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ASX Announcement

CELAMIN LTD REPORTS NO 'FATAL FLAWS' PFS RESULTS FOR **BIR EL AFOU PROJECT** **Targeting 1.5 Mtpa Stage 1 Phosphate Rock Production**

The Board of Celamin Holdings NL (ASX: CNL) is pleased to announce the results of Celamin Ltd's (Celamin) Prefeasibility Study (PFS) conducted over the Bir El Afou Project (BEA) in Northern Tunisia. BEA is located within the 84 km² Bir El Afou Exploration Permit held by Celamin (80%) and Tunisian Mining Services SARL (TMS: 20%).



Location of Bir El Afou Project

Highlights

- Prefeasibility Study shows no 'fatal-flaws' to development potential targeting 1.5Mtpa phosphate rock production for export sales (Stage 1);
- Positive Government and Community support at all levels;
- Access to existing well located infrastructure and services;
- Encouraging investment terms (5-year tax holiday);
- High grade concentrate (phosphate rock) of 30% P₂O₅ at 150 micron grind achievable;
- Inferred Resource of 29Mt at 11.1% P₂O₅ at 7.5% P₂O₅ cutoff grade;
- <5% of the permit area drilled or explored;
- Good potential to increase grade, tonnage and improve mining factors during Interim Delineation Phase;
- Well educated local community with job creation a strong social imperative;
- Project enjoys significant advantages with large identified Target Potential situated in a favourable geographical location and geopolitical jurisdiction.

Key Findings

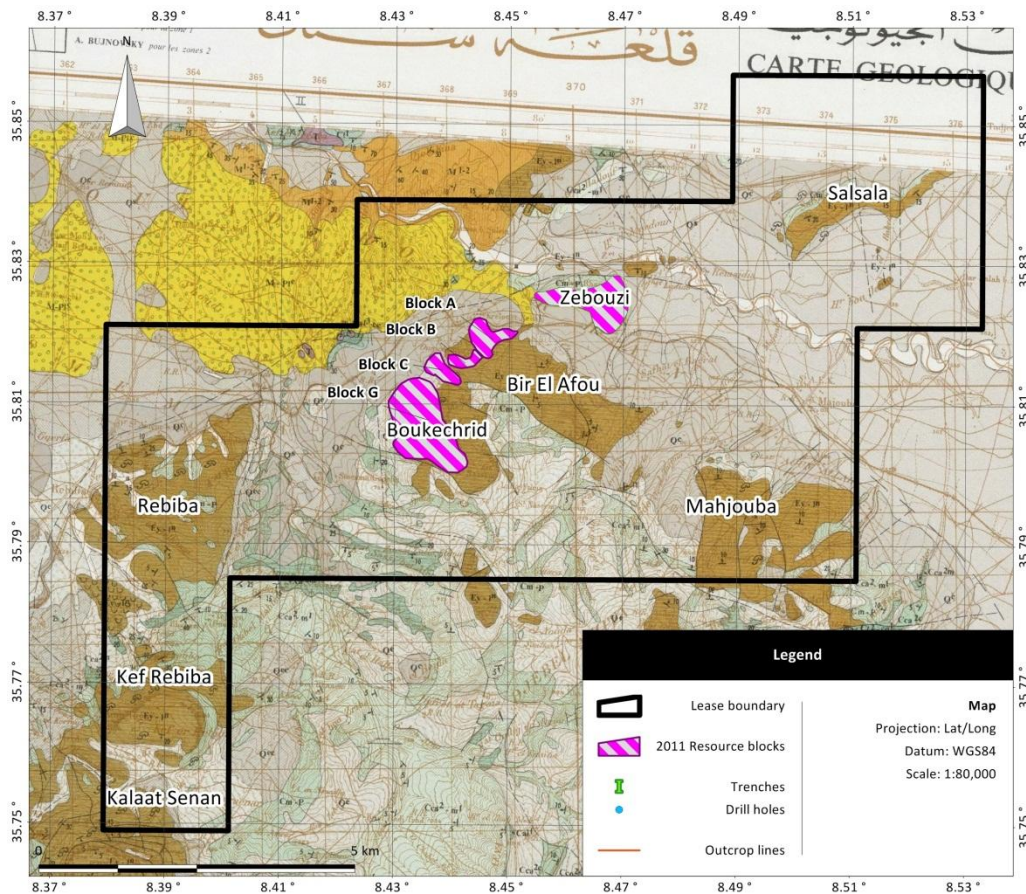
Celamin and TMS have had excellent co-operation from the Tunisian Government authorities with respect to all aspects of the Project but in particular that Infrastructure and Services as follows:

