

ASX:ENX 11 October 2021

# **Quarterly Activities Report**

For the period ending 30 September 2021

# **Highlights**

- WorldView-3 satellite surveys acquired over Green Hills Project and Goomalling Project. Imagery will be used for spectral studies to define geology, alteration and structures to generate exploration targets
- Significantly improved clarity of subsurface structure at Walebing Project via reprocessed seismic line
- Falcon Airborne Gravity Gradiometer and Gravity Survey designed over Miamoon Project; now contracted and to be flown in October
- Geochemical augur sampling programs across Miling Project designed with initial roadside sampling to commence shortly

#### 1. West Yilgarn Ni-Cu-PGE Projects – Enegex 100%

## 1.1 Background

Enegex (ASX: ENX) has built a strategic tenure position (comprising 20 granted exploration licences totalling 3,576km<sup>2</sup>) in the West Yilgarn Ni-Cu-**PGE** province, prospectivity of which has highlighted been Chalice Mining's Julimar Ni-Cu-PGE discovery (Figure 1).

The Western margin of the Archean-age Yilgarn Craton in Western Australia has not until now been systematically explored for Ni-Cu-PGE mineral systems. However. following the Julimar discovery, this mineral province is now the focus of significant exploration activity.

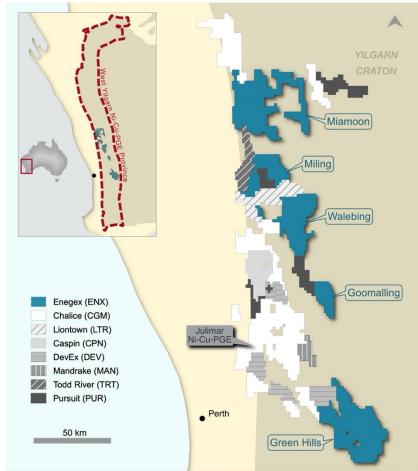


Figure 1 Enegex's West Yilgarn Ni-Cu-PGE Province Tenure





### 1.2 Enegex's Projects Prospectivity

The geology of Enegex's project areas is not well understood. Historically most exploration activities in Western Australia have been directed away from private freehold farming land, as is prevalent in the West Yilgarn. Consequently, the area is only lightly studied, and government mapping interprets the bedrock geology as metamorphic sedimentary, greenstone and granite (*Figure 2*). The Julimar deposit is hosted in a mafic-ultramafic intrusive rock sequence that was previously misinterpreted as granitic domain.

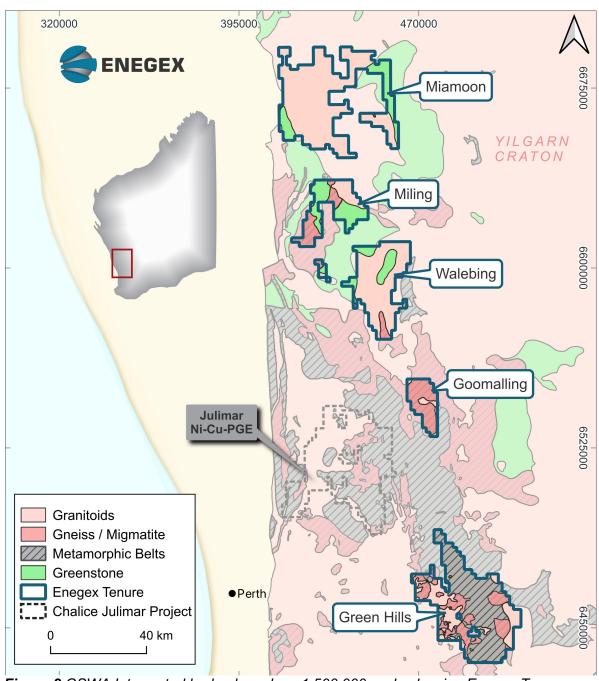


Figure 2 GSWA Interpreted bedrock geology 1:500,000 scale showing Enegex Tenure

Enegex has divided its West Yilgarn tenements, into five project areas; Miamoon, Miling, Walebing, Goomalling and Green Hills.

Map detail is limited due to soil cover which is generally thicker in the north (at Miamoon) and thins in the south. Notwithstanding the limited map detail, Enegex's project areas have been identified to host mafic-ultramafic rock sequences with small areas of outcrop and interpreted bedrock geology recorded on government maps.

Within Enegex's project areas there are a number of features with distinctive "highs" in the magnetic and gravity data such as at Enegex's Miling and Miamoon projects. These are interpreted to contain mafic and ultramafic intrusive bodies and are priority areas for groundwork including geochemistry and subsequent ground-based geophysics in order to define drilling targets.

