ASX Code: POZ

# phosphateaustralia

#### QUARTERLY REPORT

Period Ending 31 December 2009

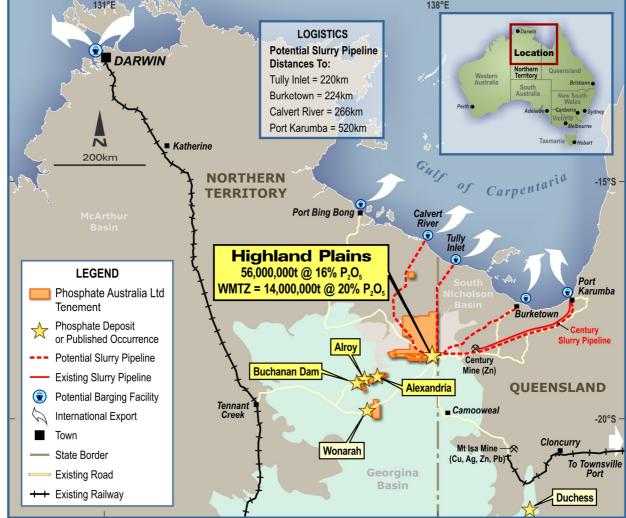
### 3 Million Tonnes per Annum Slurry Pipeline Initiative for Highland Plains Phosphate Project in the Northern Territory

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#### **Highlights:**

- Potential to transport up to 3 million tonnes per annum of phosphate product via slurry pipeline from Highland Plains to the Gulf coast at very low transport costs.
- Transport costs estimated from only A\$2.06 to \$3.69 per tonne (pipeline operating costs only).
- These very low transport costs completely change the potential economics of the Highland Plains phosphate project both in terms of scale and operating costs.
- Metallurgical flotation test results (Report #3) are very positive from the coarse and fine fractions with continuing improvement in recoveries.

Figure 1: Highland Plains Location and Slurry/Barging/Shipping Options





#### 1.0 Phosphate Slurry Pipeline Study: 3 million Tonnes per Annum Initiative

Scoping studies into various logistics options for the transport of phosphate product from Highland Plains to the Gulf coast have now been received. Phosphate Australia Limited (POZ) is pleased to announce a very positive outcome regarding operating expenses for 3 different slurry pipeline options. The full report is attached in Appendix A.

The project is located within EL 25068 abutting the NT border with Queensland and 230 km from the Gulf of Carpentaria.

These slurry pipeline opportunities have only been possible as a result of the excellent water drilling results announced on 7 December 2009. It is important to note that not all phosphate projects are as well endowed with water as Highland Plains.

The slurry pipeline option opens up the potential for POZ to ship up to 3 million tonnes per annum (mtpa) at very low transport costs, which have been estimated from **A\$2.06** to **\$3.69 per tonne** (pipeline operating costs only).

This very low charge totally changes the potential economics of the Highland Plains phosphate project both in terms of scale and operating costs. As a result of this the Board is now focusing on these slurry pipeline opportunities as a matter of priority.

Scoping level capital expenditure estimates to build such a pipeline are estimated at \$184 to \$226 million depending on option selection. This does not include the mine-site preparation plant or dewatering plant at the barge site.

For a 3 mtpa operation these capital costs appear to be realistic.

Whether the slurry pipeline is pursued solely through the Northern Territory or primarily in Queensland would be determined on a commercial basis. Importantly, these options now enable POZ to pursue the logistics outcome which is most favourable in terms of cost, engineering and permitting.

A barging and storage facility will also be required on the Gulf coast and the Company is studying these requirements. Road transport alternatives are still possible for transporting phosphate product. However, the slurry pipeline options are now being more actively pursued due to this low OPEX opportunity presented to the company. As such, previous time and cost estimates are now superseded by the slurry pipeline opportunity.

The slurry pipeline scoping study has been prepared by independent consultants Slurry Systems Pty Limited (SSPL) who have conducted a number of similar studies in phosphate slurry pipelines in Queensland. Formed in 1978, Slurry Systems is an Australian company specialising in slurry handling systems. Slurry Systems has been providing expert technical services to the Mining and Sand Bypass/Dredging industries for over 20 years.



#### 2.0 Slurry Pipeline Routes and Costings

There are 3 different slurry pipeline routes that were studied and costed. The routes are shown on Figure 1 and are described in Table 1. The scoping study is attached in Appendix A.

**Table 1: Slurry Pipeline Route Options and Transport Costs** 

Option	Barge Site	Distance km	Pump Stations	OPEX A\$/tonne	CAPEX A\$	Comment
					million	
1	Tully Inlet	220	1	2.06	184	Queensland
2	Burketown	224	1	2.14	192	Ballast Grounds barge site
3	Calvert River*	266	2	3.69	226	Northern Territory only

<sup>\*</sup> This option includes an area within Aboriginal freehold land and access agreements would need to be negotiated.

