



EMPEROR ENERGY
LIMITED

31st January 2022

ASX Market Announcements
ASX Limited
20 Bridge Street
Sydney NSW 2000

December 2021 Quarterly Activities Report

Key Points

- **Emperor Energy maintains focus on achieving first gas sales from Judith Gas Field in 2027**
- **Conversations continue with potential Exploration Partners to fund Judith-2 Appraisal Well**
- **Emperor Energy is ready to commence Judith-2 Well permitting and approval process**
- **AEMO forecasts Victorian gas pricing at \$10/GJ (in 2020 AUD\$ terms) by 2028**
- **Projected production rates see annual revenue from the Judith Gas Field exceeding \$A300M at \$10/GJ pricing**
- **AVO analysis with new, fully processed PSDM 3D Seismic Data has led to significantly enhanced seismic definition and Amplitude Versus Offset (AVO) response**
- **AVO results correlated against known gas sands in the Judith-1 and Kipper-1 wells provide an increased level of confidence in the use of AVO as a Direct Hydrocarbon Indicator (DHI) at Judith**
- **AVO DHI's extend across the Judith structure indicating multiple, stacked gas sands**
- **Extension of strong DHI's in Judith and underlying Longtom sands across the Judith South Block is encouraging and confirms the presence of substantial resource potential in this block**
- **Seismic data and AVO indicates potential extension of Kipper and Golden Beach sands across the Judith structure to the proposed Judith-2 wellsite. The Kipper and Golden Beach sands are the principal reservoirs at the Kipper Gas Field)**
- **Recently acquired 3D Seismic data and AVO analysis further de-risks the Judith-2 target**
- **Judith-2 considered the most advanced and best prepared drilling target in the Offshore Gippsland Basin**
- **Vic/P47 Permit in good standing with Work Program progress on schedule**



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1. Judith Gas Project Objectives

In a market update on 1st December 2021, Emperor Energy reiterated that its key focus is the development of the Judith Gas Project located 40km offshore from the Orbest Gas Plant in the Gippsland Basin, Victoria. 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.

The project requires drilling of a successful Judith-2 appraisal well in early 2023 to prove Gas Reserves and subsequently provide economic justification for gas field and processing plant development leading to targeted commercial production of sales gas in 2027.

Emperor Energy has systematically analysed all available data from the Judith 1 Well (drilled in 1989) to define a very large Prospective Resource and smaller Contingent Resource. AVO Analysis of recently acquired 3D Seismic data shows direct hydrocarbon indicators extending throughout the entire Judith Structure adding further confidence to the resource scale.

A project pre-feasibility study completed by gas pipeline company APA during 2020 provides a clear understanding of the infrastructure path and cost required to achieve commercial production.

