

16 September 2024

## MinRes maiden gas and oil resource statements

Mineral Resources Limited (**ASX: MIN**) (**MinRes** or **Company**) is pleased to announce maiden resources for the Lockyer Gas Project and the Erregulla Oil Project, both located on Exploration Permits (EP) 368 and 426, approximately 300 kilometres north of Perth.

These two exploration permits are part of MinRes' 100%-owned onshore Perth Basin oil and gas acreage, which has been the subject of extensive exploration investment since the Lockyer Deep-1 (LD-1) discovery by MinRes in 2021.

### Lockyer Gas Project

- Maiden 2C contingent gas resource of 435 petajoule (PJ) sales gas, with 3.3 million barrels (MMbbl) associated condensate. Total current 2C contingent gas resource is 76 million barrels of oil equivalent (MMboe).
- Current total 2U prospective gas resource of 1,420 billion cubic feet (Bcf) and a risked 2U of 487 Bcf across 14 Kingia Sandstone prospects and leads.<sup>1</sup>

The Lockyer Gas Project is comprised of two gas pools – Lockyer and North Erregulla – mapped over more than 18km<sup>2</sup> and occupying three graticular blocks in EP 368 and two graticular blocks in EP 426.

The Lockyer Gas Project has now been proven through successful drilling across a six-well program, including a Perth Basin record flow test at the Lockyer-5 Sidetrack-1 well.

The 435 PJ 2C contingent gas resource indicates it is one of the largest onshore gas discoveries in Western Australia, with significant exploration upside across the two exploration permits that could total up to 1.4 trillion cubic feet (Tcf) of gas.<sup>1</sup>

Planning for the development of the Lockyer Gas Project is well progressed and approvals have been submitted for a Central Processing Facility with a production capacity of up to 250 terajoules per day (TJ/d).

In response to inbound queries from a number of domestic and global parties, MinRes is reviewing development and partnering opportunities related to EP 368 and EP 426.

As part of this review, MinRes will assess joint venture partnerships, as well as full or partial sale options. MinRes is also considering development financing options through infrastructure funding partners, as noted in April 2024.

MinRes will only consider opportunities that realise greater value for shareholders than what MinRes considers it can achieve through its standalone delivery plans. The Company expects to provide an update by the end of the calendar year.

### Erregulla Oil Project

- Maiden total 2C contingent oil resource is 31.6 MMboe.

The 31.6 MMboe 2C contingent oil resource confirms one of the largest onshore oil discoveries in Western Australia since the discovery of oil on Barrow Island in 1964, with further exploration upside.

Opportunities to commercialise the Erregulla Oil Project will be considered alongside the review of options for the Lockyer Gas Project. Options for consideration include separate ownership and development plans for the two assets.

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<sup>1</sup> The estimated quantities of gas that may potentially be recovered by the application of a future exploration project relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable gas. Prospective Resources quoted were derived probabilistically, totals are summed arithmetically, and are unrisksed.

**Mineral Resources Managing Director Chris Ellison said:**

“Our Perth Basin conventional oil and gas discoveries are among the largest onshore finds in Western Australia, with significant upside on these two exploration permits alone.

“Developing these resources provides MinRes with yet another option to grow shareholder value through our portfolio of commodities located in the world’s best resources jurisdiction.

“With the commissioning of our new exploration rig, we are just getting started and the Energy division is firming up targets on the largest acreage holding in the highly prospective Perth and Carnarvon basins.

“Developing the Perth Basin remains subject to sensible WA Government domestic gas policy, and MinRes will consider all development and partnership options to maximise value from our exploration success.”

**RESOURCE TABLES AND WELL RESULTS**

**Total Contingent Resources**

Contingent Resources – MMboe	1C	2C	3C
	MMboe	MMboe	MMboe
Lockyer Gas Resources <sup>1</sup>	59	76	94
Erregulla Oil Resources	14.6	31.6	65.3
<b>Total</b>	<b>73.6</b>	<b>107.6</b>	<b>159.3</b>

<sup>1</sup> 1 MMboe is equivalent to 6 Bcf Raw Gas

**Total Prospective Resources**

Prospective Resources – MMboe	1U (Low)	2U (Best)	3U (High)
	MMboe	MMboe	MMboe
Risked Gas Prospects and Leads <sup>1</sup>	25	85	201
Risked Oil Prospects and Leads	4	13	32
<b>Total</b>	<b>29</b>	<b>98</b>	<b>233</b>

<sup>1</sup> 1 MMboe is equivalent to 6 Bcf Raw Gas

**Well results**

Discoveries	Well	Date	Net Pay	Average Porosity	Reservoir Pressure	Average Stabilised Flow Rate	Max Flow Rate
			Metres	%	PSI		
Gas	Lockyer Deep-1	Sep 2021	32	15	6,510	102 MMscf/d	117 MMscf/d
	North Erregulla Deep-1	May 2023	33	16	6,745	79 MMscf/d	99 MMscf/d
	Lockyer-3	July 2023	11	13	6,550	Future testing	
	Lockyer-5 (ST1)	March 2024	27	18	6,735	104 MMscf/d	128 MMscf/d
Oil	North Erregulla Deep-1	May 2023	47	13	4,525	Not tested (Kingia gas completion)	
	North Erregulla-2	April 2024	71	13	4,525	675 Bopd	900 Bopd

