Developing the Ambler Mining District to Produce Metals for the Future

Our Partnership with AIDEA

AIDEA BOARD PRESENTATION
January 15, 2020
Infrastructure Partnership - AIDEA

Advancing the Ambler Mining District in Alaska by Forming Strong Partnerships

- Key Partnerships
  - Local Native Partnership with NANA – Business Relationship with strong community relationships
  - Financial Partnership with South32
  - Infrastructure Partnership with State of Alaska - AIDEA currently permitting to build road access
  - Alaska Railroad – a Key Transportation Partner to Develop the Ambler Mining District
Infrastructure Partnership - AIDEA

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Ambler Mining District - Alaska

Safe Jurisdiction – Mining District Hosts Deposits Rich in Copper, Zinc, Lead, Gold, Silver & Cobalt

- Politically Stable
- Rule of Law
- Recognized Mineral Potential
- Resource Extractive Industries are the Largest Contributors to Alaska’s Economy
- Well Established Permitting Process
- Supportive Borough Gov’t – tax base for region
- NANA Agreement

- NANA - Alaskan Regional Native Corporation with 14,000 Iñupiat shareholders
- Land owner and Joint partner with Teck on Red Dog
- Red Dog is the largest Zinc mine in the world operating for nearly 30 years
- Good jobs and Local taxes from Red Dog supports NW Arctic Borough Government and School District

➡️ Strong local support for Mining
Truck Transportation Plan

Truck Transfer to Alaska Railroad
Concentrates Containers – Sealed and Easy to Stack and Load Directly into Ship

Sloped side walls and end walls to allow easy discharge and no hang up – “ICE CUBE” design
Port of Alaska - Anchorage
Concentrates Loaded Directly into Ship Port of Alaska - Anchorage

Good for the Environment
Saves Money
= Better $Green Solution
Concentrates Shipped to Asia
Processed in Usable Metals

Only Export from Port of Anchorage
Stats on Concentrates Containers

• The containers look like 20’ Sea Containers and Measure: 20’L X 8’W X 6.6’H
• The containers will carry 30 tons of concentrate (separate for copper, zinc and lead/precious metals)
• The containers can be stacked 3 to 4 high when loaded
• Approximately 300 containers transferred per week
• The number of containers we would have at the port between ships would range from 1,350 – 1,700
• Will require between 2.5 – 3.0 acres for our year round storage and movement of containers at both the Port in Anchorage and Fairbanks Rail Yard

⇒ No Metal Contaminants along Transportation Route
Ambler Mining District

Ambler Mining District Hosts Deposits Rich in Copper, Zinc, Lead, Gold and Silver & Cobalt

NANA - TRILOGY JOINT AREA of INTEREST

AMBLER MINING DISTRICT PROSPECTS

- Historical Resource Estimate (Other Company)
- NI 43-101 Technical Report
- Historical Resource Estimate and/or Mineralized Drill Intercept
- Other Prospect
- Village

Ambler Schist Belt
Bornite Carbonate Sequence
Reserves at the Arctic Project

Probable Mineral Reserves

Probable Mineral Reserves
43,038,000 tonnes @ ~5% Cu Eq.
Average Grades:
2.32% Cu
3.24% Zn
0.57% Pb
0.49 g/t Au
36.0 g/t Ag

Additional Inferred Resources of 3.5 Mt, with average grades of 1.71% Cu, 2.72% Zn, 0.60% Pb, 0.36 g/t Au and 28.69 g/t Ag.
See Appendix for Reserve Estimate for the Arctic Project.
Arctic Project Development Plan

Overview of Valley – Looking Northeast
Arctic Project Development Plan

Feasibility Design Stage: Overview of Mine Site – Looking Northeast
Ambler Mining District Hosts Deposits Rich in Copper, Zinc, Lead, Gold and Silver & Cobalt

District Exploration Upside

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NANA - TRILOGY JOINT AREA of INTEREST
- Ambler Schist Belt
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Camp at Bornite
**Bornite Exploration Drilling**

**Six Billion Pounds of Copper, 77 Million Pounds of Cobalt and Growing**

**2011-2019 Programs**

$US60 Million

56,000 Meters drilled in 87 holes

Potential Open Pit Resource:
2.7 Billion lbs Copper grading ~1% Cu

Potential Underground Mine Resource:
3.7 Billion lbs Copper grading 2.89% Cu

Discovery Cost of <1 cent/lb of Copper
Bornite: Potential Combined Open Pit and Underground Mine

