

14 January 2021

ASX Announcement

## ACQUISITION OF THE WORLD'S LARGEST HISTORICAL CRYOLITE MINE WITH RARE EARTH POTENTIAL and PLACEMENT

### HIGHLIGHTS

- **Eclipse Metals Ltd to acquire 100% ownership of exploration tenure covering the historical Ivittuut Cryolite deposit and mine located in southwestern Greenland.**
- **The Ivittuut mine is notable for having been the world's only commercial natural cryolite mine, closing in 1987 after 120 years of production.**
- **Cryolite is a rare mineral proven to act as a beneficial fluxing agent to reduce energy consumption in aluminium production.**
- **Associated mineralisation including rare earth elements (REE), high purity silica, fluorite and base metals in the pit floor is yet to be assessed.**
- **Historical mineral exploration included drilling about 19,000m of diamond drill core, stored in a Greenland government facility, will provide material to be sampled and assayed.**
- **Indications of further cryolite mineralisation near surface and at depth from 1980's drilling exploration.**
- **Potential short-term cash flow opportunities by extraction of cryolite and REE from dumps and tailings.**
- **Additional potential REE mineralisation in the Gronnedal-aka carbonatite deposit, 10km from the Ivittuut mine.**
- **Commitments for a placement of 133,333,334 Ordinary Shares at a price of \$0.015 per Share to raise \$2,000,000 (before expenses) have been received.**

Eclipse Metals Ltd (ASX: **EPM**) (**Eclipse Metals** or the **Company**) is pleased to announce that it has entered into an agreement pursuant to which the Company will acquire the **Ivittuut Project** in Greenland (**Project**) and associated mining information in relation to the Project tenement MEL2007-45 (**Tenement**) (together, the **Assets**) (**Agreement**). A summary of the material terms of the Agreement is set out below.

The Ivittuut Project (sometimes called Ivigtut) is known as the world's largest and only cryolite mine from which cryolite was historically produced for use in the extraction of aluminium from bauxite (alumina) ore. Production of 3.8 million tonnes of cryolite has been recorded by the Greenland Geology Survey Department (this is not a resource or reserve estimate equivalent) (Bondam, J. 1991).

Although cryolite has been found in other places, Ivittuut is the only place where this mineral has been commercially extracted. In addition to cryolite the mine workings contain associated minerals including fluorite, siderite, quartz (high purity silica), REE and base metals.

#### **ECLIPSE METALS LTD**

Level 3, 1060 Hay Street, West Perth WA 6005  
T: +61 8 9480 0420 | F: +61 8 9321 0320  
ABN 85 142 366 541



**Figure 1: Aerial image of Ivittuut and the cryolite mine in 1960, showing the working open-pit, mine infrastructure, ore and waste dumps and ship loading facilities.**

## ABOUT THE IVITTUUT PROJECT

Ivittuut is located near Cape Desolation in southwestern Greenland. Ivittuut today is a small tourist town with remains of a land backed wharf used previously for the export of cryolite. The town has a power station with fuel supplies to service this station and local traffic and to support mineral exploration. About 5.5 kms to the northeast of Ivittuut, the twin settlements of Kangilinnguit and Gronnedal, respectively provide a heliport and an active wharf with infrastructure. (Figures 1, 2, 3 and 4).

### **Eclipse Metals Ltd Executive Chairman Mr Carl Popal commented:**

*“This transformational 100% acquisition has multi-facet commercial potential for Eclipse.*

*Ivittuut is unique in so many ways; not only as the world’s only cryolite mine with huge potential for multi-commodity deposits next to a historical port but also as a source of highly sought after heavy rare earth minerals. This is a global leap forward for the Company to expand its interests with unique opportunities in the green energy metals and minerals sector.*

*EPM is now well positioned not only to deliver increasing value for our shareholders by being able to achieve cost effective results from assay of the 19,000m of drill core presently in storage but also delineating short term opportunities in the highly sought after REE sector.*

*In the short run, having substantial high purity quartz (silica) still within the pit area puts the Company in a position to potentially be a near term supplier to the electronic, solar, optical and silicon metal industry. High purity quartz is a highly sought after industrial mineral.*

Furthermore, the large tenement area covers Greenland's only known carbonatite deposit in close proximity to Gronnedal port. This deposit could provide an ideal product for neutralising acid mine and process water produced by other miners in the Greenlandic region. This fits well with the Company's mission to excel in the commercialisation of metals and minerals demanded in the production of green energy and required by the industry in the reduction of pollutants.

We have expanded the Company's technical team and we are looking forward to working on exploration programs that will deliver results not only on Ivittuut but also on our existing Australian portfolio of uranium, gold, palladium, vanadium and manganese prospects."

