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# TENEMENTS PROSPECTIVE FOR LITHIUM ACQUIRED IN THE PHILLIPS RIVER DISTRICT WESTERN AUSTRALIA

# **Expanding our portfolio of demand- driven commodities**

Pioneer Resources Limited ("**Company**" or "**Pioneer**") (ASX:PIO) is pleased to announce that it has acquired through pegging a 100% interest in the Phillips River Lithium Project, located approximately 100km east of the Mt Cattlin Lithium Mine, Ravensthorpe, in Western Australia.

The project comprises 3 exploration licence applications that cover approximately 340 km<sup>2</sup> that are considered prospective for lithium spodumene-bearing pegmatites. (Refer to Figure 1).

#### **Lithium Targets Identified Using Geoscience Australia Dataset**

The Project was generated through interrogating the Geoscience Australia 'National Geochemical Survey of Australia: The Geochemical Atlas of Australia: Dataset' (de Caritat et al, 2011) which included a sample taken from the Lort River catchment in south Western Australia that contained the **highest lithium value from a stream sediment sample in Australia**. (Refer to Figures 2-3).

Roadside sampling 'upstream' of the Lort River lithium anomaly, completed by a competitor exploration company (Fletcher and Howard, 2010; Eddison and Fairall, 2012), included assays for lithium as part of a broader suite of elements targeting gold. When processed, this information indicated 2 standout lithium anomalies supported by modified pegmatite PEG-4 index values (Smith et al, 1987), and a number of other lithium anomalies which are considered elevated and warrant further investigation. (Refer to Figure 4).

This pegging is consistent with the Company's strategy that was announced in its release of 15 March, 2016 and further expands its asset portfolio of key demand-driven commodities – adding additional lithium properties to its high grade gold assets and nickel properties in Western Australia. The Company's commitment to these projects remains unchanged and it will provide details of the next phase of exploration initiatives in due course.

### **Close to Established Infrastructure**

The Project is located approximately mid-way between Ravensthorpe and Esperance in the Great Southern of Western Australia. Tenements are readily accessible through a network of main and regional roads with water, power, and a skilled work force available close-by. The Port of Esperance is approximately 60km away.

#### **Exploration Strategy in a Rare-Element Mineral Field**

The Project is considered prospective for rare-element granitic pegmatites of the Lithium-Caesium-Tantalum (LCT) geochemical family. These are the type of pegmatites that have been intersected in drilling at the Company's optioned Mavis Lithium Project, located in Ontario, Canada.

Pegmatite is a reasonably common igneous plutonic rock of variable texture and crystal size, composed of common granite minerals such as quartz, feldspar and micas, but less commonly with economically important minerals (the LCT pegmatites) containing elements such as lithium (in spodumene), tantalum, niobium, tin and tungsten.

Genetically, LCT pegmatites have been linked to the emplacement of peraluminous, S-type granites, and distinguishing these from barren (such as I-type) granites is a critical step in the exploration for lithium of this genesis (see Glossary for more details).

The largest known LCT pegmatites in Western Australia include those at Greenbushes (lithium, tin and tantalum), Pilgangoora and Wodgina (lithium, tin and tantalum), Mt Marion (lithium), Bald Hill (tantalum); and in the immediate area, the Mt Cattlin (lithium and tantalum) Deposit.

## **Work Programs**

Following the grant of the tenements, expected during the third quarter 2016, work programs are likely to include:

- Further multi-element geochemistry to constrain what are presently large, open targets.
- Aeromagnetic surveys. Pegmatites are much less magnetic when compared to the host mafic volcanic country rocks.
- Mapping within resultant targets. Much of the tenement area has been cleared for cropping, making access easy.
- Resultant drilling.

Pioneer's current program of lithium and gold project acquisitions; and associated exploration programs in Australia will be undertaken concurrently with the commencement of field exploration activities at the Mavis Lithium Project in Ontario, Canada, where soil and rock geochemistry, mapping and a ground magnetic survey, and a diamond drilling program are currently being planned ahead of a commencement date in May 2016.

Drilling is also planned for the Company's Acra Gold Project, to further test new targets identified by drilling in 2015 at the Deep River and Kalpini West prospects, and infill and extensional drilling at the Kalpini South gold deposit.

Managing Director

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### Glossary

"Li<sub>2</sub>O" means Lithia, or Lithium Oxide, and is the elemental metal quantity converted to its oxide (in percent (%)), which is a form of reporting used for lithium in scientific literature. The conversion factor for Li to Li<sub>2</sub>O is 2.152.

"Spodumene" is a lithium aluminosilicate (pyroxene) found in certain rare-element pegmatites, with the formula LiAlSi<sub>2</sub>O<sub>6</sub>. Spodumene is the principal lithium mineral sourced from pegmatites and is the preferred source for high purity lithium products.

