

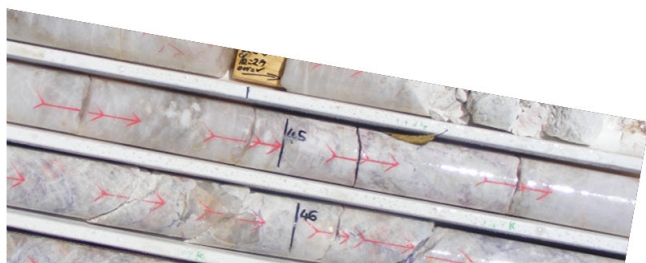


# Unearthing Australia's First Pollucite Deposit (and other things)

*David Crook, Managing Director*

**RIU Explorer's Conference**

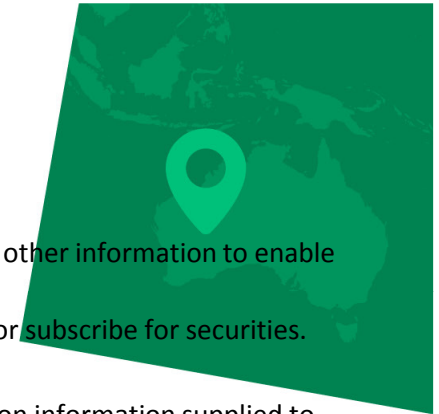
Fremantle 20-23 February 2018



27	Co
55	Cs
3	Li
28	Ni
73	Ta



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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.”***