- Rail transportation. Societe Nationale Chemin de Fer Tunisie (SNCFT) the national rail operator has confirmed the availability of locomotives and rolling stock to enable the transportation of the product to Port over existing rail track;
- Port. The Office de la Marine Marchande et des Ports (OMMC) the Tunisian Port Authority has confirmed availability of a suitable site at Rades port, at Tunis covering approximately 24,000m². This site contains an existing rail spur and shed for unloading and storage as well as access to a shared berth and the space for construction of another dedicated berth as required. The berth is suitable for loading of vessels up to 30,000 dwt;
- Energy Supply. Societe Tunisienne de Electricite du Gaz (STEG) the national electricity and gas supplier has confirmed the availability of power and gas supplies to the site under existing gazetted pricing arrangements for Industrial usage. High voltage transmission lines are located close to the BEA Exploration Permit and gas is supplied to a nearby cement works;
- Water. Celamin and TMS have received permission from the responsible Government Authority for water supply from a site about 25 km from the proposed plant site. This site is capable of delivering as much as ten times the water supply estimated for the process plant consumption (~60 litres per second);
- Environmental Aspects. The initial study by Tunisian consultancy EAM has confirmed there are no 'fatal flaws' to the proposed development of a phosphate rock mining and processing operation in the Bir El Afou exploration permit;

- **Drilling.** Celamin and TMS completed 66 diamond core drillholes totalling 5,360.35m between December 2010 and August 2011. This slow rate of drilling was due to a number of factors the consequence was that the program had to be focussed in a limited area in order that resources to JORC Code guidelines could be estimated. Only 3.2Km² –or less than five percent- of the 84 Km² Exploration Permit area has been drilled or explored to date. This will be expanded during the next phase;
- **Process testwork.** Core samples from Bir El Afou were sent to Ammtec in Australia for process testwork, surface samples were also tested in Tunisia (audited by Jacob's Engineering, a phosphate flotation specialist). All of this work showed that the phosphate is soft with a Bond Work Index of about 4, and that a flotation concentrate grading 30% P₂O₅ can be made at an acceptable recovery. This concentrate is a clean product within acceptable product specifications. The process testwork was used to construct a 'Metsim' model which is used to create design outputs for plant and equipment and for estimation of consumables;
- **Resource estimate.** The resource estimate was delayed by the issues relating to the drilling, and was undertaken for Bir El Afou Blocks A, B and C, Boukechrid (Block G) and Zebouzi. This is summarised in the following table and on the attached plan:

Cut-off Grade P₂O₅%	Resource Tonnes	Grade P₂O₅ %
0.0	80,800,000	5.7
5.0	42,000,000	9.6
7.5	29,000,000	11.1
10.0	17,700,000	12.6
12.5	6,000,000	15.5

- **Mine Planning.** The delays in resource estimate led to delays in the mine plan, with a consequence that this could not be optimised during the currency of the PFS. At this stage the current pits have unacceptably high waste: ore ratios. This will be optimised during the next phase;
- **Capital Costs.** These have been confirmed within the range of expectations when the Project was first scoped. The mining costs are higher than anticipated because of the necessary pre-strip and size of mining fleet required for the waste in the un-optimised open pits. The mining costs will be reviewed to align then to a Tunisian base during the next phase;
- **Operating Costs.** These have been confirmed within the range of expectations when the Project was first scoped. The mining costs are higher for the same reasons as above.



Location of Prospect Areas – Bir El Afou Exploration Permit

Commentary

The BEA PFS indicates that Celamin Holdings NL can develop a robust Project at competitive capital and operating costs. The high grade product with low impurity levels will be acceptable to the general marketplace.

The executive chairman of CNL Mr Kevin Nichol said that the study results clearly delivered on the promise shown when the Project was first introduced to CNL by Celamin Ltd.

“This is a very significant result for our Company and places us in the forefront of phosphate rock developers. This PFS confirms that we have a robust and attractive Project. We have identified a number of areas where further work will enhance the returns on the Project and these will be the focus during the next phase. Considering the situation during this year in Tunisia this has been an excellent result for Celamin Ltd and it’s team delivering a high quality result whilst learning to operate in a sometimes challenging environment.

