ARTISAN VEHICLES

TRANSITIONING TO ZERO-EMISSION EQUIPMENT

Brian Huff

Chief Technology Officer

Current Status of the Zero Emission Mine

- Very Active in Northern Ontario
- New generation lithium battery equipment in service since 2011
- All major mining companies in Canada are planning a full conversion to zero emission equipment underground

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KL Gold - Macassa BEV Fleet - Since 2011

34 machines, 38 chargers, 80 batteries

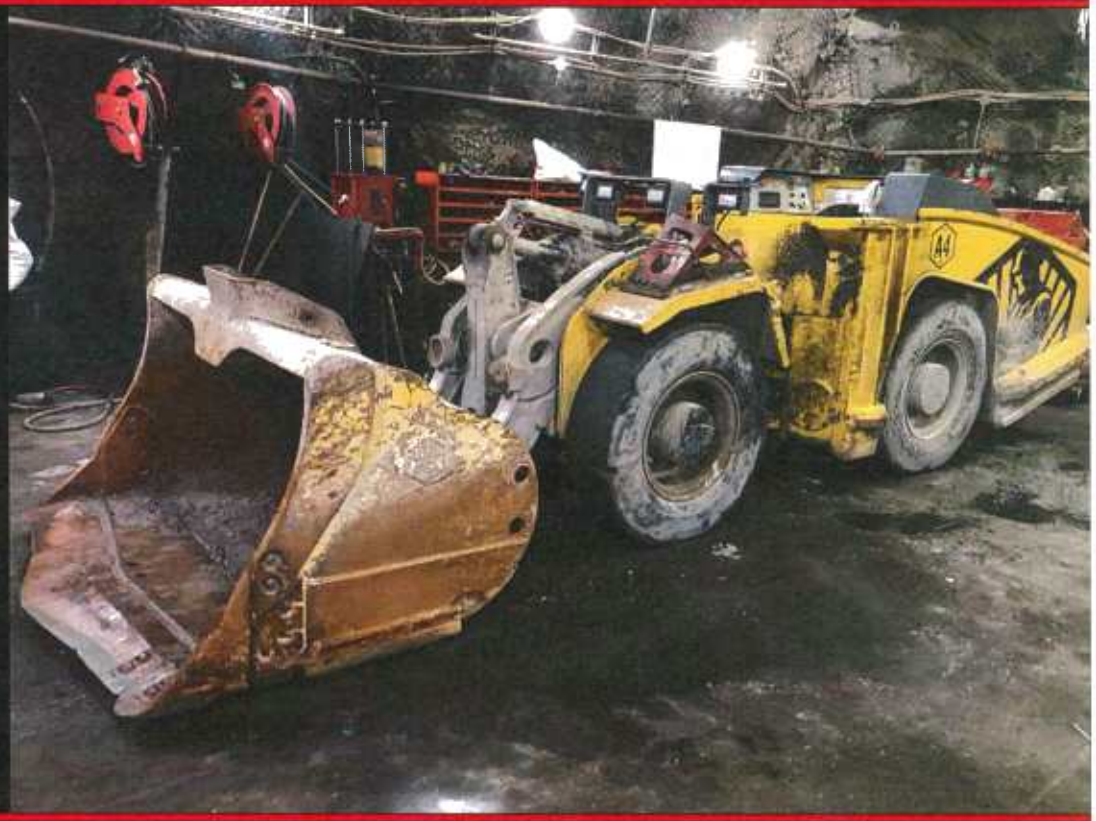
187,000 operating hours

80% of production from BEV

85% availability

- Artisan 2.7 tonne LHD conversion
- Artisan A4 - 4 tonne LHD
- Artisan Z40 - 40 tonne HT
- Epiroc ST7 - 7 tonne LHD
- Epiroc ST2G – 3.6 tonne LHD
- Epiroc MT2010 - 20 tonne HT
- RDH 3 yd - 5 tonne LHD

ALL have Artisan's Powertrain



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Why use battery powered equipment?