The Calvert River option is of particular interest, as it lies solely within the confines of the Northern Territory. This opens up a new development choice for the company as the mine and logistics chain could be within a single jurisdiction. POZ executives have had ongoing meetings with the Northern Territory Department of Resources, Minerals and Energy and have found the NT to be very receptive to new developments in the Gulf area.

The board of POZ is very pleased by the new potential for the Highland Plains project that is opening up as a result of this slurry pipeline study. POZ is now looking at more in depth studies for detailed route selection, permitting, potential environmental impacts, barge operating sites etc.

Importantly, with the increased potential for a much larger operation (up to 3 mtpa), a program to fully define the resource at Highland Plains and surrounds, will now be targeted as a priority. It is anticipated that drilling at Highland Plains will re-commence in early April.

#### 3.0 Metallurgical Results Introduction

These results are part of an ongoing study involving information from progressive testwork. Results are proving positive with the phosphate rock material demonstrating amenity to beneficiate. The performance of the material to date looks encouraging for further upgrades and recoveries in the future with continued testwork.

To give an indication as to commercial phosphate grades, internationally traded rock phosphate commonly has a concentration of 29 to 32%  $P_2O_5$ .

The testwork is based on part or several of the following phases:

Phase 1: Ore Preparation: scrubbing (washing and agitating the material to disaggregate it) or whole rock grinding.

Phase 2: Rougher Flotation (initial float).

Phase 3: Cleaner Flotation (final float).

Conducting these tests aims to enrich the phosphate to produce a saleable product with good phosphate recovery and low concentrations of silica.

NB: \* Costings do not include the mine-site preparation plant, barge site storage, filter (de-watering) plant or barging.



Notably, the results in this report are based upon individual phases of testwork. The final product will be as a result of combining all of these phases into a streamlined process in which product grade is incrementally improved and enhanced by each step. It is not possible to ascertain what this result will be until the entire process of testwork has been completed.

The Company is working with Orway Mineral Consultants and Amdel Laboratories to produce the best possible product as efficiently as possible.

#### 4.0 Metallurgical Testwork Results - Report #3

These results (Metallurgical Report #3) are from the Highland Plains material after it has been separated into two separate size fractions. These size fractions are designated the 'coarse' and 'fine' fractions.

Splitting the phosphate rock into two fractions of coarse and fine sizes helps to optimise the process so that the fine material does not interfere with the coarse material during the flotation process.

The results in this report are most encouraging particularly in terms of repeatability.

#### 4.1 Rougher (Initial) Flotation Test Results for Coarse and Fine Fractions

The rock phosphate material is divided into two fractions after being ground to 125 microns (0.125mm). The coarse fraction represents material greater than 20 microns; the finer fraction less than 20 microns. Altogether there is roughly a 50:50 split of coarse to fine material.

Once a metallurgical process has been roughly defined for the rock phosphate product, then optimisation testing will commence which will include such things as refining the grind size and the coarse/fine separation point.

#### 4.1.1 Rougher Test Results – Coarse Fraction

**Table 2: Coarse Fraction Rougher Flotation Best Test Results** 

	P <sub>2</sub> O <sub>5</sub> %	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	Recovery P <sub>2</sub> O <sub>5</sub> %
Coarse Input Material	23.2	34.0	1.7	4.5	
Coarse Fraction Rougher Testing	33.4	12.3	1.2	2.7	84.6

The above results are very encouraging for the company as they indicate the flotation testwork has been able to repeat the results from earlier testwork using the same collector.

The Board is impressed with these results as the cleaner (final) flotation in the metallurgical testwork will further improve the product grade and quality.



#### 4.2.1 Rougher Test Results Fine Fraction

**Table 3: Fine Fraction Rougher Flotation Best Test Results** 

	P <sub>2</sub> O <sub>5</sub> %	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	Recovery P <sub>2</sub> O <sub>5</sub> %
Fine Input Material	23.7	26.4	7.2	3.9	
Fine Fraction Rougher Testing	30.5	16.5	3.5	2.6	52.3

These results are a significant improvement in recovery from the previous testwork reported in Metallurgical Release #2.

The Board is pleased by these fine material results as they are showing continuing improvement. There is still the cleaner (final) flotation remaining to further improve the grade of the product and further reduce the concentration of silica, aluminium and iron.

#### 5.0 Metallurgy Summary

The rougher flotation tests to date are very encouraging as they show improvements in the process. These positive improvements are before the cleaner (final) phase of flotation which aims to further improve on grade while selectively removing the deleterious elements.

In this round of testing, the finer material has also shown significant improvement from previous work in that the recovery has been strongly improved.

Near term metallurgical testwork will now focus on the cleaner phase.

