

ASX ANNOUNCEMENT

31st July 2024

QUARTERLY ACTIVITIES REPORT FOR PERIOD ENDING 30 JUNE 2024

Top End Energy Limited (**Top End** or the **Company**) (ASX:TEE) is pleased to present its activities report for the quarter ended 30 June 2024 (the **Quarter**).

HIGHLIGHTS OF THE QUARTER

Achieved formal Ministerial grant of Exploration Permit (EP) 258 in the Northern Territory (**NT**), Australia. EP 258 is located on the margin of the active McArthur Basin and is prospective for both conventional and unconventional gas as well as hydrogen and helium.

- Landmark achievement, being the first EP granted in the NT since 2015.
- Culmination of a multiple year application and approval process encompassing native title holder agreement and NT Ministerial approvals.
- Unlocks pathway for grant of additional high-priority permits: EP 257, EP 259 and EP 261.
- Enables the deployment of planned exploration program, expected to begin in the September period and set to comprise:
 - An airborne gravity gradiometry (**AGG**) survey.
 - A targeted 2D seismic acquisition and data processing program.

Received consent from the Northern Land Council (**NLC**) and approval from the NT Government **for the acquisition of granted Beetaloo Basin and South Nicholson acreage** from wholly owned subsidiaries of Handcock Prospecting Limited (**Handcock**) (the **Transaction**). Successful completion of the Transaction occurred post Quarter end.

- Transaction included EP 144, EP 153 and EP 154 in the NT.
- Significant gas play fairways identified on EP 144 as well as natural hydrogen / helium potential.
- Natural hydrogen and helium prospectivity over EP 153 and EP 154.
- Advanced approval status to enable acceleration of on-ground activities.