## 1.3 Exploration Activities

During the September Quarter, a wide variety of work has been undertaken across the Enegex Project areas, with the aim of developing robust targets that can be field tested once private freehold property access agreements have been put in place.

## 1.3.1 Digital capture – Miamoon and Miling

During the quarter Enegex has focussed on digital capture of historical exploration data to underpin our target generation framework. Efforts have focussed on extraction and capture of assay and spatial geology data from historical reporting and maps in the Miamoon and Miling Projects and implementation of an SQL database to empower streamlined work flows and maximise data integration to drive our exploration activities across the project areas.

### 1.3.2 WorldView-3 Imagery – Green Hills and Goomalling

During the quarter, high-resolution WorldView-3 satellite imagery has been captured across each of Enegex's Green Hills and Goomalling Projects. (*Figure 3*). The satellite imagery incorporates an area of 1,452km<sup>2</sup> over the entire Green Hills and Goomalling projects

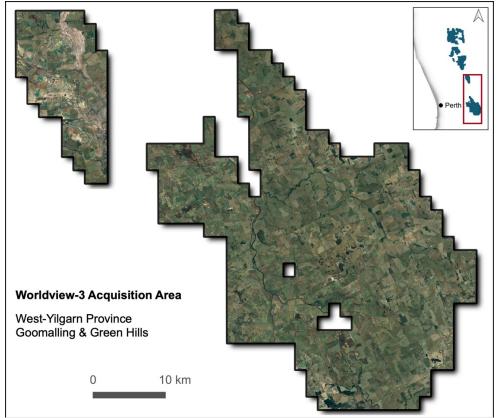


Figure 3 Goomalling and Green Hills Project areas (on google satellite imagery)





Specialist geoscientific processing and interpretation of this Worldview data is currently being carried out by Exploration Mapping Group, Inc. in the United States, with data delivery due in December 2021.

The WorldView-3 satellite measures 17 spectral bands which enables mapping of areas with respect to clay minerals (including argillic, phyllic and propylitic clay alteration), iron minerals, silica minerals as well as "hotspot" alteration intensity mapping to identify zonation within alteration assemblages. All of these data products can be used to assist target generation.

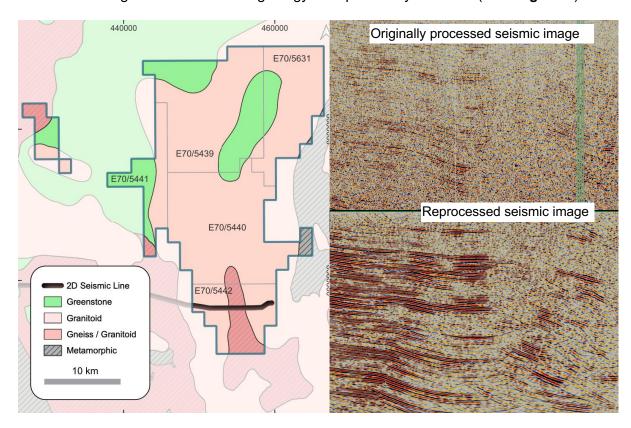
The geography of the Green Hills and Goomalling areas, with high levels of outcrop to subcrop and insitu soil and regolith profiles, as well as the significant number of freehold landowners, make the area well suited to successful imagery.

Interpretation of the Worldview 3 data will be integrated with historical datasets to define geology and structures and generate targets for ground-checking. Worldview-3 imagery will also provide high resolution base maps to constrain geographic and logistical considerations for field sample validation programs.

#### 1.3.3 Post-stack reprocessing of seismic line - Walebing

A 12km section of seismic line extending east-west across Enegex's E70/5442 tenement in the Walebing Project (*Figure 4*) was re-processed by Internode Seismic during the quarter using high-resolution depth imaging.

The seismic line was originally acquired by Curtin University in 1992 to provide information on the crustal structure and geodynamic history of the Perth Basin, Darling Fault and South-West Yilgarn Terrane. The reprocessing significantly improved clarity, resulting in a more detailed and reliable image of the subsurface geology than previously available (refer *Figure 4*).



**Figure 4** Location of seismic line in Walebing Project (L) and before and after displays of E70/5442 seismic section (R)



A structural interpretation of the reprocessed data will be completed in the December quarter. This interpretation will be used in conjunction with other geophysical datasets and other open file data, as the basis for geological interpretation of the Walebing project area to underpin target generation.

## 1.3.4 Airborne Gravity Gradiometer (AGG) and Gravity Survey Design - Miamoon

A Falcon Airborne Gravity Gradiometer (AGG) was designed over the western area of the Miamoon Project where several magnetic high features have been identified in regional magnetic datasets that may represent mafic-ultramafic intrusions (*Figure 5*).

High resolution Falcon AGG gravity data will provide information on the structural and lithological framework of the survey area and map targeted intrusive bodies.

