

## **Due Diligence and Valuation Report**

Arrowhead Code: 25-02-09
Coverage initiated: 14 12 2011
This document: 08 04 2015

Fair share value bracket: AU\$0.16 and AU\$0.21<sup>i</sup>

Share price on date: AU\$0.04<sup>ii</sup>

**Analyst Team** 

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#### **Market Data**

52-Week Range:	AU\$0.033 - AU\$0.072 <sup>iii</sup>
Average Daily Volume:	115,471 <sup>iv</sup>
Market Cap. on date:	AU\$8.02MM <sup>v</sup>

## Financial Forecast Data (in AU\$)

	`15E	16E	`17E	`18E	`19E	`20E	`21E
High profit/ (loss) MM	(4.0)	(3.1)	(1.0)	(1.3)	18.4	42.4	41.8
High EPS cents	(2.0)	(1.6)	(0.5)	(0.6)	9.2	21.2	20.8
Low profit/ (loss) MM	(4.0)	(3.1)	(1.0)	(1.3)	16.9	39.3	38.7
Low EPS cents	(2.0)	(1.6)	(0.5)	(0.6)	8.4	19.6	19.3

#### Fiscal Year (FY)

1st July - 30th June

#### **Summary**

Potash West NL is an Australia-based mineral exploration and development company, with interests in phosphate and potash projects. It is currently focused on bringing the Dandaragan Trough phosphate project in Western Australia to production, and advancing the exploration in the South Harz potash project in Germany.

Both these projects benefit from excellent connectivity and infrastructure. These projects would also enable the company to cater to multiple target markets, particularly China and Europe which together account for over 70% of the global SOP consumption.

## **Dandaragan Trough Project**

The Dandaragan Trough hosts one of the world's largest glauconite deposits, along with phosphate mineralization. The Dinner Hill prospect within the project has a phosphate resource of 120MMT at 2.79%  $P_2O_5$ , and a K-Max resource estimate of 122MMT at 4.6%  $K_2O$ . The current resource covers 15% of the Dinner Hill project area, less than 1%





Company: POTASH WEST NL

Ticker: ASX:PWN

Headquarters: Perth, Australia

Managing Director: Patrick McManus

Website: www.potashwest.com.au

of the license area, suggesting potential resource upside over the whole project area.

The company updated its scoping study in January 2015, indicating a pre-tax IRR of 30% and  $NPV_{12}$  of AU\$652MM. The scoping study was based on a mining rate of 4.2Mtpa in two stages – phosphate project, and Integrated K-Max project.

## Stage 1 - Phosphate Project

During the first five years of operations, the company will focus on the phosphate project, with an estimated production of 390ktpa SSP. The project is expected to have a low capex of AU\$135.7MM. As a stand-alone project, phosphate production generates an IRR of 30% and an NPV $_8$  of AU\$331MM.

The study also highlighted the easy adoption of the process flowsheet with a recovery of 70% to 36% of the mass (indicating relatively non-expensive upgrade of resources to  $5.4\%~P_2O_5$  for feed to the flotation plant).

Potash West currently plans to carry out a Definitive Feasibility Study on the phosphate project, and expects to complete it by Dec 2016. The company aims to complete the construction and start production by mid-2018.

## Stage 2 - Integrated K-Max Project

In the second stage, the company plans to process glauconite concentrate along with phosphate in an Integrated K-Max plant. It is expected to be operational from 2H22, and will produce 152ktpa SOP, 136ktpa KMS, 223ktpa iron oxide, 764ktpa aluminium sulphate, and 152ktpa phosphoric acid.

The company has also developed a proprietary K-Max process to extract Sulphate of Potash (SOP), and other co-products from glauconite. The company has applied for a patent for the K-Max process.

The project has an estimated capital cost of AU\$590.3MM. This second stage is expected to



have a relatively lower risk profile due to funding from the operating cashflows of the phosphate project, along with use of existing beneficiation plant. The project will also have lower mining costs due to exposed K-Max ore from phosphate mining in Stage 1.

#### **German Project**

In July 2014, the company entered into a farm-in agreement with Exploration Pty Ltd. (EE), through which it can earn up to 55% interest in two exploration tenements in the South Harz region in Germany.

Based on the historical exploration data relating to drilling, the company estimates 4–5BT of mineralized rock, containing 292–1,285MMT  $K_2O$  at a grade range of 7.2–25%. The company plans

to advance the project by locating and analyzing detailed historical exploration records along with sample material from exploration drill holes. Also, the company plans to submit approvals to undertake a drilling program.

#### **Valuation**

Given the due diligence and valuation estimations based on the discounted project cash flows, Arrowhead believes that Potash West NL's fair share value lies between AU\$0.16 and AU\$0.21. Our valuation is based on the company's flagship Dandaragan Trough Project, which is at a relatively advanced stage. We have not carried the valuation for the German project, given the early exploration stage.



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## **Company Presentation**

Potash West NL (PWN) is an ASX-listed mineral exploration company seeking to make the transition to producer status. The company's asset base comprises the Dandaragan Trough project in Western Australia, and the South Harz potash project in Germany. The projects are located close to major infrastructure facilities, providing easy access to the market.

The Dandaragan Trough deposit is the world's largest glauconite deposit, and is spread over an area of more than 2,000km². The Company plans to develop its phosphate project first, as the development time is shorter, capital cost is lower and there are lower technical risks with the well-established process. It plans to conduct a Definitive Feasibility Study on phosphate production by December 2016, followed by construction and production by July 2018. Following the commencement of phosphate production, it plans to develop the potash project, processing glauconite to produce Sulphate of Potash (SOP), and a range of valuable by-products, using its proprietary K-Max process.

In 2015, the company updated its scoping study Dinner Hill prospect, with IRR of 30% and  $NPV_{12}$  of AU\$652MM at the mining rate of 4.2 Mtpa. The company also provided an estimated capital cost of AU\$135.7MM and AU\$590.3MM for Phosphate and Integrated K-Max projects, respectively.

In July 2014, the company entered into a farm-in agreement through which it can earn up to 55% interest in the South Harz potash project by funding early stage exploration. Through its Joint Venture firm, East Exploration Pty Ltd. (EE), the company received exploration licenses for two tenements. The tenements are situated in a historically significant potash mining belt, and have the advantage of geological information availability. In March 2015, EE provided an exploration target of 4,055–5,141MMT (292–1,285MMTof  $\rm K_2O$ ) based on historical potash exploration data. Potash West plans to target European markets through production from this project.

