

From mine to farm, integrated fertiliser resource developments.





#### FORWARD LOOKING STATEMENTS

These materials include forward looking statements. Forward looking statements inherently involve subjective judgement and analysis and are subject to significant uncertainties, risks and contingencies, many of which are outside of the control of, and may be unknown to Centrex Metals Limited ('Centrex' or the 'Company').

Actual results and developments may vary materially from those expressed in these materials. The types of uncertainties which are relevant to the Company may include, but are not limited to, commodity prices, political uncertainty, changes to the regulatory framework which applies to the business of the Company and general

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Forward looking statements in these materials speak only at the date of issue. Subject to any continuing obligations under applicable law or any relevant stock exchange listing rules, the Company does not undertake any obligation to publicly update or revise any of the forward looking statements or any change in events, conditions or circumstances on which any such statement is based.

Forward looking statements include, but are not limited to, statements concerning Centrex's planned exploration program, targeted resources, commencement of product export and other statements that are not historical facts. When used in this document, the words such as "could", "target", "plan", "estimate", "intend", "may", "aim", "potential", "should", and similar expressions reflected in these forwardlooking statements are reasonable, such as statements involving risks and uncertainties and no assurance can be given that actual results be consistent with these forward-looking statements.



### Summary

- High-grade Ardmore Phosphate Rock Project in Queensland with >300 historical drill holes and a Mining Lease purchased from Incited Pivot
- Prefeasibility Study commenced for Oxley Potassium Nitrate Project in Western Australia
- Both fertiliser projects have existing infrastructure for exports
- NSW zinc exploration project with drilling intersections at three massive sulphide prospects
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Outcropping DSO Phosphate Deposit





Rare large-scale potassium deposit at surface

Advanced Zinc & Copper Prospect



Phosphate & Potash Market

# Good Long-Term Fundamentals

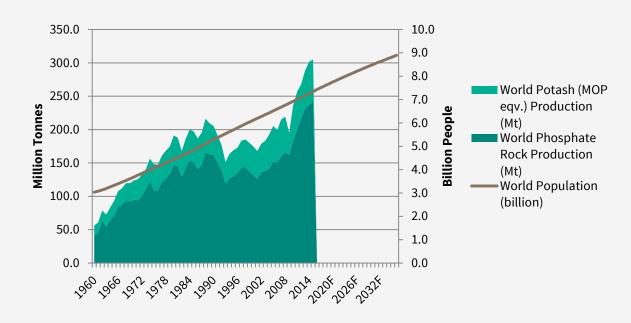


#### Simple demand side story

- More mouths to feed
- More food to feed them.
- Less land to produce it from
- Higher crop yields needed
- = More Fertiliser
- Phosphate & potash 2 of the 3 required macronutrients
- No substitutes!

#### **Long-Term Phosphate & Potash Growth Trends**

Source: Derived from USGS (Production), World Bank (Population)



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### Phosphate Rock







2016 Phosphate Rock Trade					
Global Imports (Mt)		Global Exports (Mt)			
India	7.5	North Africa	11.8		
European Union	5.2	Middle East	6.9		
Rest of Asia	2.9	South America	3.8		
South America	2.0	Rest of Africa	1.3		
North America	1.9	Kazakhstan	0.4		
Australasia	1.0	Australasia	0.0		
Rest of World	2.9	Rest of World	0.0		

Source: Derived from UN Comtrade Database

- Mined as the mineral apatite  $Ca_5(PO4)_3(F,Cl,OH)$  within marine sedimentary phosphorites, igenous apatites, or guano deposits (deposit grades 5 to 35%  $P_2O_5$ )
- Beneficiated >30% P<sub>2</sub>O<sub>5</sub> concentrate reacted with sulphuric acid to create single super phosphate, or further processed to make phosphoric acid for value added fertilisers (e.g. DAP), and smaller use for direct application or animal feed
- 260 million tonne market but only 24 million tonne traded as most used domestically in value added fertiliser manufacturing
- China a major producer (138 million tonne) primarily for internal consumption... for how long can domestic reserves support its huge consumption?



