

Bluejay Mining plc / EPIC: JAY / Market: AIM / Sector: Mining  
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**Bluejay Mining Plc ('Bluejay' or the 'Company')  
2019 Exploration Programme at Disko-Nuussuaq Project**

Bluejay Mining Plc, the AIM and FSE listed company with projects in Greenland and Finland, is pleased to provide an update on its licensed 2,776km<sup>2</sup>Disko-Nuussuaq Magmatic Massive Sulphide ('MMS') Nickel-Copper-Platinum Project ('Disko' or the 'Project') in West Greenland.

- >20 large-scale drill ready targets identified on licence holdings recently expanded following further exploration from 2,556 km<sup>2</sup> to 2,776 km<sup>2</sup>
- 2019 work programme designed to refine both new and previously defined drill targets by;
  - o Reprocessing and validating historical data; and
  - o Acquiring new geophysical and geochemical data
- Licence area aerial survey using AustinBridgeporth's Lockheed Martin developed Enhanced Full Tensor Gradiometer Gravity ('eFTG') technology
- Work to augment geological understanding of Disko includes;
  - o Reprocessing original Titan 24 survey data from six survey areas
  - o Magnetic, photogrammetric and hyperspectral imaging surveys
  - o Spatiotemporal Geochemical Hydrocarbon ('SGH') survey
  - o Mobile Metal Ions survey ('MMI')
  - o Geological field work
- Grab samples from the historical Igdlukunguaq Gossan assayed 1.9% Cu, 3.3% Ni, and 1.1% Cu, 2.8% Ni, confirming the previously identified existence of a massive sulphide system
- Site visit undertaken recently identifying significant and multiple nickel/copper gossans in the licence area
- Multiple occurrences of nickel and copper sulphide

- bearing boulders identified throughout licence holdings
- Prospectivity of area highlighted by major mining companies recently acquiring c.10,000 km<sup>2</sup> of licence area surrounding Disko

**Bluejay CEO Roderick McIlree said:** *"As the Dundas Ilmenite Project moves through permitting, joint assessment and ultimately construction, Bluejay is now able to redirect its exploration focus to the Disko and Nuussuaq area in West Greenland. This is recognised by the geological community as being highly prospective for metals including nickel, copper, cobalt and Platinum Group Metals ('PGMs'). Historic surface sampling on the Disko licence has already confirmed a working sulphide system with initial chemical assays in oxidised surface material returning 2.02% nickel, 0.8% copper and 0.2% cobalt. Further to this, additional handheld XRF sampling on fresh, polished material from the gossan zones returned values averaging between 4.6%-9.3% nickel & 1.5-2.8% copper.*

*"Disko's work programme for 2019 will refine and validate all defined drill targets through a combination of modern reprocessing techniques and the acquisition of new geophysical and geochemical data, including the exciting eFTG survey.*

*"Significantly for Bluejay, confidence in the Disko-Nuussuaq region hosting a large nickel-copper district, analogous to the Noril'sk District in Siberia, increases with every newly acquired piece of data. Importantly, Bluejay is a first mover in this strategic district, currently holding 2,776 km<sup>2</sup> of highly prospective and readily accessible licence area. Since early 2019, nearly 10,000 km<sup>2</sup> of ground has since been claimed, essentially surrounding Bluejay's holdings. It appears others are now also of the view that this region has the potential to host a significant discovery. The 2019 field programme at Disko will lay the groundwork to refine our more than 20 drill targets and will hopefully ultimately make a major discovery for our shareholders."*

To view the announcement with the illustrative maps and diagrams please use the following link:

[http://www.rns-pdf.londonstockexchange.com/rns/1201E\\_1-2019-7-1.pdf](http://www.rns-pdf.londonstockexchange.com/rns/1201E_1-2019-7-1.pdf)

**Disko - Background and Opportunity**

Disko Exploration Ltd (a wholly owned subsidiary of Bluejay) holds licenced areas covering 2,776 km<sup>2</sup> in West Greenland, which have been subject to extensive exploration programmes over the last 60 years by bodies including work by the Geological Survey of Denmark and Greenland/geological Survey of Greenland (GEUS & GGU) as well as international mining companies including Cominco and Falconbridge, Vismant & Cairn Energy Plc. These programmes built an extensive geological database which provided an advanced starting point for historic and future work with defined, highly encouraging drill ready targets and support confidence that the Disko-Nuussuaq region hosts major magmatic Ni-Cu-Co-PGE-Au bearing mineralised systems.

