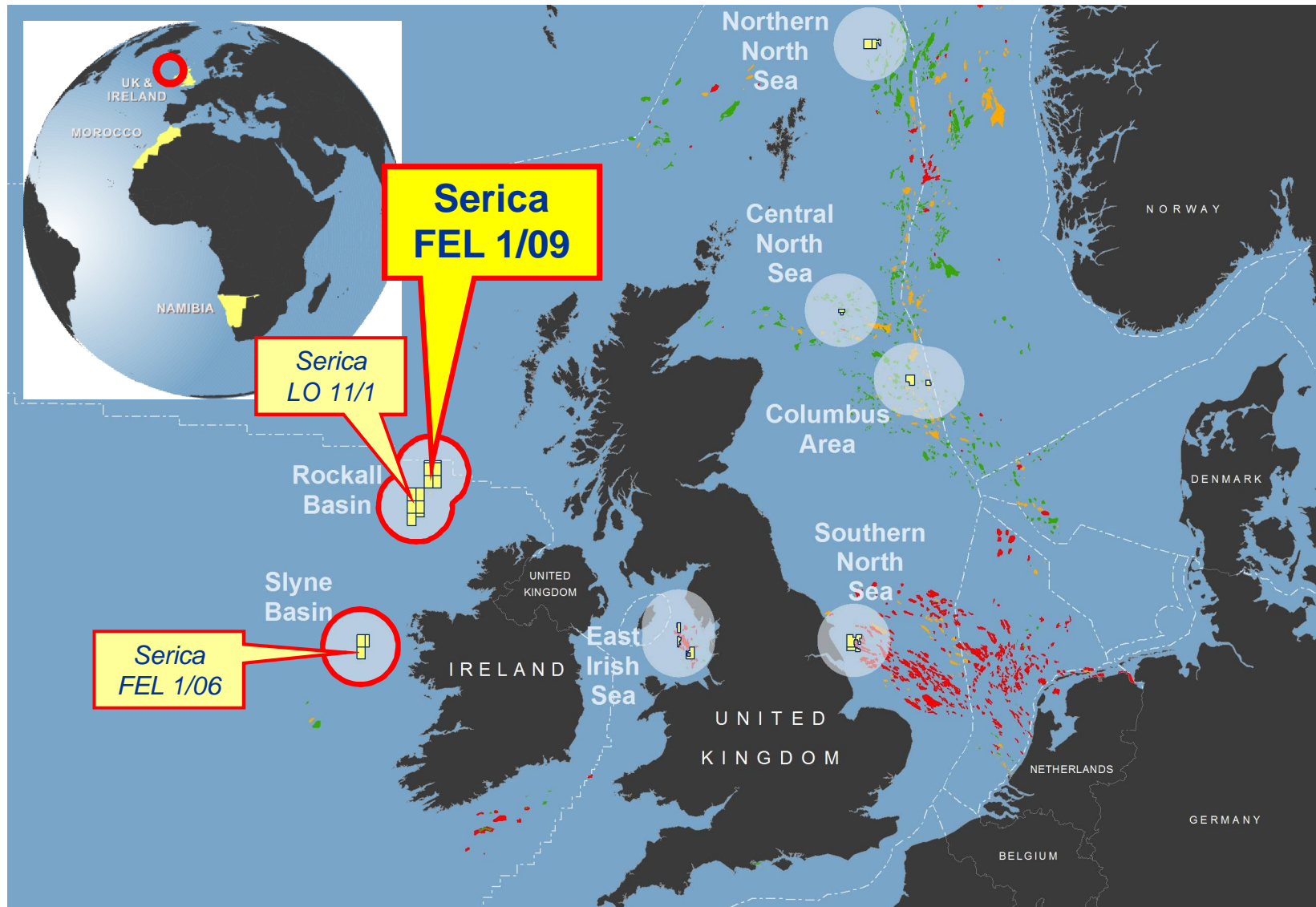


Muckish Prospect, FEL 1/09, Irish Rockall Basin

# SERICA IRELAND

## Rockall Basin Acreage

**SERICA**ENERGY



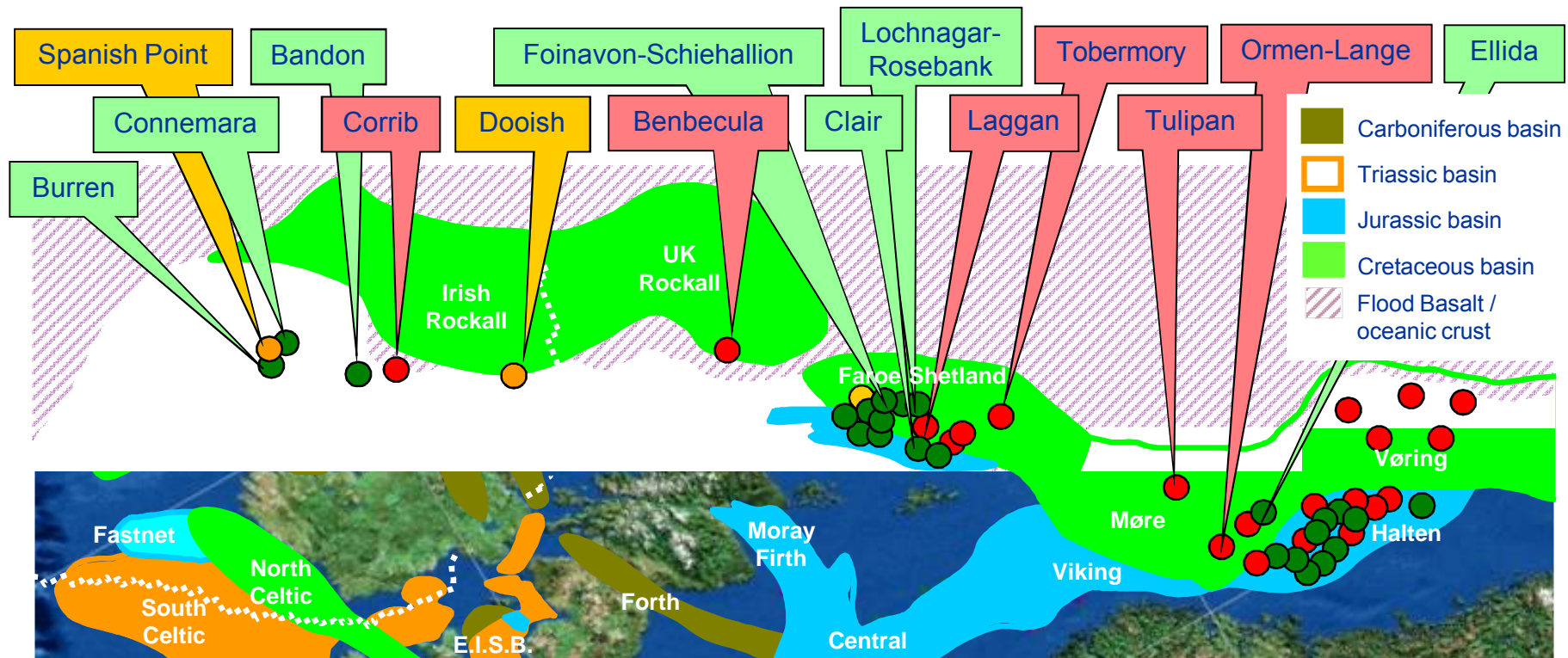


# WHY ATLANTIC IRELAND?

## Geological Factors

**SERICA**ENERGY

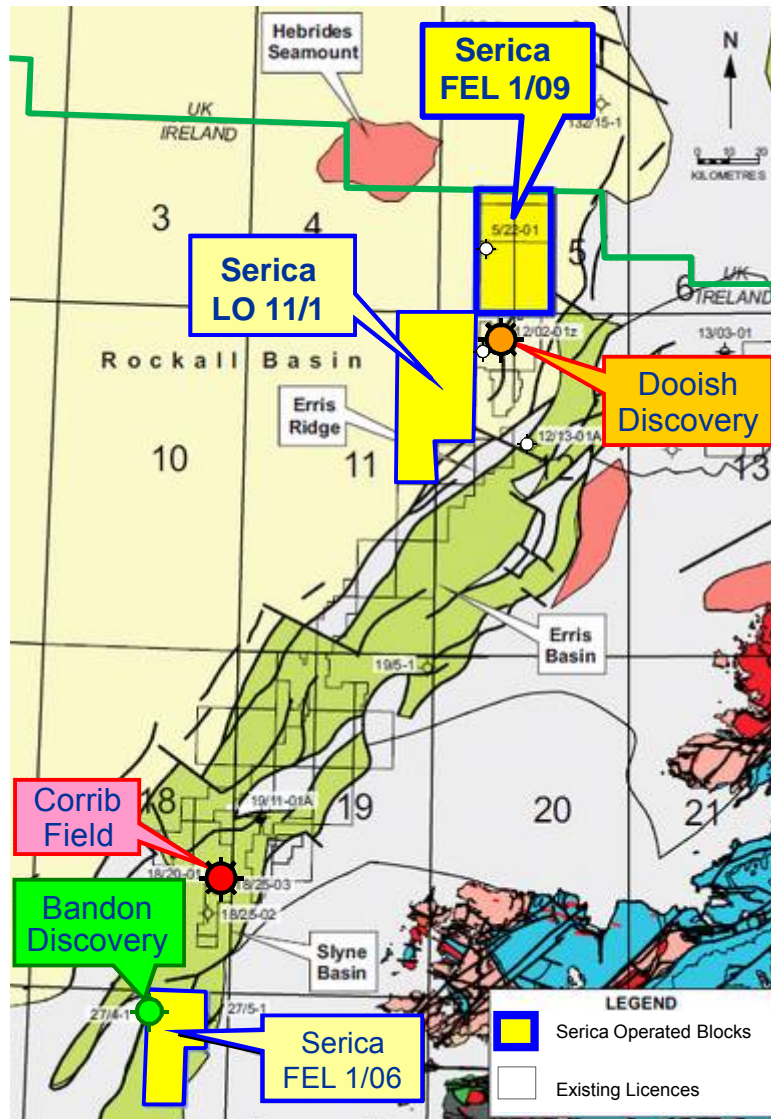
- Shared geology with UK, Faroe & Norwegian Atlantic margins
- Numerous overlapping basins and multiple phases of rifting
- Six oil and gas fields / discoveries
- More than one proven play
- Numerous pre, syn and post-rift reservoirs & seals
- Several proven source rocks
- Numerous wells with shows
- Many large undrilled structures
- Significant stratigraphic upside



# INTRODUCTION

## Rockall Basin Regional Setting

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- Deepwater (500 - 2000m)
- Only 3 exploration wells in Irish sector Rockall Basin
- Dooish Discovery (12/2-1,1z) proved a hydrocarbon system
  - Seals: Tertiary to Lower Cretaceous
