

Agriculture – Phosphate

Is Mosaic On the Lookout For A Phos-Rock Developer? Who And When Makes Sense?

- To date in 2012, The Mosaic Co. (MOS-NYSE) has raised its dividend by 400%. In February, MOS raised its annual dividend to \$0.50 from \$0.20 and in mid-July, it doubled its annual dividend to \$1/share. The dividend increases highlight the increasing profitability and robust outlook in the fertilizer space and raise questions as to what MOS will do with its capital.
- At May 31, 2012, MOS had \$3.8 billion in cash and \$1.1 billion in debt. The company continues to generate significant amounts of free cash flow and we believe that a likely use of capital could be to acquire additional phosphate rock supply in politically stable jurisdictions.
- On its July 17 conference call, when addressing potential uses of capital, CFO Lawrence Stranghoener stated, “Our second priority is strategic investments, like new rock mines or acquisitions or joint ventures”.
- We highlight four benefits to MOS from purchasing a North American based development phos-rock project: 1) a cheaper source than importing rock from Morocco, which we estimate accounts for ~1 mtpa of MOS’ supply; 2) extends reserve life, which we believe sits at 9.5 years for operating mines; 3) manages jurisdictional risk, which has been an issue in Florida, the location of all of MOS’s phos-rock mines; and 4) increases security of supply and reduces reliance on politically unstable regions in North Africa.
- To minimize development risk, we believe that MOS would be most interested in an advanced-stage project and would likely wait until the completion of a feasibility study before making a move. We believe the most likely candidates are:
 1. **Arianne Resources (DAN-TSXV, Outperform, \$2.50 target price):** If looking for a large project, MOS could purchase DAN’s Lac à Paul property, located in Quebec with the potential for 3mtpa of production within 200km of a deep sea port on the St. Lawrence river (easy access to Florida). The pre-feasibility study estimates capex of \$814M and opex of \$90/mt to produce an extremely high grade product (~39% P₂O₅). The feasibility study is expected by 2013 with initial production as early as 2016.
 2. **Stonegate Agricom (ST-TSX, Outperform, \$1.50 target price):** If looking for a smaller, simpler operation, ST’s Paris Hills property, located in Idaho, is a 1mtpa potential DSO project. The pre-feasibility study estimates initial capex of \$149M and opex of \$73/mt to produce a 29.4% P₂O₅ product. The feasibility study is expected in late 2012 with initial production as early as 2015.

Figure 1: Phosphate development company summary

Company	Symbol	Rating	Target Price	Share Price	Target Return	Market Cap	Enterprise Value	P/NAV	EV per tonne	Reserves & Resources (Mt)			
										M+1	Inferred		
d'Arianne Resources Inc.	TSXV:DAN	Outperform	2.50	0.87	187%	58.3	52.6	0.35	1.82	348	7%	114	5%
Stonegate Agricom Ltd.	TSX:ST	Outperform	1.50	0.46	230%	65.7	51.0	0.30	0.79	59	17%	462	12%

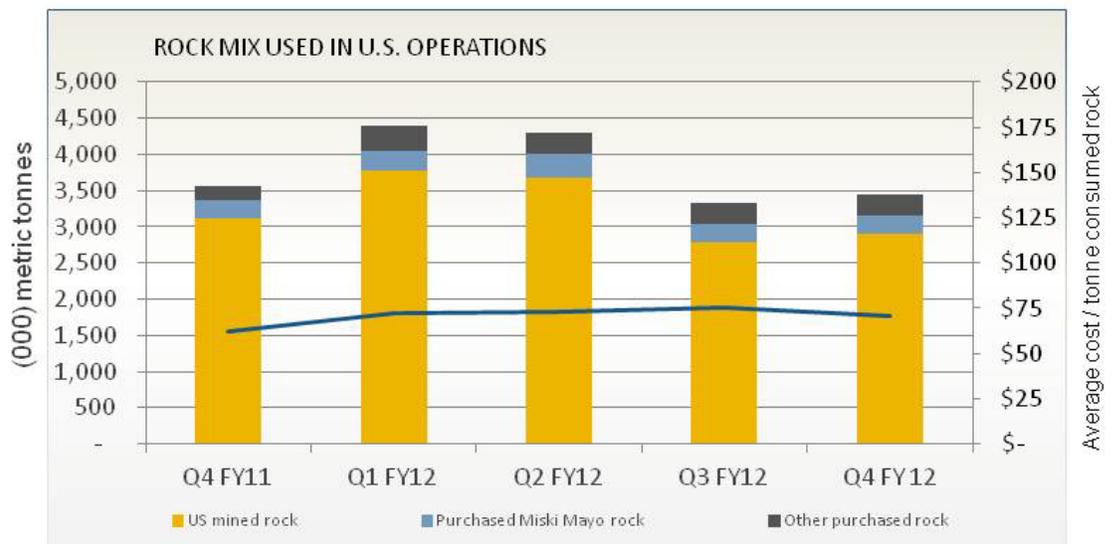
Source: Company reports, Stonecap Securities Inc.