In the coming months I look forward to the accelerated results from the planned Interim Delineation Phase which will lead us to a final Project scope for the Feasibility Study”

Summary of Key PFS Outcomes

Geology and Resource - Since work commenced in 2010, Celamin and TMS have completed 5,360m of diamond core drilling (66 holes), 229m of trenching & pitting (17 openings).

The most recently completed Resource Estimate (September 2011) for Zebouzi, Bir El Afou Blocks A, B and C and Boukechrid Block G deposits, resulting from this work is found in the following Table:

Inferred Resource	Bir El Afou Block A		Bir El Afou Block B		Bir El Afou Block C		Bir El Afou Blocks A, B & C	
Cut-off Grade P ₂ O ₅ %	Resource Tonnes	Grade P ₂ O ₅ %	Resource Tonnes	Grade P ₂ O ₅ %	Resource Tonnes	Grade P ₂ O ₅ %	Resource Tonnes	Grade P ₂ O ₅ %
0.0	7,300,000	6.5	2,800,000	9.5	700,000	8.7	10,800,000	7.4
5.0	3,900,000	10.7	2,600,000	10.0	500,000	9.8	7,000,000	10.4
7.5	2,900,000	12.1	1,900,000	11.4	300,000	13.5	5,100,000	12.0
10.0	1,800,000	14.6	1,300,000	13.0	200,000	14.6	3,300,000	14.6
12.5	1,300,000	16.3	500,000	16.1	200,000	14.6	2,000,000	16.1

Inferred Resource	Boukechrid Block G		Zebouzi		All Blocks	
Cut-off Grade P ₂ O ₅ %	Resource Tonnes	Grade P ₂ O ₅ %	Resource Tonnes	Grade P ₂ O ₅ %	Resource Tonnes	Grade P ₂ O ₅ %
0.0	27,000,000	7.1	43,100,000	4.3	80,800,000	5.7
5.0	18,300,000	9.5	16,800,000	9.1	42,000,000	9.6
7.5	13,900,000	10.6	9,900,000	11.0	29,000,000	11.1
10.0	9,400,000	11.4	5,000,000	13.4	17,700,000	12.6
12.5	1,200,000	13.2	2,800,000	15.1	6,000,000	15.5

This work has covered about 3.2 Km² of the 84 Km² permit and there are numerous prospects that warrant further delineation work including Bir El Afou Blocks D, E and F, Boukechrid Extended, Mahjouba, Rebiba, Kef Rebiba and parts of Kalaat Senan.

The resource was estimated using block modelling within geologically defined domains by conventional inverse distance modelling techniques by Independent consultants.

No resources have been delineated to date from the limited drilling and trenching at the Salsala prospect, although phosphate has been intersected.

Mining - The mine plan developed has considered the mining of the resource above a 7.5% cutoff grade. Technical and economic factors have been considered in developing the mine plan as an open cut mine.

It has been planned to perform staged mining of the various pits. A number of production profiles were produced to reduce the strip ratio while maintaining a constant feed to mill. It was planned to incorporate all the blocks using:

- Conventional Drill and Blast, Load and Haul truck/excavator operations;
- Waste to be placed in mined out pits during the life of the operation;
- Co-disposal of process plant tailings to be considered;
- Base Case Ore Mining Rate is 2.7 Mtpa;
- Base Case Average Head Grade is 11.6% P_2O_5 .

Processing - The proposed Bir El Afou Process Plant will produce a phosphate concentrate suitable for export. The major processing steps are crushing, grinding, desliming, reverse flotation, filtration and drying.

The design production rate from the Bir El Afou beneficiation plant is 1.5 million metric tonnes of dry concentrate per year at an average grade of 30 wt% P_2O_5 . The design annual feed of ROM material to the plant is 5.4 million metric tonnes of ore at a grade of 11.6 wt% P_2O_5 . The beneficiation plant is available for operation on a continuous basis, 24 hours per day, 7 days per week, 50 weeks per year.

Basic engineering for the phosphate plant was designed based on the following criteria developed from testwork:

- Plant concentrate recovery of 30 wt% of dry ROM ore feed;
- Slimes generation of 30 wt% of dry ROM ore feed; and
- Concentrate grade of 30 wt% P_2O_5 and a maximum 1 wt% MgO.

A phased start-up strategy would involve the process plant initially starting up with a capacity of 0.75 Mtpa of product and then upgrading to a 1.50 Mtpa of product capacity at a later stage.