  - Reservoirs: Jurassic to Carboniferous
  - Source: most likely Jurassic
- Dooish Discovery reserves 265 bcf + 17 mmbbls 45 °API condensate (Shell, 2010)
- Large structural closures mapped on high-quality 3D seismic data in adjacent Serica acreage
- Serica's Muckish Prospect is drill-ready
- Several additional structural prospects plus stratigraphic upside

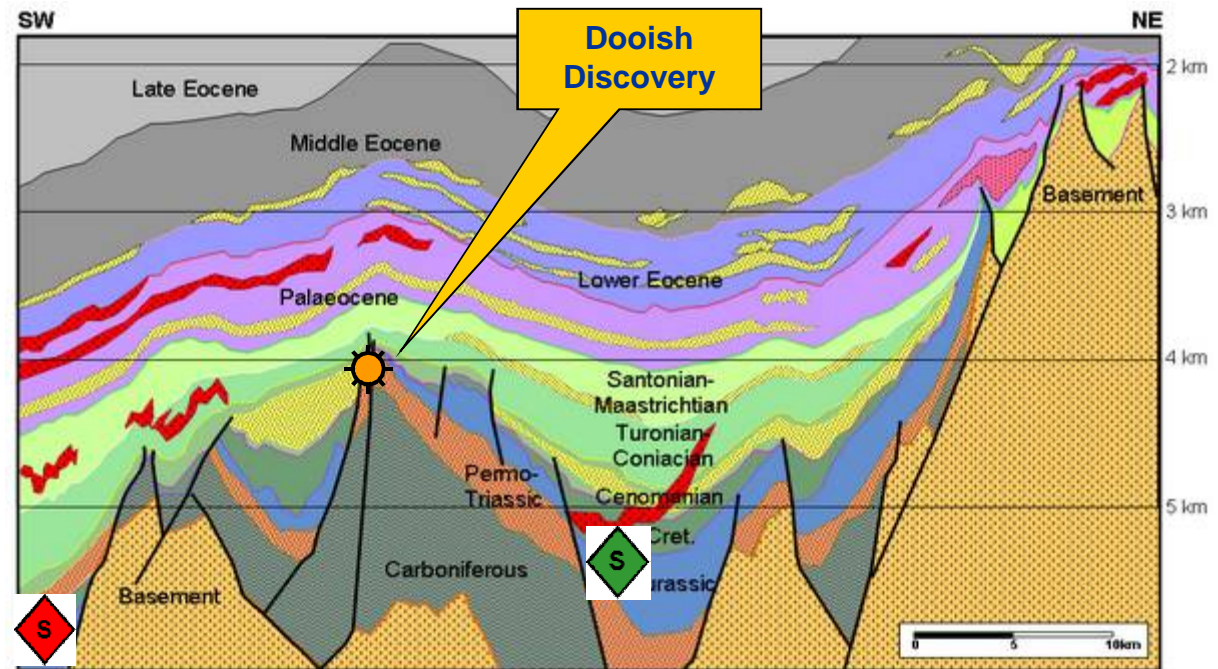
# IRISH ROCKALL BASIN

## Geoseismic Section illustrating Key Plays

**SERICA**ENERGY

### Reservoir

- Fractured basement
- Carboniferous fluvio-deltaic sandstones
- Permian continental sandstones
- Triassic continental sandstones
- Middle Jurassic continental / fluvial sandstones
- Upper Jurassic shallow to deep marine sandstones
- Cretaceous shelf/slope turbidite fan sandstones
- Palaeocene & Eocene turbidite fans



### Trap

- Pre-Cretaceous conventional tilted fault blocks
- Post-Cretaceous drape anticlines
- Cretaceous to Tertiary stratigraphic pinch-outs

