

2022 EXPLORATION STRATEGY

HIGHLIGHTS

- Aries Project Kimberlite Cluster will be Odessa's Principal Exploration Focus for 2022
 - Aries Contains Gem-Quality occurrences of Diamonds
 - Digitisation of an Extensive Historical Database for Aries is Underway
 - Geophysical Interpretation Demonstrates Significant Exploration Targets within Odessa's Granted Tenement
 - Historic Results Demonstrate Microdiamond Count at Aries North Increases 12-fold with Depth
 - Heritage Access Agreement Process Underway
 - Technical Review of Portfolio to Identify Additional Exploration Targets
 - Drilling to Commence at Aries when Weather Allows and Permits Approved
 - Drilling to Target Aries North and Aries Central Kimberlites and Regional Targets to the South
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Odessa Minerals Limited (ASX:ODE) ("Odessa" or "The Company"), a diamond exploration Company, is pleased to provide an update on the Company's exploration plans for 2022.

Overview

The Company is initially focusing on the Aries project¹ ("**Aries**" or "**The Project**") where gem-quality diamonds have been recovered by previous explorers. The project is located near the Mt Barnett Roadhouse in the central Kimberley of Western Australia, approximately 240 kilometres west of the Argyle Diamond Mine, and 260 kilometres east of Derby. The Aries project consists of numerous diamond-bearing kimberlite pipe targets.

Additionally, a review of the Company's broader portfolio tenements is underway, involving an analysis of past exploration work. This work is intended to identify potential new opportunities for exploration.

Mr. Alistair Stephens, CEO of Odessa, commented:

"Our technical advisors, Ms. Lisa Wells, Dr. Darren Holden and Mr. Grant Boxer, are making significant progress in helping guide our exploration program designs and plans. In addition, we have made significant progress into project generation for these and other targets as part of our strategic positioning in the diamond industry. Aries remains our active focus to define areas where diamond enrichment occurs including the previous

identification of gem quality macrodiamond occurrences. We look forward to commencing exploration work at our Kimberley-based Aries Project in the upcoming field season and providing further updates resulting from our technical review, in due course."

Aries Project

The Company is preparing drilling programs to investigate known diamondiferous pipes at the Aries Diamond Project. The aim of the drilling is to test depth extensions where previous drilling shows microdiamond counts increasing 12-fold from near surface to the base of historic drilling at 300m. This grade increase is coincident with less wall rock dilution and potentially provides a vector towards higher diamond grades. The Company intends to conduct a number of deep tests to assess the potential for the grade to increase at depth at Aries North, Aries and Athena.

The development of drilling targets requires the assessment of an extensive historic database of non-digital information that is currently being digitized. The targeted works are to be completed by the end of March and will then be modelled to provide a spatial geometric model of the existing diamond pipes and alluvial deposits of initial interest. This dataset will be used in the detailed borehole drilling program for this year.

As announced on 2 February 2022, geophysical re-modelling of magnetic data at the Aries dyke to the south has resulted in the identification of a potential fissure and hidden geophysical features that may be kimberlite pipes.