#### Potash







2016 MOP (KCl) Trade					
Global Imports (Mt)		Global Exports (Mt)			
Asia	12.1	Canada	11.8		
USA	8.8	Belarus	6.9		
Brazil	8.7	Russia	3.8		
European Union	3.7	Israel	1.3		
Rest South America	1.0	USA	0.4		
Australasia	0.5	Australasia	0.0		
Rest of World	1.5	Rest of World	0.0		

Source: Derived from UN Comtrade Database

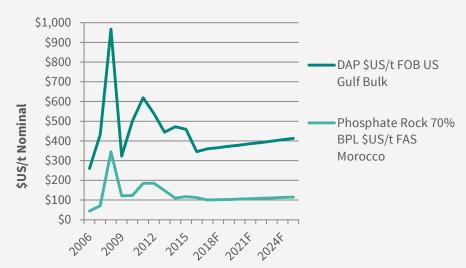
- Mined as the mineral sylvite KCl from evaporite deposits deep underground (grades 11 to 25% K<sub>2</sub>O), or crystallised out from natural brines (a few % K<sub>2</sub>O at most)
- No DSO deposits, all require beneficiation to produce a pure product such as muriate of potash ("MOP or KCl"), the dominant form
- MOP may be used for production of higher value, chloride free potassium sulphate ("SOP") or potassium nitrate ("NOP"), or all may be used in NPK multi-element fertilisers
- Much higher proportion of 61 million tonne (MOP equivalent) market traded compared to phosphate rock

#### Price Trends

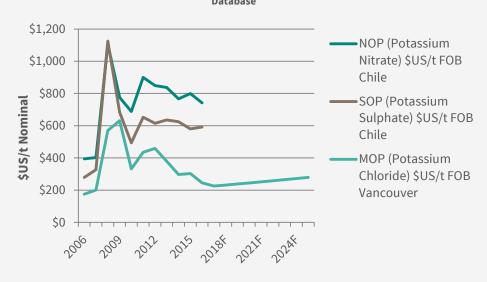


**Phosphate Price Trends** 

Source: Derived from World Bank April 2017



# Potash Price Trends Source: Derived from World Bank April 2017 (MOP), and UN Comtrade Database



Ardmore Phosphate Project



# Project History



- 3 high-grade deposits were drilled out in the 1970s; Duchess & Rimmer Hill in the Duchess Embayment, and Ardmore in the Ardmore Outlier around 80km further west
- Mining Leases were granted over all three deposits in the mid-70s and they have remained continuously under single ownership until now!
- The largest deposit at Duchess was prioritised for development, currently the feed stock to Incitec Pivot's Phosphate Hill ammonium phosphate fertiliser plant located at their mine site
- The smaller high-grade Ardmore satellite deposit has remained undeveloped, until now!

# Ardmore Phosphate Deposit

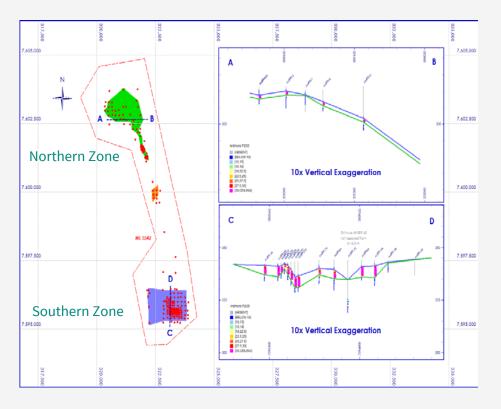


- The Ardmore deposit is hosted in the same Cambrian sedimentary package as the nearby Duchess deposit
- Phosphate mineralisation occurs in two units within the same formation; an upper high-grade (>25%  $P_2O_5$ ) phosphorite member, and a basal lower grade (10-15%  $P_2O_5$ ) phosphorite member with a series of cherts in between
- The upper high-grade member has been the focus of exploration and outcrops within the Ardmore Mining Lease
- Phosphate occurs as relatively coarse (≈200µm) apatite pellets



#### Resource Definition





- >300 drill holes have been completed across the deposit in the 1970s pre-JORC
- Independent Exploration Target established for Centrex of 12.0 to 16.5 million tonnes at 28.2% to 29.4% P<sub>2</sub>O<sub>5</sub>
- The potential quantity and grade of the Exploration Target is conceptual in nature and there has been insufficient exploration to define a Mineral Resource. It is uncertain if further exploration will result in the determination of a Mineral Resource
- Surveys of old drill hole collars needed to utilise past drilling in a JORC Mineral Resource are nearing completion