### Source

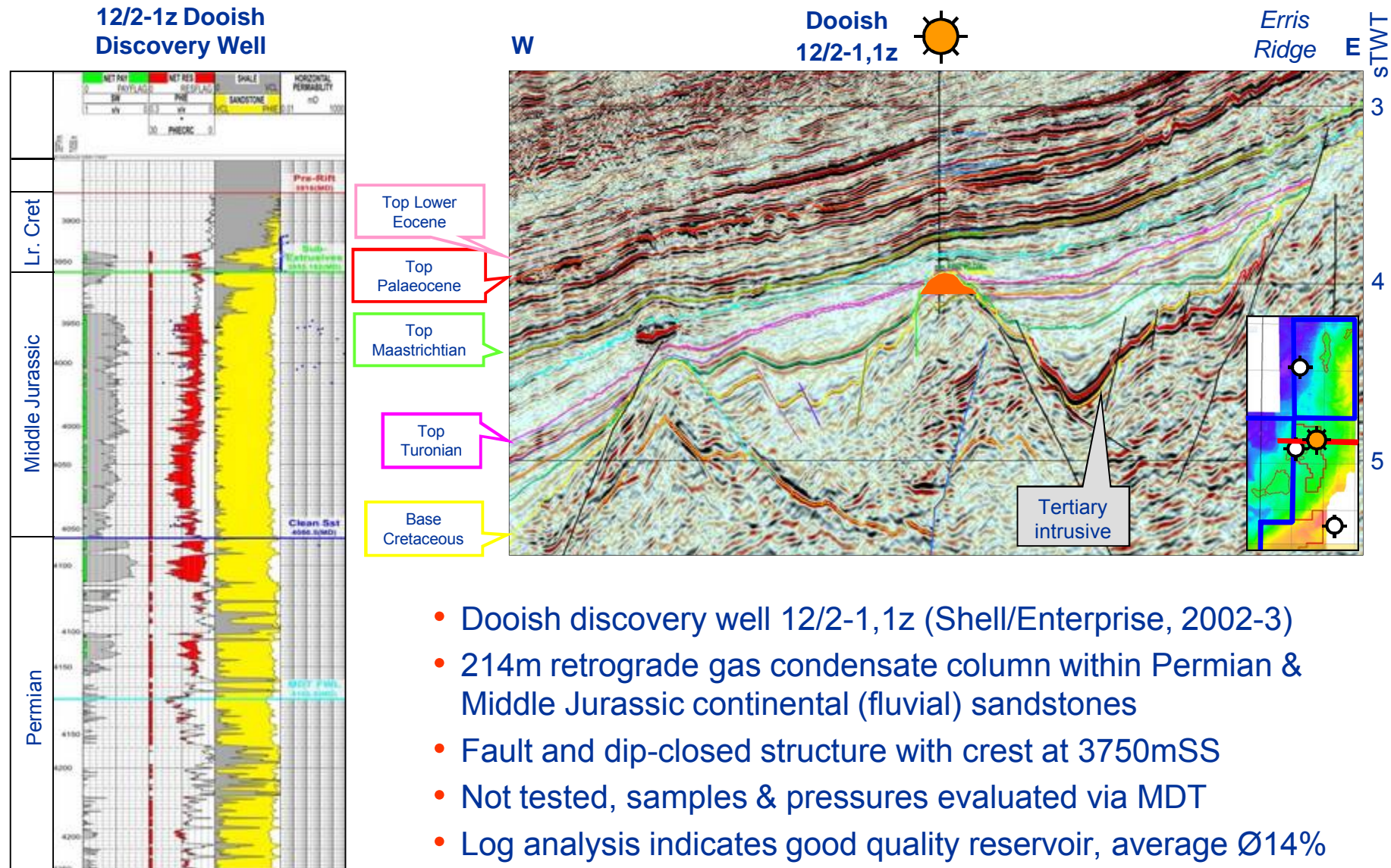
- Probable Upper Jurassic oil shales (Kimmeridge Clay equivalent)
- Possible Middle Jurassic oil shales and/or Carboniferous coals & oil shales



# IRISH ROCKALL BASIN

## 12/2-1,1z Dooish Discovery

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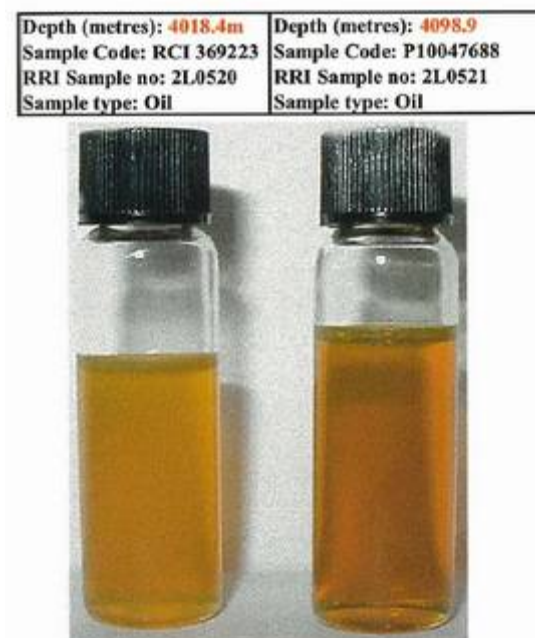


# IRISH ROCKALL BASIN

## Dooish Reservoir Fluid

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- Rich 45 °API retrograde gas condensate
- Geochemical analysis suggested a mixed terrestrial/marine source rock at peak maturity
- However, liquids content (up to C<sub>30</sub>) suggests a preference for a liquids-prone Jurassic source as opposed to a dry gas-prone Carboniferous source
- Possibility of an early oil charge flushed by a later wet gas charge



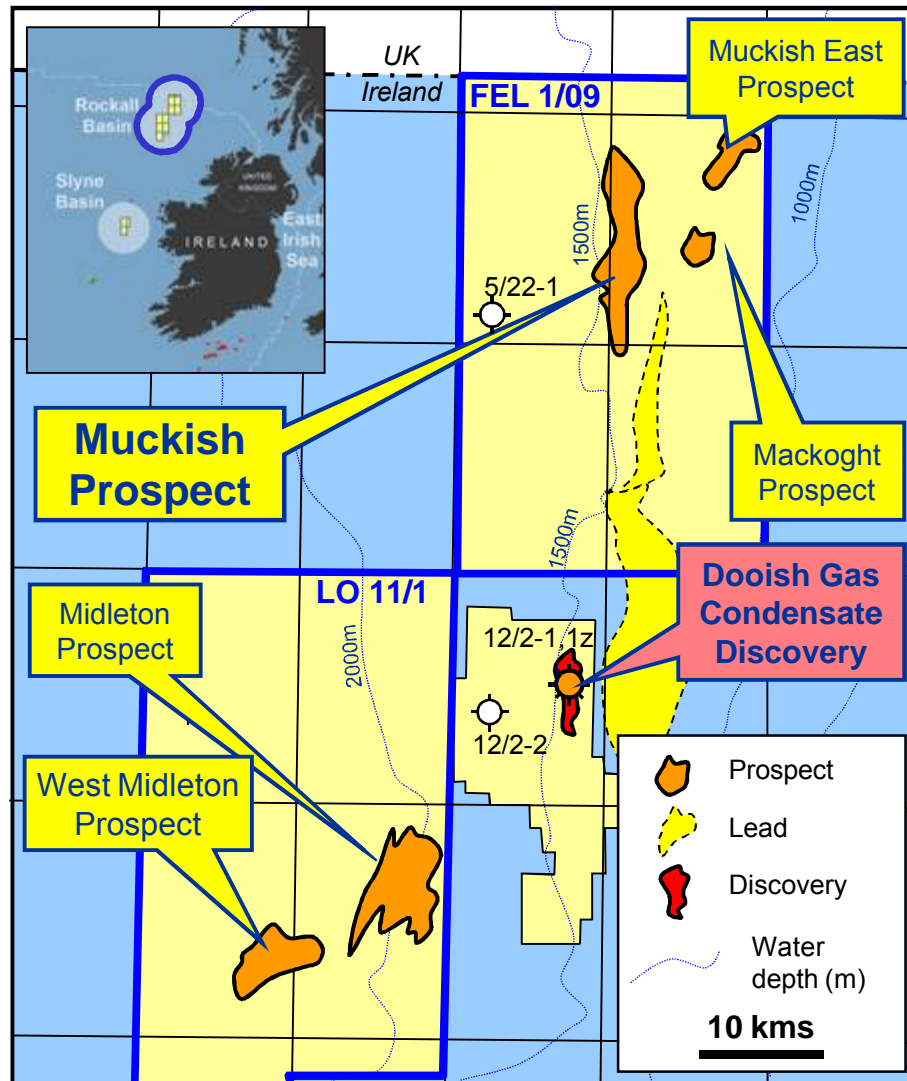
Upscaled Tank Properties	Units	Distr. Type	Mean	Std.Dev
GRV Gas (from XTRAP)	10 <sup>9</sup> m <sup>3</sup>	ExpCurve	0.456	0.15
GWC	m	ExpCurve	4133	3.1
Net/Gross Gas	%	ExpCurve	88	6.2
Porosity Gas	%	ExpCurve	13.77	1.13
Saturation Gas	%	ExpCurve	63.8	4.16
RF Gas	factor	ExpCurve	0.61	0.038
R F Condensates	factor	ExpCurve	0.26	0.019
% non-HC Gas	%	Spike	0	0
CGR	stm <sup>3</sup> /10 <sup>6</sup> stm <sup>3</sup>	Triangular.	725	118
FVF Gas (Bg)	rm <sup>3</sup> /stm <sup>3</sup>	Normal	0.00327	7e-5

