

Pioneer Resources Limited
(ASX: PIO)

April 2018

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Contents

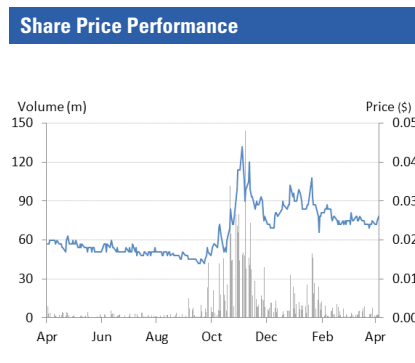
Specialty Metal Specialists	1
Key Points	1
SWOT Analysis	2
Overview	3
Strategy and Project Overview	3
Financial Position.....	4
Pioneer Dome Lithium Project - Pioneer 100%	4
Golden Ridge Cobalt and Nickel Project – Pioneer 100%	11
Mavis Lake and Raleigh Lithium Projects – Earning 80%	15
Other Projects.....	19
Peer Group Analysis.....	21
Lithium Peers	21
Cobalt Peers	23
Capital Structure	24
Risks	24
Board and Management	25
Background - Caesium and Markets	26
Background - Cobalt and Markets.....	26
Background – Lithium and Markets	28

Note: This report is based on information provided by the company as at April 20, 2018

Investment Profile	
Share Price as at 20 April 2018	\$0.024
Issued Capital:	
Ordinary Shares	1,447m
Listed Options	44.3m
Options	32.0m
Performance Rights	0.0m
Fully Diluted	1,523m
Market Capitalisation	\$34.73m
12 month L/H	\$0.014/\$0.046

Board and Management	
Mr Craig McGown: Non-Executive Chairman	
Mr David Crook: Managing Director	
Dr Allan Trench: Non-Executive Director	
Mr Wayne Spilsbury: Non-Executive Director	
Mr Timothy Spencer: CFO and Company Secretary	

Major Shareholders	
PNB Paribas Nom P/L	2.39%
JP Morgan Noms Australia Ltd	2.24%
Board and Management	3.14%
Top 20	20.20%



Senior Analyst – Mark Gordon

The investment opinion in this report is current as at the date of publication. Investors and advisers should be aware that over time the circumstances of the issuer and/or product may change which may affect our investment opinion.

SPECIALTY METAL SPECIALISTS

With production planned to start from the 100% owned Sinclair Zone Caesium Project ("Sinclair Zone"), Pioneer Resources Limited ("Pioneer" or "the Company") believes it is set to receive significant cash flow to augment funding for its portfolio of quality specialty metal and nickel projects. Sinclair Zone is a recent discovery by Pioneer, and occurs in a belt of highly fractionated lithium-caesium-tantalum ("LCT") pegmatites that also have demonstrated lithium mineralisation within the overall eponymous Pioneer Dome Project; there is also the potential for additional resources of the extremely rare and highly valuable caesium mineral pollucite to be found. Sinclair Zone is the first caesium discovery in Australia, and the first globally for many years.

Other lithium exposure includes the Mavis Lake and Raleigh projects in Ontario, Canada, with historical drilling and drilling by Pioneer demonstrating the presence of high grade, spodumene bearing LCT pegmatites located near infrastructure in a mining friendly jurisdiction.

Back in Western Australia, the Company has demonstrated the cobalt laterite potential of the 100% owned Blair Dome Project, which historically has been explored successfully for nickel, and contains the now closed Blair Nickel Mine. The cobalt potential was initially identified through a review of historic drilling data; this was followed up by drilling which confirmed the historical data, and returned cobalt results that compare very favourably with those from other similar Australian projects.

Recent drilling has also confirmed the potential for new nickel sulphide discoveries at the relatively under-explored Blair Dome, with this returning an intercept of 22m at 1.02% Ni in disseminated sulphides at the targeted ultramafic basal position - Blair Dome, being located near Kambalda, is in a world class nickel producing region.

KEY POINTS

Short term, low risk and low cost development of a high value commodity: The imminent development and resulting DSO pollucite sales from the Sinclair Zone present a potentially high margin, low risk, high cash flow opportunity, which will be used to fund exploration activities on the other properties; there is also upside here with the potential to sell other products, including high quality microcline feldspar and lithium-bearing lepidolite.

Association with Lepidico: Lepidico (ASX: LPD) is developing the LMax® metallurgical process to treat lepidolite and other lithium micas, long considered second cousins to spodumene which forms a basis to the Australian hard-rock lithium industry; Lepidico is farming into one of the Pioneer Dome pegmatites with a view to defining resources to supply a planned Phase 1 LMax® plant, and Pioneer has successfully treated lepidolite from Pioneer Dome using the process at a desk scale.

Highly prospective properties: The results of exploration over all properties has highlighted the potential of them for the targeted mineralisation, be it cobalt, lithium or nickel - grades from the "battery" metals have been comparable with, or higher than those from similar projects, and with defined mineralisation at all properties being open.

Rolling over projects: One part of Pioneer's strategy is to roll over projects to make sure activities are concentrated on the most promising and delivers the best bang for the buck; a recent example is the farming out of the Acra Gold Project to Northern Star Resources (ASX: NST) which will ensure that this still highly prospective project gets adequately funded with Pioneer retaining a free carried interest.

Infrastructure rich: All of the Company's projects are located in mining friendly jurisdictions and well served by infrastructure; for instance the Blair and Pioneer Dome projects are located close to the world-class mining town of Kalgoorlie and transport and power infrastructure, with the Ontario projects being located close to towns, road, rail and power.

Strong metals fundamentals: The market for the so called "battery" metals, including lithium and cobalt, is forecast by many to remain relatively strong with the forecast growth in demand for batteries, particularly in the electric vehicle sector - strong prices will continue to support investment into those companies with quality projects looking to discover and explore resources of these metals.

Experienced and committed personnel: The Company's personnel have extensive experience in the resources industry, with this including strong technical skills, which has played a key role in the discoveries to date; in addition personnel hold shares in the Company

Steady News Flow: The Company has an active exploration, appraisal and development programme over the rest of 2018 - this will result in steady news flow.

SWOT ANALYSIS

Strengths

- ◆ **Low cost, low risk caesium development:** With only a shallow open pit and DSO mine gate sales, the Sinclair Zone presents a low risk, low cost project with the potential to produce high margins and significant cash flow, despite the relatively small, 10,500t size of the resource.
- ◆ **Largely permitted:** The Sinclair Zone is now largely permitted, with the Mining Lease ("ML") being granted and agreements in place with the Traditional Owners; remaining permitting requirements relate largely to routine statutory requirements.
- ◆ **Other prospective projects:** Work at the Company's other projects has confirmed the prospectivity of them for the minerals sought.
- ◆ **Infrastructure rich in established mining jurisdictions:** Both areas in which the Company is operating in are well regarded mining destinations, scoring well in the 2017 Fraser Institute survey of Mining Companies - Western Australia ranked 5th globally and 1st in Australia, whereas Ontario ranked 7th globally and 3rd in Canada.
- ◆ **Strong forecast lithium and cobalt prices:** Short to medium term price forecasts indicate strong prices for both cobalt and lithium.
- ◆ **Experienced people with skin in the game:** Company personnel have significant experience in the resources game as well as shareholdings in Pioneer; personnel also

Weaknesses

- ◆ **Operating in a crowded space:** Recent times have seen a large number of companies entering into the lithium and cobalt spaces, with these vying for the same pot of money; successful development of projects will require differentiation to attract the funding required.
- ◆ **Lepidolite at Pioneer Dome:** Lepidolite is considered the poor cousin of spodumene, with it generally more expensive to treat due to the lower grade of the concentrate when compared to spodumene; as such, until a viable processing facility is built nearby (with the development of an LMax® facility a potential option) we would think it hard for Pioneer to be able to sell the lepidolite mineralisation. However, on the other hand this is not critical with regards to the economics of the caesium operation.

Opportunities

- ◆ **Resource expansion:** This is the key opportunity at the Sinclair Zone, with a good chance to increase the pollucite resource; in addition there is the chance to increase feldspar and lepidolite resources.
- ◆ **Initial resource delineation:** This is the main opportunity at Mavis Lake and Golden Ridge Cobalt - we often see significant increases in value on the delineation of a potentially economically viable resource.
- ◆ **Exploration success:** All properties offer an excellent chance of further discoveries.

Threats

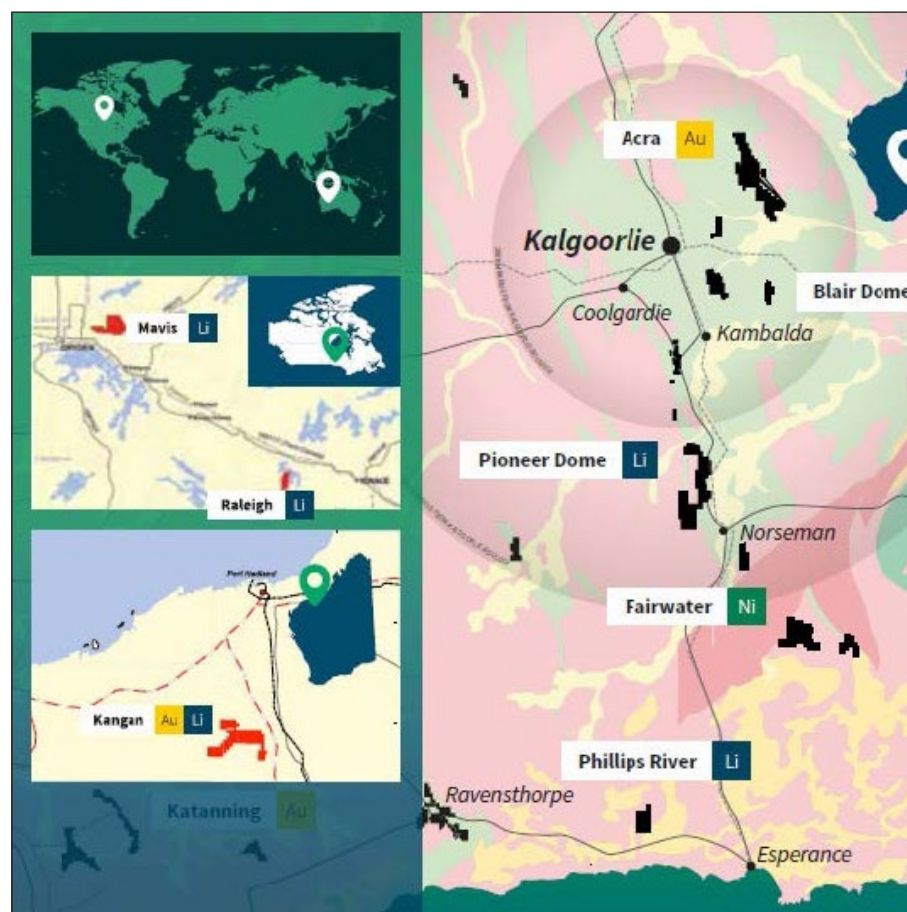
- ◆ **Small, closed caesium market:** With the caesium upstream and downstream markets being largely controlled by one company, there may be issues in entering the market or obtaining a reasonable price (and what is a "reasonable" price given the opaqueness of the market) for the pollucite concentrate; the Company however is confident of being able to sell at a price that makes the Sinclair Zone a very attractive proposition.
- ◆ **Permitting:** This is a perennial threat for near development projects, however in the case of at least the Sinclair Zone, with the ML already granted this is mitigated. With the jurisdictions that Pioneer is operating here we see this threat as a delay, rather than failure to permit.
- ◆ **Lack of exploration success:** This is self-explanatory.
- ◆ **Specialty metals focus:** Although most analysts see a bright future for these metals largely predicated around growing demand for batteries, there is always a chance that the market for these could undergo a significant correction and thus negatively affect the sector. This is particularly relevant in the case of Co-Ni laterites - these are generally expensive to treat, with the historically high Co prices now driving a re-awakening of interest in them. Pioneer however will be partly insulated from price corrections in the short term with the expected cash flow from the Sinclair Zone.
- ◆ **Prices and markets in general:** These are constant threats to junior resource companies, and will affect the ability to raise capital, but, as mentioned above, with the expected cash flow from the Sinclair Zone the Company will be largely insulated for a period.

OVERVIEW

STRATEGY AND PROJECT OVERVIEW

- ◆ Pioneer's activities are concentrated on a portfolio of specialty metals and nickel projects in Western Australia and Ontario, Canada, as presented in Figure 1.
- ◆ In addition the Company has two gold assets, Kangan and Acra, with major Australian miner Northern Star (ASX: NST) earning into and operating Acra - given the focus on the other projects these will only be discussed briefly.
- ◆ The immediate focus is the commercialisation of the Sinclair Zone Caesium Deposit at Pioneer Dome, with production targeted for mid-2018 - Sinclair is the first caesium discovery in Australia (which was discovered by Pioneer in 2016), and the first globally for a number of years; it is also reportedly, with an Indicated Resource of 10,500t at 17.1 % Cs_2O the third largest known deposit of the caesium bearing mineral pollucite.
- ◆ The Company plans to use the cash flow from the Sinclair Zone to fund other exploration activities.
- ◆ Along with the pollucite the Sinclair Zone hosts lepidolite and other lithium minerals and high purity microcline feldspar - both of these have the potential to provide additional revenue to any upcoming operation, and will be stockpiled pending successful offtake negotiations.
- ◆ Although highlighted as a nickel project, recent work, including an appraisal of historic drilling data and recent drilling has highlighted the potential of Blair Dome (also referred to as Golden Ridge), to host lateritic cobalt mineralisation.
- ◆ Blair Dome/Golden Ridge is also prospective for further nickel sulphide discoveries, with recent drilling testing a geological model intersecting significant sulphide nickel mineralisation.
- ◆ The Company is actively working on the Canadian Mavis Lake and Raleigh Lithium Projects, with drilling to date intersection significant thicknesses of moderate to high grade spodumene bearing pegmatites.

Figure 1: Pioneer project location map



Source: Pioneer

FINANCIAL POSITION

- ◆ As of December 31, 2017, the Company had A\$5.44 million in cash and no debt, with this sufficient to fund planned activities through CY2018.
- ◆ During CY2017 the Company spent A\$3.602 million on exploration and A\$1.205 million on administration and staff costs, highlighting the high proportion of funds going into the ground.
- ◆ During the year the Company raised A\$5.662 million (before costs) from oversubscribed capital raisings; this included a placement that raised ~A\$1.3 million through the issue of 92.9 million shares and an SPP that raised ~A\$4.37 million from the issue of 312.4 million shares - both were at A\$0.014/share, with the Directors subscribing for A\$0.245 million in the placement.

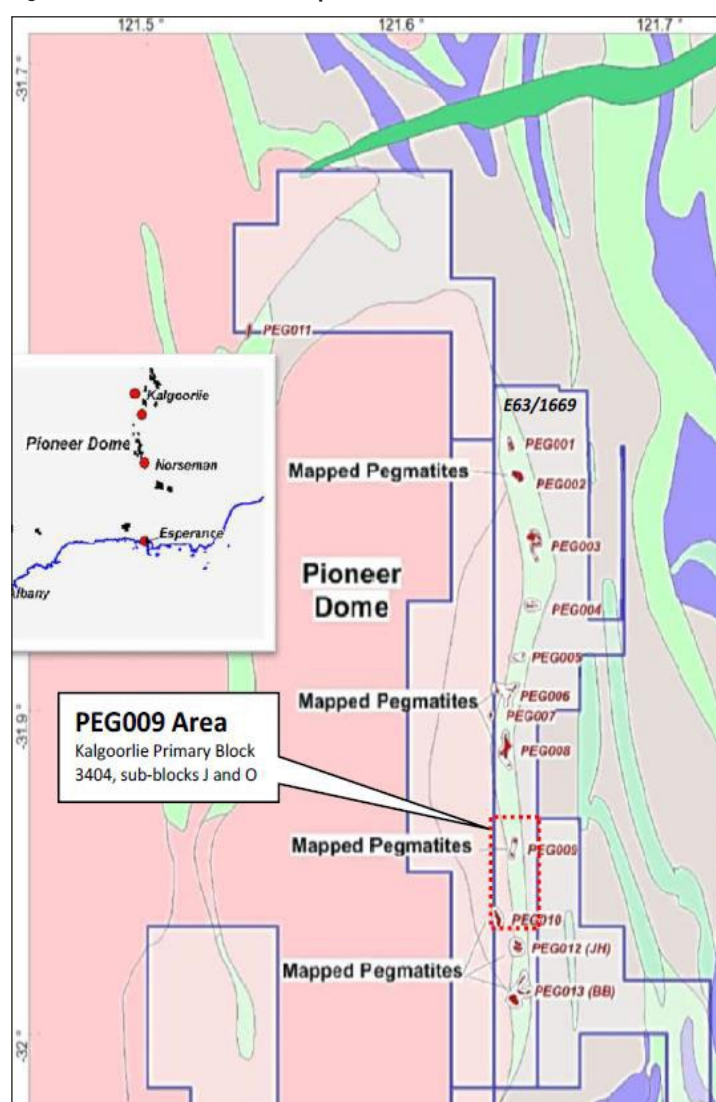
PIONEER DOME LITHIUM PROJECT - PIONEER 100%

(INCLUDES SINCLAIR ZONE CAESIUM)

Location and Tenure

- ◆ Pioneer Dome comprises seven granted Exploration Licences ("ELs"), one granted Mining Lease ("ML") and one granted Miscellaneous Licence ("L"), covering an area of some 350km² (inclusive of the 97Ha ML and 119Ha L) - all tenements are in good standing.
- ◆ The majority of the tenements are shown in Figure 2, and the Sinclair Zone leases detailed in Figure 3 - Sinclair is centred over pegmatite PEG008 as shown in Figure 2.
- ◆ Lepidico is farming into 2 sub-blocks (~5.80km²), centred over pegmatite PEG009 (Figure 2).