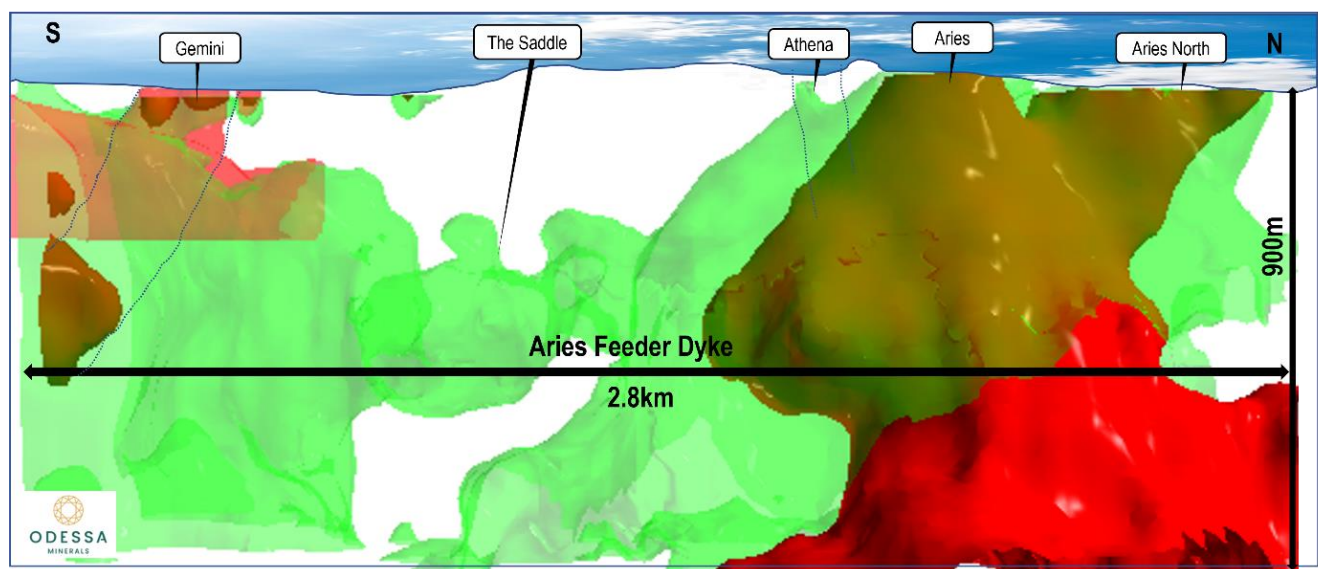


Figure 1 Long section view west of the various magnetic models showing the target extent of the Aries Kimberlite Complex to the south

The modelling demonstrates in technical detail some of the geometries of the kimberlite pipes that extend to significant depths. The contrast between the host sandstone and the magnetic kimberlite, coupled with historical drilling data, provides comfort that the geometry has not been distorted by other nearby magnetic rocks and is therefore attributable to a kimberlite intrusive.

The program will use this new geophysical model and historic information to target diamond-bearing kimberlite at depth. The programs, inclusive of authorizations for Programs of Works and Heritage Access Agreements, are

being progressed. Access to exploration licences in the central Kimberley requires time for access agreements with Traditional Owners and Landholders, as well as permit approvals from the Department of Mines and Petroleum. Current planning anticipates approvals being in place for exploration to commence in the dry season this year.