# Mining

- Deposit outcrops in several areas = low cost open cut
- Overall deposit is generally flat lying
- Average depth to the hanging wall at 8.3m, and average depth to footwall 12.0m for the average 4.3m thick high-grade member = relatively low strip ratio
- 6 historic excavations completed with a D9 dozer down to 10m below surface showing it to be "free-dig" (no drill and blast required), similar to mining at the Duchess deposit

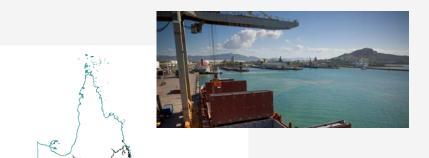
DSO Phosphate ore at surface in historic 
trench AE6





## Logistics & Marketing





Townsville

Ardmore 🍑



- Product will be hauled in bulk via triple road trains 90km to Mount Isa rail line
- ≈880km rail haul to Townsville Port
- Option to transport and store ore in containers for shipping via existing 3<sup>rd</sup> party Rotainer berth
- Alternate existing bulk storage option at Townsville also being investigated
- Marketing by Centrex already well advanced in India, Australasia and SE Asia



### Next Steps

- Complete transfer of Mining Lease to Centrex from Southern Cross Fertilisers
- Complete interim Resource estimate using historic drilling
- Commence feasibility study targeted for completion in mid-2018
- Further infill drilling to develop Indicated & Measured Resources for conversion to Ore Reserves (average hole depth is only 15m!)
- Metallurgical testwork program to optimise process route and determine product quality
- In parallel environmental baseline and approval studies and off-take contract negotiations

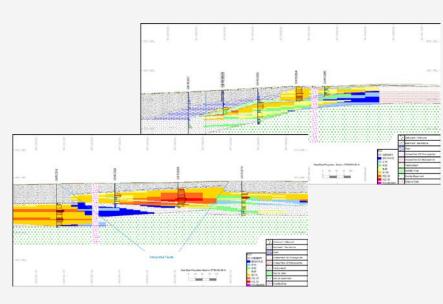


Oxley Potassium Nitrate Project

# Oxley Potassium Deposit

- 32km striking globally rare ultrapotassic lava flow
- Dominantly composed of potassium feldspar
- Outcropping and shallow dipping meaning simple open cut mining
- Current 155 million tonne Inferred Resource at 8.3%
   K<sub>2</sub>O (6% K<sub>2</sub>O cut-off) over just 3km section of deposit
- Inferred Resource includes 38 million tonne at 10%
   K<sub>2</sub>O (9% K<sub>2</sub>O cut-off)
- Rock chips over entire 32km length shows consistent high potassium grades up to 14% K<sub>2</sub>O



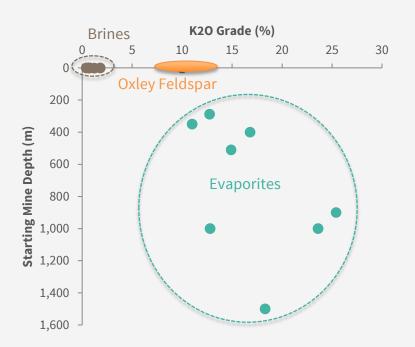


For full details of the Inferred Mineral Resource please see announcement 8<sup>th</sup> March 2016: http://www.asx.com.au/asxpdf/20160308/pdf/435nrchjm48mjx.pdf

The results were reported under JORC 2012 and Centrex is not aware of any new information or data that materially affects the information contained within the release. All material assumptions and technical parameters underpinning the estimates in the announcement continue to apply and have not materially changed.



