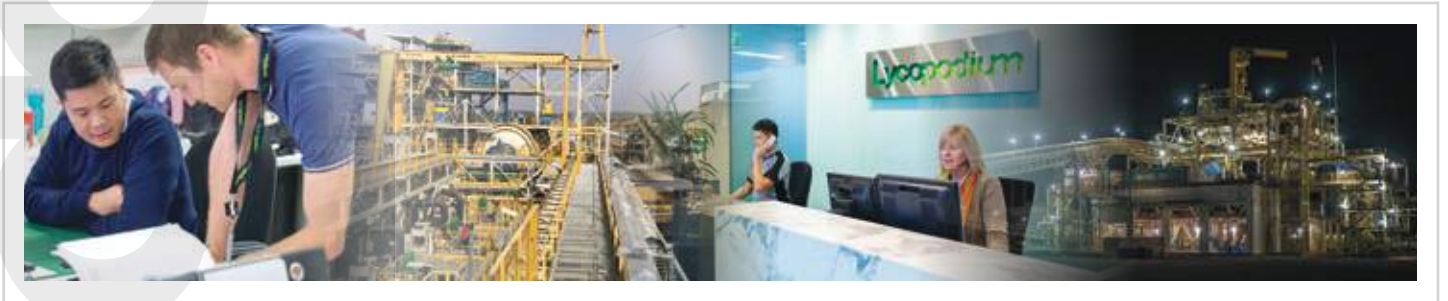


Lycopodium



SHAREHOLDER REPORT 2018



Financial Snapshot

(Unaudited)

39,732,373
Shares on Issue

182.6 CENTS
Net tangible assests per share

\$194.6 MILLION
Revenue

\$18.17 MILLION
Net profit after tax

45.7 CENTS
Earnings per share after tax

30 CENTS
Dividend per share (fully franked)

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Chairman's Report

*My name is Mick Caratti.
I am one of the founders and chairman of Lycopodium.
This publication is designed to introduce you to the
company, telling you who we are, what we do and
how we see our future. This report does not replace the
statutory financial statements but is designed to provide
an informative insight into Lycopodium
in an easier to read layout.*



In my section of the report I usually try to give an insight into the industries and markets that our subsidiaries service.

Last year I talked about the conditions we were seeing as the economy was recovering from the downturn of 2012 and some of the effects that might be important over the next few years.

Over the past year the conditions have not changed as much as might have been expected given the uncertainties in trading conditions among the major economies. Metal prices have moved; gold in a +/-7% range, copper -15% but still above the price of 2 years ago and nickel is up. Good projects have been financed and constructed in all these commodities and less attractive projects have struggled to find finance. Infrastructure projects are progressing but at a reduced pace as governments come to grips with the realities of post boom revenue. Surprisingly some industrial projects seem to be getting underway. Overall it does not seem materially different to what we were seeing 12 months ago.

There is still a lot of competition for those projects that do get finance, so margins are tight as they were last year and clients are looking to pass on risk to the contractor. I predicted last year that these conditions would not bode well for the projects or contractors and while there have been some issues the jury is still out on my skills as a forecaster.

One effect that we have noticed recently is the speed with which the commodities market changes. Five years ago the market for battery

metals was dominated by Nickel Cadmium and few had heard of high purity alumina, yet lithium may have already passed its peak and be headed for commodity status in the foreseeable future. It will be interesting to see what the next 'must have' mineral turn out to be as the demand for energy storage evolves. It is interesting that the first Tesla was sold in 2008 when none of the major manufacturers had all electric model in production and now even Porsche and Jaguar have production in place or planned. The energy market is certainly evolving faster than governments or companies can foresee and utility level storage is only in its infancy.

From Lycopodium's point of view the current conditions are not unfavorable. We would like to see some easing of the worst of the unrealistic contractual conditions that prevail in some areas but a return to boom times is not something we wish for. A balanced market allows the clients and service providers to both do well and those providers that produce the best product will be rewarded with ongoing work. Lycopodium began in such times in the 90's and was able to grow and do well as it has done this year.