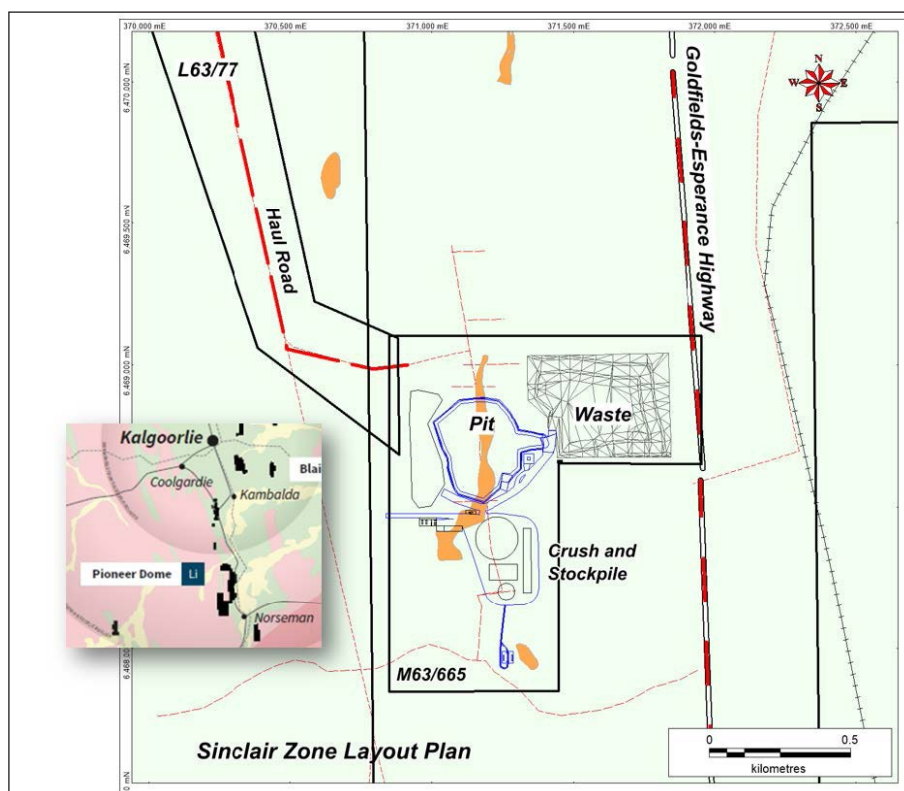
Figure 2: Pioneer Dome location map



Source: Lepidico

- ◆ The Project is readily accessible, being located adjacent to the sealed Goldfields-Esperance Highway, centred some 200km north of the port at Esperance and 130km south of the major mining centre of Kalgoorlie; the nearest town is Norseman (population ~1,000) 40km to the south.

Figure 3: Sinclair Zone leases



Source: Pioneer

Lepidico Farm-in

- ◆ As announced to the market on February 23, 2017, Lepidico is farming into two sub-blocks covering pegmatite PEG009 (Figure 2).
- ◆ The key purpose of the farm-in is to define a lithium mica resource to provide at least five years' feed for Lepidico's proposed Stage 1 LMax® processing plant, which is currently the subject of a pre-feasibility study ("PFS").
- ◆ LMax® is a proprietary metallurgical process designed to produce lithium carbonate from lithium-bearing micas, including lepidolite; the reasoning behind development of the process is to provide a disruptive third source of lithium carbonate in addition to the current spodumene hard rock and brine production.
- ◆ Key terms of the farm-in include:
 - Stage 1 farm-in: Within 12 months of the commencement date, Lepidico would commit to undertaking such work as to enable the delineation of a lepidolite-rich JORC Code-compliant Inferred Resource of at least 500,000t grading at least 1.2% Li₂O based on lepidolite content.
 - Stage 2 farm-in: Within 24 months of the commencement date, Lepidico is to delineate a lepidolite-rich JORC Code-compliant Indicated Resource of at least 500,000t grading at least 1.2% Li₂O based on lepidolite content to earn a 75% equity interest in the PEG009 Area.
 - If Lepidico fails to meet either the Stage 1 or Stage 2 requirements the agreement will terminate and Lepidico will not retain any rights in the PEG009 Area.
 - Lepidico has rights to lepidolite and minerals able to be treated by the LMax® process only; all rights relating to pollucite and spodumene remain with Pioneer.
 - Upon Lepidico earning 75%, Pioneer will be free carried through feasibility until any decision to mine
 - Following this, the companies shall form a contributing joint venture ("JV"), with both having the option to dilute. If Pioneer dilutes to an interest of less than 10% then its interest would convert to a 2% net LMax® refinery royalty. If Lepidico dilutes to an

interest of less than 10% then it will be deemed to have withdrawn from the joint venture, its interest would be deemed to be zero, and all rights in the PEG009 area will revert to Pioneer.

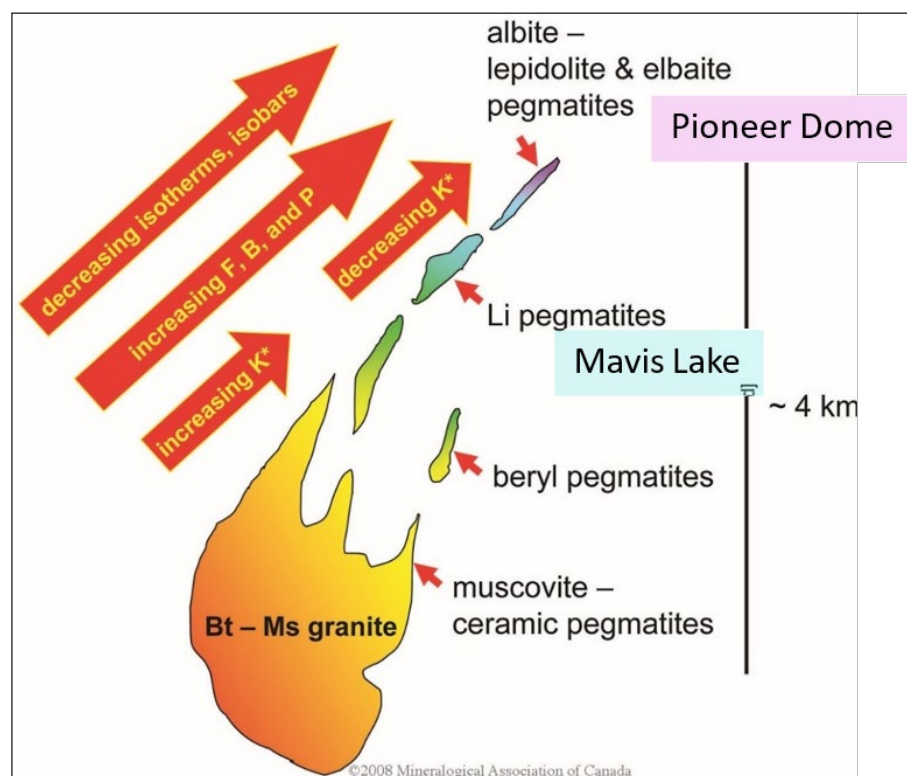
Production Strategy

- ◆ Pioneer is well advanced in plans to mine and sell the high value pollucite mineralisation via a small open pit, with mine gate DSO sales of the pollucite.
- ◆ This will result in a low cost, low risk operation that will have the potential to bring in appreciable cash flow which will then fund exploration at Pioneer Dome and the Company's other projects.
- ◆ Given that the lithium minerals (lepidolite and petalite) and microcline will need to be mined through to get to the other minerals, Pioneer will stockpile these pending successful offtake negotiations for their sale - revenue from these minerals is unlikely to be critical for the viability of the Project.

Geology and Mineralisation

- ◆ Pioneer Dome hosts typical highly fractionated LCT style pegmatite, with lepidolite and petalite being the main lithium bearing minerals identified to date (however there is the potential for spodumene mineralisation, with this mineral identified in some of the drilling to date); there is also appreciable pollucite, a caesium bearing mineral, and the main primary global source of caesium.
- ◆ The highly fractionated nature is evidenced by the presence of pollucite and the particular lithium-bearing minerals as shown in Figure 4 below.

Figure 4: LCT pegmatite evolution.



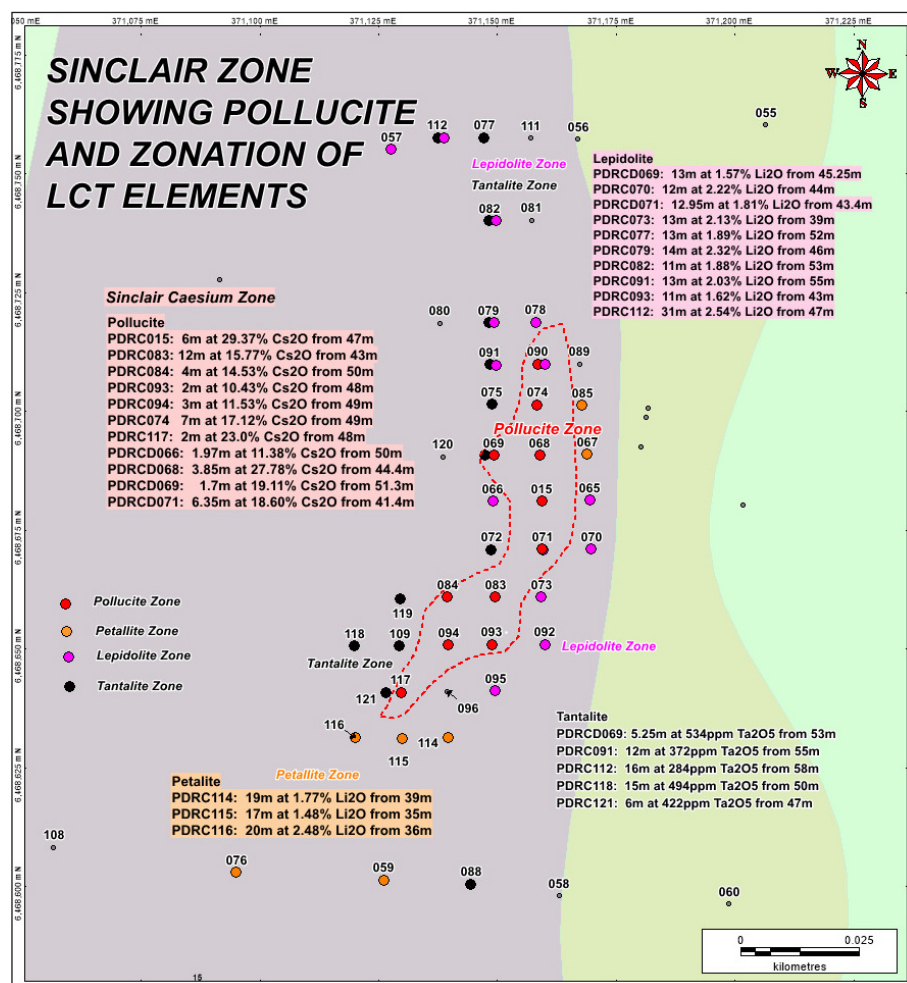
Source: Pioneer

- ◆ The pegmatites, of which 13 have thus far been identified (which include 19 targets) over a north-south strike length of some 20km (Figure 2) are Archaean in age, and hosted within greenstones of the Eastern Goldfields Province of the highly mineralised Yilgarn Craton; the Archaean cratons of Western Australian are the largest global producers of hard-rock lithium, however unlike at Pioneer Dome, the major deposits have spodumene as the lithium mineral.
- ◆ The greenstones, which include ultramafic, mafic and sedimentary units dip steeply east and strike north south along the eastern side of the younger Pioneer Dome granite (Figure 2).
- ◆ The greenstone units have been intruded by sills and dykes of pegmatite, related to the intrusion of the granite - these form a swarm of intrusive bodies along the strike length of the eastern side of the granite.

PEG008 Pegmatite

- ◆ Of key interest is the PEG008 pegmatite, which hosts the pollucite mineralisation in the Sinclair Zone, and which is considered similar to the zoned pegmatite that hosts caesium mineralisation at Cabot's Tanco Mine at Bernic Lake in Manitoba, Canada (which reportedly has a resource of 350,000t).
- ◆ The pegmatite, which includes two zones, PEG008A and PEG008B, has a strike length of 2.4km and is up to 80m thick - the mineralisation is ~40m below surface.
- ◆ The pollucite mineralisation occurs as a 15° striking, flat-lying to shallowly west dipping pod with a strike length of ~70m, is up to 20m wide and 10m thick (Figure 5).
- ◆ The pollucite core is within a broader zone of largely lepidolite lithium mineralisation and as closely associated with a zone of high purity microcline feldspar (Figure 6).