- Ventilation Reduction
  - No emissions (H2O/DPM/NOx/etc.)
  - 88% reduction in heat
  - Less dust (no tailpipe)
- Cooling/Heating reduction
  - Less airflow = less cooling or heating
- Time to Production
  - Expand with no new shafts
- Productivity
  - Higher power and smaller
- Health Concerns
  - DPM/Dust/Noise/Vibration
- Possible New Regulations

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Managing the Transition

Infrastructure

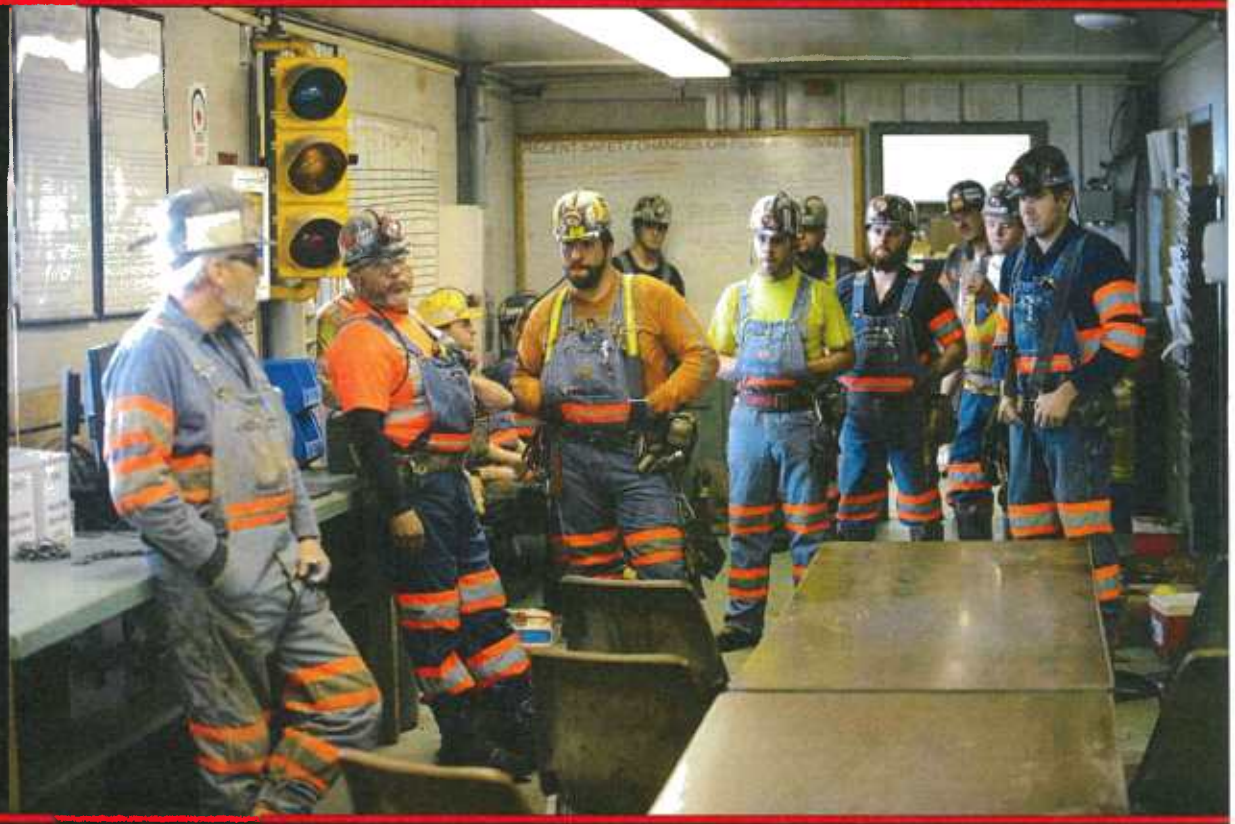
- Electrical Requirements
- Underground Shop Requirements

Charging Logistics

- Fast Charge or Swap

Personnel

- Operators
- Technicians
- Supply Chain
- Mine Management
- New service personnel type - Battery equipment technician