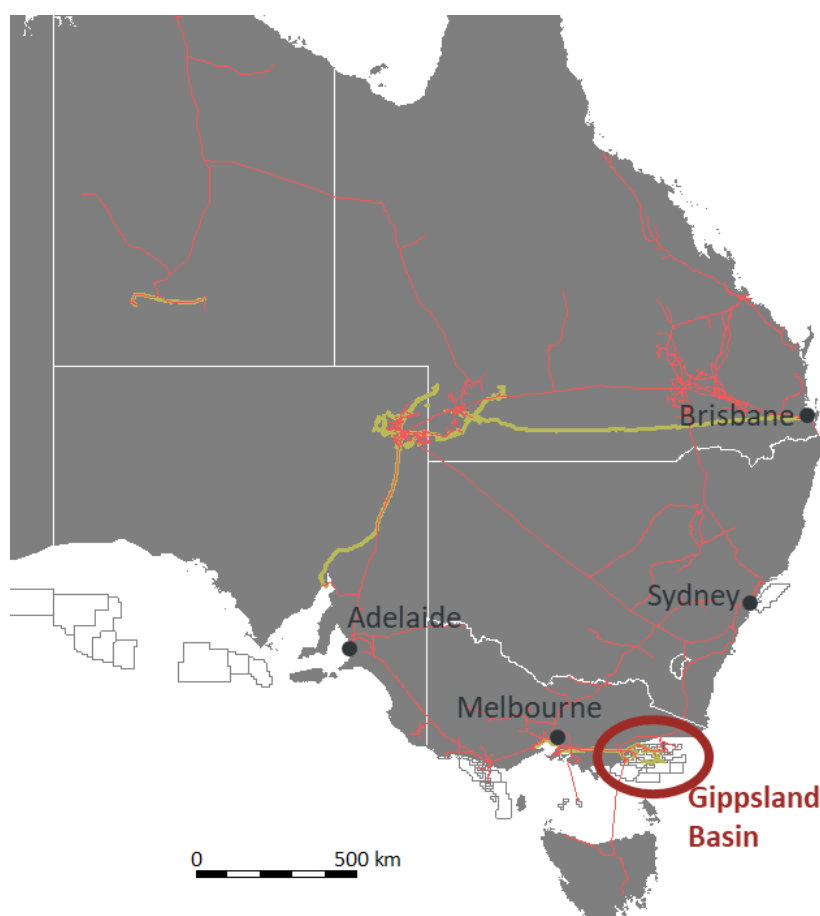


Figure 1: Gippsland Basin Location



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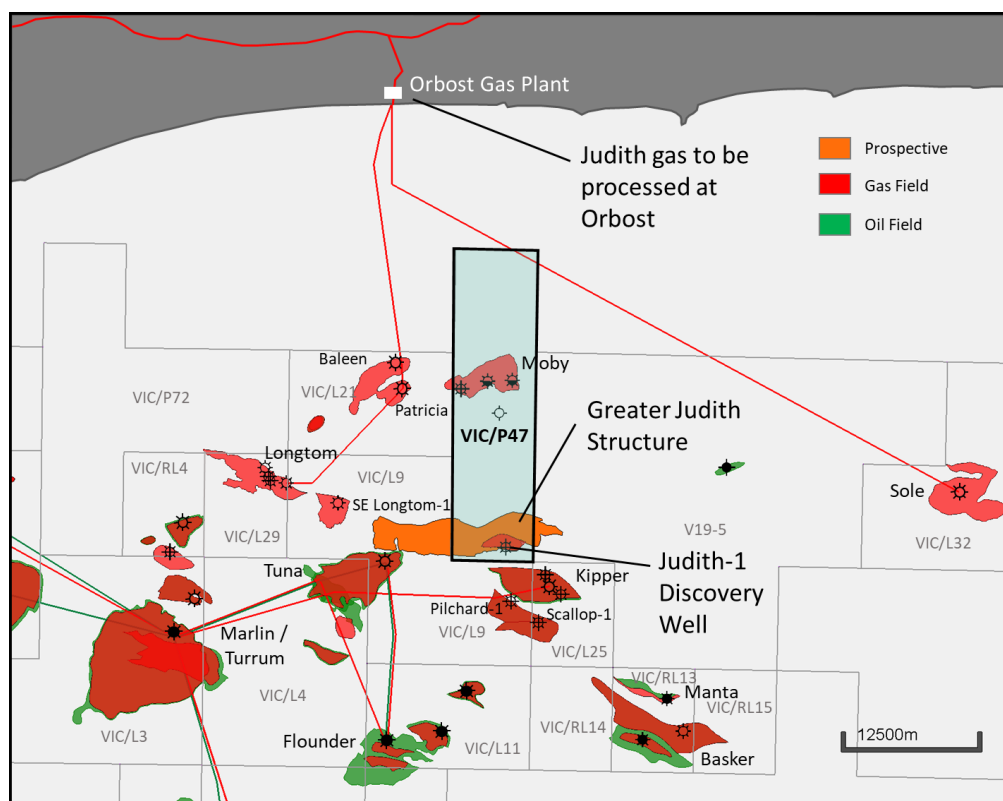


Figure 2: Judith Gas Field Location in Gippsland Basin and proximity to Orbost Gas Plant

2. Progress on Securing an Exploration Partner

Fundamental to the development of the project is the securing of an exploration partner to fund the appraisal well. Emperor Energy has been actively working to secure a partner. The in-depth discussions and negotiations held with potential partners have provided Emperor Energy with a solid understanding of the funding arrangements likely to be reached with potential partners.

The recently acquired 3D seismic data across the Judith Gas Field has significantly reduced exploration risk and has re-rated the Judith-2 Well from exploration to appraisal well status in the Judith Gas Sands that have been previously penetrated by the Judith-1 Well.

The underlying Longtom Gas Sands that have previously been in production at the nearby Longtom Gas Field remain as an upside exploration target in the Judith Gas Field.

During November 2021, Emperor Energy received the final and fully reprocessed version of the new seismic data. This has now been incorporated into the project marketing process and is attracting additional interest as discussions with potential Farm-In Partners continue.

3. Preparations underway to be Drill Ready at Judith

During November, Emperor Energy also announced it is preparing to engage well management consultants AGR to commence the application process to secure necessary approvals to drill the Judith-2 Well from the relevant



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government authorities. AGR has previously carried out initial well design studies for Emperor Energy in 2020 and has now scoped out the approval process in detail.