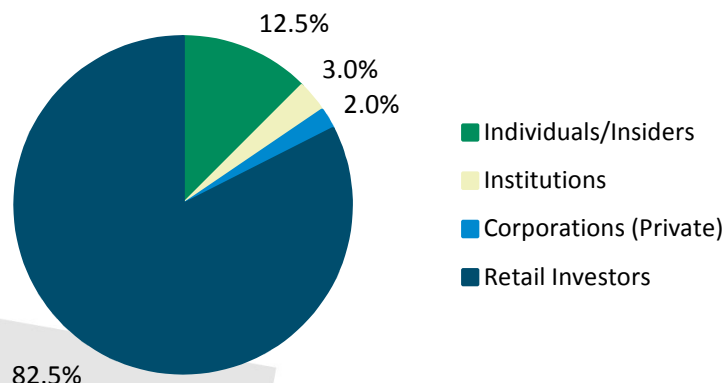
***Brian Colwell***

# Corporate Overview

## Capital Structure

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

## Shareholder Analysis

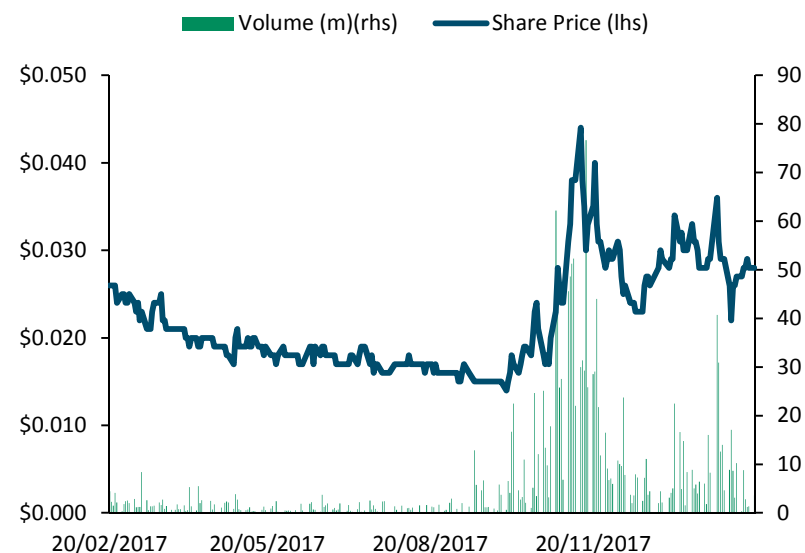


Top 20 Ownership: 19.6%

## Board of Directors

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

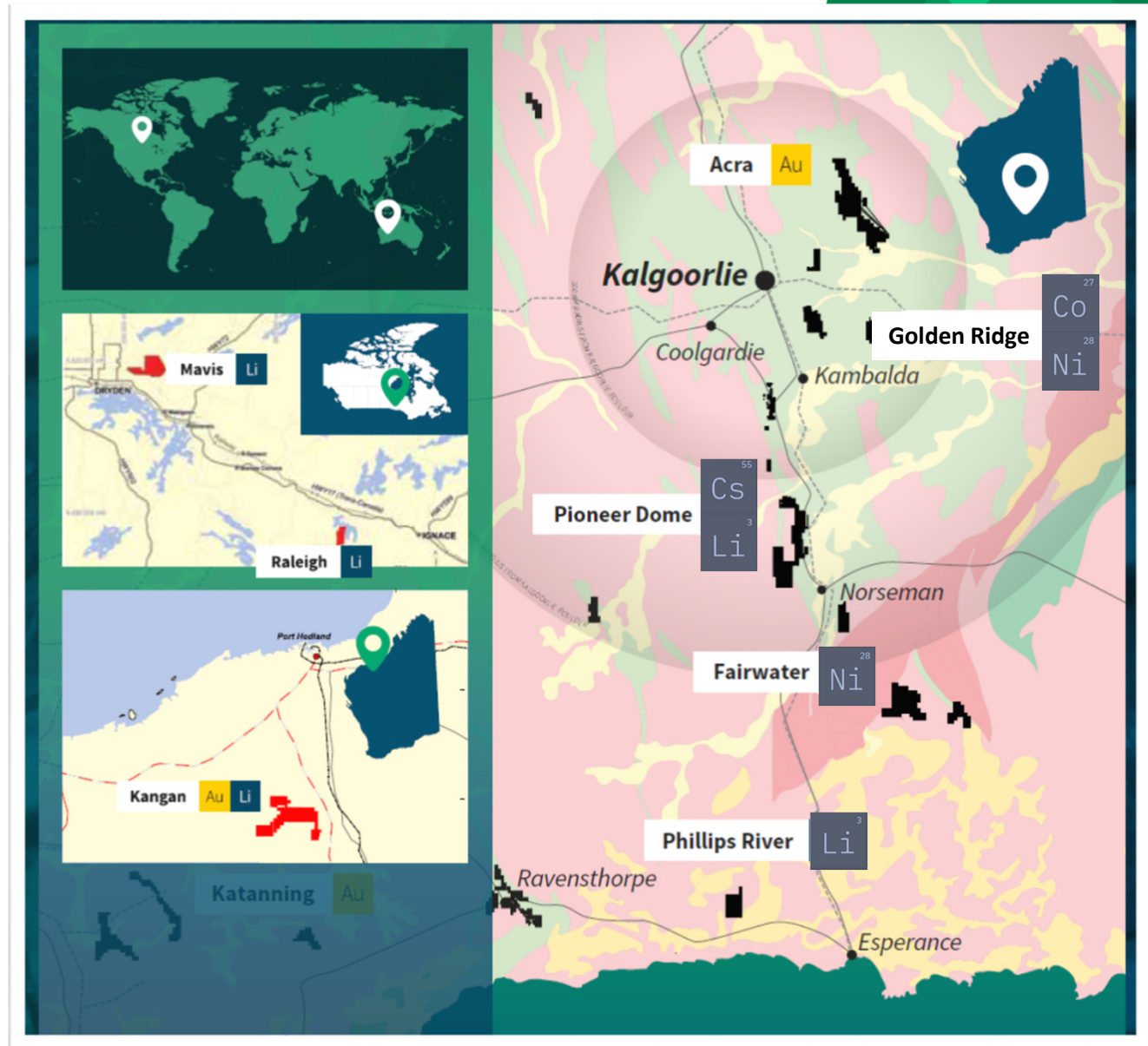
## 12 Month Share Price chart





# Key Assets Along Infrastructure Corridors in WA and Ontario

Golden Ridge  
Mavis Lake  
Kangan  
Pioneer Dome  
Kalgoorlie  
Ontario  
Pilbara  
Norseman



# Golden Ridge – Cobalt 2018

## Pre-2017 Drilling

GOR0388: 12m at 0.14% Co from 36m  
 GOR0392: 10m at 0.14% Co from 32m  
 GOR0396: 6m at 0.25% Co from 38m  
 GOR0404: 30m at 0.15% Co from 36m  
 GOR0405: 10m at 0.17% Co from 40m  
 GOR0409: 6m at 0.28% Co from 18m  
 GOR0413: 6m at 0.31% Co from 18m  
 GOR0413: 8m at 0.19% Co from 42m  
 GOR0414: 12m at 0.16% Co from 40m  
 GOR0418: 18m at 0.19% Co from 42m  
 GOR0451: 10m at 0.26% Co from 48m  
 GOR0460: 16m at 0.15% Co from 16m  
 GOR0461: 12m at 0.15% Co from 42m  
 GOR0474: 12m at 0.16% Co from 44m  
 GOR1107: 8m at 0.2% Co from 48m  
 GOR1118: 2m at 0.42% Co from 52m  
 GRA0227: 8m at 0.18% Co from 45m  
 GRA0233: 10m at 0.15% Co from 38m  
 GRA0275: 11m at 0.12% Co from 56m

BLD053: 12m at 0.27% Co from 106m  
 GRA0010: 9m at 0.37% Co from 20m  
 GRA0010: 11m at 0.10% Co from 35m  
 GRAC906: 10m at 0.26% Co from 34m  
 GRAC949: 14m at 0.21% Co from 43m