#### 6.0 Outlook for 2010

The slurry pipeline study has outlined a considerable opportunity for the Company. The dramatic reduction in transport costs for product movement from the conceptual mine site to the potential barging facility has enabled POZ to pursue an export operation of up to 3 mtpa.

To support this objective the company will commence resource drilling in early April at Highland Plains. This program will involve both PQ core and RC drilling and will allow the construction of a detailed resource model over the entire Highland Plains project area. Upon completion of this program an updated resource estimate will be calculated by POZ's independent consultants, Cube Consulting.

The Company is well resourced to pursue its technical objectives at Highland Plains with \$6.95 million cash on hand as at the end of the December quarter.

#### ANDREW JAMES Managing Director

The information in this report that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Mr Jim Richards and Ms Lisa Wells, who are both Members of The Australasian Institute of Mining and Metallurgy. Mr Richards and Ms Wells are both Directors of POZ and Ms Wells is also a full time employee. Both Mr Richards and Ms Wells have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2004 Edition of the Australasian Code for Reporting of Exploration



Results, Mineral Resources and Ore Reserves. Mr Richards and Ms Wells both consent to the inclusion in the report of the matters based on the information in the form and context in which it appears.

The information in this report that related to metallurgical testwork is based on information compiled by Mr Fred Kock and overseen by Mr Brian Putland who is a member of the Australian Institute of Mining and Metallurgy. Mr Putland is the Managing Director of Orway Mineral Consultants.



#### **Appendix A: Slurry Pipeline Study**

#### PHOSPHATE AUSTRALIA LIMITED

#### **SCOPING STUDY**

#### PHOSPHATE AUSTRALIA DEPOSIT

#### TRANSPORTATION MODES - PHOSPHATE SLURRY PIPELINES ALTERNATIVE

Revision	Issued for:	Date
Α	Scoping Study	18 <sup>th</sup> Dec 2009

Performed by

**SLURRY SYSTEMS PTY LIMITED** 

December 2009 Job: 630

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#### 1.0 INTRODUCTION

Phosphate Australia Limited (PAL) are considering alternative modes of transportation to transport 3 Mtpa of phosphate rock from PAL's phosphate deposit in the Northern Territory. A slurry pipeline is one mode being considered with three alternative terminal locations: Tully Inlet, Ballast Grounds or Calvert River on the shores of the Gulf of Carpentaria.

PAL requested Slurry Systems Pty Limited (SSPL) conduct a Scoping Study on the slurry pipeline alternatives, including Order of Magnitude capital and operating costs.

SSPL has previously conducted a number of studies into phosphate slurry pipelines in Queensland including laboratory testing of the physical properties and rheology of phosphate slurries from a number of deposits and with varying particle sizing. In addition SSPL has measured corrosion rates for a number of Queensland phosphate slurries at varying pH levels.

The in-house data from these prior tests, together with general information in the literature on other phosphate slurry pipelines provides the basis for the Scoping Study.

#### 2.0 BASIS OF STUDY

#### 2.1 Provided Information

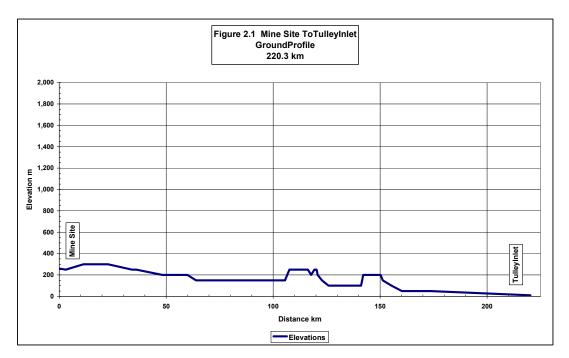
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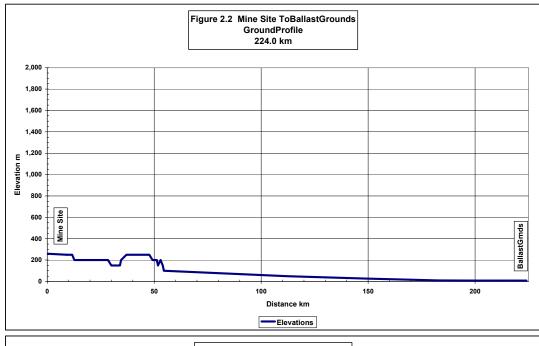
- 3 Mt/yr capacity
- 137.98deg E / 18.64 deg S starting location
- 138.16deg E / 16.67 deg S option 1 (Tully Inlet) = 225 km (ground rugged in parts)
- 139.70deg E / 17.63 deg S option 2 (Ballast Grounds) = 220 km (national park crossing? , 20 km of salt flats)
- 137.74deg E / 16.27 deg S option 3 (Calvert River) = 335 km (circumventing most difficult terrain)

