

# Freeport Resources Announces Star Mountains AI Evaluation and K-means Analysis Results Produced by Minerva Intelligence

03.05.2021 | [CNW](#)

VANCOUVER, May 3, 2021 - [Freeport Resources Inc.](#) (TSX-V: FRI) (FSE: 4XH) (OTCQB: FEERF) ("Freeport", or the "Company") is pleased to share results from an evaluation of the Star Mountains data conducted by Minerva Intelligence Inc. (TSX-V: MVAI) ("Minerva"), an artificial intelligence company focused on knowledge engineering. Previously announced on November 23, 2020, Minerva utilized DRIVER, its cutting-edge AI software, to perform an evaluation of multi-element drilling data. In addition, Minerva reinterpreted existing geophysical information on the project and completed traditional K-Means Cluster analysis on the multi-element data.

Freeport engaged Minerva to apply its cognitive AI-powered DRIVER technology to sub-surface geochemical data available for the Star Mountains project to enhance its next phases of surface and sub-surface evaluation of the extensive property, located 25 kilometres from the Ok Tedi mine in Papua New Guinea.

DRIVER and K-Means Cluster analyses were focused in the Olgal deposit area, utilizing geochemical analyses from 23 drillholes, for which a current inferred resource was previously determined. Evaluation identified multiple mineralized subgroups of dioritic rocks and skarn as potentially significant for copper, as well as a significant overlap of copper and gold-bearing volumes. These sub-groups are located at the core of the deposit area and well distributed from near surface to the basal thrust fault at depth. Two mineralized dioritic sub-groups for gold were identified.

## DRIVER Evaluation

DRIVER delivers valuable insights from multi-element geochemical data through comprehensive evaluation of all elements present within a given database, not simply elements of direct economic interest. Comparable evaluation of such data has typically been prohibitively time-consuming and too complex for geologists to attempt.

Many of the DRIVER volumes examined at the Olgal deposit exhibit a prominent central pipe-like feature having a strong spatial association with Quartz Diorite and "Early Diorite". This pipe-like feature is interpreted to represent a composite volume resulting from gold - copper intercepts hosted within quartz diorite and/or "Diorite 4" in drillholes 001OLG10, 002OLG10 and 014OLG12. As such, study results confirm previous interpretation of at least two dioritic intrusive phases (Quartz Diorite and "Early Diorite"). A separate and distinct molybdenum volume southeast of the core of the deposit area is interpreted to indicate a third diorite intrusion. The Olgal Deposit is interpreted to result from multi-phase intrusion of diorite at the contact between Derai Limestone and Leru Sediments. Study results also support interpretation of a mineralized copper and gold trend extending north-northwest from the Olgal Deposit. These results and interpretations independently validate similar interpretations by Freeport personnel.

## K-Means Cluster Analysis

K-Means Cluster analysis was focused in the Olgal deposit area, utilizing geochemical analyses from 23 drillholes, for which a current inferred resource was previously determined (see below). Evaluation identified multiple mineralized subgroups of dioritic rocks and skarn as potentially significant for copper. These sub-groups are located at the core of the deposit area and well distributed from near surface to the basal thrust fault at depth. Two mineralized dioritic sub-groups for gold were identified.

Widespread presence of Derai Limestone in the project area, within which numerous occurrences of diorite intrusions have been documented, supports interpreted potential for Cu ± Au skarn-style mineralization.

Subsequent application of K-Means Cluster analysis to geochemical results from limited drill holes around the broader area of the Olgal Deposit are interpreted to indicate that Futik, Ratatat and Kum Kom have

multiple intercepts corresponding to the mineralized sub-groups described above. Therefore, they are interpreted to represent targets for future evaluation.

#### Geophysics Reinterpretation

Available geophysics, dominated by various generations of magnetic data, with subordinate electromagnetic data, were also evaluated. Spatial association of strong magnetic anomalies with surface geochemical results are interpreted to indicate the Star Mountains project area has multiple targets having a signature similar to the Olgal Deposit and are, therefore, worthy of further evaluation.

Magnetic Inversion modeling identified a large volume underlying the Olgal Deposit, with the majority of the volume extending northwest, toward Futik and beyond. As such, geophysical results are interpreted to support potential for identification of additional sub-surface mineralization, extending northwest from Olgal, through Futik and beyond.

In addition, magnetic inversion results also document subsurface volumes spatially associated with Ratatat and Tuk. There are comparatively small sub-surface inversion volumes (relative to the Olgal - Futik anomaly) evident at Ratatat and Tuk, however, there are only limited drill hole results with which to evaluate sub-surface potential. Note: the detailed survey did not extend far enough north to cover Kum Kom and, therefore, there are no magnetic data available to assess potential at that locality. Results of magnetic inversion support results of K-Means Cluster analysis, interpreted to support further evaluation of these areas.