## Golden Ridge Cobalt Project

## 2017 Drilling

### ROCKET

- GRRC34: 31m at 0.15% Co from 43m
- GRRC37: 6m at 0.57% Co from 22m

### LEO'S DAM

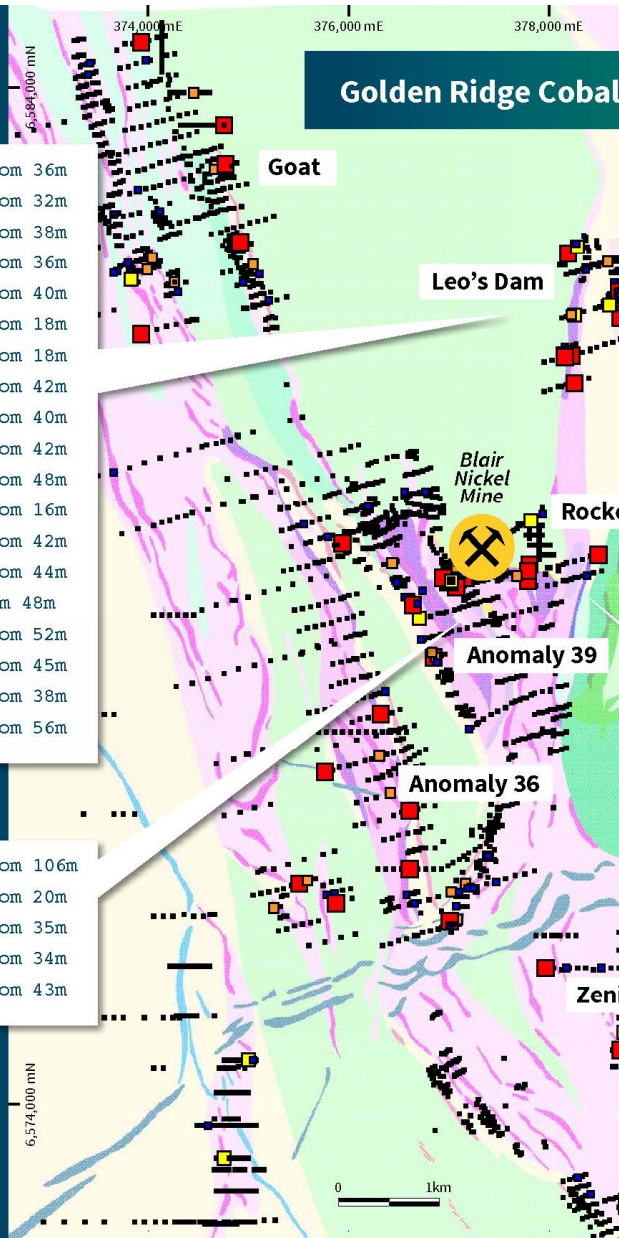
- GRRC27: 22m at 0.18% Co from 38m
- GRRC33: 19m at 0.22% Co from 34m