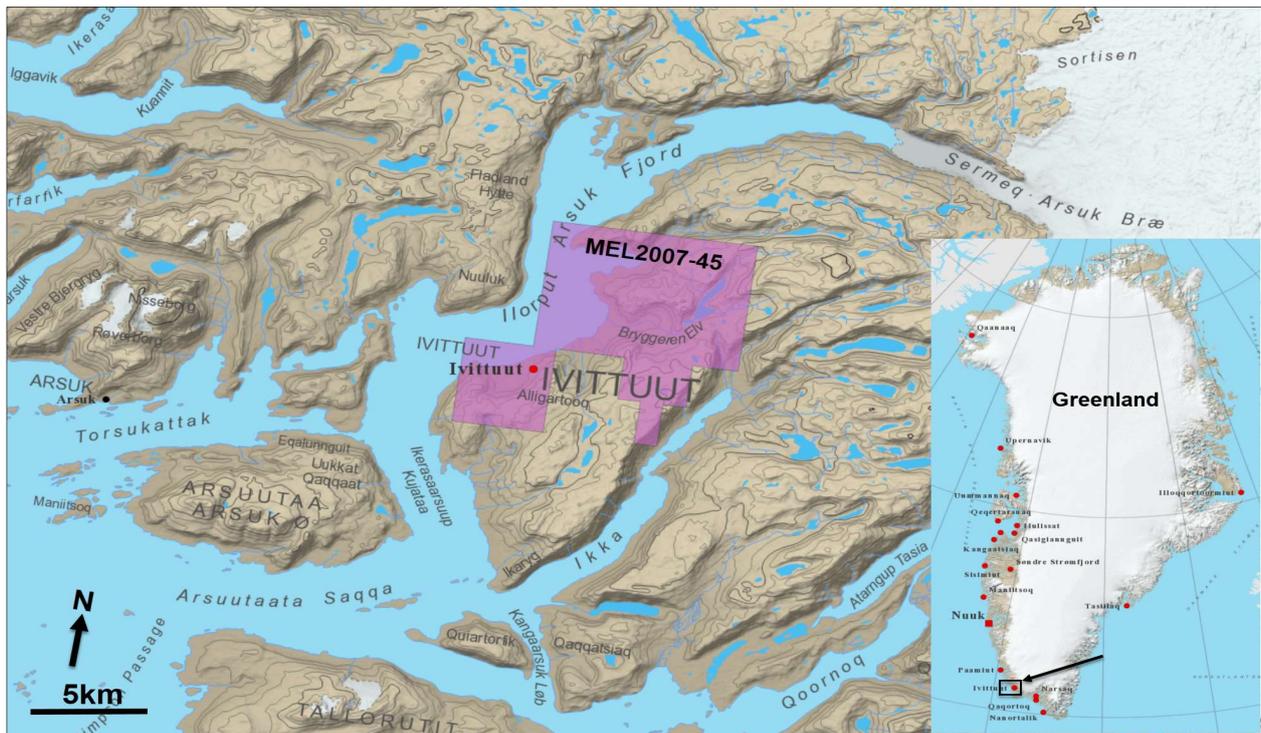


Figure 2: The Ivittuut Project Location Map

## ABOUT GREENLAND

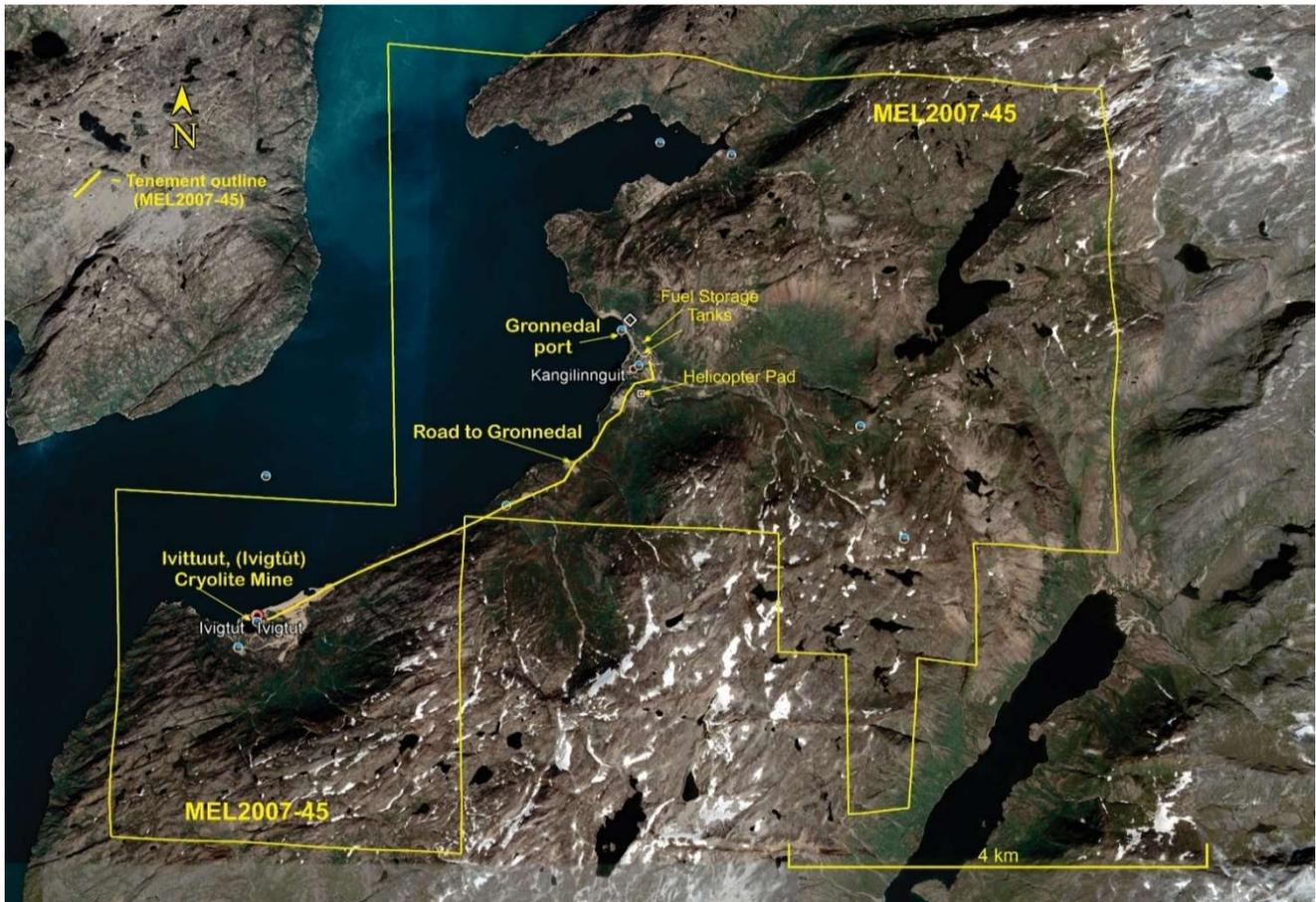
Southwest Greenland is host to a province of unique magmatic intrusions of alkaline rock which have a very high potential for REE and other specialty metals including tantalum, niobium, high grade quartz, uranium, thorium, beryllium and zirconium. The National Geological Survey of Denmark and Greenland (**GEUS**) have mapped all of Greenland at least to the detail of 1:500.000 RF (*"Representative Fraction"*, a standard universal representation of map scale) and many areas to greater detail.

## GEOLOGY

The cryolite deposit at Ivittuut is a zoned mineralised body emplaced in a nearly cylindrical leucogranite intrusion which in turn is enveloped by an intrusive breccia in contact with high metamorphic granodioritic gneiss constituting the southernmost extension of the Archean block as found on the west coast of Greenland.

The cryolite deposit is divided into siderite-cryolite, pure cryolite, fluorite-cryolite and a fluorite-topaz unit, located above a large siderite and quartz rich unit (refer to Figure 6).

Up until 1987, when operations ceased, exploration included approximately 19,000m of diamond drilling, the core from which is currently stored in a Greenland government facility, available for logging and sampling.



**Figure 3: Satellite image showing the whole of MEL2007-45 with the Ivittuut and Gronnedal Areas**

Most remaining mineralisation (quartz, siderite, fluoride, sphalerite, cryolite) lies within 40-80m below the bottom of the pit, under the largely mined-out upper cryolite zone.

In the mid to late 1980's diamond drilling intersected disseminated cryolite mineralisation in leucogranite over an interval of 91m in drill hole BB-25, from a depth of 715m down to the bottom of the hole at 806m below surface (refer to Figure 5). No further drilling was carried out and exploration ceased (*refer Pauly 1974 and Gothenborg et al. 1988 and GEUS Open File Report No.20211, pages 6 to 11*). Please refer to the below table outlining BB-25 drill hole statistics as per the GEUS Report.

Hole Id	Local East	Local North	RL (m)	Azimuth Direction	Dip	Depth (m)
BB 25	1085	1393	1.6	332	-87	806

The hatched area shown on Figure 5, below, denotes the position within the leucogranite intrusion in which conditions for deposition of massive cryolite are considered to be favourable and will be investigated further.

Indications of cryolite mineralisation are also known at the base of the Bunker Breccia, but this has been little explored (Figure 6) (1989, Platinova Resources Ltd Canada, *Reference GEUS Open File No.20516*).

## IVITTUUT POTENTIAL

### Cautionary Statement

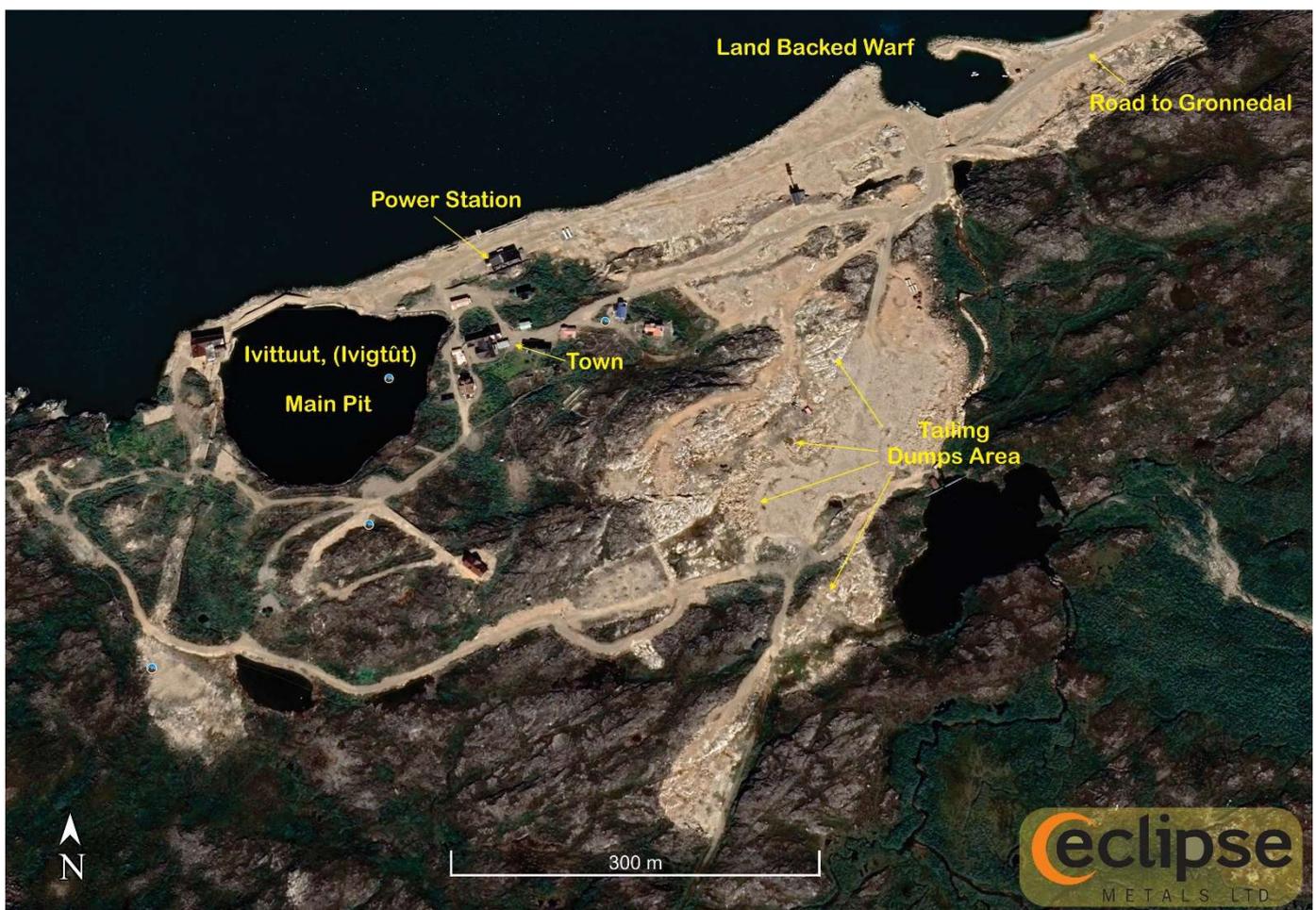
*The Exploration Results have not been reported in accordance with the JORC Code 2012. A Competent Person has not done sufficient work to disclose the Exploration Results in accordance with the JORC Code 2012, it is possible that following further evaluation and/or exploration work that the confidence in the prior reported Exploration Results*

may be reduced when reported under the JORC Code 2012. Nothing has come to the attention of the acquirer that causes it to question the accuracy or reliability of the former owner's Exploration Results, but the Company has not independently validated Exploration Results and therefore is not to be regarded as reporting, adopting or endorsing those results.