Finally, results of magnetic inversion are interpreted to indicate the Olgal Deposit is a decapitated porphyry, again, consistent with previous interpretation. However, the Olgal Deposit is interpreted to have been tilted to the north-northeast in the hanging wall of the thrust fault and transported to the northeast. Therefore, the root of the Olgal porphyry system is interpreted to be located to the west-southwest of the current surface exposure.

#### Significant Conclusions

1. Based on K-Means Cluster, DRIVER and 3D inversion results, potential to expand both grade and volume of copper ± gold porphyry-style mineralization is interpreted to exist at the core of the Olgal Deposit area, extending to the northwest. Infill drilling is recommended.
2. Extending drill holes 003OLG10 and 004OLG10 below the basal thrust fault is expected to return mineralized intercepts associated with an anomaly identified through 3D inversion of magnetic data, based on magnetic susceptibility results.
3. Mapped exposures of epidote alteration, marble, skarn and diorite, supported by trends interpreted from the results of both K-Means Cluster and DRIVER analysis and a large sub-surface volume delineated by magnetic inversion, are interpreted to indicate strong potential for identification of additional porphyry-style mineralization extending from the Olgal Deposit northwest to Futik and beyond.
4. Limited drilling at Futik, Ratatat, Pad 48 and Tuk is interpreted to have tested the margins of their respective target anomalies, particularly those defined by 3D inversion of magnetic data, with holes either collared too far laterally and/or not drilled deep enough. Further evaluation is strongly recommended.

"We found Minerva's analysis and the DRIVER system to be very useful to our understanding of the project," said Gord Friesen, CEO of Freeport. "DRIVER validated our geologists' interpretation of the deposit zonation and gave indication of mineral potential beyond known resources on our properties and confirmed it in a fraction of the time. The synthesis of independent methodologies was a valuable contribution to the project and gave us confidence about the results."

A summary report prepared by Minerva can be found on the Freeport website at [www.freeportresources.com](http://www.freeportresources.com).

Dr. Nathan Chutas, PhD, CPG, Senior Vice-President of Operations for Freeport, is a qualified person for the purposes of National Instrument 43-101. Dr. Chutas has reviewed and approved the technical content in this news release.

About Freeport Resources Inc.

Freeport is a Canadian junior exploration company. Freeport recently acquired Quidum Resources and, through its wholly owned subsidiary Highlands Pacific Resources Ltd., controls the Star Mountains project in Papua New Guinea. Please visit [www.freeportresources.com](http://www.freeportresources.com) or contact the email address below for more information.

#### About the Star Mountains Property

Star Mountains is a large copper and gold porphyry project in mining-friendly Papua New Guinea, comprising 4 tenements located 25 kilometres northeast of the giant Ok Tedi mine. H&S Consultants Pty. Ltd. completed a maiden mineral resource estimate, in accordance with National Instrument 43-101, for the Olgal deposit situated on the EL 1312 tenement. The current inferred resource, using a 0.3% copper cut-off grade, is 210 million tonnes grading 0.4% copper and 0.4 g/t gold, for 2.9 million ounces of contained gold and 1.9 billion pounds (840,000 tonnes) of contained copper. Using current prices for gold and copper, this is equivalent to approximately 7.4 million ounces of gold or 3.1 billion pounds (1,380,000 tonnes) of copper.

#### About Papua New Guinea

Papua New Guinea (PNG) is a country that occupies the eastern half of the island of New Guinea in the southwestern Pacific Ocean. PNG is richly endowed with mineral resources, and the geological arc spanning the island is home to some of the world's largest gold and copper mines/projects including Grasberg, Porgera, Frieda River, Ok Tedi, Ramu and Lihir. PNG is considered a stable and mining-friendly jurisdiction and presents tremendous exploration potential.

#### About Minerva Intelligence Inc.

Minerva Intelligence Inc. is a knowledge engineering company based in Vancouver, Canada, with a subsidiary office in Darmstadt, Germany. Their proprietary evidence-based, decision-making software applies the benefits of artificial intelligence technology to industries dependent on reasoning with complex technical and scientific data.

Currently, Minerva's AI applications focus on earth science-related domains, including, but not limited to, natural hazards and mineral exploration; their technology has applications in diverse industries and domains.

Minerva's common shares are currently listed on the TSX Venture Exchange (symbol MVAI). For further details, please refer to their website [www.minervaintelligence.com](http://www.minervaintelligence.com) or follow Minerva on Twitter or LinkedIn.

Neither the TSX Venture Exchange nor its Regulation Services Provider (as that term is defined in policies of the TSX Venture Exchange) accepts responsibility for the adequacy or accuracy of this release.

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