

## **Due Diligence and Valuation Report**

Arrowhead Code: 25-02-02

Coverage initiated: 14 December 2011

This document: 24 May 2012

Fair share value bracket: AU\$2.03 to AU\$4.84<sup>i</sup>

Share price on date: AU\$0.21<sup>ii</sup>

**Analyst Team** 

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Company: POTASH WEST NL

Ticker: ASX: PWN

Headquarters: Perth, Australia

Managing Director: Patrick McManus

Website: www.potashwest.com.au

#### **Market Data**

52-Week Range: AU\$0.15 – AU\$0.35<sup>iii</sup>

Average Daily Volume: 60,978<sup>iv</sup>

Market Cap. on date: AU\$ 17.4MM<sup>v</sup>

#### Financial Forecast Data (in AU\$)

	'12E	'13E	'14E	'15E	16E	'17E	'18E
High profit/ (loss) MM	(4.1)	(7.9)	(22.1)	(25.9)	(37.4)	(52.2)	381.1
High EPS cents	(4.9)	(8.5)	(19.6)	(13.0)	(4.9)	(4.4)	32.3
Low profit/ (loss) MM	(4.1)	(7.9)	(22.1)	(25.9)	(45.2)	(69.4)	310.1
Low EPS cents	(4.9)	(8.5)	(19.6)	(13.0)	(5.9)	(5.9)	26.3

#### Fiscal Year (FY)

1st July - 30th June

#### **Summary**

Potash West NL is an Australian-based mineral exploration company. The company's main focus is on the Dandaragan Trough, within the North Perth Basin, where it operates in 15 tenements with five exploration licenses (ELs) and ten applications for ELs. The company's exploration assets include the potash and phosphate rights to tenements held by Image Resources, Elsinore Energy and tenements held in its own right.

In the Dandaragan Trough project, the company is expected to mine glauconite-bearing greensands to recover potassium, the main chemical ingredient of potash. The tenure of Dandaragan Trough extends over a total area of 2,905km² and process test work confirms low cost beneficiation route. The company in Q3 2011/12 completed drilling of 153 holes totaling 8.3km. The majority of drill holes in the current program penetrated significant thicknesses of Coolyena Group sediments consisting of fine to medium grained glauconitic sandstone, siltstone

and claystone.

Potash West has defined two flow sheets that have successfully produced laboratory quantities of potassium chemicals, with the potential to be important ingredients in fertilizer production for domestic and international markets.

The company continues to focus on areas identified with high grades and expects to define JORC estimates by September 2012. The target geological formations are on elevated ground, where the greensand units have not been eroded and weathering is minimal.

Potash West also continues to identify cost effective commercial process to produce Potash from Greensands resources. The company in April 2012 reported that feed grade has been achieved from bulk sample of Poson Hill by applying screening and magnetic separation.

In November 2011, the company entered into an agreement with Ochre Resources Ltd., which gives Potash West 70% interest in Langey Project in Western Australia. In Q3 2011/12 company completed planning for sampling program scheduled for June 2012 quarter.

In May 2012, the company raised AU\$1.5MM from a private placement of 6.67MM shares at AU\$c 22.5 per share. The shares were placed to clients of Stellar Securities, which also managed the placement and existing shareholders. The fund raised will be used to protect IP created as part of process development work.

Given due diligence and valuation estimations based on discounted cash flow method, Arrowhead believes that Potash West NL's fair share value lies between AU\$2.03 to AU\$4.84. Valuations are based on conservative estimate and the current valuation does not factor in the potential value of the company's other projects.



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## **Company Presentation**

Potash West (ASX: PWN) is an exploration company developing potassium-rich glauconite deposits in the mineral tenements situated in the Perth Basin, to the north of Perth, Western Australia. The company's Perth Basin project consists of the right to explore potash and phosphate within five exploration licenses (ELs) and ten applications for ELs (totaling 15 tenements with a total area of 2,905 km²) located between 50 and 230km north of Perth. The Company also has 4 ELs in its own right.

Currently, Potash West NL is drilling and has commenced scoping studies on chemical extractions. The company completed a drilling program of 153 holes, totaling 8,300m during Q3 2011/2012. Ten target areas have been identified with significant ( $+3\%K_2O$ ) grades, low overburden ratios and thickness's of greater than 10m. These identified areas are now expected to undergo follow up drilling and the company is expected to define JORC resource by September.

Potash West NL has continued working on extracting the potassium from the glauconite matrix. Results of screening and magnetic separation test work on a sample of greensand from one of the target areas showed that the K2O grade can be increased from 2.8% to 6.2%, with a potassium recovery of 75%, by simple screening, desliming and magnetic separation. A number of leaching tests have been completed and commercial grades of Muriate of Potash (MOP, potassium chloride) and Sulphate of Potash (SOP, potassium sulphate) have been produced. The company is continually working in evaluating and comparing different process routes for potash extraction.

The Company in November 2011, entered into an agreement with Ochre Resources Limited (a wholly-owned subsidiary of Heron Resources Limited) which allows company 70% interest in large, potentially glauconite rich Langey Project in Western Australia. Langey project covers an area of 162km<sup>2</sup> situated 60km of Derby in exploration permit E04/1727. In Q3 2011/12 company completed planning for sampling program scheduled for June 2012 quarter.

## Potash West NL's Portfolio and Company Premiums

#### Large, Near Surface Greensand Deposit

Potash West NL has a major landholding over one of the world's largest known glauconite deposits, with exploration licenses and applications covering an area of 2,900 km². Previous exploration indicates glauconite sediments are widespread for more than 150 km along strike and 15 km in width. It also holds the rights to any by-products produced by processing these minerals. Several target areas identified throughout Dandaragan Trough, with shallow, high grade glauconite. The drilling appears to have confirmed that the most prospective locations are on slopes, on elevated ground, where the greensand units have not been eroded and weathering is minimal. The proposed application of recent advances in metallurgy, including fine grind technologies, aimed at extracting potassium to produce commercial-grade potash, are expected to add to company's valuations.

### **Resource Characteristics**

Potash West NL's asset at Perth Basin contains potassium-rich glauconite deposits. Along with glauconite, the company also plans to explore phosphate contained in the greensands, which might be recovered during mining and processing of the greensands. This gives the company the opportunity to devise a single production plant to extract different elements in a cost-efficient manner. Also, global fertilizer demand and change in potash price structure are expected to provide a compelling case for re-evaluating and, if viable, commercializing the deposits.

#### **Region of Operation**

Potash West NL operates in Australia, and once its resources are defined, is expected to become one of the largest producers of potash in the country. The country has a long history of a favorable regulatory environment via-a-vis the mining industry; currently Australia imports all its potash

See important disclosures on page 25 of this report.



requirements. The project is close to the local markets and connects to major roads/rails routes and export ports, providing innate advantage to the company.

## **Experienced Management Team**

The company's management is from diverse mining backgrounds such as mining, geosciences, finance and project management.

Mr. Adrian Griffin is an Australian-trained mining professional with exposure to metal mining and processing worldwide during a career spanning more than three decades.

Mr. Patrick McManus, Managing Director has been a mining professional for more than 30 years; his work has taken him to several sites within Australia and overseas, including Perth Basin and the Murray Basin in Australia, and Madagascar, Indonesia and the US. His background is in industrial minerals with roles in operations, project development, corporate and marketing.

**George Sakalidis** is an exploration geophysicist of more than 20 years standing. His career has encompassed extensive exploration for gold, diamonds, base metals and minerals. He compiled one of Australia's largest aeromagnetic databases, now held by Image Resources.

**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. He has developed several hydrometallurgical processing applications, some of which are in use in major operations.