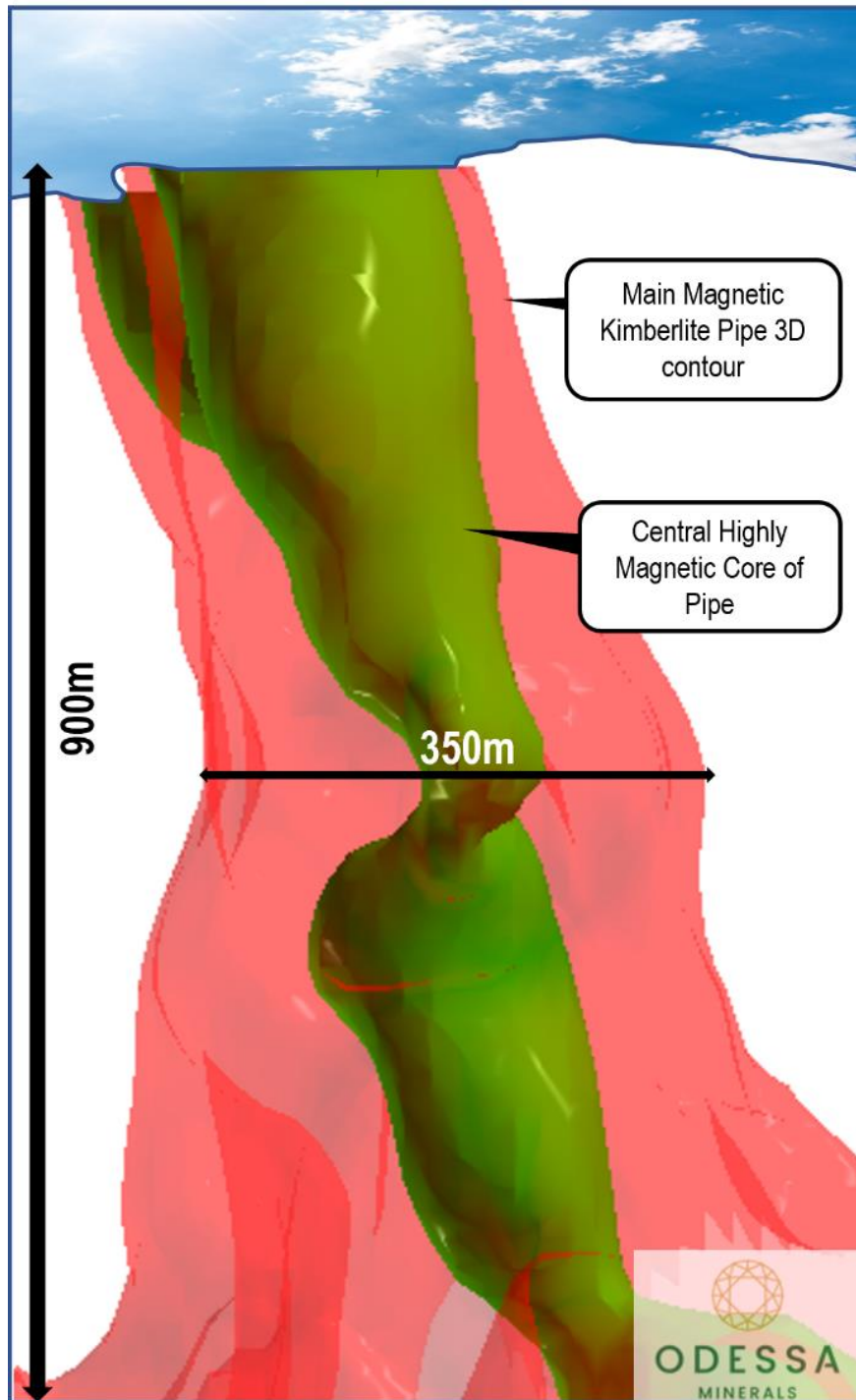


Figure 2: View north (cross-section) of the new 3D magnetic model of the Aries Kimberlite Complex

Modelling of Historic Data

The Aries Kimberlites were first discovered by Freeport of Australia Ltd and Triad Minerals Ltd in 1986 and since then multiple campaigns have been undertaken by other explorers. The project area is host to coincident kimberlite intrusions, collectively named the Aries Kimberlites, consisting of Aries North (The North Lobe), Aries Central and Aries South (The South Lobe). The kimberlite pipes mapped at surface have a footprint of approximately 18ha, making this the largest known diamond-bearing kimberlite complex in Western Australia². Geophysical modelling suggests that these pipes may coalesce into a central pipe area of about 20ha (about 800m long by 300m wide) below the surface, and extend to a depth of at least 900m.

During the 1990s, previous explorers conducted multiple campaigns of near-surface bulk sampling and drilling, and recovered grade estimates up to 4.8cpht (carats per hundred tonnes)³.

Between 2004 and 2006 United Kimberley Diamonds (UKD) conducted a wide-diameter (“Bauer”) drill program for bulk sampling and processed 2169 tonnes, recovering 181 diamonds for 25.34 carat with a best grade of 4.9cpht⁴. The Bauer Drilling, to an average depth of 17.9 metres, largely matched grades from previous bulk sampling results. Due to subdued diamonds prices at that time, UKD considered the grades too low for economic recovery. However, UKD reported that around 95% of the Aries diamonds are **gem-quality**.



Figure 3: Example of diamonds recovered from the Aries bulk sample processing plant

² R. Ramsay, Compositions of garnet and spinel from the Aries diamondiferous kimberlite pipe, central Kimberley Block, Western Australia — implications for exploration, 1994. *Journal of Geochemical Exploration*, 51, 1.