**Table 1:** Lockyer and North Erregulla well results summary

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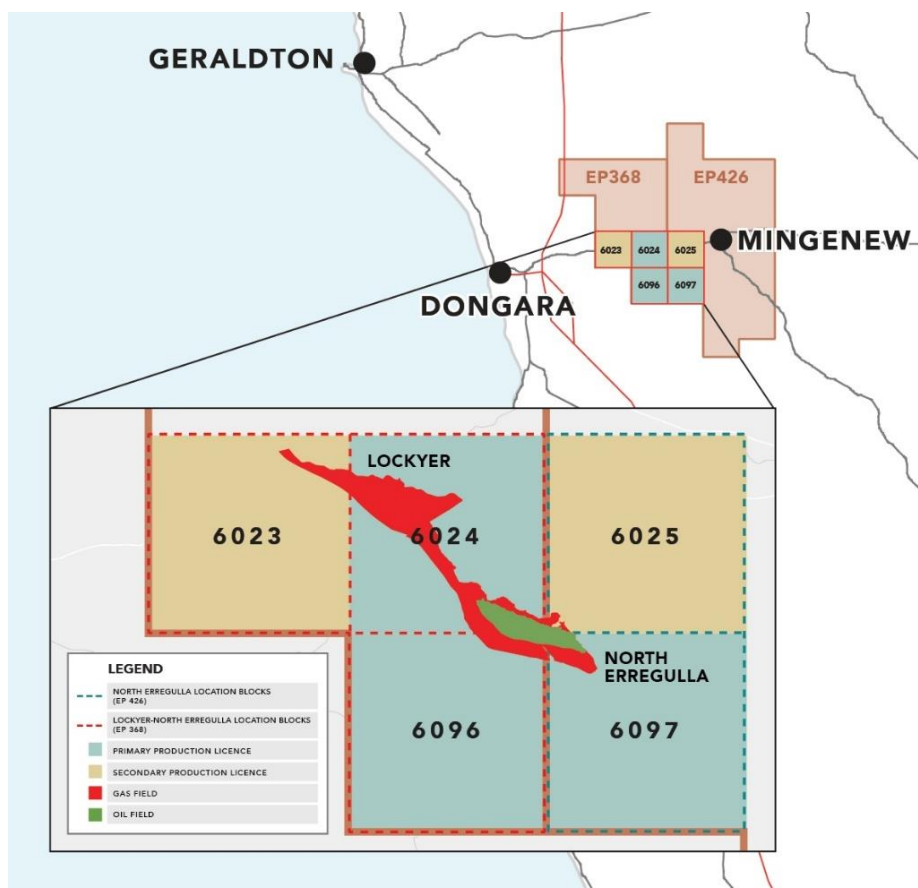
## LOCATION BLOCKS AND PRODUCTION LICENCES

- MinRes' nomination of five location blocks over the Lockyer and North Erregulla discoveries were declared by the WA Government as locations.
- Four production licences (PLs) applications have been submitted to the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS), and are pending grant as PLs.

Energy Resources Limited and Westranch Holdings Pty Ltd, both wholly owned subsidiaries of MinRes, are the registered holders of Petroleum Exploration Permits EP 368 and EP 426. Locations STP-LNA-0012 (within EP 368) for Perth Map Sheet (SH50) graticular blocks 6023, 6024 and 6096, and STP-LNA-0013 (within EP 426) for Perth Map Sheet (SH50) graticular blocks 6025 and 6097 were declared as a location under the Petroleum and Geothermal Energy Resources Act 1967 (PGERA) on 16 February 2024 and 10 May 2024 respectively, for the Lockyer Gas, North Erregulla Gas and North Erregulla Oil fields. The declaration of these blocks as locations resulted from the discovery of a significant gas resource pool in Lockyer Deep-1 (LD-1) in 2021, the acquisition of the Rococo 3D seismic survey in 2023, then followed in 2023 by significant gas and oil resource pool discoveries in North Erregulla Deep-1 (NED-1).

On 22 May 2024, MinRes submitted two applications for production licences pertaining to the Lockyer-North Erregulla Location within EP 368. These applications are identified as primary entitlement STP-PRA-0013 and secondary entitlement STP-PRA-0014. On 28 August 2024, MinRes also applied for two additional production licences for the North Erregulla Location within EP 426. These applications are identified as primary entitlement STP-PRA-0015 and secondary entitlement STP-PRA-0016 (Figure 1).

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**Figure 1:** Lockyer and North Erregulla declared location blocks and production licence applications

In September 2024, following recent exploration and appraisal drilling and testing in EP 368 and EP 426, MinRes defined a major 2C contingent petroleum resource of 107.6 MMboe. Along with the current MinRes risked 2U prospective resources of 98 MMboe, the combined total 2C and 2U amounts to 205.6 MMboe.

## DISCOVERED GAS RESOURCES

The discovery of conventional gas resources in LD-1 in 2021 and gas in NED-1 in 2023 is defined by MinRes as the Lockyer Gas Project. The current total estimated 2C contingent resources from the two identified gas pools is 435 PJ sales gas, with 3.3 MMbbl associated condensate. Total current 2C contingent gas resource is 76 MMboe.

