

DECEMBER 2023 QUARTERLY REPORT**SIGNIFICANT PROGRESS AT ALPHA PROJECT AND EXCITING
HELIUM ACQUISITION IN CENTRAL AUSTRALIA****Highlights****Alpha Torbanite Project, QLD (100%-owned):**

- Updated Inferred Resource of 28Mt of Torbanite and Cannelite, representing a 51% increase on the maiden 18.6Mt MRE (March 2022).
- Increase to volumetrics with 27.7 million barrels of synthetic oil equivalent – up 30% on the previously stated MRE.
- Technix provide first the indications of bituminous product potential and Licella™ completes supercritical test program in two significant advancements with Test Program Four.
- Monash University program gathering momentum with 9 of 16 test runs now complete and Test Program Four expected to be completed in early 2024.

Geothermal Project – 100%-owned

- Native Title Discussions for consent of exploration progressing well.

Georgina Basin IOCG Project, NT (20%-owned):

- Data processing and interpretation continued for the Ambient Noise Tomography (“ANT”) geophysical survey, which commenced in the previous quarter.
- Survey results will be used to generate future drill targets.

Corporate:

- Farm-in agreement executed with Mosman Oil and Gas Ltd to acquire a 75% interest in the highly prospective EP 145 Permit in the Amadeus Basin in Central Australia:
 - P 145 hosts an existing Prospective Resource Estimate with a “Best Estimate” of 440 Billion cubic feet (“Bcf”) Total Gas, including 26.4 Bcf of Helium and 26.4 Bcf of Hydrogen.
- Issue of \$477,000 of fully-paid shares to Pioneer Resources which reduces loan exposure to that Company.

Overview

Greenvale Energy Limited (ASX: **GRV** or **the Company**) achieved a number of significant milestones during the December Quarter, with its principal focus being to further advance its 100%-owned Alpha Torbanite Project in Queensland towards development.

REGISTERED OFFICE:

Level 5, Suite 6 189 Kent Street, Sydney, New South Wales 2000 | GPO Box 2733, Sydney NSW 2001
+61 2 8046 2799 | admin@greenvaleenergy.com.au | www.greenvaleenergy.com.au

ABN 54 000 743 555

The completion of an updated JORC Mineral Resource Estimate (MRE) for the deposit marked a key step toward the commercial development of this flagship project. The updated MRE revealed a substantial 51% increase in the total dry tonnes of the deposit, reaching 28Mt of combined cannellite and torbanite, compared to the maiden 2022 estimate of 18.6Mt.

This enhancement underscores the scale and potential of the Alpha deposit, positioning it as an asset of considerable commercial significance. The synthetic oil equivalency of the deposit also saw a notable improvement, with an additional 6.4 million barrels bringing the total to 27.7 million barrels of synthetic oil equivalent.

The updated MRE, calculated using yield estimations from the Modified Fischer Assay (MFA) results reported in December 2021, is expected to be further enhanced with the imminent completion of the final stage of liquefaction testing led by Monash University. This progress not only holds the potential for increased yields but also an elevation of the confidence level of the MRE from Inferred to Indicated, crucial for the upcoming Pre-Feasibility Study (PFS).

The Company's commitment to refining the extraction process was evident in the positive outcomes achieved from liquefaction Test Program Four. Greenvale's technical bitumen advisors, Technix, assessed initial liquefaction bulk samples from PROCOM, indicating the potential to supply bituminous products of commercial interest to the market. The asphaltene content of the produced oil extract showed promising properties, with a higher percentage than standard bitumen, positioning the product as a high-quality blend stock. The observed extract aligns closely with Class 600 bitumen, a grade commonly used in road construction, indicating the potential for a premium product. Further exploration of bitumen properties from additional bulk samples is underway, and the early indications suggest the potential for a suite of high-value products.

The completion of the supercritical water program by Licella™, under PROCOM direction, represented another positive step in Test Program Four. The results obtained from Licella™'s test apparatus will contribute valuable insights to Monash University's broader program, optimising processing conditions and evaluating different seams in four drill holes.

Greenvale's Board and management team are very encouraged by the recent developments and the positive trajectory toward the maiden PFS for the Alpha Project. The significance of the first indications of potential commercial products and the contribution from the team at Licella™ cannot be underplayed. With a majority of test runs now completed by Monash, updates for shareholders are anticipated early in the March 2024 Quarter on the progress of Test Program Four and the final delivery of the PFS.

In addition to these advancements, Greenvale finalised a farm-in agreement with Mosman Oil and Gas Ltd to acquire a 75% interest in EP 145 in the Amadeus Basin, Central Australia. The farm-in agreement, which is subject to Ministerial Consent and Government approval for the transfer of operator rights, positions Greenvale as the operator of the project. EP 145 hosts an existing Prospective Resource Estimate, including 26.4 Bcf of Helium and 26.4 Bcf of Hydrogen, offering an exciting opportunity to target the rapidly expanding helium market. The proximity to critical gas infrastructure provides a near-term commercialization pathway, complementing the progress of the Alpha Torbanite Project in Queensland.

The transaction terms involved a cash payment of \$160,000 for a 75% interest, with Greenvale funding 100% of the seismic and well work program. The Company will act as the Operator, overseeing the project through an Operating Committee that it controls. This acquisition aligns with Greenvale's broad green energy strategy, tapping into the potential of helium and hydrogen resources in Central Australia.

Projects

Alpha Project, Queensland

Background

The Alpha Torbanite Project is located approximately 50km south of the town of Alpha in Central Queensland. The Alpha torbanite deposit consists of two seams, an upper seam of mostly lower-grade mineralisation with an average thickness of 1.12m and a lower seam containing lenses of torbanite up to 1.9m thick. The Project has been subject to extensive exploration and laboratory testing since its initial discovery in 1939.

During 2019, SRK Consulting Pty Ltd (“SRK”) was engaged to reassess the project’s commercialisation strategy. SRK’s report set out a potential new development strategy based on the production of a diversified suite of value-added products. SRK noted that, in contrast with typical oil shale deposits, the Alpha torbanite deposit is exceptionally high-grade, containing up to 650 litres of hydrocarbons per tonne of torbanite, and can produce high-value bitumen, light crude oil and activated carbon.

The upper and lower bituminous shales also produce similar products, albeit at lower yields of 110-140 litres per tonne. Additionally, the torbanite and bituminous shales can deliver high-quality value-added products through appropriate investment in processing infrastructure. SRK was engaged to undertake a staged work program to assist in evaluating the project’s commercial viability.

