

25 February 2022

ASX Market Announcements
Australian Stock Exchange Limited
20 Bridge Street
Sydney NSW 2000

Amplitude Versus Offset (AVO) Analysis of Kipper and Golden Beach Gas Sands indicates significant additional gas play across the Vic/P47 Permit & Judith Gas Field

Key Points

- **Amplitude Versus Offset (AVO) analysis with new, fully processed PSDM 3D Seismic Data carried out on the Kipper and Golden Beach gas sands located above the sequence of Judith gas sands that currently comprise the Judith Gas Field Prospective Resource.**
- **Results shows very strong (AVO) response in 4 x gas sands as below:**
 - **Kipper gas sand**
 - **Upper, Intra and Lower Golden Beach gas sands**
- **AVO results correlated against reservoir gas in the nearby producing Kipper-1 well operated by Exxon Mobil where the Kipper and Golden Beach sands are the principal reservoirs**
- **Initial calculations of rock volumes indicate the four gas sand intervals have the potential to contain significant Gas in Place and add to the existing P50 Unrisked Prospective Gas Resource of 1.226 Tcf within the Vic/P47 Permit area.**

Emperor Energy is now progressing new Gas in Place calculations for the Kipper and Golden Beach sands prior to preparing an upgrade of Prospective Resources within Vic/P47.

1. AVO Analysis of Golden Beach and Kipper Gas Sands

Emperor Energy is pleased to advise of the very strong results achieved from recent Amplitude Versus Offset (AVO) analysis of the Golden Beach and Kipper Gas Sand formations using the final, fully processed 3D PSDM seismic data received from international seismic acquisition company CGG in November 2021.

The fully processed seismic data allows for a significantly better seismic evaluation of the section above the Judith Gas Sands and also provides the best clarity and definition of AVO response yet seen across the Judith structure and gas field.



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The AVO analysis was carried out across four geological sequences as follows:

1. Kipper Sandstone
2. Upper Golden Beach Sequence
3. Lower Golden Beach Sequence
4. Basal Golden Beach Sandstone

The geological sequences and AVO attributes were correlated and tied back to Reservoir gas in the Kipper-1 well representing the currently producing Kipper Gas Field operated by Exxon Mobil.

AVO response is used as a Direct Hydrocarbon Indicator (DHI). Three types of AVO attribute analysis were carried out as follows:

1. AVO Gas Indicator
2. AVO Class III (Gradient vs Intercept cross-plot)
3. Shuey Fluid Factor

High AVO values indicate the presence of reservoir gas in the Kipper Sandstone and on three additional sequences of the underlying Golden Beach Sub-group.

The extent of the strong AVO response is interpreted to indicate potential gas saturation in these sands extending over more than 500m of vertical relief across the Judith structure terminated by the Rosedale Fault to the north.

Kipper-1 – Judith-1 – Judith-2 (proposed) Seismic Section highlighting Kipper & Golden Beach Sub Group