## **Potash West NL's Portfolio and Company Premiums**

- Large, multi-resource, greensand deposit in Australia...: The Dandaragan Trough Project area is spread over 2,000 km², and hosts one of the world's largest glauconite deposits, along with phosphate mineralization. Along with rights to the glauconite and phosphate minerals within the tenements, Potash West also holds rights to by-products produced by processing these minerals. The Dinner Hill prospect within the project has a phosphate resource estimate of 120MMT at 2.79%  $P_2O_5$ , and K-Max resource estimate of 122MMT at 4.6%  $K_2O$ . The mineralization displays strong geological continuity, providing scope for additional resources to the south, east, and north of the tenement. The current resource was established in ~15% of the Dinner Hill prospect; over the broader Dinner Hill area, the company estimates an exploration target of 1.0BT to 1.5BT at 4.0% to 4.8%  $K_2O$ , including 300–600MMT phosphate mineralization target at 1.5% to 3%  $P_2O_5$ .
- ...coupled with interest in the potentially attractive German potash project...: In July 2014, the company entered into a farm-in agreement with a firm, East Exploration Pty Ltd. (EE). EE received two exploration licenses in the South Harz region of Germany in January 2015, and Potash West can earn up to 55% interest in the German potash project by funding early-stage exploration. South Harz is a prolific potash producing region in Germany, with over 500MMT potash ore mined during the past 100 years. The mineralization in the company's application license areas, covering more than 450km². The mineralization in the two licensed areas intersects at a shallow depth of 511–900m below the surface, which is expected to result in lower costs in the initial years. The project also benefits from the availability of significant historical geological information; currently EE has appointed ERCOSPLAN to review the same in the Kuellstedt application license area.
- ...provides a unique opportunity to access multiple, significant geographical markets: The geographical distribution of the company's asset portfolio provides it with the unique opportunity to cater to the demand from Australian, Asian and European markets. The company's assets the Dandaragan Trough project and the recently added German project— are well connected and located close to major infrastructure facilities, thus providing easy access to target markets. While the products from the Dandaragan Trough project could be marketed for local consumption (currently a major share of the Australian demand is imported), as well as exported to India and China; the



German project, if successful, could expand the company's target market to Europe. This will enable the company to cater to multiple regions which account for more than 70% of the global SOP consumption (in 2013, China and Europe were the major consumers of SOP, accounting for 49% and 24% of the global consumption, respectively)

- Profit maximization by harnessing the potential synergy between phosphate and K-Max projects in the Dandaragan Trough project: The phosphate and the potash projects in the Dandaragan Trough, when combined together, could lead to revenue maximization and cost reduction. The waste from the K-Max plant (coarse mineralization) could be used to recover phosphate, resulting in higher phosphate production. Also, potash and other co-products could be extracted from the concentrate and slimes (by-products of phosphate processing), which can be stockpiled for the second stage (K-Max process). The second stage of the project (K-Max) will also benefit from the use of a common beneficiation plant, and lower costs from mining in exposed areas from the phosphate project.
- Successful application of the proprietary K-Max process could provide a potential revenue-earning stream: The company developed the K-Max process, a one-of-its kind flowsheet, to extract potash and other products by processing glauconite in the greensand. This enables the production of sulphate of potash (SOP) and various co-products such as high-magnesium SOP, merchant grade phosphoric acid, iron oxide, and aluminium sulphate from glauconite. The company holds 100% Intellectual property (IP) of the process, and has already applied for its patent. It plans to conduct a pilot run on its glauconite deposits, which if successful, would be applied to a host of other glauconite deposits. The success of this project might result insignificant revenue generation.

## Potash West NL's Portfolio and Company Risks

We believe that the company's operational risk has reduced, given the JORC-compliant resource estimate on its Dandaragan Trough Project and the project's strong technical and financial viability (suggested by the initial scoping study). The farm-in agreement for potentially attractive German Potash project is expected to diversify the company's asset base, thus reducing the concentration risk.

However, currently, the company does not have any operational asset, though it is planning to conduct a Definitive Feasibility Study on the Dandaragan Trough Project.

Although the company has raised capital through IPO and private placement, we believe that significant capital infusion will be required to finance future activities. However, the financing risk in Stage 2 of the project (Integrated K-Max plant) will be reduced due to funding from cash flows from Stage 1 operations. Additionally, Potash West faces other risks inherent to mining firms, such as regulatory risk, commodity price risk, and title risk.

## **Potash West NL's Corporate Strategy**

Potash West is currently focusing on advancing the potash project in the Dandaragan Trough project, while simultaneously developing the German Potash project.

The Dandaragan Trough project will enable the company to consolidate prospective ground in Western Australia, thus reducing competing market interests, dominating the Australian glauconite resource market, defining cost effective extraction, maintain efficiency and cost profile, and advancing toward definitive feasibility. The project has ready local and export market at its doorstep, being close to rail and export ports.

The recent farm-in on the *German potash project* further provides it with a unique opportunity to expand its presence in the European market. Though still in the exploration stage, availability of information on historical geological exploration on the project area is expected to reduce the time for development.

The IP of the K-Max process can be applied to other Glauconite developers and has the potential to be expanded to other minerals. There has been interest from third parties in this and the company is looking to leverage its technology assets over the next 12 months.



#### News

**Updated exploration target at Kullstedt, South Harz Project, Germany:** On March 4, 2015, the company released an exploration target on the German project based on the historical exploration campaigns and former three operational mines. The exploration target is estimated between 4,055MMT and 5,141MMT of mineralized rock, containing  $292-1,285MMTK_2O$  (at 7.2-25%  $K_2O$ )

Potash West reported improved economics for Dinner Hill Project: On January 13, 2015, Potash West announced updated results on the Dinner Hill Project, highlighting a pre-tax IRR of 30% and  $NPV_{12}$  of AU\$652MM, based on 4.2Mtpa mining rate. The company also provided additional information on capital cost, operational cash costs, and EBITDA.

**Potash West acquires 25% interest in Lithium Carbonate Technology company:** On February 27, 2015, Potash West announced an acquisition of 25% interest in a company, which holds the license for a unique lithium carbonate producing technology. It's a continuation of the company's relationship with the Strategic Metallurgy, which would result in developing new process technologies and then licensing them to project developers.

**East Exploration receives exploration licenses in Thuringia, Central Germany:** On January 16, 2015, East Exploration has been granted with the exploration licenses by Thuringian Mining Authority, subject to develop a new mine in this historic mine and to extract information on 30 holes drilled in Kuellstedt and in close proximity to it.

**Change in management:** On December 1, 2014, Potash West announced the appointment of Mr. Chew Wai Chuen as a non-executive director to the board. Mr. Chew has 15 years of industry experience in the Asian capital markets.

**Resignation of non-executive director:** On November 14, 2014, Potash West notified that Mr. George Sakalidis will retire from the post of non-executive director on November 26, 2014 in the Annual General Meeting.

**Potash West completes AU\$2.9MM placement:** On October 10, 2014, Potash West announced capital raise of AU\$2.9MM through placement of 58MM shares at AU\$0.05 per share. The proceeds from the placement will be used in Dandaragan Trough project and Kullestedt potash project.

**Potash West acquires additional tenements in the Dandaragan Project:** On August 20, 2014, Potash West announced an acquisition of 300km<sup>2</sup> of prospective tenements to the Dandaragan Trough Project. The addition is expected to consolidate the company's holding over prospective areas of Dandaragan Trough Project and add to the existing extensive resource base, close to the Dinner Hill.

**East Exploration commissions review of geological data:** On August 18, 2014, East Exploration (EE), the company's JV arm in Germany, commissioned IngenieurgesellschaftGeotechnik und BergbaumbH (ERCOSPLAN) to review the geological data of the Kuellstedt project. The process, including collation, analysis and reporting of the geological data, will be completed in 14 weeks.