Infrastructure Transformation

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Infrastructure Transformation

Facilities - Swapping Bay

- Purpose built cut out
- Swapping Bay requires:
  - Higher back height
  - Level floor
  - Overhead crane
  - Room for machine
  - Room for 2-3 packs
  - Room for charger

Artisan Products

A4

- Battery-Electric
- 4 tonne LHD

ArtisanVehicles.com/A4

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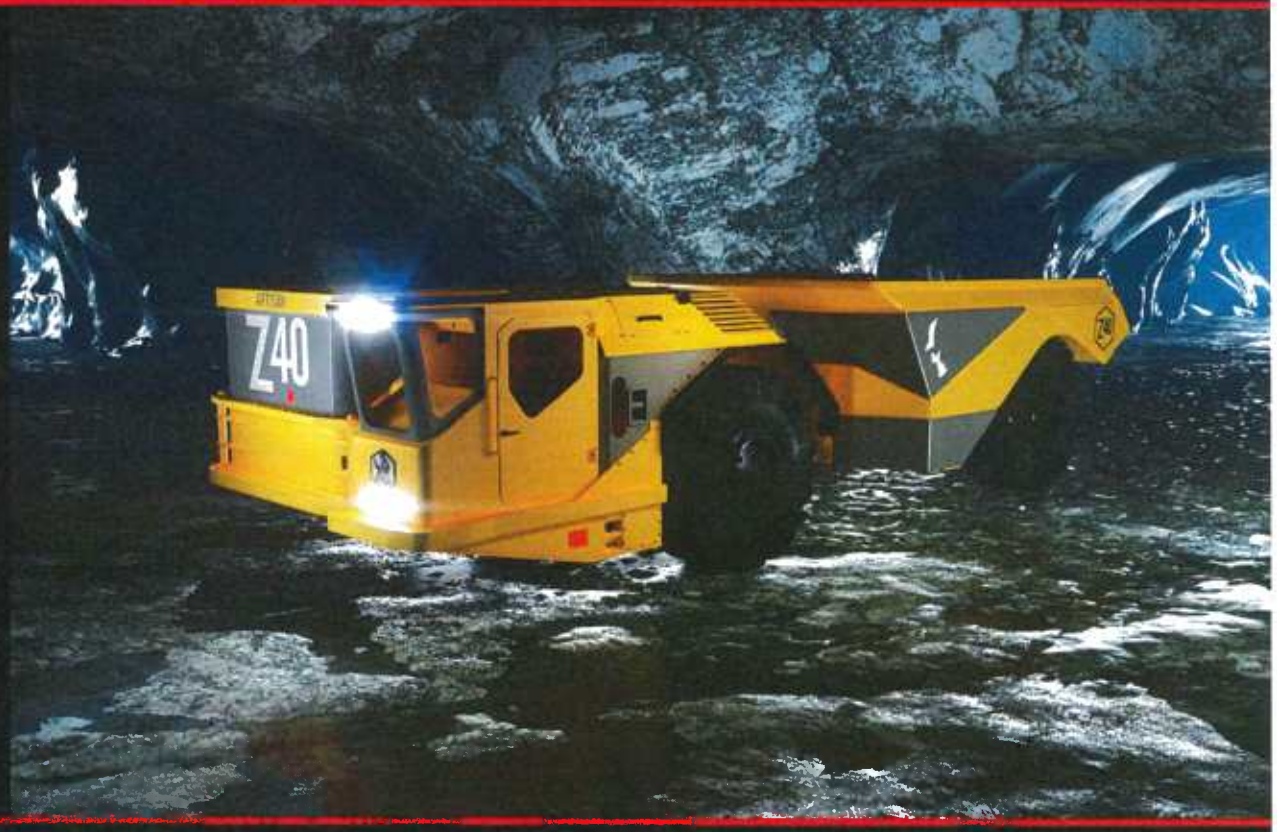
A4
ORE

