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Phosphate Rock Preliminary Scoping Study

Prepared For:

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Phosphate Rock Preliminary Scoping Study

1. Introduction

Legend International Holdings, Inc (OTC-BB: LGDI.OB) (a Delaware Corporation) with projects in Queensland and the Northern Territory of Australia, has interests in landholdings which contain historically defined phosphate deposits totalling 1,463 million tonnes of phosphate rock at an average grade of 16% P_2O_5 (See Table 1). All phosphate landholdings are located approximately 120km NNW of Mt. Isa in the Georgina Basin of Queensland, Australia, totalling more than 40,000 acres (See Figure 1). Each tenement hosts a known and well documented, deposit of phosphate rock (Cook, P.J, 1989, Howard, P.F, 1986). This report is an initial scoping study with preliminary costing for bringing these deposits into production.

Legend's flagship project is the Lady Annie and Lady Jane deposits where BH South Ltd discovered and delineated world class phosphate deposits in 1967, of 486 million tonnes at 17% P_2O_5 and completed technical and economic feasibility studies for a 8-10 million tonne per year mine, beneficiation plant to produce 4-5 million tonnes per year of phosphate rock concentrate of 34% P_2O_5, and a 300km long slurry pipeline to transport the concentrate to a new deep water port facility at Sweers Island in the Gulf of Carpentaria of Queensland (Cook, P.J, 1986).

The D-Tree deposit also owned by Legend which is located 12km west of the Lady Annie/Lady Jane deposit and had technical and economic feasibility studies conducted by International Minerals and Chemical Development Corporation (IMCDC). IMCDC defined 450 million tonnes at 15.9% P_2O_5 and completed detailed proposals for a mine site, town site, beneficiation plant producing 4 million tonnes of >31% P_2O_5 concentrate per year and a 300km railway line to a new deep water port facility near Mornington Island in the Gulf of Carpentaria (Forster et al, 1975).

Legend has also entered into a farm-in and joint venture heads of agreement with King Eagle Resources Pty Limited on December 7, 2007 pursuant to which Legend can earn an 80% interest in phosphate on three tenement blocks named Highland Plains, Lily, Sherrin and Quita creeks by spending $3 million on phosphate exploration over five years. IMCDC and later Australian Fertiliser's Limited, discovered and delineated these deposits.

Legend proposes to re-evaluate past feasibility studies conducted by IMC Development Corporation and BH South Ltd and plans to initially develop the Lady Annie deposit. A mine of 10 million tonnes of phosphate rock ore per year will be developed to provide feed to a beneficiation plant which will produce 5 million tonnes of phosphate rock concentrate of 34% P_2O_5. A 300km slurry pipeline will also be constructed to transport the rock to Port Karumba (Figure 1) where the concentrate will be dewatered and loaded on to shallow water barges which will transfer to Panamax or Post Panamax size vessels and shipped to Asia.

The table below lists tonnes and grade of the historically defined deposits for the prospects within Legend tenements and those covered by the joint venture heads of agreement with King Eagle Resources Pty Limited (Italics). Although classed as reserves at the time of estimation (1970-75) the following table of tonnes and grade are not yet current reserves as defined by the U.S SEC Industry Guide 7, Australian JORC 2004 or Canadian NI.43-101. Validation drilling and current economic factors are yet to be applied to the estimates below; therefore they have been termed 'historically defined deposits'.