The Lockyer Gas Project is located in the onshore northern Perth Basin, Western Australia, with the two gas pools mapped over more than 18km<sup>2</sup>; and occupying three graticular blocks in EP 368 and two graticular blocks in EP 426 (Figures 1 and 2).

The Lockyer and North Erregulla gas fields have been appraised with six well penetrations to date. Key well results are set out in Table 1. The LD-1 well discovered the Lockyer gas pool and the NED-1 well discovered the North Erregulla gas pool in the Kingia Sandstone. The downdip appraisal wells Lockyer-2 drilled in the Lockyer fault block and Lockyer-5 well drilled in the North Erregulla fault block helped to define the gas water contact (GWC) range for each pool. The estimated mid-case GWC for the Lockyer gas pool is 4010m total vertical depth subsea (TVDSS) and the estimated mid-case GWC for the North Erregulla gas pool is 4020m TVDSS. In-field appraisal wells Lockyer-3 and Lockyer-5 Sidetrack-1 (ST1) were successful in appraising the reservoir quality of the fields at their respective locations (Figure 2).

The following hydrocarbon resources have been estimated based on a range of volumetric cases incorporating mapping of processed pre-stack time migration (PSTM) volumes of the Rococo 3D seismic survey, probability distributions of gas water contacts for each pool and reservoir parameter distributions, representing the current accepted range of uncertainty for the project (Figure 2).

### Gas

Contingent Resources – recoverable raw gas	1C	2C	3C
	Bcf	Bcf	Bcf
Lockyer Pool	136	180	230
North Erregulla Pool	198	245	295
<b>Total</b>	<b>334</b>	<b>425</b>	<b>525</b>

Contingent Resources – sales gas <sup>2</sup>	1C	2C	3C
	PJ	PJ	PJ
Lockyer Pool	139	184	236
North Erregulla Pool	203	251	302
<b>Total</b>	<b>342</b>	<b>435</b>	<b>538</b>

<sup>2</sup>Net of 3.5% CO<sub>2</sub>, HHV 1.06 PJ/Bcf

### Associated condensate

Contingent Resources – associated condensate yield	1C	2C	3C
	MMbbl	MMbbl	MMbbl
Lockyer Pool	0.9	1.2	1.5
North Erregulla Pool	1.6	2.1	2.7
<b>Total</b>	<b>2.4</b>	<b>3.3</b>	<b>4.2</b>

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## Total Resources

Contingent Resources – MMboe	1C	2C	3C
	MMboe	MMboe	MMboe
Lockyer Pool	24	32	41
North Erregulla Pool	35	44	53
<b>Total</b>	<b>59</b>	<b>76</b>	<b>94</b>

The current level of project maturity for the Lockyer Gas Project is classified as Discovered Contingent Resources – Development Pending according to the Society of Petroleum Engineers – Petroleum Resource Management System (SPE-PRMS) last revised June 2018. The basis of this classification is underpinned by satisfaction of all requirements to upgrade Prospective Resources to Contingent Resources on discovery of the Lockyer and North Erregulla gas pools, but more importantly satisfaction of most requirements detailed in the SPE-PRMS to upgrade from Contingent Resources to Reserves.

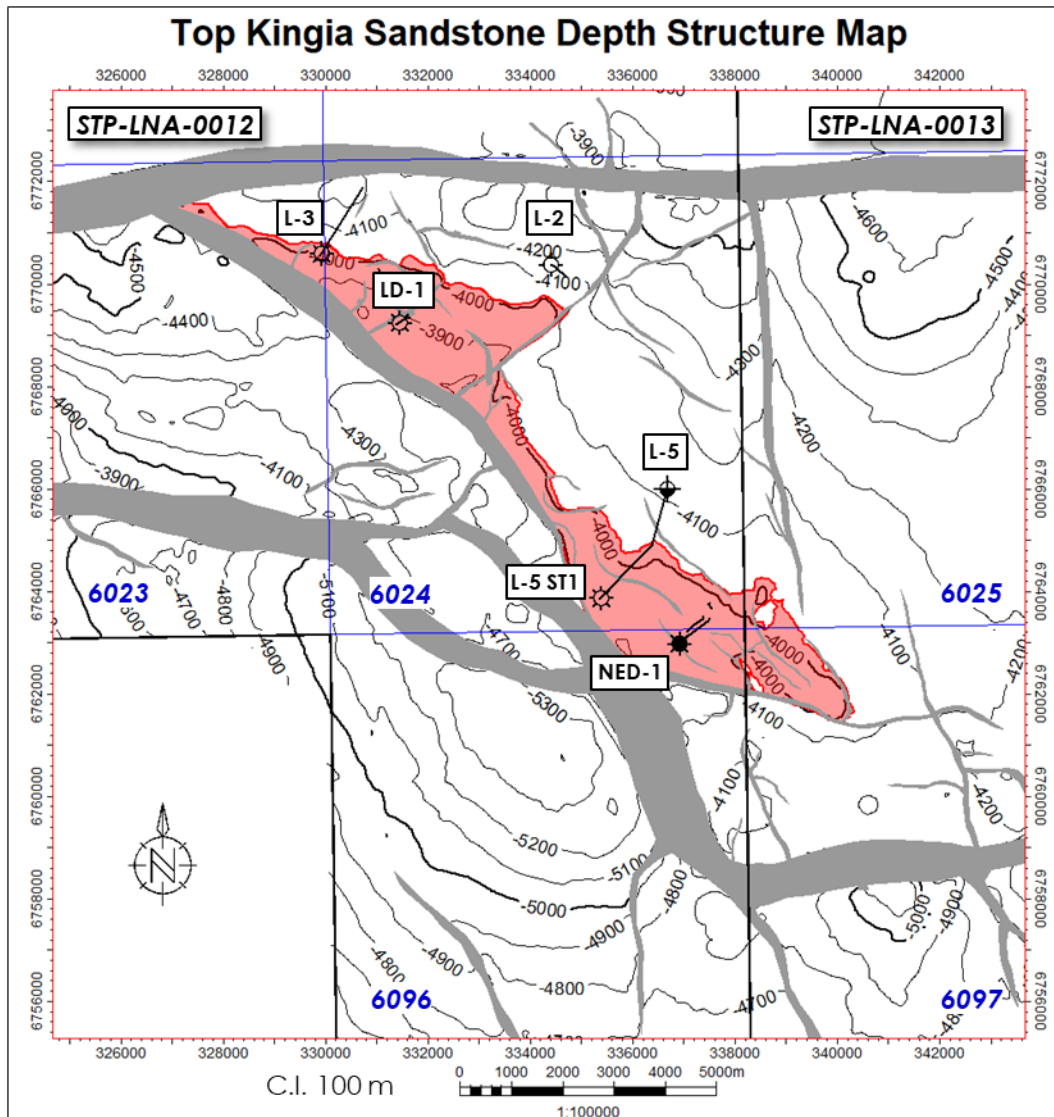
It is MinRes' assessment that viable markets for its gas and condensate products are available at the time of any anticipated first gas. MinRes may supply gas to gas-fired power generation at MinRes mining operations, WA domestic gas users, LNG export (subject to WA Government agreement for partial export) and other downstream opportunities.