### ANOMALY 13

- GRRC30: 16m at 0.17% Co from 42m

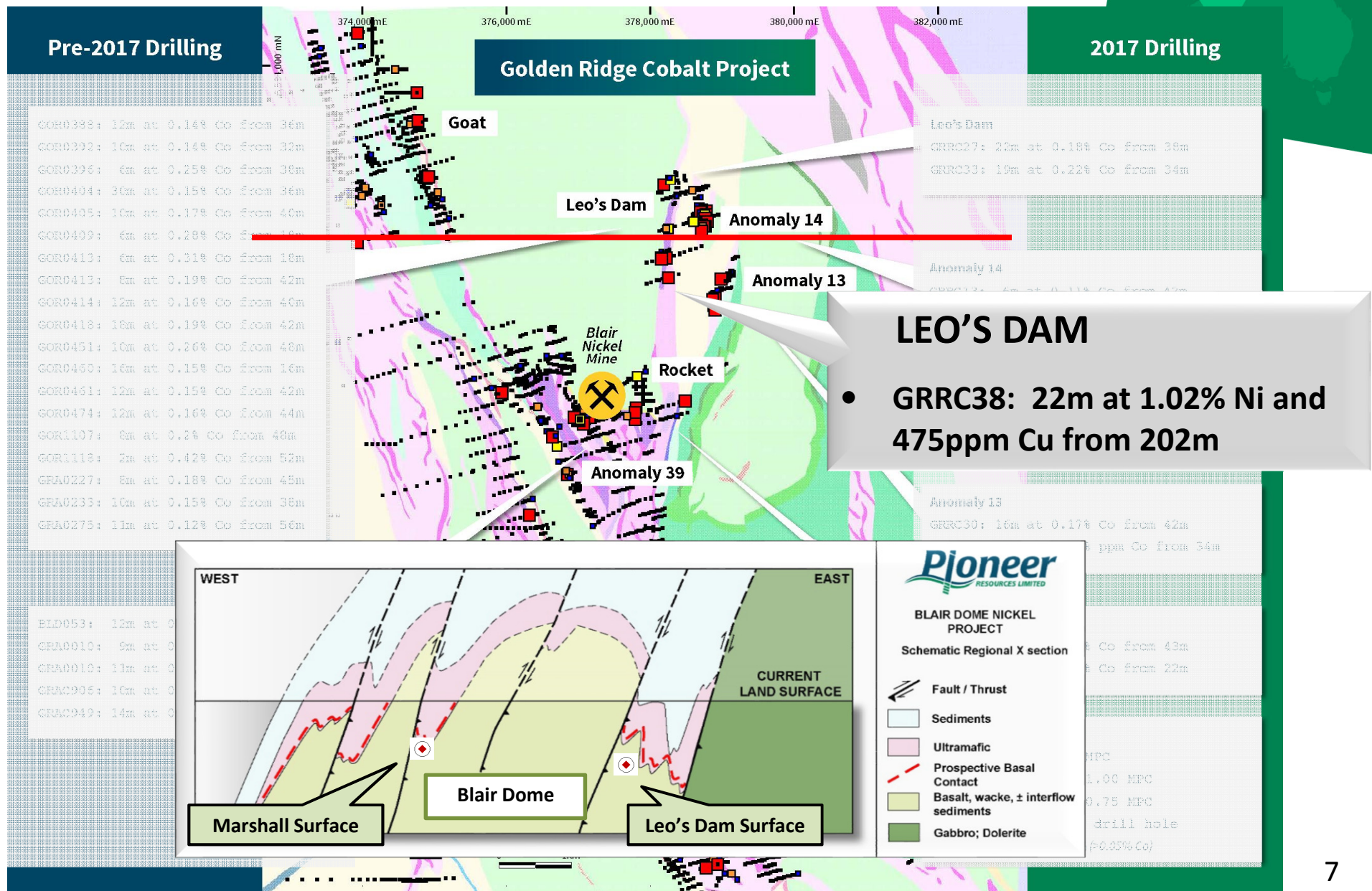
### ANOMALY 14

- GRRC18: 8m at 0.17% Co from 34m
- GRRC19: 17m at 0.11% Co from 34m
- GRRC24: 11m at 0.21% Co from 35m