**Potash Westearns interest in Germany's potash project:** On July 29, 2014, Potash West announced 25% interest in East Exploration Pty Ltd. (EE) following the payment of AU\$100k. EE holds  $450 \, \mathrm{km}^2$  of exploration permits in the prospective South Harz region of Germany. The company can earn a further 25%, subject to payment of AU\$200k, for funding the licenses and reviewing the historical geological data. The company can earn upto 55% from EE, subject to payment of AU\$50k.

**Potash West announces completion of AU\$800k placement:** On July 9, 2014, Potash West raised AU\$800k through the placement of ~23MM fully paid ordinary shares. The proceeds from the placement will be used in Dandaragan Trough project.

**Updated scoping study demonstrates improvements at Phosphate Project:** On April 15, 2014, Potash West announced the results of the updated phosphate scoping study on the Dandaragan Trough Project. The study suggests attractive economics, with IRR of 29.5% and pre-tax NPV<sub>8</sub> of AU\$331MM. It also indicated average revenue of AU\$124MM based on the production of 340ktpa SSP at  $18.1\% P_2O_5$ .



## **Listing Information**

Potash West NL listed on ASX on May 11, 2011 (Ticker: PWN). It is also listed on OTCPink (Ticker PWNNY)

## **Contacts**

Registered office	Potash West NL, Suite 3, 23 Belgravia Street, Belmont WA 6104, Belmont WA 6984, Australia
Telephone	+61 8 9479 5386
Facsimilie	+61 8 9475 0847
E-mail	info@potashwest.com.au

# Major Shareholders<sup>vi</sup>

Equity Holder	No. of Shares (MM)	Percentage Issue Capital (%)
Venture Frontier Ltd	32.00	15.97%
Choy Thai Yap	13.00	6.51%
Uob-Kay Hian Pte Ltd	9.55	4.77%
Van Der Laan Robert	6.79	3.39%
Griffin Adrian Christo	6.00	2.98%
Cahill Lindsay	3.76	1.87%
Millward John Stephen	3.73	1.86%
Mcmanus Patrick Bernar	3.60	1.79%
Torbinup Resources Pty Ltd	3.56	1.78%
Bell Dennis	2.86	1.43%
Gilpin Park Pty Ltd	2.85	1.42%
Sept Rogues Ltd	3.00	0.91%
Nutsville Pty Ltd	1.74	0.87%
Richmond Resources Pty Ltd	1.40	0.70%
Zheng Chaoyang	1.31	0.65%
Pontian Orico Plantations	1.19	0.60%
L'Aime Frederick Denis	1.18	0.59%
Chandrika Rajendram	1.15	0.58%
Potash West NI	1.15	0.57%
Leeman Pty Ltd	0.69	0.34%
Chew Wai Chuen	0.50	0.25%



# **Management and Governance**vii

Potash West NL's management comprises professionals with a proven record and sound geological background.

Personnel	Designation	Current and Total Experience
Adrian Griffin	Non-executive Chairman	Adrian Griffin is an Australian-trained mining professional with exposure to metal mining and processing worldwide during a career spanning more than three decades. A pioneer of the lateritic nickel processing industry, he has helped develop extraction technologies for a range of minerals over the years. He also specializes in mine management and production. He is also the managing director of ASX-listed Midwinter Resources NL, an Africa-focused iron ore project developer. He is a former CEO of Dwyka Diamonds Limited, an AIM- and ASX-listed diamond producer. He was a founding director and executive of Washington Resources Limited and also a founding director of Empire Resources Limited, Ferrum Crescent Limited and Reedy Lagoon Corporation Limited. Adrian was also a founding director of ASX-listed Northern Uranium Limited, of which he is currently a non-executive director.
Patrick McManus	Managing Director	Patrick McManus has a degree in mineral processing from Leeds University and is an MBA from Curtin University. A mining professional for more than 30 years, his work has taken him to several sites within Australia and overseas, including Eneabba and the Murray Basin in Australia, Madagascar, Indonesia and the US.  Patrick has worked in operational, technical and corporate roles for RioTinto, RGC Limited and Bemax Resources Limited. He was a founding director and, from January
Chew Wai Chuen	Non-executive Director	2007 to March 2010, Managing Director of ASX-listed Corvette Resources Limited.  Chew Wai Chuen is a Managing Partner at a financial advisory firm, providing personal investing planning and wealth management for high net worth individuals. He has more than 15 years of experience as a financial advisor, particularly for corporate and wealth management for ultra-high net worth individuals. He has a widespread network of clients based in Singapore and Malaysia and has worked with several financial institutions in Singapore such as Standard Chartered Bank, OCBC Bank, and Credit Suisse Singapore.
Gary Johnson	Non-executive Director	Gary Johnson is a metallurgist with more than 30 years of experience in all aspects of the mining industry. In his early career, he gained operational and project expertise with a range of metals in operations in Africa and Australia. Later, he was a member of the team operating the metallurgical pilot plant at the giant Olympic Dam copper, gold and uranium project in South Australia. Currently, he runs his own consulting company and holds several patents in the field of hydrometallurgy. He is currently a director of the TSX-listed Hard Creek Nickel Corporation.  In 1998, after 10 years as chief metallurgist for a large gold producer, Gary formed his own specialized hydrometallurgical consulting company. During this period, he worked closely with LionOre Mining International to develop the Activox® process for treating sulphide concentrates. In 2006, when LionOre acquired Gary's company, he joined LionOre as a senior executive. In 2007, LionOre was taken over by MMC Norilsk Nickel and in 2009 Gary became managing director of the latter's Australian operations.

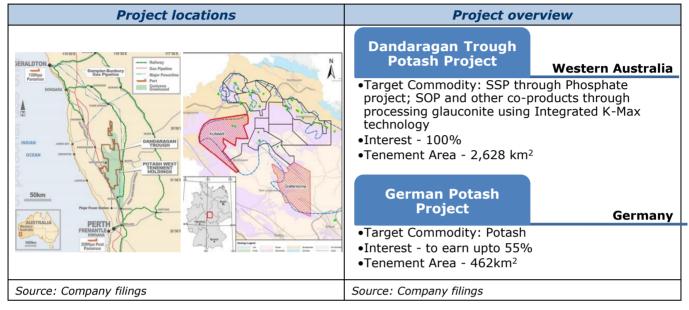


## **Assets and Projects**

#### **Overview**

The company's assets include the Dandaragan Trough project in Western Australia (covering over 2,000km²), and the South Harz potash project in Germany (with application licenses in tenements over 450km²). The projects are located close to good infrastructure facilities, providing easy market access.

## **Company's Asset Portfolio**



## **Dandaragan Trough Project**

**Asset Summary:** The project is expected to be one of the world's largest glauconite deposits, along with hosting phosphate mineralization. It has unique advantages in terms of connectivity to major road/rail routes and export ports, and its proximity to the local markets.

The Dinner Hill prospect has a phosphate resource of 120MMT (at 2.79%  $P_2O_5$  and 3.1%  $K_2O$ ), and a K-Max resource estimate of 122MMT (at 1.8%  $P_2O_5$  and 4.6%  $K_2O$ ). The company expects an exploration target of 1.0BT to 1.5BT (at 4.0% to 4.8%  $K_2O$ ) over the broad project area, including 300–600MMT of phosphate mineralization target at 1.5% to 3%  $P_2O_5$ .