Importantly, the Disko-Nuussuaq region shares many geological components and characteristics with the Norilsk Nickel District in Siberia which hosts copper-nickel-platinum group commodities in magmatic-hosted massive sulphide. The Norilsk District has an estimated total resource of 1.3Bt@1.8% Ni, 3.6% Cu, 9.5 g/t PGE.

Numerous areas for magmatic Ni-Cu-Co-PGE-Au bearing mineralised systems, directly analogous to the Norilsk District, have been defined within the licenced areas in the Disko-Nuussuaq region.

### **Disko Work Programme 2019**

Leveraging pre-existing data and knowledge, combined with new reprocessing techniques along with more sophisticated modelling of data, Bluejay has now identified and ranked over 20 drill ready targets, which will be expanded during the already budgeted for 2019 field programme.

The 2019 Work Programme will refine both new and previously defined drill targets by the reprocessing and validation of historical data as well as the acquisition of new geophysical and geochemical data. An integrative interpretation of all available data for 3D modelling and direct targeting of potential mineralised bodies will increase the confidence in the current targets and evaluate future targets.

The primary aim is to rank identified drill targets on Disko Island and the Nuussuaq Peninsula in preparation for drilling. The season will conclude in the autumn with a state-of-the-art aerial Enhanced

Full Tensor Gradiometer Gravity ('eFTG') survey to be performed by the geophysical service provider AustinBridgeporth. The eFTG system is the most advanced airborne gravity gradiometer system available and will augment the understanding of the potential of the Disko licence area.

*Figure 1 Disko licence areas of Disko Exploration Ltd (100% Bluejay Mining).*

## **Site Visit July 2018 & June 2019 - Preparation of 2019 Season**

On a site visit in July 2018, ground targets for upcoming geophysical work programmes were identified. This excursion yielded two additional grab samples from the historical Igdlukunguaq massive sulphide discovery (28 tonnes) site, assaying at 1.9% Cu, 3.3% Ni, and 1.1% Cu, 2.8% Ni and confirming the previously identified existence of a massive sulphide system.

The Company performed a multi-day site visit in mid-June to follow-up on newly reprocessed geophysical data, assess the geological settings, prepare and prioritise sites for field work later in the season, and to evaluate the terrain conditions for future drilling. All licensed areas were visited including the Illukunnguaq, Qullissat, Kuugannguaq and the Aaffarsuaq areas. Each area has numerous defined targets for future exploration.

*Figure 2 - Site-visit in the Aaffarsuaq Valley, Nuussuaq*

*Figure 3 - Multiple nickel copper gossans identified at Disko*

*Figure 4 - Illukunnguaq area on Disko showing Gossan. 1.9% Cu, 3.3% Ni, and 1.1% Cu, 2.8% Ni in outcrops.*

## **Reprocessing of Historical Magnetotelluric Data**

The Magnetotelluric ('MT') Titan 24 surveys was carried out by Quantec Geoscience in 2003-2004 in the Disko-Nuussuaq region. Bluejay contracted Quantec Geoscience to reprocess the original Titan 24 survey data from six survey areas (see Figure 5), which are currently in progress. There have been significant improvements made to the processing and inversion streams for the Titan system that benefit the evaluation and interpretation of

the original Disko surveys. The raw data from these types of surveys are suitable for new processing techniques, utilising increased computational power and interpretive techniques that have been developed since the original survey. These improvements include processing raw field data and the use of a joint inversion code for the MT resistivity and DC resistivity data. The use of the new joint inversion code can also help to improve near surface resolution. MT surveys are a geophysical method which uses natural time variations of the Earth's magnetic and electrical fields for estimating the electrical resistivity - or conductivity - of the sub-surface. Electrical conductivity is an important physical property to measure in the search for massive sulphide mineralisation.

Figure 5 Most significant Titan 24 MT conductors (reprocessed) survey lines (red stars).  
MT Survey lines shown as black lines.

The MT Titan 24 reprocessing and reinterpretation work has provided very promising results with improved focus and resolution compared to the original historic processing. For example, at the Qullissat area, situated on the northern Disko Island, a strong conductor was identified on a 2.5km long line on the extension of a mafic sill, which has been intersected on its upper parts by historical drilling. This conductor can be seen as the base of a mafic intrusion underlain by sediments (Figure 6).