Since the cessation of mining operations in 1987, there has been recurring interest in the potential of the Ivittuut deposit.

In 1987, Outokumpu Mining Consultants (**Outokumpu**) carried out an assessment of the remaining in-pit mineralisation in which they quantified the contained the commercially significant minerals including cryolite, fluorite and siderite.

In 1989, Platinova Resources Ltd Canada completed tonnage calculation of the mined cryolite stock dumps based on topographical and geophysical surveys. Significant results were delineated from the exploration work completed.



**Figure 4: Satellite image showing main infrastructure in proximity to the Ivittuut cryolite mine**

In 1991, J. Bondam assessed data from 144 drillholes and quantified the grade and tonnage of cryolite, fluorite, siderite and sphalerite (refer to GEUS Report File No. 21339 for results, Open File Series 91/4).

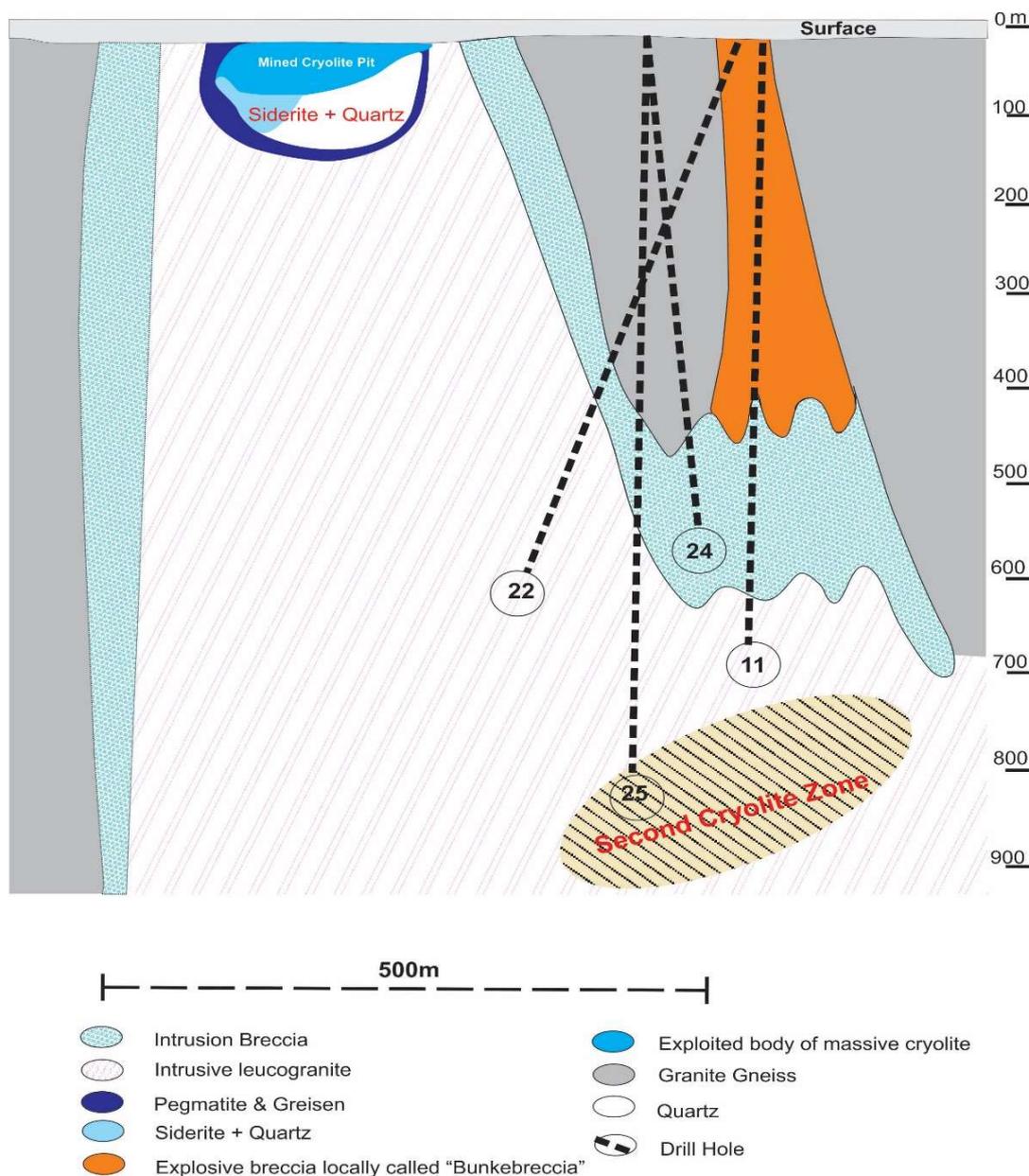
In the same report J Bondam recorded presence of a large quartz body below the cryolite with some zones of very high purity, interlayered with siderite. It is noted that historical analyses of the quartz is not representative of all quartz within the deposit, but it is indicative of higher purity, compared with natural quartz from other sources used in the optical glass, electronic and solar industries and to produce silicon metal (refer Bondam J, 1991 page 10-11) - (refer Figure 6).

In 1992, H. Pauly conducted mineralogical analyses of drill core from the fluorite zone and fluorite-cryolite supplemented with analyses of crude fluorite-cryolite. The results of the report highlighted cryolite, fluorite, siderite and zinc mineralisation as extensive, warranting further investigation.

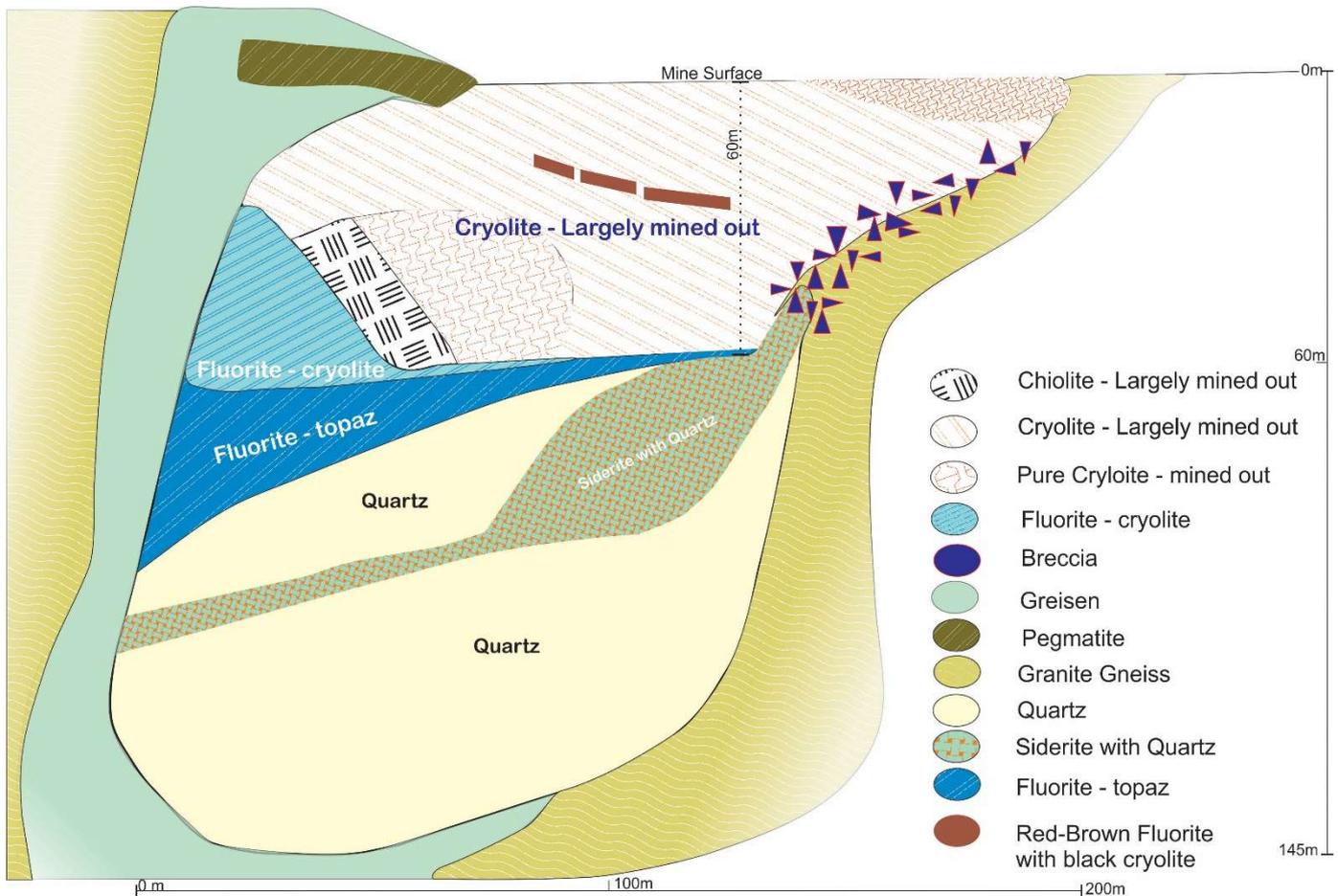
In 1999, H. Pauly and J.C. Bailey quantified the in-situ tonnage and grade of quartz and siderite.