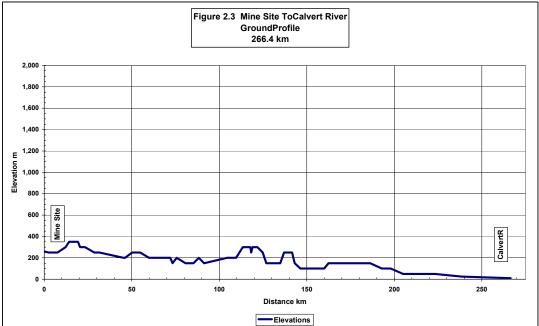
SSPL conducted an independent desktop evaluation of potential pipeline routes and determined similar pipeline lengths as above for Tully Inlet and Ballast Grounds terminals but a significantly shorter route to Calvert River. Route profiles of the adopted routes are given in the following Section 2.2. Horizontal scaled pipeline lengths are increased by 1.5% as contingency to provide for slope vs horizontal drainage plus some future field dictated divergence.

#### 2.2 Developed Information on Pipeline Routes

The potential pipeline routes were selected by desktop examination of published 1:250,000 Topographic maps of the area of interest. The three route profiles are summarised in Figures 2.1, 2.2 and 2.3.







#### 2.3 Assumed Information on Phosphate Slurry Properties

#### 2.3.1 Solids SG

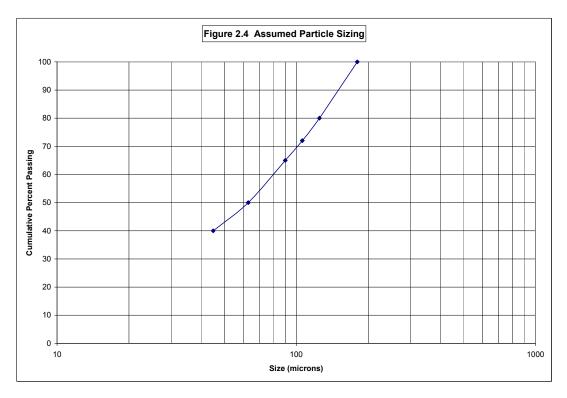
Based on data for other phosphate deposits in the region, a solids SG 3.0 is assumed.

#### 2.3.2 Particle Size Consist

Various particle sizing consists have been considered in previous studies. For economic pipeline transport the particle size consist must

be relatively fine. The assumed size consist in Table 2.1 and shown in Figure 2.4 has a size distribution relevant to phosphate slurries and a maximum particle size suitable for economic long distance transport by slurry pipeline. Adoption of a coarser particle sizing increases capital and operating costs due to higher pipeline flows and pump pressures which require additional pump stations and result in increased pipe wear.

Table 2.1						
Assumed Particle Size						
Size (microns)	180	125	106	90	63	45
Cumulative Percent Passing	100	80	72	65	50	40



#### 2.3.3 Assumed Rheology

The slurry pipeline is required to operate in turbulent flow and rheology is a significant property that determines the maximum concentration able to be pumped whilst still maintaining turbulent flow in the pipeline. The rheology of a slurry is primarily dependant on the basic ore type and the particle size. Rheology varies from deposit to deposit and sometimes within deposits. It is therefore not possible to definitively state a rheology without specific testwork on representative samples. However, based on SSPL's in-house data on rheology of phosphate slurries in North Queensland, a pumping concentration in the range 45% to 50% by weight is likely. Table 2.2 summarises the assumed rheology over this concentration range.

Table 2.2						
Assumed Rheology						
Concentration	Concentration   Yield Stress   Plastic Viscosity					
(wt%)	(Pa)	(mPas)				
45	2.3	7				
48	3.5	9				
50	4.4	10				

SSPL is aware that some overseas phosphate pipelines operate at concentrations around 60%. However the available rheology data indicates a maximum concentration of around 50% applies to Queensland phosphates.

#### 2.3.4 Corrosion Rate

Operating experience in existing phosphate pipelines indicates corrosion rates are low, especially if the pH is maintained around pH 10. SSPL has also conducted quite extensive corrosion testing of Queensland phosphate slurries which confirms the low corrosion rate.

Based on this pipeline experience and test data, an unlined pipe is selected with a design corrosion rate of 0.1 mm/y. For an assumed design life of 25 years a total pipe wall corrosion thickness allowance of 2.5 mm applies. The pH is maintained around 10 by addition of caustic soda.

#### 2.3.5 Availability

Slurry pipelines typically have availabilities in excess of 95% but an overall availability of 90% is assumed giving a required solids throughput rate of 380.5 tph based on a 365 day, 24 hour per day operation.

