

# Bluejay Mining\*

JAY LN

**BUY**  
**Target 24p**

## Ilmenite depth exceeds drill capacity

### Stock Data

Ticker	FAM LN
Share Price:	15.5 pence
Market Cap:	£119m

Bluejay are evaluating the scale and grade of resources at the Pituffik mineral sands project in Greenland. The JORC inferred resource shows the project is probably the world's highest grade and ranks as world class when compared with major mineral sands projects held by major western mineral sands miners.

**We upgrade our target price to 24p from 22p on our revised cash flow analysis**

### Price Chart



- BlueJay Mining report significant progress at the Pituffik ilmenite (titanium mineral sand) project in Greenland this field season.
- **Sonic drill rig:** The newly acquired Sonic-drill rig as recommended by SRK Consultants is working well and shows mineral sands to a depth of over 30m in some areas exceeding the length of available drill rods and casing. The Sonic rig is reported to be working well and to be drilling off five to six holes per day depending on depth. We witnessed the first test drill hole on the recent site visit to Moriusaq Bay, Greenland.
- **Resource:** This dramatically exceeds our depth expectations and definitely exceeds the 1m depth assumed in the SRK JORC resource based on auger drilling.
- It is too early to give an accurate estimate as to the eventual scale of the mineral sands at Pituffik eg at Moriusaq Bay and Interlak Delta area but it is easy to make the assumption that the resource should expand to a significant multiple of the current and relatively conservative SRK estimate of 23.6mt grading 8.8% ilmenite.
- Early indications suggest to us that the ilmenite rich sands at surface may be equally well distributed at depth with no or very few apparent layers of rocks, aggregates or other minerals seen in preliminary drilling. This may or may not extend over much of the deposit but given that the ilmenite rich material is so much heavier than any other mineral it may be that most other minerals were washed away by waves and storms through the deposition process. Either way, Pituffik appears to be an exceptional deposit in this way.
- **Bulk sample:** The first 250t batch of ilmenite has already been shipped down to a warehouse at a deep water port in Greenland for further shipment.
- The team are planning to produce around 500-600t this season but could produce much more if required given the very rapid production of the first 250t which has essentially been produced in the first full two weeks of the field season using simple screens.
- **Purity:** The amazing thing about Pituffik is the apparent purity of the ilmenite mineral sands and the near total lack of any other material, particularly clay which bungs up processing at many other mineral sands operations.
- **Valuation:** we are upgrading our target price today to 24p/s from 22p/s based on adjustments to our cash flow analysis following our site visit.

*\*SP Angel act as nomad and broker to BlueJay Mining*

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- In short, nature has done an amazing job in sorting out the heavy mineral sands from the lighter material and this can be very clearly seen from the air where rivers show plumes of natural sand being washed down the shoreline to other beaches leaving a mass of ilmenite sand on Bluejay's licenses at Pituffik. We note, other beach sands in the region do not appear to have similar areas of ilmenite concentration.
- Microscopy indicates good purity levels with the ilmenite grains liberated by erosion. The very heavy levels of erosion seen in general in Greenland appear to have served to liberate the ilmenite in a way that may not be seen in less active environments.
- **Sonic Drilling:** we believe the sonic drill rig will show high-grade ilmenite in a mass of heavy mineral sands largely free of any other mineralisation till the base rock.



- **Bucket test:** We completed our proprietary SP Angel bucket test on the BlueJay license. The test involved borrowing a five liter bucket from the kitchen, filling it with mineral sands off random locations on the beach, weighing said bucket with some recently purchased luggage scales. Our test showed high levels of heavy mineral sands from all areas and particularly near the shore line where we weighed 13.4kg for approximately 5kg of mineral sands with no sieving.



- **Beaches and Terraces:** The very high level of erosion caused by glacial and freeze/thaw erosion combined with the unusually high level of ilmenite rich dyke swarms has created an exceptional environment for the sorting of heavy mineral sands over millions of years enabling the natural enrichment and deposition into the active beaches which have then been uplifted to form deep terraces of ilmenite mineral sands. Drilling is reported to show ilmenite to >30m of depth in this environment. This fits with a theoretical beach model when considering the scale of the beach terraces and surrounding geology in our view.



- **Shipping:** the Fjords of Greenland provide deep shipping lanes with depths of >800m seen by us on the sonar during our travels. Deep water is present very close to shore at Pituffik and it should be relatively inexpensive and simple to rig up a short 10-20m pier and conveyor for the loading of Handymax or Panamax ships through the summer months. Ice breaking could extend the shipping season though we suspect this will not be necessary if the carriers can load in time. The bathymetry survey should be completed in the next few weeks and should show the best location for the pier, though nature has provided much of the infrastructure to be needed.
- **Moriusaq Bay:** The Moriusaq Bay area provides a natural harbour to protect against passing icebergs and heavy weather. The bay, active beaches and raised beaches appear to contain significant concentrations of potentially uniform ilmenite.
- **Iterlak Delta:** The Iterlak Delta and raised beaches appears to host exceptionally high-grade ilmenite as seen in the very heavy and black nature of the mineral sands. The delta is solid to walk across due to its concentration of heavy mineral sands. People tend to sink into normal sand in such wet environments but the density of the heavy minerals in the sand at Iterlak makes it quite unlike any beach we have ever walked across.



The 'freeboard' or wall of mineral sand demarking the raised beach from the lower delta area at Iterlak gives a view as to the probable depth of ilmenite in the raised beach, though we do not yet know the depth of ilmenite in the more active delta environment.



- **Environmental:** a local group, Orbicon Artic are working on a baseline sampling program for the EIA though we saw nothing to cause any particular concern on the beaches or at the shore line.
- **Moriusaq camp:** The abandoned settlement at Moriusaq provides a camp of reasonable quality saving BlueJay a small fortune in camp costs. The former supermarket provides a useful mess room and canteen and the recent installed washrooms are a significant addition for the team working at site.
- **Kitchen:** an army marches on its stomach and miners in the field are just the same. We are pleased to report that the Pituffik kitchens are well appointed with an

unusually creative Danish chef and enough grub to keep the team going through this season and beyond, though the coffee could take some getting used to.

- **Health & safety:** Two minor injuries were sustained by staff eating Snow Crab and some icebergs were damaged while testing anti-polar bear deterrent devices. All other health and safety issues appear well managed.
- **Feasibility study:** the team now look set to deliver a feasibility study on the project in the second half which will likely show very low unit operating costs and strong economic potential for the project. Our own preliminary evaluation of the project economics shows significant value and considerable upside from here.
- **Processing:** The mineral sands at Pituffik appear to require very little in the way of mineral processing. Simple screening and sieving produces concentrate for testing while the use of spirals should produce a viable concentrate for sale. A further stage of processing using permanent 'neodymium' magnets may produce concentrate which is suitable for 'Chloride' producers commanding higher prices for this purer material. This fetches the higher end of market prices at around \$180-220/t.

#### Ilmenite sorts itself



- **Ilmenite market:** we expect the environmental crackdown in China to further restrict the processing of titano-magnetite ores and concentrates. This should restrict the availability of titanium from this source and drive demand for ilmenite 'titanium' rich concentrates from mineral sands.
- **Ilmenite pricing:** The Metal Bulletin report bulk concentrate TiO<sub>2</sub> prices for 54% FOB Australia today at \$160-180/t though higher prices of around \$180-280/t are seen in the market depending on quality.

**Conclusion:** Pituffik is one of the most economically promising mineral projects we have ever had the privilege to visit.

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