Table 1: Legend International Holdings Historically Defined Phosphate Deposits

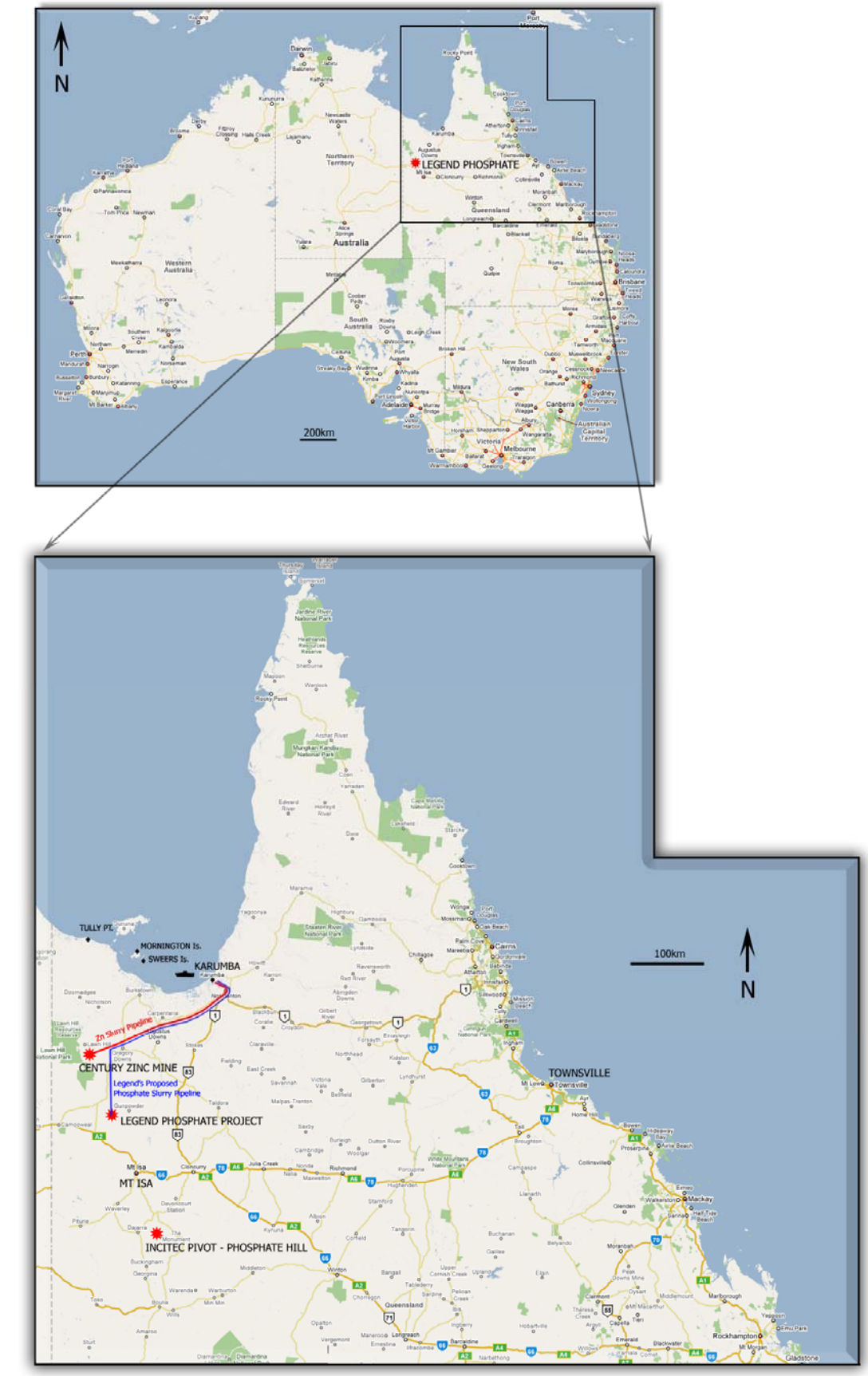
PROSPECT	Tonnes (millions)	% P_2O_5
[1]D Tree	450	15.9
[2]Lady Annie	293	16.6
[2]Lady Jane	193	17.6
[2]Thorntonia	47	18.1
[2]Lily Creek	191	14.9
[2]Quita Creek	30	7.42
[2]Sherrin Creek	175	16.5
[2]Highland Plains	84	13.4
Total	**1,463**	**16.0**

Sources:

[2] Denaro, T., Ramsden, C., & Brown, D., *Queensland Minerals - A Summary of Major Mineral Resources, Mines and Projects (*4th Edition), Queensland Government Department of Mines & Energy, 2007.

[1] Howard, P.F., 'The D-Tree Phosphate Deposit, Georgina Basin, Australia' in *Phosphate Deposits of the World – Volume 1: Proterozoic and Cambrian Phosphorates*, Edited by P.J. Cook and J.H. Shergold, p556, Cambridge University Press, 1986.