In 2014, North Atlantic Mining Associates Ltd (**NAMA**) completed a pre-feasibility study together with an assessment of the contained mineralisation below the pit in which the tonnage and grade of cryolite, fluorite, siderite, sphalerite and silica (quartz) were quantified.

Much of the diamond drill core in storage represents vertical drill holes from the bottom of the pit plus downward inclined and horizontal drilling in the foot of the walls. In 1951 samples were collected from the west and north walls from exposures of fluorite-cryolite to supplement the drill sample assays. The analysis of fluorite-cryolite was established by combining drill core analyses with analyses of crude cryolite shipped between 1957 and 1963 because they came from quarrying the pit walls.



**Figure 5: Generalised profile of cryolite, quartz and fluorite emplacement within the granite intrusion and its eastern extension (Pauly 1974 and Gothenborg et al. 1988 & GEUS Report No 20211).**



**Figure 6: Generalised profile of cryolite, quartz and fluorite emplacement within the granite intrusion and its eastern extension prior to mining (Pauly 1974 and Gothenborg et al. 1988).**

## CARBONATITE

The Gronnedal-aka carbonatite complex is less than 10km from Ivittuut and only 5km from the port of Gronnedal. This complex is also one of the 14 larger Gardar alkaline intrusions in Greenland. It is also recognised as one of the prime REE targets in Greenland by GEUS.

The Gronnedal-aka complex has potential for at least two types of deposits:

1. REE occurs through the complex especially in the late-stage veins where it occurs as various strontium REE carbonate minerals.
2. Carbonatite body is 2km by 1km and can offer potentially large tonnages of carbonate rock.

REE occurs throughout the carbonatite complex, especially in late-stage veins where it occurs as various strontium REE carbonate minerals. Europium (**Eu**) has been recorded from the whole intrusion at values five times greater than average for rocks elsewhere in the Gardar Province and many times more than normally found in carbonatite – Eu is in short supply around the world. Other minerals noted include apatite, monazite and the REE mineral synchysite.

The Gronnedal-aka area contains the only known source of carbonate minerals in Greenland which could be suitable for neutralising acid mine and process water. Again, this could be readily shipped from available wharf infrastructure at Gronnedal.



**Figure 7: Photo of Kangilinnuit**

## **FORWARD STRATEGY**

EPM will undertake a detailed re-logging and sampling of the 19,000m of drill core stored in Greenland. Much of the diamond drill core in storage represents vertical drill holes from the bottom of the pit plus downward inclined and horizontal drilling in the foot of the walls.

Mineralised core will be re-split, sampled and assayed with a view to preparation of a JORC Code 2012 compliant resource estimation by an independent resource geologist. All necessary QA/QC methods will be implemented along with geological logging and geo-technical studies. Further recent data will be sought whilst the Company is working on the extensive geological and Global Information System (**GIS**) database over the Project area and surrounding known mineralisation.

EPM will also assess the potential for REE outside the immediate Ivittuut mine area and over the Gronnedal-aka carbonatite / REE prospect area.

## **CONCLUSION**

The Company is poised to commence work on this world class unique opportunity with a vision of developing producing mines on the project tenement. The Company's technical team is working on the data to schedule an exploration programme for 2021 which will be announced to the market in due course.

## **ABOUT CRYOLITE AND ITS MARKET**

Cryolite (with the chemical name sodium hexafluoroaluminate) is an inorganic compound with the formula  $\text{Na}_3\text{AlF}_6$ . Synthetic cryolite is generally manufactured from aluminium oxide, sodium hydroxide and

hydrofluoric acid or their equivalent reagent -- hexafluorosilicic acid. Cryolite is a fluxing agent with a very low melting point. In large amounts, cryolite can become volatile in presence of silica.

Cryolite is primarily used as a flux in the smelting and electrolytic production of aluminium. Although it is used in a relatively small amount, cryolite plays a crucial role in aluminium production. The melting point of alumina is very high and hence it is blended with cryolite to reduce its melting point. Cryolite is also used for the production of abrasives, welding agents, soldering agents, blasting, glazing, glass and pyrotechnics. Cryolite also finds applications in metal surface treatment and is used as a component in pickling pastes for stainless steel.

In nature, aluminium does not exist in a pure state. The production of primary aluminium metal commences with bauxite ore, which is composed of hydrated aluminium oxide (40%-60%) mixed with silica and iron oxide. Roughly 4 to 5 tons of bauxite ore are refined to produce approximately 2 tons of alumina. This alumina is smelted to produce around 1 ton of aluminium. Production of aluminium is a very capital and energy-intensive process. Alumina, power, and labour account for 75% to 80% of the total cost of aluminium depending on the region where it is produced. The major resources required for aluminium production are bauxite, carbon, aluminium fluoride, cryolite and electrical power.

## SUMMARY OF THE KEY TERMS OF THE AGREEMENT

Pursuant to the Agreement between the Company, Cerium Pty Ltd (**Cerium**), Rimbal Pty Ltd (**Rimbal**) and Greg Barnes, the Company has agreed, subject to satisfaction or waiver of certain conditions precedent to acquire the Assets from Cerium and Rimbal (together, the **Sellers**).

### **Initial Completion:**

Ten business days after the execution of the Agreement initial completion will occur (**Initial Completion**). At Initial Completion, the Sellers must give the Company all documents to effect the transfer of the Tenement to the Company as well as exclusive possession of the Assets. Within 2 business days after Initial Completion, Rimbal must lodge with the relevant Government Agency in Greenland the documents required to seek the approval required under Greenland's Mineral Resources Act (as referred to in paragraph (b) below) and effect transfer of the Tenement.

### **Conditions precedent to Second Completion:**

Second completion will occur 10 business days after the satisfaction or waiver of the following conditions precedent (**Second Completion**):

- (a) Eclipse holding a general meeting (**EGM**) at which it seeks to obtain all shareholder approvals required for issue of the securities set out in the table below in Phase 2 and Phase 3;
- (b) the Sellers obtaining such regulatory approvals in Greenland (if any) as are necessary to transfer the Tenement to the Company and the Company becoming the sole registered as the holder of the Tenement on conditions satisfactory to the Company; and
- (c) completion by the Company of due diligence on the Assets.

### **Consideration:**

Consideration	Timing of payment / issue of securities	Paid / Issued to Cerium	Paid / Issued to Third Parties
<b>PHASE 1 – Initial Completion</b>			
Cash	Initial Completion	\$50,000	N/A

Fully paid ordinary shares ( <b>Shares</b> ) in the issued capital of EPM	Initial Completion	200,000,000	12,000,000
<b>PHASE 2 – Second Completion</b>			
Cash	Second Completion	\$100,000	N/A
Shares	Second Completion	81,000,000	73,000,000
Options over Shares, each exercisable at \$0.015 on or before the date that is 3 years from the date of issue ( <b>1.5 cent Options</b> ) <sup>1</sup>	Second Completion	50,000,000	12,500,000
Options, each Option exercisable at \$0.05 on or before the date that is 5 years from the date of issue ( <b>5 cent Options</b> ) <sup>2</sup>	Second Completion	20,000,000	12,500,000
<b>PHASE 3 - 12 months after Second Completion</b>			
1.5 cent Options	12 months after Second Completion	150,000,000	30,000,000
5 cent Options	12 months after Second Completion	130,000,000	30,000,000

1. The terms of the 1.5 cent Options are set out in **Annexure B**.
2. The terms of the 5 cent Options are set out in **Annexure C**.