Activities during the December Quarter

A key milestone during the December Quarter was the release to market of the updated JORC Mineral Resource Estimate (MRE) for the Alpha Project on 13th November 2023 (*ASX Release - ‘51% Increase in Alpha Resource Substantially Expands Project Scale and Potential’*).

The updated MRE saw a 9.4Mt increase in the total dry tonnes of the deposit, up from 18.6Mt in the maiden 2022 to 28Mt of combined cannelite and torbanite. This represents a significant 51% increase in the total size of the Inferred Resource and reinforces the scale and potential of the Alpha deposit.

The synthetic oil equivalency of the deposit also saw a noticeable improvement, adding 6.4 million barrels for a total of 27.7 million barrels of synthetic oil equivalent.

It is also important to note that the updated MRE synthetic oil equivalency has been calculated utilising yield estimations from the standardised Modified Fischer Assay (MFA) results reported back in December 2021 and are likely to improve following completion of the final stage of liquefaction testing due in the first quarter of 2024.

The updated JORC Mineral Resource Estimate for the Alpha Deposit is set out in Table 1 and Table 2 below, with the Inferred Resource Area shown in Figure 1:

Table 1: MDL 330 Inferred Mineral Resource Estimate by seam and ply unit (plus % +/- from maiden MRE)

Seam /Ply	Area (m ²)	Volume (cu m)	Waste Thickness (m)	Waste Volume (bc m)	Tonnes (Air Dried)	% +/- (Air Dried)	Tonnes (Dry)	Tonnes (In Situ)
U	5,199,146	5,409,700	21	181,383,104	6,491,640	+97%	6,653,931	6,437,543
L1	9,056,464	10,548,503	16	142,970,480	12,995,530	+64%	13,291,114	12,869,174
LT	6,774,137	3,635,190	0	157,694	4,301,324	-6.4%	4,325,876	4,289,524
L2	8,684,433	3,465,159	0	41,993	4,267,732	+49%	4,366,100	4,192,842
Total					28,056,227	+51%	28,637,021	27,789,083

The Mineral Resources were estimated for each of the modelled plies for which there are reasonable prospects for economic extraction. Mineral Resources are limited to the area within MDL 330 and do not, as previously stated, allow for any extension of the deposit into the Company's surrounding exploration permit, EPM27718.

Table 2: MDL 330 preliminary volumetrics for Mineral Resource estimate

Seam /Ply	Inferred Dry Tonnes (Mt)	% of Total	Synthetic Oil (MMboe)	% of Total	Oil Yield LTOM	No. of Drill Holes
U	6.7	23%	4.4	16%	105	2
L1	13.3	46%	8.7	31%	104	4
LT	4.3	15%	10.7	39%	395	4
L2	4.4	15%	3.8	14%	140	4
Total	28.6	100%	27.7	100%	154	6

Mineral Resources have been estimated for Upper and Lower seams (U, L1, LT, L2). Points of Observation for determining cannel coal and torbanite thickness and continuity include cored seam intersections, with geophysical wireline log.

The up-dip (northern and north-eastern) limits of the Inferred Resource were defined by the modelled base of weathering.

An improved topographic surface model obtained from airborne LiDAR acquired in 2022 has changed the projected base of weathering in the northern section of the deposit where terrain is more variable.

The down-dip (western, southern and south-eastern) extent of the Inferred Resource was limited to a maximum open cut mining depth of 60m to the floor of the Lower Seam and to the tenement boundaries of MDL330.

The cannel coal and torbanite lens Resource tonnage calculations were based on the bulk density model for the coal seam on an in-situ basis. The modelled laboratory air dried bulk density data for the cannel coal and torbanite units was used to calculate air dried tonnages and was subsequently adjusted to an in-situ moisture basis using the Preston and Sanders (1993) calculation.