## Potash West NL's Portfolio and Company Risks

Potash West NL has no operating history and its flagship project – Dandaragan Trough Potash Project – is still under processing test work phase, resulting in materially high operational risks. Also, there are significant risks associated with the financing of the projects, as the company is exploring the mineral assets and is yet to start mining operation. Although the company has successfully raised AU\$6MM through an IPO, Arrowhead believes that it will require additional capital to finance future activities.

## Potash West NL's Corporate Strategy

The company's long-term strategy centers around consolidating prospective ground in Western Australia, reducing competing market interests, dominating the Australian glauconite resource market, defining cost effective extraction, maintain efficiency and cost profile, and advancing toward bankable feasibility. The project has ready local market at doorstep and is close to rail and export ports.

The company plans to concentrate on further drilling of identified areas and procurement of results of the same in order to define maiden JORC resources in Calendar 2012.





#### News

## Potash West raises further \$1.5MM from private placement (May 21, 2012)

Potash West published its quarterly activities report for Q3 2012 and reported that it has identified several target areas throughout Dandaragan Trough, with shallow, high grade glauconite. The company reported results from drilling program completed during the year. Company also said that its focus is on exploration to find high grade mineralization zones and process development to identify cost-effective process of producing Potash.

## Potash West publishes quarterly activity report for Q3 2012 (April 27, 2012)

Potash West published its quarterly activities report for Q3 2012 and reported that it has identified several target areas throughout Dandaragan Trough, with shallow, high grade glauconite. The company reported results from drilling program completed during the year. Company also said that its focus is on exploration to find high grade mineralization zones and process development to identify cost-effective process of producing Potash.

## Potash West announces Process Development update (April 17, 2012)

Potash West announced that it has achieved target process feed grades from a bulk sample of the Poison Hill Greensand sequence by applying a screening and magnetic separation process. The process was successful in removing quartz, feldspar and chalks leaving clean glauconite concentrate with grade of over 6% K<sub>2</sub>O.

## Potash West appoints Stellar Securities as an Adviser (April 12, 2012)

Potash West appointed Stellar Securities, a specialist security trading and corporate advisory firm based in Western Australia, as a Corporate Adviser to the Company. Stellar Securities is expected to assist Potash West with advice on equity market transactions and facilitate the introduction of the Company to high net worth individual, corporate and institutional investors for the company's exciting prospects.

# Potash West identifies targets over a length of 140km within Dandaragan Trough Project (April 03, 2012)

Potash West announced completion of road verge drilling program and produced commercial grade MOP and SOP from glauconite from the trough. The 153 hole, 8.3km drilling program commenced in November 2011, successfully identified ten prospective target zones over a distance of 140km between Gingin and Corrow. The majority of drill holes penetrated contained significant thickness of Coolyena Group sediments consisting of fine to medium grained glauconitic sandstone, siltstone and clystone.

Potash West publishes financial report for half year ending 31 December 2011 (March 16, 2012) Potash West announced half year results H1 2012. The company reported a net loss of AU\$1.75MM for the period and EPS of AU\$(2.89). The company received AU\$0.1MM as interest revenue and ended the half year with cash and cash equivalents of AU\$3.78MM.

# Potash West intersects 20m of Glauconite Rich Greensands in several locations in Dandaragan Trough (January 27, 2011)

Potash West announced assay results and updates from ongoing aircore drilling on its tenure in the Dandaragan Trough. A total of 41 widely spaced holes for 3,235m were completed in November and December 2011, with assay results received from the 18 holes drilled in November. The best assay interval, 22m @ 4.12% K2O from 74m below surface, was encountered and although the intersection is deep it points to the potential for higher grades in selected areas of the sequence.

## Potash West succeeds in producing potash from WA glauconite deposits (January 23, 2011)

Potash West continued to make important breakthroughs in the critical area of identifying a commercial process to produce Potash from its world scale greensands resources in Western Australia. Potash West defined two flow sheets that have successfully produced laboratory quantities of potassium chemicals which have the potential to be important ingredients in the production of fertilizers for the domestic and international marketplace.



## Potash West acquires interest in Kimberley Exploration Interest (November 23, 2011)

Potash West entered into an agreement with Ochre Resources Limited, allowing company to earn a 70% interest in potentially glauconite rich, Langey project in Western Australia. The Langey Project covers an area of 162km² situated 60km south of Derby, in the Kimberley Region of WA and comes in exploration permit E04/1727. Phosphate grades for the nodular horizon average 4.2% P2O5 for the project.

## Potash West commences drilling program at Dandaragan Plateau (November16, 2011)

Company has commenced reconnaissance drilling program on the Dandaragan Plateau in the Perth Basin in Western Australia. Assay results are expected by January 2012. Aircore drilling of 1,500-2,000m in the southern part of the project area is designed to provide stratigraphic information on the Poison Hill Greensand and the Molecap Greensand.

## Potash West completes unmarketable Parcel program (October 17, 2011)

Company on behalf of 1,458 eligible shareholders sold a total of 931,092 shares at a sale price of \$0.1805 per share. A further 197 eligible shareholders increased their holdings under the Unmarketable Parcel Program and purchased 1.13MM shares, at an average price of \$0.1805 per share. The unmarketable purchase Plan was announced by company on 8 August, 2011.

## Potash West receives positive returns from ongoing potassium extraction (October 6, 2011)

Potash West NL announced that it has achieved potassium extraction of 95% by leaching of glauconite concentrate in the Dandaragan Trough, north of Perth in Western Australia. Almost all of the potassium can be extracted rapidly as per company release. Company also announced that test work has shown that the valuable glauconite can be separated from gangue minerals by magnetic separation, enhancing the K2O content with recoveries of up to +90%.

## Potash West announces its first annual results (September 30, 2011)

Potash West NL listed for 2 months on ASE announced its first annual results for the year ended June 30, 2011. Company reported revenue of AU\$ 64,769 as interest income. The net loss for the company was AU\$ 808,723 for the year ended June 30, 2011. Company did not announce any dividend to its shareholders for the financial year.

### Potash West extends WA Land Holding by 40% (September 14, 2011)

Potash West NL announced that it has extended its exploration tenure in the Dandaragan Trough from an area of 2,107 square kilometers (km²) to 2,905km². The new exploration areas increase the Company's control over the glauconitic prospective Dandaragan Trough to an estimated 80% of the available ground in the region. After the detailed mapping exercise aimed at identifying areas of enhanced glauconite prospective, the Company undertook field trips to carry out preliminary ground investigations and subsequently applied for four Exploration Licenses, E70/4124, E70/4137, E70/4138 and E70/4139, which have a combined area of 798 km².

## Potash West confirms potassium extraction potential (September 13, 2011)

Potash West NL announced that it has it has achieved encouraging results from the initial processing test work aimed at unlocking the potassium value in its large Dandaragan Trough glauconite holdings in Western Australia. Initial scoping tests, using high-intensity magnets, show a strong recovery of glauconite from the quartz and other minor minerals. Initial scoping tests, using high-intensity magnets, show a strong recovery of glauconite from the quartz and other minor minerals. In addition to conditions identified in the published literature, new process options have been tested with encouraging results. These results are being confirmed and will be released to the market in the near future.



## **Listing Information**

Potash West NL listed on ASX on May 11, 2011.

## **Contacts**

Registered office	Potash West NL, Unit 3, 23 Belgravia Street, WA 6103, PO Box 588, 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 (%)
Barclay Wells Limited	15.00	18.07
Elsinore Energy	12.50	15.06
UOB KayHian Private Limited	6.01	7.24
HSBC Custody Nominees	2.88	3.47
Citicorp Nopminees	1.79	2.16
Patrick McManus	1.70	2.05
Sept Rouges Pty Ltd	1.40	1.69
National Nominees	1.00	1.20
Top 20 Shareholders	49.43	59.55



## Management and Governance<sup>vii</sup>

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

Personnel	Designation	Current and total experience	Prior 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 2007 to March 2010, Managing Director of ASX-listed Corvette Resources Limited.
George Sakalidis	Non-executive Director	George Sakalidis is an exploration geophysicist of more than 20 years standing. His career has encompassed extensive exploration for gold, diamonds, base metals and minerals. He was a director of North Star Resources NL, Image Resources and the unlisted Imperium Minerals Limited.	George compiled one of Australia's largest aeromagnetic databases, now held by Image Resources and contributed to a number of discoveries, including gold discoveries at the Three Rivers and the Rose deposits in Western Australia. He was also instrumental in the acquisition of the Image Resources exploration tenements, design and interpretation of the magnetic surveys that led to the discovery of the large mineral sands resources at the Dongara project of Magnetic Minerals NL, of which he was a founding director.
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 Lion Ore Mining International to develop the Activox® process for treating sulphide concentrates. In 2006 when Lion Ore 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.