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Mosaic Phosphate Business Overview

MOS is the world's largest producer of finished phosphate products, with capacity greater than the next two largest combined. MOS operates four MAP/DAP facilities in Florida and Louisiana with total operating capacity of 9.7 mtpa. MOS is vertically integrated, and supplies its plants with phosphate rock from four mines with annual capacity of 15.9 mtpa (each tonne of DAP requires ~1.6 tonnes of rock). MOS also owns a 35% stake in Vale's 3.9mtpa Bayovar mine (Miski Mayo) and the right to purchase 35% of production. As shown in Figure 2, MOS relies on the spot market (mainly Moroccan rock from OCP) to fulfill its needs. We estimate this accounted for ~1 million tonnes in F2012.

Figure 2: Mosaic phosphate operations



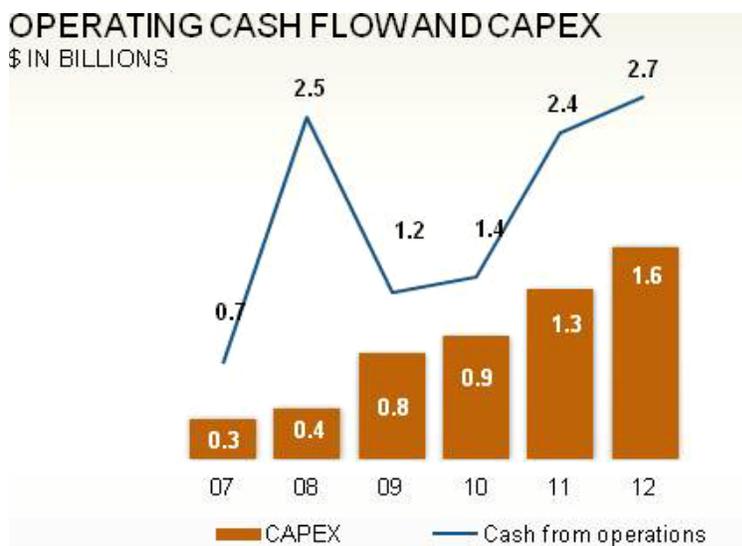
Source: Company reports

Excess Capital Used for Phosphate?

At May 31, 2012, MOS had \$3.8 billion in cash and \$1.1 billion in debt. As show in Figure 3, the company continues to generate significant amounts of free cash flow and has increased its dividend twice in 2012, to \$1/share from \$0.20/share previously. We believe that a likely use of capital, and one that makes sense for MOS, would be to acquire additional phosphate rock supply in politically stable jurisdictions. On its July 17 conference call, when addressing potential uses of capital, CFO Lawrence Stranghoener stated:

“Our second priority is strategic investments, like new rock mines or acquisitions or joint ventures”

Figure 3: Mosaic's free cash flow generation growing



Source: Company reports

Why Mosaic Should Buy A Rock Deposit

We highlight four benefits to MOS from purchasing a development project:

- 1) **A Cheaper Solution** - We estimate that MOS is currently purchasing ~1 mtpa of phos-rock from OCP in Morocco. Spot prices for Moroccan rock now sit at \$180-200/mt FOB Morocco for 31-33% P₂O₅ product. If we assume freight from Morocco to MOS's plants in Louisiana/Florida is approximately \$30/tonne, its landed cost ranges from \$210-230/mt, or \$687 per point of P₂O₅.

We estimate that MOS's all-in cost to acquire DAN and ST, including a 50% takeover premium, initial and sustaining capex, and operating and freight costs, are \$164/t and \$144/t, respectively (Figure 4). While it would cost MOS slightly more on a per tonne basis to acquire DAN, its concentrate is 38% P₂O₅ vs. ST's at 30%. On a \$ per point of P₂O₅ basis, DAN would cost \$432/mt and ST would cost \$480/mt, both significantly cheaper options for MOS than paying spot prices from OCP. On this basis, the DAN option would represent 59% savings to MOS and the ST option would represent savings of 43%.

