## Ploneer

# Unearthing Australia's First Caesium Deposit (and other things)

**Australian Energy Conference**Display 2018



CO<sup>27</sup>

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- The information in this report paraphrases material that is in the public domain including exploration results is based on information supplied to and compiled by Mr David Crook. Mr Crook is a full time employee of Pioneer Resources Limited. Mr Crook is a member of The Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientist and has sufficient experience which is relevant to the exploration processes undertaken to qualify as a Competent Person as defined in the 2012 Editions of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'.
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"You won't be able to afford it"

Mine Executive on buying Caesium Formate

Everyone's talking about Lithium... and they should be "It's the next gasoline."

Brian Colwell

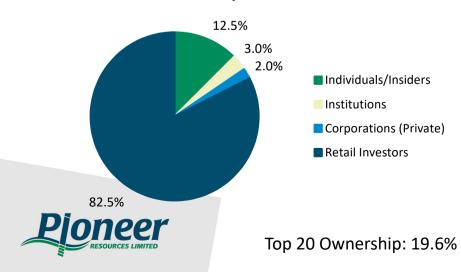


#### **Corporate Overview**

#### **Capital Structure**

Share Price	\$0.025
Shares Outstanding (m)	1,430
Market Capitalisation	\$35.0
Cash (\$m) (approx. 31/12/2017)	\$5.4
Debt (\$m)	0.0
Options Outstanding (listed/unlisted(m))	44.3/32

#### **Shareholder Analysis**



#### **Board of Directors**

Craig McGown	Non-Executive Chairman
David Crook	Managing Director
Allan Trench	Non-Executive Director
Wayne Spilsbury	Non-Executive Director