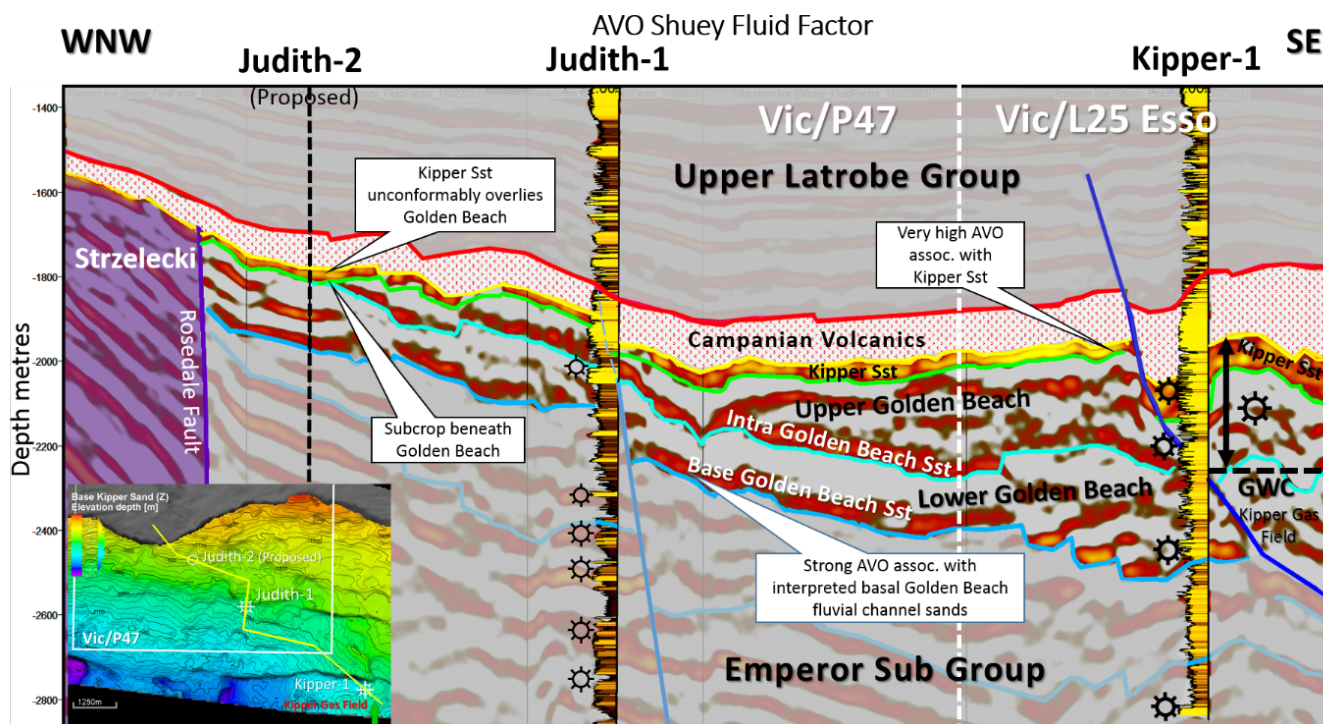


Figure 1: Detailed seismic section showing AVO Shuey Fluid Factor response (brightening from brown to orange) in the Kipper