Figure 5: Sinclair Zone, showing pollucite and LCT element zonation (prior to the recently completed drilling)

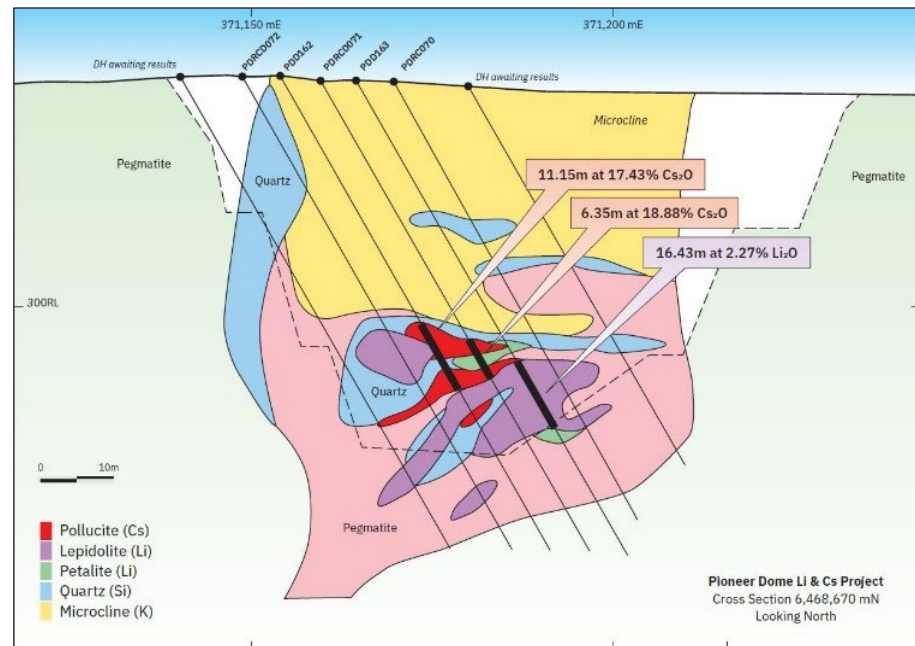


Source: Pioneer

Work Completed

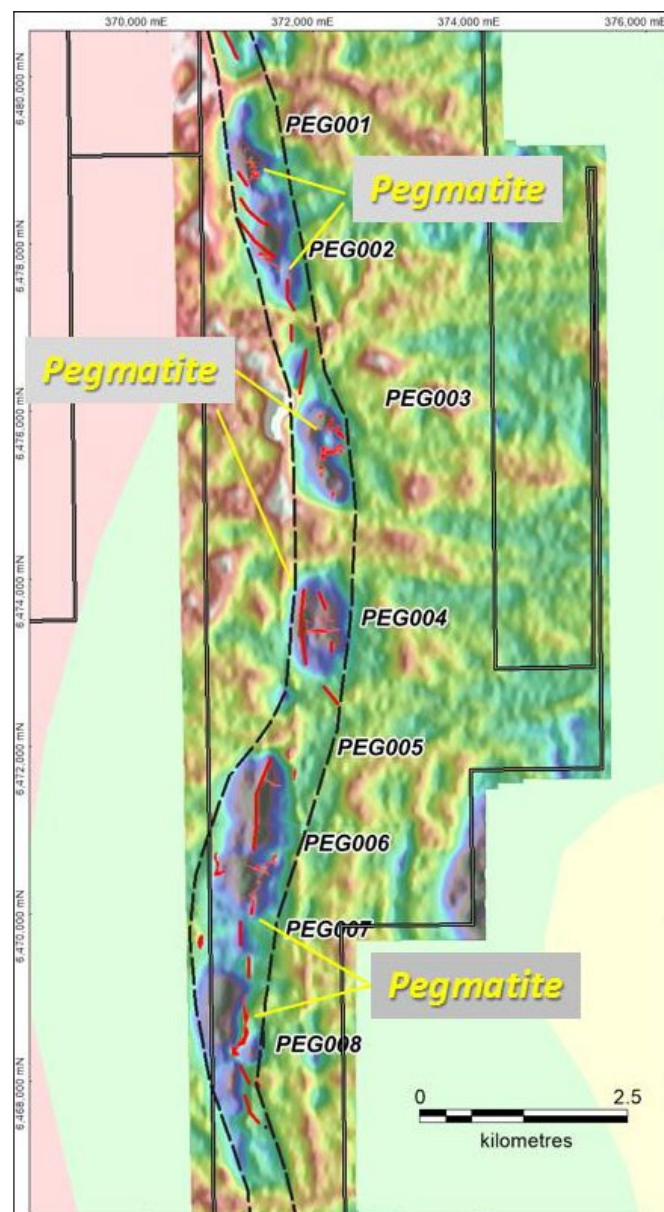
- ◆ Historic exploration work targeted gold and nickel, and included geological mapping, geochemical sampling, geophysics and limited drilling - prior to Pioneer's activities no work had targeted the LCT pegmatite potential.
- ◆ Pioneer recognised the area as being prospective for LCT-type pegmatites following a review of reports of historic exploration over the Pioneer Dome - this and the geological interpretations of the data recognised at least 13 clusters of pegmatites along the 20km strike - these clusters were named PEG001 to PEG013, with the pegmatite corridor being marked by a magnetic low (Figure 7)
- ◆ In early 2016 this was followed up by geological reconnaissance to confirm the geology, with soil sampling (over 15,000 samples initially, followed up by 10,000 samples at the same time as the initial drilling programme) to define drilling targets - the initial soil sampling highlighted the prospectivity of PEG001, PEG002 and PEG008; the later soil sampling concluded that results from pegmatites PEG003, PEG004, PEG006 and PEG009 were encouraging for LCT mineralisation.

Figure 6: Sinclair Zone cross section showing mineral zonation and pit outline



Source: Pioneer

Figure 7: Pioneer Dome pegmatite corridor highlighting correlation with low magnetic zone



Source: Pioneer

Drilling

- ◆ Pioneer has thus far completed five drilling programmes at Pioneer Dome (with a sixth underway), with the majority targeting PEG008 with some limited work at PEG003.
- ◆ Total drilling to date comprises 131 RC and 29 diamond core holes for 14,969m.
- ◆ These programmes include:
 - October 2016 - 64 RC holes for 5,232m;
 - Late 2106/early 2017 - 40 RC and six diamond core holes for 3,232m;
 - June 2017 - 14 RC and three diamond core holes for 1,002m;
 - November 2017 - 33 RC holes for 4,170m; and,
 - Early 2018 - 20 diamond core holes for 1,333.29m.
- ◆ The initial drilling programme discovered significant lithium, tantalum and caesium mineralisation at pegmatite PEG008A, with the more southerly PEG008B not drilled during this programme.
- ◆ This work also recognised the highly fractionated and distal nature of this pegmatite, which is up to 80m thick.
- ◆ Intersections from this initial programme included amongst others:
 - PDRC015 - 7m at 1.52%Li₂O from 52m in PDRC015 and 6m at 27.7% Cs₂O from 47m
 - PDRC021 - 12m at 1.37%Li₂O from 54m and 10m at 408ppm Ta₂O₅ from 54m
- ◆ Of major interest however was the intersection of 6m at 27.7% Cs₂O from 47m in hole PDRC015, indicative of the distal nature of the pegmatite.
- ◆ The second drilling programme was completed in the December 2016 quarter, with this intersecting further lithium and caesium mineralisation, including intersections of 11m at 2.63% Li₂O from 47m (hole PDRC067) and 6.35m at 18.60% Cs₂O from 41.4m (hole PDRC071).
- ◆ This included drilling the pollucite zone out at 10m x 10m, with the results of drilling up unto the end of this programme being used in the initial MRE for the pollucite zone, with these results also being the catalyst to look towards commercialisation of the mineralisation.
- ◆ This work, along with geological mapping and sampling recognised that PEG008 has a strike length of some 2.4km, with only 30% of this being drilled at the time.
- ◆ RC drilling in the third programme was largely targeted at lithium mineralisation to the south of the Sinclair Zone pollucite; this intersected significant widths and grades of interpreted lepidolite mineralisation (however with some other species including petalite and possibly spodumene).
- ◆ Notable lithium intersections included amongst others:
 - PDRC114 - 19m at 1.37%Li₂O from 39m (spodumene and/or petalite); and,
 - PDRC112 - 31m at 2.54%Li₂O from 47m (lepidolite).
- ◆ Tantalum intersections included 15m at 494ppm Ta₂O₅ from 50m in PDRC118.
- ◆ The diamond drilling, although completed initially for geotechnical purposes, confirmed the presence of the largely mono-mineralic microcline feldspar zone that forms a major part of the overburden to the pollucite mineralisation, and is continuous along strike within the zone.
- ◆ The fourth programme targeted PEG003 and PEG008B - this downgraded PEG003 with zones of pegmatitic granite being intersected, however confirmed that PEG008B contained well differentiated pegmatites with mono-mineralic zoning similar to that in PEG008A to the north - further work is required to assess this prospect.
- ◆ The recently completed fifth programme concentrated on the Sinclair Zone, including infill drilling to a 10m x 5m spacing; this confirmed the tenor of the caesium mineralisation and the enveloping lithium mineralisation; intersections included:
 - PDD162 - 11.15m at 17.43%Cs₂O from 38.2m (pollucite),
 - PDD164 - 16.10m at 2.64%Li₂O from 47m (lepidolite/petalite).
- ◆ Four of the holes were drilled for geotechnical purposes to assess ground conditions for the proposed pit walls.

Mineral Resources

- ◆ The initial pollucite MRE was completed subsequent to the second drilling programme, with this presented in Table 1.

Table 1: Sinclair Zone Mineral Resource Estimate

Sinclair Zone Mineral Resource Estimate			
Category	Tonnes	Grades % Cs ₂ O	Contained Cs ₂ O
Indicated	10,500	17.70%	1,860
Inferred	0	0%	0
Total	10,500	17.70%	1,860

Source: Pioneer

- ◆ The results of the recently completed drilling will be used to upgrade this MRE and possibly declare initial Reserves in preparation for mining activities.

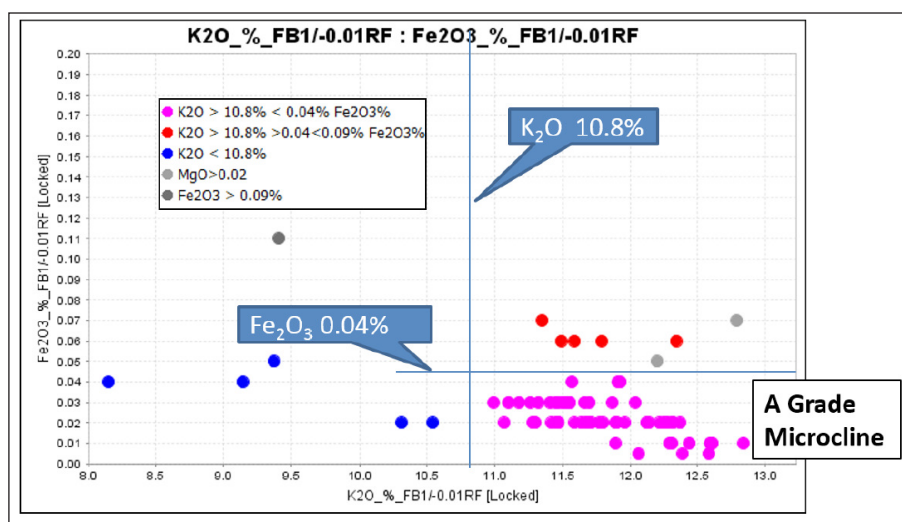
Metallurgy

- ◆ Given plans for the commercialisation of the three products, namely pollucite, lepidolite/petalite and microcline feldspar, the Company has carried out preliminary test work and/or product analysis on all three with very promising results.
- ◆ One key feature is the largely mono-mineralic nature of the different mineralisation types - this will result in products potentially being able to be sold on a DSO basis, without requirements for an on site concentration plant.
- ◆ The Company has successfully produced caesium formate brine from the Sinclair Zone.
- ◆ In addition to the farm-in deal with Lepidico, Pioneer has elected, given the identified lepidolite mineralisation, to participate in the LMax® business with Lepidico - samples from the Sinclair Zone were studied for the suitability to be treated using the LMax® with the following results:
 - Demonstrated the potential for high specification battery grade lithium carbonate grading 99.7% to be produced using the technology; and,
 - The process reached 93.9% lithium extraction and 93.3% caesium extraction from the flotation concentrate, with estimated lithium recovery to the final lithium carbonate product of 90%.
- ◆ 82 microcline samples from two diamond drillholes, PDD125 and PDD126, were analysed to determine the quality of the mineral - 61 samples returned analyses consistent with published specifications of A Grade Microcline - average specifications of all samples are listed in Table 2 and shown in Figure 8; additional samples are currently being analysed.

Table 2: Sinclair Zone microcline average assays and specification guidance

Sinclair Zone microcline average assays and specification guidance		
Element Oxide	A-Grade Microcline Guidance	Sinclair Microcline Analysis
Beneficial		
K ₂ O	10.8% ± 0.5%	11.79%
Na ₂ O	2.5% max	2.99%
SiO ₂	66.0% ± 1.0%	65.6%
Al ₂ O ₃	18.5% ± 0.5%	18.80%
R ₂ O: (Na ₂ O + K ₂ O)	14.0% min	14.78%
Deleterious		
Fe ₂ O ₃	0.09% max	0.03%
MgO	0.2% max	0.09%
CaO	0.25% max	0.02%
TiO ₂	0.3% max	0.01%
LOI	0.9% max	0.03%

Source: Pioneer

Figure 8: Sinclair Zone microcline sample K₂O-Fe₂O₃ plot

Source: Pioneer

Mine Design

- ◆ The upcoming resource upgrade and reserves (subject to firm product pricing) will be used to update and finalised the mine design for the proposed pollucite pit; this work is expected to be completed by the end of May

Permitting

- ◆ Permitting is well advanced, with the Mining and Miscellaneous Leases granted in late 2018.
- ◆ This grant followed the Company's signing of mining and heritage agreements with the Ngadju Native Title Aboriginal Corporation RNTBC, representatives of the Ngadju People, the Traditional Owners of the land that the proposed operation is located on.
- ◆ The Company is working on other permits that will be required to commence mining, including mining and rehabilitation plans.

Offtake and Marketing

- ◆ The Company is continuing offtake and marketing negotiations for the three proposed products; there however may be difficulty in selling the lepidolite produced, however this is not critical to the economics of the operation.

Ongoing and Upcoming Work

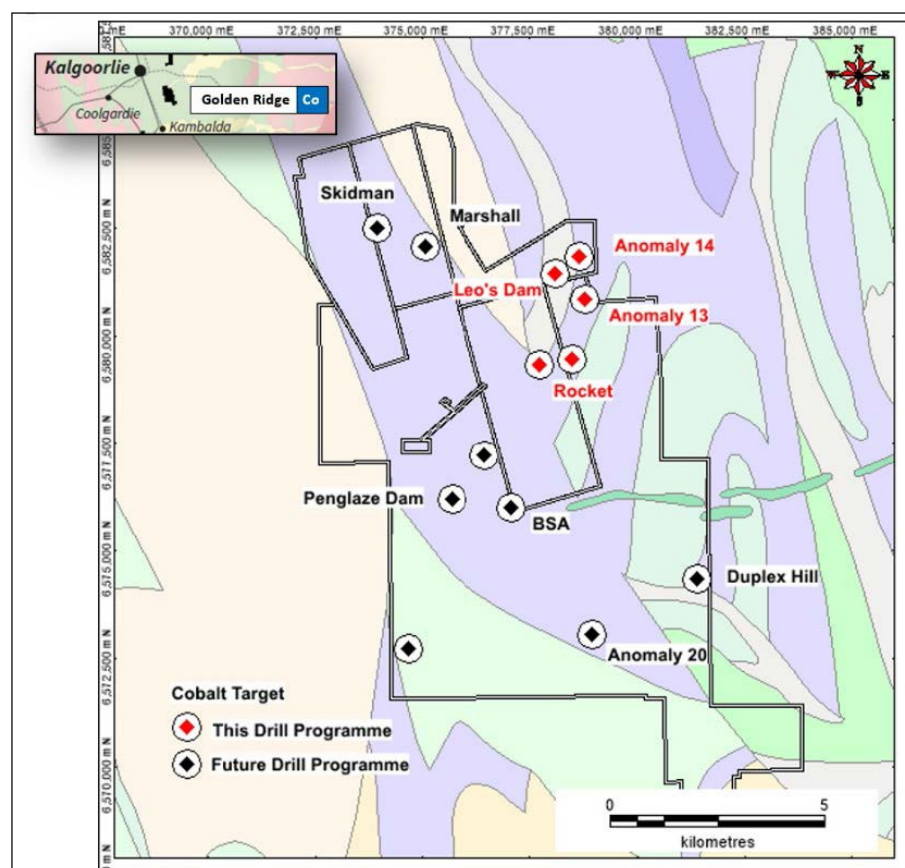
- ◆ Activities are currently focussed on the commercialisation of the Sinclair Zone, with these including amongst others:
 - Resource upgrade, initial declaration of Reserves and final mine design;
 - Finalising offtake agreements; and,
 - Final operating approvals from the Department of Mines, Industry Regulation and Safety ("DMIRS").
- ◆ As mentioned earlier, this is targeted at commencing mining by July, 2018.
- ◆ In addition the Company will continue the evaluation of other targets, with this including drilling which has recently commenced and is testing targets to the north of the Sinclair Zone - there is the potential for the discovery of addition pollucite mineralisation, as well as further lithium, including spodumene mineralisation.

GOLDEN RIDGE COBALT AND NICKEL PROJECT – PIONEER 100%

Location and Tenure

- ◆ The Golden Ridge (also termed Blair Dome) Project includes four granted MLs, one Miscellaneous Licence and one EL for 115km², with all tenements being in good standing (Figure 9).
- ◆ Blair Dome is located ~30km SE of Kalgoorlie, and readily accessible via the Goldfields Highway and mine roads to the previously operated Blair Nickel Mine, which is on the property and now shut down; however, increases in nickel prices may again make this a viable operation.

Figure 9: Blair Dome Project location, tenements, key prospects and geology



Source: Pioneer

Geology and Mineralisation

- ◆ The Project is located over the mafic ultramafic Blair Dome complex, one of a number of similar Archaean domes in the Yilgarn Craton of the Kalgoorlie/Kambalda district that host world-class sulphide nickel mineralisation.
- ◆ The geology (Figures 10 and 11) includes ultramafic flows and sediments overlying an older succession of mafic volcanics and volcanic derived sediments - primary nickel mineralisation is largely at the basal contact of the ultramafic (komatiitic) flows, show as the Leo's Dam and Marshall surfaces in Figure 11.
- ◆ Blair Dome is analogous in size and style to the Kambalda Dome, which hosts a number of the world class nickel sulphide mines, including Otter Juan and Long amongst others.
- ◆ As mentioned earlier, the now closed underground Blair Nickel Mine is located within the Golden Ridge Project - Resources are presented in Table 3.