Figure 1: Legend Phosphate Project Location



2. Lady Annie/Lady Jane Phosphate Project

BH South Ltd discovered Lady Annie in 1967 and Lady Jane in 1968. A total of 2168 rotary percussion drill holes were completed for an aggregate of 57,633m and 33 shafts were sunk for bulk sampling for an aggregate of 442.7m (Rogers, J.K, 1986). Ten large excavations were completed to supply feed for a 100 tonne/day grinding and flotation beneficiation plant which operated on site during 1973-74 (Rogers, J.K, 1986). This work culminated in defining a 'Western Reserve Zone' at Lady Annie (See Figure 2) from which positive feasibility studies were then conducted to outline the development of the deposit. The Western Reserve zone was calculated as a measured reserve as defined by the U.S Bureau of Mines and the U.S Geological Survey in 1974 (BH South Ltd, company report, 1974)

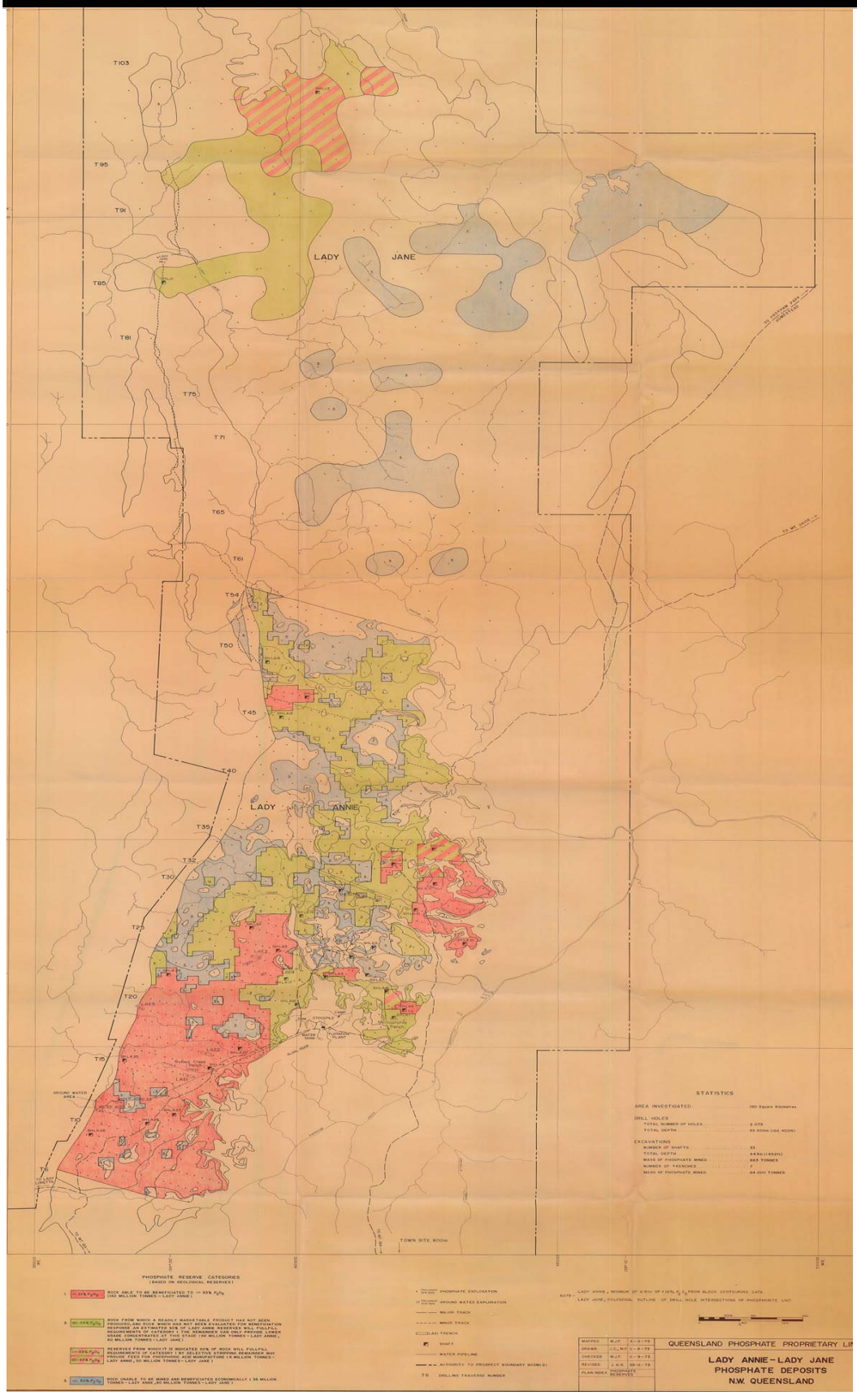
Feasibility studies included pilot plant metallurgical testwork, town site investigations, slurry pipeline and possible railway routes, geotechnical drilling at Sweers Island for the deep water port site, bathymetry measurements offshore from Sweers Island, geotechnical investigations for dam sites for water source, and power generation options. The conclusion of the feasibility study was that a 4-5 million tonne/year phosphate rock concentrate beneficiation plant and 300km slurry pipeline to a newly constructed deep water port at Sweers Island was technically and economically feasible.