#### 3.0 PIPELINE HYDRAULICS & SYSTEM FACILITIES

#### 3.1 Selected Pipe Size and Operation

The selected steel pipe is DN350 (OD 355.6 mm) with a pumping concentration of 48% which provides a suitable minimum operating velocity for the assumed particle size. An API 5L, Grade X70, DN350 pipe is selected .Pipe wall thickness varies along the route to suit pipeline pressure variation. For the Tully Inlet and Ballast Ground options a single pump station at the mine is sufficient and pipe wall thicknesses range from 15.1 mm to 6.4 mm. For the longer Calvert River pipeline a booster station is required and pipe wall thicknesses range from 12.7 mm to 6.4 mm.

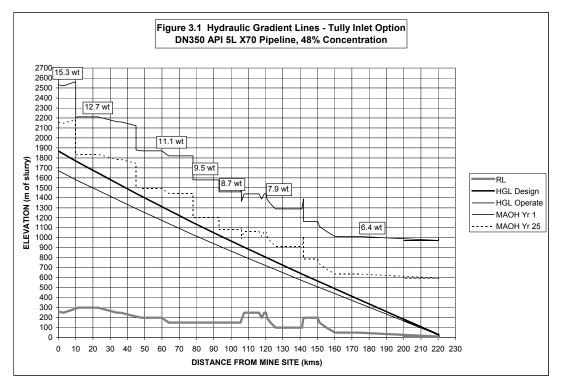
#### 3.2 Predicted Head Loss Gradients

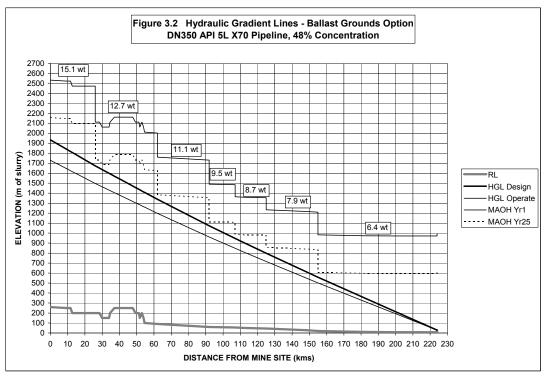
The predicted head loss gradients are summarised in Table 3.1 and based on the assumed particle size, solids SG and rheology. A design flow rate 6% higher than operating is selected to provide a design margin.

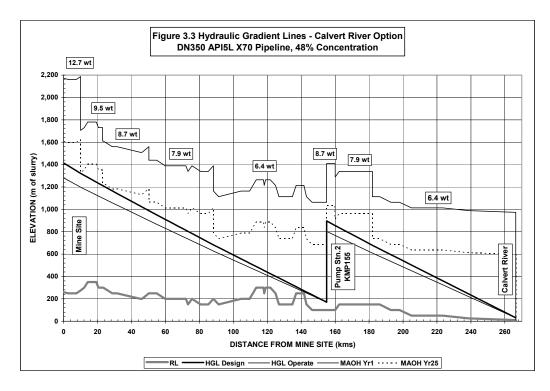
Table 3.1							
Velocities and Head Loss Gradients							
	380.5 tph Pipeline Capacity						
			Design		perating		
		Flo	ow Rate	Flo	ow Rate		
		57	71 m³/h	53	39 m³/h		
Wall	ID	Velocity	Head	Velocity	Head		
Thickness	(mm)	(m/s) Loss		(m/s)	Loss		
(mm)		Gradient			Gradient		
			(m slurry/km)		(m slurry/km)		
15.1	325.4	1.909	10.02	1.801	8.95		
12.7	330.2	1.854	9.30	1.749	8.30		
11.1	333.4	1.818	8.85	1.715	7.90		
9.5	336.6	1.784	8.43	1.683	7.53		
8.7	338.2	1.767	8.23	1.667	7.35		
7.9	339.8	1.750	8.03	1.651	7.17		
6.4	342.8	1.720	7.68	1.622	6.85		

#### 3.3 Hydraulic Gradient Lines

Figures 3.1, 3.2 and 3.3 show the Design and Operating Hydraulic Gradient Lines (HGL) for the Tully Inlet, Ballast Grounds and Calvert River options respectively. Also shown are the Maximum Allow Operating Heads (MAOH) in Year 1, new pipe, and Year 25, allowing for 2.5 mm wall thickness loss due to corrosion.