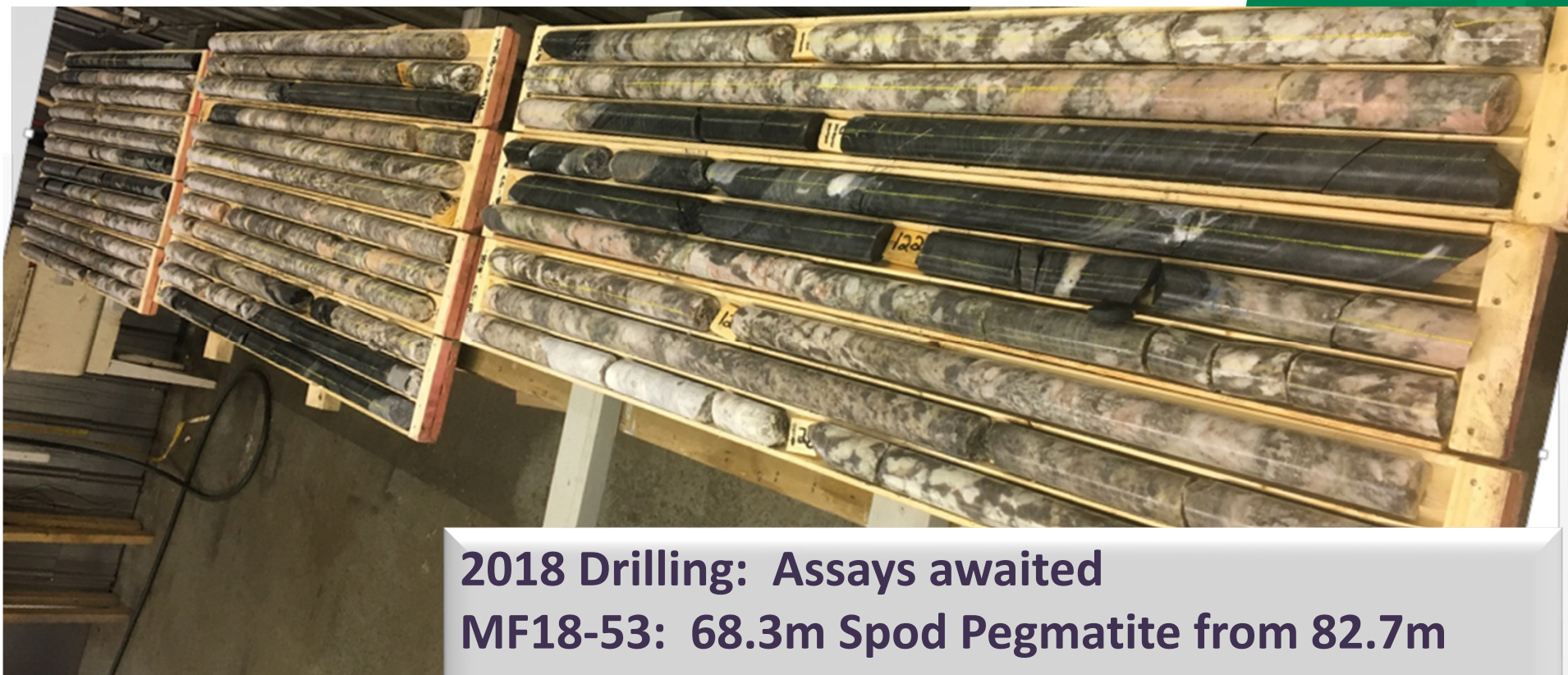


# GR/Blair Dome – Nickel Sulphide 2018



# Mavis Lake – Spodumene 2018

**MF18-53**



**2018 Drilling: Assays awaited**

**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**



\* All widths reported are drill core widths and have not been converted into true width. Appropriate rounding of Li<sub>2</sub>O values applied.



# Kangan Gold - Pilbara Wits 2 Model



- polymictic conglomerate identified in the field at this location over an 800m strike length
- Adjacent anomalous soil geochemistry and rock chips recorded in Technical Reports by previous explorers.



# 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

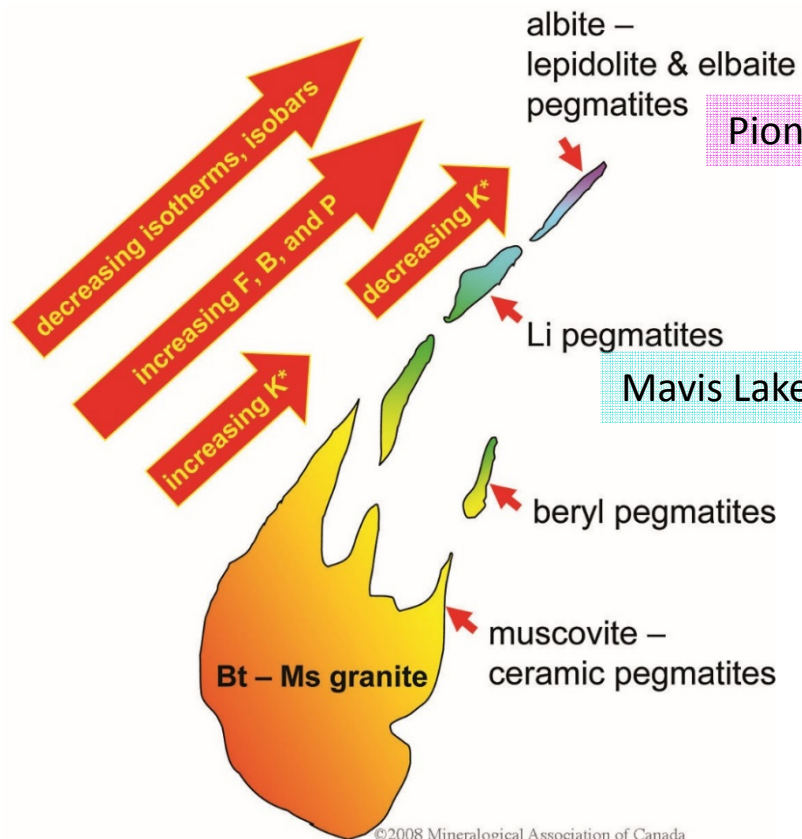
➤ Finalise Offtake

➤ Final Approvals from DMIRS (Mines Department)