# Why a Potassium Feldspar Deposit?

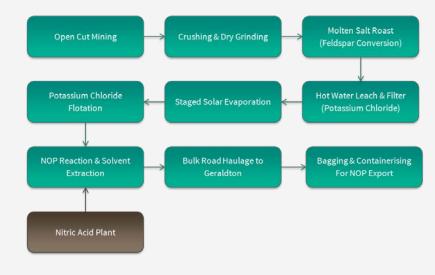


- Potassium fertilisers traditionally sourced from either mixed evaporite salt deposits deep underground, or very low potassium grade natural brines at surface
- The existing operations are not direct ship ores and require significant processing
- Oxley is the happy medium between low mining costs and reasonable grades
- Oxley has existing roads and rail to the Port of Geraldton just 125km to northwest, order of magnitude less export logistics than a lot of current producers e.g. Canada, Russia
- Limited potassium mining exists in Asia outside China giving Oxley a large freight advantage over the majority of producers

## Scoping Study Basis



- Start-up primary producer NOP operation
- Ultrapotassic lava mined open cut in a series of shallow to selectively mine higher grade with small fleet 90 tonne trucks
- Crush & dry grind ore to P80 150µm
- Blend ore with salt and roast to convert to soluble potassium chloride (MOP)
- Hot water leach (order of magnitude higher potassium than natural brines) and filter
- Solar evaporation to crystallise and float potassium chloride
- Reacted with nitric acid produced on site to make NOP





# Roasting Testwork



- Centrex has completed around 80 roast tests including static, rotary kiln, fluid bed, and 2kg agitated trials
- Testwork has demonstrated >90% leach extraction of potassium achievable
- Primary reaction is ion exchange
- KAlSi<sub>3</sub>O<sub>8</sub> + NaCl + Heat = KCl + NaAlSi<sub>3</sub>O<sub>8</sub>
- Small-scale continuous pilot trial of roasting circuit to be commenced in coming months

# Oxley Regional Infrastructure



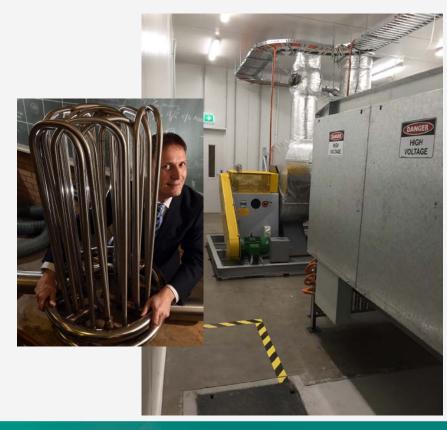


- A sealed main road runs straight past the project site connecting through to the Port of Geraldton
- Start-up operation to haul bulk in road trains to 3<sup>rd</sup> party storage facilities where product will be bagged and containerised for export
- Gas to be piped to site from connection into Western Australia gas network in the Perth Basin
- Gas to be used for onsite power generation as well as furnace operations, and potentially ammonia production
- Centrex holds adjacent tenement to Oxley covering a brine deposit for salt make-up and potentially process water (bonus KCl in brine)



#### UniSA Research

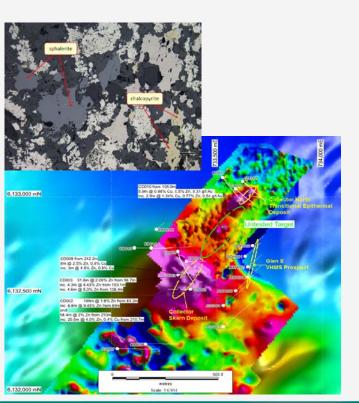
- Western Australian & South Australian Governments providing grant funds for molten salt mineral processing research at UniSA
- Research to be undertaken as an extension to UniSA's existing molten salt solar thermal storage systems facility
- UniSA also contributing cash funds with A\$ 390,000 of external funding conditionally committed in total from all three parties
- Research to consider potential for a second generation process circuit at Oxley undertaking all processing steps in a molten salt environment



# Goulburn Zinc Project

## Goulburn Zinc Project





- Located in the East Lachlan Fold Belt with existing skarn and VHMS mineralisation intersected 10km north of the Woodlawn mine in the same host geology
- Drill ready DHEM targets from 250m depth proximal to existing massive sulphides at Collector
- 3 existing projects with significant zinc and copper drilling intercepts including the discovery hole DDH C2;

25.2m at 4.1% Zn, 0.8% Cu, 0.1% Pb from 86m depth (inc. 6.3m @ 9.9% Zn, 0.7% Cu)