This approval process is expected to commence in early 2022 and be completed by year end.

Following peer review from exploration experts with significant Gippsland Basin experience, Emperor Energy is now of the opinion that the Judith-2 Well is the best advanced and most prepared gas target in the offshore Gippsland Basin complete with a clearly defined infrastructure route to the lucrative Australian East Coast Gas Market.

The 100% Emperor Energy owned Vic/P47 Exploration Permit containing the Judith structure is in very good standing with the National Offshore Petroleum Titles Authority (NOPTA) with more than adequate permit term remaining to complete the Judith-2 Well.

4. Forward Gas Pricing

During November 2021 Emperor Energy provided information from the Australian Energy Market Operator (AEMO) on forward gas pricing estimates for the South-East Australian gas market.

This information was extracted from the AEMO annual Gas Statement of Opportunities (GSOO). The two key points relating to gas supply taken from the 2021 GSOO are:

- A scarcity of southern gas supply risks appears ahead of winter 2023 due to more rapid decline in producers' forecasts of maximum daily production from legacy southern fields supplying to Longford, Victoria. *Source: 2021 AEMO Gas Statement of Opportunity*
- Sufficient gas supply will be maintained provided first gas from the proposed Port Kembla Gas Terminal (PKGT) is delivered ahead of winter 2023. *Source: 2021 AEMO Gas Statement of Opportunity*

The reality of this scenario is that the producing Exxon Mobil fields in the Offshore Gippsland Basin are depleting faster than planned and the South-Eastern Australian gas market will become reliant on imported Liquefied Natural Gas (LNG) being delivered to the PKGT by winter 2023 to avoid an acute shortfall of gas supply.

This also implies that gas prices in the South-Eastern Australian gas market will then be inextricably linked to and therefore determined by LNG import prices in a global commodity market.

The projected Melbourne industrial pricing is shown in the graph below (Figure 3). The Central Case of this pricing indicates gas prices to reach \$10/GJ (in 2020 AUD\$ terms) by 2028.

The Step Change Case which accounts for incorporating stronger action on climate change sees this price at \$9.50/GJ (in 2020 AUD\$ terms) by 2028.

At this pricing, the projected sales gas volumes from the Judith Gas Project in conjunction with associated condensate (liquids) would see the annual revenue from the Judith Gas Field project exceeding \$A300M per year. *Note: Revenue based on gas sales at AUD\$10/GJ from well production rates of 80mmscf/day as projected in dynamic modelling completed by Emperor Energy in 2020 and then included in Judith Gas Field Infrastructure Pre-Feasibility Study 2021.*

Internal economic analysis of the Judith Gas project carried out by Emperor Energy's consultants using costings from the infrastructure pre-feasibility study carried out by APA, in conjunction with estimated field development capital



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costs and overall operating costs, sees these pricing scenarios both providing very attractive project Internal Rates of Return.

Figure 7 Melbourne Large Industrial Non-Oil Indexed Prices Scenario Comparison (\$A2020/GJ)

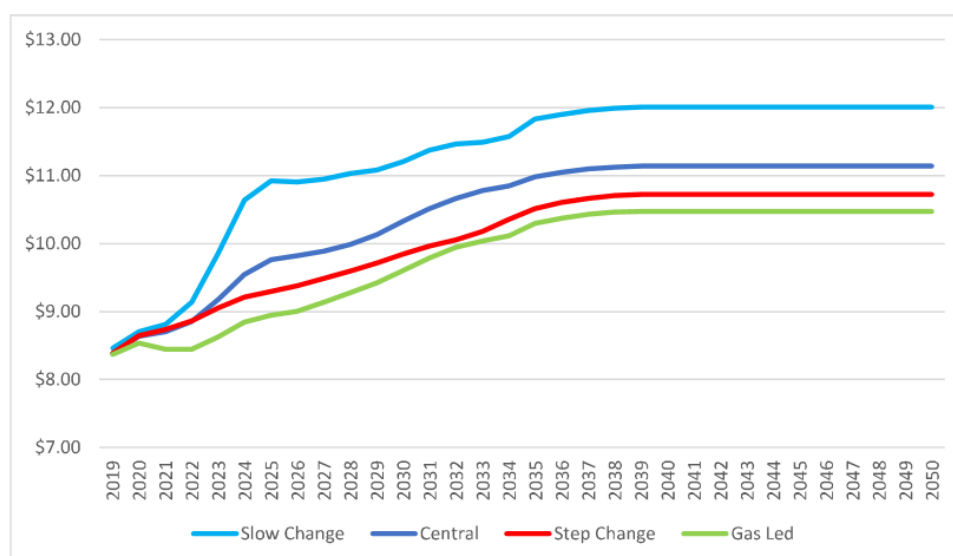


Figure 3: Melbourne Large Industrial Non-Oil Indexed Prices Scenario Comparison (\$A2020/GJ)