In March 2015, the company updated its scoping study, highlighting a pre-tax IRR of 30% and  $NPV_{12}$  of AU\$652MM at a mining rate of 4.2Mtpa.

Potash West plans to develop the project in two stages. In Stage 1, it estimates 390ktpa SSP production for the first five years of operations (from mid-2018).

Stage 2 will involve processing glauconite and phosphate in an integrated K-Max plant,

producing 152ktpa SOP, 136ktpa KMS, 223ktpa iron oxide, 764ktpa aluminium sulphate, and 152ktpa phosphoric acid.

Capital costs during Stage 1 and Stage 2 is expected to be AU\$135.7MM and AU\$590.3MM, respectively.

**Target Commodity:** Single Superphosphate (SSP) from the phosphate project; and Sulphate of Potash (SOP) from processing glauconite using K-Max technology (including co-products such as high-magnesium SOP (KMS), high-grade Iron oxide, and aluminium sulphate, and merchant grade phosphoric acid.

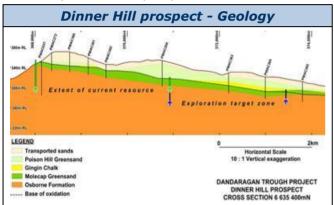
**Location:** The tenements commence from 100km north of Perth. The Dinner Hill project, the focus of company's current exploration, is located 175km north of Perth.

Infrastructure Advantages: The project, located between Moora and Dandaragan in Western Australia, is well positioned in terms of road and rail access, export ports (200km from Kwinana and Geraldton ports), and proximity to natural gas and electricity corridors. The well-established infrastructure and connectivity is expected to result in lower transportation costs.

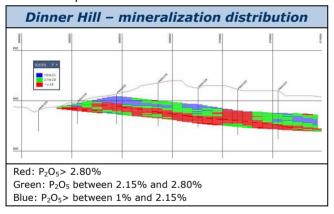


**Regional Geology:** Greensands in the area are an unconsolidated mixture of silica and glauconite, and share similar physical characteristics to Cataby and Eneabba mineral sand deposits located nearby. The greensands contain significant amounts of potash in the glauconite and phosphate.

The tenements primarily cover the Poison Hill and Molecap Greensand, separated by Gingin Chalk. The greensand formations are covered by a layer of sand, with an average thickness of 11m. The following table shows the geological cross-section of the key Dinner Hill prospect:

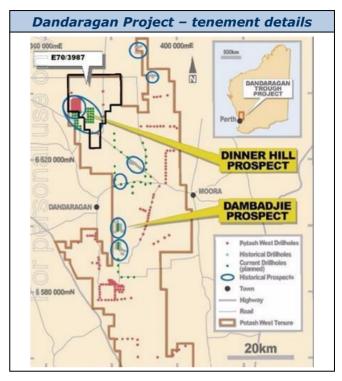


Within the resource area, mineralization is primarily encompassed in the lower portions of the Poison Hill Greensand, the Gingin Chalk, and the Molecap Greensand.



**Tenement Details:** The company has 12 tenements and applications in the Dandaragan Trough project area cover 2,628km², with extensive greensand units. The Dinner Hill project area covers approximately 60km² in the northwest of the trough.

Along with rights to the glauconite and phosphate minerals within the tenements, Potash West NL also holds rights to any by-products produced by processing these minerals.



**Potential Mineralization:** The JORC resource is currently estimated within 9km<sup>2</sup> area in the Dinner Hill prospect. The higher grade portion of the K-Max resource occurs in the Molecap Greensand.

In March 2014, Potash West upgraded the phosphate resource estimates in the Dinner Hill prospect to 120MMT indicated resource at 2.79%  $P_2O_5$ , following the confirmation of phosphate recovery from the calcite-rich chalk layer.

	Resource (MMT)	P <sub>2</sub> O <sub>5</sub> (%)	K₂O (%)			
	Phosphate					
Indicated	120	2.79	3.10			
Total	120	2.79	3.10			
K-Max (Molecap greensand)						
Indicated	120	1.8	4.6			
Inferred	2.0	2.2	4.4			
Total	122	1.8	4.6			

The current resource is estimated over 15% of the  $60 \text{km}^2$  prospect area, highlighting the significant upgrade potential. Over the total Dinner Hill area, the company estimates an exploration target of 1-1.5BT fresh greensand at 4-4.8%  $\text{K}_2\text{O}$  (including 300-600MMT phosphate mineralization at 1.5-3.0%  $\text{P}_2\text{O}_5$ ). The exploration target is not compliant with JORC.



**Scoping Study:** In January 2015, the company updated its scoping study at Dinner Hill.

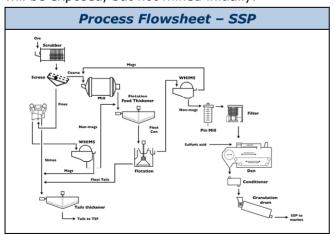
Scoping Study - Consolidated Key Outcomes		
Mining rate	4.2Mtpa	
Mine life	20+ years	
Average annual revenue	AU\$380MM	
Average annual Operating expenses	AU\$168MM	
Annual EBITDA	AU\$212MM	
IRR	30%	
NPV <sub>12</sub>	AU\$652MM	
Capital cost	AU\$725.3MM	

The study involves the production of SSP for the first five years of operation (Stage 1). During the fourth and fifth years of operation, it plans to process phosphate and potassium-containing minerals to produce potassium sulfate, potassium magnesium sulfate, iron oxide, and aluminium sulfate from Integrated K-Max Plant (Stage 2).

**Stage 1 – Phosphate:** The company plans to focus on the production of SSP in the first five years of operation (from mid-2018).

Stage 1 (First 5 years)		
Processing output	390ktpa SSP	
Annual EBITDA	AU\$61MM	
Capital cost	AU\$135.7MM	

*Processing:* The mined material will be treated in a superphosphate processing plant (including beneficiation and acidulation plant) to produce phosphate rock (>30%  $P_2O_5$ ). The phosphate rock will then be treated with purchased sulfuric acid to produce SSP (>18%  $P_2O_5$ ), resulting in lower operating costs. The potassium rich glauconite will be exposed, but not mined initially.



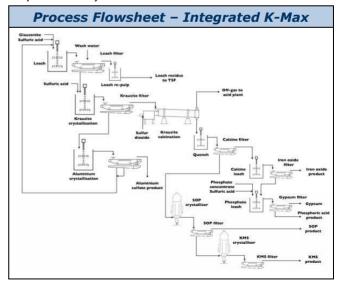
The scoping study highlighted the easy adoption of the process flowsheet into the Phosphate resource with a recovery of 70% to only 36% of the mass. The feed will use phosphate with average grade 2.8%  $P_2O_5$  to 5.4%  $P_2O_5$ .

The process also results in the production of glauconite concentrate, which will be stockpiled for later treatment.