*Figure 6 - Qullissat area, target Qu-1. A strong conductor on the base of a mafic sill.*

The second example of a reprocessed MT Titan 24 profile-line with encouraging results is from the Aaffarsuaq on the Nuussuaq Peninsula. Conductors were detected on several MT profile lines (see Figures 5 & 7). One of the most encouraging results was obtained from the eastern part of MT line L-10N, where a conductive zone is probably elongated in East-West direction with extension to the east (Figures 7 and 8). In both the Qullissat area and the Aaffarsuaq areas, conductors are associated with magnetic anomalies obtained in aeromagnetic data (see e.g. Figure 8).

*Figure 7 - Reprocessed Titan 24-line, L-10N, Aaffarsuaq Valley. Pink to dark violet colours indicate strong conductive bodies.*

*Figure 8 - A. Total magnetic intensity field from Aaffarsuaq valley with showing MT Titan 24 profile lines. B. Similar to A. but now with the grid of MT profile lines derived conductivity at level -500 m below surface for the Aaffarsuaq area. Strong pink to dark violet colours indicates strong conductive bodies at subsurface level 500 m. The*

*conductivity grid is plotted on top of the magnetic field where pinkish colour reflects strong magnetic anomalies.*

## **Enhanced Full Tensor Gradiometer Gravity (eFTG) Survey**

Bluejay has commissioned an aerial 'enhanced Full Tensor Gradiometer Gravity' ('eFTG') survey, to be performed by the geophysical service provider AustinBridgeporth in autumn of 2019.

The eFTG system is the most advanced airborne gravity gradiometer system.

Gravity surveys allow measurements of small differences in the Earth's gravitational field, differences that are related to density changes of the underlying rock masses e.g. rocks intruding into the crust and accumulation of massive sulphides, etc. Gravity gradiometer surveys measure multidirectional gravity gradients in three directions as they yield additional information on geometrical and density changes in subsurface geology that give rise to gravity anomalies. An aerial survey is highly advantageous to a ground-based survey, in terms of survey time and manpower requirements.

The eFTG instrument is developed by Lockheed Martin and operated by AustinBridgeporth. It has a noise floor about three times lower than the conventional FTG instruments and provides data with higher bandwidth., resulting in gravity gradiometer data that has increased accuracy and higher spatial resolution. This permits smaller and more subtle anomalies to be detected with a greater degree of accuracy and confidence, widening the range of geological targets that can be mapped by gravity.

The eFTG survey will cover over 2,500 km<sup>2</sup> on Bluejay's West Greenland licence areas (Figure 11). The eFTG survey is designed to detect gravity and magnetic anomalies and represents a final stage in pre-drilling exploration across all licences.

*Figure 9 - AustinBridgeporth DC3 eFTG survey aircraft.*

*Figure 10 - Planned eFTG survey areas outlined in yellow.*

## **MMI and SGH Soil Sampling Programme**

To further improve the geological model and identification of

drillable targets at Disko, Bluejay will perform a tandem soil sampling survey during the summer work programme.

Mobile Metal Ions ('MMI') technology will be used as a soil geochemical method to help identify potential Ni-Cu-Co-PGE-Au sulphide mineralisation. MMI technology is an innovative geochemical methodology in which careful soil sampling strategies, sophisticated chemical ligands and ultra-sensitive instrumentation makes it possible to measure metal ions that travel upward from mineralisation to unconsolidated surface materials (Figure 8). This method is well suited for buried mineral deposits and has been proven to be an efficient method for drill hole targeting.

At each MMI survey location, a Spatiotemporal Geochemical Hydrocarbon ('SGH') sample will also be taken (Figure 11). SGH exploration technique is a highly developed nanotechnology that detects nanogram quantities of indicator hydrocarbon compounds that have seeped through nano-sized perforations in the overburden and is able to reveal the presence of buried mineralisation under thin to thick cover. The hydrocarbon compound in the surficial residues are from the decomposition of bacteria and microbes that feed on the target commodity (i.e. nickel, copper, sulphides) during their life cycle. Specific classes of hydrocarbons are associated with the presence of certain minerals and are therefore useful in exploration work for delineating drilling targets.