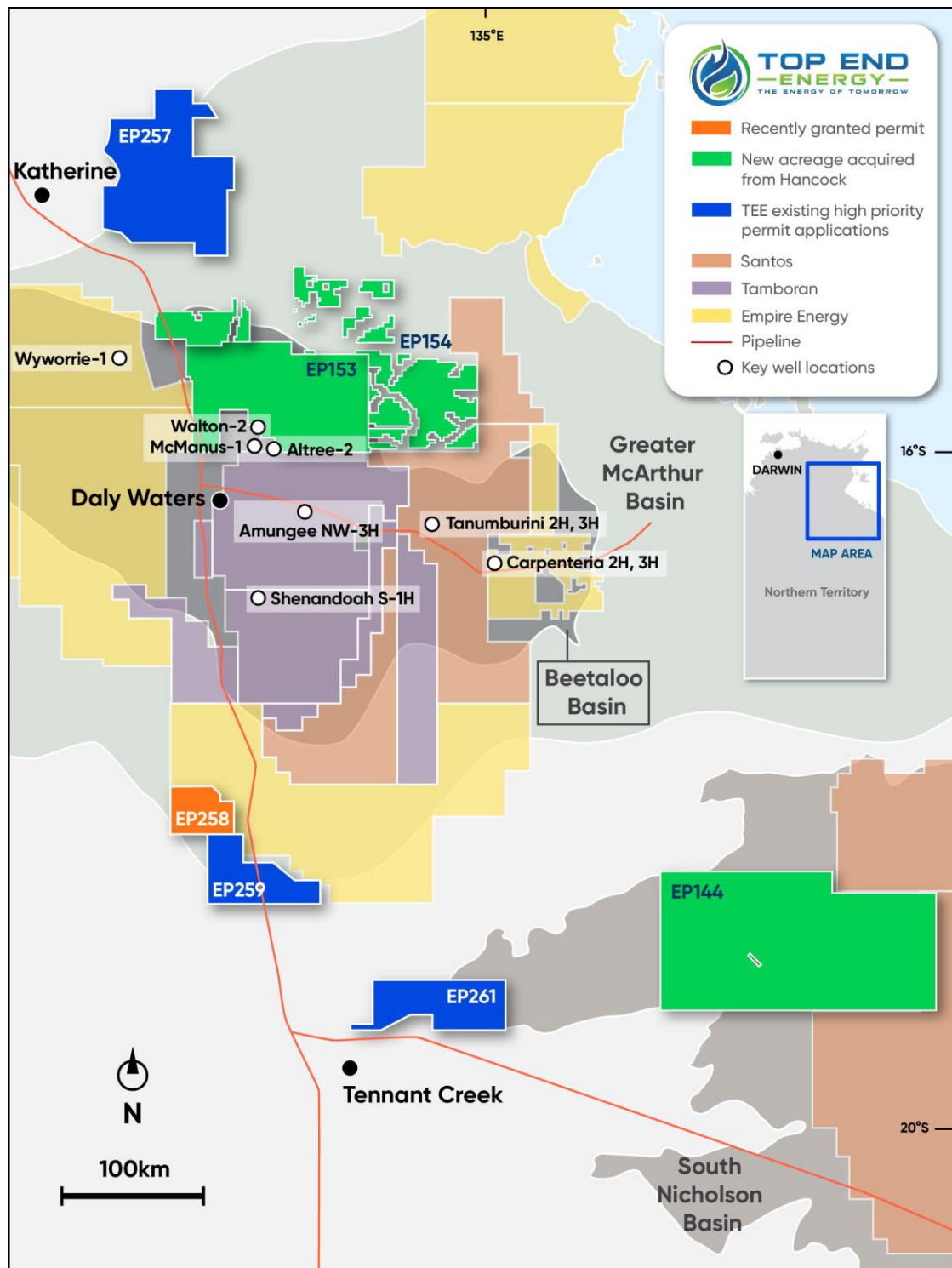


Figure 1: Top End's diversified portfolio of granted acreage, highlights the priority Beetaloo Basin and South Nicholson Basin play potential.

LANDMARK GRANT OF EP 258

On 6 June 2024, Top End announced that it had achieved the formal Ministerial grant of EP 258. This represented a landmark achievement, being the first EP granted in the NT since 2015. EP 258 is over on the southern flank of the Beetaloo basin (C) (refer Figure 1)

BACKGROUND

On 4 June 2024, Territory Gas Aust Pty Ltd (**Territory Gas**) was formally granted EP 258 by the NT Minister of Mining. Top End holds a ~58% beneficial interest in Territory Gas and is manager of EP 258 in addition to the other 29 EP applications held by the immediate parent entity of Territory Gas.

Following three on country meetings with the Native Title Holders of the Permit, Top End was advised on 3 April 2023 that the NLC had received instructions from the native title holders for the Top End (Default PBC/CLA) Aboriginal Corporation (**Top End PBC**) to enter into an exploration agreement ancillary to an agreement under section 31(1)(b) of the Native Title Act (the **Exploration Agreement**). The Top End PBC is the native title body corporate representing the native title holders. On 13 June 2023, and pursuant to the NLC's internal processes, the Exploration Agreement was executed by the Top End PBC and the Company. This represented the final milestone and critical path item for achieving formal grant of the Permit.

On 17 November 2023, Top End announced that it had entered into a Section 31 Deed (the **Deed**) in relation to the Permit, to which the Top End PBC, the NLC and the NT Government are also parties. The Deed is a statutory document which the NT Government relies upon for consent of the native title party to the grant of the Permit under the *Native Title Act*.

Top End was advised during the March 2024 quarter that the Permit had been re-notified by the NT regulator under section 18 of the *Petroleum Act 1984* for a 60-day period given the age of the application and change in the shape of the permit. Following the completion of this period and satisfaction of all conditions to grant, the Permit was granted.

As the first EP to be granted in over nine years, this milestone opens the door not only to initiating work programs on the Permit, but also for progressing the Company's interest in its other high priority permit applications.

PLANNED EXPLORATION PROGRAM

Initial exploration activities at EP 258 will target confirmation of the presence of the unconventional Velkerri Shale formations, the conventional Bessie Creek Sandstone play potential, and to validate any potential natural hydrogen and helium prospectivity.

In parallel with the application for grant of EP 258, a targeted exploration program was prepared to enable the advancement of EP 258 and identify resource targets for a future potential drilling event. The exploration program includes the following key workstreams:

- completion of an AGG survey, commissioned to aid structural interpretation and optimise acquisition parameters and location of a seismic survey;
- targeted 2D seismic acquisition and data processing program, optimised utilising the outcomes from the AGG; and
- completion of AGG and 2D seismic data processing in combination with geochemical analysis to identify drilling prospects.