"Be" means beryllium, "B" boron, "Cs" caesium, "Li" Lithium, "Nb" niobium, "Rb" rubidium, "Sb" antimony, "Sn" tin, "Ta" tantalum.

"PEG-4 index" is an indicator for the presence of LCT pegmatites, and is a function of the assayed values for Sb, Sn, Nb and Ta.

"Pegmatite" is a common plutonic rock of variable texture and coarseness that is composed of interlocking crystals of widely different sizes. They are formed by fractional crystallization of an incompatible element-enriched granitic melt. Several factors control whether or not barren granite will fractionate to produce a fertile granite melt (Černý 1991; Breaks 2003):

- presence of trapped volatiles: fertile granites crystallize from a volatile-rich melt.
- composition of melt: fertile granites are derived from an aluminium-rich melt.
- source of magma: barren granites are usually derived from the partial melting of an igneous source (I-type), whereas fertile granites are derived from partial melting of a peraluminous sedimentary source (S-type).
- degree of partial melting: fertile granites require a high degree of partial melting of the source rock that produced the magma.

Initially, fractional crystallization of a granitic melt will form barren granite consisting of common rock forming minerals such as quartz, potassium feldspar, plagioclase and mica. Because incompatible rare elements, such as Be, Li, Nb, Ta, Cs, B, which do not easily fit into the crystal of these common rock-forming minerals, become increasingly concentrated in the granitic melt as common rock forming minerals continue to crystallize and separate from the melt.

#### References

Breaks, F. W., Selway, J.B., and Tindle, A.G., 2003: Fertile peraluminous granites and related rare-element mineralization in pegmatites, Superior Province, Northwest and Northeast Ontario: Operation Treasure Hunt; Ontario Geological Survey, Open File Report 6099, 179p.

de Caritat, P. & Cooper, M., 201: *National Geochemical Survey of Australia: The Geochemical Atlas of Australia: Dataset*. Geoscience Australia, Canberra. <a href="http://dx.doi.org/10.4225/25/54CAB00B4C9AB">http://dx.doi.org/10.4225/25/54CAB00B4C9AB</a>

Černý, P., 1991: Rare-element granitic pegmatites: Part I, anatomy and internal evolution of pegmatite deposits; Geoscience Canada, V. 18, No. 2, p.49-67.

Eddison, F. and Fairall, C. 2012, Anglogold Ashanti Australia Limited, Viking Project, Viking 4 Combined Annual Report (WAMEX A096138)

Fletcher, Damian and Howard, Brendan 2010, Anglogold Ashanti Australia Limited Annual Report Viking Project – Viking Group 4 (WAMEX A088744)

Smith, R.E., J.L. Perdrix, J.L and Davis, J.M 1987: Dispersion into pisolitic laterite from the greenbushes mineralized Sn-Ta pegmatite system, Western Australia. JGE, 28, 251-265

#### **Competent Person**

The information in this report that relates to Exploration Results is based on information supplied to and compiled by Mr David Crook and Dr Nigel Brand. Mr Crook is a full time employee of Pioneer Resources Limited and a member of The Australasian Institute of Mining and Metallurgy (member 105893) and the Australian Institute of Geoscientists (member 6034). Mr Crook has sufficient experience which is relevant to the activities undertaken to qualify as a Competent Person as defined in the 2012 Editions of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'.

Dr Brand is the principal of geochemical consultancy Geochemical Services Pty Ltd, and is a Competent Person as defined in the 2012 Editions of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'

Mr Crook and Dr Brand consent to the inclusion in the report of the matters based on this information in the form and context in which it appears.

### **Caution Regarding Forward Looking Information**

This document contains certain statements that may be deemed "forward-looking statements." All statements in this presentation, other than statements of historical facts, that address future market developments, government actions and events, are forward-looking statements.

Forward-looking statements are not statements of historical fact and actual events and results may differ materially from those described in the forward looking statements as a result of a variety of risks, uncertainties and other factors. Forward-looking statements are inherently subject to business, economic, competitive, political and social uncertainties and contingencies. Many factors could cause the Company's actual results to differ materially from those expressed or implied in any forward-looking information provided by the Company, or on behalf of, the Company. Such factors include, among other things, risks relating to additional funding requirements, metal prices, exploration, development and operating risks, competition, production risks, regulatory restrictions, including environmental regulation and liability and potential title disputes.

Forward looking statements in this document are based generally on the Company's beliefs, opinions and estimates as of the dates the forward looking statements that are made, and no obligation is assumed to update forward looking statements if these beliefs, opinions and estimates should change or to reflect other future developments.