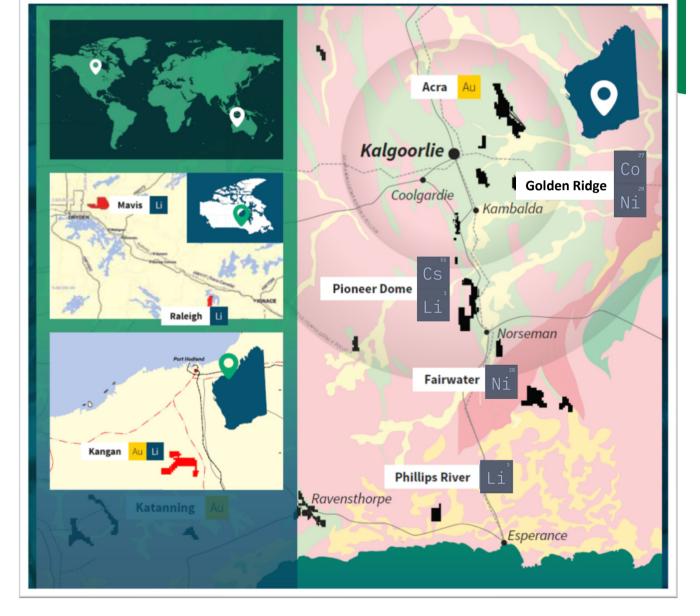
#### 12 Month Share Price chart



### **Key Assets Along Infrastructure Corridors in WA and Ontario**

Golden Ridge Kalgo
Mavis Lake Onta
Kangan Pilba
Pioneer Dome Nors

Kalgoorlie Ontario Pilbara Norseman





## Sinclair Zone Caesium Deposit Making Mines Making Money

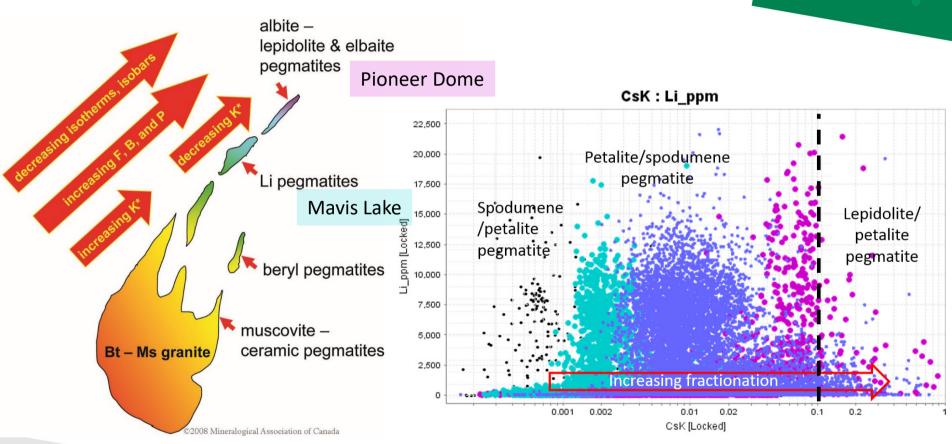


- ☐ Timetable Aiming for Mid 2018 startup:
  - Mining Lease and Miscellaneous Licence: Granted
  - ☐ Project, Safety, Community System: Initialised
  - ✓ Detailed heritage surveys: Completed
  - **☑** Detailed resource drilling finished:
  - ☐ Drilling results awaited
    - Final Mine Design
    - Finalise Offtake
    - > Final Approvals from DMIRS (Mines Department)
    - Commence Mining



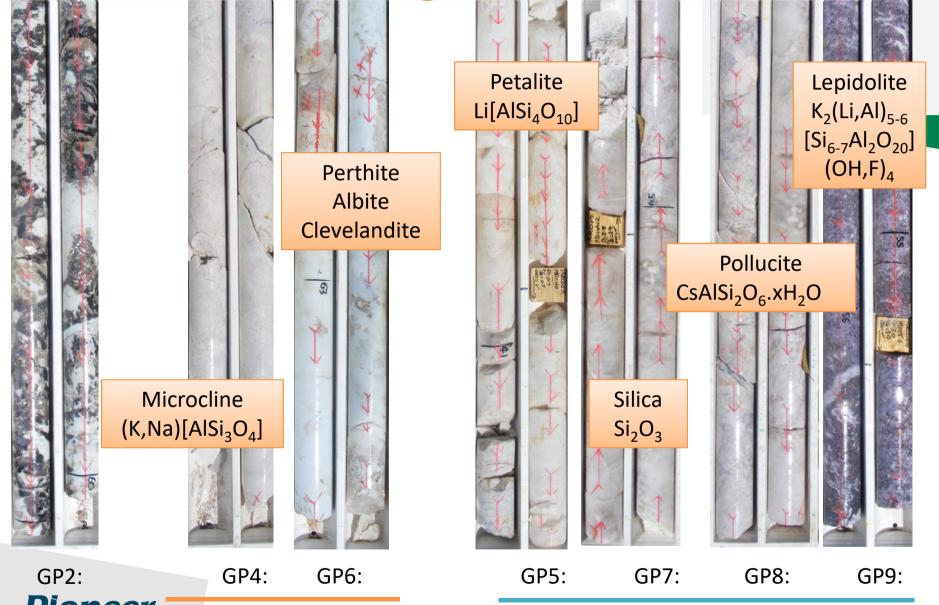
#### **Charting Pegmatite Evolution**







Sinclair Zoned Pegmatite more akin to Tanco



Pioneer Wall zone

Intermediate Zone

**Highly Fractionated Core** 

#### Caesium

- The Caesium mineral "pollucite" is very rare
- The two main producers are:
  - TANCO in Canada,
  - Bikita in Zimbabwe
  - Other locations range from fist-size to small pods
- Forms in highly evolved LCT pegmatite core zone
- Co-exists with lithium (petalite and lepidolite) and silica
- Used to make lubricant in high temperature/high pressure oil and gas drilling
  - Raw material supply is severely constrained
  - High value product, therefore is leased and recycled in the oil industry