SGH is a weak leach of surficial material that measures 162 organic hydrocarbon compounds. It has been proven to be successful at delineating mineralisation in conditions and areas of the overburden where other geochemical methods have had difficulty. SGH has been successful in difficult terrain. Samples can be near surface soils, peat, humus, till, sand, submerged lake-bottom sediments, and even snow. SGH responses contain a signature that is able to identify the type of mineralisation, even at depths well in excess of 900m.

*Figure 11 - Cross section showing migration pattern of SGH samples around buried orebody The combination of MMI and SGH provide a powerful method for looking through the soil- and glacial-alluvial till-covered surfaces and valley-infill. Bluejay Mining license area at Kangerluarsuk have also very successful made use of MMI and SGH surveys.*

## **Reprocessing and Reinterpretation of Vibro-Seismic Survey**

A large, historical, high-resolution vibro-seismic survey was conducted in 2013 over a ZTEM defined conductive body in the Kuugannguaq valley. Seismic mapping confirmed the presence of intrusions, and several strong reflectors were located exactly where 3D inverted ZTEM data revealed a conductive body. The original survey was a success, but somewhat hindered due to noise caused by wind.

Bluejay has presented the data to seismic companies that are experienced with work in basalt covered provinces. Through a reprocessing and a detailed mapping of the seismic data, it should be possible to reduce the noise, map and expand the observed features in the seismic data. A detailed mapping and reinterpretation will provide a tie point for the newly acquired eFTG data, establishing relationships that will be critical for interpretation.

### **Multi-Sensor Drones for Geological Mapping**

The Illukunnguaq area, as well as nearby anomalies generated by the Titan 24 MT reprocessing found in the Qullissat area, will be subject to detailed magnetic, photogrammetric and hyperspectral imaging drone-based surveys.

These surveys will be conducted by the European Union and partner-financed innovation community EIT Raw Materials. Project 'MULSEDRO' (Multi-Sensor Drones for Geological Mapping), will be performed with partners from the Geological Survey of Denmark and Greenland, Helmholtz Institute Freiberg for Resource Technology, Geological Survey of Finland, Deutsche Montan Technologie GmbH, Radai Oy and LTU Business AB, and supported by Bluejay during the field work. The Illukunnguaq area as well as other target sites on the north-coast of Disko will also be targeted by the previously mentioned geochemical sampling and mapping programmes to follow-up on potential shallow-seated targets with massive sulphide mineralisation.

### **Luleå University of Technology 3D Modelling Project Disko**

Bluejay has initiated a large 3D modelling programme with Exploration Technology Professor Thorkild M. Rasmussen from Luleå University of Technology ('LTU') in which he will integrate the vast amount of new and historic geophysical data and geological



knowledge from Disko and Nuussuaq to improve and expand on previously identified targets. The Geological Survey of Denmark and Greenland ('GEUS') will also support the project with existing 3D mapping data from the Disko and Nuussuaq area.

### **Market Abuse Regulation (MAR) Disclosure**

Certain information contained in this announcement would have been deemed inside information for the purposes of Article 7 of Regulation (EU) No 596/2014 until the release of this announcement.

**\*\*ENDS\*\***

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### **About Disko**

Located on the south-west coast of Greenland, Disko has shown its potential to host mineralisation similar to the nickel/copper sulphide mine Norilsk-Talnakh located in northern Russia ('Norilsk'). Seven significant MMS targets have been identified to-date at the licence area, with the largest being 5.9km long by 1.1km wide. A 28t boulder assaying 6.9% nickel, 3.7% copper, 0.6% cobalt and 2g/t platinum group metals has also been discovered on the licence area, which is now displayed in the foyer of the Danish Geological Museum in Copenhagen, further highlighting the potential of these licences.

A surface sampling programme in 2017 confirmed a working sulphide system at Disko with initial chemical assays in oxidised surface material returning 2.02% nickel, 0.8% copper, 0.2% cobalt. Handheld XRF sampling on fresh, polished material returned values averaging between 4.6%-9.3% nickel & 1.5-2.8% copper. Fresh samples taken from outcrops confirmed characteristics indicative of large-scale Ni-Cu-Co-PGE sulphide segregation and coarse grained inter-locking crystals of metal sulphides were observed in hand specimens with an average size

of +15cm.

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