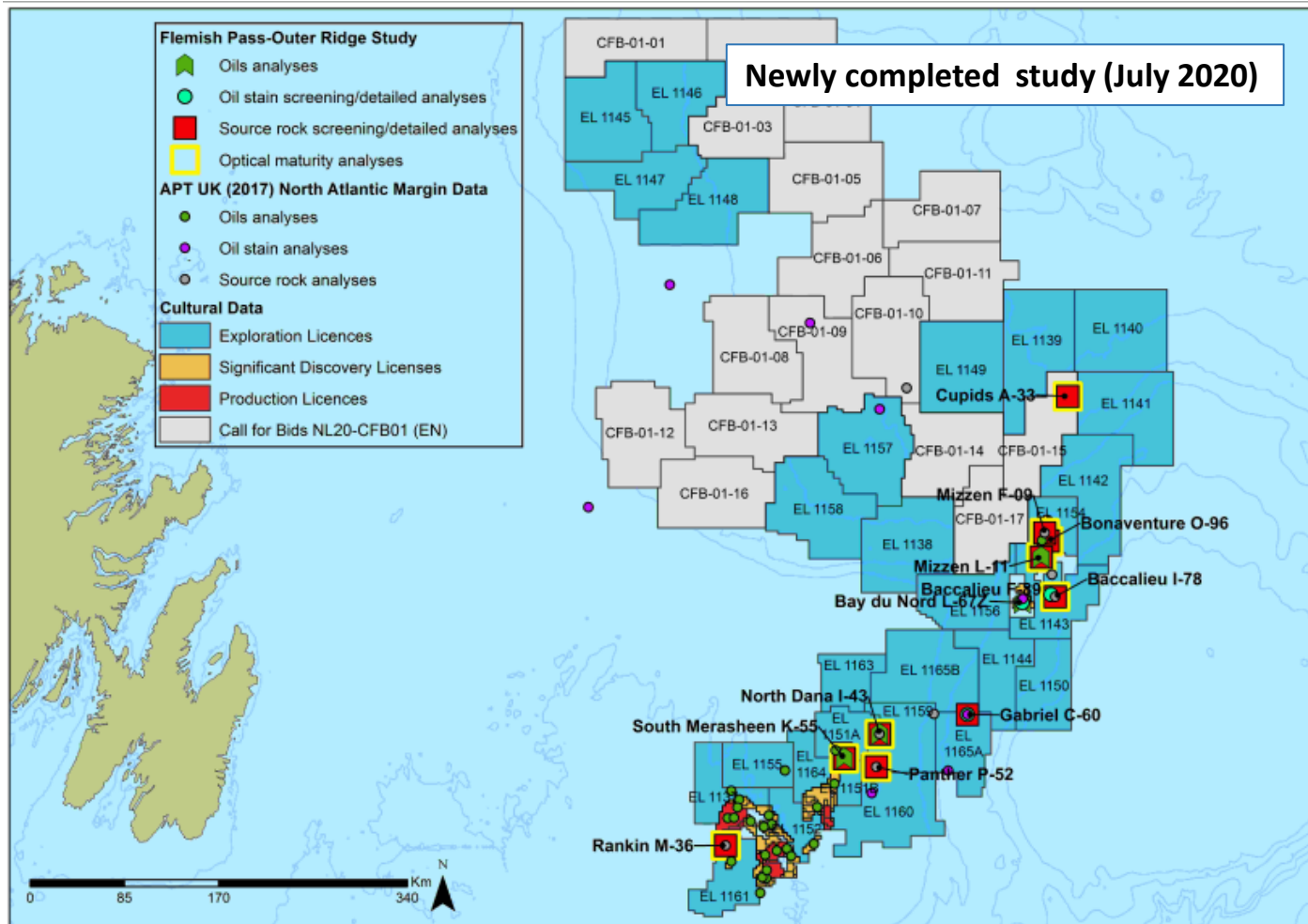


The Canadian Atlantic Updates: Flemish Pass & Outer Ridge

A characterisation of the extant petroleum systems of the Flemish Pass, Outer Ridge and Northern Jeanne d'Arc basins.



Building on the comprehensive analytical data generated by APT in the 2017 'North Atlantic Conjugate Margins Study', the flowed oils, stains and source rocks from recent and key wells have been characterised and the maturity assessed to provide better model inputs and calibration for petroleum systems analysis.