The project did not eventuate due to a sharp increase in the phosphate rock price in 1974. This led to a change in focus which would enable BH South Ltd to capitalise quickly on the higher price. A few hundred kilometres to the south lies the Duchess deposit (now owned and currently operated by Incitec Pivot Limited at Phosphate Hill – See Figure 1) which was closer to the Mt Isa to Townsville railway line and terminated at an already operating port. The deposit also had accessible 'direct shipping grade' ore (>31% P_2O_5). BH South Ltd decided that they could develop Duchess and ship rock much faster with less initial capital expenditure and therefore capitalise on the rapid phosphate rock price increase and allow quick market penetration. This led to subsequent infrastructure being developed at Duchess and later a full beneficiation plant, ammonia plant (after a new gas pipeline had been developed), sulphuric acid plant at Mt Isa, and full phosphoric acid and fertiliser manufacturing plant on site at Phosphate Hill.

Lady Annie was the original focus for BH South Ltd as the deposit is much closer to the coast and would benefit from economies of scale. The slurry pipeline option would also have allowed much larger volumes of concentrate to be shipped as the Mt Isa to Townsville railway has capacity issues. Interestingly, before the price jump in 1974, the view on Lady Annie was "both by location and quality, (the Lady Annie deposit) is the one which will make possible the initiation of the project. The northern deposits are each too small and too far apart to provide the initial rock production rate. The Duchess deposit is remote from the coast and the increased capital investment and transport cost would require a much higher level of sales to achieve economic utilization" (Thomson, L.D, & Russel, R.T, 1971).

Due to a number of factors Phosphate Hill also ceased operations between 1978-81 and 1983-93 whereby the traditional island sources were adequate for Australia's needs. The development of Lady Annie or the nearby D-Tree lay dormant as the capital cost involved along with low phosphate rock prices (until very recently) did not attract any developers. Phosphate rock prices have increased significantly in the last 12 months with current prices as of March 2008 at $350 – 400/tonne fob Morocco, making the development of these deposits once again extremely attractive, hence Legends plans to initiate a new feasibility study and bring the Lady Annie deposit into production.

Figure 2: Lady Annie and Lady Jane Deposit Categories



Source: QPPL Report on Exploration, Authority to Prospect No. 903M, 1972.

3. Legend's Plan

Legend International Holdings Inc is planning to conduct a new feasibility study on the Lady Annie deposit. The study will revalidate results from the previous feasibility studies initiated by BH South Ltd. The study will assess the following:

- A 10 million tonne per year phosphate rock mine site.
- A 5 million tonne per year phosphate rock concentrate beneficiation plant.
- A 300km slurry pipeline from Lady Annie which will access the Miscellaneous Infrastructure Corridor that Zinnifex's Century Zinc slurry pipeline currently uses and terminates at the Port of Karumba (see Figure 1).
- The development of a drying facility, plus loading and berthing areas at the Port of Karumba.
- Barge transfers from shallow draught barges out to larger vessels moored off the coast in the Karumba Roadstead waters ready to ship product to Asia.

Initial steps will be to:

- Conduct an initial costing scoping study (this document).
- Revalidate the historical deposit estimates by drilling a number of twin holes across representative sections throughout the deposit zone (Figure 2).
- Revalidate the metallurgical testwork by sending bench and pilot plant scale samples to Jacobs Engineering in Bartow, Florida to develop a flow sheet and final plant design.
- Conduct full technical Feasibility Study and Environmental Impact Statement.