The preference for lump sum development of projects is not something that I expected following the 2012 downturn. While there has always been a demand for lump sum the preference shown by the majors since 2012 was surprising. This seems to have softened a little and Lycopodium has been able to maintain a mix of lump sum and EPCM projects that limits our risk to an acceptable level.

I would like to commend the whole Lycopodium team for their performance and success this year. The variety of projects commodities and regions in which the projects were undertaken is impressive and the success is a credit to the team. On behalf of the Directors and Shareholders – Thank you.

I hope you find this report informative and readable and if you would like further information please give us a call.

MJ Caratti

Managing Director's Report



Lycopodium has had a busy and successful year. Operationally we have delivered five West African gold projects on time, on budget and on specification. Financially we have delivered a good profit result, added to our already strong balance sheet and paid a fully franked dividend of \$0.30 per share to shareholders. Above all else, we have achieved these results while keeping our people safe and healthy.

We continue to be flexible in the form of contract we use to deliver our services. Of the five projects commissioned this financial year, two were delivered under EPC contracts while the remaining three were delivered under EPCM contracts.

EPC

- Mako Project for Toro Gold Ltd (Toro) in Senegal
- Sissingué Project for Perseus Mining Limited (Perseus) in Côte d'Ivoire

EPCM

- Houndé Project for Endeavour Mining Corporation (Endeavour) in Burkina Faso
- Natougou Project for SEMAFO Inc. (SEMAFO) also in Burkina Faso; and
- Fekola Project for B2Gold Corporation (B2Gold) in Mali.

Looking forward for the next year we have kicked off two new greenfield gold projects – the Ity Project in Côte d'Ivoire for Endeavour and the Waghniou Project in Burkina Faso for Teranga Gold Corporation. We are also completing the Karma Upgrade for Endeavour. Subject to market conditions discussed below, our pipeline looks reasonable for 2018/19.

The delivery of major West African gold projects in the past year masks the diversity of our business.

As examples of this diversity:

- we have continued to provide EP (Engineering and Procurement) services at the Cobré Panama Project for First Quantum Minerals Ltd (FQM), the largest greenfield copper project in the world
- we are progressing the Toka Tindung Expansion in North Sulawesi for PT Arci Indonesia

- we have designed, delivered and are currently commissioning the Final Recovery Plant on the Montepuez Ruby Mine in Mozambique for Gemfields plc
- we continue to provide a broad range of specialist diamond processing and engineering services to De Beers Group (De Beers) in South Africa, Botswana and Namibia
- we are jointly preparing the Pre-feasibility Study for the Toliara Minerals Sands Project for Base Minerals Limited in Mozambique
- we are undertaking studies and delivering projects in battery minerals including graphite, lithium, cobalt and nickel.

In addition, our infrastructure services continued at a steady rate across the year with a number of material briefs awarded and executed. These included the Stockingbingal to Parkes study package on the Australian Inland Rail Project, study services on the Pipers Flat Coal Unloader for Energy Australia, ongoing professional services as part of the Main Roads of Western Australia Project Management Panel and design services on BHP's Jimblebar Stretch Assist Project.

In our process industries business we executed the design and construct contract for a Cotton Seed De-linting package in NSW and the EPC work associated with the Mt Piper Air Cannon Project.

The above projects are examples of the broad portfolio of commodities, geographies and sectors within which we operate.

Our staff numbers have reduced modestly over the year reflecting the rise and fall associated with our project delivery activities. It is with great pride that we can report that all

our projects and studies are being delivered very well across the business and as always that is a reflection of our great people and teams.

FULL YEAR RESULTS

For the financial year ended 30 June 2018, Lycopodium derived revenues of \$194.6 million and a net profit after tax of \$18.17 million.

The Directors have resolved to pay a final dividend of 18 cents per share, which is in line with the dividend policy. The total dividend for the year is 30 cents per share fully franked.