**Stage 2 – Integrated K-Max:** The K-Max process is a proprietary technology used by the company to produce Sulphate of Potash (SOP) and various co-products from glauconite.

Stage 2 (2022 onwards)			
Annual EBITDA	AU\$261MM		
Capital cost	AU\$590.3MM		
Processing Output (ktpa)			
SOP	152		
кмѕ	136		
Merchant grade phosphoric acid	152		
Iron Oxide	223		
Aluminium Sulphate	764		

Processing: With the use of additional equipment, the K-Max plant will process phosphate concentrate to phosphoric acid and glauconite to potash products, SOP and KMS, along with iron oxide and aluminium sulfate as by-products. In line with that, a sulfur-burning acid plant (to make available sulfuric acid and steam) and a natural gas-fired boiler (to supplement steam requirements) will be installed.



The plant has potassium and magnesium recoveries of 92.9% and 83.2%, respectively



from magnetic concentrate to final products, and overall phosphate recovery of 69.5%.

Advantages: The Integrated K-Max plant will benefit from the following:

- Low mining costs in the initial period due to the exposed K-max ore areas during Stage 1.
   Further, cash flows from the phosphate project can fund some of the equity requirements of this stage
- Production of phosphoric acid, which benefits from on-site acid plant, coupled with cheaper transportation costs and larger market compared with SSP

**Project Schedule:** The company plans to focus on the phosphate project initially, and aims to commence production by 2018.

Phosphate project timelines	Timeline
Resource upgrade	April 2015
Feasibility study	Dec 2016
Construction	Q4 2017
Full-scale production	Mid 2018

The company also plans to construct a pilot plant to process glauconite deposits to better understand the applicability of K-Max technology.

Integrated K-Max project timelines	Timelines
Pilot plant	1H 2019
Pre-Feasibility study	1H 2019
Feasibility study	1H 2020
Construction	1H 2022
Full-scale production	2H 2022

## **Molecap Greensand**

The Molecap Greensand is a major unit primarily composed of coarse quartz and medium-sized green glauconite grains with varied thickness. Geological modelling of the resource and surrounding area suggest that the Molecap becomes shallower and thickens to the south and east. It has been the primary target at Dinner Hill prospect based on higher potassium oxide grade and thickness. The company has identified 122MMT of higher grade mineralization at 4.6%  $\rm K_2O$  and 1.8%  $\rm P_2O_{5}$ , at an average thickness ranging from8m to 14m within the Greensand.

## **Poison Hill Greensand**

The Poison Hill Greensand has features of glauconitic quartz sandstone and shallow marine and is weakly lithified, medium-to very coarsegrained, poorly-sorted, clayey glauconitic sandstone that in places has a lower unit of glauconite clay. The upper part of the unit is strongly ferruginised, however unaltered material has been exposed by bulldozing it along with the base of the northern ridge.

## **Gingin Chalk**

The Gingin Chalk contains some glauconitic mineral and the unit locally comprises thinly interblended greensand and chalk. The Gingin Chalk overlies the Molecap Greensand and is typical of chalk deposits of this age globally and was deposited on the floor of a shallow, warm sea supporting abundant marine life and with little inflow of terrestrial debris.

## **Osborne Formation**

The Osborne Formation has glauconite sandstone, with minor siltstone and clay stone. Although it contains less glauconite than the overlying Molecap and Poison Hill Greensands, it is still prospective for glauconite production.

## **German project**

**Company's interest in the project:** Currently 25%; estimated to increase to 55% for a total consideration of AU\$550k, subject to funding early stage exploration.

**Asset Summary:** In July 2014, the company entered into an agreement to earn an interest in the East Exploration Pty Ltd. (EE). EE has exploration licenses for its tenements covering over  $450 \text{km}^2$ . The mineralization in these areas intersects at a relatively shallow depth of 511-900m below the surface.

EE has commissioned ERCOSPLAN in August 2014 to review the geological data in the Kuellstedt application license area. Potash West aims to target the European market with the production from the German project.

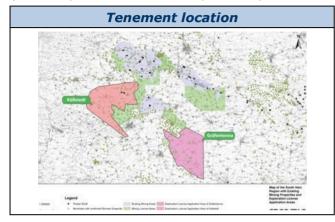
**Location:** South Harz region in Germany, nearby the town of Sonderhausen.

**Historical Mineralization:** Since 1896, over 500MMT potash ore has been mined from the region, producing over 100MMT potash fertilizers. Extensive exploration work during 1960-80 indicated presence of sylvinite (KCl and NaCl) and



carnallite (KCl and MgCl) in the region. The company plans to use the drilling and assaying information to evaluate the geological and economic potential of the licenses.

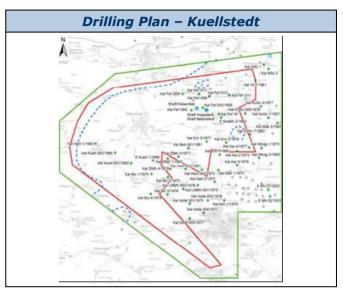
**Tenement details:** In January 2015, EE received licenses for two exploration areas – Kuellstedt (246 km<sup>2</sup>) and Graefentonna (216 km<sup>2</sup>).



**Recent Developments:** Information gathered from historical exploration campaigns and three former operational mines confirmed the existence of potash salts. Based on the 3D geological model of the Kullstedt deposit, the company estimates the following exploration target:

Kullstedt Exploration Target						
Mineralized Rock (MMT)	KCI (%)	K <sub>2</sub> O (%)	K₂O (MMT)			
4,055-5,141	11.8-40.1	7.2-25	292-1,285			

**Further Work:** To advance the Kullstedt project, EE plans to work with ERCOSPLAN and other geologists and develop a pipeline of work to be executed. It aims to locate and analyze detailed historical exploration records along with locating sample material from the exploration drill holes.



EE also plans to submit approvals for commencing drilling program in order to estimate the resources for the project.



## **Technologies and Markets**

## **Potash Description**

Potash refers to potassium compounds and potassium-bearing materials, used primarily in fertilizers. Potash is critical in the regulation of plants' physiological functions and improves plant quality and increases yields. The common forms of potash are Muriate of Potash, MOP (KCI) and Sulphate of Potash, SOP ( $K_2SO_4$ ).

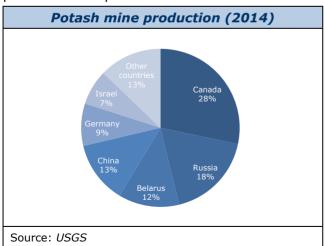
**Sources:** Potash deposits are limited to a few regions across the world, but often occur in large deposits. Potash fertilizers contain about 20 to 62%  $K_2O$ . They consist of potassium in combination with chloride, sulfate, nitrate, and other elements.

Historically, the large evaporate deposits of Saskatchewan and Belarus has provided potash to the world markets. These types of deposits are of high grade but they occur at great depths.

Approximately 90% of potash is extracted by conventional underground mining methods. Solution mining is used when underground deposits are irregular and very deep.

**Production**viii: Potash production is limited to only 12 countries. Of these, the top 5 countries – Canada, Russia, Belarus, China, and Germany account for ~80% of the global mine production.