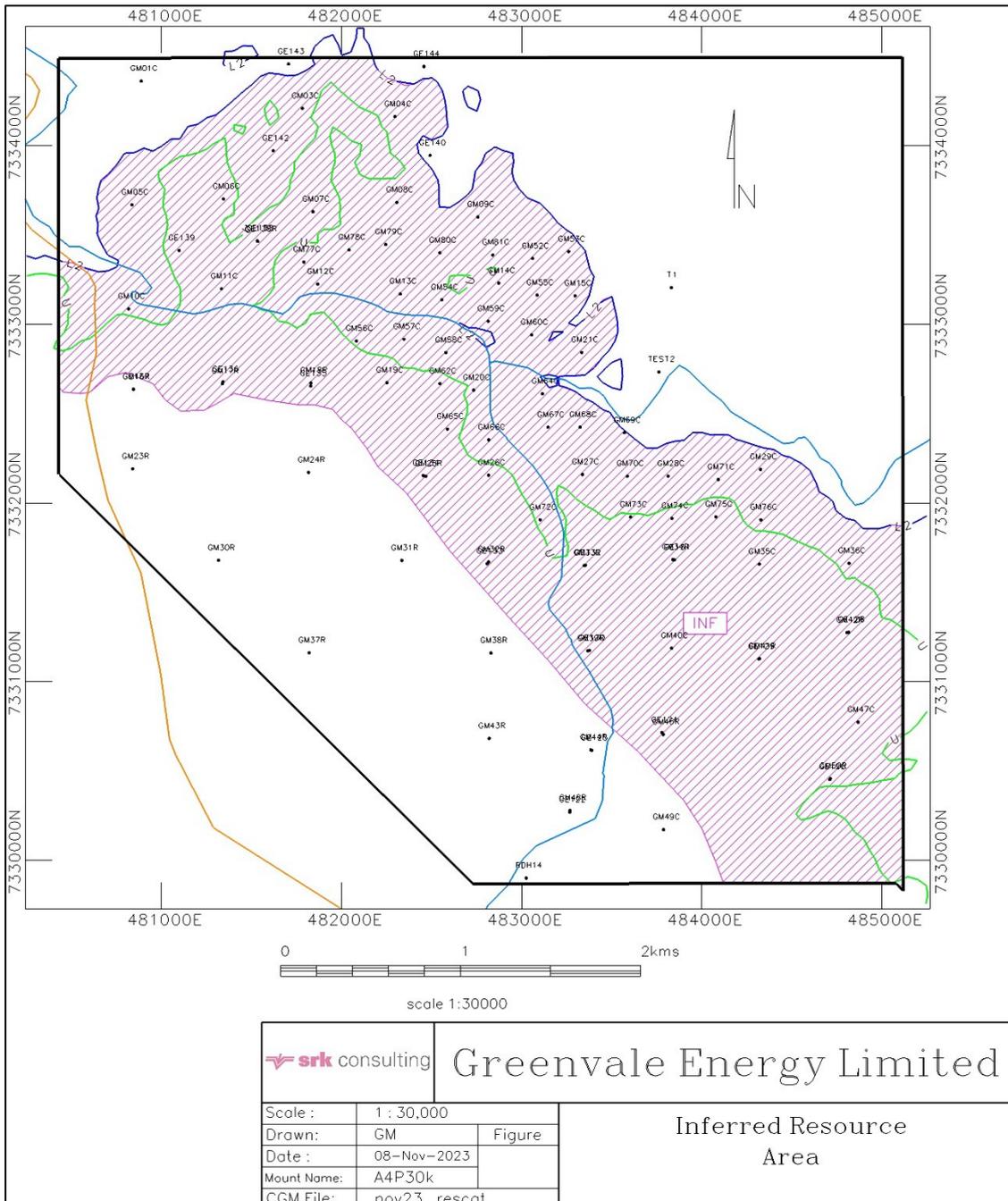


Figure 1: Inferred Resource Area at Alpha Torbanite Project, QLD.

As in-situ moisture cannot be measured directly, an assumed in-situ moisture of 14% was used for the Alpha cannel coal, based on an air-dried moisture regression equation developed by Fletcher and Sanders (2003). The resultant in-situ moisture for the sampled cannel coal seams typically equates to the air-dried moisture of 9.4%.

A lower in-situ moisture of 6% was assumed for the torbanite lens. Due to its finer pore structure, lack of cleat and resultant lower air-dried moisture content (av. 5.1% ad) compared with the cannel coal plies.

No torbanite or cannel coal quality limits/grade cut-offs were applied to the MRE and the Resource is considered amenable to open cut mining methods.

Additionally, as reported to the market on 27th December 2023 (ASX Release: 'Test Program Four Delivers First Indication of Bituminous Products as Licella Completes Supercritical Water Program'), the Quarter saw the first indications from Greenvale's technical bitumen advisors, Technix, of the bituminous potential of the Alpha Deposit.

Technix assessed the initial liquefaction bulk samples from PROCOM and separated the remaining solids and the produced oil. Initial testing of that bulk oil indicated the potential for the Alpha Project to supply bituminous products of considerable commercial interest to market. Technix has confirmed that the full range oil separated out from the bulk sample provided by PROCOM has very promising properties. The asphaltene content of the produced oil extract is higher than that of the standard bitumen at approximately 55% (55.3% heptane insoluble), while the asphaltene content of standard bitumen varies up to 25%.

Without any additives, the viscosity of the cannelite and torbanite extract from core samples is similar to 60/70 penetration grade bitumen. However, the penetration is significantly less and therefore, as a blend stock, the product is considered to be of high quality. With respect to the Australian Standard, the crude extract classification assessed by Technix is close to Class 600 bitumen, with its viscosity at 60C being slightly higher.

Class 600 bitumen refers to a specific grade of bitumen used for road construction and pavement applications. The classification is determined based on various factors, including penetration values, softening points and other rheological properties. These properties help in specifying the suitability of bitumen for different climate conditions and road construction requirements.

In general, higher-grade bitumen, such as Class 600, may attract a premium compared to lower-grade bitumen such as Class 300. This premium is typically because higher-grade bitumen often requires additional refining processes to meet specific performance characteristics.

The observed extract requires further analysis and understanding of the blending potential and/or the need for modification by Technix to satisfy the requirements of standard bitumen used in road pavement applications. The early indications are extremely promising for a high-value product.

In addition to the study on bitumen properties from two bulk samples of products, a number of other studies are focusing on the evaluation of Alpha drill core samples to establish whether they will strongly convert to suitable oils under similar processing conditions to the successful trials used in Test Programs 1 – 3 on outcrop samples. This work is being undertaken on both oil and water as carriers for the liquefaction process. To date, the emphasis has been on the use of water as the carrier.

Licella™ also completed its supercritical water program, marking another step forward in Test Program Four under PROCOM direction. The information obtained from Licella™ test apparatus results has demonstrated the trends of increased conversion with Supercritical density as reported in literature. Analysis of the results will provide sound input to the broader based program being undertaken by Monash University to evaluate all the different seams in four drill holes and optimise processing conditions.

Technix Bitumen Assessment:

The tests conducted by Technix involved a 2.5L sample of cannelite and torbanite processed extract derived by using toluene as the carrier for the Alpha Torbanite Project, produced by PROCOM. The separation of derived oil from the carrier (toluene) and the remaining reaction solids was comprehensive, involved homogenising the sample, heating, filtration, toluene washes and separation of the remaining toluene solvent at 110°C, resulting in a 100% heavy oil Alpha Shale derived extract. Rigorous testing followed, encompassing dynamic viscosity, penetration, and asphaltene content.

Test methods:

Dynamic viscosity: ASTM D2171 or equivalent Australian Standards

Penetration: ASTM D5. or equivalent Australian Standards

SARA Analysis: ASTM D3279 or equivalent Australian Standards

Results:

Results indicate a total residue of 900g after filtration (not fully dried) and a total crude extract of 128g after solvent removal. Viscosity measurements at 60°C (887.00 Pas) and 135°C (0.422 Pas). Penetration measured at 32 dmm, and Analysis showed 55.3% heptane insoluble (asphaltene).

The above results are encouraging. However, toluene will not be used as a carrier in a commercial plant, and it was used experimentally to allow easy separation of the produced oils. Toluene will not play a role in the Alpha processing pathway on a large scale. Consequently, the precise identification of products and determination of yields is not final but directionally they are a good indicative measure. The derived oil-based bulk sample analyses which will soon follow will help close this loop.

Licella™ Test Program:

Unfortunately, the majority of trials fell short of achieving a sufficiently high supercritical fluid density of around 0.35g/ml as indicated in literature as an optimal for the conversion of the torbanite, cannelite and blend samples. The target conditions include holding the reagents at about 400oC for 30 minutes in the reactors of various sizes and methods of agitation.