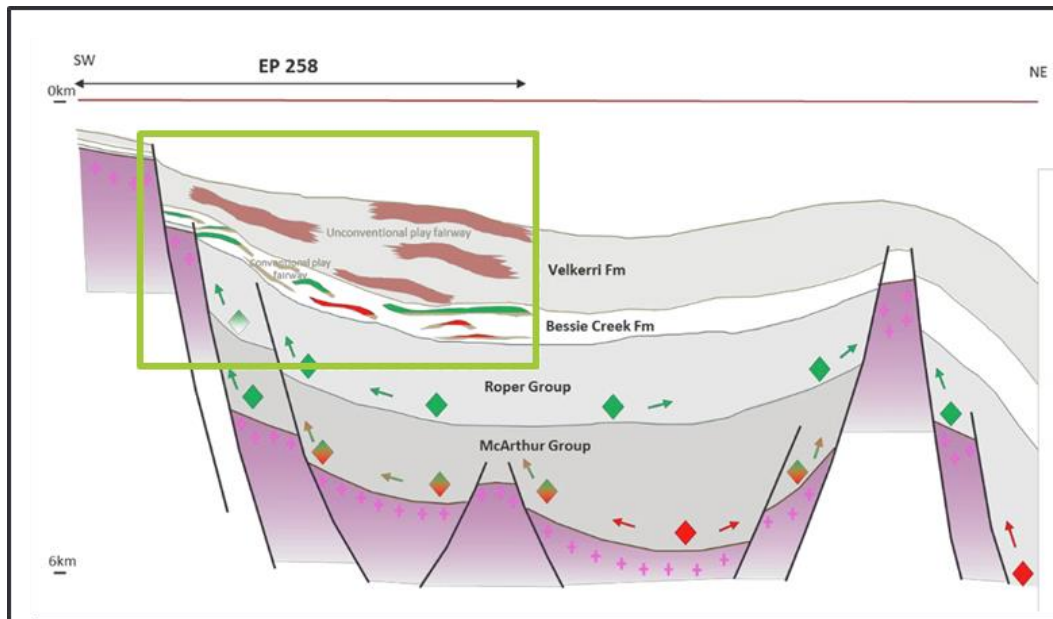


Figure 2: Regional schematic highlighting the potential of the untested southern margin of the greater McArthur Basin and EP 258.

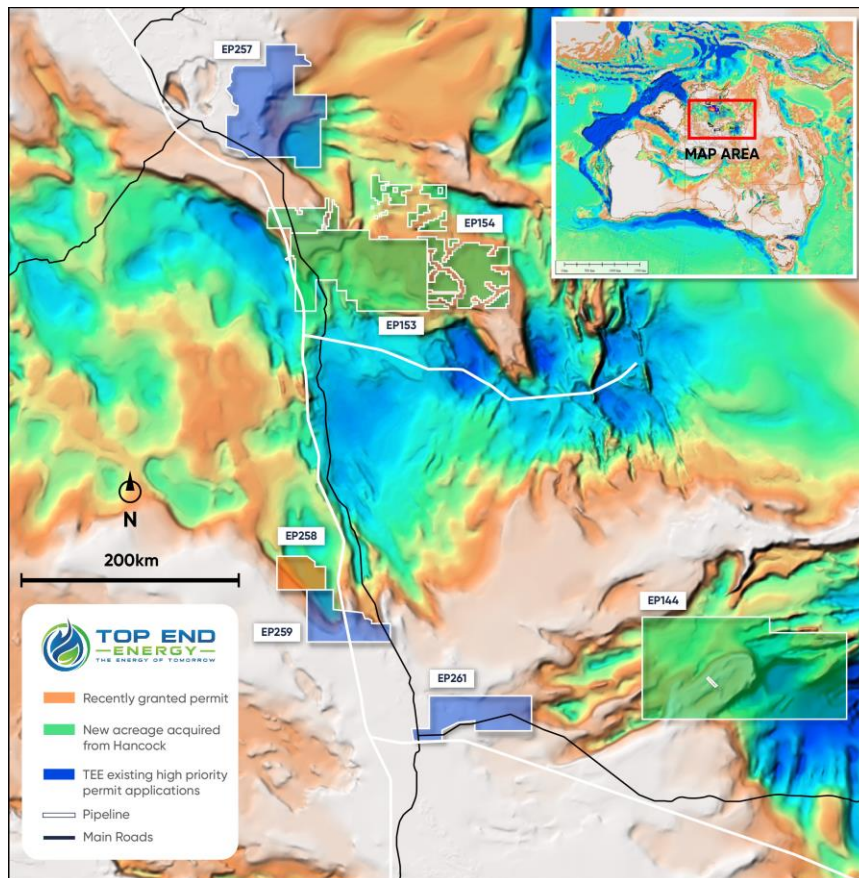


Figure 3: McArthur Basin detail showing location of granted Top End's granted acreage (EP 258 in orange).

COMPLETION OF TRANSACTION TO ACQUIRE EP 144, EP 153 and EP 154

On 27 February 2024, Top End announced the execution of a binding term sheet to acquire NT EP 144, EP 153 and EP 154 (the **Permits**) from Minerals Australia Pty Ltd and Jacaranda Minerals Limited, wholly owned subsidiaries of Hancock (together, the **Vendors**).