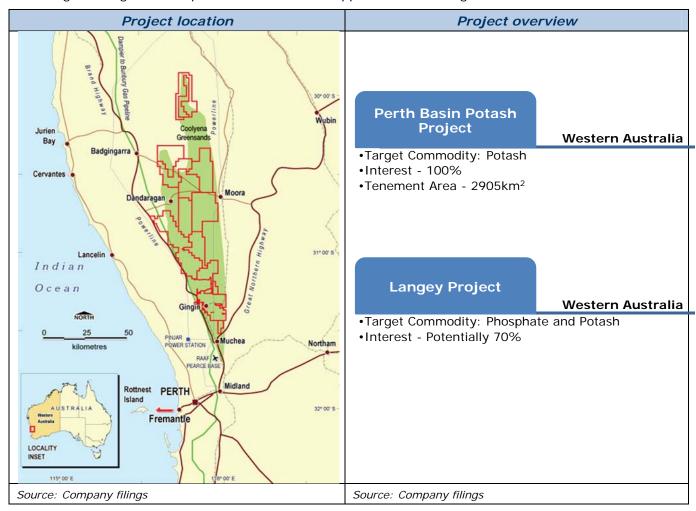
## **Assets and Projects**

#### **Overview**

Potash West is an exploration company focused on developing potassium-rich glauconite deposits in West Australia's Perth Basin.

### Company's Asset Portfolio

The Company has a major land holding over one of the world's largest known glauconite deposits, the Dandaragan Trough, with exploration licenses and applications covering an area of 2,905km<sup>2</sup>.



## Perth Basin Potash Project

**Project Location:** The Perth Basin Project, comprising 15 tenements with a total area of 2,905 km<sup>2</sup>, is located between 50 and 230 km north of Perth, in Western Australia. These tenements cover cretaceous sediments of the Coolyena Group.

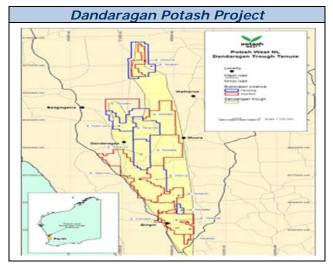
**Geology:** Potash West NL controls the landholdings within the Dandaragan Trough, a portion of the Perth Basin close to Perth.

Greensand deposits in the Dandaragan Trough contain large quantities of potassium. The deposits are located within agricultural land that currently consumes significant quantities of potassium-based fertilizers, preferring the form of  $\rm K_2SO_4$ . The target geological formations are flat-lying, outcropping or near-surface, and extend between Gingin in the south and Hill River in the north.

The tenure of Dandaragan Trough extends over a length of 155 km, with an average width of



close to 20 km (a total area of 2,905 km²). The underlying glauconite beds generally range in thickness from 25m to 50m in areas previously drilled. The maximum thickness appears to be about 200m.



Resource Definition: The Dandaragan Trough Project comprises 15 tenements; leaving the company with major landholding over one of the world's largest known glauconite deposits. Based on a notional target production of 200KT of  $K_2SO_4$  per annum, the resource assumed necessary to support a 10-year mine plan is 40 to 45MMT. The Company believes that, based on widespread drilling, the resource is will be much larger than this, and could support a large operation for many years. The company has increased its land holding by 798 km² in September 2011, an increase of 40%.

The Dandaragan Trough potash project's location provides natural advantage to the company as it is close to the local markets and connects to major roads/rails routes and export ports. The identified tenements lie between two major transport corridors—the Brand Highway to the west, and the Great Northern Highway and Perth-Geraldton railway to the east. The Dampier-to-Bunbury gas pipeline passes along the western boundary of the Project, as does a major power transmission line.

**Tenements Details:** The tenements are variously held or applied for by Potash West NL, Image Resources, Richmond Resources, Torbinup Resources and Adrian Griffin. 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.

Tenement	Grant date	Term (Years)	Holder or applicant	Area (km²)
E70/3100	04/05/2010	5	Image Resources	488
E70/3360	07/04/2010	5	Adrian Griffin	9
E70/3418	08/02/2011	5	Image Resources	95
E70/3635	02/12/2010	5	Richmond Resources	122
E70/3636	02/12/2010	5	Torbinup Resources	253
ELA70/3967	Pending	N/A	Richmond Resources	225
ELA70/3988	Pending	N/A	Richmond Resources	293
ELA70/3969	Pending	N/A	Richmond Resources	360
ELD70/3999	Pending	N/A	Image Resources	24
ELA70/4000	Pending	N/A	Image Resources	24
ELA70/4001	Pending	N/A	Image Resources	214
E70/4124	Pending	N/A	Potash West NL	
E70/4137	Pending	N/A	Potash West NL	700
E70/4138	Pending	N/A	Potash West NL	798
E70/4139	Pending	N/A	Potash West NL	
			Total Area (KM²)	2,905

Source: Company Prospectus as on Feb 2011/Media Release 14 September, 2011/Annual Report June 30, 2011

However, some small pre-existing tenements and reserves (such as flora and fauna reserves) are present in these tenements. Henceforth, the total area of the tenement applications may not be granted.

**Drilling Results:** Potash West in Q3 2011/12 completed road verge drilling program over the Dandaragan Trough Potash Project in Western Australia. The 153 hole, 8.3km program which began in November 2011 completed in February 2012 and identified ten prospective target zones with significant grades of K2O at shallow depth and low overburden ratio over a distance of 140km. Though deep weathering is common over the project area, the drilling was successful in demonstrating near surface grade of above 4.0% K<sub>2</sub>O and confirmed elevated areas with slopes having gradients with active erosion surface as primary targets. Targets area identified were spread across the entire extent of the tenement holdings indicating potential for multiple zones of mineralization. Metallurgical samples collected from re-drills of existing holes in the Koorian, Dalaroo and the Marchagee target areas are currently under processing while targets area generated are expected to be evaluated with grid drilling over prospective



zones in Q4 2011/12. Intersections above 3.0% K20 within 6m of surface are presented below:

Hole	Target	From	То	K20	P205
	Area	(m)	(m)	%	%
PWAC030	Marchagee	4	42	3.05	0.44
PWAC040	Northwest	6	24	3.74	1.01
PWAC133	Menardie	4	28	4.83	1.48
PWAC142	Stockyard	6	24	3.87	1.79

Company is currently targeting to release its maiden JORC resource estimates in September 2012.

**Project Financing:** In March 2011, Potash West NL successfully raised AU\$6MM through IPO and the stocks were subsequently listed on ASX from May 11<sup>th</sup>, 2011. The company is expected to allocate the funds in the following manner in order to execute the Perth Basin Potash Project:

Activity	Year 1 (AU\$)	Year 2 (AU\$)		
Geology – target generation, drilling, resource estimation	610,000	1,615,000		
Metallurgy – research, test work, flow-sheet development	605,000	1,185,000		
Tenement administration, rents, rates	90,000	140,000		
Administration	490,000	490,000		
Expenses of the issue	485,000			
Contingency @ ~5%	120,000	170,000		
	2,400,000	3,600,000		
	Total AU\$ 6,000,000			

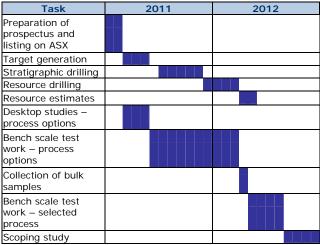
In May 2012 the company raised a further \$1.5 MM by issuing 6.67MM shares at 22.5 cents. The fund will be used for process development of the Dandaragan Trough glauconite project in Western Australia and improve working capital of the company.