Source: 2021 AEMO Gas Statement of Opportunity

5. AVO Analysis of Fully Processed Seismic Data

During December and again in January Emperor Energy advised of the very strong results achieved from recent Amplitude Versus Offset (AVO) analysis using the final, fully processed 3D PSDM seismic data received from international seismic acquisition company CGG in November 2021. This fully processed seismic data has provided the best clarity and definition of AVO response, used as a Direct Hydrocarbon Indicator (DHI), yet seen across the Judith structure and gas field.

AVO analysis compares the seismic amplitude response recorded from geophones located close to seismic signal source (Near gathers) with amplitude data from other geophones located at a greater distance away (Far gathers). The AVO computation allows a comparison in the variations of fluid properties present in the porous space of the target gas sands and provides a calculated geophysical interpretation of where the sand formations are gas charged or water filled. This can provide a good predictor for gas other than drilling. Signal strength and data quality is highest in flat-lying strata (e.g. around Judith-1) but both diminish in dipping beds and where the signal is diffracted by faults.

Figure 4 below shows how the AVO Shuey Fluid Factor response brightens within the horizons of the Judith Gas Sands defined by the Gamma Ray at Judith-1. This provides confidence in looking at the extension of AVO response across the Judith Structure as the AVO response is calibrated against the AVO response in gas sands at the Judith-1 well.



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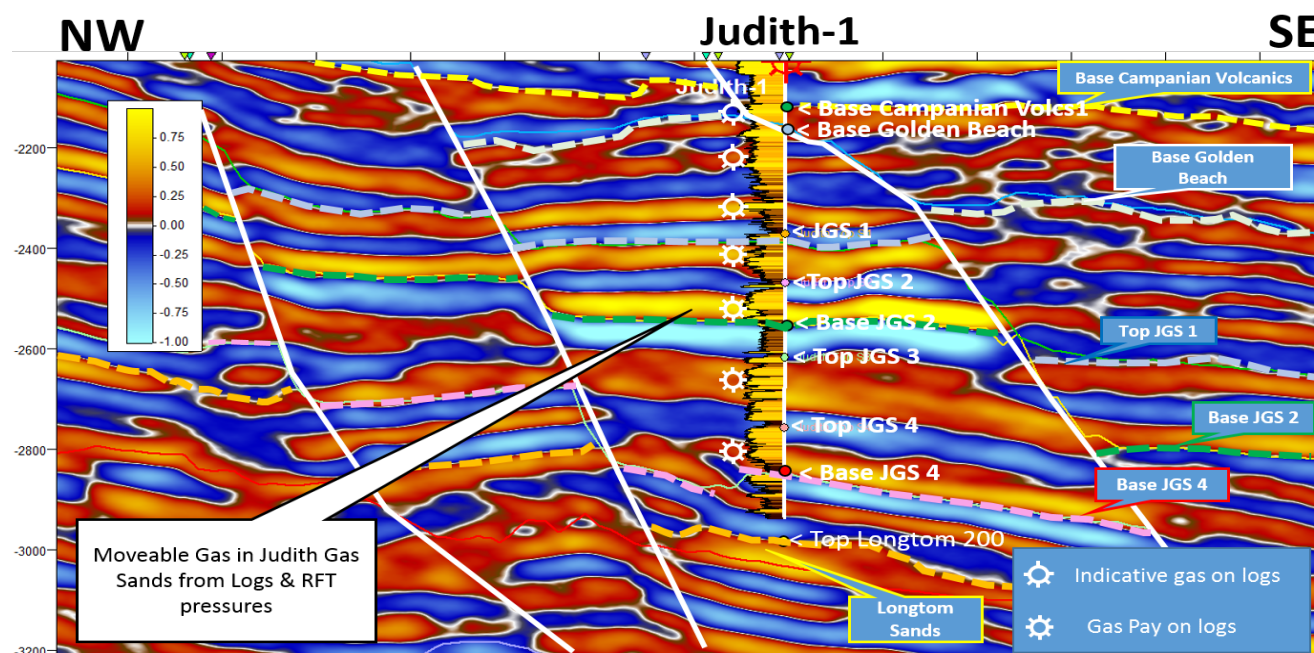


Figure 4: Detailed seismic section showing AVO Shuey Fluid Factor response in gas sands at Judith-1. The figure shows correlation between AVO seismic response (brightening from brown to orange) of the Judith Gas Sands where the presence of reservoir gas is indicated by mud log gas, well log evaluation and RFT pressure tests.