The process plant configuration for the 0.75 Mtpa capacity would be based on the following:

- Same front end as the base case (1.5 Mtpa); up to and including secondary crushing;
- Milling forward would be two parallel trains, each train having a capacity of 0.75 Mtpa of product; and
- Simplification of stacking and reclaim facilities (i.e. stackers/reclaimers to be replaced by front end loaders);

Cost scaling factors were used to estimate the 0.75 Mtpa capacity costs in addition to replacing the ore reclaimer and stacking system with a front end loader costs.

Water Supply - The project has taken significant measures to reduce water consumption, including:

- Filtering of tailings and recycling of all water streams;
- Recycling of all mine drainage water streams, and domestic water;

As a result of these water conservation techniques the project water demand is approximately 5,500 m³ per day (~60 l/s). Water supply to the project will be provided by using water from Oued Sarrath and Mellegue, and piped 25 km to the site.

Electrical Power & Gas - The initial operation, the first process train will require approximately 7 MW of power increasing to 15 MW at full production with two processing trains. This will be provided by STEG through its existing transmission line network.

Additionally STEG will also supply the gas requirements of approximately 70 GJ/hr rising to 140 GJ/hr when full phase, two process train, production is attained.

Site Infrastructure - It is planned to accommodate the workforce, in the nearby towns Tajerouine and the Governorate centre of El Kef. Transport will be provided to the site. A minor network of site roads will be constructed to connect the plant, mine and village to the national highway network.

Rail and Port Terminal - A separate study has been undertaken into the transportation and shipping of product from the site to export market(s).

SNCFT operates the existing rail network in Tunisia which has an operating rail line in close proximity to the project site and rail alignment within the project site.

Additional rail infrastructure required to facilitate the export of phosphate through the Port of Rades includes:

- New rail siding at the mine site to facilitate the loading of the trains;
- New siding at the Port of Rades to facilitate shunting activity and the unloading of the trains;
- The OMMC operates the commercial port facilities throughout Tunisia. OMMC have made the port terminal facility in the Port of Rades available. It is close to the capital Tunis and accessible by existing operational rail network to the mine proximity.

The Port of Rades bulk storage & export port location has direct access to 30,000DWT ship birth and ship loading quay. The facility has an existing operational rail siding and a non-operational bottom dump rail wagon unloading facility.

Project Resourcing - Tunisia has an excellent availability of semi-skilled, skilled and professional personnel available with good experience in mining, transport, metallurgical processing and similar industries.

Tunisia, has a priority focus on creating new employment opportunities and support for creating sustainable new work opportunities is made at all levels of government, business and communities.

Tunisia has developed a high standard of education, skills training and extensive experience in phosphate mining and processing.

The construction phase will generate up to 400 employment opportunities for local Tunisian people over a two year period. When in operations employment opportunities should be created by the project for 200 to 250 local Tunisian people in the nearby communities.

Specialist and independent consultants - Performed various activities associated with the study. These are as follows:

- Deswik – Resource modelling, mine planning and mine engineering consultancy
- Geos – Resource database and resource modelling
- Sargon Engineering – Process design
- Golder Associates – Environmental (Equator Principles Standards)
- ALS Ammtec – Metallurgical test work, Milling testwork and Mineralogical Studies
- Jacobs Engineering – Metallurgical Independent Expert
- Professor Ammar Henchiri (Tunisia) – Metallurgical testwork
- RSV Australia – PFS
- Aurecon Engineering – PFS Report on Rail & Port Infrastructure
- ALS-Global (Spain) – Analyses
- Green Labs (Tunisia) – Water analyses
- Stewart Group Labs – Check Analyses
- ALS-Chemex (Australia) – Check Analyses
- EAM (Tunisia) – Environmental and Social
- Professor Elyes Gaubi (Tunisia) – Hydrology
- Tunisian Mining Services – Diamond Drilling, Geological, Mining and Rail Consultancy and Services

Implementation Plan - Development of the DFS is planned to proceed as follows:

DFS Stage	Completion
Start Interim Delineation Phase	October 2011
Start Drilling (Preliminary plan for 10,000m)	January 2012
Start - Study Engineering Phase	April 2012
Start Front End Engineering Design (FEED)	September 2012
Complete DFS	December 2012

Social and Environmental Aspects - The project area is located within the south west zone of the Governorate of El Kef and within the delegations of Jerissa, Tajerouine, Kalaa Khasba and Kalaat Senan.