On 14 May 2024, the Company announced that it had entered into a full form Sale and Purchase Agreement (**SPA**) with the Vendors.

On 31 May 2024, the Company and the Vendors received the consent of the Northern Land Council to the transfer of the titles pursuant to the terms of the existing Co-existence and Exploration Deeds with the Traditional Owners of the Permits.

On 2 July 2024, Top End announced that the parties had received approval for the acquisition of the granted NT acreage in the SPA from the delegate of the Minister of Mining under section 96 of the Petroleum Act 1984.

On 12 July 2024 (subsequent to the Quarter end), the Company announced the successful completion of the SPA.

ACQUIRED PERMITS

The Permits cover a combined area of 27,885km² across the northern flank of the Beetaloo (A) and South Nicholson (B) basins in the NT (refer Figure 1). The Permits are underexplored, with several independent play types identified presenting multiple opportunities to deliver transformational resource success. The Permits are fully granted and with Native Title agreements in place.

EP 144: EMERGING UNCONVENTIONAL GAS POTENTIAL

EP 144 covers the Southern Nicholson Basin and includes a Paleoproterozoic aged Wonarah Basement High, where historical remote sensing geophysical data interpretation identified basement related lineaments and structural trends that could provide migration focus for both natural hydrogen and helium, as well as conventional hydrocarbons. EP 144 represents highly prospective underexplored acreage in a proven hydrocarbon region, with potential ties to the Proterozoic shale plays of the Lawn Hill Platform and the Beetaloo Sub-basin Velkerri Formation. Santos Ltd (ASX:STO) is the only other energy company with a granted acreage position in the South Nicholson Basin (refer to Figure 3 and Figure 4).

EP 144 is strategically located in proximity to the Northern Gas Pipeline, which provides access to Mount Isa and the East Coast gas market. There is significant existing hard rock exploration and mining activity in the area (including Teck Resources, South32 and Endeavour Resources), providing potential opportunities for additional data sources, exploration collaboration and offtake counterparties.

A Co-existence and Exploration Agreement is in place with the Traditional Owners of the EP 144, which is in year three of the initial five-year exploration period, and renewable for up to two further periods of up to five years each. Environmental Management Plans and Well Operations Management Plans have been approved for drilling of stratigraphic wells on the Permit, and the Company is engaging with pastoral lease holders to extend existing Land Access Agreements.

Post Quarter end, Top End announced a comprehensive review of existing data acquired across the South Nicholson Basin, and EP 144 specifically (refer to ASX announcement dated 15 July 2024). This dataset included:

- NDI Carrara-1 stratigraphic well (TD 1,751m) drilled by Geoscience Australia (**GA**) in late 2020 under the Exploring for the Future (**EFTF**) program;
- Existing 2D seismic data acquired by GA in the area, including approximately 325-line kilometres across EP 144;
- Historic exploration wells drilled across the basin;
- Existing gravity and magnetic data sets; and
- Industry publications and peer interpretations.

Top End has identified the potential for two significant gas play fairways on the EP 144:

1. The **Carrara Sub-basin Extension**: ~600km² (~125,000 acres) of high potential core play fairway with running room of up to ~1,200km² (300,000 acres); and
2. The **Alexandria Sub-basin**: ~1,100km² (~270,000 acres) of high potential core play fairway with running room up to ~2,300km² (~580,000 acres).

Helium and hydrogen potential has also been indicated, with possum belly gas samples collected from the NDI Carrara-1 well containing traces of both gases. Hydrogen sampled at up to 27% mol (air corrected). Potential hydrogen gas seepage pathways and a potential structural trap in EP 144 have been identified on the 17GA-SN2 2D seismic line acquired by GA. Surface depressions observed on satellite imagery in the area are potentially linked to the hydrogen seepage pathways interpreted on the seismic.

Multiple potential sources of hydrogen are thought to be linked to thick sequences of the Leichhardt Super Basin (1800 – 1760 Ma).