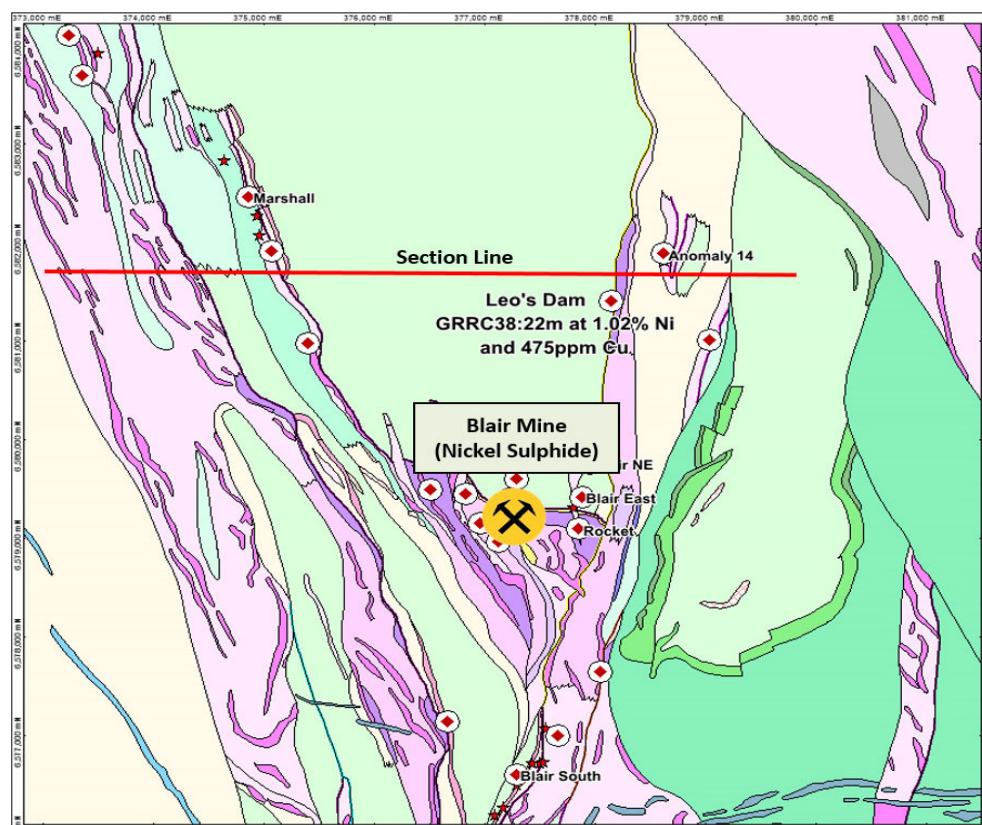
Table 3: Blair Nickel Mine Mineral Resource Estimate

Blair Nickel Mine Mineral Resource Estimate			
Category	Tonnes	Ni %	Contained Ni (t)
Indicated	75,560	4.37	3,300
Inferred	147,150	2.18	3,210
Total	222,710	2.92	6,510

Source: Pioneer

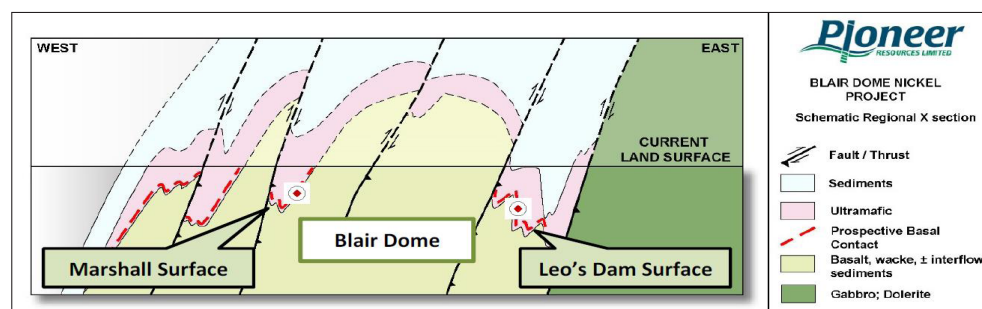
- ◆ As for the other domes in the region, there is the potential for the Blair Dome to host a camp of deposits; ~12km of the prospective basal ultramafic contact has been recognised in work completed to date, with another five km strike recognised in subsidiary domes.
- ◆ More recent work by Pioneer, including a review of historic data, has recognised the potential of the Project to host lateritic Co-Ni mineralisation - these laterites are formed by the deep weathering of underlying mafic to ultramafic units, resulting in the upgrading of more immobile elements including nickel and cobalt.
- ◆ These generally occur as relatively thin, laterally continuous sheets above the precursor units.

Figure 10: Simplified Blair Dome bedrock geology, with key drilling intercepts



Source: Pioneer

Figure 11: Simplified Blair Dome bedrock geology, with key drilling intercepts



Source: Pioneer

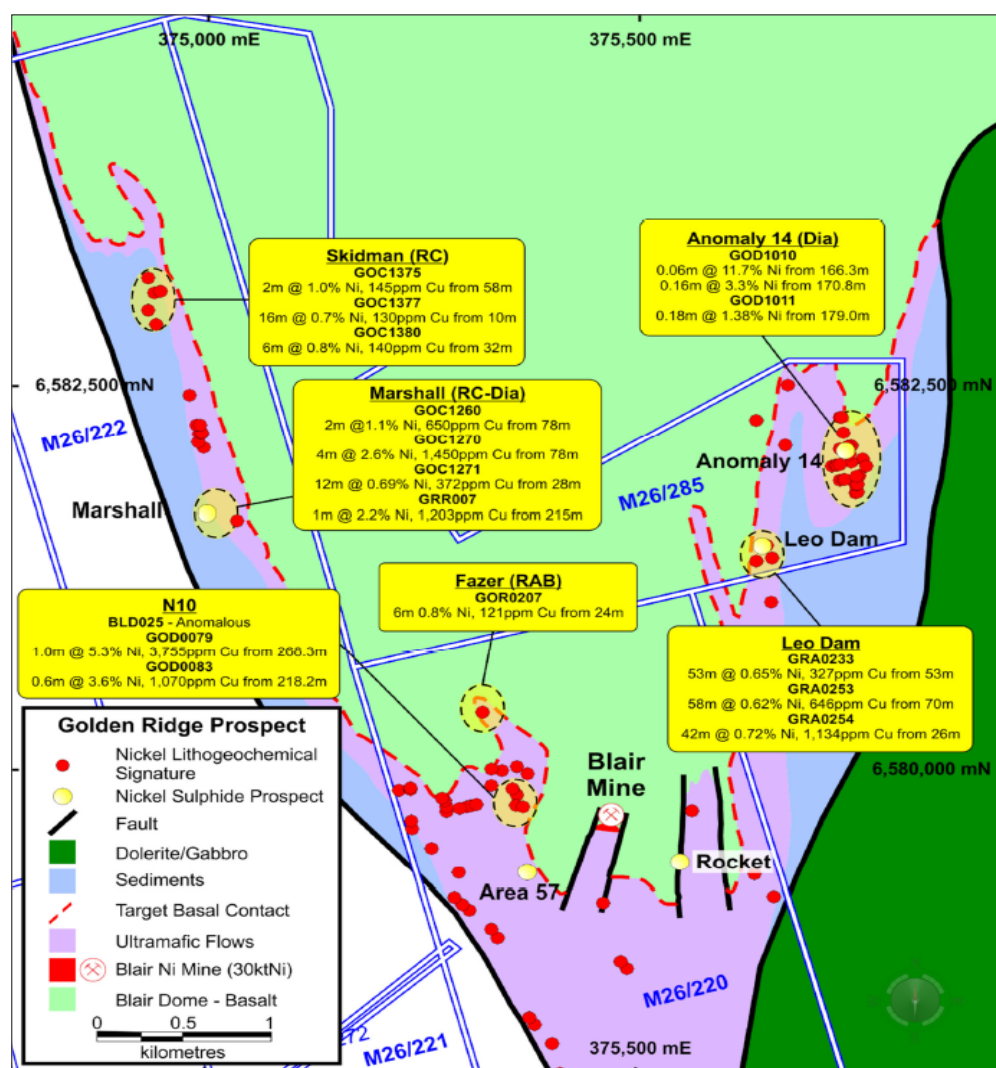
Exploration History and Work Completed

- ◆ Blair Dome has seen significant work by a number of explorers since the 1960s nickel boom, with this largely concentrating on sulphide nickel - previous workers include Western Mining Corporation ("WMC"), who discovered the Blair Nickel Mine, which produced some 32,900t of contained nickel from 1990 until its closure in 2008 due to depressed nickel prices.
- ◆ Production was 1.26Mt at 2.62% Ni, with the ore being treated at Kambalda - the mine was operated by WMC with periodic halts until 2003, at which time it was re-opened and operated by Australian Mines until its closure in 2008.

Pioneer Nickel Sulphide Exploration

- ◆ From 2008 until 2017, work by Pioneer concentrated on the potential for nickel sulphide mineralisation with extensive work, including geological mapping, geochemical sampling, geophysics and drilling being completed.
- ◆ This, along with the results of earlier work has identified a number of key prospects along the ultramafic basal zone; these and selected intersections are shown in Figure 12.

Figure 12: Blair Dome geology, prospects and drill results



Source: Pioneer

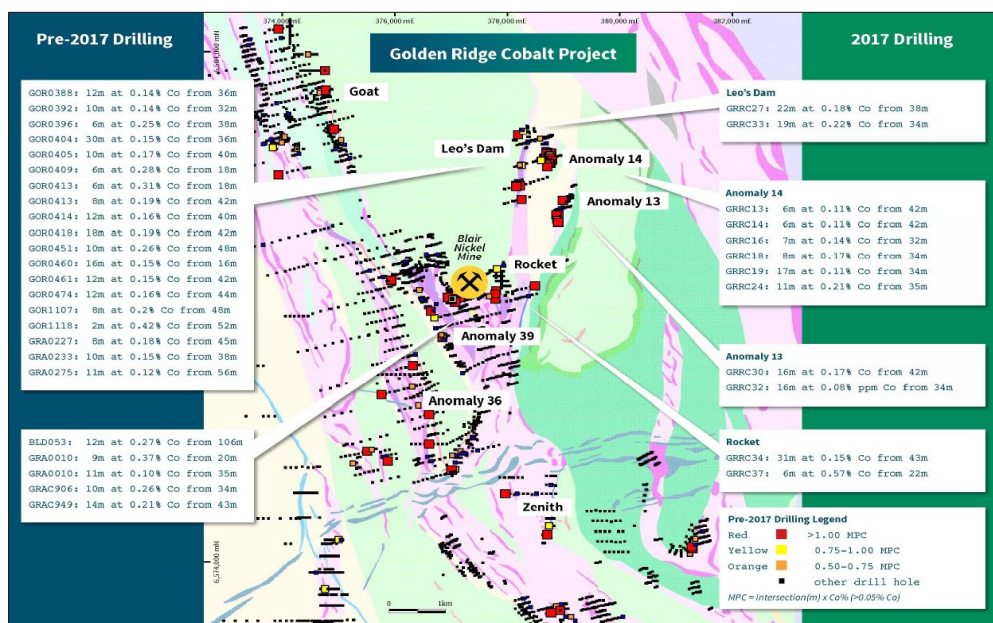
- ◆ This work is ongoing, with recent drilling discovering a broad zone of disseminated nickel sulphides at the Leo's Dam prospect, as reported to the market on January 25, 2018.
- ◆ This hole, GRRC38, intersected the following:
 - 22m at 1.02% Ni and 475ppm Cu from 202m, including;
 - 3m at 1.27% Ni and 526ppm Cu from 202m;
 - 4m at 1.23% Ni and 503ppm Cu from 213m; and,
 - 4m at 1.08% Ni and 616ppm Cu from 220m.
- ◆ The results of this drilling validate the exploration model, and highlight the potential of the Blair Dome for further nickel sulphide discoveries.
- ◆ One feature to come out of the drilling however is the more mafic composition of some of the host rocks; unlike at Kambalda where the mineralisation is largely hosted in ultramafic komatiitic rocks, mineralisation in hole GRRC38 is hosted in peridotite and pyroxenite.
- ◆ In addition, the sulphides are considered to be high tenor (which helps to produce a valuable high grade concentrate) -sulphides from the peridotite contain 53% Ni and the pyroxenite 32% Ni.

Pioneer Co-Ni Laterite Exploration

- ◆ More recent work by Pioneer has been concentrated on identifying and confirming the Co-Ni laterite potential of Golden Ridge, with this being successful.
- ◆ Initial work included a review of historic drilling results, with this identifying numerous intersections with Co assays above 0.10% - this included holes drilled between 1975 and 2008 by previous explorers and from 2008 onwards by Pioneer.
- ◆ Significant intersections included 12m at 0.226% Co from 106m at Rocket and 12m at 0.139% Co from 36m at Anomaly 14.

- ◆ This was followed up by a 3,084m, 31 hole RC drilling programme with results announced to the market on January 24, 2018 - this targeted Leo's Dam, Anomaly 14, Anomaly 15 and Rocket, with results (and the results of historic drilling) shown in Figure 13.
- ◆ Best results included amongst others:
 - GRRC34 - 31m at 0.15% Co and 0.37% Ni from 43m (Rocket), and,
 - GRRC33 - 19m at 0.22% Co and 0.23% Ni from 34m (Leo's Dam).
- ◆ Although resources are yet to be estimated, these drill grades compare very favourably with the grades of published resources of other laterite projects in Australia.
- ◆ This is a key point to differentiate Golden Ridge from other projects; in addition laterite metallurgical treatment is generally expensive, and thus higher grades are preferable, along with having appreciable by-products.

Figure 13: Golden Ridge cobalt and nickel laterite results



Source: Pioneer

Ongoing and Upcoming Activities

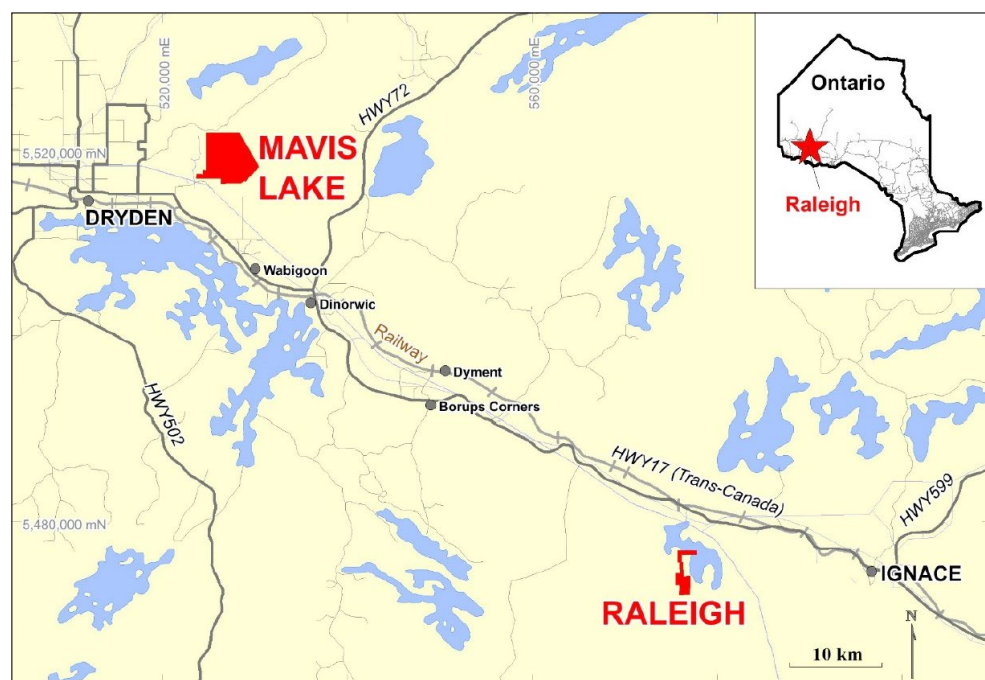
- ◆ Pioneer will continue to progress both the nickel sulphide and laterite strategies, with the immediate aim for the laterite to estimate an exploration target, which will then form the basis for sufficient drilling to allow an initial MRE to be estimated - it is expected that drilling will commence in the 2018 December quarter.
- ◆ More drilling is also planned to test additional nickel sulphide targets, initially at Leo's Dam and then working back towards the Blair mine.