Table. Static reservoir model parameters.

# IRISH ROCKALL BASIN

## Muckish Prospect Drilling Opportunity

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- Located 30 kms north along strike from Dooish Discovery
- Large tilted fault block, clearly defined on 3D seismic data
- 2013 Muckish exploration well to target P<sub>50</sub> recoverable 1285 bcf wet gas + 164 mmbbls condensate\*
- Water depth ~1500m
- Additional prospects with significant upside:
  - Muckish East, Mackoght, Middleton and West Middleton
- Seeking one or more companies to participate in drilling a Muckish exploration well

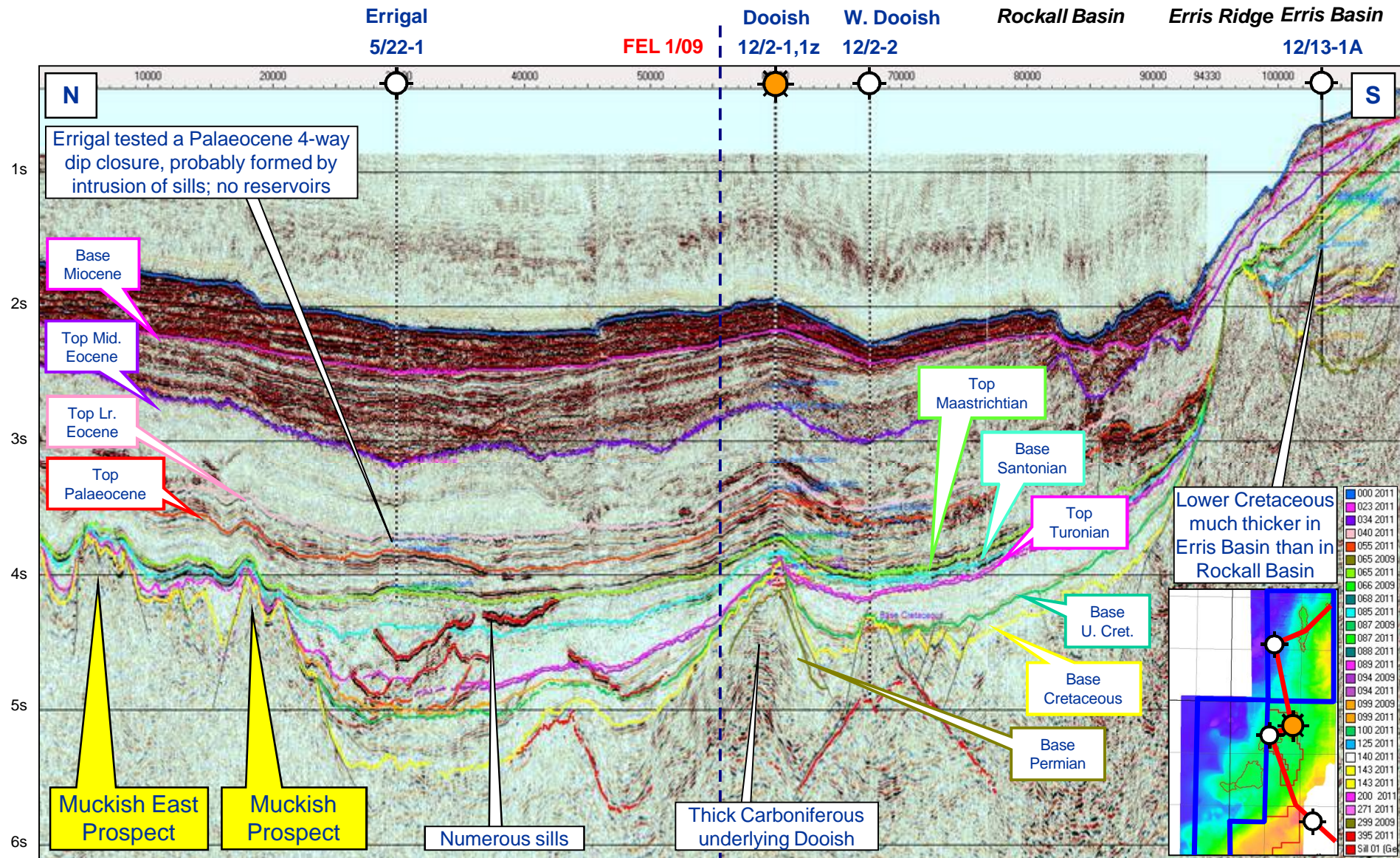
\* Based on Serica's Best Technical Case