gas sand along with the Upper, Intra and Lower Golden Beach sands.



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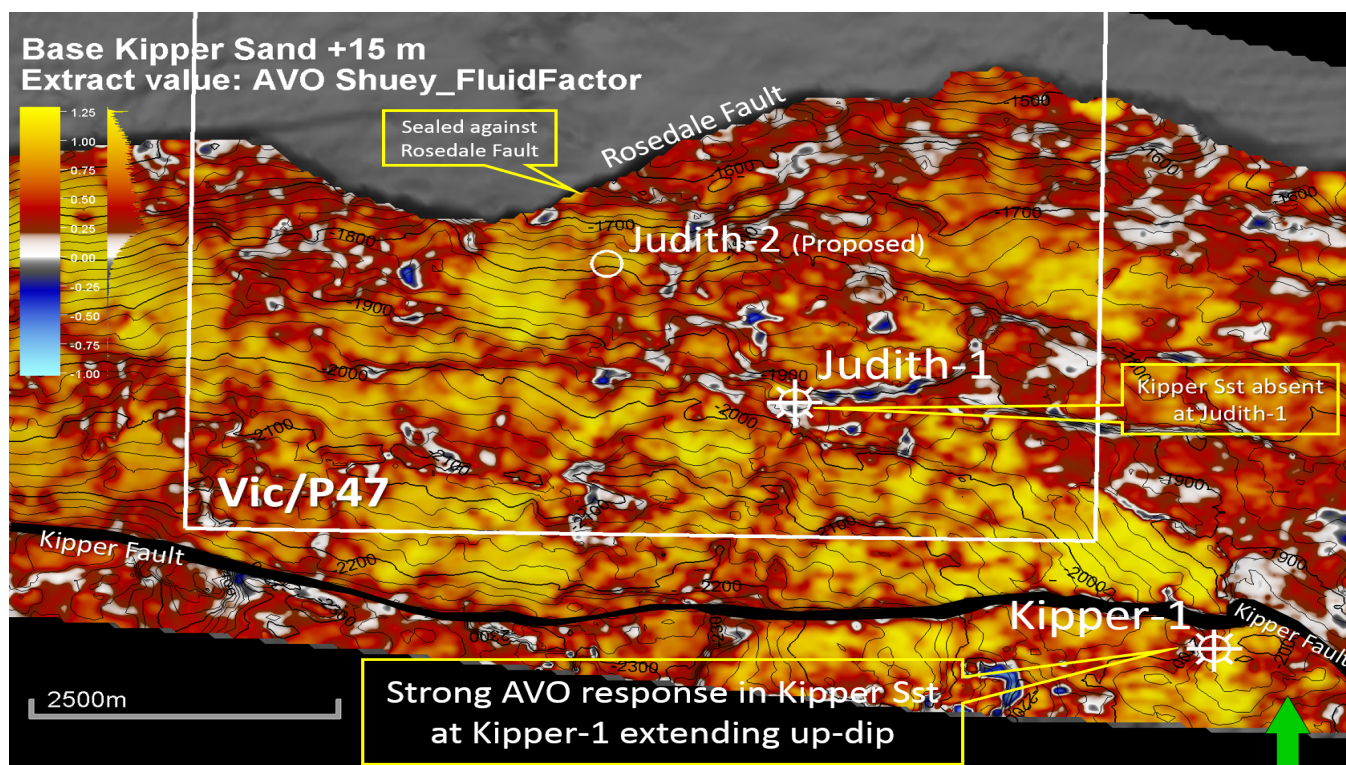