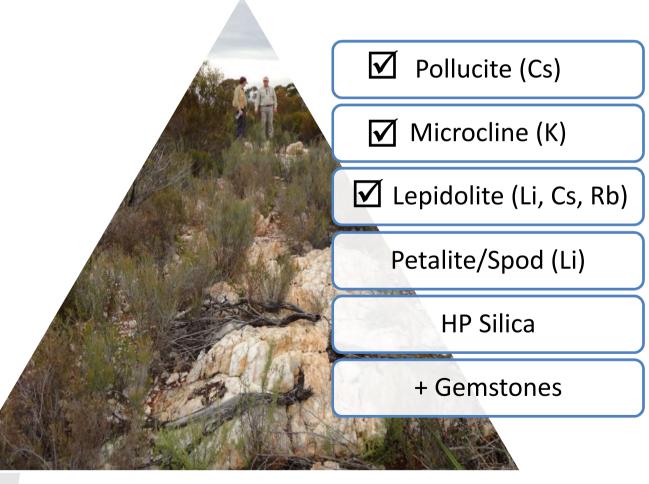






## This gives us a list of Saleable Products

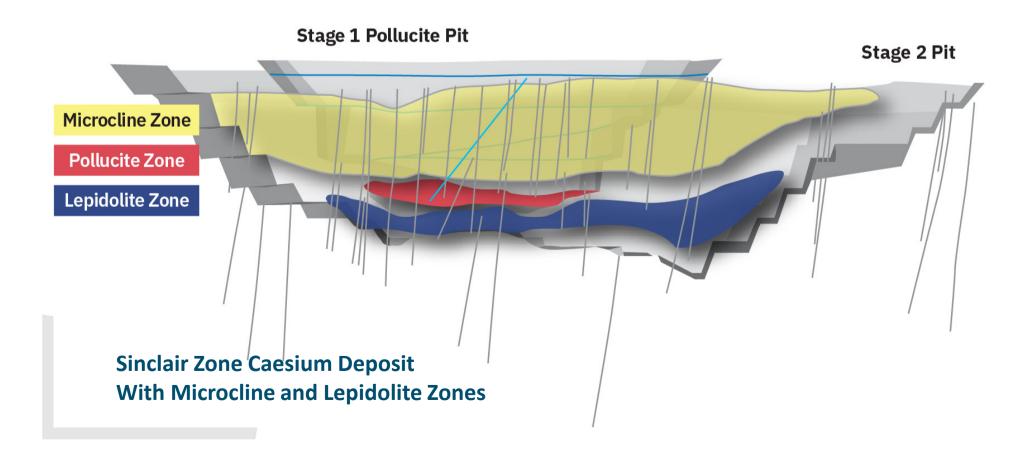




### This is what the Sinclair Mine Could Look Like

- Discovery in October 2016,
- Measured Mineral Resource of 10,500t pollucite grading 17.1% Cs<sub>2</sub>O
- The World's 3<sup>rd</sup> largest known pollucite deposit (pre depletion of others)





#### **Pioneer Dome Lithium**

#### 19 lithium targets identified and prioritised

#### • Petalite intersections from the Sinclair Zone:

PDRC067: 11m at 2.63% Li<sub>2</sub>O

PDRC085: 6m at 3.66% Li<sub>2</sub>O

PDRC114: 19m at 1.77% Li<sub>2</sub>O

PDRC116: 20m at 2.48% Li<sub>2</sub>O

#### Lepidolite intersections from the Sinclair Zone:

PDRC070: 12m at 2.22% Li<sub>2</sub>O

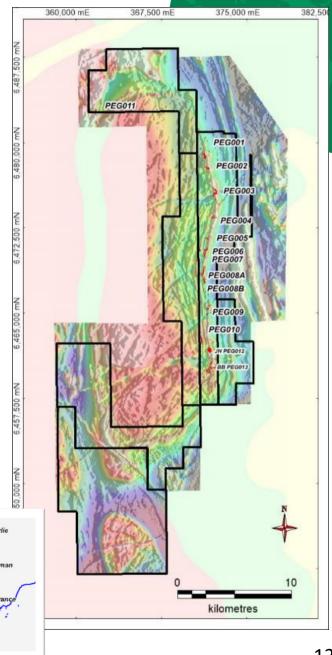
PDRCD072: 8.65m at 3.01% Li<sub>2</sub>O