OUTLOOK

General view

Although we are always adapting to changes in mining legislation, tax structures and security issues in the normal course of our business. The markets within which we operate are in a relatively steady state. Subject to any material impacts associated with trade wars and tariffs on commodities we expect this to continue. In practical terms a steady state translates to a reasonable level of work and opportunity in the market which we expect will translate to reasonable financial returns for the business.

Resources

The gold price this time last year sat at around US\$1,310/oz, peaked at over US\$1,360/oz and subsequently weakened to US\$1,173/oz in mid-August 2018 before rallying to approximately US\$1,200/oz in mid-September.

Although this has not had a material effect on our level of activity on gold projects to date, we expect we will see some future delay to near term gold related prospects whilst project owners deal with more arduous routes to project funding.



At time of writing the copper price is also down 10% from this time last year yet the medium to long term outlook for copper sees a production deficit which will exert an upward influence on the price. This has been the general story across many of the commodities with which Lycopodium has historically worked. The result is that whilst there is significant activity in the sector the activity is predominantly in the development phase of the existing project order book. Timeline slippage is being seen in those projects which are at the pre-development and funding phase making predicting project award dates somewhat difficult. Notwithstanding the steady outlook for those more traditional mineral resources we have during the year made significant inroads into the battery metals market having taken on and executed studies and projects in lithium, cobalt, graphite and nickel.

Process Industries

In general we are seeing an increase in engineering services in the chemical processing sector and the water, waste water and waste management sectors, which has offset the decline being experienced in the food and beverage sector and the pharmaceuticals sectors.

Infrastructure

We have seen a steadily improving level of activity within the infrastructure sectors we service. During the year we have strengthened our position on the east coast of Australia in Rail Infrastructure Management (RIM) services particularly in NSW and have also continued to build our presence in Victoria. We secured a key package on the Inland Rail Project for Australian Rail Track Corporation (ARTC) and a significant multiyear

contract with Pacific National Corporation (Pacific National) which should benefit our ability as a business to secure similar future briefs.

CORPORATE OVERVIEW

During the course of the year we undertook a thorough strategic planning process involving the full leadership team across our global business. This has culminated in the development of a strategic plan and a series of strategic initiatives to take the business forward.

The outcome of this work can be summarised as:

- Remaining focussed on surety of outcome for our clients, shareholders and staff.
- Enhancing our tradition of innovation in design and innovation in implementation by establishing an innovation centre within the business given the breadth of changes now confronting all of us.
- Pursuing strategies that have the potential to broaden our offering in the market.

All of this delivered from our hubs in Australia, Canada and South Africa supported by our Manila based operation.

A key initiative reported last year was the establishment of Mondium Pty Ltd (Mondium). This business is a standalone joint venture company owned by Lycopodium and Monadelphous Ltd, a highly respected engineering and construction company listed on the ASX.

Mondium has been established to service the mineral resources market in Australia and selected other regions by delivering projects on an EPC or Lump Sum Turnkey basis.

During the past year Mondium secured a number of EPC briefs and successfully completed its first project at Talison Lithium Limited's Greenbushes site in Western Australia. This team has continued to build a reputation for delivering quality outcomes and although the number of large EPC opportunities is low we remain highly confident that Mondium will be successful in developing into a significant asset for Lycopodium.

Growing our business, adapting and embracing change, responding to new market conditions – these are challenges to be addressed by Lycopodium's people. Developing our people so that they, individually, are able to reach their full potential remains at the very core of Lycopodium's business and culture.

OPERATIONAL HIGHLIGHTS

Resources

We have a world class skill set within our business.

- Gold – we continued building our track record as the preeminent international engineer for gold projects in West Africa.
- Copper - we are providing engineering and procurement services on the largest greenfield copper project under construction in the world (Cobré Panama).
- Diamonds - we continue to deliver leading edge diamond process and engineering services to key clients including De Beers.
- Comminution - we provide world-leading comminution circuit modelling, design, commissioning and optimisation services through our wholly owned subsidiary, Orway Mineral Consultants (OMC).