Although Pioneer believes the outcomes expressed in such forward-looking statements are based on reasonable assumptions, such statements are not guarantees of future performance and actual results or developments may differ materially from those in forward-looking statements. Factors that could cause actual results to differ materially from those in forward-looking statements include new rare earth applications, the development of economic rare earth substitutes and general economic, market or business conditions.

While, Pioneer has made every reasonable effort to ensure the veracity of the information presented they cannot expressly guarantee the accuracy and reliability of the estimates, forecasts and conclusions contained herein. Accordingly, the statements in the presentation should be used for general guidance only.

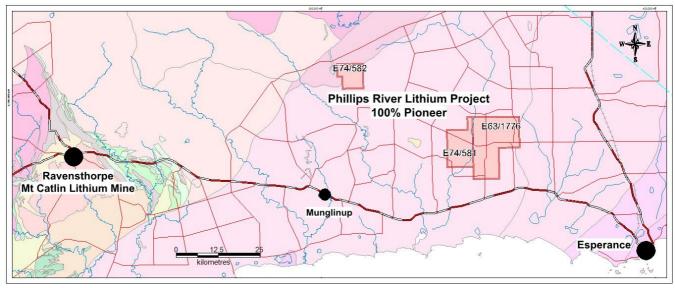
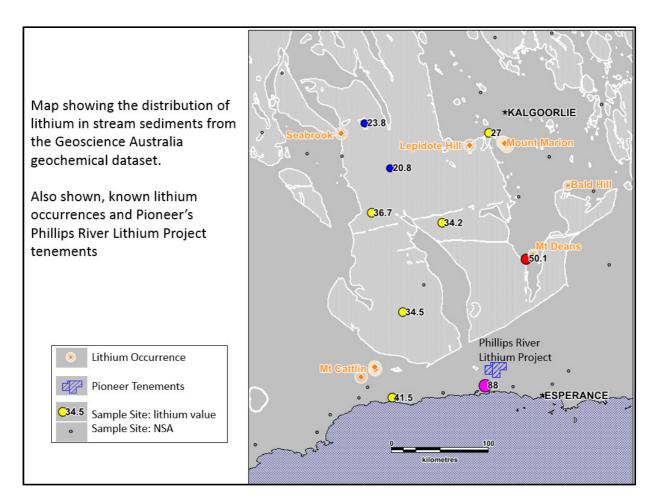
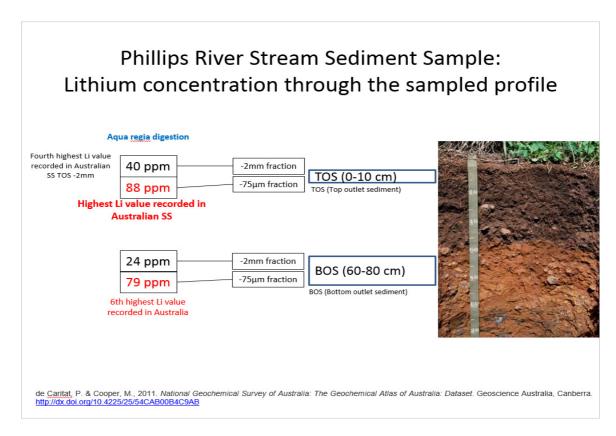


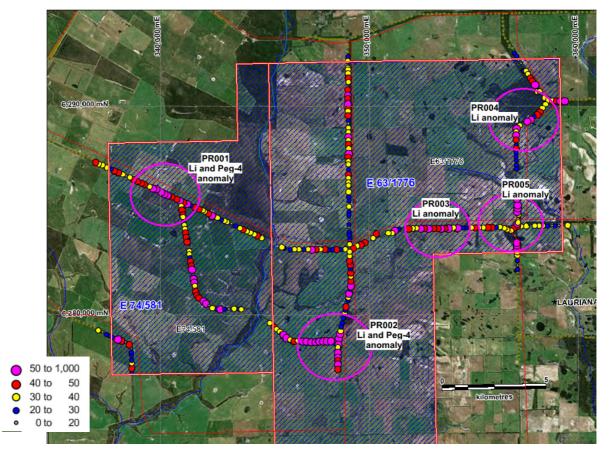
Figure 1. Location of the Phillips River Lithium Project tenements.



**Figure 2**. Geoscience Australia geochemical dataset for lower Western Australia showing lithium values and known LCT pegmatite occurrences.



**Figure 3**. Geoscience Australia geochemical dataset sampling methodology, and Lort River sample lithium assays. (Photo not from Phillips River)



**Figure 4**: showing the location of side of roadside soil samples coloured by Lithium values in ppm. (Data from Fletcher and Howard, 2010; Eddison and Fairall, 2012).