+/- 1% Copper in Potential Open Pit Mine

+/- 3% Copper in Potential Underground Mine
Over 250 Million tonnes of Potential Ore-Grade Resources Identified in the District

- Horse Creek: 10Mmt@2.84% CuEq
- Sunshine: 20Mmt@2.12% CuEq
- Shungnak: 1Mmt@4.3% CuEq
- BT: 3.5Mmt@3.2% CuEq
- Sun*: 11Mmt@3.7% CuEq

* Not owned by TMQ

See Company Press Release on February 6, 2019 regarding disclosure of Historic Resources

A Qualified Person has not done sufficient work to classify the above historical estimates (Smucker, Horse Creek, Sunshine, Shungnak, and BT) as current mineral resources or mineral reserves. Trilogy is not treating these historical estimates as current mineral resources or mineral reserves, has not verified the above historical resource estimates and is not relying on them.
District Exploration – Pearls on a String
Ambler Mining District Industrial Access Project (AMDIAP)

Two parallel processes underway:
1) BLM lead NEPA Review – Environmental Impact Statement (EIS)
2) NPS Environmental Economic Assessment as per ANILCA (EEA)
NEPA Road Permitting Process (EIS)

EXPLORATION & ENVIRONMENTAL STUDIES

PERMITTING

ENGINEERING & CONSTRUCTION

OPERATIONS

2 - 3 years

+/- 3

3 years

+ 20 years

Baseline Data Gathering

Permit Application (Consolidated Right of Way Application)

Notice of Intent

Public Scoping

Preliminary Draft EIS

Draft EIS

Public Comment Period

Final EIS

Record of Decision Issuance

Aug 23, 2019

Oct 29, 2019

Q1 2020

Q2 2020

March 5, 2020

Expect Bureau of Land Management Final EIS and US Army Corps of Engineers 404 Permit by March 5, 2020 and Joint ROD 30 to 60 Days later
Still a lot of work to do before AIDEA starts building the Ambler Road

Legal Agreements with Land Owners

Legal Agreements with Users

Establish Subsistence Committee

Finalize Design and Costs

Financing Plan

➡️ Construction
Arctic Mine Permitting - Same NEPA (EIS) Process

Start Permitting Process - Submit NOI for Mine in 2020
Army Corp of Engineers (ACOE) is expected to be the lead agency

EXPLORATION & ENVIRONMENTAL STUDIES

PERMITTING

ENGINEERING & CONSTRUCTION

OPERATIONS

CLOSE 
MONITORING

2 - 3 years

+/- 3

3 years

+ 20 years

7 - 10 years

Early 2020

2+ Years

Notice of Intent

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Final EIS Record of Decision Permit Issuance

Baseline Data Gathering

404 Permit ACOE

EED Being Finalized
• Trilogy and South 32 Finalizing JV Formation (Mid-February)
• JV and AIDEA then Enter into an MOU to Develop an Execution Plan and Budget for AMDIAP - Including: timelines and milestone dates; responsible parties; and financing plan
• Should Cover
  ➢ Finalize Permitting
  ➢ Final Feasibility Engineering and Design (FEED)
  ➢ Ownership and Owners Rights
  ➢ Construction, Operations and Closure
  ➢ Facilitate alignment with local Governments, Alaska Native Corporations and Tribal Groups
  ➢ Establish Subsistence Committee
• Enter into a Cost Reimbursement Agreement
Copper and Other Metals are Critical for a Green Energy and Transportation Future

Reducing CO2 Requires Global Electrification

None-CO2 Energy: Wind; Solar; Hydro; Geothermal; and Nuclear

Smart Grid Connectivity

Battery Storage

Require HUGE amounts of Copper and other metals
Another Inconvenient Truth

CO₂ Contributions to the Atmosphere Comparisons
Ambler Mining District Copper Deposits

Alaska Oil Production Currently Contributes 61 Million tonnes CO₂/yr

Ambler Cu used for alternative energy

Reduce 250 Million tonnes CO₂/yr If Used to Replace ICE vehicles

Reduce 1 Billion tonnes CO₂/yr If used to replace Coal Energy

200,000 tonnes CO₂/yr

Alaska's current oil production CO₂ contribution
Ambler Cu used for alternative energy
Ambler Cu used for electric vehicles
CO₂ produced from Ambler Mining District
Remarkable, Irreplaceable and Infinitely Recyclable

Copper plays a significant role in transition to a low-carbon economy

More and More...  

Think Green Think Copper
Plus Zinc and Precious Metals

80% Recycled
Taikuu!