Highlights of the technical programme are;

- Oils, stains and source rock intervals analysed from 9 Flemish Pass wells.
- Source rocks, including possible Middle Jurassic, analysed from 4 Outer Ridge and Jeanne d'Arc basin wells plus 2 oil samples.
- Source rock intervals characterised by TOC and Rock-Eval.
- Petrophysical 'Source Rocks from logs' applied to 7 key wells.
- Maturity determined by vitrinite reflectance and spore colouration for 9 wells.
- Biomarker analyses of oils and selected source rock extracts to define oil-oil and oil-source correlations.

Full details of the analytical programme are shown overleaf...

Flemish Pass & Outer Ridge: analytical programme

These new and high quality, consistent data and interpretation are key to parameterise and calibrate models of the known and potential hydrocarbon charge systems for these relatively frontier basins.

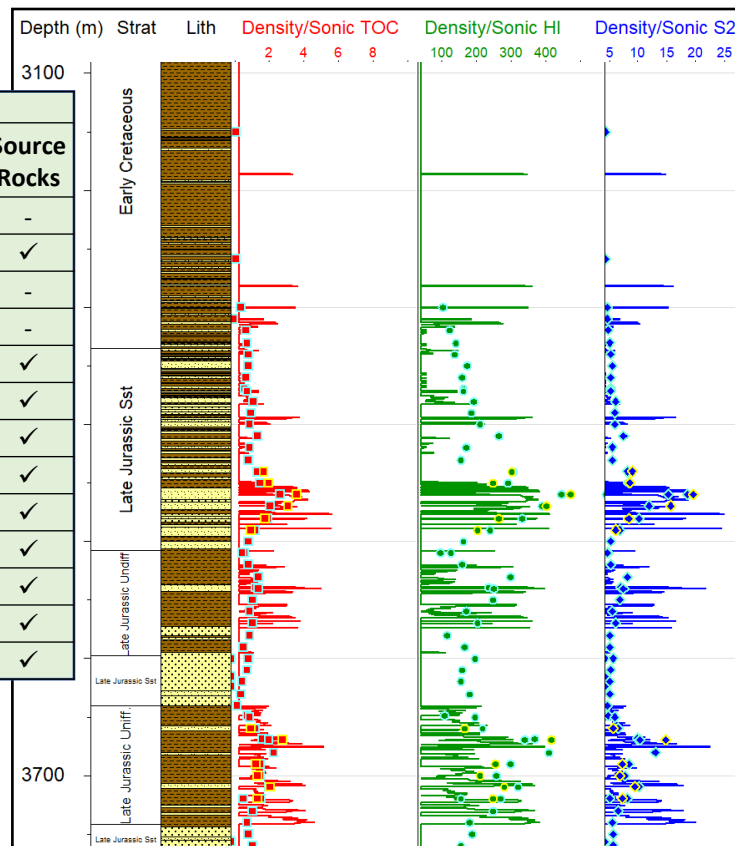
The study will help to optimise exploration strategies for the upcoming license areas.

Samples and data from newly released wells in the Flemish Pass and Outer Ridge Complex have been analysed to;

- ✓ Better understand oil characterisation & comparison with oils from the conjugate margin
- ✓ Provide TOC, Rock-Eval screening and maturity - vitrinite reflectivity & spore colour
- ✓ Create new detailed source rock characterisations
- ✓ Assess and validate source quality and thickness using in-house 'SR from Logs' techniques
- ✓ Update oil and oil show to source rock correlation

Table of study wells

Well	Analytical Programme			
	Oils	Stains	Maturity	Source Rocks
Baccalieu F-89	-	✓	-	-
Baccalieu I-78	-	-	✓	✓
Bay de Verde F-67Z	-	✓	-	-
Bay du Nord L-67Z	✓	-	-	-
Bonaventure O-96	-	-	✓	✓
Cupids A-33	-	-	✓	✓
Gabriel C-60	-	✓	-	✓
Mizzen F-09	-	-	✓	✓
Mizzen L-11	✓	-	✓	✓
North Dana I-43	✓	-	✓	✓
Panther P-52	-	-	✓	✓
Rankin M-36	-	-	✓	✓
South Merasheen K-55	✓	-	✓	✓



Faint orange to yellow fluorescent Amorphous Organic Material. Miospores fluoresce faint orange

Interesting new observations about the potential for charge from sources other than the Tithonian with respect to source facies and oil typing.

Inferences drawn could have significant impact on the hydrocarbon potential for the Outer Ridge area.

In the Flemish Pass and Orphan Basins, the project has confirmed and characterised the source quality of the Tithonian. Given optimum thermal conditions, this could indicate significant potential for exploration.

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