PDRC079: 14m at 2.32% Li<sub>2</sub>O

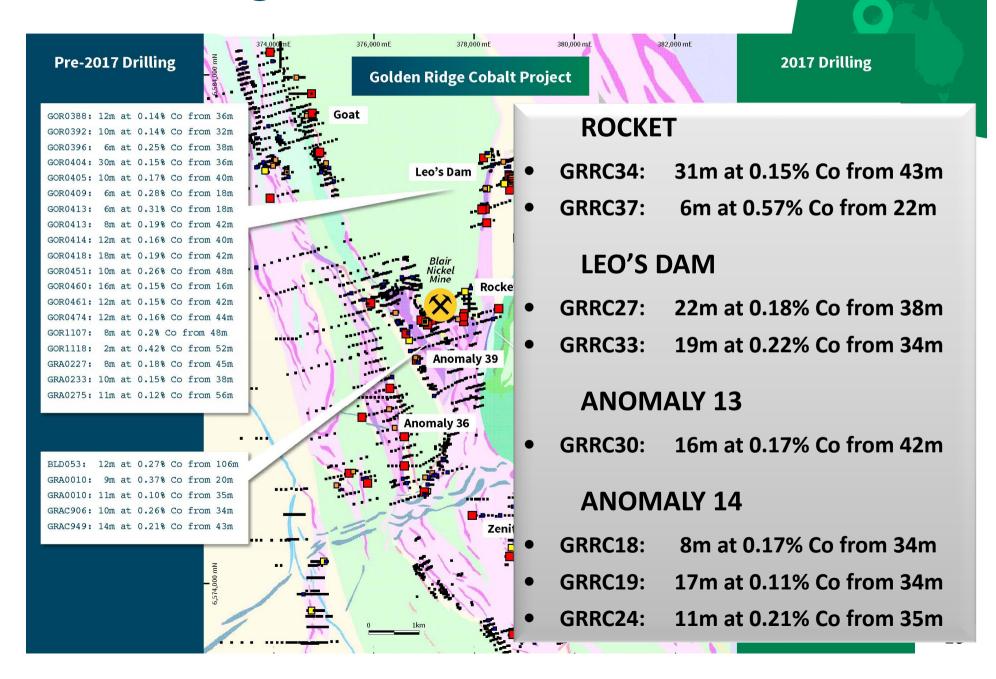
PDRC090: 8m at 2.62% Li<sub>2</sub>O

PDRC095: 6m at 2.95% Li<sub>2</sub>O





#### Golden Ridge – Cobalt 2018



#### **How Does Golden Ridge Compare**



BLD053: 12m at 0.27 % Co from 106m

GRAC949: 14m at 0.21 % Co from 43m

GRAC906: 10m at 0.26 % Co from 34m

#### **Anomaly 14 Prospect**

GOR0451: 10m at 0.26 % Co from 48m

GOR0404: 30m at 0.15 % Co from 36m\*

GOR0409: 6m at 0.28 % Co from 18m

GOR0413: 6m at 0.31 % Co from 18m\*

GOR0418: 18m at 0.19 % Co from 42m\*

#### **Skidman Trend**

AMBR0059: 5m at 0.31 % Co from 15m

GOD0290: 8m at 0.25 % Co from 16m

#### Regional

GOD0346: 8m at 0.28 % Co from 36m

AMBR0386: 5m at 0.60 % Co from 40m

GRA0118: 5m at 0.51 % Co from 38m

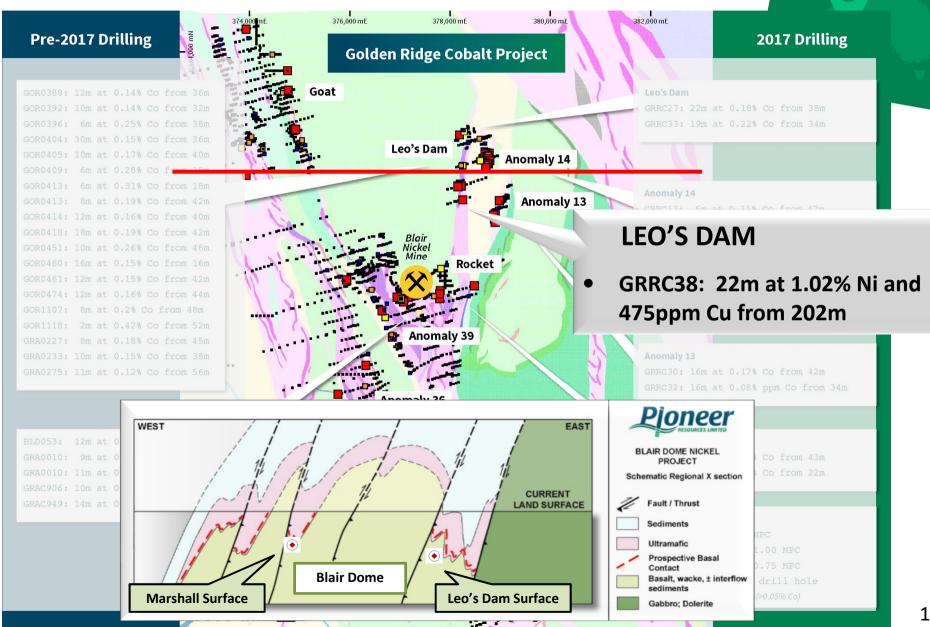


#### **Reported Lateritic Cobalt Deposit Size**

Company	Tonnes	Grade*	Location	
	(mt)	Со		
Ardea (\$128m)	805	0.05 %	Valgaarlia MA	
includes	64	0.13 %	Kalgoorlie, WA	
CleanTeq (\$719m)	109	0.10 %	Syerston, NSW	
GME (\$76m)	108	0.06 %	Leonora, WA	
Conico/Barra	32	0.12 %	Norseman, WA	
Platina	9	0.15 %	Owendale, NSW	
Augur	16	0.05 %	Homeville, NSW	
Cougar	10	0.07 %	Leonora, WA	
Australian (\$294m)	89	0.11 %	Sconi, QLD	

Refer respective Company websites for details
Grades appropriately rounded from reported Co grade

#### **GR/Blair Dome – Nickel Sulphide 2018**



#### **Mavis Lake – Spodumene 2018**

**MF18-53** 





MF18-53: 68.3m Spod Pegmatite from 82.7m

MF18-57: 30m Spod Pegmatite from 117m

MF18-58: 29.8m Spod Pegmatite from 116.8m

MF18-51: 25.3m Spod Pegmatite from 76.7m



#### **Value Proposition**

#### **Pioneer Dome Strategy**

- ☐ Mid-year Sinclair Zone Pollucite (Caesium) Deposit
- Commercialise Co-Products i.e. Lepidolite, Microcline
- Drill for further discoveries
  - ☐ Drill Lithium (Spodumene and Lepidolite) Targets