The collective findings indicate that conversions ranging from 28 wt% to 35 wt% can be achieved using water as a carrier under the conditions of the experiments. There is potential for improved yields if the correct conditions can be found. Catalysts have also not been investigated in this program.

Notably, Licella™'s liquefaction tests attained the highest conversions, which are reporting primarily as oil, with lower asphaltene and pre-asphaltene yields compared to Monash University's tests utilising water as the carrier.

Gas yields of about 8 wt% on an as received basis appeared relatively consistent between both testing programs with water as a carrier (results appear to be different when oil is used as the carrier).

Tests of supercritical water densities (0.1-0.16g/ml) at the lower end of the optimal range clearly indicate improved conversions with increasing density. Yields of pre/asphaltene components are however low.

Next Steps

The second bulk sample will be separated, and the oils analysed by Technix. This progression will require a more involved separation procedure compared with the toluene-based product already analysed. PROCOM has recommended distillation at atmospheric pressures and under vacuum to split the oil carrier derived products. A vacuum cut at about 340C was suggested to produce the base for bitumen analyses. Analysis of distillation products will provide insights into the typical production process and will allow the evaluation of the heavier and the lighter oils which can both be utilised in bitumen product formulations.

The methods used to separate out asphaltenes from the remaining shale solids will be standardised according to good laboratory practices to ensure consistency in results and their interpretation.

Additional analytical tests have been recommended, including TGA on liquid sample to provide information on the oil components within a specific temperature range. TGA, Proximate and Ultimate Analysis on the solids will identify any organic materials that may still be present and further characterise the sample.

In regard to the ongoing liquefaction test program, there are too few results available to make a definitive call on the best conditions and how the different seams affect yield with water as carrier. Further tests are planned with Monash at higher Supercritical Densities across all the four wells.

PROCOM and Monash University will now take the findings of the Licella™ supercritical water program and integrate these findings into the ongoing work.

Monash University will continue their work and it is anticipated that the results from their test runs will be released to the market in the coming Quarter. Their results, along with the ongoing work by Technix, will be integrated into a final resource statement and the techno/commercial modelling that will form part of the Pre-Feasibility Study.

Greenvale is confident that the first Quarter of 2024 will see a steady and rewarding flow of news regarding the Alpha Project, with the Company's Board and Management looking forward to sharing updates on this ever-evolving project with shareholders as the news comes to hand.

Geothermal Project, Queensland

Background

Greenvale and its wholly-owned subsidiary, Alpha Resources, is the 100% owner of a number of Exploration Licences in north Queensland of Geothermal energy projects. Geothermal energy is the heat produced deep in the earth's core. Geothermal energy is regarded a clean, renewable resource that can be harnessed for use as heat and electricity.

Activities during the December Quarter

The focus of GRV's geothermal program has now shifted to the Millungera Basin, where the company is exploring avenues for reducing well costs, including potential rig acquisition tailored to the project's needs. A detailed sub-surface review has commenced to provide a thorough sub-surface assessment to identify drilling risks and define subterranean stratigraphy more accurately.

Native Title discussions regarding consent agreement for exploration with the Mitakoodi and Mayi People is progressing and expected agreement to be in place by Q1 2024.

Next Steps

- Finalisation of Native Title Agreement allowing the Queensland Government to Grant EPG 2023, EPG2024 and EPG2025.
- Detailed sub-surface review to complete a thorough sub-surface assessment to identify drilling risks and define subterranean stratigraphy more accurately.

Georgina Basin IOCG Project, Northern Territory

Background

The Georgina Basin Project, owned by Knox Resources Pty Ltd (**Knox**), a company which is 20% owned by Greenvale. As part of its ownership of Knox, the Company is required to contribute to the funding of its share of Knox's future costs. Greenvale is entitled to a 2% net smelter royalty (**Royalty**) for all Iron Oxide Copper Gold (**IOCG**) product exploited in the future from the existing tenements owned by Knox.

Located in the highly prospective East Tennant province in the Northern Territory, the Georgina Project, which is 80% owned by Astute Metals NL (ASX ASE) and the remaining 20% is owned by the Company and comprises seven granted Exploration Licences and three under application, for a combined total of approximately 4,500km² (Figure 2).

The East Tennant province has been the subject of intense geoscientific investigation by both Geoscience Australia and the Northern Territory Geological Survey for over five years. Pre-competitive work undertaken as part of the Federal Government's \$225 million Exploring for the Future program (EFTF) included solid geology interpretation, alteration proxy mapping and mineral prospectivity mapping for Iron Oxide Copper Gold (IOCG) deposits; and

The collaborative MinEx CRC National Drilling Initiative, conducted in late 2020, confirmed the highly prospective nature of the region by intersecting prospective host rocks, IOCG-style alteration and sulphide mineralisation as part of a 10-hole program at East Tennant.

IOCG deposits are typically large, economically attractive copper-gold deposits with some smaller high-grade variants – most notably those at Tennant Creek. This style of deposit contains elevated levels (10-60wt %) of the iron oxide minerals magnetite and hematite, which gives rise to their (typically) elevated magnetic and gravity (density) properties.

Australian IOCG's include the South Australian Olympic Dam, Prominent Hill, and Carrapateena deposits, Ernest Henry in north-west Queensland, and the high-grade Northern Territory Warrego and Juno deposits, located west of the Georgina Project at Tennant Creek.

Knox has been awarded a co-funding grant by the NT Government to conduct the ANT survey, under Round 16 of the Geophysics and Drilling Collaborations program. The grant, valued at \$100k, is one of two awarded to the Company this year. The award of this grant is testament to the sound technical rationale employed by the Astute technical team in the survey design. The Company would like to acknowledge the Northern Territory Geological Survey for their continued support and their commitment to establishing the Northern Territory as a Tier-1 exploration jurisdiction.

Work During the Quarter

During the quarter, Knox/ASE continued data processing and interpretation for the Ambient Noise Tomography ("ANT") geophysical survey, which commenced in the previous quarter. The survey is located over its highly prospective central Georgina tenement, EL33375, in the Northern Territory. The survey, conducted using Fleet Space Technologies "ExoSphere" technology, is the first of its kind to be employed in the frontier IOCG-prospective East Tennant region.

Full details of the findings from the ANT review were announced on 11th January 2024 and full details will be released in the Company's 31 March 2024 Quarterly Report.