The Lockyer Gas Project is a conventional gas project that has been proven with successful and record gas flow tests in wells drilled to date. Sufficient evaluation of the accumulations has been completed with appraisal activities, including structural mapping of the Rococo 3D PSTM interpretation, with pre-stack depth migration (PSDM) and inversion studies also commenced. In terms of reservoir evaluation, numerous routine and special core analysis studies are underway with ongoing petrophysical and image log evaluation, petrology, depositional and sedimentological studies.

Static and dynamic reservoir modelling is in progress for detailed In-Place and Recoverable hydrocarbon resource quantification. Field development planning activities are ongoing to justify commercial development and an internal project feasibility study has been completed. Development well design concept select studies are in progress to optimise completions for production. A surface gas processing facilities FEED study is near completion. Near-term operations include ongoing appraisal and development drilling, and nearfield exploration with the Moriary Deep Prospect to be drilled in the current drilling campaign.

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**Figure 2:** Top Kingia Sandstone Depth Structure Map

## DISCOVERED OIL RESOURCES

The discovery of conventional oil resources in NED-1 in 2023 and North Erregulla-2 (NE-2) in 2024 is defined by MinRes as the Erregulla Oil Project. The current total estimated 2C contingent resources from the three identified oil pools is 31.6 MMboe. The Erregulla Oil Project is located in the onshore northern Perth Basin, Western Australia, with the three oil pools mapped over more than 7 km<sup>2</sup>; occupying two graticular blocks in EP 368 and two graticular blocks in EP 426 (Figures 1, 3, 4 and 5). The oil potential in this area was initially encountered in the late 1960s by West Australian Petroleum Pty Ltd, which drilled North Erregulla-1 in 1967.

The NED-1 well in 2023 proved highly successful for both the primary Kingia Sandstone gas target and the secondary Dongara-Wagina Sandstone oil target. Petrophysical evaluation in NED-1 at the time of drilling estimated 47m of net oil pay across the Dongara-Wagina Sandstone with an average porosity of 13% and oil saturation of 79%. Appraisal drilling of the North Erregulla Oil field commenced in March 2024 with the drilling of the NE-2 oil appraisal well. The NE-2 well reached total depth of 3,515m measured depth relative to the rotary table (MDRT) on 8 April 2024. The Dongara Sandstone at NE-2 was intersected at 3201m MDRT and was fully cored from 3206m MDRT over a 117m interval, with good oil and gas shows observed to 3295m MDRT. Pressure and fluid data obtained across the Dongara-Wagina reservoir in NED-1 and NE-2 indicates the estimated mid case oil water contact (OWC) is 3070m TVDSS (Figure 3).

Additionally, two new oil zones were identified in the overlying secondary objective Arranoo Sandstone, with oil shows in cuttings that were subsequently confirmed as pay on logs with two downhole oil samples retrieved

from a wireline logging tool. Estimated net pay is 17.6m in the Lower Arranoo and 9m in the Upper Arranoo with the average porosity in both reservoirs of 13%. Further appraisal drilling and testing is required to finalise reservoir parameters and areal extents of both Arranoo oil pools, the current estimated total 2C contingent resources for the Arranoo Sandstone is 11 MMboe. The estimated mid case OWC for the Lower and Upper Arranoo Sandstone oil pools are 2,785m TVDSS and 2,700m TVDSS respectively (Figures 4 and 5).