Project Development: Potash West continues to make breakthroughs in identifying a commercial process to produce Potash from its greensands resources. As part of this, significant new and innovative intellectual property has been created. The company has defined two flow sheets that have successfully produced laboratory quantities of potassium chemicals with potential to be important ingredients in the production of fertilizers. Results of screening and magnetic separation test work on a sample of greensand from one of the target areas in Q3 FY2012 showed that the K<sub>2</sub>O grade can be increased from 2.8% to 6.2%, with a potassium recovery of 75%, by simple screening and magnetic separation. The Company now targets to achieve its aim of finalizing a flow sheet by mid-2012 and is carrying out further work on samples from the ten target areas, with the objective of increasing the  $K_2O$  recovery and product grade.

Project Schedule: Potash West NL is expected to continue exploration, to identify the thickest, shallowest and highest grade deposits and carry out all necessary work to enable estimation of an indicated resource for the potassium-bearing mineral glauconite within a specific area of the project and release maiden JORC resource estimates by September 2012. The company is further expected to simultaneously carry out process development and identify the most cost-effective process of producing Potash.

Potash West NL has planned its exploration budget based on a broad-based, three-stage approach leading to delineation of a JORC-compliant resource at the end of year two. With successful listing of shares on ASX, the company is expected to commence a scoping study in the middle of 2012.

Arrowhead believes that if the scoping study is commenced in mid 2012, the company will start production of glauconite from 2016. The entire project time line is expected to be as under:



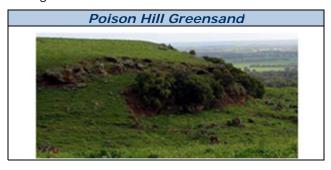
Source: Company Prospectus as on Feb 2011

## **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. It is over 40 m thick at its type locality; Poison Hill, which is located within the E70/3636 tenement (a Torbinup Resources tenement grant for which was received on December 12, 2010).



Four of the greensand samples from the Poison Hill area analyzed by Simpson, the government mineralogist, ranged from 2.48% to 3.76%  $K_2O$ , with glauconite contents from 35% to 52%.



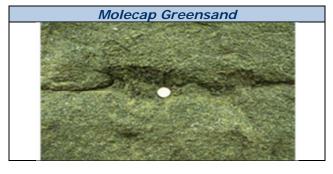
## **Gingin Chalk**

The Gingin Chalk has features of glauconitic mineral and the unit locally comprises thinly interblended greensands. 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.



## **Molecap Greensand**

The Molecap Greensand is a major unit primarily composed of coarse to granule-sized quartz and medium-sized green glauconite grains. The thickness of the unit varies within the underlying topography as the unit was laid down in shallow sea over an irregular topography.



Analysis of eight greensand samples by Simpson from the Molecap Hill Quarry recorded  $K_2O$  in the range of 1.22% to 2.94%, with glauconite contents ranging from 17% to 44%.

#### Osborne Formation

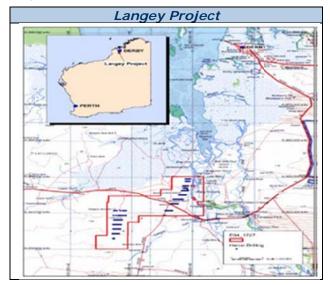
The Osborne Formation has glauconite sandstone, with minor siltstone and clay stone. Although it contains less glauconite than the overlying greensands, it is still prospective for glauconite production.

## Langey Project

**Project Interest: 70%** 

**Project Location:** The company entered into an agreement with Ochre Resources Limited (a wholly-owned subsidiary of Heron Resources Limited), allowing Potash West to earn a 70% interest in, potentially glauconite rich, Langey project in Western Australia's North West. Located in exploration permit E04/1727, the Langey Project covers an area of 162km² situated 60km south of Derby, in the Kimberley Region.

**Mineralization:** The phosphate layer is between 0.5 to 1m thick and underlies the entire tenement area. Phosphate grades for the nodular horizon average 4.2% P2O5, while the nodules themselves have an average grade of 21% P2O5. Overlying the phosphate layer is a 1.5- 2m thick horizon containing green glauconitic clays containing between 3%-4% K2O.



**Drilling:** Heron has undertaken over 2,200m of RC drilling intersecting continuous glauconite



and phosphate mineralization at depth of 14km. Flotation tests have produced a concentrate grading 31% P2O5 with 81% recovery.

**Recent Development:** In Q3 2011/12 plan for sampling program scheduled in Q4 2011/12 was finalized.

## **Agreement Structure**

Under the agreement Potash West will earn:

- 51% interest in project by meeting expenditure for 2 years or spending AU\$225,000.
- 70% interest in project by meeting expenditure for further 1 years or spending AU\$400,000.
- Free carry Ochre to a bankable feasibility study, or until the expenditure of AU\$5M.



## **Technologies and Markets**

## **Potash Description**

The term "potash" refers to a group of potassium (K)-bearing minerals and chemicals. The chemical symbol, K, comes from the Latin word - *kalium*, which in turn is derived from the Arabic word for alkali. Potassium is the seventh most abundant element in the Earth's crust, and is the third major plant and crop nutrient after nitrogen and phosphate. Usually occurs in combination with chlorine and 95% of total potash production is used as fertilizer. viii

**Geology:** The prevailing potash in the market is the compound potassium chloride (or 'KCI'), a naturally occurring pink, salty mineral.

Most of the world reserves of potassium were deposited as sea water from ancient inland oceans evaporated, and the potassium salts crystallized into beds of potash ore. KCI ore deposits are located deep underground and are mined using conventional mining techniques or solution mining for the deeper mineralization.

The primary potash-bearing ore is sylvinite, which is made up of sylvite and halite and is widely used in North America. Most Canadian operations mine sylvinite with proportions of about 31% KCI (sylvite) and 66% NaCI (halite) with the balance being insoluble clays, anhydrite and in some locations carnallite.

Silvinite is most desirable as it can be extracted with relative ease under standard conventional or solution mining depending on the depth of the deposit.

**Properties:** Potash plays a critical role in the regulation of plant physiological functions: It strengthens cell walls, aids in water retention, improves disease resistance and boosts nitrogen and phosphate absorption. Enhancing these functions results in improved plant quality and increased yields. ix

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.

Its name is derived from the Greek 'glaucos' meaning 'gleaming' or 'silvery', to describe the appearance of the blue-green color, presumably relating to the sheen and blue-green color of the sea's surface. Its color ranges from olive green, black green to bluish green. It is the result of the presence of divalent iron (Fe $_2$ +) ions in the mineral. It is normally found in dark green rounded pellets with the dimension of a sand grain size.

Where is Glauconite Mined: The mineral 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>x</sup>.

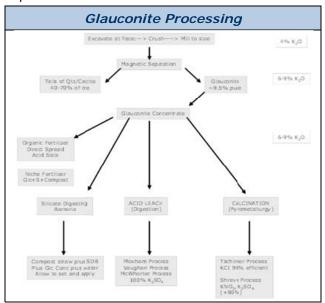
Glauconite Processing: Given that there are huge global resources of potassium found in greensands, work has been underway since the early 1900s to find a means of beneficiating the Early experiments described Mansfield 1922 showed that to get significant potash release, the soil substrate must have greensand, flowers of sulphur, and manure. The conclusion of that study was that the manure reacts with sulphur and a sulphonation reaction occurs, oxidizing the sulphur, thereby lowering the pH. This enables the leaching of potash from glauconite. The presence of iron or aluminum had no effect on the reaction; however, it is proposed that calcium carbonate is beneficial at the early stages of the reactions. Their results showed a 9-43% release of the total potash.