# IRISH ROCKALL BASIN

## Seismic Tie Line: Dooish to Muckish

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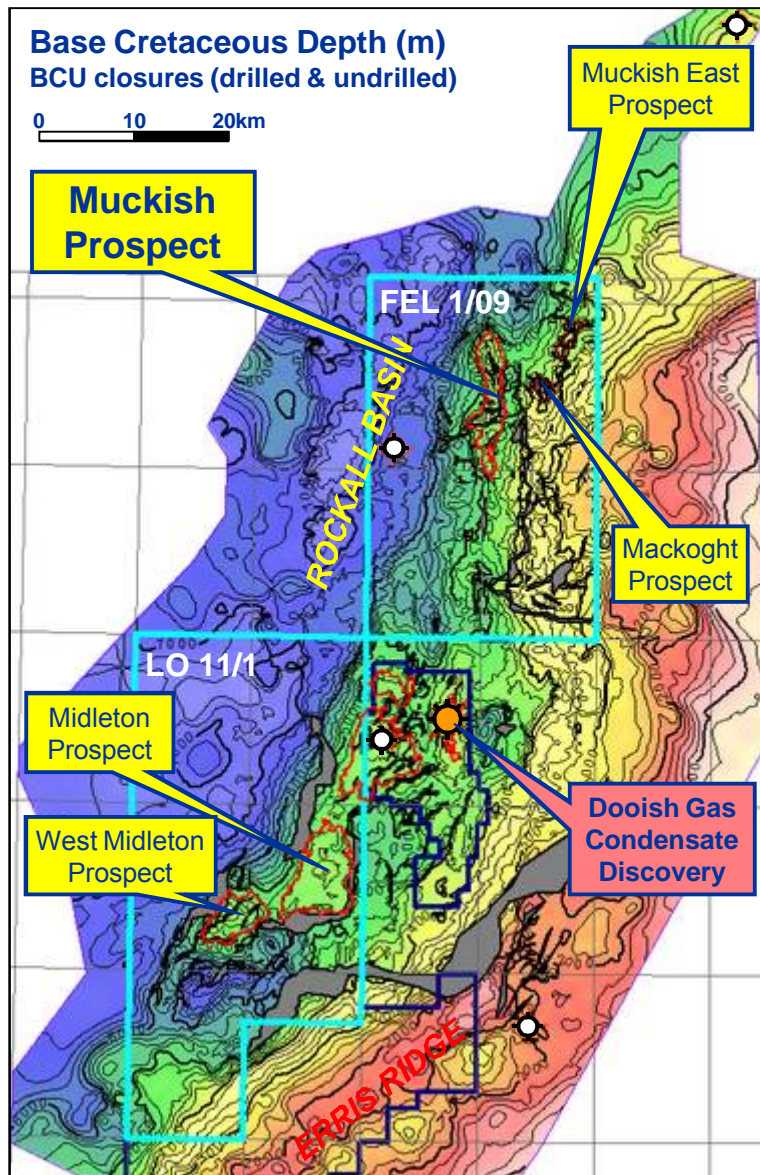




# IRISH ROCKALL BASIN

## The Muckish Prospect

**SERICA**ENERGY



- Large tilted fault block analogous to the Dooish Discovery
- Crest at 4000 mSS
- 31 km<sup>2</sup> areal closure and over 600 m of vertical closure

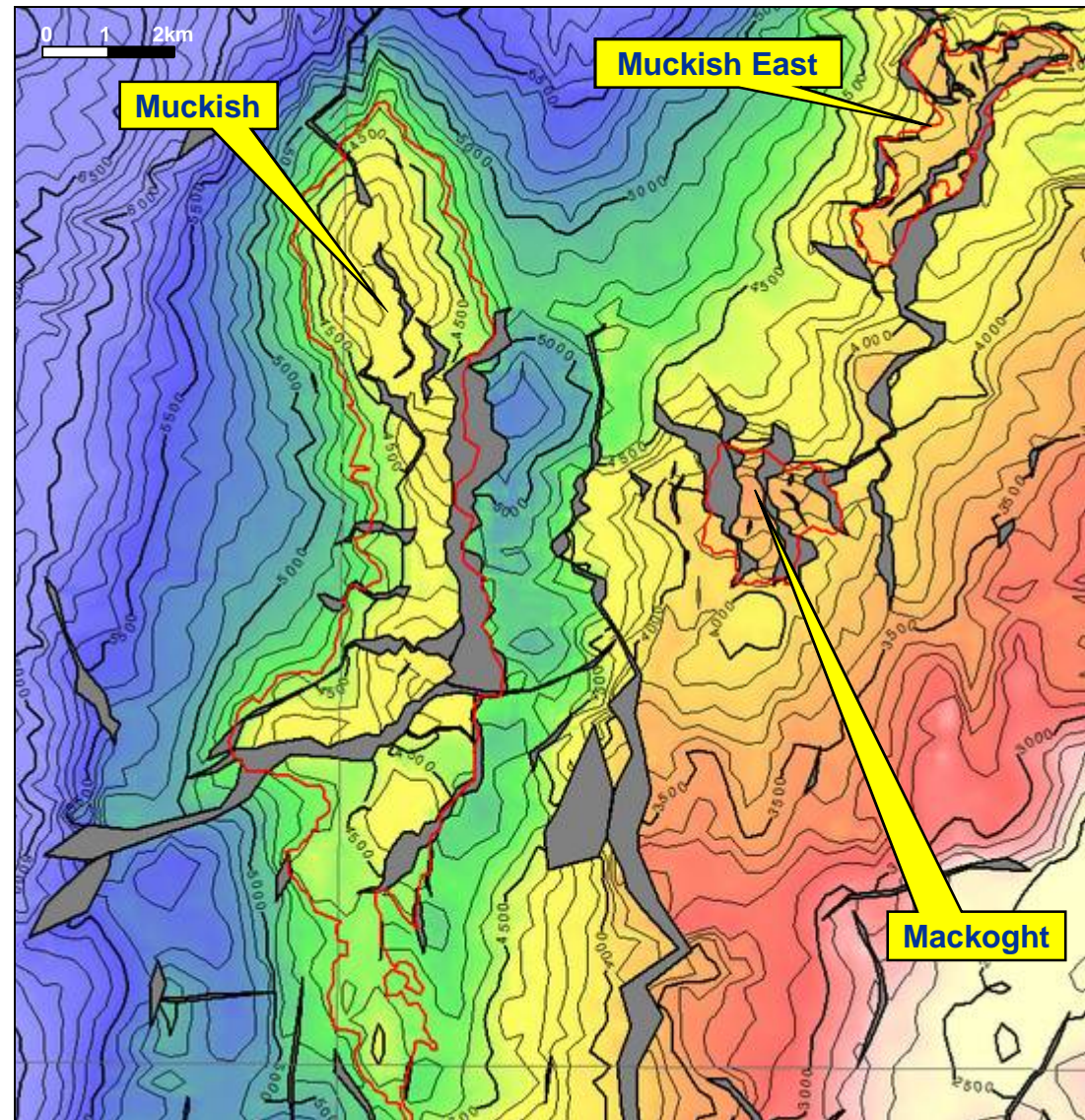
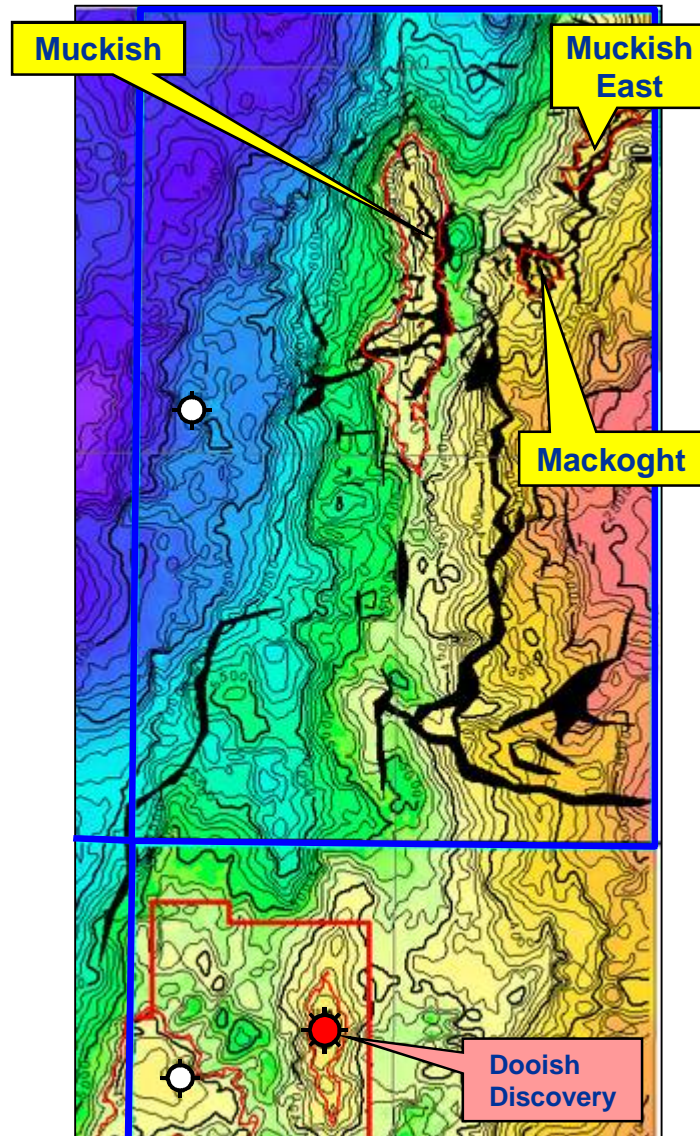
Muckish GIIP	P <sub>90</sub>	P <sub>50</sub>	P <sub>10</sub>	COS
	417	1973	5287	20%
Muckish Reserves	P <sub>90</sub>	P <sub>50</sub>	P <sub>10</sub>	COS
Gas bcf	270	1285	3442	20%
Condensate mmbbls	34	164	446	