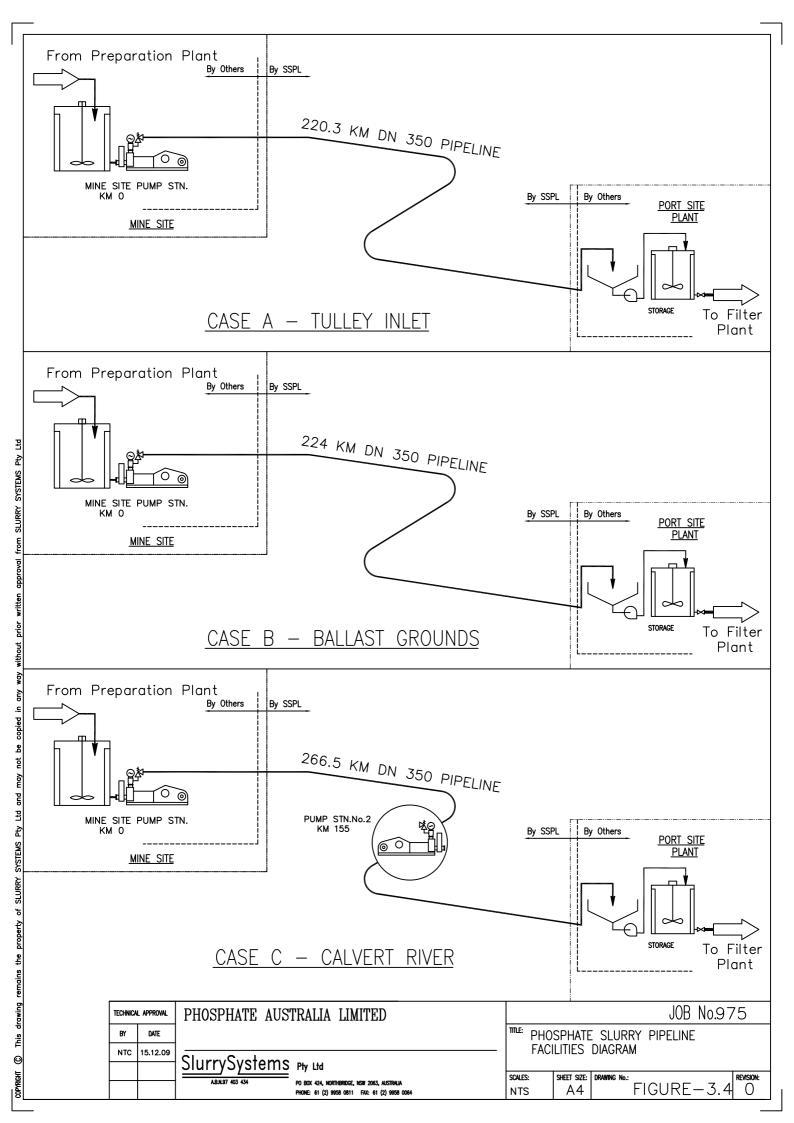
#### 3.4 Comparisons - Pipeline Steel and Pump Pressures and Powers

Table 3.2 compares the mass of steel pipe and pump pressures and powers for the three options.

Table 3.2					
Comparise	ons Pipeline	Options			
	Tully Inlet	Ballast Grounds	Calvert River		
Pipeline Length (km)	220.3	224.0	266.4		
Number of Pump Stations	1	1	2		
Total mass steel pipe (tonnes)	17,079	18,388	16,926		
Number of Pumps including					
one standby	3	3	3 + 2 = 5		
Design Pump Pressure (kPa)	23,220	24,150	16,653/11,486		
Operating Pump Pressure (kPa)	20,370	21,200	14,726/10,142		
Total Installed Pump Power (kW)	6,750	7,200	5,100/4,600		
including standby	0,750	7,200	= 9,700		
Total Operating Pump Power (kW)	3,245	3,380	2,346/1,616		
Total Operating Pullip Power (KW)	3,243	3,360	= 3,961		

#### 3.5 System Facilities

The facilities in each alternative are summarised in Figure 3.4 Facilities Diagram. Each slurry pipeline system commences with phosphate slurry into agitated slurry storage tanks at the minesite pump station and terminates in a pipeline terminal at the port site. The extraction and preparation of the slurry at the minesite is by others. The slurry storage and dewatering, stockpiling and shiploading of the phosphate at the port site is also by others.



#### 3.5.1 Agitated Storage Tanks

Two agitated storage tanks are installed at the minesite pumping station. It is assumed the phosphate slurry from the preparation plant is thickened and each storage tank has capacity equivalent to 6 hours of pipeline operation. Each tank is equipped with an 110 kW agitator.

#### 3.5.2 Minesite Pump Station

Three mainline pumps are installed in each mine site pump station. Two operating, one pump on standby. The pumps at pump station 1 (minesite) are driven by electric motors. The pump station electric power supply to the pump station MCC and transformer is by others.

The pumps for pump station 2 for the Calvert River alternative are driven by diesel engines. Two mainline pumps are installed (One operating, one pump on standby).

#### 4.0 COST ESTIMATE

#### 4.1 Basis of Cost Estimate

The capital cost is factored from more detailed cost estimates conducted for previous pipeline studies.

#### 4.1.1 Pipeline

Pipe supply cost for shop coated pipe is based on budget quotation from One Steel.

The estimated pipe installation costs for each slurry pipeline are factored from recent detailed estimates for similar pipeline systems.