³ (WAMEX Report A40275)

⁴ (WAMEX Report A72519).

With the diamond market prices increasing significantly since the closure of Argyle, Odessa believes that the time is right to renew exploration in this field, especially given Aries is a known source of gem-quality diamonds and underexplored at depth.

Diamond Occurrence Grade Increase at Depth

Kimberlites form in the 'diamond stability field' typically occur from 120 to 240 kilometres below the surface before a violent volcanic eruption brings them to the surface in a matter of hours. The Aries kimberlites have been determined to be 820 million years old and the surface topography appears to record evidence of the original volcanic crater.⁵ The Aries kimberlite is diluted near surface with basalt and sandstone wallrock⁶, which is a typical feature of near surface explosive volcanic activity. Therefore, this wall rock contamination also dilutes the diamond grade near the surface.

Drillhole AN15, an NQ (47mm) sized drill hole drilled into Aries North in 1994, is the deepest hole drilled at the project to a depth of 300.7 metres. The half-core from this drillhole is available at the Geological Survey of Western Australia's Core Library facility in Perth, and has recently been reviewed by the Company.

Due to the low likelihood of intersecting macrodiamonds in a drillhole, microdiamond count is considered a potential indicator of the potential grade, with a higher microdiamond count reflecting the potential for higher macrodiamond grade. Four sections of AN15 were analysed for microdiamonds⁷ with grades indicating a 12-fold microdiamond increase from:

- 10 microdiamonds per 100kg from 21.5 to 52.5 metres,
- 38 microdiamonds per 100kg from 121.7 metres, and
- 124 microdiamonds per 100kg from 277.7 metres.

The drillhole terminated in diamond-bearing kimberlite. Historic sampling programs that have tested material from surface to 48m suggests that grades at depth are significantly higher in a zone of kimberlite that has less wallrock contamination.

Table 1: Microdiamond count from hole AN15, as reported in WAMEX file A40275⁸

From (m)	To (m)	Weight (kg)	>0.3 mm	>0.2 mm	>0.1 mm	<0.1 mm	Microdiamonds	Microdiamonds per 100 kg
21.5	52.5	45		2	2		4	10
121.7	143.2	46		3	12		15	38
207.7	231.3	51.9		2	15		17	41
277.7	300.7	53	2	11	39	14	66	124

⁵ Peter Jason Downes, Magmatic evolution, xenolith mineralogy, and emplacement history of the Aries micaceous kimberlite, central Kimberley basin, Western Australia, 2006. PhD Thesis, *The University of Western Australia*.

⁶ WAMEX A40275

⁷ by Triad Minerals WAMEX report A40275

⁸ As reported and reviewed in the Company's prospectus/independent geologist report.



The Company is planning a drillhole campaign targeting beneath the zone of wall rock dilution in order to confirm the distribution of increasing microdiamond grades. Deeper diamond drilling, designed to test beyond the 300m depth of AN15, is currently being assessed. Depending on the outcome of this work, the Company is considering options for future plans to extract a large sample at depth to reconcile bulk sample macrodiamond and microdiamond counts with drill hole microdiamond counts.