  - Watch for Caesium vectors and drill for Pollucite
- In Addition....
  - Mavis Lake, Raleigh, Canada: Spodumene Results March
  - ☐ Golden Ridge: Bench Test for Cobalt,
    - Further Drilling for Ni Sulphides





#### References



#### References

#### **Projects**

- Golden Ridge/Blair Dome: Refer Company's announcements to ASX dated 18 November 2013 (Blair Resource Estimate), May 2014, 27 January 2015, 18 May 2015, 20 July 2015, 13April 2017, 23 January 2018, 25 January 2018.
- Mavis Lake and Raleigh: Refer Company's announcements to ASX dated 15 March 2016, 20 April 2016, 13 July 2016, 26 July 2016, 12 October 2016,7 February 2017, 8 February 2017, 10 March 2017, 11 April 2017, 23 January 2018.
- Pioneer Dome: Refer Company's announcements to ASX 19 May 2016, 27 July 2016, 28 August 2016, 1 September 2016, 4 October 2016, 17 October 2016, 14 November 2016, 2 December 2016, 13 December 2016, 13 January 2017, 24 January 2017, 23 February 2017, 20 March 2017 (Sinclair Measured Resource Statement), 20 June 2017, 22 August 2017, 9October 2017, 17 January 2018, 21 February 2018
- Kangan: WAMEX A No, 26936, 79608, 81531, Note 1. The Continent of Ur and the Beginning of the Crustal Gold Cycle–Hennigh, Q.T., IGC35, September 1, 2016, Note 2. Company announcement to ASX dated 6 October 2017, 24 October 2017.
- Internal documents by Brand N. W. of Geochemical Services Pty Ltd
- Plus Company quarterly reports.

#### **Pegmatites**

London, D. (2008): Pegmatites. The Canadian Mineralogist Special Publication 10.

#### Microcline

Charles River Associates (May 10, 2013). Potassium Feldspar Study: Market Assessment Report to I-Minerals, May 10, 2013

The Company it is not aware of any new information or data that materially affects the information included in this Report





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