4. Capital and Operating Costs

The following table presents capital cost estimates for Legend International's proposed mine/complex for mining and beneficiation of phosphate rock ore for export. We have used one theoretical capacity of marketable phosphate rock of 5 million t/y. Estimates of average annual revenues and costs are provided. The data is intended to show a snapshot of current capital costs and product prices. Our table breaks out the following components:

Annual Capacity – This is relatively straightforward and is based upon mining ore of approximately 2x the volume of the beneficiated product capacity. In this example, a mine of ten million tonnes of ore, and a beneficiated rock facility for four million tonnes of phosphate rock (~32-34% P_2O_5). Five million tonnes of finished product is of sufficient size to realize most of the available economies of scale.

Capital Cost – There is significant variability in capital expenditure from mine to mine and plant to plant, which primarily extends to the very different characteristics of individual phosphate rock ore bodies (and the subsequent process equipment necessary to extract and beneficiate the material). As such, mining and beneficiation costs tend to have the greatest degree of variability. Our estimate of this line item is probably on the high side, but this is due to our current lack of comprehensive information on the deposit and subsequent input from mining and design/construction engineers. We have also included a line item for 'contingency', which is essentially to assume some degree of cost overruns – in our example, 15%.

Product Prices – Our average annual price for phosphate rock is based on our expectations of where the typical contract price of phosphate rock sourced from various locations and delivered to India will settle within the next several years. In March 2008, new contracts were settling near $400/t cfr India, and expectations are that prices in the second half of 2008, as well as in 2009 and 2010 could rise further. We have chosen to use only $200/t in our analysis, in part due to the fact that we believe that phosphate rock prices will begin to ease by the time the Legend plant is built. This is primarily a function of the two confirmed and one probable projects of similar size being brought on stream during a similar time-frame (though not all of this new capacity will invariably be for export), as well as several others under study, and the likely impact of these on prices.

Annual Revenue – This is the product of annual production and netback price, in millions of $US.

Annual Costs – Using an in-house production costs model, we have estimated the cash operating costs for the proposed project, based on our 'best-efforts' assumptions concerning the ore body and likely costs of beneficiation. These figures are provided in both US$ per tonne and annually in millions of US dollars.

Annual Gross Earnings – This is simply the difference of annual revenues and costs in millions of US$.

Table 2: Lady Annie/Lady Jane Phosphate Project Capital and Operating Costs

Annual Capacity (million tonnes):		
Beneficiated Phosphate Rock (32-34% P_2O_5)		5.0
Capital Cost (million US$):		
Mine & Plant Site: Drilling/Permitting/Study/Engineering[1]		11.9
Pipeline: Right-of-way Acquisition/Permitting/Study		4.0
Sight Infrastructure		5.5
Mining[2]		n/a
Beneficiation (incl. crush/wash/screen/flotation)		228.0
Slurry Pipeline		302.4
Other (Storage/Handling/Transport/Misc.)		27.0
Dedicated Barges		140.0
Contingency (15%)[3]		107.8
	Total Plant Capital Cost	**826.6**
Phosphate Rock Price (per tonne):		
Delivered to India		235.0
minus Ocean Freight		-35.0
	fob Netback Price	**200.0**
Annual Revenue (million US$, assumes 100% utilisation):		
Phosphate Rock Sales Revenue		**1,000.0**
Annual Costs (million US$, fob basis):	**(per tonne cost)**	
Cash Cost of Production		
Mining	$12.4	61.8
Beneficiation	$15.1	75.5
Royalties	est. $1.0	5.0
Handling	$0.5	2.5
Transportation	$2.9	14.3
Dewater/Drying	$6.0	29.9
Storage/Handling/Loading (post-beneficiation)	$6.3	31.5
Barge Transport	$8.0	39.9
Other Costs[4]	$7.6	38.0
Total Costs	**$59.7**	**298.4**
Annual Gross Earnings (million US$):		
	Total Gross Earnings	**701.7**

All price and cost data is in US dollars, 2007 basis.
Ore grade = 17% P_2O_5, Stripping Ratio <2:1.
[1] Though not a true capital cost, we include this to show additional up-front costs of developing the project.
[2] This will be done on a contract basis, and is thus accounted for only under operating costs.
[3] This is to account for unforeseen cost overruns.
[4] Includes Sales, General and Administrative costs and other business costs. These do not include capital costs/depreciation/corporate income taxes.