The “Third Parties” noted in the table above will be nominee(s) of Cerium who are professional or sophisticated investors. No Third Party will be associates of Cerium.

The Company will also make the following payments to Cerium on satisfaction of certain milestones (**Milestone Payments**):

- (i) \$1,000,000 - Within 10 business days of the announcement of a JORC compliant inferred resource within the Tenement in respect of any mineral.
  - (ii) \$3,000,000 - Within 10 business days of the announcement of completion of the first scoping study in respect of the Tenement.
  - (iii) \$7,000,000 - Within 10 business days of the announcement of completing the first pre-feasibility study in respect of the Tenement.
  - (iv) \$9,000,000 - Within 10 business days of the announcement of the last to occur of completion of the first definitive feasibility study in respect of the Tenement and the grant of a mining licence from Greenland Government over the area the subject of that study.
- (a) From Second Completion, the Company will grant to Cerium a 3.5% net profit royalty payable in relation to any mineral product recovered from the Tenement and sold (**Royalty**).
  - (b) If EPM shareholders do not approve the issue of the Phase 2 and Phase 3 securities, EPM will make equivalent cash payments to Cerium and the Third Parties calculated as follows:
    - (i) Shares - by multiplying the number of Shares to be issued by an amount equal to the 5-day VWAP of the Shares for the 5 days prior to the notice of meeting for the EGM less 20%; and
    - (ii) Options - by reference to Black Scholes Model per Option where the indicative share price used for the calculation is the 5-day VWAP of the Shares for the 5 days prior to the notice of meeting for the EGM or, where applicable, any subsequent general meeting,

**(Cash Alternative Payments).**

- (c) EPM may elect to satisfy any of the Milestone Payments (wholly or partly) by way of the issue of Shares. The number of Shares will be determined by dividing the cash amount to be satisfied by the Shares by the price of the Shares, applying the 5-day VWAP prior to announcement of the relevant milestone.

**(Milestone Securities).**

- (i) The issue of the Milestone Securities will be subject to shareholder and regulatory approvals, if EPM elects to issue Shares in lieu of cash; and
- (ii) The notice of meeting seeking shareholder approval for the issue of the Milestone Securities must contain an independent expert's report in accordance with section 13 of Guidance Note 19 opining on whether the issue of the Milestone Securities is fair and reasonable to non-participating security holders
- (d) All securities issued to Cerium (including those issued on exercise of the Options) will be escrowed as follows:

Percentage of securities issued	Escrow period
50%	24 months
50%	12 months

All Shares issued to Third Parties (other those issued on exercise of the Options) will be escrowed as follows:

Percentage of securities issued	Escrow period
50%	12 months
50%	No escrow

All Shares issued to Third Parties upon exercise of the Options will be escrowed as follows:

Percentage of securities issued	Escrow period
100%	12 months

**Other material terms of the Agreement:**

- (a) For so long as Cerium holds at least 19% of the total issued Share capital of the Company, Cerium will be entitled to nominate one director for appointment to the Board (Director Appointment Right), subject to the Company being satisfied such person has appropriate commercial and professional experience to fulfil the role, is of good fame and character (as contemplated by the Listing Rules) and is otherwise satisfactory to the Board acting reasonably.
- (b) Until the Milestone Payments and Royalty are paid in full the Company cannot sell or assign the Tenement without assigning its obligation to pay the Milestone Payments or the Royalty (as applicable) to Cerium to the same transferee at the same time.
- (c) The Company will grant to Cerium a mortgage or other similar security over the Tenement to secure payment of the Milestone Consideration allowable under the laws of Greenland.

The cash component for the first and second completion of the acquisition will be paid from the existing cash reserves following capital raisings.

## Placement

EPM has received commitments totalling \$2,000,000 (before expenses) for a placement of 133,333,334 Ordinary Shares at an issue price of \$0.015 per Share to sophisticated investors.

The Shares will be issued under the Company's existing placement capacity pursuant to ASX Listing Rule 7.1A.

## General Meeting of Shareholders

A general meeting date will be set and a notice of meeting will be issued for the required Shareholder approvals to issue the phase 2 and 3 consideration securities for the Ivittuut Project.

## Authorised for release by the Board.

Carl Popal  
Executive Chairman

Pedro Kastellorizos  
Non-Executive Director

Rod Dale  
Non-Executive Director

## Competent Persons Statement

*The information in this report that relates to Exploration Results and non-JORC historical estimates together with any related assessments and interpretations is based on information compiled by Mr. Petro Kastellorizos and Mr Rod Dale, both Non-Executive directors of Eclipse Metals Limited, and Mr. Alfred Gillman, Director of independent consulting firm, Odessa Resource Pty Ltd. Mr. Gillman, a Fellow and Chartered Professional of the Australasian Institute of Mining and Metallurgy (the AusIMM), Mr Kastellorizos, a Member of the AusIMM, and Mr Dale, a Fellow of the AusIMM, have sufficient experience relevant to the styles of mineralisation under consideration and to the activity being reported to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves.*

## Cautionary Statement

*The Exploration Results have not been reported in accordance with the JORC Code 2012. A Competent Person has not done sufficient work to disclose the Exploration Results in accordance with the JORC Code 2012, it is possible that following further evaluation and/or exploration work that the confidence in the prior reported Exploration Results may be reduced when reported under the JORC Code 2012. Nothing has come to the attention of the acquirer that causes it to question the accuracy or reliability of the former owner's Exploration Results, but the Company has not independently validated Exploration Results and therefore is not to be regarded as reporting, adopting or endorsing those results.*

## About Eclipse Metals Ltd (ASX: EPM)

Eclipse Metals Ltd is an Australian exploration company focused on exploring the Northern Territory and Queensland for multi commodity mineralisation. Eclipse Metals Ltd has an impressive portfolio of assets prospective for gold, platinum group metals, manganese, base metals and uranium mineralisation. The Company's mission is to increase shareholders' wealth through capital growth and ultimately dividends. Eclipse Metals Ltd plans to achieve this goal by exploring for and developing viable mineral deposits to generate mining or joint venture incomes.

**ANNEXURE A - REFERENCES**

*The below documents are all classified as open file reports which can be downloaded from the internet*

**The following references have been cited in this report: -**

J Gothenborg (1990), Platinova Resources Ltd, Report on the Cryolite Exploration at Ivittuut, South Greenland, Special emphasis on the ore potential of broken low-grade fill-materials (GEUS open file report 20516)

Bondam, J. 1991: The Ivigtut cryolite deposit in South Greenland. Short note on recent geoscientific developments. GEUS Open File Series Report No.21339, Grønlands Geologiske Undersøgelse 91/4, 29 pp.

G B & Associates, 2013, "Ivigtut Annual Report 2013, Licence No. 2007/45 GEUS Open File Series Report No.23793.

**Other references available and yet to be reviewed.**

Bailey, J.C. (1980): Formation of cryolite and other aluminofluorides: a petrologic review. Geological Society of Denmark Bulletin 29, 1-45.

Bailey, J.C., Gwozdz, R., Rose-Hansen, J. & Sørensen H. (2001): Geochemical overview of the Ilimaussaq alkaline complex, South Greenland. Geology of Greenland Survey Bulletin 190, 35-51.

Bastos Neto, A.C., Pereira, V.P., Ronchi, L.H., Lima, E.F. & Frantz, J.C. (2009): The world-class Sn, Nb, Ta, F (Y, REE, Li) deposit and the massive cryolite associated with the albite-enriched facies of the Madeira A-type granite, Pitinga mining district, Amazonas State, Brazil. Canadian Mineralogist 47, 1329-1357.

Bøggild, O.B. (1953): The Mineralogy of Greenland. Meddelelser om Grønland 149, 3. 442 pp.

Dubacq, B., Bickle, M.J., & Ewans, K.A. (2013): An activity model for phase equilibria in the H<sub>2</sub>O-CO<sub>2</sub>-NaCl system. Geochimica et Cosmochimica Acta 110, 229-252.

G B & Associates, 2011, "Ivigtut Annual Report 2013, Licence No. 2007/45 GEUS Open File Series Report No.22563.