Figure 2: AVO Gas Indicator in the Kipper Gas Sand. Areas brightening to orange show a strong AVO gas effect. (Emperor Energy Vic/P47 Permit Boundary shown as white line)

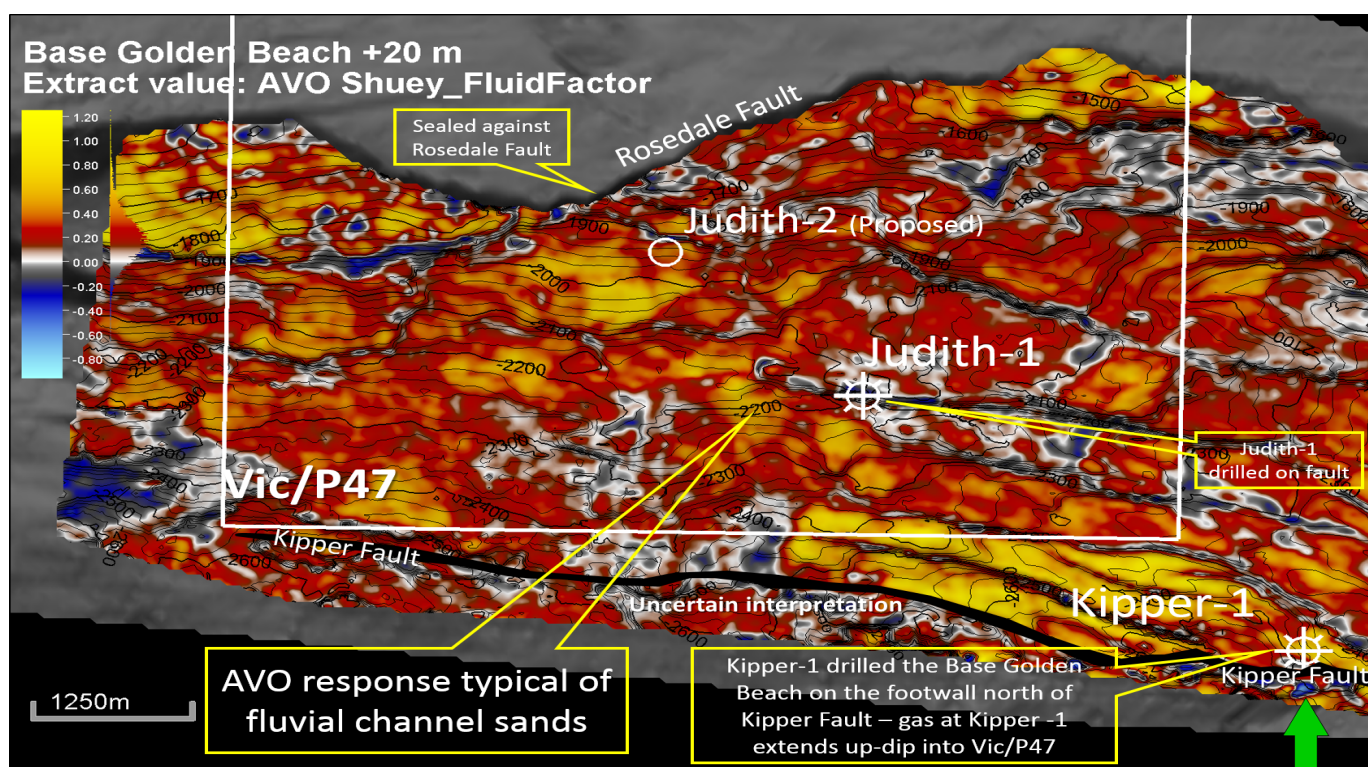


Figure 3: AVO Gas Indicator for the Base Golden Beach Formation. Areas brightening to orange show a strong AVO gas indicator. (Emperor Energy VicP/47 Permit Boundary shown as white line)



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2. Rock Volume Calculations leading to Prospective Resource Upgrade

The fully processed seismic PSDM 3D Seismic Data has allowed a significantly better seismic evaluation of the Kipper and Golden Beach gas sands above the Judith Gas Sands. This has not been previously possible on the older vintage seismic.

The very strong AVO response within the Kipper and Golden Beach gas sands and correlation of the AVO response to the Kipper-1 well indicates that the sands are highly prospective for gas and a possible extension of the Kipper gas field into Vic/P47.

The top seal of this play is interpreted as the overlying Campanian Volcanics with the Rosedale Fault providing the up-dip lateral seal.

Initial calculations of rock volumes indicate the four gas sand intervals have the potential to contain significant Gas in Place. Emperor Energy is now progressing Gas in Place calculations and preparing an upgrade of Prospective Resources within the Vic/P47 Permit.

3. Judith Gas Project Objective

Emperor Energy's key focus is the development of the Judith Gas Project located 40km offshore from the Orbost Gas Plant in the Gippsland Basin, Victoria (Figure 4). Based on the existing P50 Unrisked Prospective Gas Resource of 1.226 Tcf within the Vic/P47 Permit area, the project objective is to establish a sales gas capacity of 80TJ per day equivalent to 28PJ per year over a minimum production period of 15 years with the value of gas and condensate sales exceeding \$A300M per year based on AEMO mid-range pricing forecasts.

Figure 5 shows a 3-dimensional structural image of the Greater Judith Structure defined by interpretation and mapping of the top of the Judith Gas Sand 1 using the latest PSDM seismic data.