ExoSphere Technology

EXOSPHERE BY FLEET® is a solution for the mineral exploration industry that provides 3D mapping of the subsurface at greater depths and increases accuracy in drilling targets. The cutting-edge technology utilises Ambient Noise Tomography (ANT) and is helping the world in the energy transition by creating a faster, more sustainable and less expensive route to finding critical mineral deposits.

The sensors are deployed in a survey area and leverage real-time passive seismic methods to ‘scan’ the land beneath in search for minerals. This is enabled through non-invasive ANT which listens to seismic waves. The data is rapidly processed and transmitted through Fleet’s low power satellite network to create a 3D model of the area in near real-time.

ANT surveys have been successfully employed by a number of resources companies across Australia, including Northern Star Resources (ASX: NST), Hillgrove Resources (ASX: HGO) and fellow IOCG explorer Coda Minerals (ASX: COD). More information is available at <https://fleetspace.com/mineral-exploration>

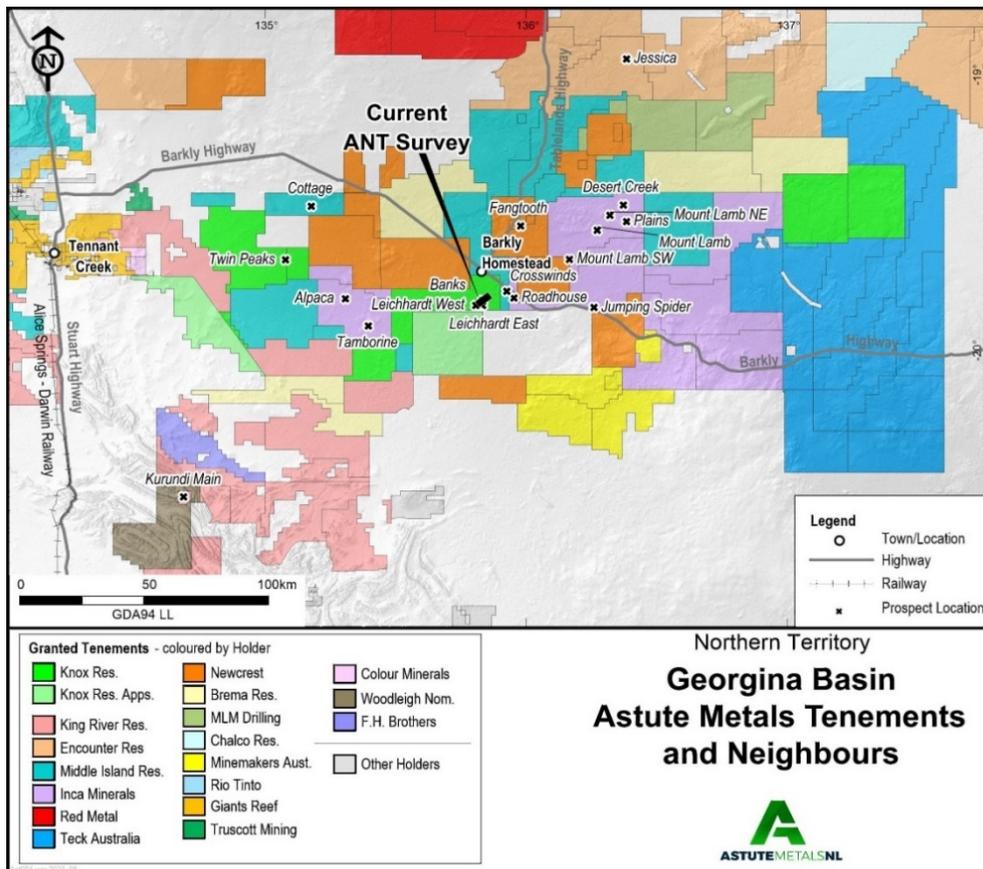


Figure 2. Knox Resources tenements (green), neighbouring tenements and location of ANT Survey

Corporate Activities

Acquisition of 75% interest in helium, hydrogen and hydrocarbon project in the Amadeus Basin, Northern Territory

During the quarter, the Company executed a Farm-in Agreement with Mosman Oil and Gas Ltd (AIM: MSMN, “Mosman”) to acquire a potentially ultra-high-grade helium, hydrogen and hydrocarbon opportunity in the Amadeus Basin in Central Australia.

Under the terms of the agreement, the to the Company’s wholly owned subsidiary, Greenvale Gas Pty Ltd (Greenvale Gas), will acquire 75% interest in EP 145 permit in the Northern Territory which is 100% owned by Trident Energy Pty Ltd, which is a wholly subsidiary company of Mosman Oil & Gas. The agreement is subject to Ministerial Consent by the Northern Territory government approval for the 75% interest the transfer of Operator rights to Greenvale Gas.

Mosman reported a Prospective Resource Estimate for EP 145 on 24 October 2022 which included a “Best Estimate” (applying the SPE PRMS standard) of 440 Billion cubic feet (“Bcf”) Total Gas, including 26.4 Bcf of Helium and 26.4 Bcf of Hydrogen.

The Amadeus Basin has a long history of hydrocarbon production in the Palaeozoic and late Proterozoic succession. Helium and hydrogen production have been proven through exploration drilling, with some of the highest concentrations of helium globally – highlighting its potential to become a world-class province for helium and hydrogen.

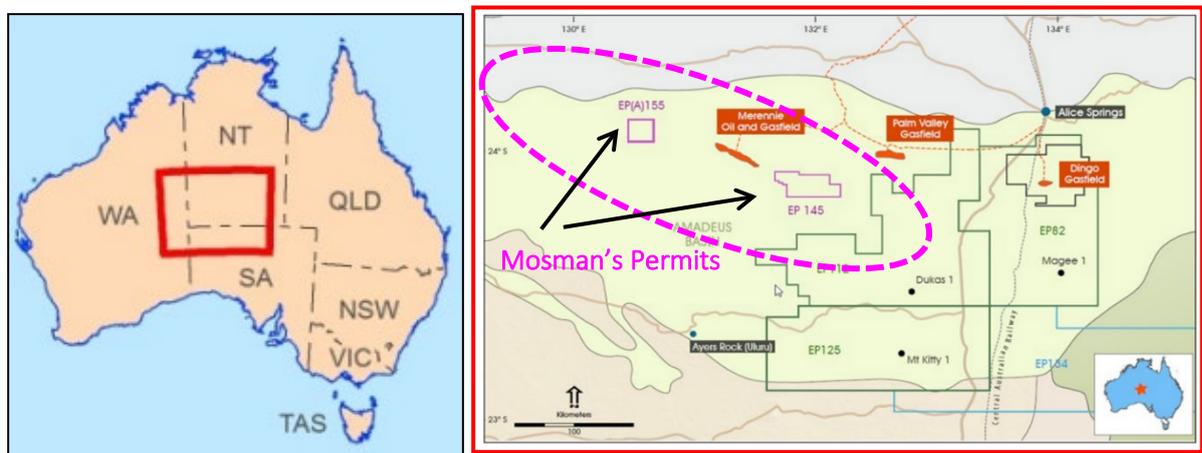


Figure 3 – Location of Mosman Permits in the Amadeus Basin

The EP 145 permit sits within recognised play fairways for helium and hydrogen and contains proven hydrocarbon discoveries. The permit lies on-trend with the producing Mereenie oil & gas field and is optimally located for helium, hydrogen and hydrocarbons.