The table below provides the headline financial figures under several pricing scenarios. We believe that our $200/t fob price estimate in our snapshot analysis above is reasonably conservative given current market conditions (some sales of Moroccan product at $400/t fob Morocco in March 2008), and have included $300/t and $400/t to illustrate the project's upside potential. In addition, we have included a 'Worst Case' scenario, which illustrates one very important detail – that even when incorporating capital costs – assuming around $25/t of rock as a capital charge (or about $100-125 million per annum) and assuming an fob rock price of just $100/t, the project would remain cash flow positive.

Table 3: Lady Annie/Lady Jane Gross Earnings Estimates (millions US$)

	SCENARIOS			
	Worst Case	**Base Case**	**High Case**	**Current Price Case**
	fob $100/t rock	***fob $200/t rock***	***fob $300/t rock***	***fob $400/t rock***
Capital Cost	826.6	826.6	826.6	826.6
Annual Revenue	500.0	1,000.0	1,500.0	2,000.0
Annual Costs	298.4	298.4	298.4	298.4
Annual Gross Earnings	**201.7**	**701.7**	**1,201.7**	**1,701.7**

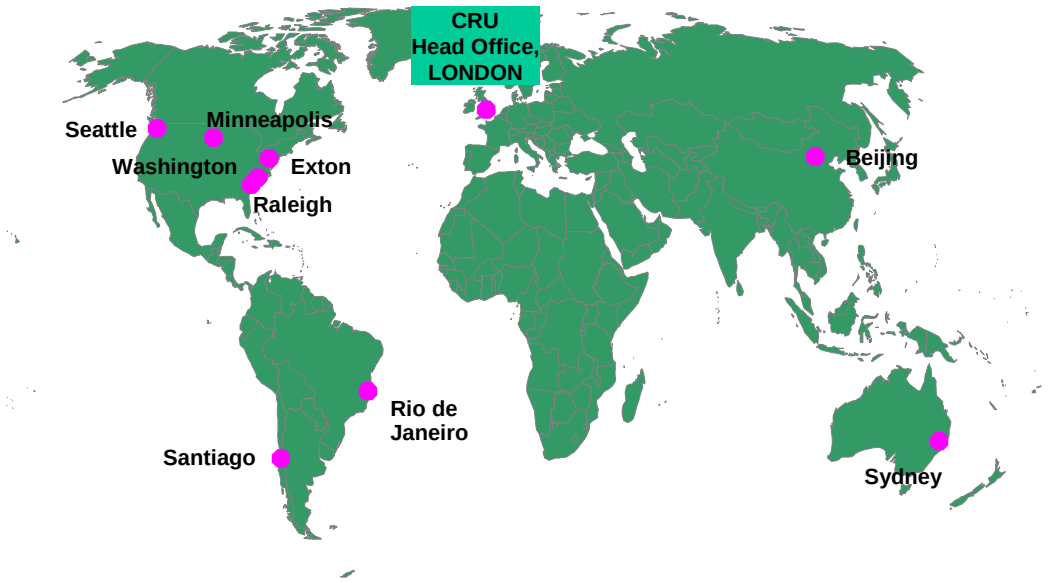
5. Qualifications of British Sulphur Consultants

The British Sulphur Consultants Division of CRU Group has been the leading business consultancy in the fertilizer and inorganic chemical sector for over 50 years. British Sulphur was the first supplier of information to the fertilizer industry, and remains the largest provider of services to the industry.

Approximately 50% of the group's revenue is derived from individual consultancy assignments, the remainder from regular reports and multi-client studies. Consultancy projects for producers, governments and multilateral agencies (such as the World Bank, IMF and IFC) are undertaken under conditions of strict confidentiality.