6. AVO Response in the Judith Gas Sands 1 and 2

Results of the AVO analysis shown in Figures 5 and 6 below indicate very strong AVO Shuey Fluid Factor response for the Judith Gas Sands 1 and 2. Similar strong responses are also observed in Judith Gas Sands 3 and 4.

In both cases, AVO analysis shows strong AVO Gas Indication (brightening to orange) extending across the Judith structure, up-dip from Judith-1 to the proposed Judith-2 wellsite.

The extent of the strong AVO response indicates interpreted gas extending over more than 500m of vertical relief across the Judith structure terminated by the Rosedale Fault to the north.

This is the strongest evidence to date supporting the 1.226 Tcf Unrisked Prospective Gas Resource estimate previously published for the Judith Gas Field (3D-GEO, July 2019).



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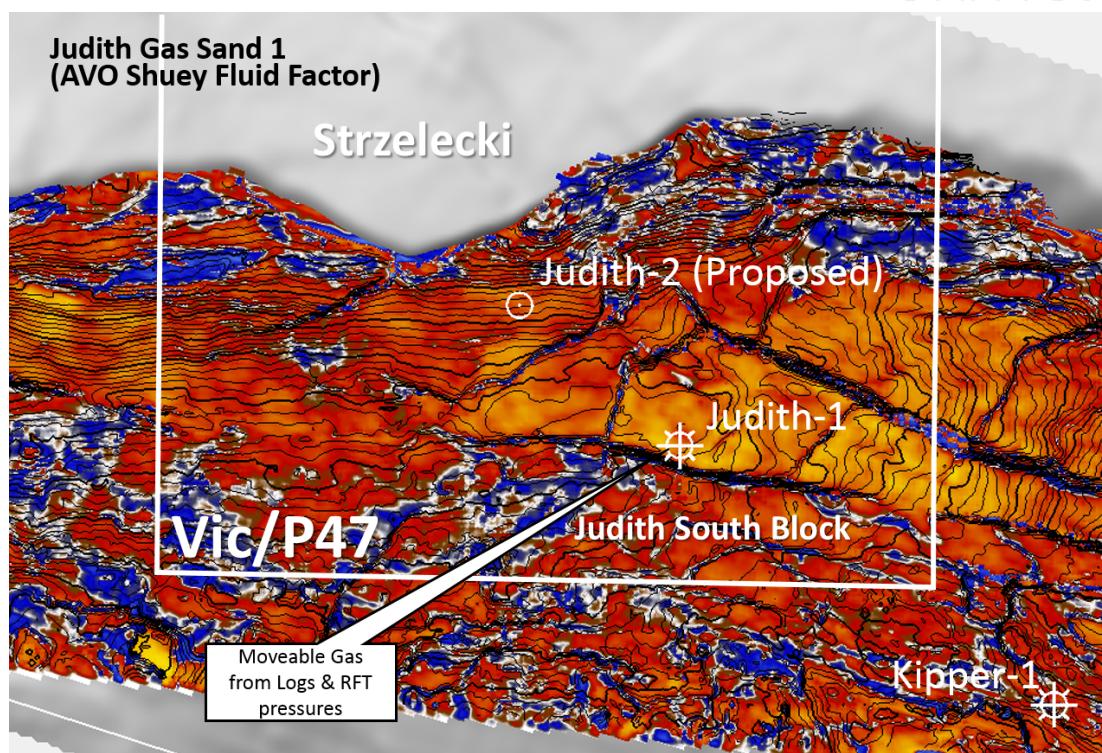


Figure 5: AVO Gas Indicator in the Judith Gas Sand 1. Areas brightening to orange show a strong AVO gas effect. (Emperor Energy Vic/P47 Permit Boundary shown as white line)