#### 4.1.2 Pumping Stations

Pump supply cost is based on a budget quotation from Weir Minerals (Geho Pumps) and an exchange rate of \$AUST1 = Euro 0.6156is applied to the Euro based price.

Pump station installation costs are factored from detailed costs for a similar system.

#### 4.2 Capital Cost

The order of magnitude capital cost for the phosphate slurry pipeline systems outlined in Section 3 are:

Case	Port Site	\$Aust x Million
Α	Tulley Inlet	184.0
В	Ballast Grounds	191.5
С	Calvert River	226.0

The facilities costs are summarised in Table 4.1.

# TABLE 4.1 PHOSPHATE AUSTRALIA SLURRY PIPELINE SYSTEMS ORDER OF MAGNITUDE ESTIMATE OF CAPITAL COST \$ Million

Case	Α		В		С	
Description	Tulley Inlet		Ballast		Calvert	
Facility	Tulley Inlet		Grounds		Ri	iver
Mine Site - Pump Station No.1						
Permanent Materials	19.0		19.3		18.9	
<ul> <li>Installation</li> </ul>	5.8		5.8		5.8	
Sub-Total Pump Station No.1		24.8		25.1		24.7
Mine Site - Pump Station No.2						
Permanent Materials	-		-		21.2	
Installation	-		-		4.3	
Sub-Total Pump Station No.2		-		-		25.5
Slurry Pipeline						
Permanent Materials	40.7		43.4		41.7	
<ul> <li>Installation</li> </ul>	66.8		69.3		69.5	
Sub-Total Slurry Pipeline		107.5		112.7		111.2
Preliminaries ,SCADA, & Terminal		15.6		15.2		17.6
Sub-Total System Direct Cost		147.9		153.0		179.0
Indirect Cost						
• EPMC	14.0		15.5		20.4	
Contingency	22.1		23.0		26.2	
Sub-Total System Direct Cost		36.1		38.5		47.0
TOTAL ESTIMATED COST		184.0		191.5		226.0

#### 4.3 Operating Cost

The estimated annual direct operating cost for the slurry pipeline system outlined in Section 3.0 for a throughput of 3 x 10  $^6$  tpa phosphate are:

Case	Port Site	\$Aust x Thousand
Α	Tulley Inlet	6,190
В	Ballast Grounds	6,410
С	Calvert River	11,060

The costs are summarised in Table 4.2.

The estimate is based on manpower, expendable parts, power consumption and other details detailed hereunder.

No cost allowance is included for cost of caustic addition to raise pH to 10.

## TABLE 4.2 PHOSPHATE AUSTRALIA SLURRY PIPELINE SYSTEMS ORDER OF MAGNITUDE ANNUAL DIRECT OPERATING COST

**Annual Cost (x \$ 1,000)** 

Case	A		В		C	
Description	Tulley Inlet		Ballast Grounds		Calvert River	
Item						
Total Pipeline Systems						
Power @ 15cents/kWh	4,500		4,673		3,328	
Fuel Booster PS \$ \$1.20/L	-		-		4,793	
Maintenance Supplies & Parts	422		438		874	
Operating Labour	351		351		585	
Maintenance Labour	328		328		454	
Sub-Total		5,600		5,802		10,034
Contingency		590		608		1,026
Estimated Annual Operating Cost		6,190		6,410		11,060
Unit Rate (\$/t)		\$2.06		\$2.14		\$3.69

#### 4.3.1 Supervision and Labour

The slurry pipeline system is automatically controlled by the prep plant control room Operator. The control of the pipeline is part of the control room Operator's duties and no portioning of his costs is made in this estimate.

Supervision of the total system, including operation and maintenance of the slurry pumping and pipeline system is the responsibility of the System Superintendent and the Maintenance Supervisor. The cost of these personnel are not included in the operating cost estimate.

The operating and maintenance labour of the slurry pumping and pipeline system is shared with the minesite preparation plant site and port site dewatering facilities.

The shared manning requirements included in the operating cost are summarised in Table 4.3, Maintenance Manning and Cost

A maintenance tradesman cost of \$120,186 per year is applied to estimated labour requirements.