A perforation and clean-up operation of the Dongara-Wagina Reservoir was completed at NE-2 with first oil observed at surface in May 2024. NE-2 was completed with 3-1/2" tubing and perforated over a 63m interval from 3,201m to 3,264m MDRT. An extended oil flow test operation was carried out over three days with a cumulative total of 1,214 barrels produced into storage tanks. The initial NE-2 clean-up flow reached a maximum oil rate of 900 barrels of oil per day (bopd) on a 30/64" choke, with an average flowing surface pressure of 170 pounds per square inch (psi).

The main flow period was 18 hours and conducted on 24/64" choke and achieved a stable oil rate and surface pressure of 675 bopd and 220 psi respectively. The observed average gas/oil ratio (GOR) during the test is estimated to be 175 standard cubic feet per stock tank barrel (scf/stb). Wellbore damage (skin) is interpreted with modelling indicating a no-skin oil production potential of 1,100 bopd, significantly higher than the well test. Independent oil assay analysis from NE-2 oil test samples has confirmed Dongara-Wagina oil properties of 31.4 degrees API gravity and 0.1% sulphur, indicating a sweet, medium to light crude oil.

The following oil resources are estimated based on a range of volumetric cases incorporating Rococo 3D mapping, both single inputs and probability distributions of contacts and reservoir and fluid parameters, to represent the current ranges of uncertainty for the project.

## Oil

Contingent Resources	1C	2C	3C
	MMbbl	MMbbl	MMbbl
Dongara-Wagina Pool	10.1	19.9	31.7
Upper Arranoo Pool	1.2	3.3	8.8
Lower Arranoo Pool	3.0	7.7	23.4
<b>Total</b>	<b>14.3</b>	<b>30.9</b>	<b>63.9</b>

## Associated Gas

Contingent Resources	1C	2C	3C
	Bcf	Bcf	Bcf
Dongara-Wagina Pool	1.52	3.48	6.34
Upper Arranoo Pool	0.07	0.2	0.6
Lower Arranoo Pool	0.2	0.5	1.65
<b>Total</b>	<b>1.8</b>	<b>4.2</b>	<b>8.6</b>

## Total Resources

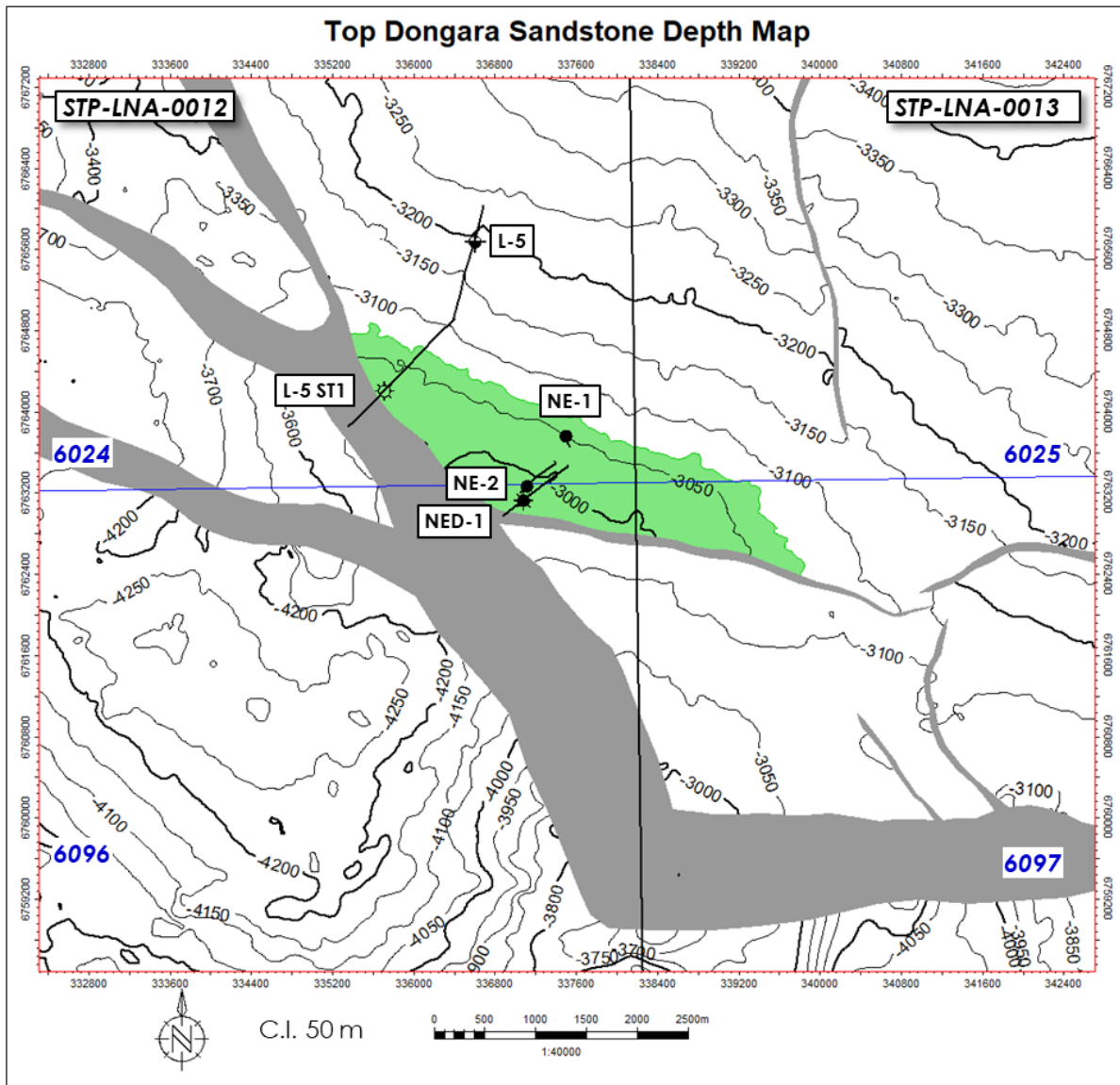
Contingent Resources	1C	2C	3C
	MMboe	MMboe	MMboe
Dongara-Wagina Pool	10.4	20.5	32.7
Upper Arranoo Pool	1.2	3.3	8.9
Lower Arranoo Pool	3.0	7.8	23.7
<b>Total</b>	<b>14.6</b>	<b>31.6</b>	<b>65.3</b>