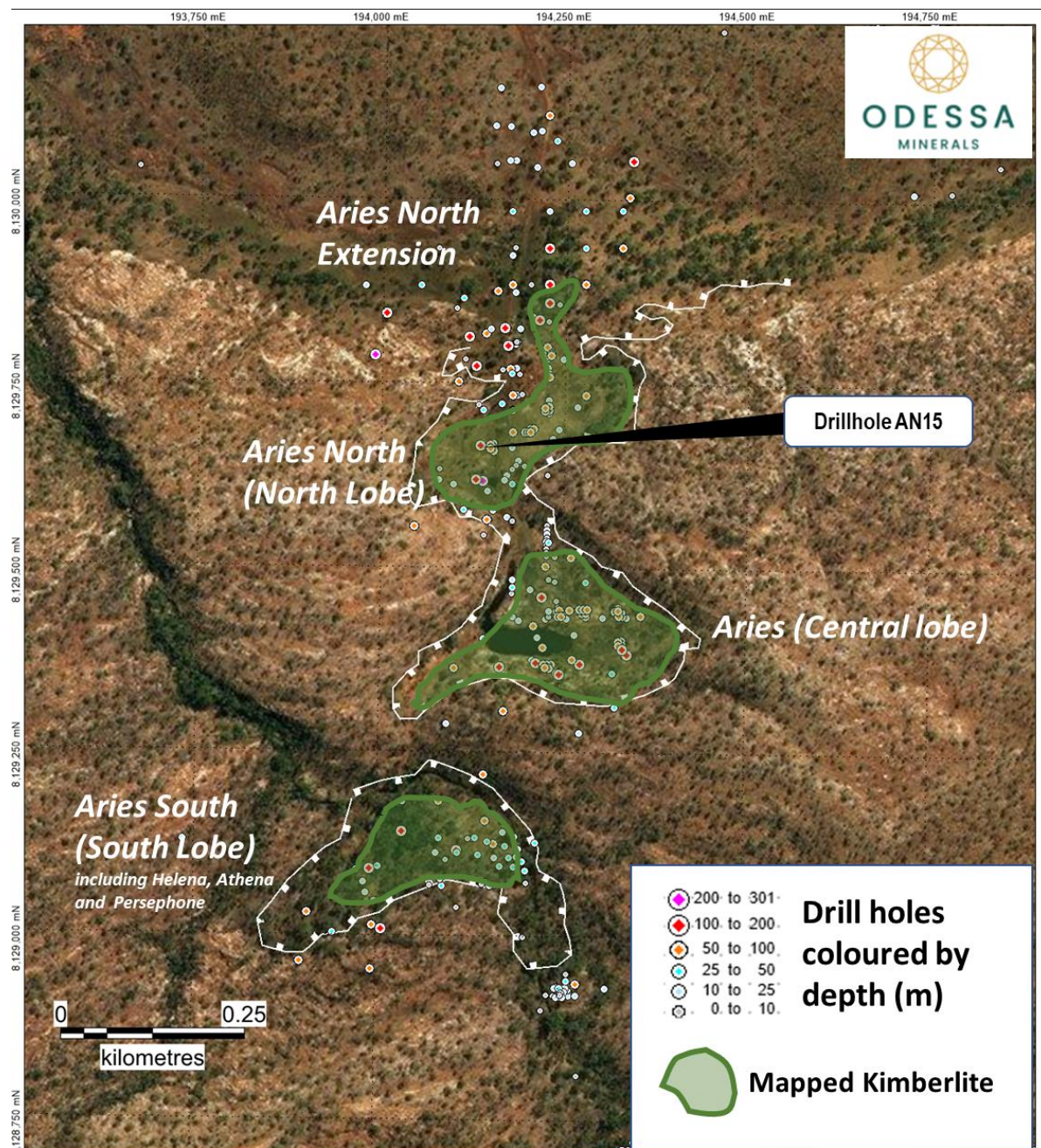


Figure 4: Surface Map of the Aries Project

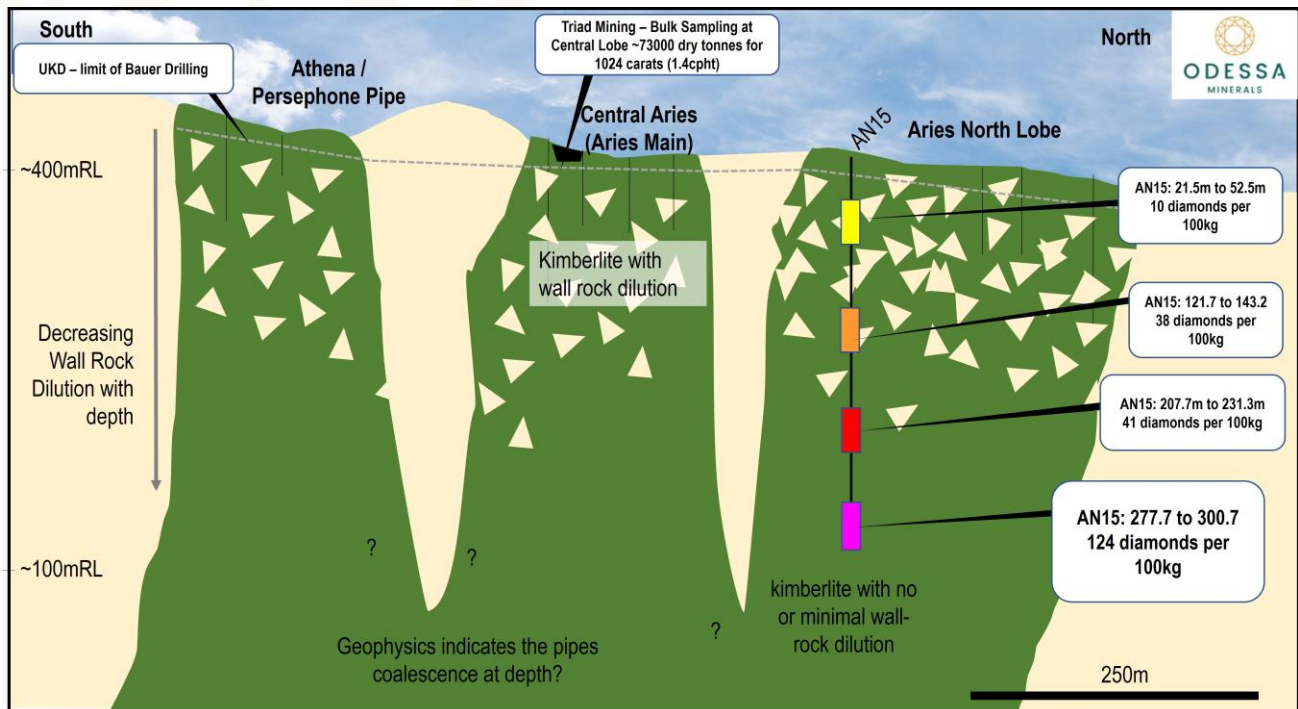


Figure 5: Schematic Long Section of Aries (looking west), showing the AN15 hole and the increasing microdiamond counts with depth

Other Exploration Targets

Surrounding Aries, there are aeromagnetic signatures that potentially represent untested kimberlite pipes and dykes. A cross cutting zone of magnetic rocks extends for approximately 4.5km to the south of the main Aries kimberlite cluster, and geophysical magnetic inversion modelling suggests a dyke-like feature in that trend. Immediately south of Aries, the model suggests the dyke is not exposed at surface and further investigation is warranted. This trend includes the previously delineated diamondiferous Persephone pipe from Aries South and “Niobe” at the more southern extents of the southerly trend.

Several other targets are worthy of assessment including the Leo target, located to 2.7km southwest of Aries, the Gemini Target to the south, and the Aries North extension.