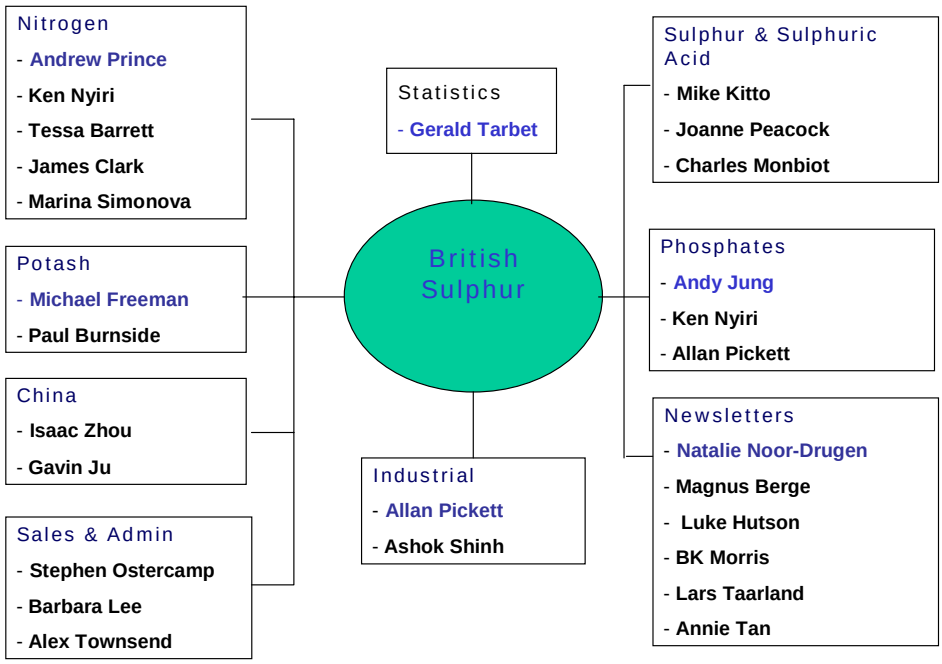
Our main consultancy office is in London. We have US representational offices in Minneapolis, MN, Raleigh, NC, and Washington DC. In addition, British Sulphur Consultants has dedicated staff in the Beijing, China, offices of CRU.

Figure 3: BSC World Office Locations



British Sulphur Consultants (BSC) employs 15 full-time professionals solely engaged in consulting and business research excluding the 6 full-time staff engaged in fertilizer market intelligence and 4 support staff. This means that BSC enjoys a portfolio of fertilizer industry consulting assignments that is considerably greater than any competitor. BSC has a commitment to a multi-disciplinary approach to assignments requiring the co-operation of strategy consultants, market analysts, engineers and chemists to produce authoritative and effective consultancy.

Figure 4: BSC Organisational Chart



Regular contact is kept with fertilizer and industrial chemical producers throughout the world, allowing BSC to maintain an up-to-date and comprehensive database of plant capacities and costs. In addition, BSC can draw on its unique database of fertilizer statistics, with nearly 500,000 records dating back to 1960.

Over the last 30 years many of the major producers and consumers of fertilizers and their raw materials have commissioned single-client studies from British Sulphur, including market studies, strategy analysis, and merger and acquisition assistance. For most management consultancies the 80:20 rule applies: 80% of the cost and time for any given consulting project is for the consultants' own learning process for the strategic consultancy needed. Because of our specialization in the industries we service we turn this rule around, which has enabled us to establish a reputation as the authority for the industries we service. The scope of single-client work is as wide as our client's imagination, but broadly breaks down into a number of key areas including:

- **Strategy Development:** Fundamental advice on raw materials management, growth options, product mix, restructuring, turnaround, business plans, marketing and purchasing strategies.
- **Value Determination:** Feasibility studies, M&A consultancy, real business option values.
- **Performance Improvement:** Operating improvement opportunities, benchmarking, efficiency audits, capital productivity analysis.
- **Negotiation Support:** Advice on off-take agreements, key project contracts, transfer pricing.
- **Market Studies:** Research and analysis, forecasting, risk assessment.

BSC's work in fertilizers and chemicals also benefits from the wider synergies of being part of CRU Group. CRU is the leading business consultancy in the global metals industry, and has considerable experience in the mineral extractive process up-stream of metal production, where there are clear commonalities with some of the extractive fertilizer products. There are also direct synergies such as between base metals (copper / lead / zinc) and sulphur / sulphuric acid; alumina and caustic soda; and the mineral extractive industries and explosive grade ammonium nitrate.

In conclusion, British Sulphur Consultants is the original business consultancy in fertilizers and inorganic chemicals, established to provide independent support based on unrivalled knowledge and analysis of these industry sectors.

6. References

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