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The current level of project maturity for the Erregulla Oil Project is classified as Discovered Contingent Resources – Development Pending according to SPE-PRMS 2018. The basis of this classification is underpinned by satisfaction of all requirements to upgrade Prospective Resources to Contingent Resources on discovery of the North Erregulla oil pools, but more importantly satisfaction of most requirements detailed in SPE-PRMS to upgrade from Contingent Resources to Reserves.

It is MinRes' assessment that viable markets for its oil and associated gas products will be available at the time of any first oil production, subject to finalising an oil sale and purchase agreement. The Erregulla Oil Project is a conventional oil project. Extended production flow tests and reservoir models are planned to fully understand future well design and any water flood requirements for sustained production from the Dongara-Wagina and Arranoo oil reservoirs. Planned near-term appraisal and development drilling is ongoing, with North Erregulla-3 spudded in August 2024 to be followed by Lockyer-6 and nearfield exploration at the Moriary Deep Prospect to assess oil prospective resources in both the Arranoo and Dongara-Wagina Sandstones.

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**Figure 3:** Top Dongara Sandstone Depth Structure Map



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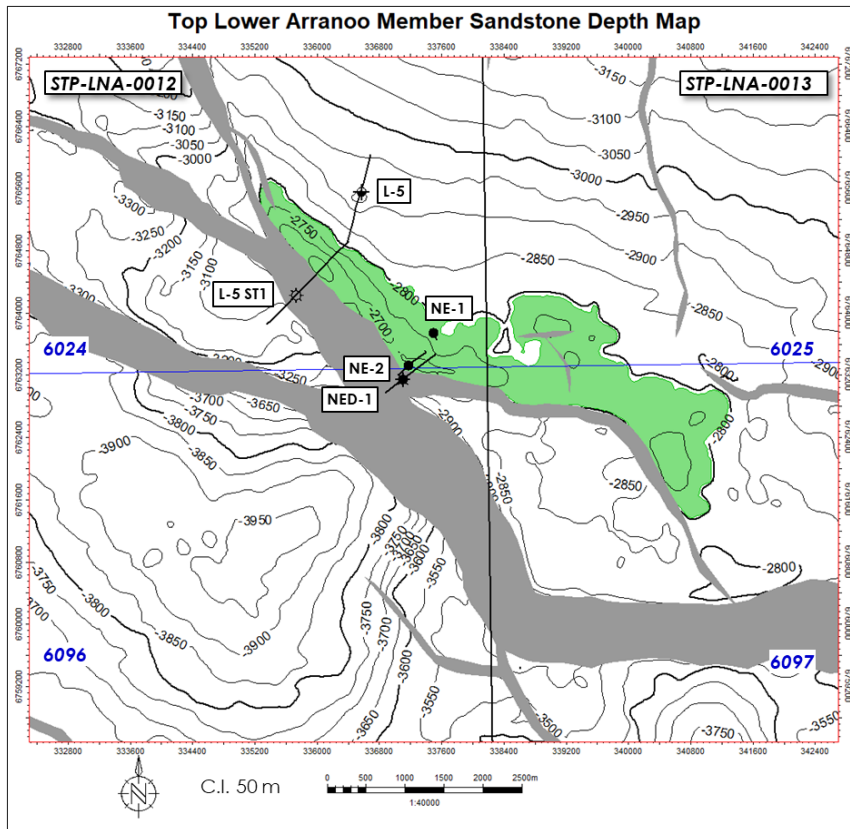