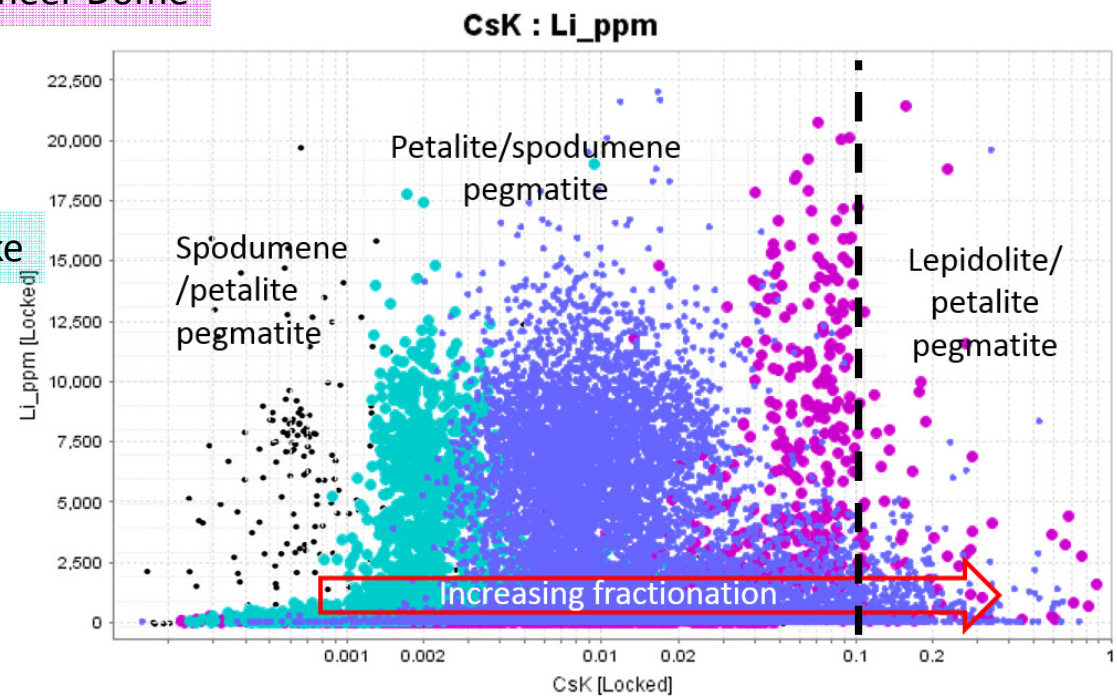
➤ Commence Mining



# Charting Pegmatite Evolution



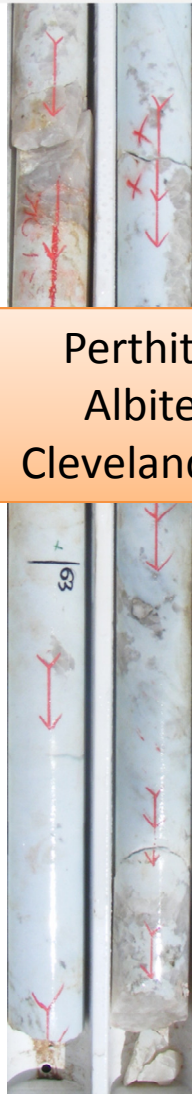
©2008 Mineralogical Association of Canada



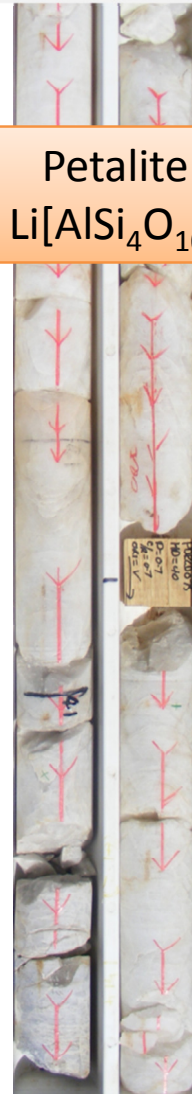
# Sinclair Zoned Pegmatite more akin to Tanco



Microcline  
 $(K,Na)[AlSi_3O_4]$



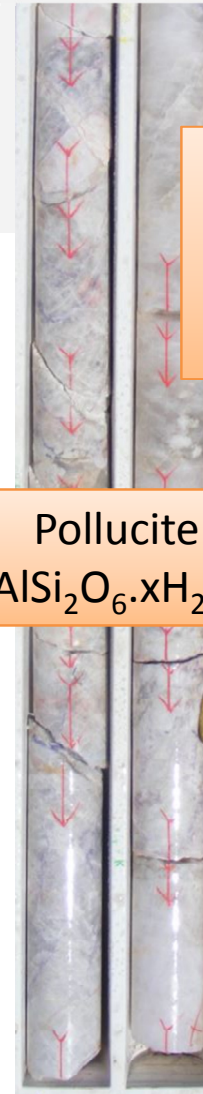
Perthite  
Albite  
Clevelandite



Petalite  
 $Li[AlSi_4O_{10}]$



Silica  
 $Si_2O_3$



Pollucite  
 $CsAlSi_2O_6 \cdot xH_2O$



Lepidolite  
 $K_2(Li,Al)_{5-6}[Si_{6-7}Al_2O_{20}](OH,F)_4$

GP2:

GP4:

GP6:

GP5:

GP7:

GP8:

GP9:



# This gives us a list of Saleable Products



☒ Pollucite (Cs)

☒ Microcline (K)