The area is characterised by a hilly landscape and divided with wavy plateaus and often isolated alluvial plains. It belongs to the Wadi Serrat catchment basin. Shallow and deep groundwater aquifers occur and are used for irrigation and drinking. A dam is under construction on Wadi Serrat, which when complete and full it will hold 20 GL.

The area is characterised by a continental climate. The winter is rigorous, snowfalls occur on the hills, whilst the summer hot winds and the 'sirocco' can cause temperatures to exceed 40 °C. The rainfall is irregular and torrential mainly occurring in spring and autumn. Average for the last 3-years has been 406.6mm.

A large part of the area is dominated by the cultivation of cereal crops. Natural vegetation is mainly found on the mountain massifs where most of the phosphate potential occurs. Fauna species likely to occur in the study areas are common on all the semi-arid bio-climatic zones of the north-west of Tunisia. No plant or animal species occur in the study area that are listed in the 2010 IUCN red list as endangered, vulnerable or threatened. There are no national parks or protected areas in the study area.

Agriculture and animal husbandry are the main socio-economic activities. Cereal production in the delegations amounts to 25.9% of the total production in the Governorate.

Two zones have been identified as of important archaeological interest. Neither of these is close to proposed location of phosphate exploration and mining activities and Celamin will work with the Tunisian authorities to help preserve these significant cultural sites.

The nearest town is Tajerouine which is outside the permit, whilst the largest village within the permit is Majouba. A network of secondary sealed roads occurs throughout the permit providing good access. Two disused rail alignments also exist, one of which will be re-furbished for use in the Project.

The project will aim to comply with International and Tunisian environmental standards, and also the IFC Equator Principles. Initial studies have indicated that there are no significant environmental issues which will be potential obstacles to the project, with the major factors to be managed including:

- Tailings – will be produced as a filter-cake and stored in a lined tailings storage facility or co-deposited with waste rock (co-disposal);
- Waste Rock – there will be considerable waste rock generated, most of which is planned to be sequentially returned to mined-out open pits;
- Water – the project has been approved by the Governorate of El Kef to use the Mellègue and Sarrat water courses (wadis). The new water pumping station will use the water resources of the Sarrat River and subsequently Mellègue River, where the salinity generally makes the water unsuitable for town or agricultural purposes;
- Chemicals – Chemicals will be used in the flotation system. Further studies will be undertaken to ensure that these do not damage the environment during long-term storage in tailings material;
- Archaeology – There are known archaeological sites that will be managed in co-operation with Tunisian authorities;
- Road Traffic – there will be a significant amount of truck traffic into and out of the site. A traffic management plan will be established to ensure the impacts of this are minimised and controlled, in collaboration with Tunisian road authorities.

The Construction phase will generate up to 400 employment opportunities for local Tunisian people over a two year period. When in operations employment opportunities should be created by the project for 200 to 250 local Tunisian people in the nearby communities.

Further downstream positive impacts will arise from the planned operating expenditures, much of which will be spent with local businesses or contractors, creating further employment opportunities.

On the Road to Development

Financial analysis of a base case and two upside cases has been undertaken. Because of the drilling progress during the PFS the resource delineation drilling was limited. This has led to an un-optimised resource and mine plan with the consequence that the base case financial analysis has produced results that are also less than optimal. The base case NPV is negative.

The two upside cases were undertaken to determine if after examination of the sensitivity of the project to its primary inputs the characteristics of realistic targets for the ID phase and feasibility study can be identified. Upside case 1 modelled increasing tonnage throughput, mining at a lower strip ratio and assuming a similar process recovery. Case 1 produced a breakeven NPV at 10% discount rate. Case 2 modelled lower tonnes at a slightly higher grade, with a similar strip ratio and process recovery to case 1. Case 2 produced a positive NPV at 10% discount rate with a 25.7% IRR. Case 2 demonstrates a target for the ID phase of 40 million tonnes at 14% P₂O₅ with an 8:1 waste to ore ratio producing 15 M tonnes of phosphate rock over 10-years.