MAVIS LAKE AND RALEIGH LITHIUM PROJECTS – EARNING 80%

Location and Tenure

- ◆ Mavis Lake (2,624ha) and Raleigh (440ha) in which Pioneer is earning 80% from International Lithium Corporation (TSX.V:ILC, "ILC") are both located in western Ontario (Figure 14), close to the Trans-Canadian Highway 17 and Trans-Canadian Railway; in addition applications for additional claims have been lodged at both projects.
- ◆ The closest towns are Dryden (population ~8,000) and Ignace (population ~1,200), with Dryden being 10km from Mavis Lake and 75km from Raleigh.

Figure 14: Mavis Lake and Raleigh project locations



Source: Pioneer

Earn-in Terms

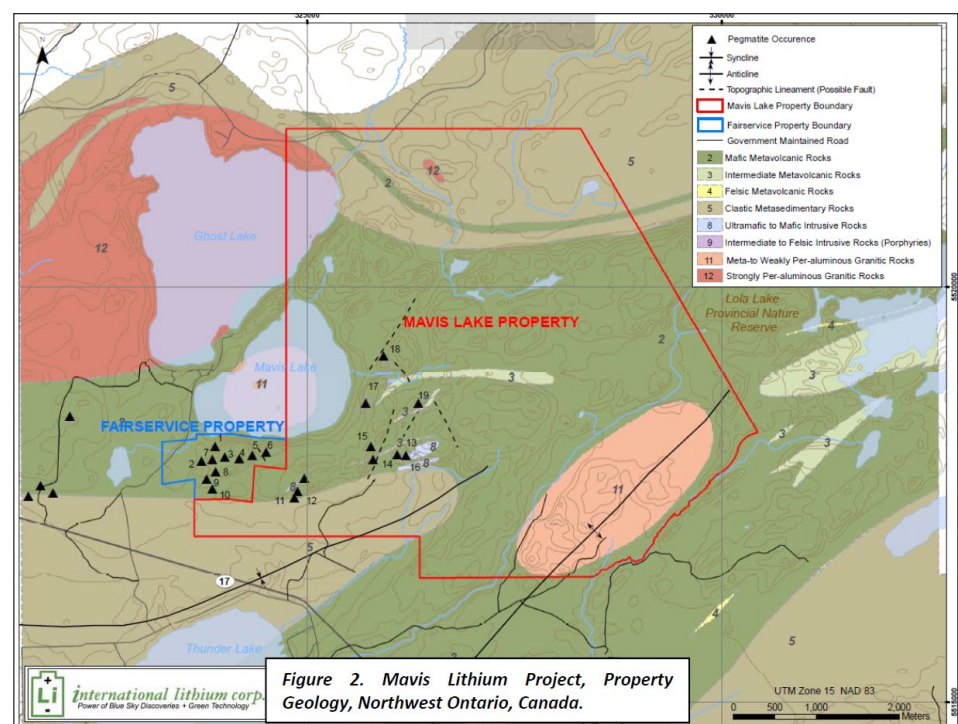
- ◆ In summary, earning an initial 51% of both projects will entail exploration expenditure of C\$1.75 million over three years, and payments to ILC of C\$625,000, notionally by way of 50:50 shares:cash.
- ◆ An additional 29% can be earned over the subsequent seven years through expenditure of C\$8.5 million at Mavis Lake and the completion of a pre-feasibility study at Raleigh.
- ◆ More detailed terms of the Mavis Lake earn-in, which was announced to the market on March 15, 2016 include:
 - In exchange for an exclusive three month due diligence Pioneer subscribed for C\$100,000 of units in ILC, at a price of C\$0.08 per unit comprising one common share and one-half of one transferable common share purchase warrant. Each warrant entitles the holder to acquire one common share of ILC for a period of three years from the date of issuance at a price of C\$0.12 per share;
 - Pioneer may earn a 51% interest in the Project by expending C\$1.5 million on exploration activities within a period of 3 years ("First Earn In"); and paying to ILC a total amount C\$375,000 in an approximate 50/50 proportion of cash and shares over three years;
 - Following the First Earn In, ILC will accrue a 1.5% Net Smelter Return royalty. Pioneer may buy back this royalty for C\$1.5 million. In addition, a pre-existing 5% royalty over the Fairservice Prospect may be purchased by the Joint Venture for an additional C\$1 million; and,
 - Pioneer may then earn an additional 29% through expending C\$8.5 million within 7 years, (total C\$10 million over 10 years to earn a total interest of 80%). Thereafter the Joint Venturers will contribute on a pro-rata basis. If either party dilutes to 15% project equity, it will retire from the joint venture and revert to a 1.5% royalty.
 - Pioneer will have a right to participate in the acquisition of certain other lithium project opportunities identified by ILC.
- ◆ The earn-in terms for Raleigh, which was announced on July 13, 2018, soon after completion of the Mavis Lake agreement include:
 - Pioneer may earn a 51% interest in the Project by expending C\$1.25 million on exploration activities within a period of 3 years ("First Earn In"); and paying to ILC a total amount C\$250,000 in an approximate 50/50 proportion of cash and shares over three years. Pioneer has indicated that it plans to adopt a minimum C\$500,000 budget for the Project, for the next 12 months.
 - Following the First Earn In, ILC will accrue a 1.5% Net Smelter Return royalty. Pioneer may buy back this royalty for C\$1.5 million.

- ILC and Pioneer will either form a Joint Venture with further development expenditure met on a pro-rata basis, or Pioneer may earn an additional 29% (to earn a total interest of 80%) through completing a pre-feasibility study, as defined by the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) standards, within 7 years. Thereafter the Joint Venturers will contribute on a pro-rata basis. If either party dilutes to 15% project equity, it will retire from the joint venture and revert to a 1.5% royalty.

Geology and Mineralisation

- Mineralisation at both Mavis Lake and Raleigh is hosted in zoned "LCT" type pegmatites, which are located in the ~3,000Ma to 2,700Ma late Archaean granite-greenstone terranes of the Sioux Lookout Domain ("SLD") of the western Wabigoon Subprovince ("WS"). of the Canadian Shield.
- The Mavis Lake pegmatites, which are one of two distinct pegmatite clusters in the "Dryden Pegmatite Field" have been dated at $2,665 \pm \text{Ma}$ and intrude mafic units of the Brownridge metavolcanics; within the Mavis Lake property two main groups of pegmatites occur, Fairservice and Mavis Lake (Figure 15).

Figure 15: Mavis Lake geology



Source: Pioneer

- The pegmatites occur as sills and dykes and form an arcuate trend around a central peraluminous granite to which the pegmatites are genetically related.
- At Fairservice, individual pegmatite outcrops range from 11m to 240m in strike, and up to 12m in width - the target zone, which includes the Fairservice and Mavis Lake pegmatites has a strike length of at least 4.8km.
- The largest pegmatite at Raleigh (Pegmatite #1) has been intersected in drilling for strike length of 400m, with good down dip continuity being demonstrated by the ILC drilling; a second pegmatite, the Johnson Pegmatite has returned strongly anomalous tantalum values from the single hole drilled into it.
- This occurs in a recognised zone with a N-S strike length of some 4km and a width of ~1.5km; more recent geochemical surveys have highlighted additional areas of lithium anomalism that require mapping and drilling.

Exploration History

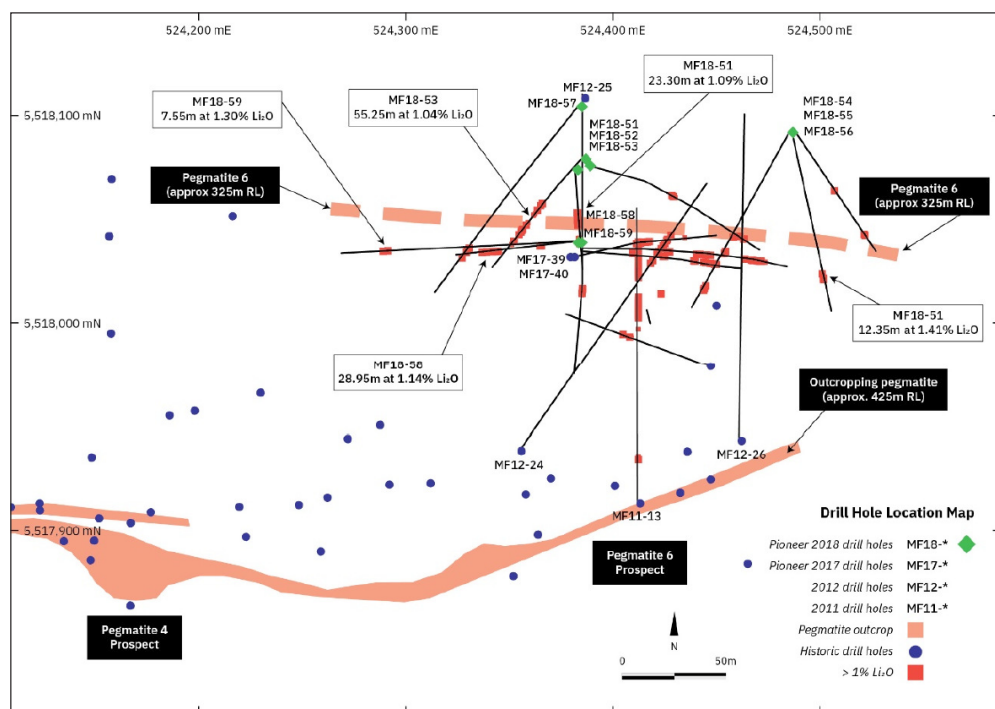
- The area has seen extensive exploration since the 1950's, with the period of 1955 to 1964 including significant lithium exploration - during this period Lun-Echo Gold Mines initially intersected pegmatites in base and precious metal drilling.
- The pegmatites were then followed up in trenching and further diamond drilling.

- ◆ The 1960s to 1980s saw a focus on tantalum and tungsten exploration, with the focus turning more diversified from ~2000 onwards; the 1980s explorers included the Tantalum Mining Corporation of Canada ("Tanco"), the initial operator of the Tanco Mine at Bernic Lake in Manitoba, which is now operated by Cabot and the primary global source of caesium.
- ◆ Prior to Pioneer's entry into the project, Mavis lake had seen three generations of diamond drilling including a programme of 38 holes in 201 by ILC - this largely targeted Fairservice, however a number of holes were also drilled at Mavis Lake, and confirmed the presence of spodumene bearing LCT pegmatites.
- ◆ This drilling included exceptional results from hole MF11-12, which intersected 16m at 1.53% Li_2O from 125m and 26.25m at 1.55% Li_2O from 152m down hole (approximately 100m below surface) - the lithium mineralisation is associated with spodumene.
- ◆ ILC has also completed drilling at Raleigh, with this intersecting 8.5m at 2.38% Li_2O amongst other quality intersections; the Raleigh pegmatites were first identified in 1966.

Work By Pioneer

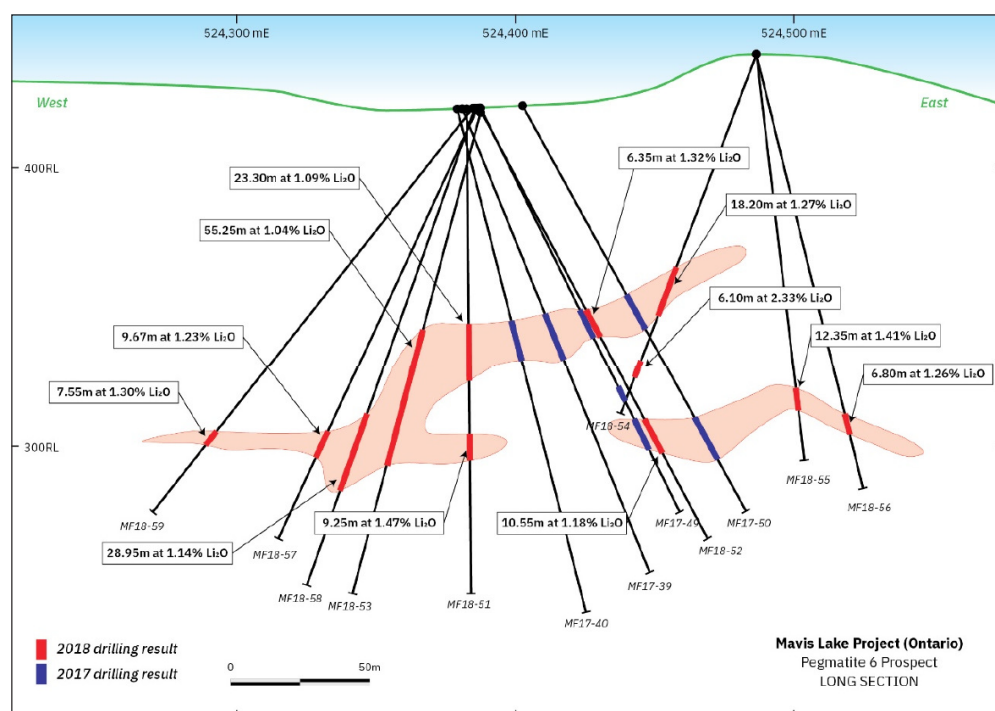
- ◆ Initial field work by Pioneer following the 2016 acquisition of the projects has included lithogeochemical sampling at both Mavis Lake and Raleigh, helicopter drone supported aeromagnetic surveying at Raleigh and ground magnetics surveying at Mavis Lake.
- ◆ Pioneer has completed two drilling programmes at the Fairservice prospect:
 - 2016-2017 Winter - 12 diamond core holes for 1,305m; and,
 - 2017-2018 Winter - nine diamond core holes for 1,591m (Figure 16).
- ◆ Both programmes have intersected significant spodumene mineralisation, with notable results including, amongst others:
 - MF17-49 - 26.30m at 1.70% Li_2O from 111.9m, including 7.70m at 2.97% Li_2O from 130.5m;
 - MF17-50 - 16.55m at 1.45% Li_2O from 74.55m and 23.10m at 1.36% Li_2O from 122.00m; and,
 - MF18-53 - 55.25m at 1.04% Li_2O from 82.75m.
- ◆ These have confirmed the presence of multiple stacked lenses of pegmatites; as shown in the cross section in Figure 17.

Figure 16: Fairservice 2018 drilling plan



Source: Pioneer

Figure 17: Fairservice 2018 drilling EW long section



Source: Pioneer

Current and Ongoing Activities

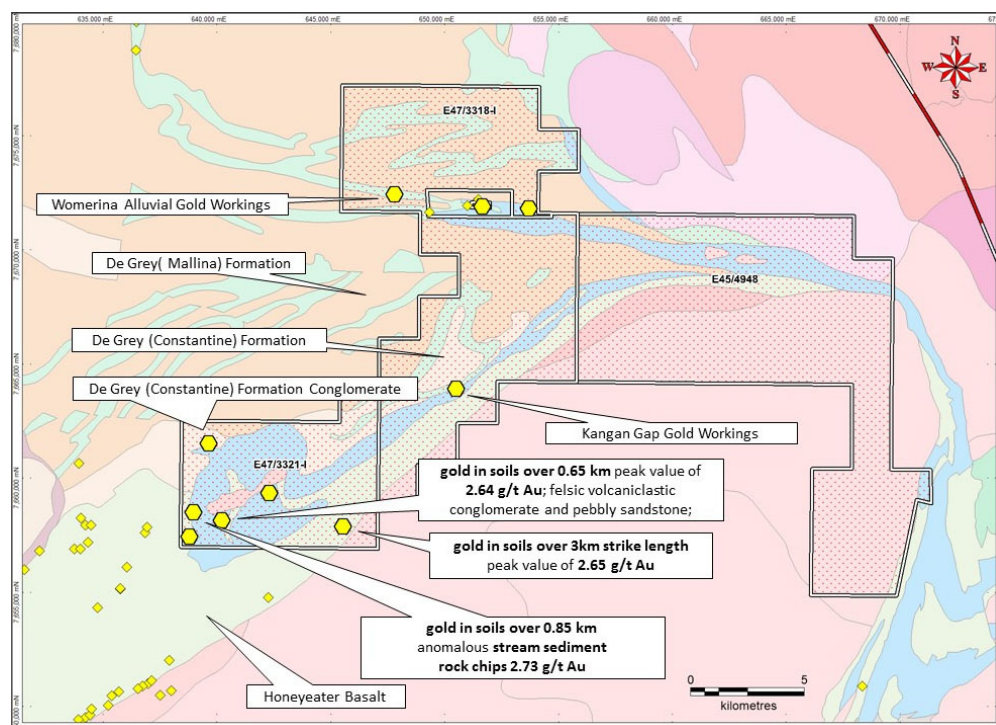
- ◆ Future field activities will include further drilling, which will be undertaken, due to the landscape, in the northern Winter of 2018/2019 - this will include testing the Fairservice pegmatites along strike and at shallower depths.