Most recent studies into the liberation of potassium from glauconite have been mostly carried out by the Indian Geological Survey. India has vast glauconite resources earmarked for development in the next decade.

In Brazil, in 2009, Amazon Mining (now Verde Potash) launched a development project on the Verdata slates in western Brazil. These are metamorphosed greensands in which the original potassium in the glauconite has been enhanced by potassium from metamorphic sericite formed during regional metamorphism in this belt of rocks. The ore runs as high as 14% potassium. The ore is roasted with lime to about 800 °C which activates the glauconite such that it improves its potash release. The ore



is then either directly spread or pressure leached via a patented process using caustic soda; the potassium dissolved is then separated<sup>xi</sup>.



**Potash Sources:** Potash fertilizers contain about 20% to 62%  $K_2O$  (potash). They consist of potassium in combination with chloride, sulfate, nitrate and other elements. The common source for potash fertilizer include Muriate of potash (MOP) or potassium chloride (KCI); Sulfate of potash (SOP) or potassium sulfate  $(K_2SO_4)$ ; Sulfate of potash magnesia or potassium-magnesium sulfate  $(K_2SO_4 \cdot 2MgSO_4)$ ; saltpeter or potassium nitrate  $(KNO_3)$ .

MOP is the most common potassium source used in agriculture, accounting for about 95% of all potash fertilizers used worldwide. Its nutrient composition is approximately 50% of potassium and 46% of chloride.  $^{\rm xii}$ 

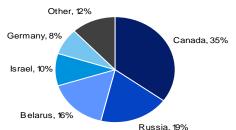
Potash Production Process: Most potash is extracted by conventional underground mining methods. The geology of the deposit dictates what method is best suited for resource extraction. Solution mining is used when underground deposits are irregular and very deep. Currently, more than 90% of the world underground potash comes from conventional Potassium underground mining. bearing minerals are mined from underground ore deposits, salt lakes and brines. The most abundant mineral in commercial deposits is sylvite (Kainite ores are much less common). Two methods are used to recover Potassium from underground ore bodies: (1) conventional shaft mining and (2) solution mining.

Conventional underground mining requires low operating costs and high capital costs. The major drawback of conventional underground mining is that the underground infrastructure is not easily moved to other locations.

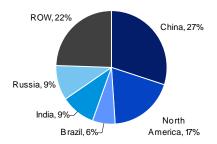
Solution mining is largely used when the potash reserves are deeper than 1,200 m. It requires low capital costs and high operating costs (due to high energy usage). Solution mining reduces the time to production and requires less manpower to operate. Currently, the standard open-cut mining method is not much in use in any major potash deposits. However, South Boulder Mines is defining two shallow potashbearing horizons with mineralization at depths of less than 100m. The other main production method involves the evaporation of brines in shallow salt lakes, followed by the harvesting of potassium minerals.

Potash Production xiii xiv xv xvi xvii: Global potash (KCI) production is estimated to increase in 2012 compared with 2011, close to 2007 levels of 50MMT. Potash production is limited to only 12 countries around the world, of which Canada, Russia and Belarus contribute upto 80% of the global production. PotashCorp, the world's largest producer plans to increase its KCI production to 17MMT by 2015 from 11.8MMT in 2012. Global capacity is forecasted to increase from 42.7MMT K<sub>2</sub>O (52MMT KCI) in 2010 to 59.6MMT K<sub>2</sub>O (70MMT KCI) in 2015. The bulk of the new potash capacity will be in the form of MOP. Producers are expected to cut production in 2012 to prevent prices from falling amid slow growth in demand and high production.

## 



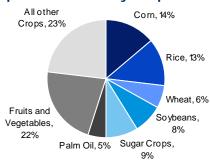
#### **Major Potash Consumers**

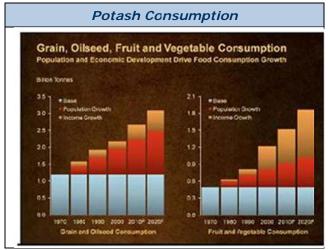




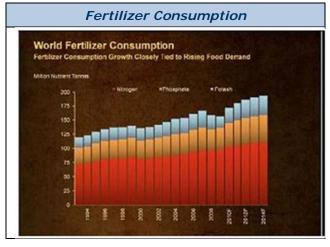
**Potash Uses** xix: Nearly 95% of all potash production goes into the agricultural sector where it is used as a plant nutrient, typically as a component of N-P-K fertilizers or compound fertilizers which combine potash with N (nitrogen) and P (Phosphate).

## Potash Uptake and Use by Crop\*\*\*\*\*



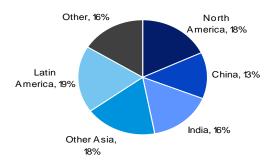


**Substitutes**\*xii: The role of potassium cannot be substituted by any other nutrient and potash has no commercial substitute as a potassium fertilizer source. Manure and glauconite are low potassium sources that can be transported over short distances to crop fields.\*xiii



## Potash Market: Demand, Supply and Outlook

Market: In 2010, more than 60% of world potash exports went to the markets of China, India, other Asian countries and Latin America. Their total imports have more than doubled over the past 20 years. Demand from these key offshore markets remains strong, particularly in Latin American and Asian countries. Many of these are striving to address the significant potash requirements of crops such as soybeans, oil palm and sugarcane to capitalize on attractive economics.



Increased consumption of potash has been most marked in developing countries such as India and China as they begin to address the need to increase crop yields through balanced soil nutrition xxiv. Potash is used extensively in key commercial crops such as corn, rice, soybean, palm oil and sugar cane.

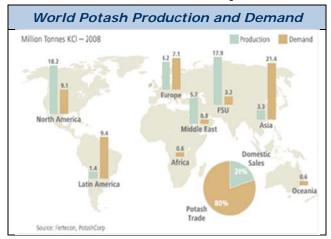
During the commodity rally of 2003-2008, potash was one of the hottest commodities surging from \$200 a ton in 2003 to a staggering \$1,000 a ton in June of 2008. In 2009, the potash market suffered from low agricultural prices, obstinate farmers and a deflationary environment due to large excess capacity. These factors have lowered the price of potash in global markets all the way down to around \$350 a ton. \*\*xv\* Recent sales have been in excess of \$500 per ton.

Demand: The potash market has experienced rapid growth in the last decade primarily due to an increased demand for food, fiber and feed. This trend directly correlates to its basic fundamentals: increasing global population, increasing incomes in emerging markets, improving diets and decreasing arable land.

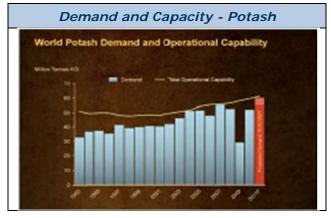
Potash is used as a major agricultural component in 150 countries. The largest importers of potash are the heavily populated countries of China, India and Brazil. Asian nations produce only 3.1MMT while consuming 23.1MMT. The state of potash-producing



infrastructure is dismal as about 85% of the world's facilities are more than 25 years old.



The current potash market is estimated at 50MMT annually and is projected to grow at a rate of 3-4%. The US remains one of the largest net consumers, producing 1.2MMT/year while consuming 5.2MMT/year. xxvi It is likely that capacity will play leapfrog with demand as new mines come on-stream in 1.0 to 2.5 mtpa increments.



Potash Corp, the largest potash player in the world, is buoyed by the transition that took hold in 2010, when global potash shipments reached an estimated 52MMT. It believes that this is only the beginning of the rebound and that shipments in 2011 could reach 55-60MMT, depending on how aggressively farmers and fertilizer dealers move to replenish depleted inventories in the soil and supply chain.