# IRISH ROCKALL BASIN

## Muckish: Depth Map on Base Cretaceous

**SERICA**ENERGY

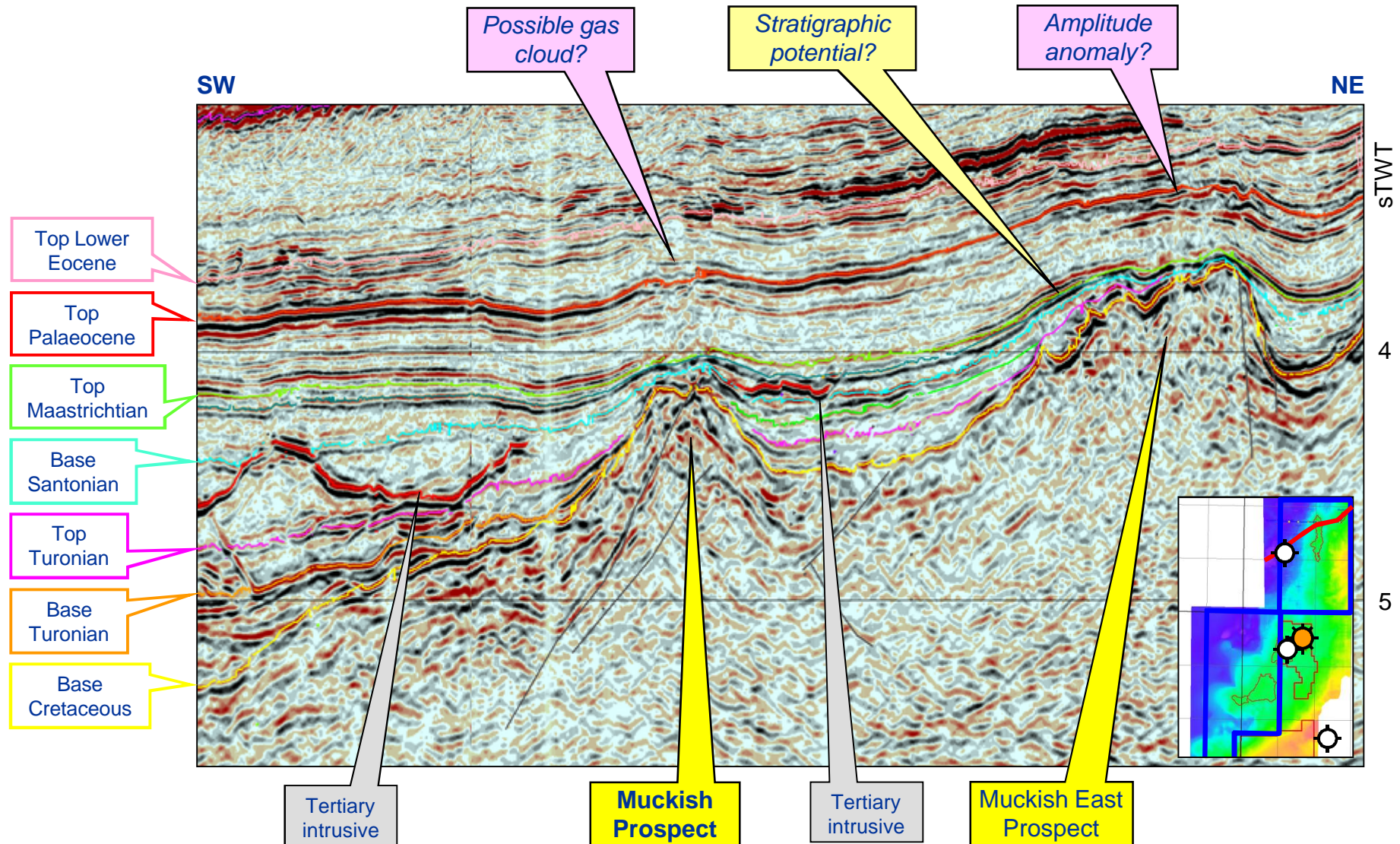




# IRISH ROCKALL BASIN

## Muckish Prospect SW-NE Seismic Line

**SERICA**ENERGY

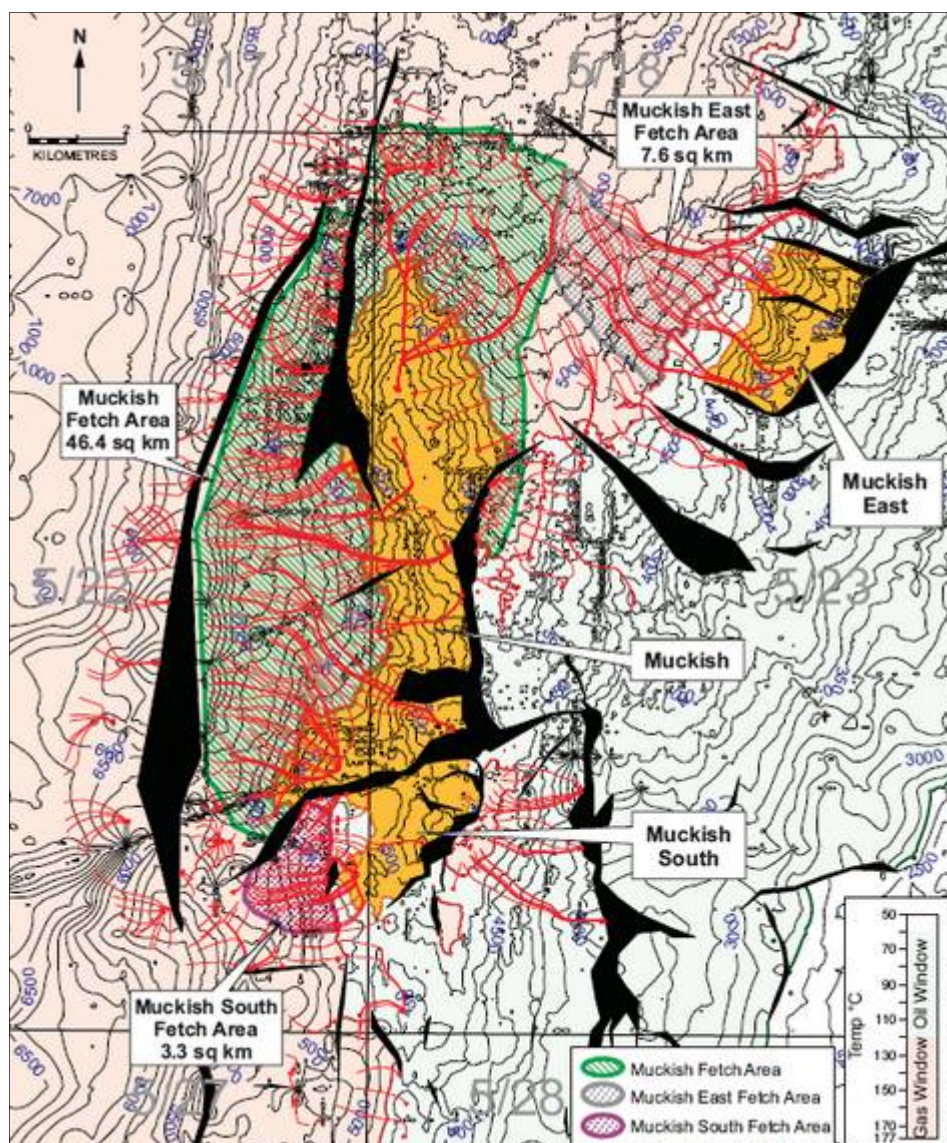




# IRISH ROCKALL BASIN

## Muckish Prospect Maturity Modelling

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- Muckish has access to potentially large mature kitchen to west and north
  - No migration shadows, with direct migration pathways into structure
- Rich, wet gas-condensate is the expected phase, but oil is possible
- Uncertainties in source rock age and regional heat flow models
  - Assumes a high geothermal gradient (at Dooish, 40 °C/km)
  - Maturity mapping is based on thickness of sediment down to Base Cretaceous
  - Older, more deeply buried source rocks will be more gas-prone