A contract has been entered into and the AGG survey is expected to be flown by Xcalibur Multiphysics in mid to late October 2021.

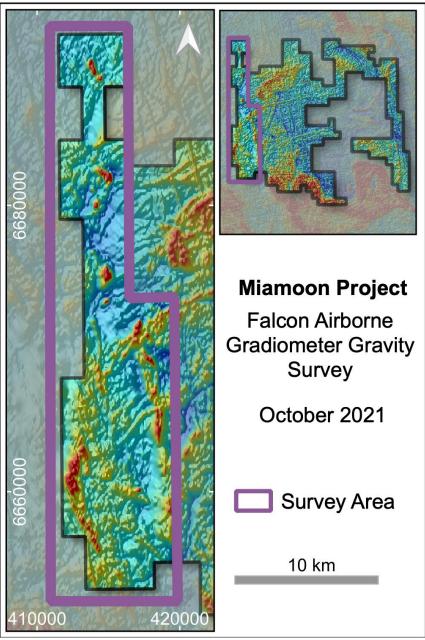


Figure 5 AGG Survey area on magnetics – Miamoon





### 1.3.5 Design of Geochemical Sampling Program - Miling

Geochemical auger sampling programs have been designed for our Miling Project where magnetic anomalies are coincident with prospective stratigraphy and into which mineralised trends identified by neighbouring tenement holders are interpreted to extend.

The auger sampling programs are designed to highlight areas of Ni-Cu-PGE anomalism including across subtle magnetic features that could represent intrusive bodies at depth (*Figure 6*).

A roadside auger sampling program is planned for the first half of the quarter (with further sampling to be undertaken, once land access agreements are executed. The logistics and approvals for the roadside program are expected to be finalised shortly.

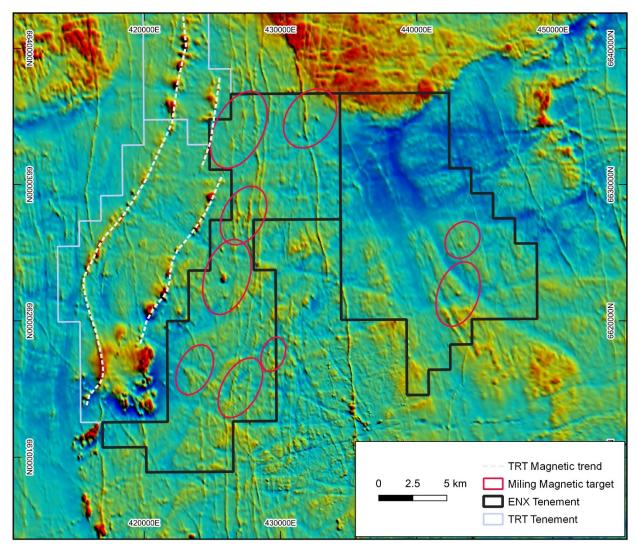


Figure 6: Miling Magnetic Targets

## 2. Hart Dolerite Project, North Kimberley - Enegex 100%

#### 2.1 Background

Enegex has one granted exploration tenement (E80/5354), covering 374km<sup>2</sup>, in the eastern margin of the Kimberley Basin of Western Australia. An additional 350km<sup>2</sup> is still under application (Figure 7).

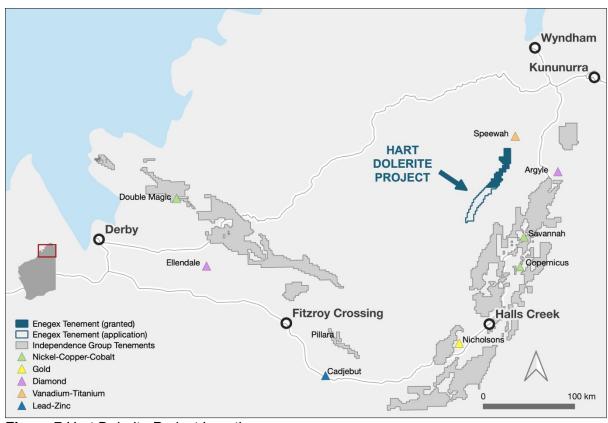


Figure 7 Hart Dolerite Project Location

The geology of the project area has been mapped as "Hart Dolerite", a regionally extensive Proterozoic sill complex. The project area has had very little previous exploration. Mapping and exploration (by other companies) immediately to the north of the project area has identified that the Hart Dolerite is made up of a layered intrusive suite of rocks.

The Hart Dolerite shows high mineral potential. It consists of a number of mafic sills that are typically tholeitic - meaning that they are similar in composition to basalt, but are richer in silica and iron and poorer in aluminum. Tholeites occur in continental flood basalt provinces, back-arc basins, volcanic arcs and mid ocean ridges. Horizons may develop within a differentiated tholeitic sill that offer a greater mineralisation prospectivity (eg iron rich zones as a target for gold mineralisation). Tholeites are also prospective for intrusion-hosted Noril'sk style Ni-Cu-PGE deposits.