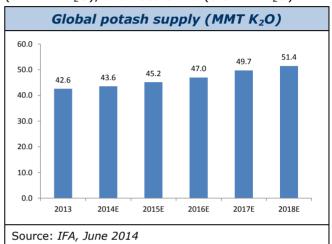
Potash is imported by more than 100 countries worldwide and over 82% of world's potash production is exported.



According to a report by IFA and USGS, global potash capacity is expected to increase at a

CAGR of 3.3% to reach 60.7MMT  $K_2O$  by 2018 (2013: 49.7MMT  $K_2O$ , 2015: 55MMT  $K_2O$ ).

Global potash supply is expected to reach 43.6MMT  $\rm K_2O$  in 2014 (2013: 42.6MMT  $\rm K_2O$ ). In the medium term, global potash supply is expected to reach 51.4MMT  $\rm K_2O$  by 2018. The incremental growth of 8.8MMT K2O between 2013 and 2018 is expected to come from North America (4.6MMT  $\rm K_2O$ ), Russia and Belarus (3.4MMT  $\rm K_2O$ ), and East China (0.8MMT  $\rm K_2O$ ).



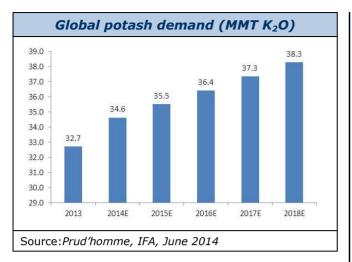
**Application** <sup>ix</sup>: Potash has three main uses: fertilizer, livestock feed supplements and industrial processes. Fertilizers use 95% of world's potash production. Potash is a key ingredient in fertilizers that enhance water retention of plants, increases crop yields and plants' disease resistance.

In feed supplements, the key function of potash is to contribute to animal growth and milk production. Potash is also used to produce glass, ceramics, soaps etc.

**Demand**\*: Potash demand is highly correlated to crop production, as it is an essential component of fertilizer. The potash market is primarily driven by the rising population and the need for nutritious food with rise in per capita income. Potash is a core part of soil nutrition and cannot be replaced by other sources.

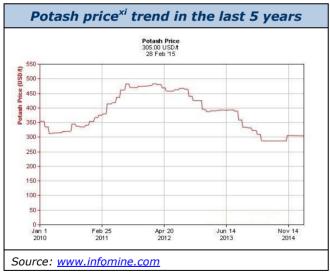
With increased population, farm output is expected to rise by 70% by 2050, which will require higher crop yields as a result of decreasing arable land per capita. In the medium term, potash consumption is expected to increase to 38.3MMT  $K_2O$  by 2018 (2013: 32.7MMT  $K_2O$ ).In the long term, potash demand is expected to grow at a rate of 3-5%.





**Price outlook:** During the commodity rally of 2003-2008, prices for MOP (Muriate of Potash, KCI) rose sharply from US\$200/T to US\$1000/T in June 2008. After a temporary slowdown during the global economic downturn beginning at the end of 2008, potash consumption levels have begun to return to pre-crisis levels in most key markets.

Potash prices are currently in the range of US\$300/T, and are expected to be under pressure in the near term due to a supply surplus. In the medium to long term, we expect the potash prices to increase, supported by demand recovery.



## **Potash from Greensand (Glauconite)**

The term 'greensand' refers to a specific formation, generally sandstone, which contains glauconite. Greensands are characterized by their high total iron content ( $Fe_2O_3$ ) and high

 $K_2O$  content, with glauconite typically containing  $\sim 6\%$   $K_2O$ .

Glauconite is an iron potassium phyllosilicate (mica group) mineral of characteristic green color with very low weathering resistance and very friable. However, potash from glauconite processing has negligible share in the global production.

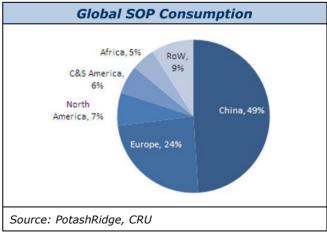
Glauconite is currently mined on a small scale either as a soil conditioner, slow release fertilizer, or as a water purifier for iron contaminated groundwater. There are a few pits scattered over New Jersey, Illinois, Wisconsin, Iowa, in the US, and Russia; even New Zealand has a few very small-scale operations<sup>xii</sup>.

## Sulphate of Potash (SOP)xiii

Potassium sulfate  $(K_2SO_4)$  is a non-flammable crystalline salt which is soluble in water. It is also called as sulphate of potash, arcanite, or potash of sulfur.

Though potassium is relatively abundant,  $K_2SO_4$  is rarely found in pure form in nature. Usually, it is found mixed with salts containing Magnesium (Mg), Sodium (Na), and Chloride (Cl).  $K_2SO_4$  is mainly used in farming, and is particularly necessary for soils and crops that require sulphur, and where Cl needs to be avoided.

Global Sulphate of Potash (SOP) market is characterized by a huge demand-supply gap, due to increasing demand and limited production. In 2013, the consumption of SOP was 4.8MMT, driven by the demand from China and Europe. Further, the demand for SOP is expected to grow at a CAGR of 11.4% between 2013 and 2019 to reach 9.8MMT by 2019.xiv



The price for SOP is generally higher compared to MOP, and was at US\$681in 4Q14, as per the



filings by Compass Minerals<sup>xv</sup>. We expect the price of SOP to rise in the medium term, driven by the increasing demand-supply gap.

# Potassium Magnesium Sulphate (KMS)

Potassium Magnesium Sulphate (KMS) has three essential plant nutrients – Potassium (K), Magnesium (Mg), and Sulphur (S).

KMS has neutral pH and does not change the soil acidity or alkalinity. Also, in some countries KMS is certified for use in organic crop production; from specific sources. Some sources are also sold as feed grade for animals and poultry as it is a dietary source of K, Mg, and S.

KMS has a unique combination and is majorly used in cases where the soils have excess Cl or the crops for which Cl needs to be avoided.

## Iron Oxide (Fe<sub>2</sub>O<sub>3</sub>)

Iron (III) oxide ( $Fe_2O_3$ ) is one of the three main oxides of iron, along with iron (II) oxide (FeO), and iron (II, III) oxide ( $Fe_3O_4$ ).  $Fe_2O_3$  occurs naturally as the mineral hematite.

 $Fe_2O_3$  is a main input to the production of iron, steel and many other alloys. Ferric oxide is used as polish on metallic jewelry and lenses as it gives a superior finish.  $Fe_2O_3$  is also used as pigments, majorly in dental composites alongside titanium oxides. The pigments, Pigment Brown 6, Pigment Brown 7, and Pigment Red 101, are approved by the Food and Drug Administration for use in cosmetics.

## Aluminum Sulfate $(Al_2(SO_4)_3)$

Aluminium sulfate, a type of alum, is mainly used to purify drinking water, treat waste water, and make paper.

Aluminium sulfate is also used in dyeing and printing of textiles as it helps the dye adhere to

the clothing fibers by making the pigment insoluble. It is also used as water proofing agent and accelerator in concrete by the construction industry.

## **Superphosphate**

Superphosphate is primarily used as a fertilizer, produced from phosphate rock or naturally found in guano.