Figure 4: Acquisition economics

	DAN	ST	Comments
Life of mine rock production (Mt)	51.0	14.0	Annual production x mine life
Acquisition cost (\$/mt LOM production)	\$1.7	\$6.7	We assume MOS pays a 50% premium to the current share price
Initial capex (\$/mt LOM production)	\$16.0	\$10.7	As per PFS
Sustaining capex (\$/mt LOM production)	\$6.0	\$6.4	As per PFS
Cash costs (\$/mt)	\$90.5	\$73.0	As per PFS
Estimated freight to Louisiana/Florida (\$/mt)	\$50.0	\$47.0	DAN - from CNR website and our estimates, ST - from PFS
Total costs (\$/mt, CFR Florida)	\$164.22	\$143.77	

Source: Company reports, Stonecap Securities Inc.

2) Tops up reserves – Based on its current operational capacity at existing mines, we estimate that MOS currently has only 9.5 years remaining of reserves (Figure 5). MOS does have two development projects which could add an additional 24.6 years to its reserve capacity, however, this assumes that these mines can be large enough to replace the depleted active mines and MOS has no intention of expanding production. We believe that at this time, it could be prudent for MOS to add to its reserve base.

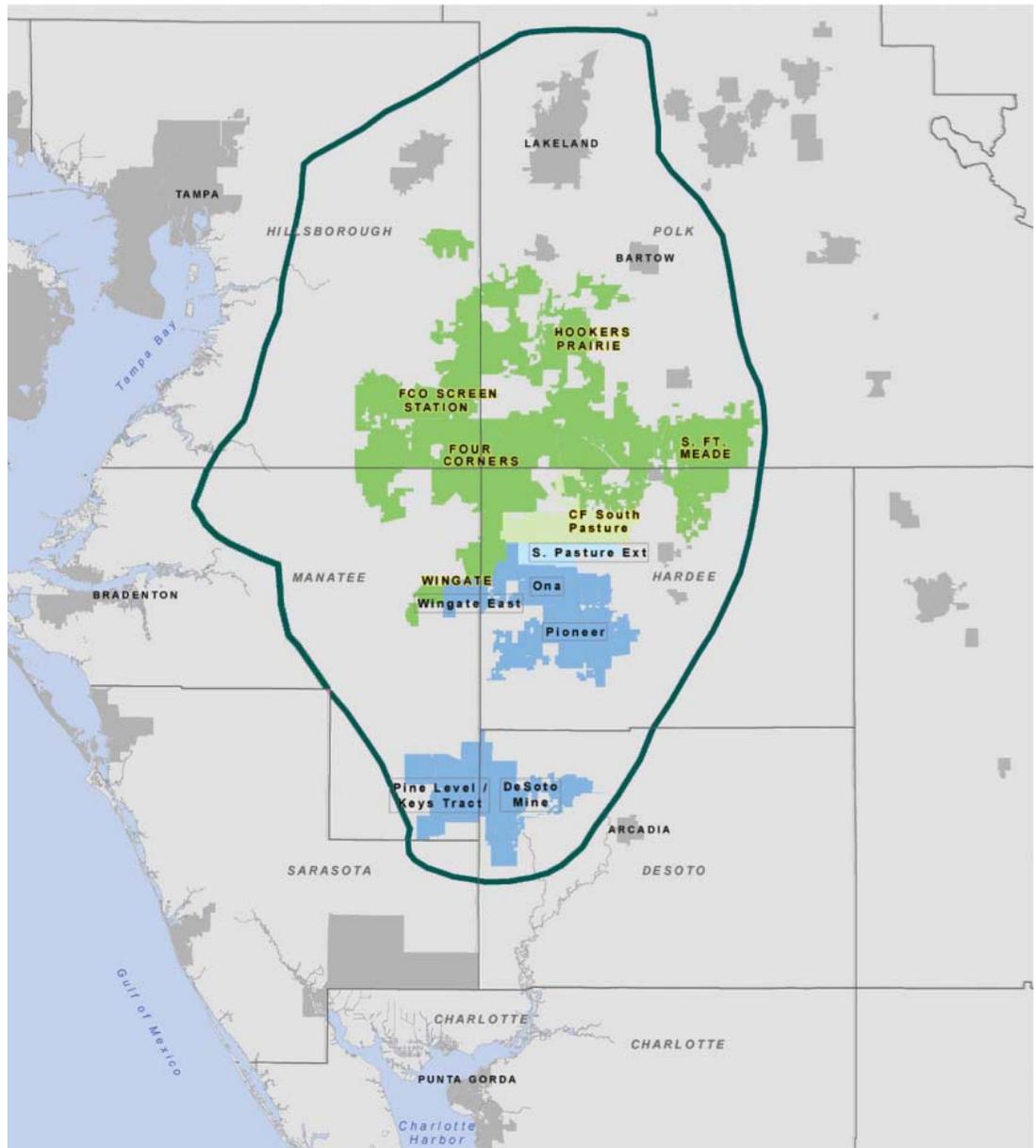
Figure 5: Reserves and mine life

Facility	Operational Capacity		Reserve Tonnes		Reserve Life
	(Mtpa)	% P ₂ O ₅	(Mt)	% P ₂ O ₅	(yrs)
Active Mines					
Four Corners	7.0	30.0	60	29.6	8.5
South Fort Meade	5.5	29.2	52	29.4	9.6
Hookers Prairie	2.0	30.1	6	30.4	2.9
Wingate	1.5	29.6	38	29.0	24.8
Total Active Mines	16.0	29.8	154	29.4	9.5
Future Mining					
Ona			246	29.0	
DeSoto			148	29.7	
Total Future Mining			394	29.3	
Total Mining			548	29.3	33.7

Source: Company reports, Stonecap Securities Inc.

3) Mitigates jurisdictional risk – All of MOS's wholly owned phosphate mines are located in central Florida (Figure 6). MOS has experienced significant permitting challenges with its South Fort Meade (SFM) extension project. It took more than eight years to complete permitting and involved 14 different local, state and federal regulatory agencies. Shortly after completion, MOS faced litigation that challenged its federal wetlands permit which led to a preliminary injunction that reduced MOS's SFM production to 