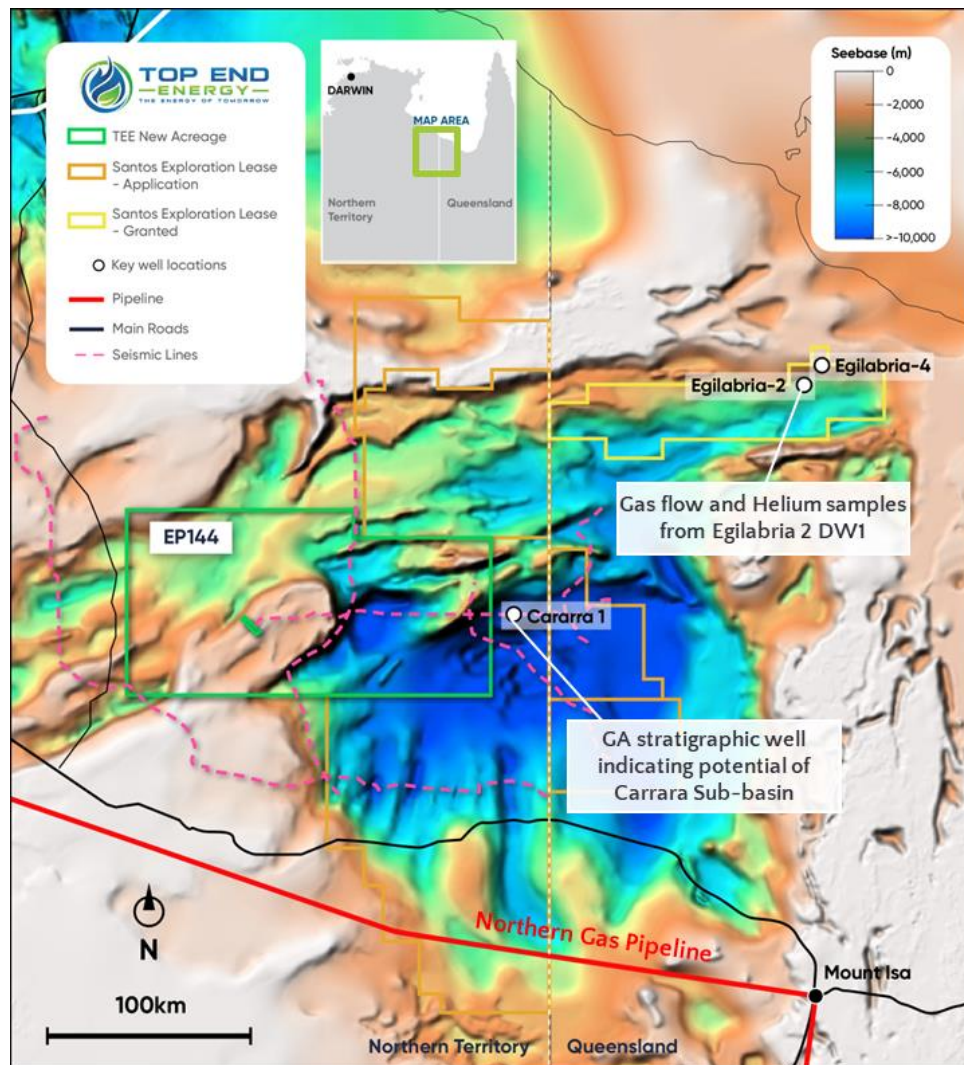


Figure 4: EP144 location covering the South Nicholson Basin, proximate to pipeline infrastructure.

EP 153 AND EP 154: MULTIPLE PLAY POTENTIAL

Of particular focus for Top End is the natural hydrogen and helium potential over EP 153 and 154 (refer to Figure 5), which is interpreted as a natural extension of the play fairway mapping completed by the Company in 2023 over its existing EP application 257. The presence of granitoid basement geology and the Urapunga Fault Trend provide potential charge and migration focus for natural hydrogen and helium. The Cambrian aged limestones present in the area are also interpreted to be conduits for thermal fluids migrating to surface and provide an initial focus area for sampling and other early-stage exploration activities.

Drilling and testing activities currently being undertaken in the core Beetaloo area of the McArthur Basin continue to mature the unconventional natural gas potential of the subbasin. Key well testing result announcements from other basin operators are expected in the coming months, as well as development of plans for respective pilot plants, potentially paving the way for expansion of operations and commercialisation of

discovered resources. It has been interpreted that unconventional gas bearing reservoirs extend into the southern margins of EP 153. EP 153 is strategically located to be able to benefit from future development activities and provide an avenue to commercialisation for discovered resources.