It is produced by the reaction of concentrated sulphuric acid or phosphoric acid with phosphate rock. It is also found naturally in deposits around seabird colonies by the buildup of guano. Superphosphate is of two variants - single superphosphate when treated with sulphuric acid, and triple superphosphate when treated with phosphorus acid.

Aside from being a fertilizer, superphosphate is widely used as an animal feed, and is used by the construction, food and drug industries.

## **Phosphoric Acid**

Phosphoric Acid is a thick, colorless, odorless, and crystalline solid. It is primarily used in an aqueous solution, an intermediate product in fertilizer manufacture and for rust removal.

It is generally produced by two methods – the Wet process and thermal process. On commercial grounds, the Wet process is in more demand. Pure processed products from the expensive thermal process are used in the food industry. It is used to acidify foods and beverages so as to create a tangy or sour taste.

Among other applications, phosphoric acid is used in medicine, specifically in dentistry and orthodontics; as an electrolyte in fuel cells and oxyhydrogen generators and as a cleaner and dispersing agent in the construction and detergent industries.



#### **Value**

The Fair Market Value for Potash West NL's shares stands between AU\$31.35MM and AU\$42.61MM.

The Fair Market Value for Potash West NL's publicly traded share stands between AU\$0.16 to AU\$0.21.

#### **Potash West NL Limited Balance Sheet Forecast**

CONSOLIDATED BALANCE SHEET

all figures in '000 AU\$, unless stated differently Low bracket estimates

year ending June 30th	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E
Total Current Assets Total Non-Current Assets	4,966 38,966	5,746 125,136	5,045 224,876	4,731 404,001	6,799 546,180	15,622 689,676	29,024 714,966	134,742 683,996
TOTAL ASSETS	43,932	130,882	229,920	408,731	552,980	705,298	743,990	818,738
Total Current Liabilities Total Non-current Liabilities	403 -	475 -	560 -	663 -	3,052 -	6,058 -	6,058 -	12,365 -
TOTAL LIABILITIES	403	475	560	663	3,052	6,058	6,058	12,365
Total Shareholder's Equity	43,529	130,407	229,360	408,068	549,928	699,240	737,932	806,373
TOTAL LIABILITIES and EQUITY	43,932	130,882	229,920	408,731	552,980	705,298	743,990	818,738

#### Important information on Arrowhead methodology

The principles of the valuation methodology employed by Arrowhead BID are variable to a certain extent, depending on the sub-sectors in which the research is conducted. But all Arrowhead valuation researches possess an underlying set of common principles and a generally common quantitative process.

With Arrowhead commercial and technical due diligence, the company researches the fundamentals, assets and liabilities of a company, and builds estimates for revenue and expenditure over a coherently determined forecast period.

Elements of past performance such as price/earnings ratios, indicated as applicable, are mainly for reference. Still, elements of real-world past performance enter the valuation through their impact on the commercial and technical due diligence.

#### **Arrowhead BID Fair Market Value Bracket**

The Arrowhead Fair Market Value is given as a bracket. This is based on quantitative key variable analyses such as key price analysis for revenue and cost drivers or analysis and discounts on revenue estimates for projects, especially relevant to projects estimated to provide revenue near the end of the chosen forecast period. Low and high estimates for key variables are produced as a valuation tool.

In principle, an investor comfortable with the high brackets of our key variable analysis will align with the high bracket in the Arrowhead Fair Value Bracket, and, likewise, in terms of low estimates. The investor will also note the company intangibles to analyze the strengths and weaknesses, and other essential company information. These intangibles serve as supplementary decision factors for adding or subtracting a premium in investor's own analysis.

The bracket should be taken as a tool by Arrowhead BID for the reader of this report and the reader should not solely rely on this information to make his decision on any particular security. The reader must also understand that while on the one hand global capital markets contain inefficiencies, especially in terms of information, on the other, corporations and their commercial and technical positions evolve rapidly. This present edition of the Arrowhead valuation is for a short to medium-term alignment analysis (one to twelve months). The reader should refer to important disclosures on page 20 of this report.



#### **Information on the Potash West NL valuation**

**Potash West NL Valuation Methodology:** The Arrowhead fair valuation for Potash West NL is based on the discounted cash flow (DCF) method. Our valuation is based on the Dandaragan Trough, given its advanced stage and the company's focus to bring it to the production level. We have calculated the NPV of the estimated cash flows for the phosphate project (Stage 1) and the integrated K-Max project (Stage 2), and have subsequently discounted these by a hurdle rate. We have also accounted for the projects through an implied P/NPV multiple, which is applied to NPV of the project to arrive at an implied equity value.

The fair value bracket for the company is derived from the valuation of the projects, adjusted for central expenses and cash. We have also excluded the German project for valuation, given its early exploration stage.

**Time Horizon:** The Arrowhead fair valuation for Potash West NL is based on a DCF method. The time period chosen for the valuation is based on the expected mine life of the project. Though the later years have a marginal effect on valuation due to heavy discounting, they are included to present a full project cycle situation.

**Underlying Business Plan:** The company is currently advancing the phosphate project in the Dandaragan Trough, and conducting the exploration German project. Post the commencement of phosphate production in the Dandaragan Trough project, it plans to develop an Integrated K-Max plant to process the glauconite deposits to produce Sulphate of Potash (SoP) and other co-products using its proprietary K-Max process. The integrated K-Max plant will also process phosphate concentrate to produce phosphoric acid.

**Terminal Value:** Terminal Value is estimated to depend on a terminal growth rate of 0%, representing the maturity, technology change and prospective competiveness in the business.

**Prudential Nature of Valuation:** This Arrowhead Fair Value Bracket estimate is a relatively prudential estimate, as it is based on the company's focus project – the phosphate production in the Dandaragan Trough project, with nil value for the German project (given the early stage exploration).



## Key variables in Potash West NL's revenue estimations

## Variable 1 - Hypothesis for production and mining at Dandaragan Trough project

We have considered the company's scoping study results to determine the mining rate. We have marginally discounted the company estimates for our Low case estimates.

We have assumed that the phosphate production will commence from 2H 2018. For the Integrated K-Max project, we assume the production to commence from 2H 2022.

SSP production - Stage 1	FY 2019
Low	370ktpa
High	390ktpa

Mining rate						
Low	4.0Mtpa					
High	4.2Mtpa					

## **Variable 2 - Commodity Prices**

We have estimated the price in line with company's updated scoping study results.

Superphosphate price						
Low	US\$340/T					
High	US\$350/T					

Potash project	SOP	KMS	Aluminium Sulphate	Iron Oxide	Phosphoric Acid
Low	US\$470/T	US\$265/T	US\$120/T	-	US\$760/T
High	US\$500/T	US\$280/T	US\$128/T	-	US\$800/T

#### Variable 3 - Exchange rate

We have estimated the AU\$/US\$ exchange rate of 0.88, based on current and expected economic conditions.

## Variable 4 - Capex

Сарех						
Stage 1-Phosphate plant	US\$ 135.7MM					
Stage 2-Integrated K-Max plant	US\$ 590.3MM					

#### Variable 5 - Implied P/NPV multiple

We have discounted the NPV of the project with P/NPV multiple of 0.20x to account for the inherent project risks, including the current stage and the timelines to bring the project to production.