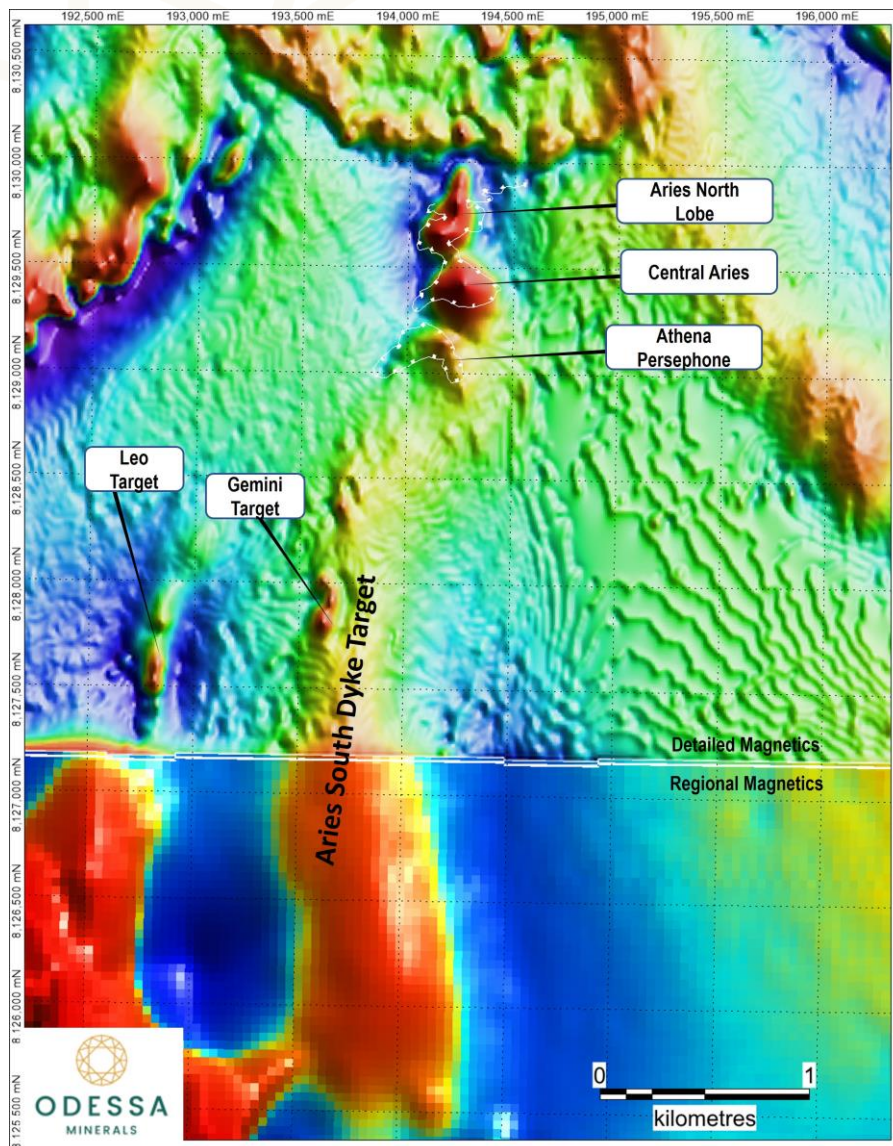


Figure 6: Reduced to Pole Aeromagnetic imagery at Aries showing other target areas south of Aries [red = high values, blue = low values]

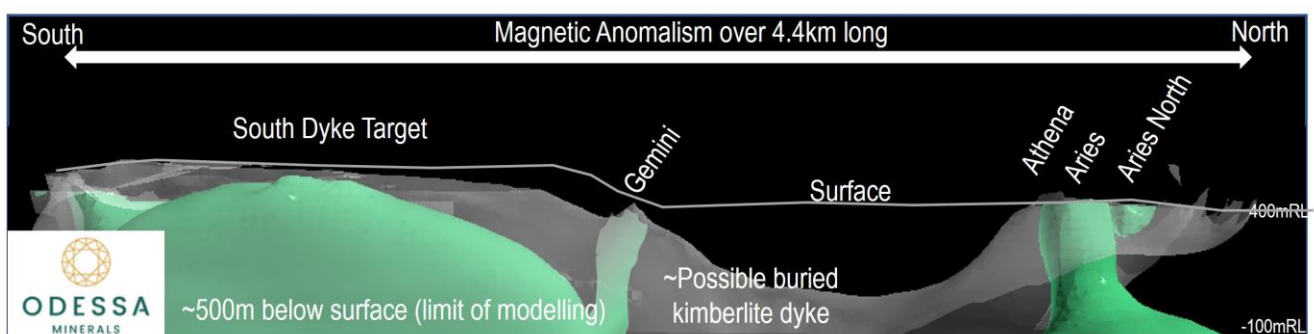


Figure 7: Long-section (looking west) of the 3D modelling of magnetics data completed by Fathom Geophysics.

This announcement has been approved for release by the Board of Odessa Minerals.