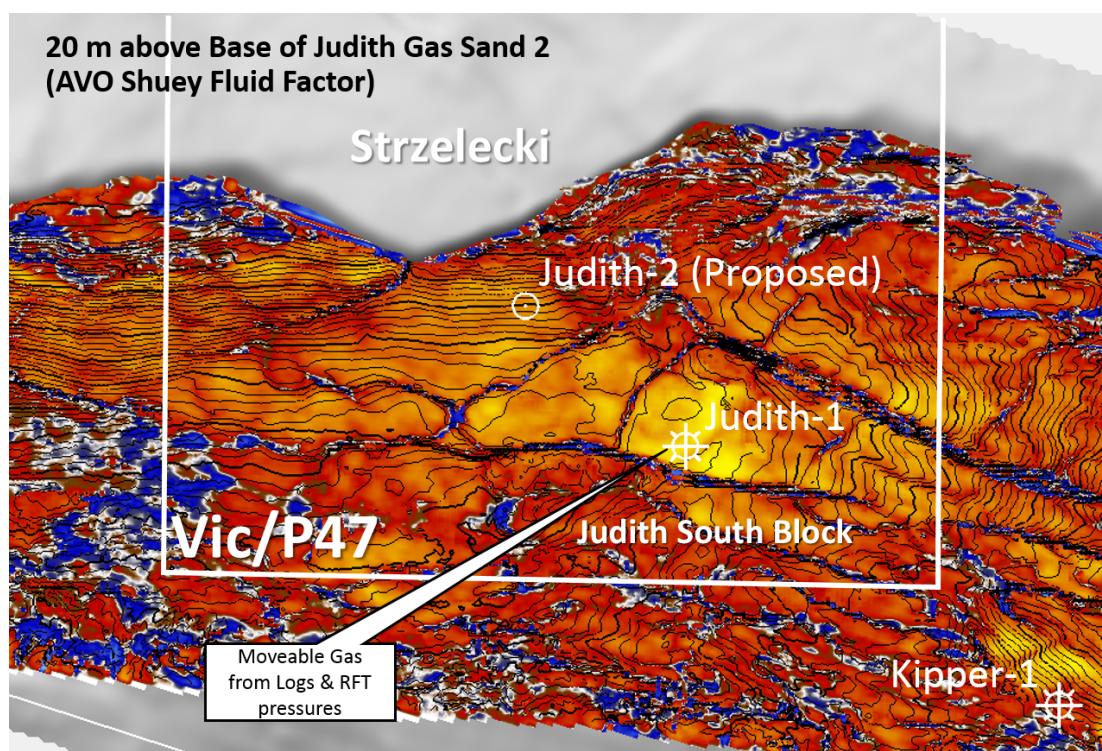


Figure 6: AVO Gas Indicator in the Judith Gas Sand 2. Areas brightening to orange show a strong AVO gas effect. (Emperor Energy VicP/47 Permit Boundary shown as white line)



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7. AVO Response in the Longtom 200 Gas Sands

AVO evaluation of the Longtom 200 sand, like the Judith sands above, again shows strong AVO Fluid Factor response with gas indications extending across the Judith Structure (Figure 7). AVO response is particularly strong in the Judith South Block. The strong AVO response extends from the southern boundary of the permit area up-dip and across structural closure beyond the planned Judith-2 well location. This strong AVO gas response is evident over more than 500m of vertical relief, similar to the Judith Gas Sands 1 and 2.

The interpreted Longtom 200 gas sand and other Longtom sands are located beneath the Total Depth of the Judith-1 well. These sands have not been previously intersected in the Judith Structure however their presence is clearly visible on the new seismic data.

The Longtom Sands provide significant exploration upside potential for the planned Judith-2 well that is designed to intersect the Longtom 200 sands at a depth of approximately 3000m. Based on Seismic correlations this sand is the equivalent of the main gas producing sand at the Longtom Gas Field located 15km to the west of Judith.

The strong AVO response of the Longtom 200 Gas Sands in the south of the permit area indicates a potential upside to the resource estimate currently in place for this area.