## TABLE 4.3 PHOSPHATE AUSTRALIA SLURRY PIPELINE SYSTEMS OPERATING & MAINTENANCE MANNING & COST

3 X 10<sup>6</sup> tpa

3 X 10° tpa							
Case A & B				С			
Description	Tulley Inlet / Ballast Grounds			Calvert River			
Classification	1 uney 11		ot Grounus			1 1 61	
_	No.of Personnel	Time Devoted to Pipeline	Total Annual Cost (\$)	No.of Personnel	Time Devoted to Pipeline	ed Total Annual Cost (\$)	
Operations							
Plant Attendant (Minesite)	3	75%	\$ 263,276	3	75%	\$	263,276
Plant Attendant (Pump Stn.2)	-	-	-	2	100%	\$	234,023
Plant Attendant (PortSite)	3	25%	\$ 87,759	3	25%	\$	87,759
Sub-Total Operations		\$ 351,035				\$ 585,058	
Maintenance (Minesite)							
Pipeline Inspection	1	8%	\$ 9,014	1	8%	\$	9,014
Mechanical Tradesman	1	65%	\$ 78,121	1	50%	\$	60,093
Electrical Tradesman	1	20%	\$ 24,037	1	20%	\$	24,037
Instrumentation	1	15%	\$ 18,028	1	15%	\$	18,028
Welder Tradesman	1	15%	\$ 18,028	1	15%	\$	18,028
Labourers & Trade Assistants	1	100%	\$ 120,186	1	85%	\$	102,158
Maintenance (BoosterPS)							
Mechanical Tradesman	-	-	-	1	35%	\$	42,065
Electrical Tradesman	-	-	-	1	15%	\$	18,028
Instrumentation	_	-	-	1	15%	\$	18,028
Welder Tradesman	-	-	-	1	10%	\$	12,019
Labourers & Trade Assistants	-	-	-	1	60%	\$	72,112
Maintenance (PortSite)							
Mechanical Tradesman	1	15%	\$ 18,028	1	15%	\$	18,028
Electrical Tradesman	1	5%	\$ 6,009	1	5%	\$	6,009
Instrumentation	1	5%	\$ 6,009	1	5%	\$	6,009
Welder Tradesman	1	5%	\$ 6,009	1	5%	\$	6,009
Labourers & Trade Assistants	1	20%	\$ 24,037	1	20%	\$	24,037
	Sub-Total Maintenance					\$	453,703
Total Annual Operating and Maintenance Labour Cost			\$ 678,542			\$	1,038,760

#### 4.3.2 Power

The cost of electricity is based on an energy cost of 15 cents per kWh. The annual power usage is as follows.

Case	Port Site	MWh
Α	Tulley Inlet	30,000
В	Ballast Grounds	31,152
С	Calvert River	22,185

#### 4.3.3 Diesel Supply

The cost of supply of diesel to pump station 2 is based on \$1.20 per litre. The annual fuel usage is 3,994 kL.

#### 4.3.4 Maintenance Supplies and Parts

The operating cost estimate for annual usage of operating supplies is based on the lives of expendable pump components by pump vendors and other maintenance items.

#### 4.3.5 Contingency

A contingency is applied to the annual direct operating cost for omissions.



#### Phosphate Australia at a Glance

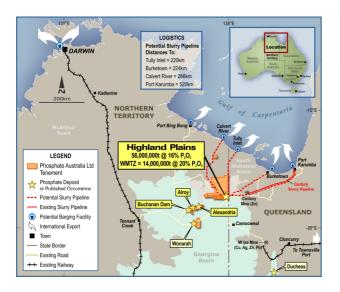
ASX Code: POZ

Phosphate Australia Limited is a rock phosphate development company targeting the production and sale of up to 3,000,000 tonnes per annum of premium grade beneficiated rock phosphate with low contaminants.

Highland Plains is the lead project with a JORC compliant Inferred Resource of 56 Mt at 16%  $P_2O_5$ . The permit is 100% controlled by POZ. The Western Mine Target Zone has been targeted for a potential start-up operation at Highland Plains. This is the shallowest part of the deposit, with outcropping mineralisation and comprises a JORC compliant Inferred Resource of 14 Mt at 20%  $P_2O_5$  as a subset of the global Inferred Resource.

The company also controls three other known phosphate occurrences in the Northern Territory at Alexandria, Alroy and Buchanan Dam. Buchanan Dam has a historical intersection of 6.1 m at 25%  $P_2O_5$  from 12.2 m.

Currently un-granted permit applications controlled by the company to the north of Highland Plains are prospective for iron and uranium with access subject to the negotiation of an agreement with the Traditional Owners.



#### Capital Structure Snapshot 28 January 2009

Ordinary Shares on Issue: 108.9 million Escrowed Shares: 42.0 million

Top 20 Shareholders: 66.6 million (61%)

Unquoted Options on Issue: 24.6 million

Share Price: A\$0.28

Undiluted Market Cap: A\$30.5 million

Number of Shareholders: 1118

Cash Balance: \$6.7 million

#### **Board of Directors**

Chairman: Jim Richards
Managing Director: Andrew James
Technical Director: Lisa Wells
Director/Company Secretary: Grant Mooney

#### **Principal Office**

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E-Mail: <u>info@phosphateaustralia.com.au</u>
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#### **Mailing Address**

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Victoria Park WA 6979

#### **Registered Office**

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#### **Share Registry**

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Shareholder Enquiries: 1300 554 474