Successful helium wells are located along the margins of the Amadeus Basin at Mt Kitty-1 and Magee-1, with existing gas pipeline infrastructure to Darwin and the Australian East Coast, providing an opportunity for rapid development and commercialisation.

A preliminary technical evaluation for EP 145 commissioned by Mosman in 2022 and undertaken by Geognostics Australia Pty Ltd identified favourable scenarios for all three essential play elements related to viable helium and hydrogen plays. These components are also present in the Mount Kitty-1 and Magee-1 wells. The key findings of the Technical Report included¹:

1. identified favourable scenarios for all three essential play elements related to viable helium and hydrogen plays including:
 - (a) basement composition as a source of helium;
 - (b) basement structure and connectivity via faults systems to support entrapment and / or migration of deeply-sourced gases (hydrogen and helium); and
 - (c) possible seal facies above basement
2. EP 145 is underlain by felsic-intermediate granites, a known source of helium in the basin.
3. EP 145 contains the West Walker anticline with traps at multiple levels and migration pathways.
4. The Gillen Formation evaporites interlayered with thin salt could be present and could act as viable seals.

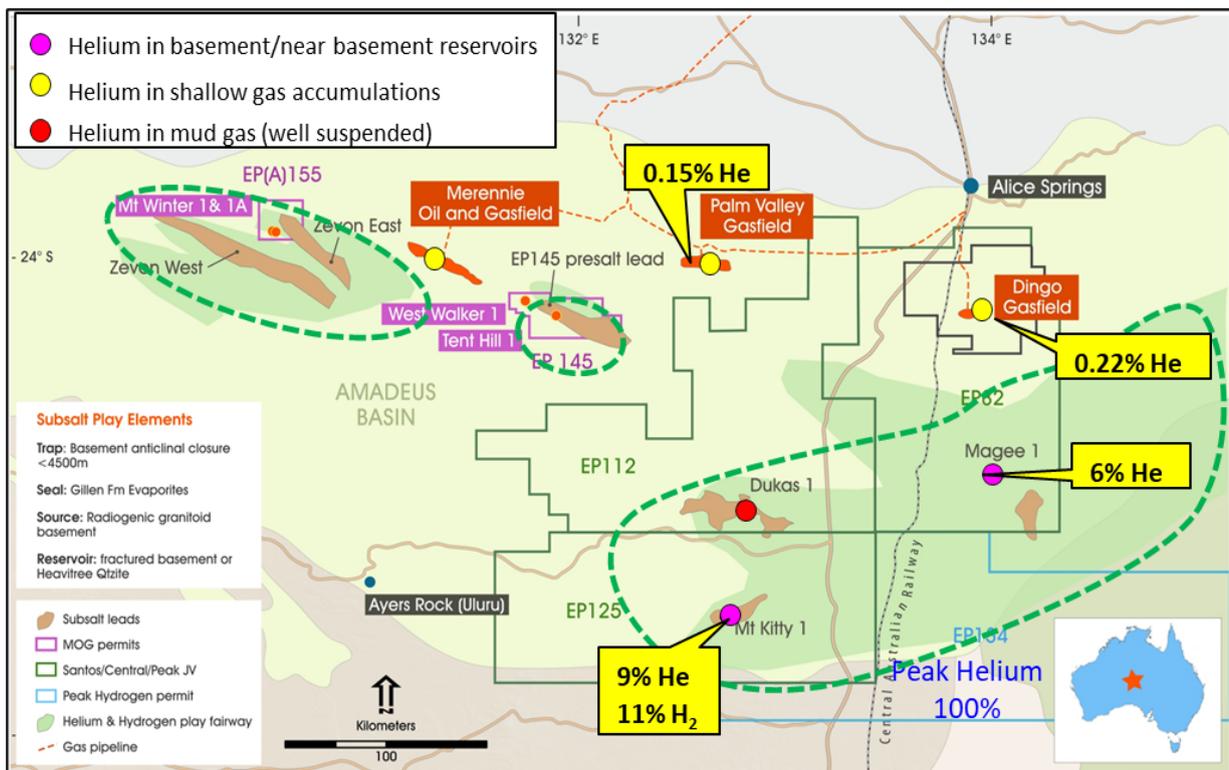


Figure 4: Helium play fairway map, Amadeus Basin.

¹ See Mosman Oil and Gas announcement 24 October 2022: “EP 145 Prospective Resource Estimate for Helium and Hydrogen”.

Since 2006, the helium market has experienced periods of severe supply shortages, with strong forecast demand growth and very few new sources of supply in the pipeline.

The EP 145 acquisition provides an exciting opportunity for Greenvale to target the rapidly expanding helium market, with global helium demand currently estimated to be around 6Bcf per annum and expected to increase to 8.5Bcf by 2030.

Helium

Helium is an inert gas that has the lowest cooling temperature of any element, making it invaluable for medical, manufacturing and scientific applications. Helium is used in medical diagnostic equipment including magnetic resonance imaging (MRI) machines, nuclear magnetic resonance (NMR) spectrometers and is used to cool nuclear reactors. Due to its unreactive nature, helium provides a protective atmosphere for making fibre optics, semiconductors and in arc welding.

Other uses include in rocket propulsion, meteorology (for instrument carrying balloons), refrigeration and cryogenic research.

Natural Hydrogen

Natural hydrogen in the Earth's sub-surface provides an alternative, clean, carbon free fuel which can be extracted for commercial use. Unlike the hydrogen produced via water electrolysis, natural hydrogen requires no additional energy input from either fossil fuels (coal/natural gas) or renewables.