OTHER PROJECTS

Kangan Gold Project, WA - 100%

- ◆ Kangan, which comprises two granted ELs, and two ELAs for ~336km² is located 80km south of Port Hedland in the Pilbara region of Western Australia (Figure 18), with the tenements originally being picked up for their lithium potential.
- ◆ The region has been the site of a recent “gold rush”, with explorers, including TSX listed Novo Resources (TSX.V:NVO) and ASX listed De Grey Mining (ASX:DEG) amongst others assessing the potential for widespread gold mineralisation, postulated by Dr Quinton Hennigh to be similar to that in the Witwatersrand of South Africa.
- ◆ The De Grey Group rocks of the Pilbara are of a similar age to the units hosting the giant Witwatersrand gold deposits, and Dr Hennigh has proposed a world wide event of microbial mats scavenging gold out of the oceans at around 3.0Ba to 2.9Ba.
- ◆ Work by explorers has discovered areas of nuggetty “watermelon seed” gold hosted largely in conglomerates, however this is work in progress with controls on the distribution of this mineralisation one of the factors that needs to be determined.
- ◆ Historical records indicates the presence of wide spread gold anomalism in the Kangan project area, with this including rock chips up to 2.73g/t Au, stream sediment samples up to 254ppb Au and two widespread soil anomalies.
- ◆ Kangan also covers part of the Womerina South Mine alluvial field, with reports of operations from the 1980s through to 2010 treating material from the De Grey Formation.

Figure 18: Kangan tenements, geology and historical gold exploration results

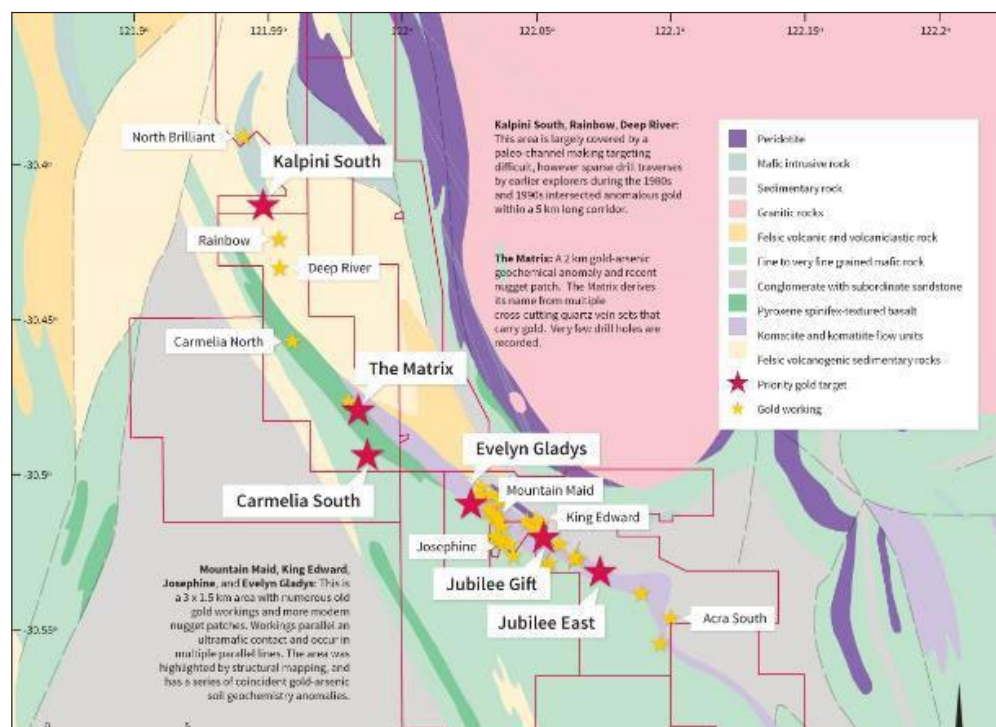


Source: Pioneer

Acra Gold Project, WA, Northern Star Earning 75%

- On October 21, 2016, Pioneer announced that major Australian gold miner, Northern Star Resources (ASX:NST) entered into a farm-in/JV on the Acra Gold Project (which comprises eight granted ELs for ~400km²), located some 40km east of Northern Star's operating Kanowna Belle treatment plant and ~80km NE of Kalgoorlie (Figure 19).

Figure 19: Acra tenements, geology and prospects



Source: Pioneer

- Key terms of the agreement include:
 - Northern Star earned 20% through the payment of A\$500,000 cash;
 - They can then earn another 55% (taking the total to 75%) by the sole funding A\$3 million of exploration expenditure over three years;

- Following this, a JV will be formed with Pioneer being free carried until a Government approval is secured for a future mining proposal; and,
 - Pioneer can then elect to either contribute pro-rata else sell its 25% JV interest at fair market value for cash or NST shares at Pioneer's election.
- ◆ This agreement brings in a well funded, experienced gold company into the Project, and with the proximity to a plant, provides a route to processing; having this facility nearby will also mean that mineralisation that would not support a standalone plant could be potentially viable.
 - ◆ This will also allow Pioneer to take advantage of any exploration and project value upside at no cost (prior to any Mining Approval).
 - ◆ Acra is centred along a 20km long structural zone (Figure 19), with activities, including small scale mining, dating back to the 1880s confirming the potential for gold mineralisation; however most of the more recent work has concentrated on nickel mineralisation.

Miscellaneous Tenements

- ◆ Pioneer also has interests in a number of other tenements in Western Australia - these are largely early stage lithium and nickel exploration areas.

PEER GROUP ANALYSIS

- ◆ Given the different exploration properties, Pioneer can be considered as a diversified explorer, however, with the primary focus on specialty metals, including cobalt and lithium we would consider both the lithium and cobalt companies as peers; there are no peers for caesium however!
- ◆ Although there is some cross over between the cobalt and lithium companies, they are largely separate, and with the lithium companies largely being more advanced due to the earlier onset in the increase in lithium prices.

LITHIUM PEERS

- ◆ Table 4 presents a selection of ASX-listed lithium explorers, developers and producers, with these sorted firstly on project status and then market capitalisation.
- ◆ We have not included lithium brine operators in our comparison; we have included hard rock projects only, which, in the majority of cases are focussed on spodumene bearing pegmatites.
- ◆ We have also included two technology developers, Lepidico and Lithium Australia; these companies are also actively farming into projects.
- ◆ With project status we have used three broad indicative groups, firstly developer and operators, secondly those companies undertaking development studies (with these including anything from scoping through to definitive feasibility) and thirdly "assessment" stage projects - this includes early stage exploration through to drilling and resource definition where development studies have not been commenced.
- ◆ In some cases, where a company has multiple projects, we have considered the status of the majority of the projects to classify a company.
- ◆ Note, we have also included Pioneer in the "assessment" phase, despite the expected near term development of the Sinclair Zone; this is due to the relatively small scale of the planned operation and the majority of the Company's projects being at the appraisal stage.
- ◆ Also, as a comparison metric and where a company has published resources, we have calculated the enterprise value ("EV") per tonne of the companies' equity share of lithium resources.
- ◆ The EV as used here is the undiluted market capitalisation, less cash, plus debt; it doesn't take account of any other projects that may be held or other factors that may affect a project's value, and as such needs to be used with discretion.
- ◆ However, as expected, there is a general trend of increasing value with project advancement.
- ◆ Note that we have used Resources and not Reserves here, as not all projects have declared Reserves - using Reserves will significantly increase the EV/tonne in most cases where Reserves have been published.

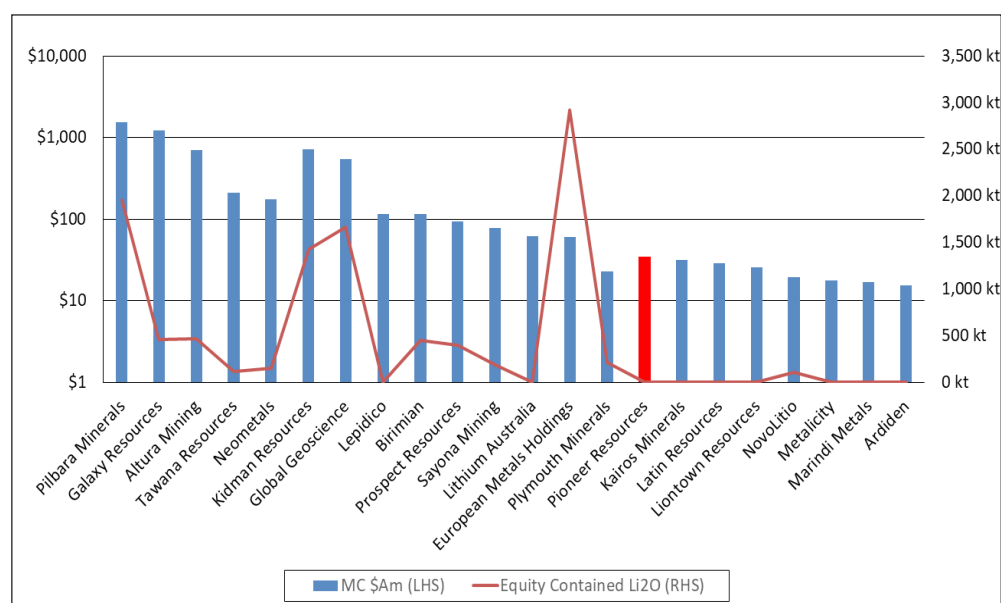
Table 4: Pioneer peers - lithium

Pioneer peers - lithium							
Company	MC (\$Am)	Region	Stage	Global Resource (Mt)	Global Li ₂ O Grade	Equity Contained Li ₂ O (RHS)	EV/ Tonne Li ₂ O
Pilbara Minerals	\$1,547	Western Australia	Development	156 Mt	1.25%	1,953 kt	\$755
Galaxy Resources	\$1,234	Western Australia, Canada, Argentina	Producer	39 Mt	1.18%	456 kt	\$2,574
Altura Mining	\$701	Western Australia	Development	48 Mt	0.99%	469 kt	\$1,566
Tawana Resources	\$212	WA, Namibia	Earning 50% into existing Bald Hill Mine	19 Mt	1.18%	112 kt	\$1,589
Neometals	\$177	Western Australia	Producer	78 Mt	1.37%	147 kt	\$917
Kidman Resources	\$711	Western Australia	Development Studies	189 Mt	1.50%	1,421 kt	\$505
Global Geoscience	\$549	Nevada, USA	Development Studies	460 Mt	0.36%	1,662 kt	\$310
Lepidico	\$115	Australia, Canada, Argentina, Peru, Brazil	Development Studies - Technology	N/A	N/A	N/A	N/A
Birimian	\$115	Mali	Development Studies	33 Mt	1.37%	451 kt	\$228
Prospect Resources	\$93	Zimbabwe	Development studies	73 Mt	1.11%	395 kt	\$185
Sayona Mining	\$78	Quebec, WA	Development studies	18 Mt	1.02%	187 kt	\$400
Lithium Australia	\$61	WA, Mexico	Development Studies - Technology	N/A	N/A	N/A	N/A
European Metals Holdings	\$61	Czech Republic	Development Studies	696 Mt	0.42%	2,921 kt	\$20
Plymouth Minerals	\$23	Spain	Development studies	102 Mt	0.28%	214 kt	\$74
Pioneer Resources	\$34	WA, Ontario	Assessment	N/A	N/A	N/A	N/A
Kairos Minerals	\$32	Western Australia	Assessment	N/A	N/A	N/A	N/A
Latin Resources	\$29	Argentina	Assessment	N/A	N/A	N/A	N/A
Liontown Resources	\$26	WA, NT, Tanzania	Assessment	N/A	N/A	N/A	N/A
NovoLito	\$19	Portugal	Assessment	10 Mt	1.00%	103 kt	\$55
Metalicity	\$18	Pilbara, Yilgarn WA	Assessment	N/A	N/A	N/A	N/A
Marindi Metals	\$17	WA	Assessment	N/A	N/A	N/A	N/A
Ardiden	\$15	Canada	Assessment	N/A	N/A	N/A	N/A

Source: IRESS, Company Reports, IIR analysis

- ◆ A point to note is that the drilling results from Mavis Lake highlight the similarity in grade to the published resources most of the other projects that have provided significant value for the companies; we also note that the drilling at Pioneer Dome has returned some significantly higher lithium grades, however those results are largely from lepidolite and petalite, which, due to the lower grade concentrates produced from this style of mineralisation are not as well received by the market.
- ◆ The same data is presented graphically in Figure 19 - note that, given the wide range in market capitalisation of our lithium universe, we have used a logarithmic left hand axis in Figure 20.

Figure 20: ASX listed lithium companies



Source: IRESS, Company Reports, IIR analysis

COBALT PEERS

- ◆ Table 5 presents data on a number of ASX-listed companies with cobalt assets.
- ◆ Unlike in the case of lithium, there can be significant differences between the geology of the cobalt projects, making direct comparisons risky.
- ◆ In most cases cobalt is associated with other metals, including scandium, PGMs and nickel in the case of laterite deposits and copper in the case of copperbelt style mineralisation (e.g. Nzuri) - in such cases cobalt can be considered as a co-product or by-product; given this a comparison on an EV/tonne of contained cobalt is meaningless.
- ◆ To take different metal assemblages into account we have also included global Ni and Cu grades in our table, with these being the most common associated metals - at current prices (US\$90,000/t Co, US\$7,000/t Cu and US\$15,100/t Ni, the in ground value of 1% Cu is equivalent to ~0.08% Co and 1% Ni is equivalent to ~0.17% Co.

Table 5: Pioneer peers - cobalt

Pioneer peers - cobalt								
Company	MC \$Am	Project and Location	Type	Stage	Global Res. (Mt)	Global Co Grade	Global Ni or Cu Grade	Equity Cobalt (t)
Clean Teq Holdings	\$727	Sunrise, NSW	Laterite	Development Studies	101	0.13%	0.59%	131,300
Australian Mines	\$233	Flemington Sconi, NSW QLD	Laterite	Development Studies	91.9	0.06%	0.58%	55,140
Celsius Resources	\$132	Opuwa, Namibia	Copperbelt Style	Development Studies	112.4	0.11%	0.41% Cu	126,113
Ardea Resources	\$97	Goongarrie, WA	Laterite	Development Studies	108.3	0.10%	0.79%	108,300
Nzuri Copper	\$96	Kalongwe, DRC	Copperbelt	Development Ready	6.91 ¹	0.62%	2.02% Cu	36,416
Cobalt Blue	\$86	Thackaringa, NSW	Cobaltiferous Pyrite	Development Studies	54.9	0.09%	N/A	25,199
Jervois Mining	\$81	Nico Young, NSW	Laterite	Development Studies	99.1	0.08%	0.58%	79,280
GME Resources	\$65	NiWest, WA	Laterite	Development Studies	81	0.06%	1.03%	48,600
Collerina Cobalt	\$61	Homeville, NSW	Laterite	Development Studies	16.3	0.06%	0.93%	9,780
Platina Resources	\$28	Owendale, NSW	Laterite	Development Studies	17.6	0.15%	0.23%	26,400
Barra Resources	\$24	Mt Thirsty, WA	Laterite	Development Studies	31.94	0.12%	0.55%	19,164
Broken Hill Prospecting	\$17	Thackaringa, NSW	Cobaltiferous Pyrite	Development Studies	54.9	0.09%	N/A	24,211

Pioneer peers - cobalt								
Company	MC \$Am	Project and Location	Type	Stage	Global Res. (Mt)	Global Co Grade	Global Ni or Cu Grade	Equity Cobalt (t)
Artemis Resources	\$129	Carlow Castle, WA	Structural	Assessment	N/A	N/A	N/A	N/A
European Cobalt	\$63	Dobsina, Juhineva, Kolba, Slovakia, Finland	Veins, Lodes	Assessment	N/A	N/A	N/A	N/A
Zenith Minerals	\$38	Split Rock, WA	Laterite	Assessment	N/A	N/A	N/A	N/A
Pioneer Res Ltd	\$35	Golden Ridge, WA	Laterite	Assessment	N/A	N/A	N/A	N/A
Aus Tin Mining	\$34	Mt Cobalt, QLD	Laterite, vein	Assessment	N/A	N/A	N/A	N/A
Hylea Metals	\$34	Hylea, NSW	Laterite	Assessment	N/A	N/A	N/A	N/A
Meteoric Resources	\$20	Iron Mask, Mulligan, Quebec, Ontario	Skarn, Vein	Assessment	N/A	N/A	N/A	N/A
Metalicity	\$18	Kyarra, WA	Poss sim to Central African Copperbelt	Assessment	N/A	N/A	N/A	N/A
Corazon	\$14	Mt Gilmore, NSW	Vein	Assessment	N/A	N/A	N/A	N/A

Source: IRESS, Company Reports, IIR analysis

1 - The quoted Nzuri resource includes the mixed and Co only domains, it does not include the Cu only domains

CAPITAL STRUCTURE

- ◆ Pioneer currently has 1,447 million ordinary shares, 44.3 million listed options and 31.97 million unlisted options on issue.
- ◆ The top 20 hold 20.20%, with insiders holding 3.14%.
- ◆ The Company has over 3,650 shareholders.