Artisan Products

Z40

- Battery-Electric
- 40 tonne Truck

ArtisanVehicles.com/Z40



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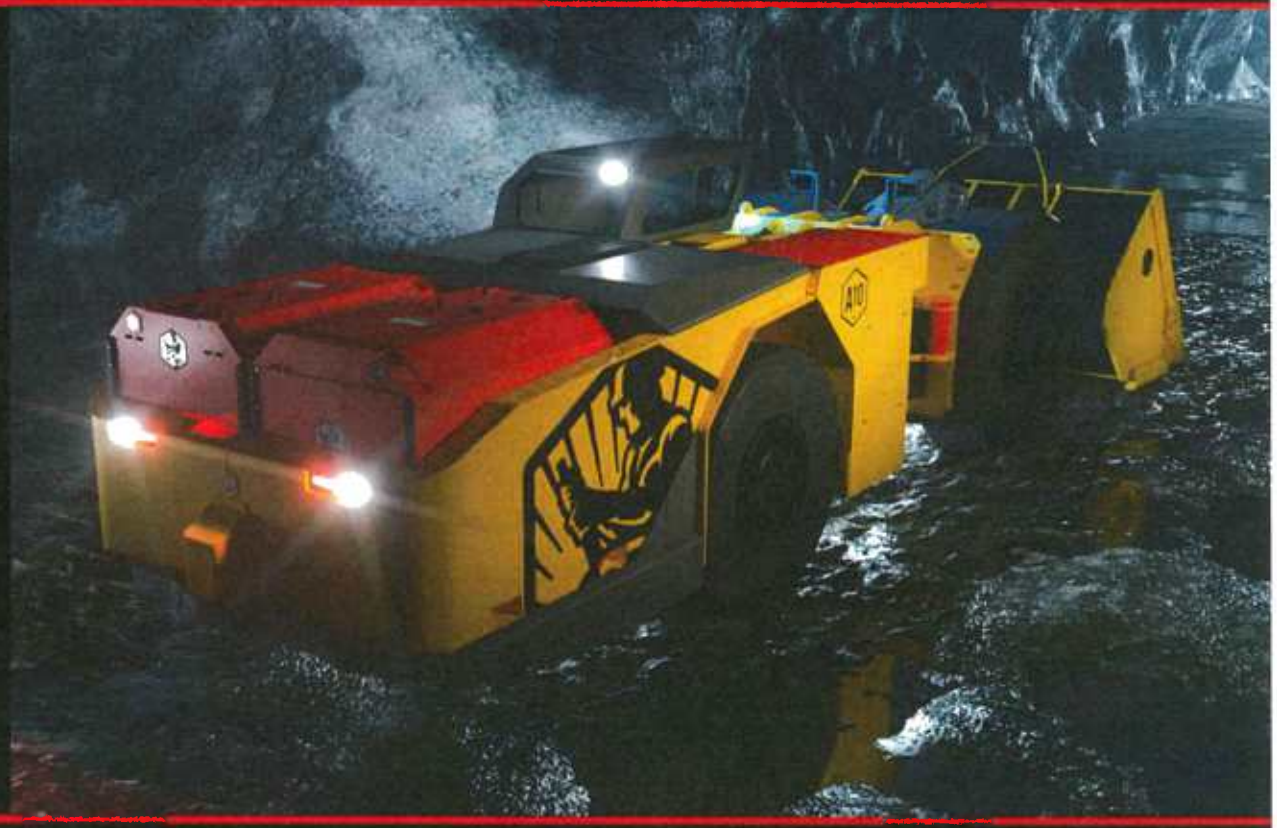
Artisan Products