This ID Phase has commenced with fieldwork continuing at the project, evaluating the remainder of the known areas of Target Potential in the Exploration Permit by mapping, and sampling. Other programs to be undertaken and evaluated will include structural and sedimentological studies. These are already commissioned and will commence shortly using Tunisian experts. In addition a shallow seismic geophysical technique, successful in similar terranes in the USA will be trialled to help with drill targeting. This multi-disciplinary work will prepare a series of priority rated targets for reconnaissance drilling. Promising prospects developed from this program will then be followed up with a program of more systematic drilling to delineate resources. Critical parameters for these targets will be:

- Areas with potential for higher P₂O₅ grade;
- Areas with lower waste strip ratios;
- Areas with potential for minimum 5 M tonne sized blocks

Planning for this ID Phase incorporates actions to address the main issues apparent in the drilling undertaken during the PFS. These include:

- Drilling Progress. Celamin and TMS have agreed that a multi-purpose drill rig with Reverse-Circulation ("RC") and diamond core drilling capability is required to speed up this program. A rig has been specified in consultation with an Independent Drilling Advisor and prices, availability and delivery options are being prepared for tender;
- Analysis of Samples. Celamin and TMS are evaluating two other laboratories, one in Tunisia in order to potentially speed-up assay turnaround, which was a significant cause of delays in the previous program;

- Flotation Testwork. Celamin and TMS are planning to routinely undertake flotation testwork in Tunisia using an in-house laboratory. This work will be undertaken under the direction of Professor Ammar Henchiri, a World authority on sedimentary phosphate flotation. Celamin and TMS will upgrade existing equipment at the local laboratory;
- Certified Reference Materials (CRMs). Celamin is working with an Australian firm specialising in preparing and supplying these materials to develop a set of CRMs based on Bir El Afou phosphate.

About Celamin Holdings NL

Celamin Holdings NL (ASX Code CNL) is an ASX listed company focused on the exploration and development of resource projects in North Africa initially in Tunisia and Algeria.

Through Celamin Ltd (Celamin), the Company's immediate focus is the Bir El Afou Phosphate project held in partnership with local company Tunisian Mining Services SA (TMS). A pre feasibility study targeted on a high grade, low cost Stage 1 mine development has now been completed.

Celamin also holds another Phosphate exploration permit in Tunisia with TMS (Chaketma). This project has larger target potential than Bir El Afou. The Company's development plan is for a sequential staged development depending on market conditions once Bir El Afou Stage 1 is in production.

Celamin continues to step up work that will further delineate the potential of its Oued El Kabir precious and base metal project in Algeria.

Celamin has also acquired rights to several base metal tailings Projects in Tunisia with TMS and is farming in to an Exploration Permit with base metal (Pb/Zn) targets.

JORC Code Statements

The information in this report that relates to Mineral Resources at Bir El Afou (Blocks A, B and C) and Boukechrid (Block G) has been compiled by M Armstrong of Deswik Mining Consultants who is a consultant and advisor to Celamin Ltd and Member of the Geological Society of South Africa. Ms Armstrong has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which is being undertaken as to qualify as a Competent Person as defined in the 2004 "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Ms Armstrong consents to the inclusion in the report of the matters based on the information supplied in the form and context in which it appears.

The information in this report that relates to Mineral Resources at Zebouzi has been compiled by S Border of Geos Mining mineral consultants who is a consultant and advisor to Celamin Ltd and Fellow of both the Australasian Institute of Mining and Metallurgy and Australian Institute of Geologists. Ms Border has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which is being undertaken as to qualify as a Competent Person as defined in the 2004 "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Ms Border consents to the inclusion in the report of the matters based on the information supplied in the form and context in which it appears.

Appendix 1:

Bir El Afou Phosphate Project – Stage 1 Capital Cost

Item	Area	Estimated US\$ 000's
Common Infrastructure	Surface	7,250
	Roads	4,614
	Electrical Services	7,659
	Water Supply	4,073
Surface Infrastructure	General	561
	Warehousing	3,470
	Waste Rock Handling	9,685
	Services	1,863
	Workshops & Buildings	3,218
	Tailings	323
Open Pit	Open Pit Mine	5,515
	Mining Equipment	3,065
Process Plant	0.75 Mtpa case	136,259
Off Site Infrastructure	Rail	16,366
	Port	10,626
	Sewerage Works	80
	Gas Supply	40
Indirects	Owners team	6,093
	EPCM	36,813
Sub-Total		257,576
Mining	Pre-Strip	45,100
	Fleet	63,630
Sub-Total		108,730
Total		366,306

Yours faithfully

CELAMIN HOLDINGS NL



KEVIN NICHOL
Chairman

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