Managing Director's Report *continued*

We have worked hard to deliver bespoke solutions for our clients, working with them to resolve problems unique to their own projects and in so doing to increase the probability of project development or alternatively, to de-risk project delivery. The following are a few highlights from the year:

- **Cobré Panama Project – FQM - Panama**

We have been active on this project since 2014. One of the unique features of this project is that FQM has a philosophy of, and a very strong capability in, self-performing and managing project delivery. Holding to these principles for a project of this magnitude (85 Mtpa) is very unusual and a credit to the strength of the FQM organisation. Lycopodium provided the EP component of the process facility and has worked very much hand in glove with FQM throughout the past 4 years. The Cobré Project represents a continuation of a long relationship with FQM that commenced with the KMT Project in 2008 and has now continued across six projects, including Cobré.

- **Sissingué**

In 2015 Lycopodium completed the Feasibility Study, a Mill Option Study and subsequently the Front End Engineering Design (FEED) for the Sissingué Project of Perseus. Lycopodium provided EPC services to deliver the process plant and related project infrastructure. The project involved a standard 1 Mtpa gold plant however was unique in that it was tailored as a fit for purpose design to suit the relatively short term life of mine.

Typical of Lycopodium plants the Sissingué process plant ramped up to nameplate production levels quickly, meeting or exceeding client expectations.

Sissingué is a transformative asset for Perseus, making the company a multi-mine, multi-jurisdiction gold producer. Perseus is now pursuing the development of the larger Yaouré Project in neighbouring Côte d'Ivoire. Lycopodium has been awarded the FEED for this project.

- **Natougou**

SEMAFO's Natougou Project is located 320 km from the capital of Ouagadougou, in the south east of Burkina Faso.

Lycopodium completed a positive Feasibility Study in February 2016 which confirmed the economic viability of an open pit, carbon in pulp project. In May 2016 we were awarded the contracts for the provision of offshore EP (engineering, procurement and project management) services, and onshore CM (field engineering, construction management and commissioning) services for the greenfield process plant and associated facilities.

The process plant concrete works commenced in April 2017, plant construction work was completed in May with the wet commissioning completed in June 2018.

Challenges unique to Natougou included the remoteness of the site being in the far east of Burkina Faso as well as the relative lack of local skilled and semi-skilled labour resources available in support of the construction efforts.

- **Houndé**

In April 2016, Lycopodium was awarded the EPCM contract for the delivery of Endeavour's 90% owned Houndé project in Burkina Faso. With an initial capital cost estimated at \$328 million, the 3 Mtpa project comprised the delivery of a gold processing plant and associated infrastructure, including a fully integrated owner operated mining fleet.

Having undertaken the detailed feasibility study and participated in project optimisation reviews, we were able to move quickly from study to detailed engineering, with site activities quickly following on.

The project was interesting in that Endeavour self-performed the project infrastructure, while Lycopodium focussed primarily on the processing facility and mine services areas. The project delivery strategy worked well and with the first gold pour occurring in October 2017. Endeavour officially announced to the markets that the mine had been successfully built, ahead of schedule and below budget. Nameplate capacity was achieved within weeks following the introduction of ore into the mill.

Lycopodium's involvement in the development of this project was a continuation of a successful association with Endeavour across the Nzema Project in Ghana, Agbaou Project in Côte d'Ivoire and Karma Expansion Project in

Burkina Faso. This association continues with the current involvement with the Ity Project in Côte d'Ivoire, a project similar in scale to the Houndé Project.

- **Fekola**

This reporting year Lycopodium continued working with B2Gold on the commissioning of the Fekola mine in south western Mali, some 400 km west of the capital Bamako. Overall Lycopodium's scope of services included the process design, detailed engineering and design of the new facilities; delivering procurement services for equipment and materials purchases as well as providing a team of engineers who were integrated with B2Gold's construction and commissioning teams to deliver site technical and scheduling support.