25.2m at 3.3% Zn, 0.2% Cu from 113m depth (inc. 3.8m @ 6.7% Zn, 0.3% Cu, 0.1% Pb)

35.2m at 2.3% Zn, 0.3% Cu from 141m depth (inc. 7.6m @ 4.6% Zn, 0.2% Cu, 0.1% Pb)

20.4m at 3.9% Zn, 0.4% Cu, 0.5% Pb from 211m depth

For full details of the DDH C2 drilling results see announcement 17<sup>th</sup> June 2014; http://www.asx.com.au/asxpdf/20140617/pdf/42q7znkpj7hkbv.pdf

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# Ardmore Exploration Target Appendix

# Ardmore Exploration Target Statement



Centrex has established an Independent Exploration Target for Ardmore. Data verification will commence upon transfer of the Mining Lease to Centrex to convert the Exploration Target to a JORC Resource. This work will include a number of twin holes to confirm the original 1970s dataset, and further infill drilling as required. The basis for the Exploration Target statement has not changed since the Exploration Target was first reported on the 2<sup>nd</sup> February 2017; <a href="http://www.asx.com.au/asxpdf/20170202/pdf/43fr772d32lgt0.pdf">http://www.asx.com.au/asxpdf/20170202/pdf/43fr772d32lgt0.pdf</a>

The Exploration Target is based on historical drilling results reported by Broken Hill South Limited and Queensland Phosphate Limited from exploration conducted from 1968 to 1980. This included 299 rotary percussion and 3 diamond drill holes. Drill spacing varies generally from 150 m by 150 m down to tight grade control drill spacing of 20 m by 20 m, undertaken in readiness for mining before the focus was moved to the nearby Duchess deposit.

The Exploration Target quantity and grade ranges were assessed from the modelled target high-grade phosphorite unit based on the historical drilling data. The historical drilling data was sourced from historical records and from the Queensland Government exploration report data bases.

Ardmore was discovered in 1966 and is located within the 'Ardmore Outlier' on the eastern side of the Georgina Basin. The Cambrian aged sedimentary phosphate rock deposit consists predominantly of pelletal phosphorites (carbonate-fluorapatite) with small bands of collophane mudstone.

The target high-grade phosphorites occurs as a single, essentially flat lying unit within two separate areas, the "Northern Zone" with a strike extent of approximately 4.0 km (N-S) and the "Southern Zone" with a strike extent of approximately 1.6 km (E-W).

The target phosphorite unit is shallow dipping, with the average depths of the hanging wall and footwall contacts being 8.3 m and 12.0 m. respectively based on drilling to date.

# Ardmore Exploration Target



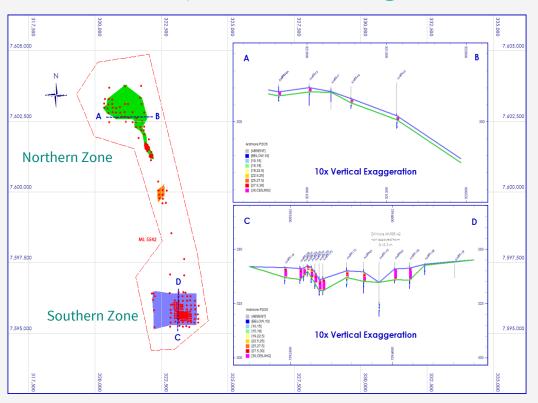


FIGURE: Plan view of the Ardmore high-grade phosphorite unit and historical drilling across the deposit, with vertically exaggerated section inserts.

For full details of the historical Ardmore drilling results see announcement 2<sup>nd</sup> February 2017;

#### http://www.asx.com.au/asxpdf/20170202/pdf/43fr772d32lgt0.pdf

The results were reported under JORC 2012 and Centrex is not aware of any new information or data that materially affects the information contained within the release. All material assumptions and technical parameters underpinning the estimates in the announcement continue to apply and have not materially changed.

#### **Competent Persons Statement**

The information in this report relating to the Exploration Target is based on and accurately reflects information compiled by Ms Sharron Sylvester of OreWin Pty Ltd, who is a consultant and adviser to Centrex Metals Limited and who is a Member of the Australian Institute of Geoscientists (RPGeo). Ms Sylvester has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity she is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Ms Sylvester consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

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