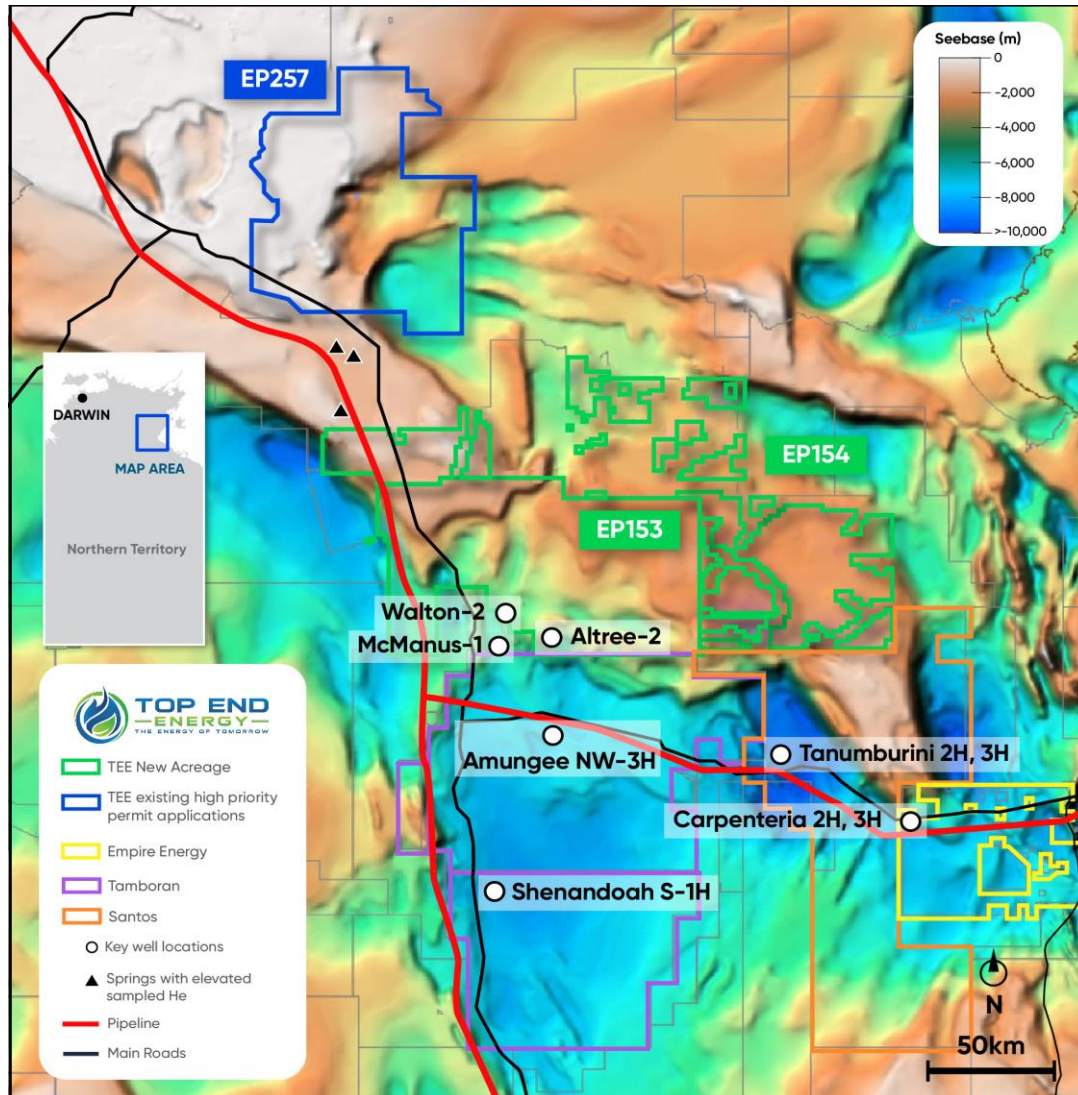


Figure 5: Multiple play potential on the northern flank of the Beetaloo Sub-Basin.

CORPORATE

- Subsequent to Quarter end (on 15 July 2024), Top End announced the appointment of Trevor Brooks as its new Exploration Manager. Mr Brooks brings significant subsurface and operational experience covering the full exploration and production cycle, including prospect generation and maturation, drilling operations, appraisal and development, joint venture and asset management.
- During the Quarter, the Company was awarded A\$200,000 in co-funding grants in Round 17 of the Geophysics and Drilling Collaborations program (Regional Scale Geophysics and Innovative Targeting), administered by the NT Geological Survey.
- As per ASX Listing Rule 5.4.1, a summary of the Company's substantive oil and gas exploration activities undertaken during the Quarter is contained herein, with exploration expenditure during the quarter totalling circa A\$179,000.
- As per ASX Listing Rule 5.4.2, there were no substantive oil and gas production and development activities undertaken during the Quarter.
- Section 6.1 of the Appendix 5B provides for an amount paid to related parties of circa A\$117,000 in relation to directors' fees and salaries.
- The Company remains well-funded with cash of circa A\$2.7M at 30 June 2024.

