GREENLAND: THE MISUNDERSTOOD ISLAND

➢ TOO COLD?

➢ TOO ISOLATED?

➢ TOO HARD?
MAYBE IT’S TIME TO THINK AGAIN?

GREENLAND HAS FOUR TIMES THE LAND AREA OF SPAIN and is only 75% covered in ice...
WHAT IF THE WORLD’S MOST PROSPECTIVE COUNTRY ISN’T AS HARD AS YOU MIGHT IMAGINE?
DUNDAS ILMENITE
PROJECTED TO BECOME A LARGE SIZE / LONG LIFE / LOW COST DEPOSIT
With an area the size of Spain open to exploration / exploitation, increasing yearly...

Supportive government focussed on developing a resource based economy

Transparent Minerals Act and firm rule of law combining to provide a low sovereign risk jurisdiction

2016 Bluejay granted first of its kind marine exploration licence for minerals by Greenland Government

Exploitation of Dundas is now possible due to profound climatic changes in Arctic

>100 years of state sponsored research into Greenland's metal occurrences.
Geological survey of Denmark and Greenland (GEUS) conducted a regional analysis of the titanium rich basalts and sediments at Dundas during 2017.

Summary of calculated ilmenite

The preferred tonnages ilmenite calculated for the Steensby Land Sill Complex in southern Steensby Land include:

1. Ilmenite contained in sills prior to erosion: 17 Gt
2. Ilmenite remaining in sills after erosion: 10 Gt
3. Ilmenite available for sedimentation: 7 Gt

Total ilmenite deposited at Moriusaq derived from sills and dykes north of Moriusaq is estimated at between 500 to 1100 million tonnes.
GEOLOGY AND LICENCE AREA

**MORIUSAQ BAY**
- Includes the initial production zone with a high-grade resource of 7.9Mt at 14.2% ilmenite
- This drowned beach target is the focus of feasibility study currently underway

**ITERLAK DELTA**
- Extremely large tonnage potential at a grade of ±15% ilmenite
- Deltaic deposits from the Intelak drainage area are the major source of all mineralisation at Dundas

The deposit covers three types of terrain:
- **Raised beaches:** contain ilmenite accumulations of unknown depths, along more than 20km of coastline
- **Active beaches:** refers to the area seaward of the frontal dunes, including the beach, tidal zones and surf zone
- **Drowned beaches:** refers to the areas seaward of active beaches.

Dundas is located 40km south-west of Qaanaaq, Greenland
DRILLING TO DATE

TARGET
To increase and expand current resource and validate the significant tonnage potential. Auger program completed at Iterlak and additional 15km of raised beach to the east

- 138 holes completed August 2017 using sonic drilling
- Ilmenite rich sediment observed in all samples confirming mineralisation across entire onshore 30km licence
- Areas of the raised beach remain open at depth

- Auger drilling completed at:
  - Iterlak, the largest target on the licence area
  - A recently discovered super high-grade deposit to the east of Iterlak where initial sampling shows that extensive areas of up to 80% ilmenite in-situ exists in large quantities
- High grade ilmenite observed in all 130 holes to date with some holes returning exceptional high-grade results from top to bottom
**RESOURCE**

**HIGHLIGHTS THAT DUNDAS IS POTENTIALLY CAPABLE OF SUPPORTING AN OPERATION OF CONSIDERABLE MINE LIFE AS WELL AS HAVING EXTENSIVE EXPLORATION POTENTIAL**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Volume (M.m³)</th>
<th>Tonnage (M.t)</th>
<th>Density (t/m³)</th>
<th>% THM</th>
<th>% &gt;2mm</th>
<th>% &gt;5mm</th>
<th>% &lt;63µm</th>
<th>% TiO₂ In HM</th>
<th>% TiO₂ In-situ</th>
<th>% Ilmenite In-situ</th>
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<tr>
<td>Inferred</td>
<td>11.2</td>
<td>23.6</td>
<td>2.12</td>
<td>34.5</td>
<td>29.0</td>
<td>21.8</td>
<td>2.5</td>
<td>12.0</td>
<td>4.2</td>
<td>8.8</td>
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</table>

- Independently proven to be the highest-grade mineral sand ilmenite project globally
- Includes a high-grade zone of **7.9Mt at 14.2% ilmenite** (in situ) at Moriusaq, which is the focus of the feasibility and production studies currently underway
- Resource sits within a larger exploration target of between **90Mt to 130Mt at an in-situ grade of between 6.3% and 8.4% ilmenite**
- Resource and exploration target defined from just 17% of the raised beach environment within the Moriusaq target area

*Extensive raised beach area*
BATHYMETRY SURVEY – COMPLETE

TARGET
To enable a robust assessment of shipping options

- Covered an area of ±90km²
- Detailed regional off-shore survey identified and surveyed, and according to Danish Maritime Law, bulk carrier capable shipping channels and fixed-point moorage locations all identified along the Dundas coastline
- Survey results demonstrate potential for bulk carrier access to near shore areas as well as the ability to emplace ship loading facilities
- Results will feed into the feasibility assessment and trade off studies in preparation for lodging the exploitation application
ILMENITE IS HOMOGENOUS AND LOW IN DELETERIOUS ELEMENTS
THE ILMENITE IS A CONSISTENT GRAIN SIZE
RADIONUCLIDES ARE <10PPM DETECTION LIMITS
EXPANSIVE TITANIUM DEPOSIT

More than 30km long, 1-3km in width, and in places more than 30m thick

FIVE DISTINCT PLACER DEPOSITS OF PRIMARY ILMENITE IDENTIFIED:

1. RAISED BEACH - ilmenite accumulations over widths of >1m along >30km of coastline (average grades to-date of ±20% ilmenite and >50% in some areas)

2. ACTIVE BEACHES - 50m either side of mid tide line, >30km long and >1m deep (average grades to-date of >50% ilmenite)

3. DROWNED BEACHES - large volume ilmenite bearing sediments located in <10m of water expected to be very high grade ilmenite

4. MORIUSAQ BAY - a low-medium tonnage area with average grades of ±50% ilmenite (up to 90% in areas)

5. ITERLAK DELTA - deltaic deposits from the Intelak drainage area, these are the primary source all sediments at Dundas. Extremely large tonnage potential at a grade of >15% ilmenite.
IS ITERLAK A BILLION TONNE BEHEMOTH? TIME WILL TELL
EARLY SIGNS ARE POSITIVE, AUGER FROM ITERLAK AREA
Raised and Active Beach mining using scrapers or excavator/trucks.
MINE PLAN – OPTION 2

Dredging within Tombolo and dozer pushing down to dredge and/or off shore dredging near Iterlak delta.

Phase | Mining of tombolo
--- | ---
1

Phase | Mining of raised beaches
--- | ---
2

Phase | Mining offshore
--- | ---
3
STAGE 1
COARSE REJECTS REMOVAL UNIT (CRMU)

ORE

FEED BIN

FEED

SCRUBBER

TROMMEL

OIS

WET CONCENTRATOR PLANT
PROCESS FLOWSHEET - STAGE 2

FROM COARSE REJECTS REMOVAL UNIT

CD TANK

STAGE 2
WET CONCENTRATOR PLANT (WCP)

ROUGHIER SPIRALS CIRCUIT

MIDDLENGS SPIRALS CIRCUIT

UPWARD CURRENT CLASSIFIER

HM CONCENTRATE TO DRYMILL

GREENLAND DUNDAS ILMENITE PROJECT WCP FLOW DIAGRAM
PROCESS FLOWSHEET - STAGE 3

STAGE 3
MINERAL SEPARATION CIRCUIT (DRY MILL)

FEED BIN
HORIZONTAL FILTER BELT
ROTARY DRYER
COOLER
RARE EARTH MAGNETS
N/M
M1
M2
M2
NON-MAGNETIC MINERAL
PREMIUM ILMENITE
MAGNETIC MINERAL

GREENLAND PITUFFIK ILMENITE PROJECT DRY MILL FLOW DIAGRAM
**BluJ – STANDARD ILMENITE**

An ilmenite ore suitable as a preferential feed:

- for direct use in the production of TiO$_2$ pigment by the sulphate process; or
- to produce high quality titanium sulphate slag

<table>
<thead>
<tr>
<th>Composition</th>
<th>Range</th>
<th>Typical</th>
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</thead>
<tbody>
<tr>
<td>TiO$_2$</td>
<td>%</td>
<td>45-47</td>
</tr>
<tr>
<td>FeO</td>
<td>%</td>
<td>&gt;38</td>
</tr>
<tr>
<td>Fe$_2$O$_3$</td>
<td>%</td>
<td>10-12</td>
</tr>
<tr>
<td>Fe (total)</td>
<td>%</td>
<td>54-55</td>
</tr>
<tr>
<td>Al$_2$O$_3$</td>
<td>%</td>
<td>&lt;0.2</td>
</tr>
<tr>
<td>SiO$_2$</td>
<td>%</td>
<td>1.0-1.5</td>
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<tr>
<td>Cr$_2$O$_3$</td>
<td>%</td>
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<tr>
<td>ZrO$_2$</td>
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<tr>
<td>CaO</td>
<td>%</td>
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<tr>
<td>MgO</td>
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<tr>
<td>MnO</td>
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<td>0.50-0.57</td>
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<tr>
<td>Nb$_2$O$_5$</td>
<td>%</td>
<td>0.02</td>
</tr>
<tr>
<td>P$_2$O$_5$</td>
<td>%</td>
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</tr>
<tr>
<td>V$_2$O$_5$</td>
<td>%</td>
<td>&lt;0.40</td>
</tr>
<tr>
<td>U</td>
<td>ppm</td>
<td>&lt;10</td>
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<tr>
<td>Th</td>
<td>ppm</td>
<td>&lt;10</td>
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- Homogeneous and consistent grade concentrate
- Readily soluble in sulphuric acid at high process efficiency
- High FeO and low Fe$_2$O$_3$ content
- Low alkali content, compared to rock ilmenite ores used for smelting
- Low key impurities such as Cr$_2$O$_3$
- Low radioactivity
A premium ilmenite ore suitable as a preferential feed:
• for direct use in the production of TiO₂ pigment by the sulphate process; and
• to produce a high quality sulphate or chloride titanium slag

- Homogeneous and consistent grade ilmenite ore
- Readily soluble in sulphuric acid at high process efficiency
- High FeO and low Fe₂O₃ content
- Low alkali content, in particular low MgO suitable for chloride slag production
- Low key impurities such as Cr₂O₃
- Low radioactivity

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<td>MnO</td>
<td>%</td>
<td>0.50-0.57</td>
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<tr>
<td>Nb₂O₅</td>
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<tr>
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<td>U</td>
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PRESENTATION TAKEAWAYS

HOMOGENOUS

STABLE MINING JURISDICTION

DUNDAS EXPECTED TO BE A TOP 5 DEPOSIT

NATURALLY LIBERATED HARD ROCK SOURCE

LARGE SCALE PRODUCTION 2019

SIMPLE PROCESSING = LOW COST

CUSTOMER ENGAGEMENT HAS STARTED