Agreement Terms

The completion date is subject to the above approvals, under the terms of the farm-in agreement, Greenvale Gas will earn a 75% working interest in EP 145 by:

- Pay to Trident Energy within 5 business days of the Completion date upfront cash payment of \$160,000;
- On completion, fund the Permit Year 3 Work Program including acquisition of seismic data by August 2024; and
- Fund the drilling of one well to be drilled before August 2025.

The cost of seismic data acquisition is estimated to be circa \$2 million. On completion, Greenvale Gas will commence the work on the seismic data acquisition. Greenvale have the right to terminate the Farm-in Agreement should any of the conditions precedent not been satisfied on or before 31 January 2024. It is noted that this period is being revisited.

In the second operation and based on the results of from the seismic work, Greenvale is to undertake to drill the well at an expected cost of \$5.5 million. Any costs over \$5.5 million are to be split between Greenvale and Mosman on a 75:25 basis.

Greenvale will take over Operatorship of the EP 145 permit under a Joint Operating Agreement (JOA). A summary of the key terms of the JOA are set out in ASX release 17 October 2023. All decisions under the JOA are to be made by the Operating Committee. It will be noted from Appendix 1 of ASX release 17 October 2023 that a majority for decisions made under the Operating Committee require a majority of one or more persons who has a 70% ownership interest.

Annual General Meeting

The Company held its Annual General Meeting on 22 November 2023, passing the following resolutions:

- Adoption of the Annual Report;
- Passing of the Remuneration Report
- Re-appointment of Elias Khouri;
- Approving of Listing 7.1A;
- Ratification of previous share issue to Pioneer Resources; and
- Approval of incentive plan to Mark Turner.

Capital raising

During the quarter, the Company issued 7,453,125 fully paid shares to Pioneer Resources Limited (Pioneer) at a price of \$0.064 cents per share. These shares have reduced the amount owing to Pioneer by \$477,000.

ASX Additional Information

The Company provides the following information pursuant to ASX Listing Rule requirements:

1. ASX Listing Rule 5.3.1:

Exploration and Evaluation Expenditure spent during the December 2023 quarter was \$459,205. Full details of exploration activity during the December 2023 quarter are set out in this report.

Below is the breakdown of the expenditure incurred during the December 2023 quarter:

Property	Nature of expenses	Amount (\$)
Alpha Project		
	Alpha Testwork	123,794
	Drilling costs	195,791
	Geology and geophysics	2,411
	Mining administration and environmental compliance cost	137,209
	Subtotal – Alpha Project	459,205
Geothermal Project		
	Subtotal – Geothermal Project	-
Total Exploration costs		459,205

Table 3: Analysis of exploration expenditure for the December 2023 quarter

2. **ASX Listing Rule 5.3.2:**

The Company confirms that there was no mine production and development activities for the quarter.

3. **ASX Listing Rule 5.3.5:** Payment to related parties of the Company and their associates during the quarter was \$120,800, in cash.

The Company advises that this relates to remuneration of Directors only. Please see the Remuneration Report in the Company's Prospectus for further details on Directors' Remuneration. Set out below is the following additional information in relation to the cash flow statement:

Name of Director	Nature of Payment	Amount (\$)
Neil Biddle	Ongoing Director fees	33,300
Elias (Leo) Khouri	Ongoing Director fees	-
Mark Turner	Ongoing executive director remuneration	87,500
Total Director Remuneration		120,800

Table 4: Director's remuneration for the December 2023 quarter

Authorised for Release

This announcement and the accompanying Appendix 5B have been approved by the Board for release.

Contact

For further details, contact:

Mark Turner, CEO, 0459 519 999

Media Inquiries:

Nicholas Read – Read Corporate

Nicholas@readcorporate.com.au

Mobile: 0419 929 046

COMPETENT PERSON'S STATEMENT – ALPHA TORBANITE PROJECT:

The information in this report that relates to Metallurgical and Bitumen results is based on information compiled by Paul Griffin, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy AusIMM Member number 100234. Paul Griffin has sufficient experience that is relevant to the processing and testing of the bituminous and related materials under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Paul Griffin consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

COMPETENT PERSON'S STATEMENT – ALPHA TORBANITE PROJECT MRE:

The information in this report that relates to Exploration Results is based on information compiled by Mr. Carl D'Silva, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy (AusIMM Member number 333432).

Mr. D'Silva is a full-time employee of SRK Consulting (Australasia) Pty Ltd, a group engaged by the Company in a consulting capacity. Mr D'Silva has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'.

Mr. D'Silva consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

COMPETENT PERSON'S STATEMENT – GREORGINA BASIN IOCG PROJECT:

The information in this report that relates to Exploration Results is based on information compiled by Mr. Matthew Healy, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy (AusIMM Member number 303597).

Mr. Healy is a full-time employee of Astute Metals NL (formerly Astro Resources NL).

Mr. Healy has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'.

Mr. Healy consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Tenements

In accordance with Listing Rule 5.3.3, Greenvale provides the following Information concerning its exploration licenses:

Tenement Details

Alpha Project, Queensland

Tenement	%age Ownership	Owned by	Status
MDL 330	100%	Alpha Resources Pty Ltd	Current to 31 January 2027
EPM 27718	100%	Alpha Resources Pty Ltd	Current to 14 February 2026

Geothermal Project, Queensland

Tenement	%age Ownership Of Applicant	Applicant	Status
EPG 2023	100%	Greenvale Energy Ltd	Under Application
EPG 2024	100%	Greenvale Energy Ltd	Under Application
EPG 2025	100%	Greenvale Energy Ltd	Under Application
EPG 2029	100%	Greenvale Energy Ltd	Under Application

1. The mining tenement interests acquired during the quarter and their location

See the table above.

2. Beneficial percentage interests held in farm-in or farm-out agreements at the end of the quarter

The Company advises that during the quarter, it entered into a farm-in arrangement to acquire a 75% interest in the EP 145 permit in the Northern Territory, which is 100% owned by Trident Energy Pty Ltd. The agreement remains subject to Ministerial Consent by the Northern Territory government approval for the 75% interest the transfer of the operator rights to Greenvale's subsidiary, Greenvale Gas Pty Ltd.

3. Beneficial percentage interests in farm-in or farm-out agreements acquired or disposed of during the quarter

Not applicable.