PLANNED ACTIVITIES FOR Q3 2024

Key activities for the September 2024 quarter include:

- NT Granted Acreage Acquisition: **Complete**
- Commencement of airborne survey over EP 258 to identify key structural features: **Q3 2024**
- Commencement of AGG survey and soil gas sampling program on EP 153 to better understand potential hydrogen / helium system play elements: **Q3 2024**
- Commencement of soil gas sampling survey on EP 144 to test for elevated levels of hydrogen and helium near NDI Carrara-1 stratigraphic well: **Q3 2024**
- Pursuit of collaboration and data sharing activities with mining companies undertaking active exploration programs on overlapping mining licenses targeting mineralisation in the same hydrocarbon source rock formations: **Ongoing**
- Heritage Protection Agreement negotiations with the traditional owner groups of EP 501 (Amadeus Basin, NT): **Ongoing**
- Portfolio rationalisation initiatives and engagement of potential strategic partners to continue to optimise corporate resources: **Ongoing**
- Evaluation of further growth opportunities in key focus areas: **Ongoing**

2024 JUNE QUARTER: ASX ANNOUNCEMENTS

This Quarterly Activities Report contains information extracted from the following ASX market announcements:

Announcement	Date of release
Acquisition of Granted NT Acreage and A\$2.1m Capital Raising	27 February 2024
Update on Granted NT Acreage Acquisition	14 May 2024
Key Stakeholder Consent to NT Acreage Received	31 May 2024
Formal Ministerial Grant of NT Exploration Permit 258	6 June 2024
Government Approval for NT Acquisition Received	2 July 2024
Completion of NT Granted Acreage Acquisition	12 July 2024
Significant Gas Play Potential Emerging in EP 144	15 July 2024

- END -

This release is authorised by the Board of Directors of Top End Energy Limited For further information contact:

Oliver Oxenbridge

Managing Director

E: oliver.oxenbridge@topendenergy.com.au

ABOUT TOP END ENERGY

Top End aims to be a leading Australian diversified energy provider at the forefront of the energy transition. Combining an attractive portfolio of granted and in-application petroleum permits across Australia, intending to pursue complementary clean energy solutions and achieve a target of net zero (Scope 1 and 2) emissions.

For further information on Top End Energy Limited please visit www.topendenergy.com.au

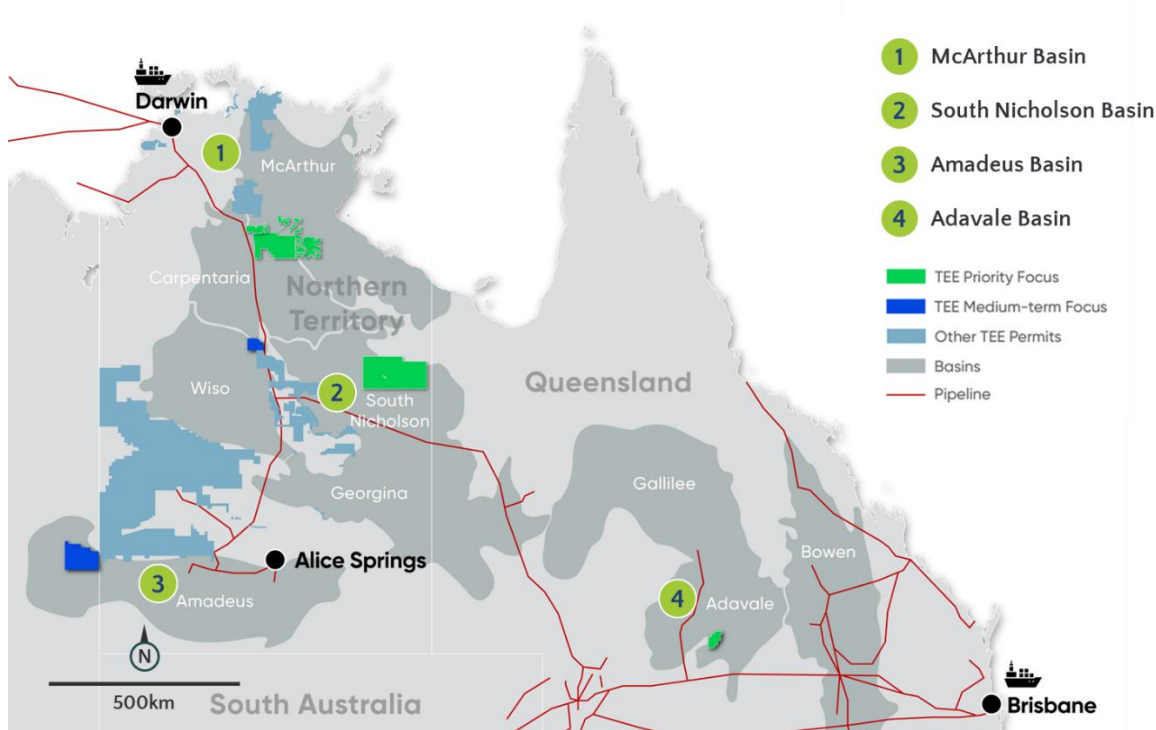


Figure 6: Top End's asset portfolio (at 12 July 2024).