## **Analyst Certifications and Important Disclosures**

#### **Analyst Certifications**

- I, Samarth Agrawal, certify that all of the views expressed in this research report accurately reflect my personal views about the subject security and the subject company.
- I, Kanniga Rajamanickam, certify that all of the views expressed in this research report accurately reflect my personal views about the subject security and the subject company.

## **Important disclosures**

Arrowhead Business and Investment Decisions, LLC received fees in 2011-15 from Potash West NL for researching and drafting this report and for a series of other services to Potash West NL, including distribution of this report and networking services. Arrowhead and some of its employees own call options and shares in Potash West equity.

Aside from certain reports published on a periodic basis, the large majority of reports are published by Arrowhead BID at irregular intervals as appropriate in the analyst's judgment.

Any opinions expressed in this report are statements of our judgment to this date and are subject to change without notice.

This report was prepared for general circulation and does not provide investment recommendations specific to individual investors. As such, any of the financial or other money-management instruments linked to the company and company valuation described in this report, hereafter referred to as "the securities", may not be suitable for all investors.

Investors must make their own investment decisions based upon their specific investment

objectives and financial situation utilizing their own financial advisors as they deem necessary.

Investors are advised to gather and consult multiple information sources before making investment decisions. Recipients of this report are strongly advised to read the information on Arrowhead Methodology section of this report to understand if and how the Arrowhead Due Diligence and Arrowhead Fair Value Bracket integrate alongside the rest of their stream of information and within their decision taking process.

Past performance of securities described directly or indirectly in this report should not be taken as an indication or guarantee of future results. The price, value of, and income from any of the financial securities described in this report may rise as well as fall, and may be affected by simple and complex changes in economic, financial and political factors.

Should a security described in this report be denominated in a currency other than the investor's home currency, a change in exchange rates may adversely affect the price of, value of, or income derived from the security.

This report is published solely for information purposes, and is not to be considered as an offer to buy any security, in any state.

Other than disclosures relating to Arrowhead Business and Investment Decisions, LLC, the information herein is based on sources we believe to be reliable but is not guaranteed by us and does not purport to be a complete statement or summary of the available data.

Arrowhead Business and Investment Decisions, LLC is not responsible for any loss, financial or other, directly or indirectly linked to any price movement or absence of price movement of the securities described in this report.



## **Valuation**

**Cost of equity** 

		_
Risk-free rate	3.3%	xvi
Beta	1.0	xvii
Risk premium	7.0%	xviii
Additional Risk Premium	0.0%	xix
Cost of Equity	10.0%	
Terminal Growth Rate	0%	xx

**Key Variables** 

110, 10, 100									
	Production rate	Commodity Price	Exchange rate						
Max value									
Min value	Please ren	er to the Key Variable S	Section						

## **Valuation**

FCFE (High) Time

Present Value of FCF	(9,257)	(51,800)	(80,463)	(88,129)	(63,450)	(62,749)	(57,324)	36,384	68,073
Free Cash Flow	(9,555)	(58,793)	(100,425)	(120,952)	(95,758)	(104,136)	(104,611)	73,013	150,213
Capital Expenditure	(6,785)	(56,655)	(99,740)	(120,095)	(119,523)	(150,501)	(150,501)	(32,441)	(5,995)
Tax	1,187	916	294	367	(7,246)	(16,869)	(16,603)	(29,352)	(50,910)
EBITDA	(3,957)	(3,054)	(979)	(1,224)	31,011	63,233	62,493	134,806	207,118
	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E
FCFE (Low) Time Period>	0.33	1.33	2.33	3.33	4.33	5.33	6.33	7.33	8.33
Present Value of FCF	(9,257)	(51,800)	(80,463)	(88,129)	(62,481)	(60,987)	(55,720)	40,391	73,914
Free Cash Flow	(9,555)	(58,793)	(100,425)	(120,952)	(94,296)	(101,211)	(101,683)	81,053	163,103
Capital Expenditure	(6,785)	(56,655)	(99,740)	(120,095)	(119,611)	(150,677)	(150,677)	(32,617)	(6,438)
Tax	1,187	916	294	367	(7,908)	(18,192)	(17,924)	(32,855)	(56,590)
EBITDA	(3,957)	(3,054)	(979)	(1,224)	33,224	67,659	66,918	146,525	226,131
	2015E	2016E	2017E	2018E	2019E	2020E	2021E	2022E	2023E
Period>	0.33	1.33	2.33	3.33	4.33	5.33	6.33	7.33	8.33

In the model, the valuation is continued till 2028 from which point the terminal value is established. For all data see reference table below

## **Arrowhead Fair Value**

	High	Low
Terminal Value (TV)	5,616,841	5,142,503
Present Value of TV	281,493	257,601
Present Value of FCF + TV	201,568	145,309
Implied Enterprise Value	40,314	29,062
Add: Cash	2,292	2,292
Implied Equity Value	42,606	31,354
Shares Outstanding (in '000)	200,400	200,400
Fair Value	AUD 0.21	AUD 0.16
<b>Current Market Price</b>	AUD 0.040	AUD 0.040
Current Market Capital (AU\$ MM)	8.02	8.02
Target Market Capital (AU\$ MM)	42.61	31.35



## **Notes and References**

- i Arrowhead Business and Investment Decisions Fair Value Bracket AFVBTM. See information on valuation on pages 17-21 of this report and important disclosures on page 20 of this report.
- ii Bloomberg, as on 8-Apr-15
- iii 52 weeks to 8-Apr-15. Source: Bloomberg
- iv 30 days to 8-Apr-15. Source: Bloomberg
- v Bloomberg as on 8-Apr-15
- vi Source: Bloomberg as on 9-Mar-15
- vii Source: http://www.potashwest.com.au/management.php
- viii Source: http://minerals.usgs.gov/minerals/pubs/commodity/potash/mcs-2015-potas.pdf
  - http://www.allanapotash.com/i/pdf/ppt/AAA-Presentation-Sept2012.PDF;
  - http://www.encantopotash.com/Repository/Home/Corporate-Presentation.pdf;
  - http://magnaresourcesltd.com/investors/MAGNA\_PPT\_1207%20Potash.pdf
- ix Source: http://www.westernpotash.com/about-potash
- x Source:http://www.thehindubusinessline.com/features/investment-world/macro-view/article3387746.ece
- xi Source: http://www.infomine.com/investment/metal-prices/potash/5-year/
- xii Source: http://sites.google.com/site/glauconitenz/globally-rest-of-the-world
- xiii International Plant Nutrition Institute
- xiv http://www.potashridge.com/files/doc\_presentations/2015/Presentation-January-2015.pdf
- xv Compass Minerals 4Q14 filings. Source: http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9MjY5NzA2fENoaWxkSUQ9LTF8VHlwZT0z&t=1
- xvi Bloomberg, as on 11-Nov-14
- xvii Arrowhead estimate
- xviii Bloomberg, as on 11-Nov-14
- xix Arrowhead estimate
- xx Arrowhead estimate