Appendix 5B

Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Name of entity

Greenvale Energy Ltd

ABN

54 000 743 555

Quarter ended ("current quarter")

31 December 2023

Consolidated statement of cash flows	Current quarter \$A'000	Year to date (6 months) \$A'000
1. Cash flows from operating activities		
1.1 Receipts from customers		
1.2 Payments for		
(a) exploration & evaluation	(62)	(80)
(b) development		
(c) production		
(d) staff costs		
(e) administration and corporate costs	(342)	(746)
1.3 Dividends received (see note 3)		
1.4 Interest received	1	4
1.5 Interest and other costs of finance paid		
1.6 Income taxes paid		
1.7 Government grants and tax incentives	-	464
1.8 Other (provide details if material)		
1.9 Net cash from / (used in) operating activities	(403)	(358)

2. Cash flows from investing activities		
2.1 Payments to acquire or for:		
(a) entities		
(b) tenements		
(c) property, plant and equipment		
(d) exploration & evaluation	(459)	(1,577)
(e) investments		
(f) other non-current assets		

Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (6 months) \$A'000
2.2	Proceeds from the disposal of:		
	(a) entities		
	(b) tenements		
	(c) property, plant and equipment		
	(d) investments		
	(e) other non-current assets	-	3
2.3	Cash flows from loans to other entities		
2.4	Dividends received (see note 3)		
2.5	Other (provide details if material)		
2.6	Net cash from / (used in) investing activities	(459)	(1,574)

3.	Cash flows from financing activities		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)		-
3.2	Proceeds from issue of convertible debt securities		
3.3	Proceeds from exercise of options		
3.4	Transaction costs related to issues of equity securities or convertible debt securities		-
3.5	Proceeds from borrowings		-
3.6	Repayment of borrowings		
3.7	Transaction costs related to loans and borrowings		
3.8	Dividends paid		
3.9	Other (provide details if material)		
3.10	Net cash from / (used in) financing activities	-	-

4.	Net increase / (decrease) in cash and cash equivalents for the period		
4.1	Cash and cash equivalents at beginning of period	4,098	5,168
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(403)	(358)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(459)	(1,574)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	-	-

Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (6 months) \$A'000
4.5	Effect of movement in exchange rates on cash held	-	-
4.6	Cash and cash equivalents at end of period	3,236	3,236

5.	Reconciliation of cash and cash equivalents at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current quarter \$A'000	Previous quarter \$A'000
5.1	Bank balances	518	1,380
5.2	Call deposits	2,718	2,718
5.3	Bank overdrafts		
5.4	Other (provide details)		
5.5	Cash and cash equivalents at end of quarter (should equal item 4.6 above)	3,236	4,098

6.	Payments to related parties of the entity and their associates	Current quarter \$A'000
6.1	Aggregate amount of payments to related parties and their associates included in item 1	(30)
6.2	Aggregate amount of payments to related parties and their associates included in item 2	(91)

Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments.

More information concerning the breakdown of the above payments to directors and their related parties can be found within the accompanying Quarterly Activities Report.

Mining exploration entity or oil and gas exploration entity quarterly cash flow report

7.	Financing facilities	Total facility amount at quarter end \$A'000	Amount drawn at quarter end \$A'000
	<i>Note: the term "facility" includes all forms of financing arrangements available to the entity. Add notes as necessary for an understanding of the sources of finance available to the entity.</i>		
7.1	Loan facilities	3,000	-
7.2	Credit standby arrangements	-	-
7.3	Other (please specify)	-	-
7.4	Total financing facilities	3,000	-
7.5	Unused financing facilities available at quarter end		3,000
7.6	Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.		
	<p>(a) <u>Loan facilities – directors</u></p> <p>The Company announced on 20 October 2022 that it had received a letter of support from its directors for \$3.00 million. The letter of support is to provide an unsecured loan to the Company, with the following terms:</p> <ul style="list-style-type: none"> • interest at 12.00% per annum; and • to be repaid at the earlier of the next capital raising (including an offer entitlement) or 18 months from when the final drawdown has been made by the Company. <p>(b) <u>Facility – Pioneer Resources LLC</u></p> <p>The Company has a facility with an institutional investor, Pioneer Resources LLC for \$4.320 million (inclusive of a premium paid). This facility was fully drawn at 31 March 2023.</p> <p>The facility is repayable by way of issue of ordinary shares in the Company, unless Greenvale otherwise elects to repay the facility in cash. For the purposes of Greenvale's Appendix 5B, the proceeds from this facility have been reflected as debt and not equity, as it represents the form of the proceeds received. However, given that the substance of the of the facility is/will be in the form equity, it has not been shown as part of the financing facilities under Response 7 above.</p>		

8.	Estimated cash available for future operating activities	\$A'000
8.1	Net cash from / (used in) operating activities (item 1.9)	(403)
8.2	(Payments for exploration & evaluation classified as investing activities) (item 2.1(d))	(459)
8.3	Total relevant outgoings (item 8.1 + item 8.2)	(862)
8.4	Cash and cash equivalents at quarter end (item 4.6)	3,236
8.5	Unused finance facilities available at quarter end (item 7.5)	3,000
8.6	Total available funding (item 8.4 + item 8.5)	6,236
8.7	Estimated quarters of funding available (item 8.6 divided by item 8.3)	7.23
	<i>Note: if the entity has reported positive relevant outgoings (ie a net cash inflow) in item 8.3, answer item 8.7 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.7.</i>	

Mining exploration entity or oil and gas exploration entity quarterly cash flow report

8.8 If item 8.7 is less than 2 quarters, please provide answers to the following questions:

8.8.1 Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?

Answer:

Not applicable, as Item 8.7 is greater than 2 quarter.

8.8.2 Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?

Answer:

Not applicable, as Item 8.7 is greater than 2 quarter.

8.8.3 Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?

Answer:

Not applicable, as Item 8.7 is greater than 2 quarter.

Note: where item 8.7 is less than 2 quarters, all of questions 8.8.1, 8.8.2 and 8.8.3 above must be answered.

Compliance statement

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Date: 25 January 2024

Authorised by: **The Board of Directors of Greenvale Energy Ltd**
(Name of body or officer authorising release – see note 4)

Notes

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 6: Exploration for and Evaluation of Mineral Resources* and *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [name of board committee – eg Audit and Risk Committee]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial

Mining exploration entity or oil and gas exploration entity quarterly cash flow report

records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.