Figure 4: Top Lower Arranoo Sandstone Depth Structure Map

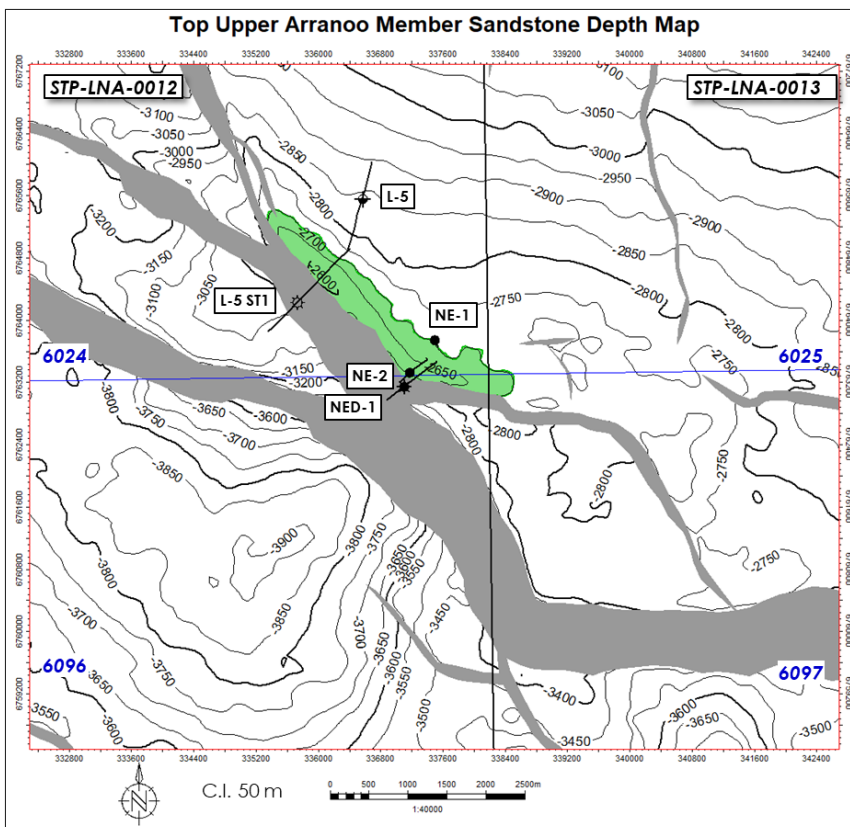


Figure 5: Top Upper Arranoo Sandstone Depth Structure Map

## PROSPECTIVE RESOURCES

Since the transition of permit management from the former Empire Oil Company (WA) Limited to Energy Resources Limited in 2017, MinRes has completed a significant exploration program for EP 368 and EP 426. Following the Lockyer and North Erregulla gas and oil discoveries, MinRes is now progressing exploration of near field opportunities of other plays, leads and prospects across EP 368 and EP 426.

A major driver of further exploration success is the 384 km<sup>2</sup> Rococo 3D seismic survey which was completed in March 2023. This survey covers both the Lockyer and North Erregulla structures and adjacent leads while extending to the permit boundary to the south (Figure 6). The Rococo 3D was acquired to provide 3D subsurface coverage of the LD-1 gas discovery, to guide appraisal and development drilling, and 3D subsurface coverage of the North Erregulla Prospect in the event of a discovery that was subsequently announced at NED-1 in June 2023.

MinRes is now working on a new 2D Seismic Survey across EP 368 and EP 426 which will have implications for future exploration drilling of potential tieback opportunities to the existing gas and oil discoveries.

As tabled below, MinRes has currently defined 14 Kingia Sandstone prospects and leads highlighted represent a total Kingia 2U prospective gas resource of 1,420 Bcf and a risked 2U of 487 Bcf (Figure 6).

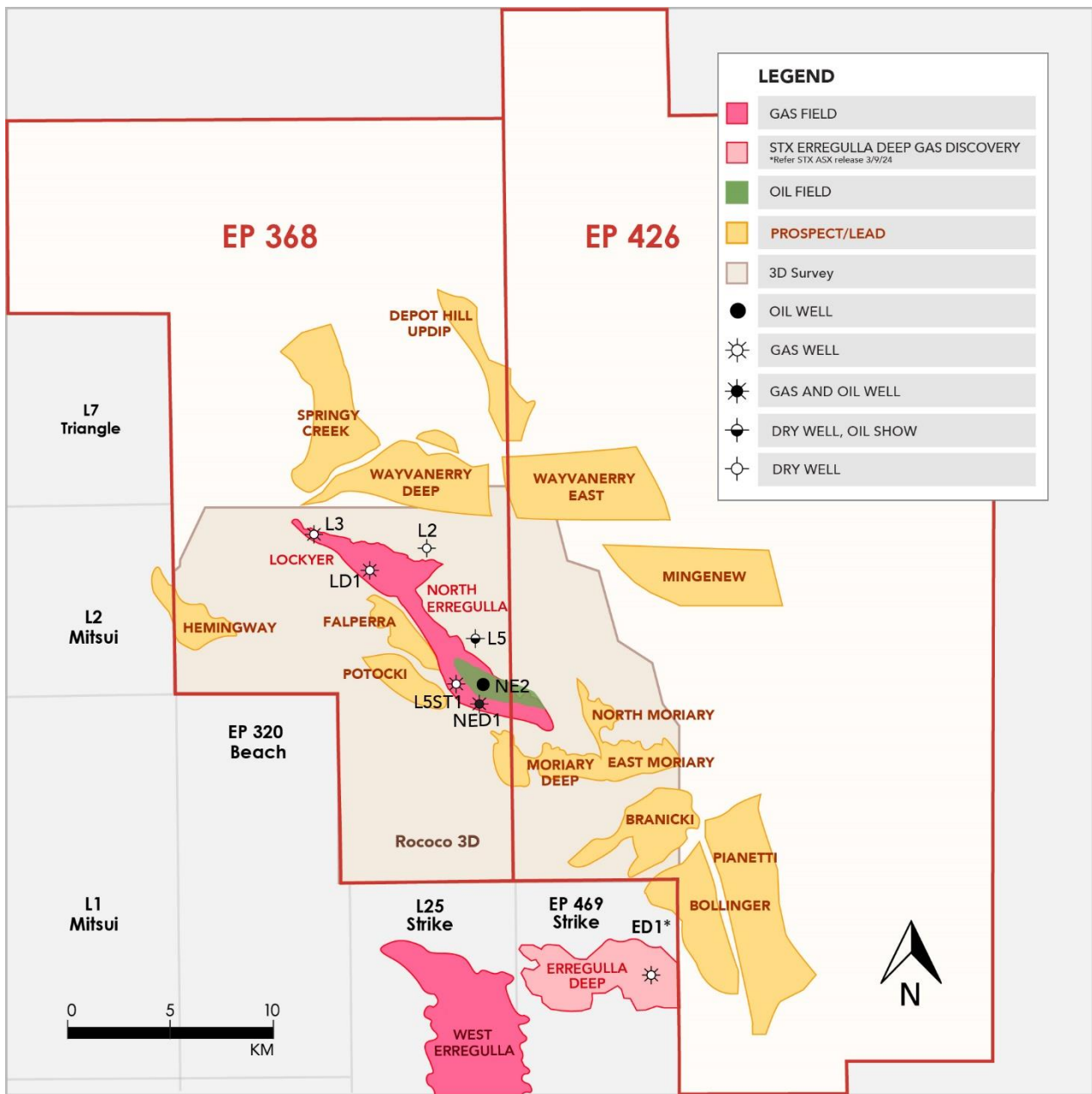
Other gas plays in the portfolio under assessment include leads assigned to the Holmwood Shale and the Dongara-Wagina Sandstone stratigraphic units. Oil plays being assessed include leads assigned to the Dongara-Wagina, the Arranoo Sandstone and the Cattamarra Coal Measures stratigraphic units.