The company asserts that potash has been under-applied in a number of key developing markets, but today these regions have growing economies, increasing demand for higher-quality food and greater ability to make the necessary investment in potash. Global potash production capabilities, however, are limited and bringing a

greenfield mine into production is a seven- to 10-year proposition.  $^{\rm xxvii}$ 

China, India and Brazil, all heavily populated countries, are together expected to demand 22.5MMT of potash in 2012. Imports by China are expected to decline in 2012 for the first time in 3 years amid falling demand and high stockpiles. Global demand is expected to grow over the next 5 years by an average 4% annually owing to concurrent need for increased food production. xxviiixxix

**Supply**: Supply is constrained by old mines with limited shaft capacity and a lack of capital for new mines. In 2007, the industry operated at full capacity and produced about 55MMT. Since then, only limited new capacity has come online – most of it has been through the expansions in Saskatchewan. Based on what the industry produced in 2007, it is estimated that the current global operational capability to be between 58-60MMT.

Over the next five years, approximately 12MMT of additional global capability is expected to be added with Potash Corp expected to account for more than half of the global total. Even with all announced brownfield projects coming on stream, it is believed that the fundamentals are in place for a tight market.

Given the tightening fundamentals, prices have begun to move higher in all markets. This has taken effect more quickly in the US, as market-focused farmers and fertilizer buyers secured the potash needed to capitalize on strong agricultural returns. Potash Corp sees potential for similar trends in offshore spot and contract markets as the year progresses. \*\*xx



Potash markets recovered sharply in 2010 following 2009's record decline. Global shipments rose by more than 80% to



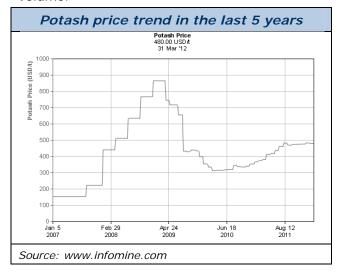
approximately 53MMT. In response to the strong demand recovery, 2010 industry operating rates increased to more than 85% of estimated operational capability.

**Price outlook:** The potash market is primarily driven by the rising population, limited increases in arable land and the need for nutritious food as the per capita income increases in the emerging markets. Potash is a core part of soil nutrition and cannot be replaced by other sources. As potash plays an important role in improving yield, taste, and nutrient value of these key crops, the farmers in developing countries have started to address decades of unbalanced fertility practices by applying potash in greater quantities.

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. With long-term fundamentals firmly in place, the potash demand is expect to a return to near historical trend-line consumption of at least 55 MMT in the near term.

Arrowhead believes that Potash prices should be firmly supported by demand recovery in the near term. In 2011, potash prices increased

25% y-o-y to US\$425/T due to higher demand (owing to increasing population and decreasing land availability). Prices are expected to increase as planting season begins in US, and settle at around US\$520/T by the end of 2012, lower than the previous estimate of US\$580/T for 2012 as buyers are waiting to purchase volume. \*\*xxxixxxiiixxxiii\*\*





## **Risk Profile Analysis**

Potash West NL has a medium to low risk profiles. The Dandaragan Trough Potash Project is under processing test work phase and the scoping study is expected to be completed by end of 2012. The company's successful IPO of AU\$6MM, is expected to mitigate its otherwise risky prospects. The company has obtained positive results from the drilling results and targets to produce maiden JORC resource estimates by September 2012. The company also continues to make important breakthroughs in identifying a commercial process to produce Potash from greensands resources in Western Australia.

## Operational Risk - Medium

Potash West NL has no operating history and its flagship project – Dandaragan Trough Potash Project – is still under processing test work phase, resulting in materially high operational risks. The operations of the company may be affected due to failure to achieve predicted grades in exploration and mining along with other technical difficulties encountered in mining. However, the directors have rich operating experience which the company hopes to leverage. Also, company announced in Q3 2011/12 that it has it has achieved encouraging results from the road verge drilling program and is evaluating shallow mineralization in the Dandaragan Trough Potash Project in western Australia.

## Financing Risk - Medium

The company recently raised AU\$6MM through an IPO to fund its project, leading to cash in hand of AU\$5.4MM as of June 2011. The raised capital is expected to mute the financial risk of the project for at least a year. However, Arrowhead believes that the company will require additional capital to fund future exploration activities (according to our estimates, the scoping study in itself could entail close to AU\$0.5MM in expenses). Any additional equity financing will dilute shareholdings, and debt financing, if available, may involve restrictions on financing and operating activities. In May 2012, the company raised of AU\$1.5MM for a private placement of 6.67MM shares at AU\$c 22.5 per share. The funds raised will be used for the process development at the Dandaragan Trough Project, improve working capital of the company and exploration and development of pending acquisitions.

## **Exploration Cost Estimates Risk – Medium**

Arrowhead believes that the company will commercially explore for glauconite until 2016, leading to higher- than-estimated exploration costs. Dandaragan Trough Potash Project is under processing test work phase and the JORC resource estimates and scoping study are expected to be completed by end-2012. Also, any future exploration activity may be affected by factors such as geological conditions and limitations on activities due to seasonal variations, which may further escalate the exploration cost.

### Regulatory Risk - Low

As Potash West NL is still under nascent stage of its operations and is exposed to regulatory and legal compliances, the company is expected to have medium regulatory risks. Changes in government policies, taxation and other laws can have a significant impact on the company's assets and operations, and, ultimately, its financial performance and securities.

#### Commodity Price Volatility Risk - Low

Potash West NL has low commodity price fluctuation risk as such risks will arise when the company achieves success leading to potash production – which is yet to start. Commodity prices fluctuate and are affected by several factors such as demand and supply, technological advancements, forward-selling activities and other macro factors.

## Title Risks - Low

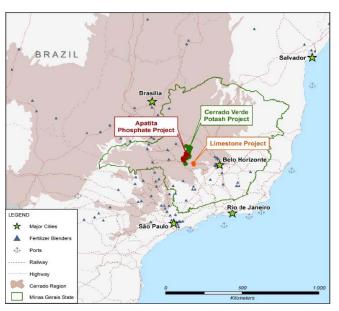
The company has the mineral rights to five exploration licenses, with a further nine under application. The company could lose title to or interest in these 14 tenements if license conditions are not met as these interests in tenements in Australia are governed by the respective state legislation and are confirmed by the granting of licenses or leases. Also, there may be areas over which legitimate common law native title rights of Aboriginal Australians exist.



## **Peer Comparison**

We compare Potash West with Verde Potash (formerly Amazon Mining) and South Boulder, besides other select group of peers.

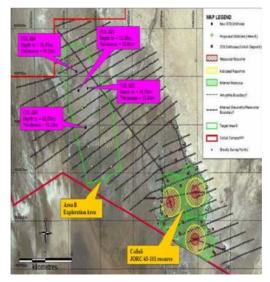
**Verde Potash** – Verde Potash Plc, formerly Amazon Mining Holding Plc, is a Canada-based mineral exploration and development company. The company is engaged in the acquisition and exploration of mineral properties in Brazil. As of April 2012, Verde is developing the Cerrado Verde project in Brazil, a source of potash-rich rock from which the Company plans to produce a potash fertilizer product.



As of April 2012, the company had total indicated mineral resource of 71.08MMt at 9.22% and total inferred mineral resource of 2,763.80MMT at 8.91%  $K_2\mathrm{O}$ . Verde Potash has completed the preliminary economic assessment with base case scenario of 0.6mtpa - 1.4mtpa from phase-1 to phase-3 and capex of US\$2,338MM. The upside case scenario had production estimates of 1mtpa - 1.5mtpa from phase 1 to phase 3 with capex of US\$3,095MM.  $^{xxxiv}$ 

In an another project – Apatita – the company has conducted an initial drilling program in two of the three phosphate prospects and identified mineralized phosphate between 0.01% and 9.57%  $P_2O_5$  with widths of between 1m and 22m. The company plans to continue drilling, targeting an NI 43-101 compliant resource estimate. In addition, Verde will continue its exploration on five other prospects that have been identified along a 30km strike length by the regional mapping and surface grab sampling program  $^{\rm xxxv}$ .