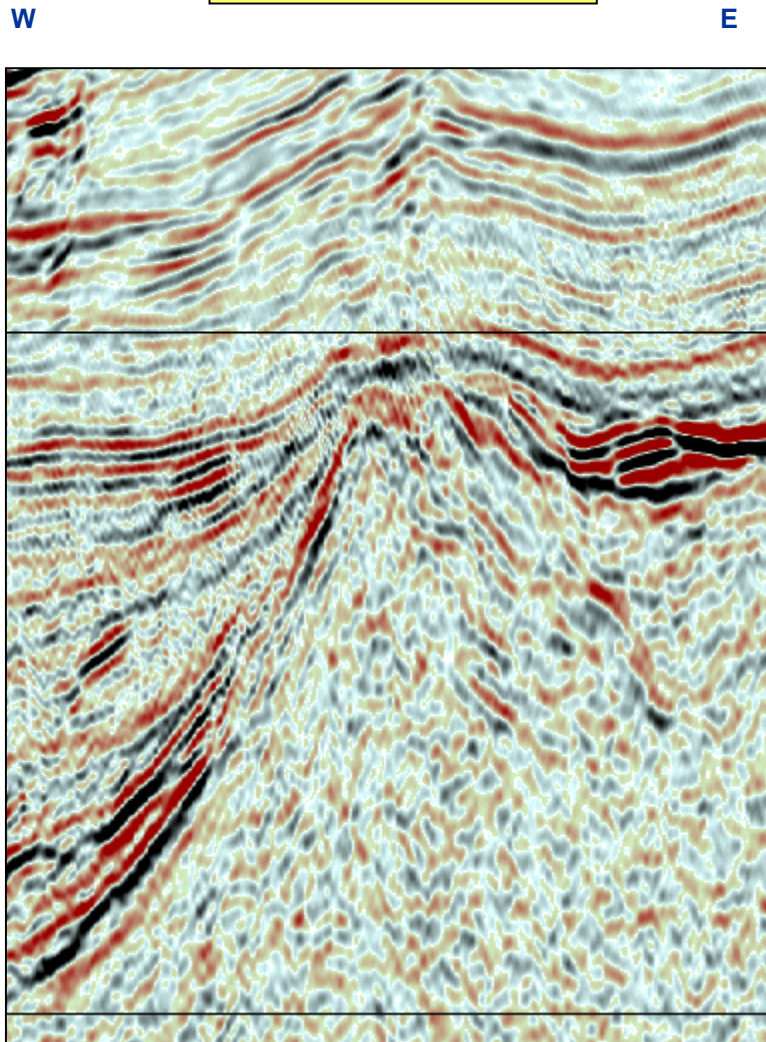


# IRISH ROCKALL BASIN

Muckish vs. Dooish, TGS 2D Long Offset Seismic Data

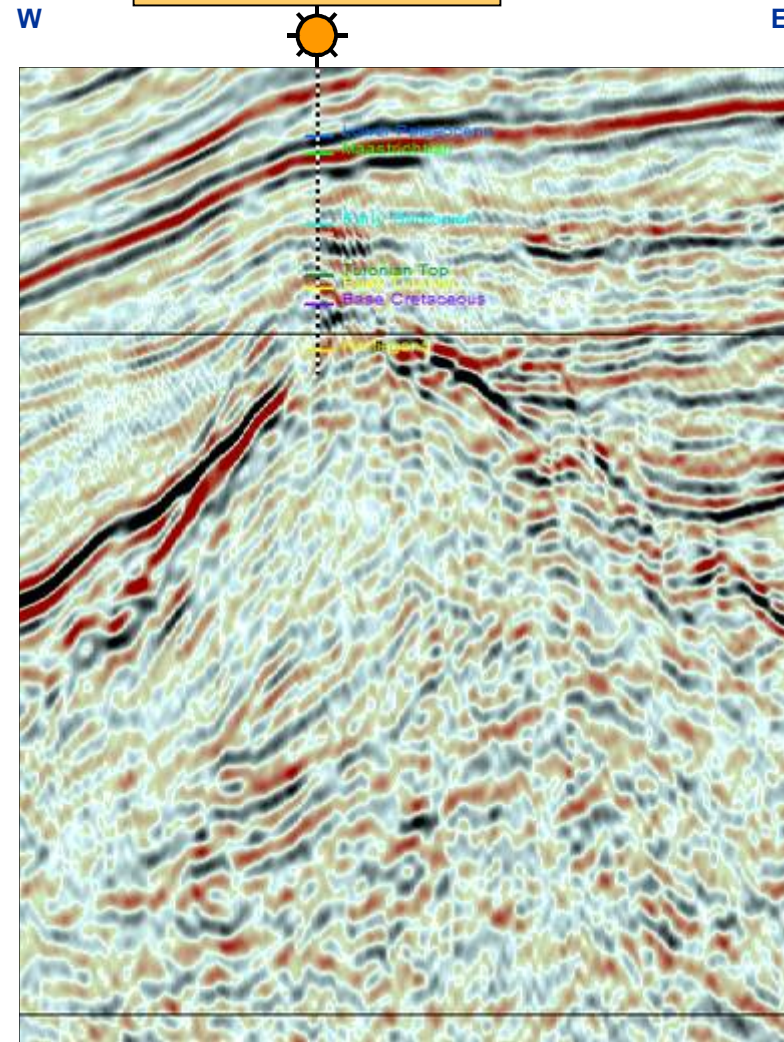
**SERICA**ENERGY

Muckish Prospect



ERM09-5238

Dooish Discovery








ERM09-5198



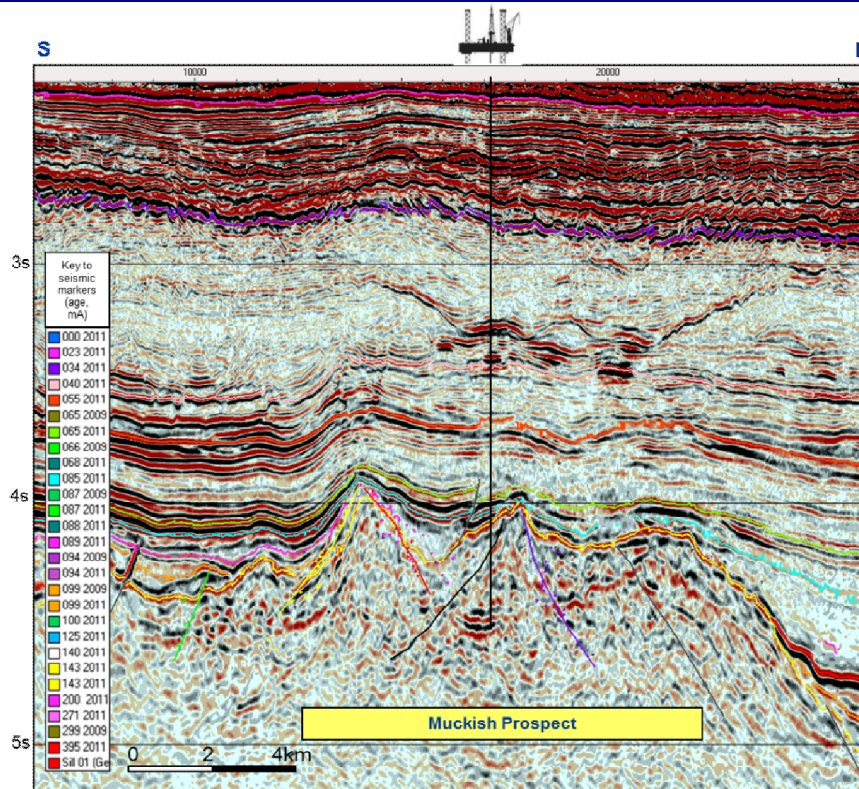
# IRISH ROCKALL BASIN

## Muckish Prospect Drilling Prognosis

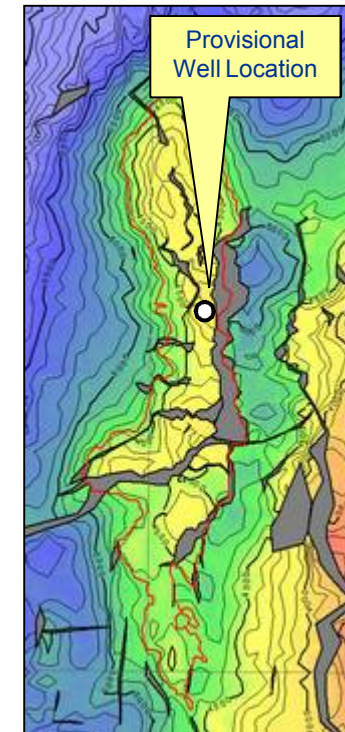
**SERICA**ENERGY

Stratigraphy		Lith Column	Comments
Tertiary	Upper Eocene-Oligocene-Miocene undifferentiated		Sea bed ~1456mSS Soft unconsolidated shales & siltstones with sandstone interbeds 3108mSS
	Lower Eocene		3385mSS
	Palaeocene		3940mSS
	Maastrichtian		4110mSS
Pre-Cretaceous	Jurassic-Permian-Carboniferous undifferentiated		

Prognosed Lithology Column



Illustrative North-South Seismic Strike Line



Depth Map

### Formation Tops:

1456mSS	1.938sTWT	Seabed
2451mSS	2.811sTWT	Miocene/Eocene Unconformity
3108mSS	3.387sTWT	Lower Eocene
3385mSS	3.685sTWT	Palaeocene Volcanics
3940mSS	3.970sTWT	Maastrichtian
4033mSS	4.024sTWT	Santonian Limestone
4110mSS	4.069sTWT	Base Cretaceous

### Provisional Location:

Inline 12132, Crossline 21050