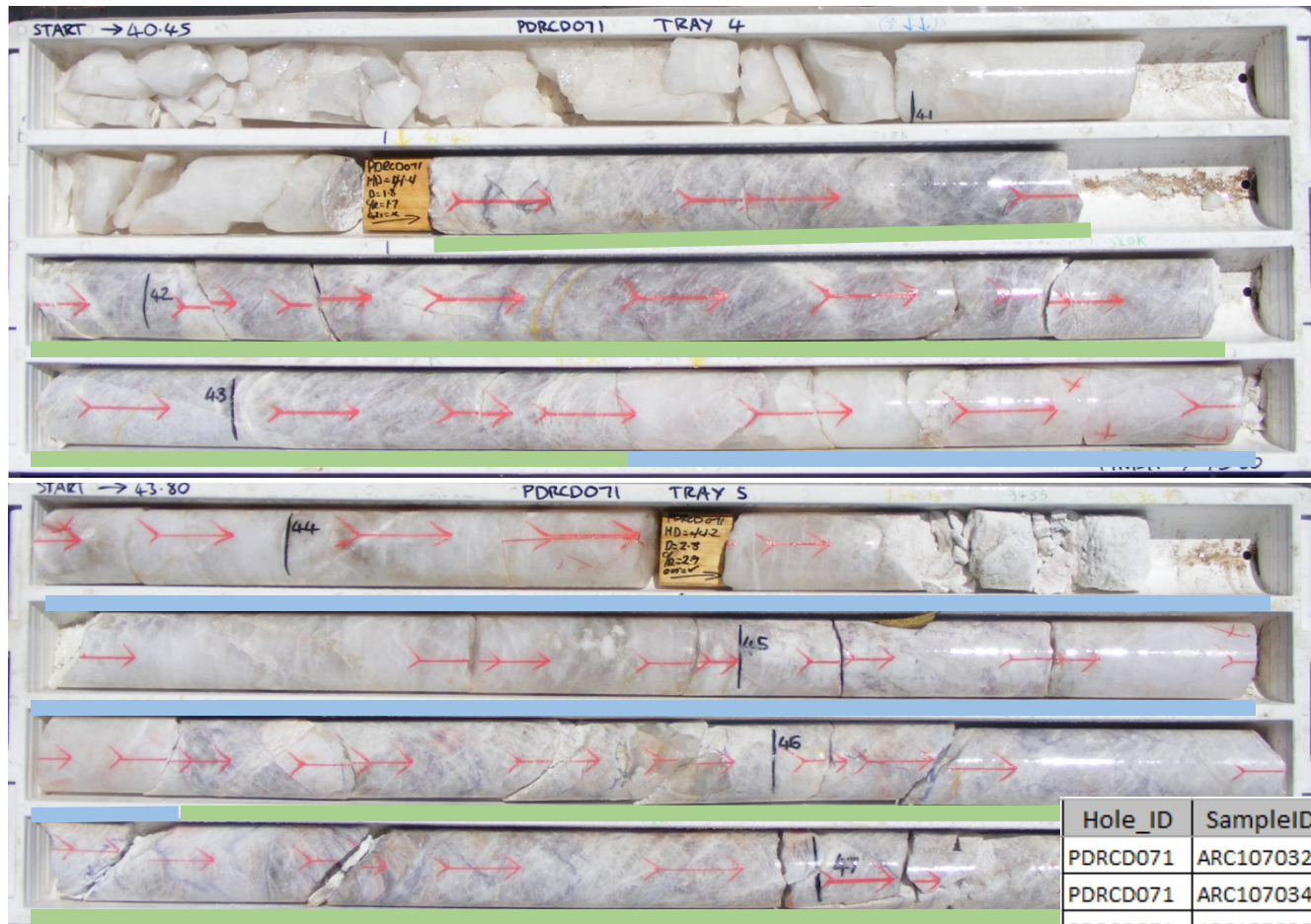
☒ Lepidolite (Li, Cs, Rb)

Petalite/Spod (Li)

HP Silica

+ Gemstones

# The Gemini (and Pegmatite) Twins: Castor and Pollux



SILICA

POLLUCITE

PETALITE (Originally Castorite)

POLLUCITE

**PDRCD071**

Hole_ID	SampleID	mFrc	mTo	Be	Cs_ %	Li2O_ %	Rb
PDRCD071	ARC107032	41.4	42		25.3		4591.1
PDRCD071	ARC107034	42	42.5		28.5		5358.7
PDRCD071	ARC107035	42.5	43		28.8		5447.9
PDRCD071	ARC107036	43	43.4		23.6		4201.7
PDRCD071	ARC107037	43.4	44			3.06	
PDRCD071	ARC107038	44	45			4.21	
PDRCD071	ARC107040	45	45.5			3.03	
PDRCD071	ARC107041	45.5	46		22.2		3218.9
PDRCD071	ARC107042	46	46.5		26.8		5881.5
PDRCD071	ARC107043	46.5	47		26.7		6469.9
PDRCD071	ARC107044	47	47.8		25.4		5420.4