Kingia Prospect & Leads	Probability of Success (POS) (%)	Gas Prospective Resource					
		1U (Low)	2U (Best)	3U (High)	2U (Risked)	2U (Best)	2U (Risked)
		Bcf			MMboe		
Moriary Deep	57%	34	<b>157</b>	379	89	26	14.9
Bollinger	44%	14	<b>175</b>	419	77	29	12.8
Branicki	50%	30	<b>113</b>	318	57	19	9.4
Wayvanerry Deep	35%	54	<b>128</b>	257	45	21	7.5
Mingenew	19%	80	<b>188</b>	373	36	31	6.0
Hemingway	30%	54	<b>122</b>	230	37	20	6.1
East Moriary	32%	44	<b>114</b>	196	36	19	6.1
Wayvanerry East	19%	59	<b>133</b>	260	25	22	4.2
Falperra	49%	15	<b>49</b>	145	24	8	4.0
Pianetti	29%	20	<b>72</b>	241	21	12	3.5
Potocki	50%	10	<b>39</b>	124	20	7	3.3
Springy Creek	15%	24	<b>63</b>	123	9	10	1.6
Depot Hill Updip	12%	25	<b>57</b>	113	7	10	1.1
North Moriary	41%	2	<b>10</b>	29	4	2	0.7
<b>Total (arith sum)</b>		<b>464</b>	<b>1420</b>	<b>3207</b>	<b>487</b>	<b>237</b>	<b>81.1</b>

**Note:** Small variances may occur due to rounding

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**Figure 6:** Kingia Sandstone Gas Prospect and Leads Portfolio

**CAUTIONARY NOTE FOR PROSPECTIVE RESOURCES**

The estimated quantities of gas that may potentially be recovered by the application of a future exploration project relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable gas. Prospective Resources quoted were derived probabilistically, totals are summed arithmetically, and are unrisks.

## COMPETENT PERSONS STATEMENT

The information in this Statement that relates to Petroleum Resource Estimates is based on and fairly represents information compiled by Neil Thompson and Roger Xiang, respectively General Manager Exploration and Drilling, and Manager Development Subsurface. Both are full-time employees of Mineral Resources Limited. Neil Thompson and Roger Xiang are qualified petroleum reserves and resources evaluators for oil and gas (as specified in ASX listing rules Guidance Note 32).

Neil Thompson, General Manager Exploration and Drilling – 35 years practical experience in petroleum exploration and production geology, with 20 years in the evaluation and estimation of petroleum reserves and resources. Member of the American Association of Petroleum Geologists (AAPG), European Association of Geoscientists and Engineers (EAGE) and Petroleum Exploration Society of Australia (PESA).

Roger Xiang, Manager Development Subsurface – 18 years practical experience in petroleum exploration and production geology, with 14 years in the evaluation and estimation of petroleum reserves and resources. Member of the Society of Petroleum Engineers (SPE) and PESA.

ENDS

This announcement dated 16 September 2024 has been authorised for release to the ASX by Mark Wilson, Chief Financial Officer and Company Secretary.

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### **About Mineral Resources**

Mineral Resources Limited (ASX: MIN) (MinRes) is a leading diversified resources company, with extensive operations in lithium, iron ore, energy and mining services across Western Australia. With a focus on people and innovation, MinRes has become one of the ASX's best-performing companies since listing in 2006. For more information, visit [www.mineralresources.com.au](http://www.mineralresources.com.au).

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