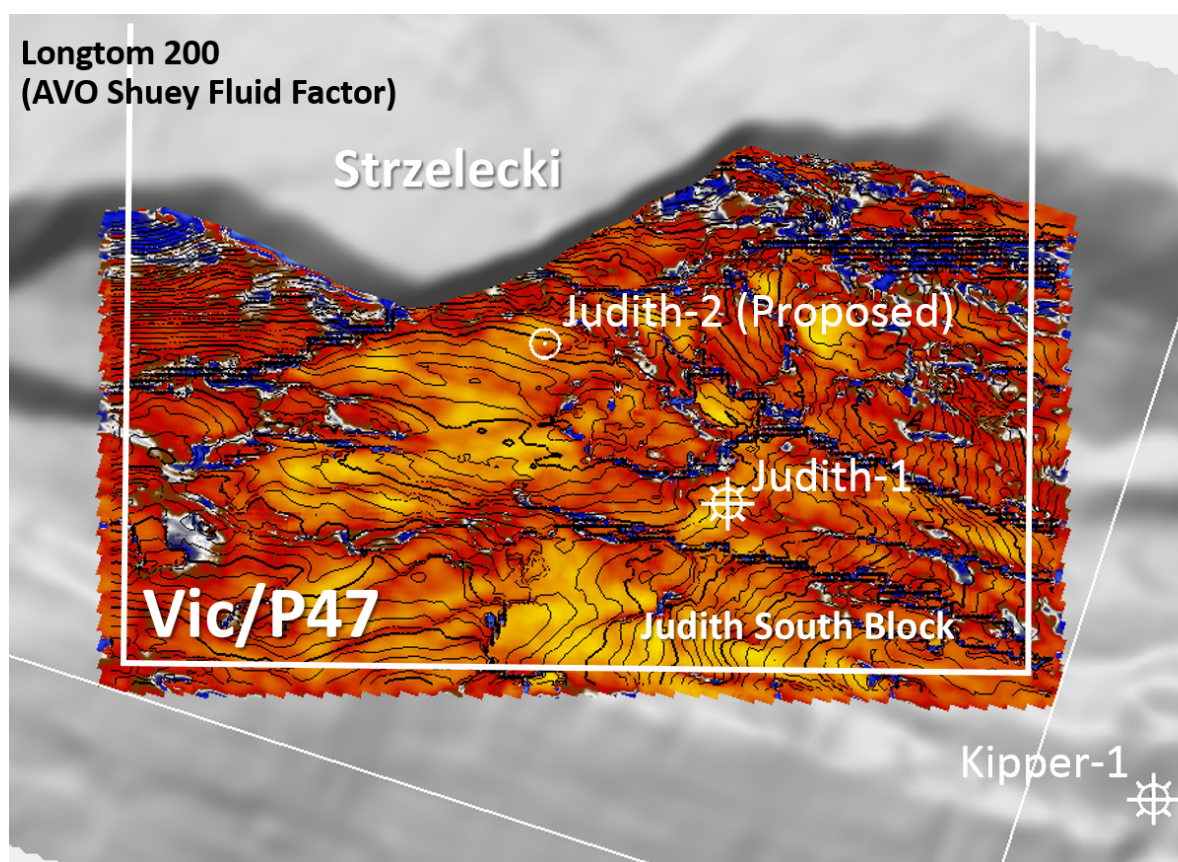


Figure 7: AVO Gas Indicator in the Longtom 200 Gas Sand. Areas brightening to orange show a strong AVO gas indicator. (Emperor Energy VicP/47 Permit Boundary shown as white line)



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8. Kipper Sand and Golden Beach Formation Play

The fully processed seismic data allows for a significantly better seismic evaluation of the section above the Judith Gas Sands that has not been seen previously on the older vintage seismic.

This has resulted in identification of a Kipper and Golden Beach Reservoir Sand Play extending up-dip from the Kipper Gas Field across the Judith Structure and extending past the proposed Judith-2 wellsite where the interpreted thickness of these gas sands is approximately 200m. (Figure 8)

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

This newly identified play provides potential for a substantial resource addition. This potential is considered significant due to the known higher porosities and permeabilities of the Kipper and Golden Beach formations. Emperor Energy is now assessing AVO Response of these upper sands.