Appendix 1: Tenement Schedule (ASX Listing Rule 5.4.3)

Petroleum tenements held by the Company and its subsidiaries at the end of the quarter and their location.

Permit / Application ¹	Location	Interest %	Holder
ATP 1069	Queensland	100.00	Tomorrow Energy Corporation Pty Ltd
EP 501	Western Australia	100.00	Tomorrow Energy Corporation Pty Ltd
EP(A) 254	Northern Territory	57.68	NT Gas Aust Pty Ltd
EP(A) 256	Northern Territory	57.68	NT Gas Aust Pty Ltd
EP(A) 257	Northern Territory	57.68	NT Gas Aust Pty Ltd
EP 258	Northern Territory	57.68	Territory Gas Aust Pty Ltd
EP(A) 259	Northern Territory	57.68	Territory Gas Aust Pty Ltd
EP(A) 260	Northern Territory	57.68	Territory Gas Aust Pty Ltd
EP(A) 261	Northern Territory	57.68	Territory Gas Aust Pty Ltd
EP(A) 262	Northern Territory	57.68	Territory Gas Aust Pty Ltd
EP(A) 263	Northern Territory	57.68	Territory Gas Aust Pty Ltd
EP(A) 264	Northern Territory	57.68	Territory Gas Aust Pty Ltd
EP(A) 265	Northern Territory	57.68	NT Gas Aust Pty Ltd
EP(A) 274	Northern Territory	57.68	NT Gas Aust Pty Ltd
EP(A) 275	Northern Territory	57.68	NT Gas Aust Pty Ltd
EP(A) 276	Northern Territory	57.68	NT Gas Aust Pty Ltd
EP(A) 277	Northern Territory	57.68	NT Gas Aust Pty Ltd
EP(A) 278	Northern Territory	57.68	NT Gas Aust Pty Ltd
EP(A) 279	Northern Territory	57.68	NT Gas Aust Pty Ltd
EP(A) 280	Northern Territory	57.68	NT Gas Aust Pty Ltd
EP(A) 281	Northern Territory	57.68	NT Gas Aust Pty Ltd

¹ The Company's petroleum tenements in the Northern Territory under application, are marked (A). Grant of applications is subject to reaching agreements with traditional owners and native title holders pursuant to the Aboriginal Land Rights (Northern Territory) Act 1976 (Cth) and the Native Title Act 1993 (Cth).

Permit / Application ¹	Location	Interest %	Holder
EP(A) 282	Northern Territory	57.68	NT Gas Aust Pty Ltd
EP(A) 283	Northern Territory	57.68	NT Gas Aust Pty Ltd
EP(A) 284	Northern Territory	57.68	NT Gas Aust Pty Ltd
EP(A) 285	Northern Territory	57.68	NT Gas Aust Pty Ltd
EP(A) 294	Northern Territory	57.68	NT Gas Aust Pty Ltd
EP(A) 295	Northern Territory	57.68	NT Gas Aust Pty Ltd
EP(A) 312	Northern Territory	57.68	Territory Gas Aust Pty Ltd
EP(A) 313	Northern Territory	57.68	Territory Gas Aust Pty Ltd
EP(A) 314	Northern Territory	57.68	Territory Gas Aust Pty Ltd
EP(A) 315	Northern Territory	57.68	Territory Gas Aust Pty Ltd
NTC/P(A) 14	Northern Territory	57.68	NT Gas Aust Pty Ltd

During the Quarter, the Company received the formal Ministerial grant of EP 258.

After the Quarter end (on 12 July 2024), the Company announced the completion of the transaction to acquire EP 144, 153 and 154 in the Northern Territory from wholly owned subsidiaries of Hancock. Transfer of title following completion is pending.

Appendix 2: Summary of cash expenditure per project

Project	Cash Expenditure A\$'000
Exploration Budget - ATP 1069	6
Exploration Budget - TG Project	118
Exploration Budget – EP 501	15
McArthur Energy – EP 144, 153 and 154	40