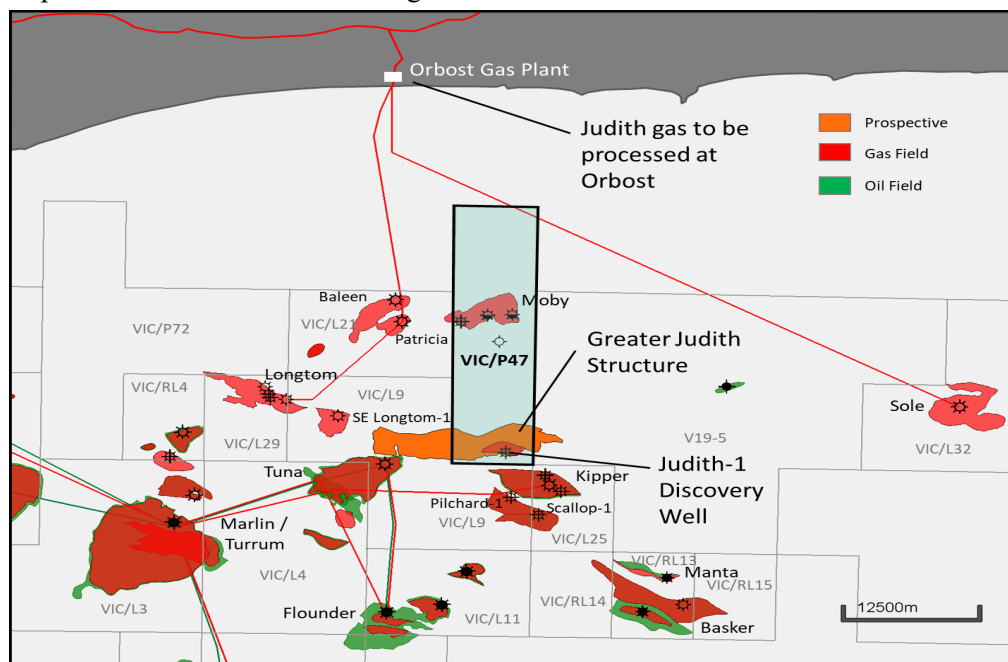


Figure 4: Judith Gas Field Location in Gippsland Basin and proximity to Orbost Gas Plant



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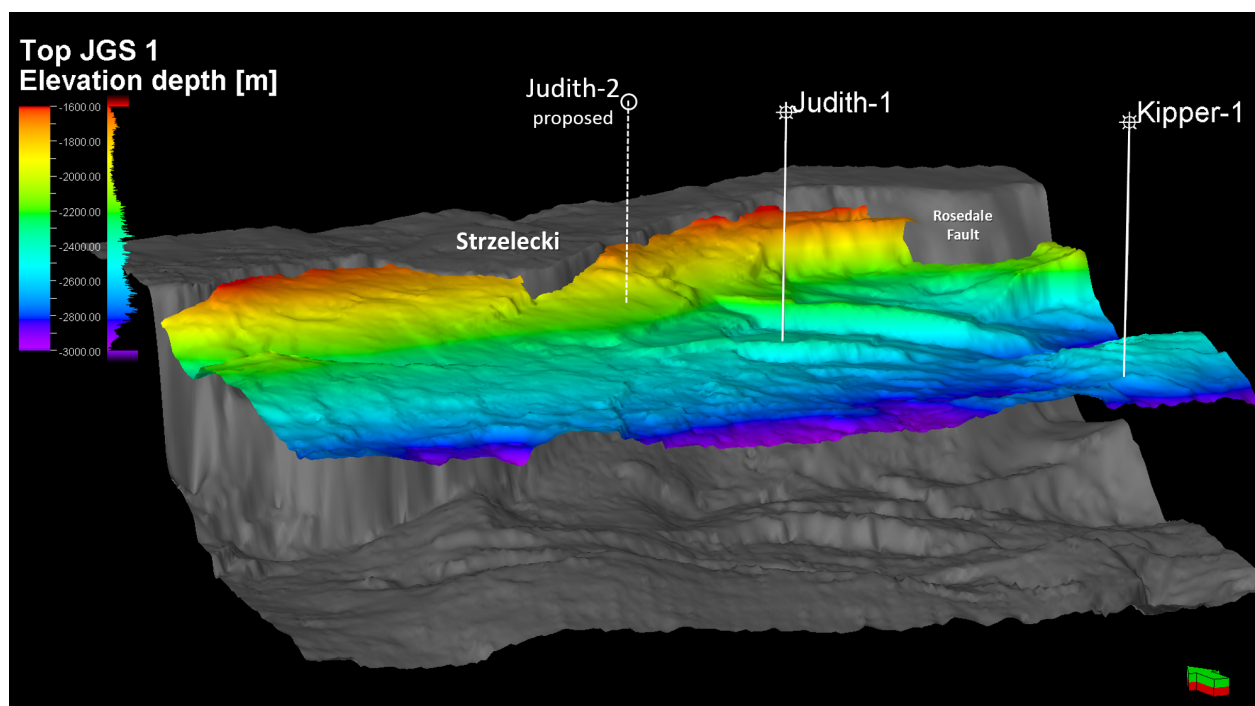


Figure 5: Structural Map of Judith Gas Field and structure showing top of the Judith Gas Sand 1

We thank shareholders and our team for their ongoing support and welcome any questions they may have.

This announcement has been authorised for release to the market by the Board of Directors of Emperor Energy Limited

Yours faithfully

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