**South Boulder Mines** - South Boulder Mines Limited is involved in acquisition, exploration and development of resource projects in Western Australia and Eritrea. The company has projects in nickel, gold and potash and is currently conducting resource confirmations and definition drilling ahead of the feasibility studies.



The company has a 100% interest in the Colluli Potash Project located in the coastal Danakil Depression region of Eritrea (Africa) approximately 200km south east of the Capital Asmara. Additionally South Boulder's 90-100% owned potash and phosphate fertilizer projects are located in Western Australia including the Lake Disappointment Potash Project in the Gibson Desert and the Cardabia Phosphate Project in the Carnarvon Basin. The Georgina Basin Phosphate Project is located in the Northern Territory.

The JORC/NI43-101 Compliant Mineral Resource Estimate for the Colluli Potash Project as of May 2012 stands at 1.08BT @ 18% KCI for 194MMT of contained potash. Definitive feasibility studies are expected to be complete in early 2013 with production scheduled for 2016 or sooner. The location of the project provides ready infrastructure as it is approximately 70km from the Red Sea Coast and major shipping routes to Asia. XXXVI



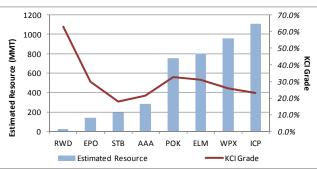
## **Comparable Potash Peers**

Ticker	Company	EV	Capacity (mtpa)	EV/ Capacity	Measured & Indicated	Inferred	KCI Grade	Estimated Resource	EV/Resource
RUM	Rum Jungle Resources	\$43	NA	NA	0.5	0.1	NA	1	\$81,456
POK	Potash Minerals	\$15	NA	NA	NA	754	32.8%	754	\$20
RWD	Reward Minerals	\$50	NA	NA	NA	21	63.0%	21	\$2,412
EPO	Encanto Potash	\$66	2.5	16	79	61	29.7%	140	\$470
MAA	MagMinerals	\$54	0.6	165	33	1,700	12.1%	1,733	\$31
ICP	IC Potash	\$102	0.6	257	838	269	22.9%	1,107	\$92
STB	South Boulder Mines	\$91	1.5	44	168	26	18.0%	194	\$471
AAA	Allana	\$80	1.0	160	195	90	21.4%	285	\$280
WPX	Western Potash Corp	\$120	2.5	39	253	708	26.0%	961	\$125
ELM	Elemental	\$160	1.2	NA	362	442	31.0%	804	\$199
NPK	Verde Potash	\$172	1.1	NA	74	2,682	8.9%	2,756	\$62

Sources: Arrowhead estimates, Company Websites, Bloomberg as on May 15, 2012

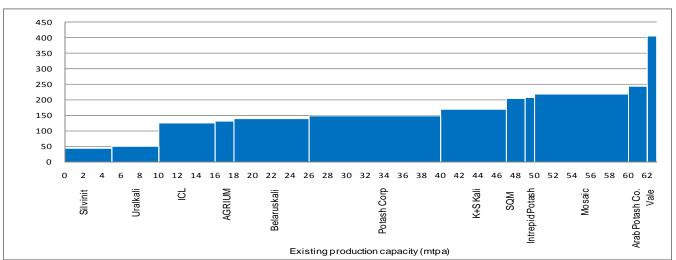
## **Enterprise Value, KCI Grade and Estimated Resource of Peers**





Sources: Arrowhead estimates, Company Websites, Bloomberg as on May 15, 2012

## Cash Cost Curve for Major Global Potash Manufacturers (in US\$)



Sources: Arrowhead estimates and Company Websites as on July 2011



## **Value**

The Fair Market Value for Potash West NL shares stands between AU\$168.5MM and AU\$401.6MM.

The Fair Market Value for one of Potash West NL publicly traded shares stands between AU\$2.03 and AU\$4.84.

#### Potash West NL Limited Balance Sheet Forecast

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

year ending June 30th	2012E	2013E	2014E	2015E	2016E	2017E	2018E
Total Current Assets	1,520	6,256	7,239	15,113	12,737	11,299	413,402
Total Non-Current Assets	3,482	5,638	12,080	165,919	1,488,251	2,411,160	2,240,760
TOTAL ASSETS	5,002	11,895	19,318	181,032	1,500,988	2,422,459	2,654,162
Total Current Liabilities	528	633	760	912	1,763	3,739	25,358
Total Non-current Liabilities	-	-	-	60,000	600,000	1,000,000	900,000
TOTAL LIABILITIES	528	633	760	60,912	601,763	1,003,739	925,358
Total Shareholder's Equity	4,474	11,261	18,558	120,120	899,225	1,418,720	1,728,804
TOTAL LIABILITIES and EQUITY	5,002	11,895	19,318	181,032	1,500,988	2,422,459	2,654,162

## 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.

We have also presented the comparables method based on enterprise value per resource of ounce (\$/oz) as a secondary measure of fair value, which, though is not central to the methodology applied towards building the fair value bracket, is presented here as additional information.

#### 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 25 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. Valuation is based on the flagship project – Perth Basin Potash Project.

**Time Horizon:** The Arrowhead fair valuation for Potash West NL is based on a DCF method. The time period chosen for the valuation is ~194 months (2012-2028). While revenue is expected to ramp up significantly during the 2016-2028, due to the discount factor used, the later years are heavily discounted and have a marginal effect on valuation. They are included to present a full project cycle situation.

**Underlying Business Plan:** Potash West NL, with large, near surface greensand deposit, is developing these assets to start production of potash. The company has been following the strategy consolidating prospective ground in Western Australia, reducing competing market interests, dominating the Australian glauconite resource market, defining extraction, efficiency and cost profile, and advancing toward bankable feasibility.

Along with glauconite, the company also plans to explore phosphate contained in the greensands, which might be recovered during mining and processing of the greensands. This gives the company the opportunity to devise a single production plant to extract different elements in a cost-efficient manner. The proposed application of recent advances in metallurgy, including fine grind technologies, aimed at extracting potassium to produce commercial-grade potash is expected to augment company's fundamentals. The company believes there are compelling reasons for the development of this project, including large, near surface greensand deposit, which is favorably located near the local markets.

Arrowhead estimates has been evaluated taking into consideration that the company has no operating history and its flagship project – Perth Basin Potash Project – is still under processing test work phase, resulting in materially high operational risks. The operations of the company may be affected due to failure to achieve predicted grades in exploration and mining along with other technical difficulties encountered in mining.

However, rising global fertilizer demand and change in potash price structure are expected to provide a compelling case for re-evaluating and, if viable, commercializing the deposits. Also, the company is expected to be benefitted from highly experienced management and technical team.

**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 discounts the eventuality of the company acquiring and producing from any other projects than Perth Basin Project before 2025.



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

**Variable 1** – *Hypothesis for mining at Perth Basin project (MTPA):* As on February 2011, Potash West is targeting to define infill drilling of selected prospect areas, leading to the definition of a target of between 50 and 70MMT of resource at 5% grade. However, with company still under pre-production stage, we expect that company will start the glauconite production from 2016, producing 2.50 to 2.60 MTPA of potash with mine-life of 12 years.

	2016	2017-2019	2020-2028
Low	2.50	5.25	7.25
High	2.60	5.50	7.50

**Variable 2** – *Hypothesis for mining for export plant:* As well as "local supply Plant", the company also plans to develop an export plant which will be used to export potash. The company is expected to start production from the export plant from 2018 with a life of more than 10 years.