G B & Associates, 2012, "Ivigtut Annual Report 2013, Licence No. 2007/45 GEUS Open File Series Report No.23656.

Giesecke, C.L. (1822): On cryolite. Edinburgh Philosophical Journal VI: 141.

Goodenough, K.M., Upton, B.G.J. & Ellam, R.M. (2000): Geochemical evolution of the Ivigtut granite, South Greenland: a fluorine "A-type" intrusion. Lithos, 51, 205-221

Gothenborg, J., Keto, L. & Morthorst, J. (1988): Mineral exploration in the Ivigtut area 1987 with an appendix and review on total exploration in 1985-1987. Kryolitselskabet Øresund. Report 272.

Karup-Møller, S. (1973): A gustavite-cosalite-galena-bearing mineral suite from the cryolite deposit at Ivigtut, South Greenland. Meddelelser om Grønland 195, 5: 40 pp.

Karup-Møller, S. (1976): Arcubisite and mineral B - two new minerals from the cryolite deposit at Ivigtut, South Greenland. Lithos 9: 253-257.

Karup-Møller, S. & Pauly H. (1979): Galena and associated ore minerals from the cryolite deposit at Ivigtut, South Greenland. Meddelelser om Grønland, Geoscience 2, 3-25.

Köhler, J., Konnerup-Madsen, J. & Markl G. (2008): Fluid geochemistry in the Ivigtut cryolite deposit, South Greenland. Lithos 103, 369-392.

Konnerup-Madsen, J. (1980): A preliminary survey of fluid inclusions in minerals from the Ivigtut cryolite deposit, South Greenland. Report 5 (unpublished, in Danish). Institute for Petrology, Copenhagen University: 17 pp.

Oen, I.S. & Pauly, H. (1967): A sulphide paragenesis with pyrrhotite and marcasite in the siderite-cryolite ore of Ivigtut, South Greenland. Meddelelser om Grønland 175, 5, 55 pp.

- Outokumpu Oy Mining Consultants, 1987, "The Planing of the Ivigtut Open Pit of Kryolitselskabet Oresund A/S Mining of the Fluorite Orebody GEUS Open File Series Report No.20236
- Pabst, A. (1939): Formula and structure of ralstonite. *American Mineralogist* 24, 566-576.
- Pauly, H. (1956): Bøggildite, a new phosphate-fluoride from Ivigtut, South Greenland. *Meddelelser om Grønland* 137, 6, 1-18.
- Pauly, H. (1960): Paragenetic relations in the main cryolite ore of Ivigtut, South-Greenland. *Neues Jahrbuch für Mineralogie, Abhandlungen* 94, 121-139.
- Pauly, H. (1962): Stenonite, a new carbonate-fluoride from Ivigtut, South Greenland. *Meddelelser om Grønland* 169, 9, 1-29.
- Pauly, H. (1965): Ralstonite from Ivigtut, South Greenland. *American Mineralogist* 50, 1851-1864.
- Pauly, H. (1974): Ivigtut cryolite deposit SW greenland. In Scemprok, H (ed) *Metallisation associated with acid magmatism (MAWAM), ICCP symposium MAWAM*
- Pauly, H. (1978): Twins in cryolite types from Ivigtut, South Greenland. Reprint replacing article in *Geological Society of Denmark Bulletin* 27, Special Issue, pp. 7-14.
- Pauly, H. (1982): Plasticity of cryolite and brecciation in the cryolite deposit, Ivigtut, South Greenland. - In: Amstutz, G.C. et al. (eds.) *Ore Genesis -The State of the art.* 345-350. Springer, Berlin.
- Pauly, H. (1985): Mechanical properties of cryolite from Ivigtut, South Greenland. *Geological Society of Denmark Bulletin* 33, 401-413.
- Pauly, H. (1986a): Cryolithionite and Li in the cryolite deposit Ivigtut, South Greenland. *Matematisk-fysiske Meddelelser* 42:1, The Royal Danish Academy of Science and Letters. 24 pp.
- Pauly, H. (1986b): Chiolite in the cryolite deposit in Ivigtut, South Greenland. - In Craig, I.R. et al. (eds.) *Mineral Paragenesis.* Theophrastus Publications S.A., Athens, 229-247.
- Pauly, H. (1992): Topaz, prosopite and closing stages of formation of the Ivigtut cryolite deposit, South Greenland. *Meddelelser om Grønland, Geoscience* 28, 22 pp.
- Pauly, H. (1993): Columnar and radiating aggregates with jarlite from the Ivigtut cryolite deposit, South Greenland. *Geological Society of Denmark Bulletin* 40, 272-279.
- Pauly, H. & Bailey, J.C. (1999): Genesis and evolution of the Ivigtut cryolite deposit, SW Greenland. *Meddelelser om Grønland, Geoscience* 37, 1-60.
- Pauly, H., Hawthorne, F.C. & Burns, P.C. (1997): Jørgensenite  $\text{Na}_2(\text{Sr,Ba})_{14}\text{Na}_2\text{Al}_{12}\text{F}_{64}(\text{OH},\text{F})_4$ , a new Aluminofluoride mineral from Ivigtut, Greenland. *Canadian Mineralogist* 35, 175-179.
- Pauly, H. & Petersen, O.V. (1981): Weberite from Ivigtut, South Greenland: new data on paragenesis, twinning, habit, and optics. *Neues Jahrbuch für Mineralogie Monatshefte*, Jg.1981, 11, 511-519.
- Pauly, H. & Petersen, O.V. (1988). Bøgvadite,  $\text{Na}_2\text{SrBa}_2\text{Al}_4\text{F}_{20}$ , a new fluoride from the cryolite deposit, Ivigtut, S. Greenland. *Geological Society of Denmark Bulletin* 37, 21-30.
- Pauly, H. & Petersen, O.V. (1997): Red-brown Th-bearing fluorite from the cryolite deposit, Ivigtut, South West Greenland. *Neues Jahrbuch für Mineralogie Monatshefte*, Jg.1996, 11, 483-490.
- Prokof'yev, V.Yu., Naumov, V.B., Ivanova, G.F. & Savel'yeva, N.I. (1990): Fluid inclusions in cryolite and siderite from the Ivigtut deposit, Greenland. *Geokhimiya* 12, 1783-1788 (*Geochemistry International* 1991, 28, 7, 115-120).
- Upton, B.J.G., Emeleus, C.H., Heaman, L.H., Goodenough, K.M. & Finch, A.A (2003): Magmatism of the mid-Proterozoic Gardar Province, South Greenland: chronology, petrogenesis and geological setting. *Lithos* 68, 43-65.

**ANNEXURE B - 1.5c Option Terms**

The terms of the 1.5c Options are:

- (a) **issue price:** there is no issue price payable for the 1.5c Options;
- (b) **transferability and quotation:** the 1.5c Options will not be quoted and are not transferable except that the 1.5c Options may be transferred as follows:
  - (i) to transferees who are sophisticated or professional investors in accordance with section 708 of the Corporations Act or other persons who do not require a prospectus under the Corporations Act; and
  - (ii) provided that on or before the transfer the holder gives notice of the transfer to the Company specifying the number of 1.5c Options being transferred, the date of the transfer and the name and address of the transferee;
- (c) **entitlement:** each 1.5c Option entitles the holder to subscribe for one fully paid ordinary share (**Share**) in the issued capital of Eclipse Metals Limited ACN 142 366 541 (**Company**) upon exercise of each 1.5c Option;
- (d) **exercise price:** the 1.5c Options have an exercise price of \$0.015 each;
- (e) **expiry date:** the 1.5c Options will expire 3 years from the date of issue. The 1.5c Options may be exercised at any time after issue and prior to the expiry date. An 1.5c Option not exercised before the expiry date will automatically lapse on the expiry date;
- (f) **exercise:** the 1.5c Options may be exercised by providing notice in writing to the Company before the expiry date specifying:
  - (i) the number of 1.5c Options being exercised; and
  - (ii) a cheque or electronic funds transfer for the exercise price for the number of 1.5c Options being exercised,

and the notice is only effective when the Company has received the full amount of the exercise price in cleared funds and an original counterpart of an escrow deed in relation to the shares to be issued upon exercise that is in the form attached to this deed (with an escrow period of 12 months) and duly executed by the holder;
- (g) **ranking of Shares:** all Shares issued upon the exercise of the 1.5c Options will rank equally in all **respects** with the Company's then issued Shares. The Company will apply to the ASX for quotation of all Shares issued upon exercise of the 1.5c Options;
- (h) **voting:** the 1.5c Options do not confer any right to vote, except as otherwise required by law;
- (i) **dividends and returns:** the 1.5c Options do not confer:
  - (i) any entitlement to a dividend;
  - (ii) any right to a return of capital, whether in a winding up, upon a reduction of capital or otherwise; and
  - (iii) any right to participate in the surplus profit or assets of the entity upon a winding up;
- (j) **participation rights:** there are no participation rights or entitlements inherent in the 1.5c Options and holders will not be entitled to participate in new issues or pro-rata issues of capital offered to holders of Shares in the Company (**Shareholders**) during the term of the 1.5c Options. Thereby, the holder has no rights to a change in the exercise price of the 1.5c Options or a change to the number of underlying securities over which the 1.5c Options can be exercised, except in the event of a Bonus Issue (defined below). The Company will ensure, for the purposes of determining entitlements to any issue, that the holder is notified of a proposed

issue after it is announced. This will give the holder the opportunity to exercise their 1.5c Options prior to the date for determining entitlements to participate in such issues;