22% of capacity and increased its pre-tax production cost by US\$200M per year. MOS incurred total litigation cost of US\$13M before receiving judicial approval of its settlement agreement in March 2012. While environmental and permitting issues have been resolved for the time being in this area, adding mines in other politically stable regions would help mitigate this risk in the future.

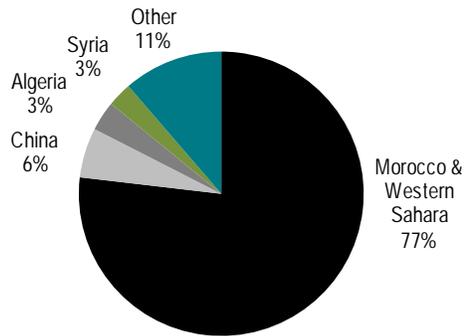
Figure 6: MOS phos-rock mine locations



Source: Company reports

4) Security of supply - As can be seen in Figure 7, Morocco has the largest share of the world's 2011 phosphate rock reserves, with an estimated 50 billion tonnes. China is second with 3.7 billion tonnes, followed by Algeria and Syria with 2.2 billion tonnes and 1.8 billion tonnes, respectively. With such a large percentage of reserves in unstable or net importing countries, we expect integrated phosphate producers to look to secure their own future rock supply.

Figure 7: Global phosphate reserves



Source: U.S. Geological Survey

Who Should Mosaic Buy?

We expect that MOS would be most interested in an advanced-stage project in North America, but would likely wait until the completion of a feasibility study before making an acquisition. We believe that if MOS is looking for a large and scalable project, then DAN's 3 mtpa Lac à Paul property is the best option. If looking for a smaller, simpler operation, ST's Paris Hills property, located in Idaho, is a 1mtpa potential DSO project. The pre-feasibility study estimates initial capex of \$149M and opex of \$73/mt to produce a 29.4% P₂O₅ product. The feasibility study is expected in late 2012, with initial production as early as 2015.

Company Name	Applicable Disclosure List Reference
Stonegate Agricom Ltd. (ST-TSX)	6
Arianne Resources Inc. (DAN-TSXV)	6
A member of the research team has visited the subject company's operations: Mantaro project in Peru on November 17, 2010 & Paris Hills project in Idaho on June 20, 2011.	
A member of the research team has visited the subject company's operations: We visited Lac a Paul project in Saguenay, QC on April 9, 2011.	

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