	2018-2019	2020-2028
Low	30	35
High	31	36

**Variable 3** – Forecast price of Potash in 2016 (US\$/T): Arrowhead believes that Potash prices should be firmly supported by demand recovery in the near term. As grain prices trend higher and farmer economics improve, potash demand is expected to sustain in the range of \$525-625 per ton in 2016, with CAGR of 1.0%. Spot contract sales are currently between US\$400 and US\$500/T. Prices are estimated as per 30%-40% premium to Muriate prices as  $K_2SO_4$  trades at similar premium. Annual growth rate of 1% for prices is considered to calculate future prices. Muriate is currently trading at US\$470/T. \*\*xxxvii\*\*

Low	650
High	675

**Variable 4** – *Forecast AU\$/US\$ exchange rate:* Arrowhead believes that exchange rate for AU\$/ US\$ will be in the range 0.90- 0.95. Since the potash prices are assumed in US\$ and company reports in AU\$ therefore exchange rates are to be assumed.

Low	0.90
High	0.95



## **Analyst Certifications and Important Disclosures**

## **Analyst Certifications**

- I, Vishal Pasari, 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, Rashmi Shah, 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 and 2012 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 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.

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

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## **Valuation**

## **WACC**

Risk-free rate	3.25%	xxxviii
Beta	1.00	xxxix
Risk premium	14.5%	хI
Additional Risk Premium	0.0%	
Cost of Equity	17.75%	
Terminal Growth Rate	0%	xli

### **KEY VARIABLES**

	Potash Prices 2016-2025	Perth Basin- Potash Production Capacity (MT)	US\$ / AUS\$
Max value	\$675	43.50	0.95
Min value	\$650	32.5	0.90

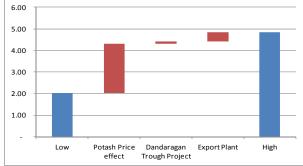
FCFE (High) Time Period>	0.13	1.13	2.13	3.13	4.13	5.13	6.13	7.13
	2012E	2013E	2014E	2015E	2016E	2017E	2018E	2019E
Net cash from operating activities	(5,011)	(10,003)	(28,481)	(29,616)	(9,170)	28,872	531,776	458,052
Capital Expenditure	-	-	-	(150,000)	(1,350,000)	(1,000,000)	-	-
Net Debt Addition	-	-	-	60,000	540,000	400,000	(100,000)	(100,000)
Free Cash Flow to Equity	(5,011)	(10,003)	(28,481)	(119,616)	(819,170)	(571,128)	431,776	358,052
Discount Factor	0.98	0.83	0.71	0.60	0.51	0.43	0.37	0.31
Present Value of FCF	(4,910)	(8,323)	(20,126)	(71,786)	(417,504)	(247,206)	158,717	111,776
FCFE (Low) Time Period>	0.13	1.13	2.13	3.13	4.13	5.13	6.13	7.13
	2012E	2013E	2014E	2015E	2016E	2017E	2018E	2019E
Net cash from operating activities	(5,011)	(10,003)	(28,481)	(29,616)	(19,152)	6,721	469,675	378,700
Capital Expenditure	-	-	-	(150,000)	(1,350,000)	(1,000,000)	-	-
Net Debt Addition	-	-	-	60,000	540,000	400,000	(100,000)	(100,000)
Free Cash Flow to Equity	(5,011)	(10,003)	(28,481)	(119,616)	(829,152)	(593,279)	369,675	278,700
Discount Factor	0.98	0.83	0.71	0.60	0.51	0.43	0.37	0.31
Present Value of FCF	(4,910)	(8,323)	(20,126)	(71,786)	(422,591)	(256,794)	135,889	87,004

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

## ARROWHEAD FAIR VALUE BRACKET

	High	Low
Terminal Value (TV)	3,449,746	2,879,090
Present Value of TV	247,481	206,543
Present Value of FCF + TV	397,185	164,109
+ Cash	2,898	2,898
Equity Value Bracket	400,083	167,007
Shares Outstanding (in '000)	83,004	83,004
Fair Value Bracket	AUD 4.84	AUD 2.03
Current Market Price	AUD 0.210	AUD 0.210
Current Market Capital	17.4	17.4
Target Market Capital	401.6	168.5

## **\$ Value Contribution by Key Variables**





## **Notes and References**

i	Arrowhead Business and Investment Decisions Fair Value Bracket - AFVBTM. See information on valuation on pages 22-26 of this report and important disclosures on page 25 of this report.
ii	Source: Bloomberg as on 24th May 2012
 III	52 weeks to 24th May 2012. Source: Bloomberg as on 24th May 2012
iv	30 days to 24th May 2012. Source: Bloomberg as on 24th May 2012
V	Arrowhead estimate based on new issue of shares in addition to existing shares at the existing share price of \$0.21.
vi	Based on Share Registry report 23 May 2012
vii	Source: http://www.potashwest.com.au/management.php
viii	Source: http://www.westernpotash.com/about-potash
ix	Source: http://www.westernpotash.com/about-potash
X	Source: http://sites.google.com/site/glauconitenz/globally-rest-of-the-world
χi	Source: http://sites.google.com/site/glauconitenz/processing
xii	Source: http://www.potash-info.com/potassium/potassiuminfertilisers/potassiuminfertilisers.htm
xiii	Source: http://www.potash1.ca/s/Fundamentals.asp
xiv	Source: http://www.potashcorp.com/news/1077/
XV	Source: http://www.cbc.ca/news/business/story/2012/01/17/potash-dbrs.html
xvi	Source: http://www.bloomberg.com/news/2012-01-24/uralkali-sees-no-drop-in-potash-price-as-users-can-afford-to-pay.html
xvii	Source: http://www.bloomberg.com/news/2012-01-25/uralkali-ready-to-cut-potash-output-to-protect-45-price-gain-commodities.html
xviii	Source: http://www.potash1.ca/s/Fundamentals.asp
xix	Source: http://www.westernpotash.com/about-potash
XX	Source: www.magindustries.com/cmsdocs//MagIndustries-on-Potash.pdf
xxi	Source: Potash Corp September 2010 investor presentation
xxii	Source: http://www.westernpotash.com/about-potash
xxiii	Source Potash Corp September 2010 investor presentation
xxiv	Source: www.potashcorp.com/media/PotashCorp_2010_AR_MDA.pdf
XXV	Source: http://www.westernpotash.com/about-potash
xxvi	Source: http://www.potash1.ca/s/Fundamentals.asp
xxvii	Source: http://www.potashcorp.com/news/1008/
xxviii	Source: http://potashinvestingnews.com/4986-phosphate-fertilizer-prices-to-fall-by-summer.html
xxix	Source: http://www.potashcorp.com/slideshow/227/
XXX	Source: http://www.potashcorp.com/news/1077/
xxxi	Source: http://www.infomine.com/chartsanddata/chartbuilder.aspx?z=f&g=127651&dr=3y
xxxii	Source: http://www.magindustries.com/cmsdocs/Presentations/MagIndustries-on-Potash.pdf
xxxiii	Source: http://www.potash1.ca/s/Fundamentals.asp
xxxiv	Source: http://www.amazonplc.com/Theme/AmazonMining/files/Verde%20Potash%20Corporate%20Presentation%20April%202012_v001_z5dh61.pdf
XXXV	Source: http://www.amazonplc.com/Projects/apatita-phosphate/default.aspx
xxxvi	Source: http://www.southbouldermines.com.au/projects/colluli-potash-project/
xxxvii	Source: http://www.infomine.com/chartsanddata/chartbuilder.aspx?z=f&g=127651&dr=3y
xxxviii	Source: Bloomberg as on 16th May 2012
xxxix	Source: Arrowhead estimate
xI	Source: Arrowhead estimate
xli	Source: Arrowhead estimate