X: 464449.5 m, Y: 6234412.6 m

Lat: 56° 15' 7.1796", Long: -9° 34' 25.420"

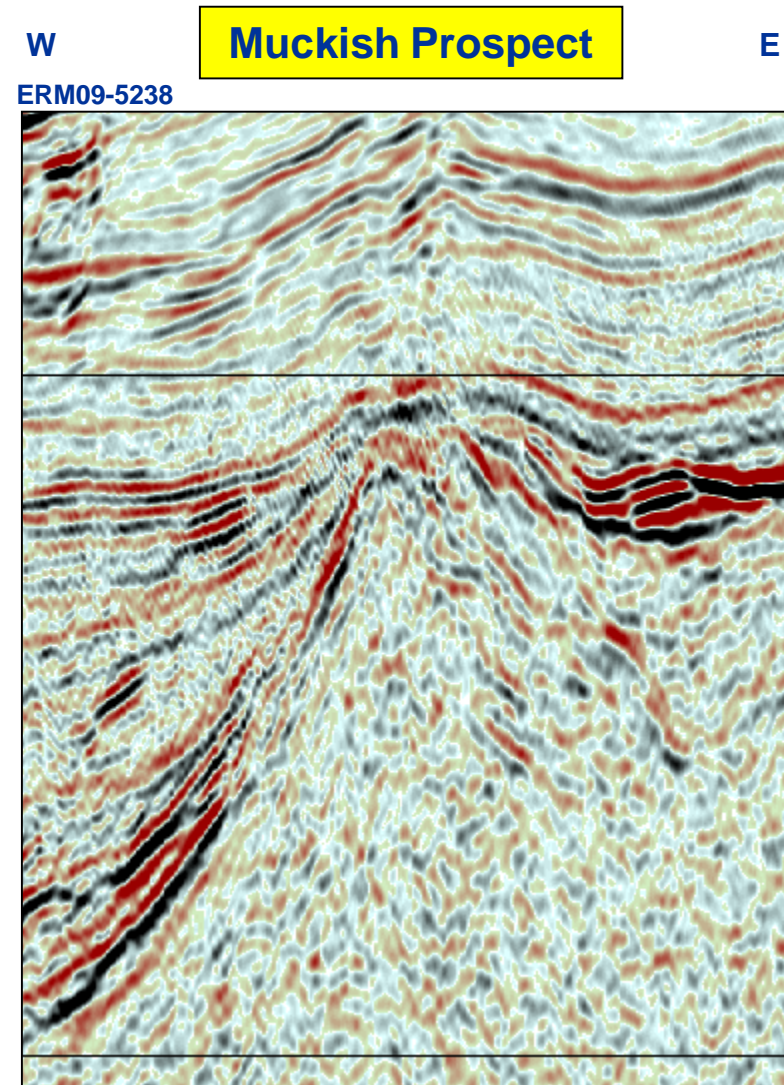
UTM Zone 29N

# IRISH ROCKALL BASIN

## Muckish Prospect Conclusions

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- The Dooish Discovery has established a proven hydrocarbon system, and is potentially economic
- Further large discoveries in close proximity would have a significantly improved chance of commerciality
- The Muckish Prospect is a tilted fault-block structure analogous to Dooish
- P<sub>50</sub> GIIP 1973 bcf and P<sub>50</sub> recoverable 1285 bcf wet gas + 164 mmbbls condensate\*
- Muckish East & Mackoght (FEL 1/09) and Midleton & West Midleton Prospects (LO 11/1) represent substantial upside
- *With significant size and modest risk, the Muckish Prospect could be the next big discovery in the Rockall Basin*



\* Based on Serica's Best Technical Case



# MUCKISH PROPSECT, ROCKALL BASIN FARM-OUT OPPORTUNITY

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*For further details,  
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