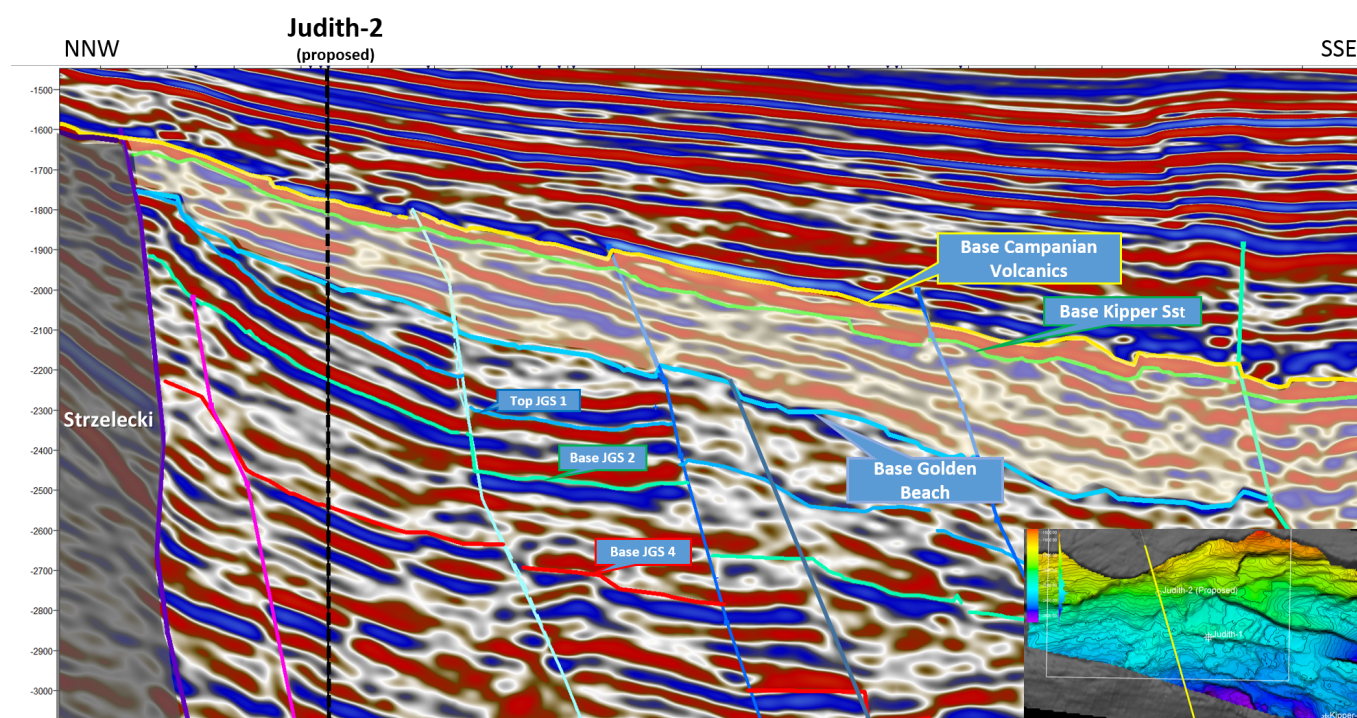


Figure 8: Seismic Section showing interpreted Kipper and Golden Beach Sands (yellow mask) overlying the Judith Gas Sands and extending up into the Judith Structure past the proposed Judith-2 wellsite

9. Permit in Good Standing with Low Permit Risk

The 100% Emperor Energy owned Vic/P47 Exploration Permit containing the Judith structure is in very good standing with the National Offshore Petroleum Titles Authority (NOPTA) with more than adequate permit term remaining to complete the Judith-2 Well.



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Emperor Energy is progressing on schedule through the Permit Work Program (Figure 9) and is now preparing to commence the approval process for the drilling of the Judith-2 Well. This approval process is expected to commence in early 2022 and be completed by year end.

Year	Start Date	End Date	Activity Description	Indicative Expenditure (AUD)	Complete?
1-3	23/02/2018	22/08/2023	Geotechnical studies including detailed resource assessment, preliminary reservoir engineering, target selection and well planning	\$400,000	✓
			Purchase of 45 km ² of multi-client 3D seismic from CGG - comprising all available MC3D full-fold coverage in VIC/P47*	\$580,000	✓
			Interpretation and mapping of newly purchased 45 km ² of Multi Client 3D seismic data*	\$150,000	In progress
			Confirmation of drilling target/s and detailed well planning and preparation	\$1,300,000	
			Drill one well	\$25,000,000	
4	23/08/2023	22/08/2024	Post-well evaluation studies	\$500,000	
5	23/08/2024	22/08/2025	Geotechnical studies including commerciality assessment	\$300,000	

Figure 9: Vic/P47 Permit Work Program showing work completed and in progress

Emperor Energy considers the Judith Gas Project in the Offshore Gippsland Basin is perfectly positioned to fulfill a role in securing gas supply to the East Coast of Australia through to 2041.

10. Finance

At the end of the quarter, 31st December 2021, the Company's cash balance was \$294,485.

The company paid \$31,268 to directors and management for the quarter ended 31th December 2021 for administration and exploration expenses.

A summary of the cash flow for the quarter are attached in the Appendix 5B.

11. Tenement holding summary

Below is a list of the tenements held by Emperor Energy Limited as of 31st December 2021:

Petroleum Tenement	Location	Beneficial Percentage held
Vic/P47	Victoria	100% / Operator
Backreef Area	Western Australia	100% / Operator



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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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Company Secretary

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