ENQUIRIES

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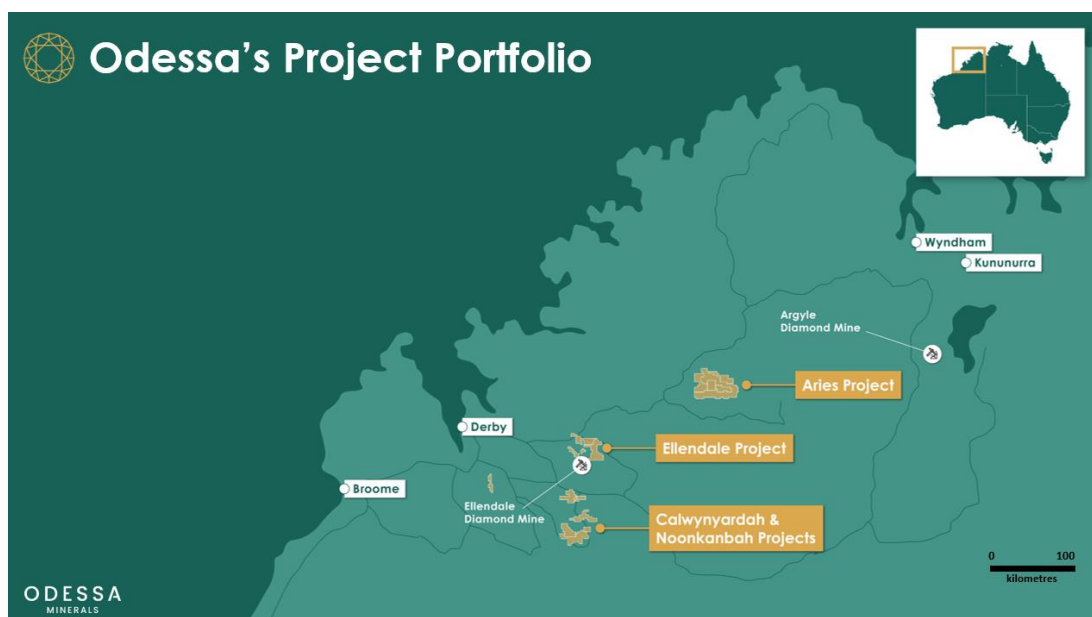
ABOUT ODESSA MINERALS

Odessa Minerals Limited (ASX:ODE) ("**Odessa**") is a diamond exploration company focused on a portfolio of high-quality projects in the renowned Kimberley region of Western Australia. Odessa's strategic intent is to become a producer of ethically sourced, low environmental impact, gem-quality diamonds. Odessa holds 20 granted and application exploration licences which constitute the Aries, Ellendale, Calwinyardah, and Noonkanbah in a portfolio of 2,400km² in the Kimberley region of Western Australia all of which are prospective for diamonds. The Aries Project is Odessa's lead project, with past exploration identifying multiple occurrences of gem-quality diamonds. EL80/5027 is a joint venture 90% Odessa, 10% Jindalee Resources Limited ASX:JRL

Odessa acknowledges the Traditional Owners of the areas which we explore and recognizes their connection to the lands and waters of the Kimberley region of Western Australia. We pay our respects to their Elders and Leaders—past, present and emerging.

Please visit our website for more information and to sign up to receive corporate news alerts:

www.odessaminerals.com.au



The information in this report that relates to Exploration Results for the Aries Project is extracted from the Company's Prospectus released on 19 November 2021 which is available at www.odessaminerals.com.au/asx-announcements/. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

Reference list:

- P.J. Downes, 2006. Magmatic evolution, xenolith mineralogy, emplacement history of the Aries micaceous kimberlite, central Kimberley Basin, Western Australia. *The University of Western Australia*. Thesis presented for the degree of Doctor of Philosophy. 385p.
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- J. Peters, 2021. Fargo Enterprises Limited/Odessa Minerals Ltd, Independent Geologist's Report, published as part of the Odessa Minerals Prospectus, 19 November 2021. Pages 179-250.
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