The widespread volcanics within the Halls Creek Oregon are indicative of potential in the comagmatic intrusive units. Several mafic-ultramafic intrusive units in the Halls Creek Oregon (which flanks the eastern side of the Kimberley Basin) are modelled with medium to high potential, consistent with the presence of known tholeiitic intrusion-hosted Ni sulphide deposits and numerous prospects in this area. These include the Savannah deposit (previously Sally Malay), and the Copernicus deposit hosted by the Alice Downs Ultramafics.



## 2.1 WorldView-3 Imagery

During the Quarter, Enegex acquired high-resolution WorldView-3 satellite data across the Hart Dolerite E80/5354 tenement. Data delivery is due in the next Quarter (*Figure 8*).

Specialist geoscientific processing of the Worldview data is being conducted by Exploration Mapping Group, Inc. in the United States. WorldView-3 measures 17 spectral bands which enables mapping of areas with respect to clay minerals (including argillic, phyllic and propylitic clay alteration), iron minerals, silica minerals and "hotspot" alteration intensity mapping to identify zonation within alteration assemblages. All of these images can be used to assist target generation.

Interpretation of the Worldview 3 data will be integrated with historical map and data constraints to define geology and structures and generate targets for ground-checking. Worldview-3 imagery will also provide high resolution base maps to constrain geographic and logistical considerations for a field sample validation program.

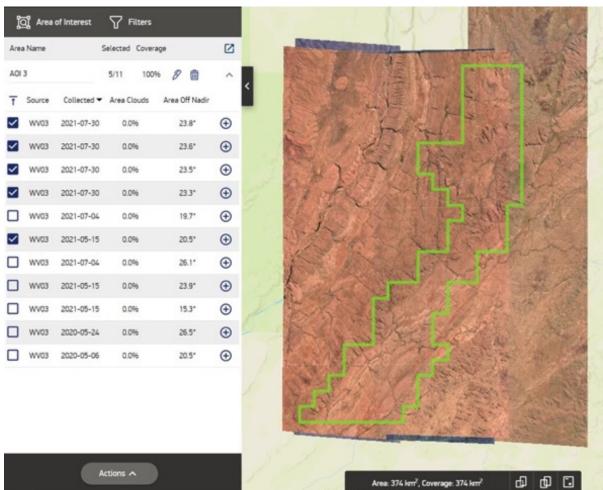


Figure 8 Worldview satellite imagery that will be used in the spectral study currently underway over E80/5354



# 3. Corporate

# 3.1 Options Exercised

During the quarter 5,201,367 \$0.03 (3 cent) options expiring 31 August 2022 were exercised, raising a further \$156,041.

By Order of the Board

R J Wright

Company Secretary Melbourne, Australia 11 October 2021

## Additional Information Required by Listing Rules 5.3.3 and 5.4.3

Mining Tenements held/applied for at the end of the quarter and their location

Tenement	Enegex interest	Km <sup>2</sup>	Tenement status
Western Australia (Kimberley Region)			
E 80/5354	100%	373.79	Granted
E 80/5355	100%	350.22	Application
Western Australia (South-West Terrane)			
E 70/5439	100%	203.55	Granted
E 70/5440	100%	206.21	Granted
E 70/5441	100%	85.43	Granted
E 70/5442	100%	82.40	Granted
E 70/5446	100%	207.76	Granted
E 70/5459	100%	207.64	Granted
E 70/5457	100%	207.55	Granted
E 70/5458	100%	208.00	Granted
E 70/5460	100%	207.71	Granted
E 70/5463	100%	207.97	Granted
E 70/5444	100%*	204.00	Granted
E 70/5445	100%*	203.93	Granted
E 70/5566	100%	203.78	Granted
E 70/5567	100%	204.06	Granted
E 70/5568	100%	203.47	Granted
E 70/5569	100%	203.83	Granted
E 70/5570	100%	203.45	Granted
E 70/5571	100%	203.72	Granted
E 70/5580	100%	214.18	Granted
E 70/5631	100%	115.06	Granted

<sup>\*</sup> via First Right of Refusal

Tenements acquired during the quarter and their location Nil

Tenements disposed of during the quarter and their location

Beneficial percentage interests held in farm-in or farm-out agreements at the end of the Quarter:

Nil

Additional Information Required by Listing Rule 5.3.5

Payments to related parties during the quarter included in Appendix 5B – Quarterly Cash Flow Report

Payments were made to directors and their associates during the quarter totalling approximately \$93,000. Payments were for contracted services including consulting fees, office costs and administrative support.