A10

- Battery-Electric
- 10 tonne LHD

ArtisanVehicles.com/A10



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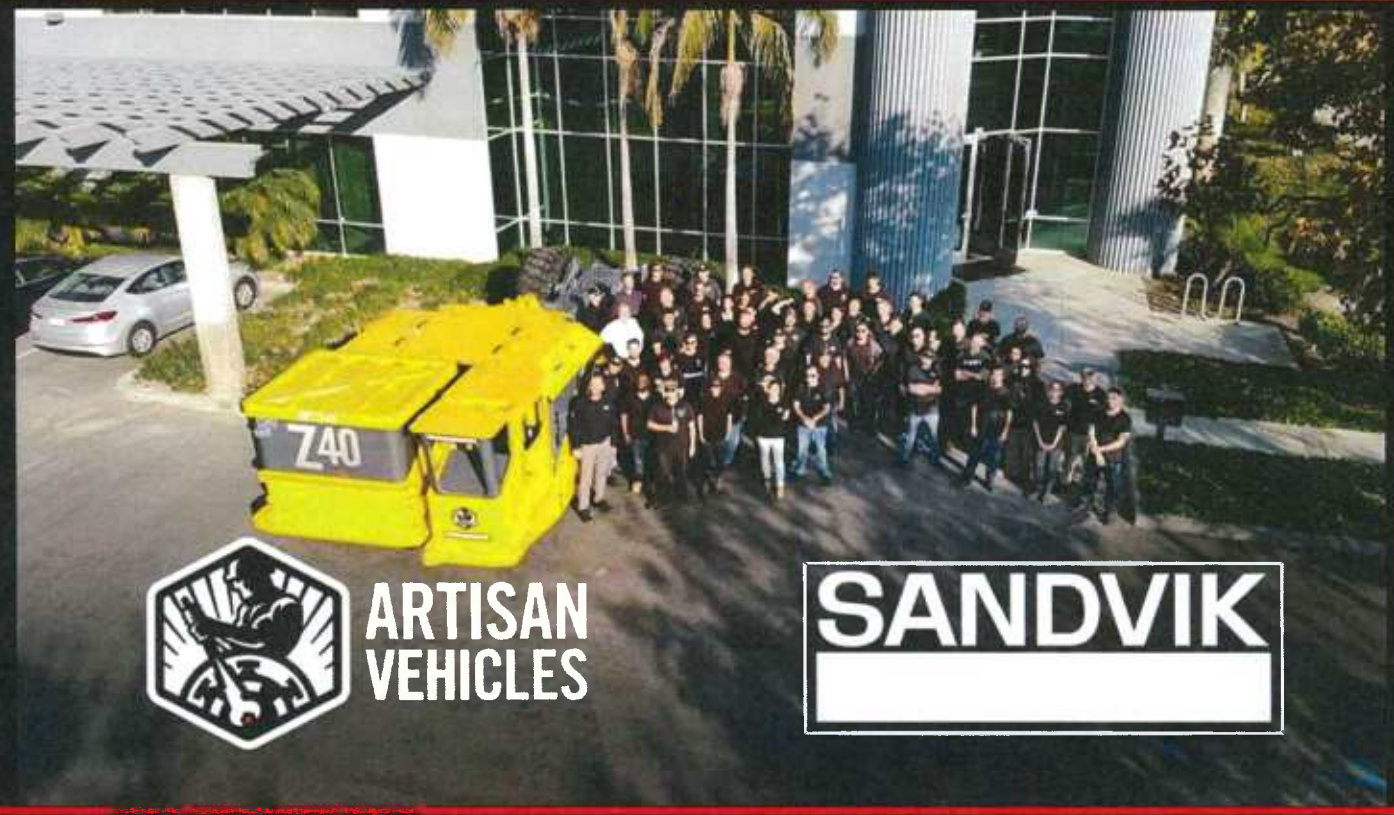
Artisan announces that it is to be acquired by Sandvik



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Artisan Products

Z40

- Battery-Electric
- 40 tonne Truck

ArtisanVehicles.com/Z40

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ARTISAN
VEHICLES

ENTER CHARGE BAY
DISCONNECT BATTERY
02:00

DROP USED BATTERY
01:30

DRIVE TO NEW BATTERY
01:30

PICK UP NEW BATTERY
01:00

CONNECT BATTERY
LEAVE CHARGE BAY
02:35

TOTAL TIME
00:00