- (k) **bonus issue:** if on or prior to the expiry date the Company makes a bonus issue of securities to Shareholders (**Bonus Issue**), then upon exercise of his or her 1.5c Options a holder will be entitled to have issued to him or her (in addition to the Shares which he or she is otherwise entitled to have issued to him or her upon such exercise) the number of securities which would have been issued to him or her under that Bonus Issue if the 1.5c Options had been exercised before the record date for the Bonus Issue; and
- (l) **reconstruction of Share capital:** in the event of any reconstruction (including consolidation, subdivisions, reduction or return) of the authorised or issued capital of the Company, all rights of the holder shall be reconstructed (as appropriate) in accordance with the ASX Listing Rules.

## ANNEXURE C - 5c Option Terms

The terms of the 5c Options are:

- (a) **issue price:** there is no issue price payable for the 5c Options;
- (b) **transferability and quotation:** the 5c Options will not be quoted and are not transferable except that the 5c Options may be transferred as follows:
  - (i) to transferees who are sophisticated or professional investors in accordance with section 708 of the Corporations Act or other persons who do not require a prospectus under the Corporations Act; and
  - (ii) provided that on or before the transfer the holder gives notice of the transfer to the Company specifying the number of 5c Options being transferred, the date of the transfer and the name and address of the transferee;
- (c) **entitlement:** each 5c Option entitles the holder to subscribe for one fully paid ordinary share (**Share**) in the issued capital of Eclipse Metals Limited ACN 142 366 541 (**Company**) upon exercise of each 5c Option;
- (d) **exercise price:** the 5c Options have an exercise price of \$0.05 each;
- (e) **expiry date:** the 5c Options will expire 5 years from the date of issue. The 5c Options may be exercised at any time after issue and prior to the expiry date. An 5c Option not exercised before the expiry date will automatically lapse on the expiry date;
- (f) **exercise:** the 5c Options may be exercised by providing notice in writing to the Company before the expiry date specifying:
  - (i) the number of 5c Options being exercised; and
  - (ii) a cheque or electronic funds transfer for the exercise price for the number of 5c Options being exercised, and the notice is only effective when the Company has received the full amount of the exercise price in cleared funds and an original counterpart of an escrow deed in relation to the shares to be issued upon exercise that is in the form attached to this deed (with an escrow period of 12 months) and duly executed by the holder;
- (g) **ranking of Shares:** all Shares issued upon the exercise of the 5c Options will rank equally in all respects with the Company's then issued Shares. The Company will apply to the ASX for quotation of all Shares issued upon exercise of the 5c Options;
- (h) **voting:** the 5c Options do not confer any right to vote, except as otherwise required by law;
  - (i) dividends and returns: the 5c Options do not confer:
  - (ii) any entitlement to a dividend;
  - (iii) any right to a return of capital, whether in a winding up, upon a reduction of capital or otherwise; and
- (iv) any right to participate in the surplus profit or assets of the entity upon a winding up;
  - (i) **dividends and returns:** the 5c Options do not confer:
    - (i) any entitlement to a dividend;
    - (ii) any right to a return of capital, whether in a winding up, upon a reduction of capital or otherwise; and
    - (iii) any right to participate in the surplus profit or assets of the entity upon a winding up;

- (j) **participation rights:** there are no participation rights or entitlements inherent in the 5c Options and holders will not be entitled to participate in new issues or pro-rata issues of capital offered to holders of Shares in the Company (**Shareholders**) during the term of the 5c Options. Thereby, the holder has no rights to a change in the exercise price of the 5c Options or a change to the number of underlying securities over which the 5c Options can be exercised, except in the event of a Bonus Issue (defined below). The Company will ensure, for the purposes of determining entitlements to any issue, that the holder is notified of a proposed issue after it is announced. This will give the holder the opportunity to exercise their 5c Options prior to the date for determining entitlements to participate in such issues;
- (k) **bonus issue:** if on or prior to the expiry date the Company makes a bonus issue of securities to Shareholders (**Bonus Issue**), then upon exercise of his or her 5c Options a holder will be entitled to have issued to him or her (in addition to the Shares which he or she is otherwise entitled to have issued to him or her upon such exercise) the number of securities which would have been issued to him or her under that Bonus Issue if the 5c Options had been exercised before the record date for the Bonus Issue; and
- (l) **reconstruction of Share capital:** in the event of any reconstruction (including consolidation, subdivisions, reduction or return) of the authorised or issued capital of the Company, all rights of the holder shall be reconstructed (as appropriate) in accordance with the ASX Listing Rules.

**Annexure D**

**JORC Code, 2012 Edition – Table 1 report**

**Section 1 Sampling Techniques and Data**

(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code explanation	Commentary
<p><i>Sampling techniques</i></p>	<ul style="list-style-type: none"> <li>• <i>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</i></li> <li>• <i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></li> <li>• <i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></li> <li>• <i>In cases where ‘industry standard’ work has been done this would be relatively simple (eg ‘reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay’). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Historical exploration and drilling were conducted in various stages by various different companies. The exploration data undertaken by several exploration/mining and academic studies – most of the exploration conducted was from the 1980’s until mid-2014.</li> <li>• A total of 19,000 metres has been drilled with 98% of core still available in Greenland and other 2 diamond holes in Denmark. All historical drill holes are core drilling.</li> <li>• There is no information regarding the metres assayed and weight of samples. None of this information has been provided within the reports and academic papers.</li> <li>• All information regarding the project has been downloaded from the Geological Survey of Greenland and Denmark (GEUS). Open file reports and academic papers have been downloaded from University websites and from the internet.</li> <li>• Some drill samples were analysis for Cy, Fl, Fe, Sio2, Zn, Eu, Ca and minor REE. Assays results are given in % or ppm as appropriate. It’s assumed that all reported assays are potentially representative of the various assay method during this period.</li> </ul>

**ECLIPSE METALS LTD**

Criteria	JORC Code explanation	Commentary
<i>Drilling techniques</i>	<ul style="list-style-type: none"> <li>• <i>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</i></li> </ul>	<ul style="list-style-type: none"> <li>• All information sourced from the literature have stated diamond drilling was completed for a total 19,000 drilled metres. No details of the drilling methods have been identified in the historic data. From the information reviewed there was no information regarding core orientated or down hole surveys taken during drilling programs</li> </ul>
<i>Drill sample recovery</i>	<ul style="list-style-type: none"> <li>• <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></li> <li>• <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></li> <li>• <i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No information has been provided if the drilled metres were weighted with no sample recovery numbers given within the reports.</li> <li>• Absence of core recovery/sample data – yet to be determined</li> <li>• Relationship between sample recovery and grade is unknown – no information has been stated within the historical reports.</li> </ul>
<i>Logging</i>	<ul style="list-style-type: none"> <li>• <i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i></li> <li>• <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i></li> <li>• <i>The total length and percentage of the relevant intersections logged.</i></li> </ul>	<ul style="list-style-type: none"> <li>• All diamond holes were geologically logged – no geological logs provided in the historical reports as yet. Eclipse is currently working to source these information – unknown timeframe by which the information will be sourced.</li> <li>• No information has been provided regarding if logging is qualitative or quantitative in nature. No available photos have been located.</li> <li>• No information regarding total length/percentages of relevant intersections logged.</li> </ul>
<i>Sub-sampling techniques and sample preparation</i>	<ul style="list-style-type: none"> <li>• <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></li> <li>• <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></li> <li>• <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></li> <li>• <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Historical approach was to sample where cryolite was over 20% within the core - some core has been sawn in half and some quartered. No details have been provided of the sub-sampling or sample preparation methods. Based on the absence of data, cannot comment on the appropriateness of the sample preparation techniques historically undertaken.</li> <li>• No evidence of control/procedures adopted for sub-sampling stages.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<p>Specific Gravity measures were also taken over certain core intervals. Unknown sample weight was measured for specific gravity. No duplicate samples have been stated within historical reporting or whether the sample are appropriate to the grain size of the material sampled</p>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<ul style="list-style-type: none"> <li>The nature and quality of the assaying labs is unknown – no specific mention of the analysis is mentioned within the reports.</li> <li>No information has been supplied regarding duplicates and laboratory checks.</li> <li>No information provided regarding quality control procedures adopted by the various exploration companies.</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>Based on historical results reported, verification of significant intersections by independent/company personnel cannot be assumed. There is no historic data that can verify significant intersections.</li> <li>No data has defined any twinned holes in the project area.</li> <li>No documentation or records of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols have been identified</li> <li>Cannot comment of adjustment to assay data based on lack of historical information.</li> </ul>
Location of data points	<ul style="list-style-type: none"> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>Method of recording collar coordinates by historical exploration/mining companies has not been identified as yet. The collars were collared on a local grid system with the accuracy of reported drill holes not been determined.</li> <li>No quality and adequacy of topographic control has been assessed.</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>Data spacing and distribution</i>	<ul style="list-style-type: none"> <li>• <i>Data spacing for reporting of Exploration Results.</i></li> <li>• <i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i></li> <li>• <i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The majority of drill holes are located on a local grid system with some scout diamond drill holes east of the historic mined pit.</li> <li>• The data spacings and distribution at this stage has not been made in the estimation of a Mineral Resource or Ore Reserve, as the quality of the drill hole data precludes its use for these estimations.</li> <li>• Not known if sample compositing has been applied.</li> </ul>
<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"> <li>• <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li>• <i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Some holes were drilled vertically to obtain geological and structural information; some at steep declines.</li> <li>• No information is known if the core sampling in the historic campaigns has introduced any significant bias</li> </ul>
<i>Sample security</i>	<ul style="list-style-type: none"> <li>• <i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No information relating to the sample security have been identified.</li> </ul>
<i>Audits or reviews</i>	<ul style="list-style-type: none"> <li>• <i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Not applicable as no audits were conducted</li> </ul>

## Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section)

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<ul style="list-style-type: none"> <li>• <i>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</i></li> <li>• <i>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</i></li> </ul>	<ul style="list-style-type: none"> <li>• MEL27007-45 will, subject to such regulatory approvals in Greenland (if any) as are necessary to transfer the Tenement, be transferred to Eclipse Metals Limited. The total area of the MEL is 50 sq km.</li> <li>• No current security over the tenure</li> </ul>

Criteria	JORC Code explanation	Commentary
<p><i>Exploration done by other parties</i></p>	<ul style="list-style-type: none"> <li><i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<ul style="list-style-type: none"> <li>In 1987, Outokumpu Mining Consultants (Outokumpu) carried out an assessment of the remaining in-pit mineralisation in which they quantified the contained the commercially significant minerals including cryolite, fluorite and siderite (<i>GEUS Report File No.20236</i>).</li> <li>In 1989, Platinova Resources Ltd Canada completed tonnage calculation of the mined cryolite stock dumps based on topographical and geophysical surveys (<i>GEUS Report File No.20516</i>).</li> <li>In 1991, J. Bondam assessed data from 144 drillholes and quantified the grade and tonnage of cryolite, fluorite, siderite and sphalerite (<i>GEUS Report File No. 21339</i>). The quartz body has some zones of high purity and differentiated layered quartz and siderite. It is noted that the analysis of the quartz is not representative for all quartz within the deposit. However, it is indicative for a high purity, compared to natural quartz from other sources used in the manufacturing of optical glass, electronic and solar industries and to produce silicon metal (Bondam J, 1991 page 11).</li> <li>In 1992, H. Pauly conducted mineralogical analyses of drill core from the fluorite zone and fluorite-cryolite supplemented with analyses of crude fluorite-cryolite.</li> <li>The Ivittuut deposit is also notable for the abundance of high-purity industrial-grade silica which is a principal ingredient in the manufacturing of optical glass, electronic and solar industries and to produce silicon metal.</li> <li>In 1999, H. Pauly and J.C. Bailey quantified the in-situ tonnage and grade of quartz and siderite.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul style="list-style-type: none"> <li>In 2014, North Atlantic Mining Associates Ltd (<b>NAMA</b>) completed a pre-feasibility study together with an assessment of the contained mineralisation below the pit in which the tonnage and grade of cryolite, fluorite, siderite, sphalerite and silica (quartz) were quantified (<i>GEUS report 23793</i>).</li> </ul>
<i>Geology</i>	<ul style="list-style-type: none"> <li><i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>Granitic Intrusive Deposits, Vein hosted</li> </ul>
<i>Drill hole Information</i>	<ul style="list-style-type: none"> <li><i>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</i> <ul style="list-style-type: none"> <li><i>easting and northing of the drill hole collar</i></li> <li><i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li><i>dip and azimuth of the hole</i></li> <li><i>down hole length and interception depth</i></li> <li><i>hole length.</i></li> </ul> </li> <li><i>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</i></li> </ul>	<ul style="list-style-type: none"> <li>Refer to Figure 6 – No information can be provided regarding the drill collar position, azimuth and intersection of mineralisation.</li> <li>Details of the geographical location, elevation and specification of drill holes in the 1980's drilling program shown in Figure 6 are not found in available literature.</li> </ul>
<i>Data aggregation methods</i>	<ul style="list-style-type: none"> <li><i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</i></li> <li><i>Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</i></li> <li><i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	<ul style="list-style-type: none"> <li>No records relating to the use of weighted averaging techniques, maximum and / or minimum grade truncations has been identified.</li> <li>No metal equivalent grades have been sourced from historic reports.</li> </ul>

Criteria	JORC Code explanation	Commentary
<i>Relationship between mineralisation widths and intercept lengths</i>	<ul style="list-style-type: none"> <li>• <i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li>• <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></li> <li>• <i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg ‘down hole length, true width not known’).</i></li> </ul>	<ul style="list-style-type: none"> <li>• Due to the mineralization style which is almost massive in its nature, the absence of historical data of the orientated core, true widths cannot be reports from the historical drilling.</li> <li>• Interval widths are not reported or unknown from historical reports</li> </ul>
<i>Diagrams</i>	<ul style="list-style-type: none"> <li>• <i>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The information in this announcement release does not refer to a significant discovery however maps and figures have been included to illustrate the location of the results historic reported.</li> </ul>
<i>Balanced reporting</i>	<ul style="list-style-type: none"> <li>• <i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No historical reporting can provide this information.</li> </ul>
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"> <li>• <i>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i></li> </ul>	<ul style="list-style-type: none"> <li>• In 1987, Outokumpu Mining Consultants (Outokumpu) carried out an assessment of the remaining in-pit mineralisation in which they quantified the contained the commercially significant minerals including cryolite, fluorite and siderite (<i>GEUS Report File No.20236</i>).</li> <li>• In 1989, Platinova Resources Ltd Canada completed tonnage calculation of the mined cryolite stock dumps based on topographical and geophysical surveys (<i>GEUS Report File No.20516</i>).</li> <li>• In 1991, J. Bondam assessed data from 144 drillholes and quantified the grade and tonnage of cryolite, fluorite, siderite and sphalerite (<i>GEUS Report File No. 21339</i>). The quartz body has some zones of high purity and differentiated layered quartz and siderite. It is noted that the analysis of the quartz is not representative for all quartz within the deposit. However, it is indicative for a high purity, compared to natural quartz from other sources used in the manufacturing of optical glass,</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>electronic and solar industries and to produce silicon metal (Bondam J, 1991 page 11).</p> <ul style="list-style-type: none"> <li>• In 1992, H. Pauly conducted mineralogical analyses of drill core from the fluorite zone and fluorite-cryolite supplemented with analyses of crude fluorite-cryolite.</li> <li>• The Ivittuut deposit is also notable for the abundance of high-purity industrial-grade silica which is a principal ingredient in the manufacturing of optical glass, electronic and solar industries and to produce silicon metal.</li> <li>• In 1999, H. Pauly and J.C. Bailey quantified the in-situ tonnage and grade of quartz and siderite.</li> <li>• In 2014, North Atlantic Mining Associates Ltd (<b>NAMA</b>) completed a pre-feasibility study together with an assessment of the contained mineralisation below the pit in which the tonnage and grade of cryolite, fluorite, siderite, sphalerite and silica (quartz) were quantified (<i>GEUS report 23793</i>).</li> </ul>
<i>Further work</i>	<ul style="list-style-type: none"> <li>• <i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li>• <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Upon completion of Tenement transfer to Eclipse Metals Ltd, exploration work will commence with accumulation of all available historical exploration, mining and academic studies as a basis for planning future activities.</li> </ul>