RISKS

- ◆ **Execution:** There are commonly risks associated with the start-up of any new operation, however we would expect this to be minimal at the Sinclair Zone - open cut methods are well understood and relatively simple with the shallow proposed pit, and due to the fact that sales will be DSO, there will be no downstream processing on site; one of the areas that presents the most risk in operation start-ups.
- ◆ **Permitting:** This is a risk for any near development project, and for Pioneer is applicable at Pioneer Dome; our view however is that the risk here should not be failure to permit (with the ML already granted), but time frames being longer than expected.
- ◆ **Exploration:** This applies mainly at Blair Dome and Mavis Lake/Raleigh, even though mineralisation is demonstrated at both properties; the key risk at Mavis Lake will be defining shallower mineralisation; as it stands it is reasonable deep with an inherent high strip ratio that could prejudice the viability of any potential operation.
- ◆ **Funding:** This is a perennial issue for junior explorers and developers, however Pioneer is largely insulated from this at the moment with sufficient cash for planned activities in 2018 and the potential for reasonable cash flow from the Sinclair Zone.
- ◆ **Markets:** Although relatively buoyant at the moment, markets can turn on a dime and funding for and sentiment towards juniors can dry up very quickly. Pioneer is exposed here (although this is mitigated by the potential cash flow from the Sinclair Zone), with the exploration focus on lithium and cobalt, two commodities that have enjoyed stellar increases in value over recent years; whether the current prices are sustainable is a widely debated point, and if they fall a number of potential projects, particularly for cobalt, will fall by the wayside.

- ◆ **Sovereign:** This is mitigated with both Ontario and Western Australia being well developed and regarding mining jurisdictions - Western Australia ranked 5th globally in the 2017 Fraser Institute survey, with Ontario 7th - Western Australia was the highest ranked Australian state and Ontario the third ranked Canadian province.

BOARD AND MANAGEMENT

- ◆ **Mr Craig McGown – Non-Executive Chairman:** Mr McGown is an investment banker with over 35 years of experience consulting to companies in Australia and internationally, particularly in the natural resources sector. He holds a Bachelor of Commerce degree, is a Fellow of the Institute of Chartered Accountants and an Affiliate of the Financial Services Institute of Australasia. Mr McGown is an executive director of the corporate advisory business New Holland Capital Pty Ltd and prior to that appointment was the chairman of DJ Carmichael Pty Limited. Mr McGown has had extensive experience in the corporate finance sector, including mergers and acquisitions, capital raisings in both domestic and international financial markets, asset acquisitions and asset disposals, initial public offerings and corporate restructurings.

Mr McGown holds directorships in Bass Metals Ltd and Peel Mining Limited. Mr McGown is also the Vice President – Corporate Development for Marengo Mining Limited.

Mr McGown brings to the Board a comprehensive knowledge of equity and debt markets and financing of resource projects. During the three year period to the end of the financial year, Mr McGown held directorships in Bass Metals Ltd (7 July 2004 to present), Peel Mining Limited (1 February 2008 to present) and Entek Energy Ltd (18 July 2008 to 28 February 2011).

- ◆ **Mr David Crook – Managing Director:** Mr Crook was appointed the inaugural Managing Director of the Company on 11 August 2003. Mr Crook is a geologist with over 30 years of experience in exploration, mining and management, predominantly within Western Australia, where he has investigated gold, nickel sulphide, nickel laterite and other commodities in teams with an excellent discovery record. He has held senior management roles including exploration management, project acquisitions, JV negotiations and capital raisings.

In Australia Mr Crook's operational experience has included tenement identification to ore reserve calculations for gold and base metal projects; and a decade engaged in operating gold mines. Prior to being employed by the Company his career highlights included participation in the discovery of the Radio Hill Nickel Mine, ore generation and early production and at the Gidgee Gold Mine during the 1980-1990s and for 7 years was the exploration manager at Heron Resources Limited.

- ◆ **Dr Allan Trench – Non-Executive Director:** Dr Trench is a mineral economist, geophysicist and business management consultant with minerals experience including nickel, gold, vanadium and mineral sands. Dr Trench led nickel sulphide exploration teams for WMC Resources in the Widgiemooltha-Pioneer and Leinster-Mt Keith regions of WA in the mid 1990s. He has subsequently worked with McKinsey and Company, KCGM Pty Ltd and is now with CRU, an independent business analysis and consultancy group.

Dr Trench has also held directorships in Navigator Resources Ltd, Venturex Resources Limited, Hot Chili Ltd and Kimberley Rare Earths Limited.

- ◆ **Mr Wayne Spilsbury – Non-Executive Director:** Mr Spilsbury is a geologist who received his B.Sc. (Honors Geology) in 1973 from the University of British Columbia and his M.Sc. (Applied Geology) in 1982 from Queens University in Ontario. He brings over 35 years of experience in mineral exploration and management, including 28 years with Teck Cominco Limited and was their former General Manager, Exploration – Asia Pacific. In this role, he held responsibility for managing an extensive exploration portfolio including large-scale gold and base metal projects in Australia and China. Mr Spilsbury has worked throughout Western Canada, the United States, Asia and Australia.

Mr Spilsbury currently holds directorships in Minco Silver Corporation, GGL Resources Corp and International Lithium Corp. (all TSX listed).

- ◆ **Mr Timothy Spencer – CFO and Company Secretary:** Mr Spencer was appointed Company Secretary on 21 November 2017 also holds the position of Chief Financial Officer (appointed 17 October 2017). Mr Spencer received an Economics degree (accounting major) from Monash University, Victoria and is a qualified accountant, holding full membership with CPA Australia. He has over 25 years' experience in mining and precious

metals markets, working in various accounting, treasury and finance roles with four mining companies, including roles as Chief Financial Officer, Company Secretary and Executive Director.

BACKGROUND - CAESIUM AND MARKETS

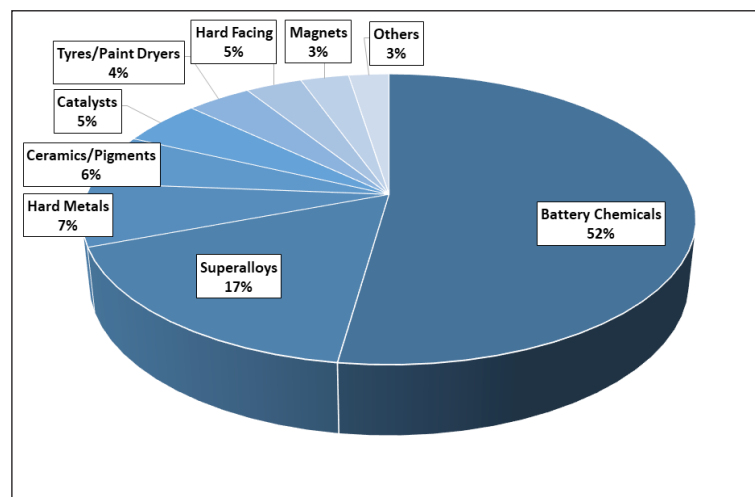
- ◆ The Caesium market is very opaque and small, with the main producers being Cabot's Tanco Mine in Manitoba, Canada with sporadic production from the Bikita Mine in Zimbabwe; minor production has also been recorded from Namibia.
- ◆ The main source of caesium is the mineral pollucite, which is found in highly differentiated pegmatites, with these being very rare.
- ◆ Pollucite is hydrous zeolite, with the formula $(\text{Cs},\text{Na})_2\text{Al}_2\text{Si}_4\text{O}_{12} \cdot 2\text{H}_2\text{O}$, and can contain up to 30% Cs_2O by weight.
- ◆ One of the main uses is in caesium formate brine, which is used in oil and gas drilling; key properties of the brine include amongst others:
 - A high density ($\sim 2.20\text{g/cm}^3$);
 - Thermally stable;
 - Acts as a lubricant in high pressure applications; and,
 - Results in faster well completions and higher production rates.
- ◆ Supply is limited, and hence brines are extremely expensive; for that reason they are leased and recycled in the oil and gas drilling industry, with recovery rates of $\sim 85\%$.
- ◆ Cabot is the major global producer of caesium formate, reportedly with a production capacity of $1,900\text{m}^3$, or $\sim 4,200\text{t}$ per annum of 75% w/w brine solution - our calculations indicate that this requires \sim three tonnes of 25% Cs_2O pollucite to produce one tonne of brine.
- ◆ Caesium is also used in a number of other applications, including electronics and atomic clocks.
- ◆ There is reportedly minor production of caesium formate out of China, with small quantities of the material going into chemical manufacture in China and Europe.

BACKGROUND - COBALT AND MARKETS

Uses

- ◆ Cobalt is a lustrous, greyish-silver metal with a high melting temperature ($1,495^\circ\text{C}$), and retains its strength at high temperatures.
- ◆ It is one of only three naturally occurring magnetic metals (along with Fe and Ni), and can be alloyed with other metals, commonly to make so called "superalloys".
- ◆ It has a wide range of chemical and metallurgical uses as shown in Figure 21, with the major use being in batteries - it is expected that demand for batteries, particularly in electric vehicles, will drive overall demand for cobalt in coming years.

Figure 21: Cobalt uses

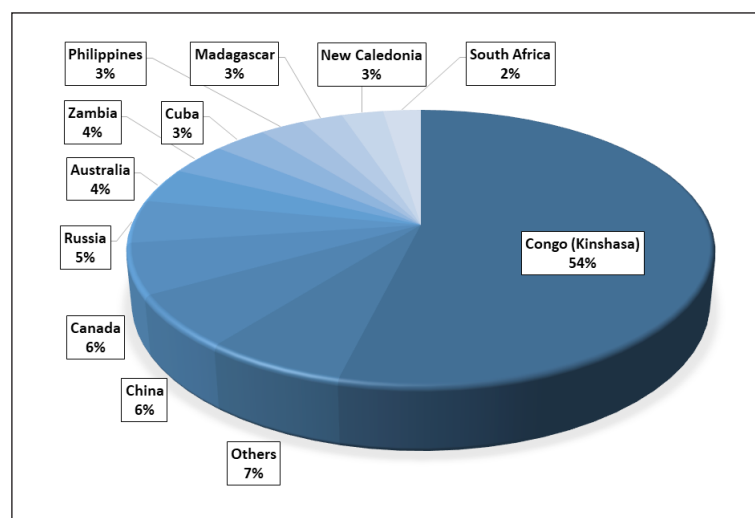


Source: UBS Global Research

Production

- ◆ A notable feature of cobalt is that 99% of mine production is as a by-product of copper (~67%) or nickel (~32%), with only 1% from primary production.
- ◆ The majority of the copper associated production is in copperbelt style mineralisation, hence the concentration of production from the DRC (Congo-Kinshasa), with some from Zambia.
- ◆ Nickel associated cobalt production is largely from laterites, with this including production from New Caledonia, Madagascar, the Philippines and Cuba; cobalt is also a by-product of primary magmatic nickel deposits, including Sudbury in Canada.
- ◆ These are important points, in that cobalt supply is affected by the prices and hence production of nickel and copper.
- ◆ Figure 22 presents a breakdown of the 2016 mine production of an estimated 123,000t by country - this highlights the dominance of the DRC, with 54% of mine production.

Figure 22: 2016 mine production



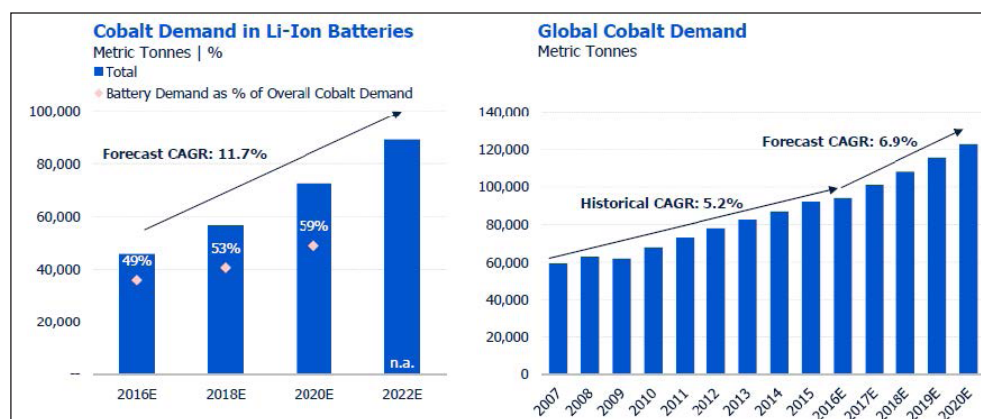
Source: USGS

- ◆ Mine production is also concentrated amongst producers; it has been estimated that Glencore produced some 24% of cobalt in 2016, mainly from Mutanda in the DRC, with China Moly contributing some 16% of global production from the Tenke operation in the DRC.
- ◆ There is significant latent capacity in the DRC, with the potential to add ~50kt over the next few years, including 34kt with the restart of Glencore's Katanga operation on which operations were suspended in September 2015; this was partially restarted in December 2017, with plans to produce 11,000t of cobalt in CY2018, ramping up to 34,000t in CY2019.
- ◆ However this is at least partially offset by political and sovereign risks, with potential for supply disruptions; as such some end users may look for supply outside of this volatile region.

Demand

- ◆ Forecasters see overall cobalt demand being driven by the demand for Li-ion batteries, with cobalt being used in three main battery types due to its high energy density - this is presented in Figure 23.
- ◆ This shows forecast battery requirements doubling from 2016 levels by 2022, a CAGR of just under 12%- this does rely largely on assumed penetrations of electric vehicles into the overall vehicle market - forecasts range widely from ~20 million vehicles in 2030 to 140 million vehicles.
- ◆ The overall growth is forecast at 6.9% out to 2022, resulting in refined cobalt demand of over 120,000tpa - this follows on from robust growth of 5.2% CAGR from 2007 to 2016, driven by the growth in batteries.

Figure 23: 2016 mine production

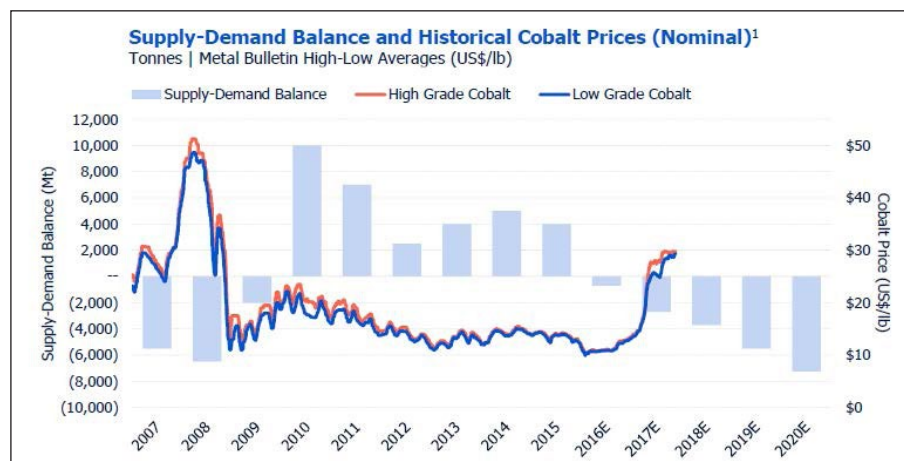


Source: Darton Commodities in UBS Global Research

Pricing

- ◆ Cobalt is characterised by highly volatile pricing, and reacting to stock levels - this is shown in Figure 24.
- ◆ This highlights the recent price rises, with the metal moving from US\$22,000/tonne to over US\$80,000/tonne coincident with supply deficits and increasing demand.