# Pollucite – what is it

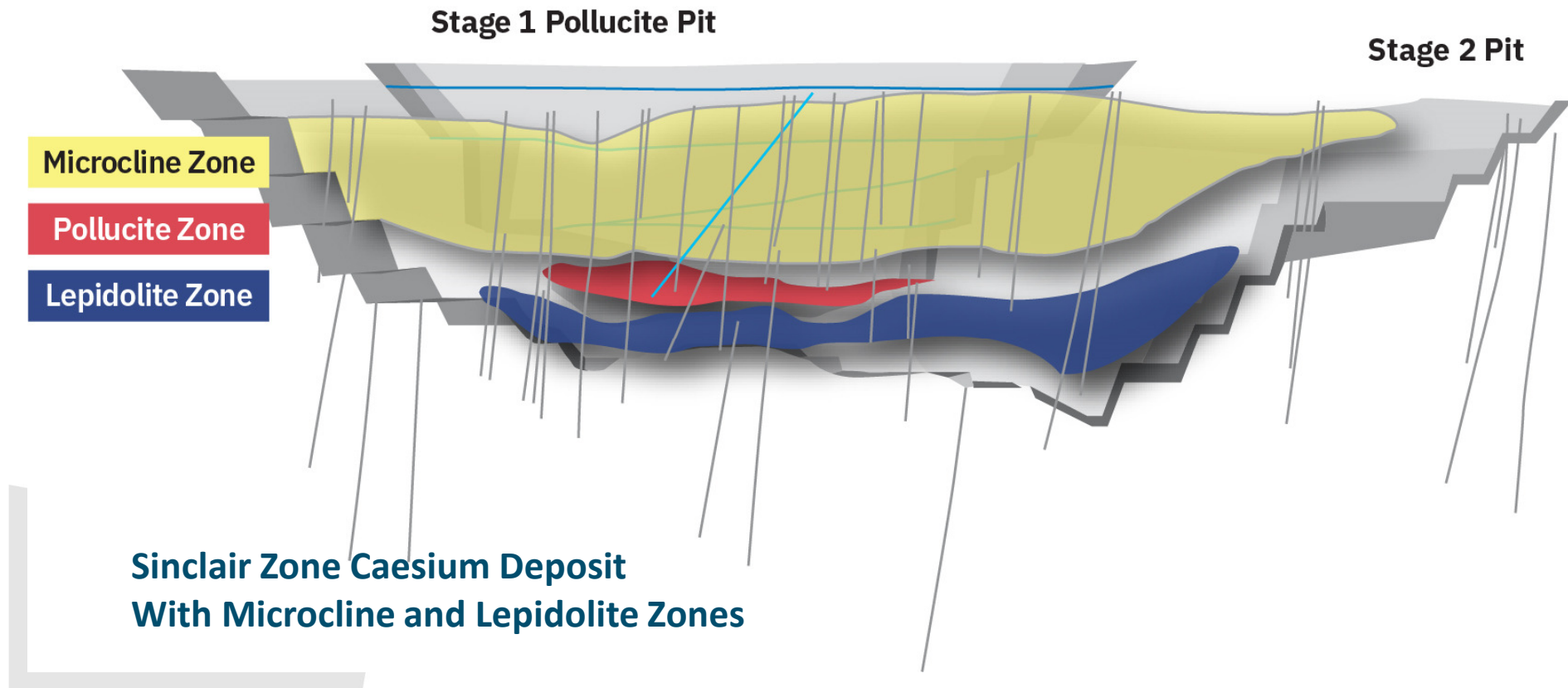


- Very rare
- forms in highly evolved LCT pegmatite core zone
- one of the last primary igneous minerals to crystallise
- range from fist-size to small pods
- co-exists with petalite, silica (and lepidolite)
- Known at approximately 110 localities worldwide
  - Two locations, Tanco Manitoba and Bikita, Zimbabwe represent ‘commercial-sized’ pollucite deposits
  - The remaining locations contain only a few grams of the mineral (Teertstra & Černý, 1997).

# This is what the Sinclair Mine Could Look Like



- *Discovery in October 2016,*
- Measured Mineral Resource of **10,500t pollucite grading 17.1%  $\text{Cs}_2\text{O}$**
- **The World's 3<sup>rd</sup> largest known pollucite deposit (pre depletion of others)**





# Caesium Formate

- lubricant in high temperature/high pressure oil and gas drilling,
  - Ensures faster completion times and
  - higher production rates
- The two main producers of Pollucite:
  - TANCO mine, CABOT Canada, produces sufficient ore to generate approximately 8,400bbl CsFm and a lesser amount of Cs chemicals
  - Bikita Mine in Zimbabwe (sporadic, and supplies the Cs chemical market)
- CABOT Specialty Fluids:
  - 2010-2014 (5 years) EBITDA averages US\$37 million, or \$312 million between 2004 and 2016
  - CsFm rented to oil companies including Shell, Total, Statoil, ExxonMobil and BP, used in 30 wells per year (2008-2009)



# Value Proposition



## Pioneer Dome Strategy

- ❑ ***Develop 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, 13 April 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, 22 March 2017 (Sinclair Measured Resource Statement), 20 June 2017, 22 August 2017, 9 October 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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