Figure 24: Pricing and supply/demand balance



Source: Darton Commodities, Cobalt27, Metal Bulletin in UBS Global Research

- ◆ How pricing may play out in the future is hard to predict, with conflicting thoughts in the market place, however most commentators are bullish, with, as mentioned previously, long term forecasts ranging up to US\$90,000/tonne, and more commonly in the range US\$50,000 to US\$70,000/tonne.
- ◆ The major unknown is the DRC, including the effect of the Katanga (and other) operations coming back on stream, however it would be expected that Glencore will ramp up production in a measured way to support prices.
- ◆ Given the forecast demand growth and potential for future supply risks, additional projects are required going forward, and these will rely on strong metals prices to be developed.

BACKGROUND – LITHIUM AND MARKETS

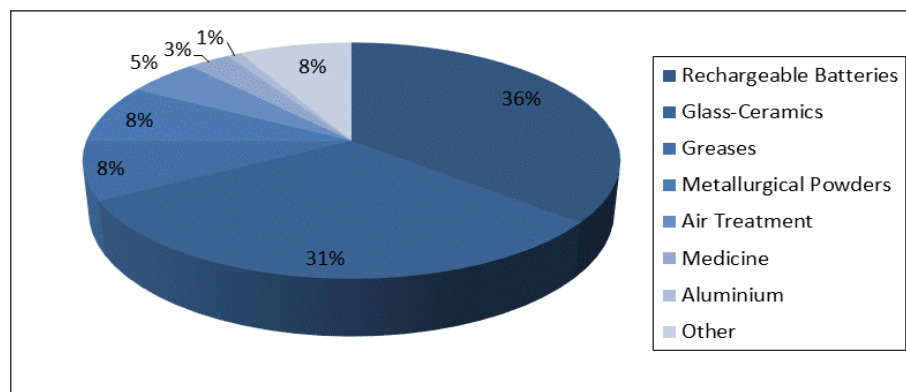
What is Lithium?

- ◆ Lithium is an alkali metal; the lightest of all metals and the least dense of any of the elements that are solids at room temperature. Because of its inherent instability and reactivity it never occurs freely in nature, but only in compounds.

Lithium Uses and Demand

- ◆ Lithium has a large number of uses, with the most relevant now being in rechargeable batteries, which in 2015 made up some 36% of the then annual demand of around 200,000t of lithium carbonate equivalent ("LCE"), which is the form that lithium grades and prices are most commonly quoted in - current LCE production is around 220,000tpa.

Figure 25: Lithium uses - 2015



Source: Company and research reports

- ◆ Some forecasters have the lithium market growing at +10% CAGR over the next 8 years, with this largely driven by demand for rechargeable batteries - this market has reportedly grown by 20% CAGR since 2000 (driven by the growth in consumer electronics and phones), with upcoming growth largely due to the expected increase in sales of electric vehicles.
- ◆ This would result in the demand for LCE growing from ~220,000tpa currently to 400,000tpa by 2025.
- ◆ More aggressive forecasting by Roskill (9th Lithium Supply & Markets Conference, Montreal, 31st May 2017) has demand growing to between 800,000tpa and 1,600,000tpa LCE by 2026, a growth of between 15% and 23% CAGR, mainly driven by the growth in the electric vehicle market.
- ◆ On the more conservative side, Stormcrow, in their 2015 121 Hong Kong conference presentation, presented the possibility that by 2025 minimum additional LCE demand from batteries alone will be 104,000tpa, a 50% increase on current total LCE production and at a 4% CAGR.
- ◆ Other growing battery uses include home storage, and the potential for grid scale storage to be used in conjunction with solar and wind power generation.
- ◆ In Australia over the last 18 months we have seen AGL Energy launching a home storage product in Australia in line with Tesla's "Powerwall" announcements, and more recently Tesla constructed a 100MW battery in South Australia.
- ◆ The major battery producers are Japan, China and South Korea, with Tesla also now joining the fray.

Lithium Products

- ◆ Lithium is supplied as, and prices quoted for a number of products, with the most common being lithium carbonate, followed by lithium hydroxide and lithium concentrates.
- ◆ Care has to be used in comparing reported grades, tonnages and expected revenues between companies when they are quoted on different bases.
- ◆ Lithium carbonate (Li_2CO_3) contains around 18.8% lithium; therefore one tonne of lithium is equivalent to 5.3 tonnes of lithium carbonate.
- ◆ Another compound that is often quoted is lithium oxide – Li_2O – which contains 46.5% lithium, around 2.5 times that of LCE (and in which hard rock concentrate grades are commonly quoted in), with lithium hydroxide (LiOH , 29% Li) also being used – conversion factors are shown in Table 6.

Table 6 :Lithium mineral/compound conversion factors

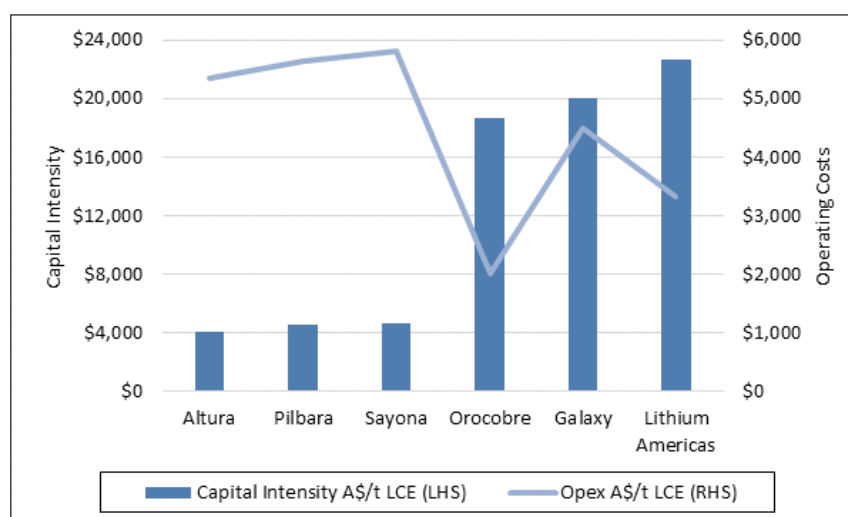
Lithium mineral/compound conversion factors						
Species	Formula	Lithium content	Convert to Li	Convert to Li_2O	Convert to Li_2CO_3	Convert to LiOH
Lithium	Li	100%	1.000	2.152	5.322	3.451
Lithium Oxide	Li_2O	46.46%	0.465	1.000	2.473	1.603
Lithium Carbonate	Li_2CO_3	18.79%	0.188	0.404	1.000	0.648
Lithium Hydroxide	LiOH	28.98%	0.290	0.365	1.542	1.000

Source: IIR analysis

- ◆ Primary hard rock concentrates come in two main products - technical grade, which is used directly in applications such as glass and ceramics, where a high grade ($>6.5\%$ Li_2O), low iron concentrate is required, and chemical grade, which is further refined to lithium carbonate and lithium oxide for end products such as batteries - specifications for chemical grade concentrates are less demanding than those for the technical grade product.
- ◆ Spodumene is the primary hard rock mineral (largely due to higher concentrate grades, and a well developed processing route), although there have been some operations globally that treat lepidolite ore; notable examples include historic operations in South Korea.
- ◆ Lithium carbonate products, either processed from hard rock concentrates or directly from brines come in three main specifications, with typical values as follows (source FMC product data sheets), and with these commanding different prices:
 - Industrial grade ($+99\%$ Li_2CO_3 , 0.60% H_2O , 0.20% Na_2O) - glass, casting powders and greases.
 - Technical grade ($\sim 99.3\%$ Li_2CO_3 , 0.60% H_2O , 0.20% Na_2O) - ceramics, greases and batteries.
 - Battery grade ($>99.5\%$ Li_2CO_3 , 0.50% H_2O , 0.05% Na_2O) - high end battery cathode materials.

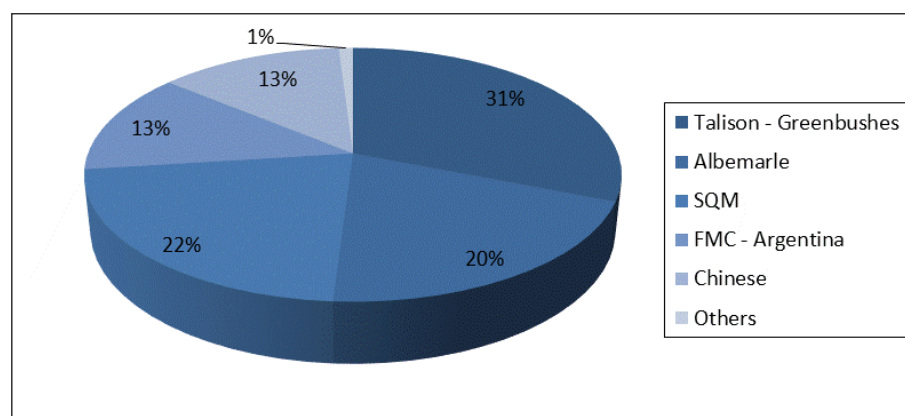
Lithium Supply

- ◆ There are two main sources of lithium – brine deposits and hard rock spodumene deposits.
- ◆ Production from brine deposits involves the extraction by pumping of lithium rich brines in salt lakes, followed by concentration by evaporation in evaporation ponds. From this, the concentrated solutions are processed to end products, including lithium carbonate and lithium hydroxide.
- ◆ Common by- or co-products include potassium and boron salts, which can significantly improve the economics of brine operations.
- ◆ Key points that affect potential brine operations include lithium content, magnesium content (this is relatively expensive to remove, with a rule of thumb stating that the ratio of Mg to Li in brines must be below 10:1 for a brine deposit to be economical) and evaporation and rainfall rates – high evaporation rates result in lower costs as smaller ponds and shorter residence times are required.
- ◆ Spodumene (which is a lithium pyroxene – $\text{LiAl}(\text{SiO}_3)_2$ - and other silicate mineral (including petalite and lepidolite) deposits are commonly hosted in pegmatites, and are mined by conventional hard rock open cut mining, followed by crushing and grinding, and extraction using a mixture of gravity, heavy media separation, magnetic separation and flotation to produce a concentrate, largely comprised of the lithium-bearing silicates, but also commonly containing quartz and feldspar.
- ◆ Both premium technical grade and the lower value chemical grade concentrates are often produced from the same hard rock deposit, dependent upon customers' requirements. A common by-product is tantalite and other tantalum minerals. The concentrate is then further treated to produce β -spodumene for downstream uses.
- ◆ Brine operations are characterised by high initial capital costs, long lead times for full production, whereas hard rock operations are marked by relatively low capital costs, short lead times but relatively high operating costs to lithium carbonate, when the estimated conversion costs of US\$2,500/tonne are added to the cost of producing a concentrate.
- ◆ This is shown in Figure 26, with figures taken from development studies for the various operations - note that we have added the estimated concentrate to lithium carbonate conversion cost to the operating costs for the three hard rock developers, Pilbara, Altura and Pioneer.

Figure 26: Cost profiles of hard rock and brine operations

Source: IIR analysis

- ◆ Figure 27 shows a breakdown of the major producers - what this shows is that production outside of China is highly concentrated, with only a few companies in the business.

Figure 27: Lithium producers by market share 2014

Source: Albemarle Lithium Day presentation - 2015

- ◆ Both FMC and SQM operate brine operations in the Altiplano of Chile and Argentina – another company starting up there is Orocobre, which is currently ramping up production at its Olaroz Project.
- ◆ The largest single producer is the Greenbushes Mine in Western Australia, which is a hard rock spodumene producer and a joint venture between Albemarle (49%) and Sichuan Tianqi Lithium (51%).
- ◆ Greenbushes provides some 78% of global spodumene concentrates, with the balance made up largely by Chinese producers.
- ◆ Albemarle's other 20% share in the above graph comes from a number of brine operations in the US and Chile, which, when added to its holding in Talison, makes it the world's largest single producer of lithium with 35% of market share.
- ◆ Greenbushes produces some 65,000tpa of LCE, however is looking at expansions, including an LiOH plant at Kwinana, to double production to 130,000tpa of LCE by the end of 2018
- ◆ Recent developments in the hard rock space (and not included in the above graph) have seen the restart of Galaxy Resources (ASX: GXY, "Galaxy") Mt. Cattlin operation and the ramp up of the Mt. Marion operation, owned by Neometals Limited (13.8%, ASX: NMT, "Neometals"). Jiangxi Ganfeng Lithium Co. Limited (43.1%, SHE: 002460, "Ganfeng") and Mineral Resources Limited (43.1%, ASX: MIN, "MinRes").
- ◆ Both operations are in Western Australia, with Mt. Cattlin planning to produce up to 137,000tpa and Mt. Marion up to 400,000tpa of spodumene concentrate.
- ◆ Other near term expansion projects include Albemarle's Salar de Atacama operation, with the recent granting of the updated quota, and with production expected to increase from Orocobre's Olaroz operation with ramping up of commissioning.

Lithium Pricing

- ◆ Like most specialty metals, pricing is opaque and set by direct negotiation between producer and customer - pricing is also dependent upon the type and relative quality of the product.
- ◆ Another difficulty involves the plethora of lithium products, however prices trend to track each other.
- ◆ Prices have increased significantly over since late 2015, with Chinese spot battery grade lithium carbonate prices recently reaching over US\$20,000/tonne CFR.
- ◆ This follows on from prices staying around US\$5,000 - US\$6,000/tonne in the preceding few years.
- ◆ These price rises have also been evident in the South American brine producers – according to the TRU Group these averaged around US\$4,500/tonne in 2014 (with battery grade product at a premium of US\$500-US\$1,000/tonne), however reached around US\$10,000/tonne in 2016 as presented in Company financial reports.
- ◆ Recently announced spodumene concentrate prices include US\$905/tonne for 6.0% Li₂O product from Galaxy's Mt. Cattlin operation - this is equivalent to ~US\$11,000/tonne LCE.
- ◆ Spodumene concentrate prices however vary according to grade and levels of contaminants; however largely track that of lithium carbonate, albeit at a significant discount on an LCE basis due to the requirement for further processing.
- ◆ We see prices of lithium carbonate continuing to trade at around US\$8,000 to US\$10,000/tonne, however this could be considered a conservative view.
- ◆ As mentioned earlier, pricing used by Tawana Resources (ASX: TAW) in the PFS for the Bald Hill Project in Western Australia average US\$760/tonne for 6% Li₂O spodumene concentrate out to 2025, with a deduction of US\$15/tonne for each 0.1% Li₂O below this benchmark - these prices were sourced from Cannacord, and are broadly equivalent to an LCE price of US\$9,500/tonne.

Where to From Here?

- ◆ This depends upon who you listen to!
- ◆ As mentioned earlier, various commentators forecast demand to rise at between 5% and 10% CAGR over the next 8 years, with this resulting in additional demand of at least between 100,000tpa LCE and 200,000tpa LCE by 2025, equating to total demand of between 300,000tpa and 400,000tpa LCE, with however Roskill forecasting demand to rise to between 800,000tpa to 1,600,000tpa by 2016.
- ◆ Even the most conservative forecast increase in demand should continue to support current prices, and we could conceivably see further price increases.
- ◆ However there is the perceived ready potential for the current oligopoly to increase production to meet any demand increases, and also the potential to price new players that are considered a threat out of the market – just two upcoming expansion projects, Greenbushes and Albemarle's Salar de Atacama Project have the potential to add up to 100,000tpa LCE into the market.
- ◆ In addition if Mt. Marion and Mt. Cattlin reach their combined targets of 537,000tpa spodumene concentrate have the capacity to supply an additional 50,000tpa of LCE into the market, assuming average concentrate grades of 5.0% Li₂O and metallurgical recoveries of 75%.
- ◆ Some commentators however doubt whether the full potential will be reached on the expansion projects.
- ◆ Our view is that we will continue to see strong demand increases and prices going forward, and thus there will be significant space for new players in the market.

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