The process plant was originally designed to process nominally 4 Mtpa primary run of mine ore however in 2016 B2Gold announced that, as a result of positive drill results and exploration potential, they had decided to expand throughput at Fekola and proceed with an expansion of the mill. Design factors built into the Optimised Feasibility Study by Lycopodium / B2Gold included 5 Mtpa assumptions for plant design, general infrastructure and tailings dam design and location, thus enabling ore throughput capacity to reach up to 5 Mtpa from the onset of initial production.

Construction of the project started in February 2015 and in November 2017 B2Gold announced that Fekola had achieved commercial production, one month ahead of the revised schedule and four months ahead of the schedule announced in the Optimised Feasibility Study. Production ramp-up to design throughput was achieved on schedule and B2Gold reports that plant operation continues to exceed both throughput and gold recovery nameplate design.

Lycopodium's involvement in the development of this project was a continuation of a successful association with B2Gold following on from previous involvement on their Otjikoto Project in Namibia and Masbate Project in the Philippines. This association continues with the current involvement with the expansion projects / studies for both the Masbate mine in the Philippines and the El Limon mine in Nicaragua.



Managing Director's Report *continued*

- **Mako**

In August 2016, we were awarded the EPC contract for the delivery of the Mako Project in eastern Senegal. Mako is the flagship asset of Toro, a private exploration, development and production company focused on West Africa.

The Mako Project is unique in that the deposit comprises a particularly hard and abrasive ore. Following extensive testwork our modelling of the comminution circuit showed that an optimum grind could be achieved on this very hard ore with a single stage SAG mill, an aggressive circuit but one delivering significant capital and operating cost savings to Toro.

Following completion of the pre-feasibility and definitive study phases in 2015 and 2016, Lycopodium successfully delivered the contract scope (treatment plant, mine services area, tailings management facility, river abstraction facility, raw water storage dam, camp and support infrastructure) on an EPC basis. In addition, the project borders a UNESCO listed park so that very high environmental protection standards were implemented in design and construction.

The Mako mine poured its first gold in January 2018, with the project coming in below budget and ahead of schedule. The project has continued to operate at nameplate capacity and design recoveries since commissioning.

- **XRT Technology Acquisition Project, Venetia Diamond Mines**

The Venetia diamond mine, which opened in 1992, is De Beers flagship operation in South Africa. It is the country's largest diamond producer and yields approximately 40% of South Africa's annual diamond production.

De Beers is now in the process of developing an underground mining operation at Venetia as it is approaching the depth limit of open-pit operations. The underground mine is expected to commence operation in 2022 and during its lifetime will treat 132 million tonnes of ore containing an estimated 94 million carats. The underground development is expected to extend the life of the mine to 2046.

Lycopodium has been involved in successfully implementing various plant improvement projects at the mine since 2011, specifically in the Reconcentrate Area as well as in the Recovery Plant. We were engaged at the end of 2017 on a cost reimbursable basis to undertake the detail design of an X-Ray Transmission (XRT) facility to be incorporated into the Dense Media Separation concentrate stream, in order to alleviate the bottle-neck that high yielding material creates in the final Recovery Plant. The project is scheduled for completion at the end of 2018.

- **Aquarium Integrated Sort House, Jwaneng Mine, Botswana**

The Jwaneng mine located in Southern Botswana is the richest diamond mine in the world and is owned by Debswana (a partnership between De Beers and the Government of Botswana).

Debswana currently has an old, stand-alone Sorthouse facility located at Jwaneng that is handling concentrate produced from all of the Debswana mines. A decision was made to relocate and integrate this final diamond sorting facility into the existing fully integrated Sorthouse building (located at the mine). The objective of the new Sorthouse facility is to handle up to 50 million carats of diamonds per annum. Debswana engaged Lycopodium, through our local Botswana office, on a cost reimbursable basis to undertake the detailed design of the new Sorthouse. The project is scheduled for completion at the end of 2018.

Process Industries

Lycopodium's Process Industries group delivers process design, engineering and project delivery services in specialty areas such as chemicals, pharmaceuticals, food and beverage renewables and water / waste water sectors. Several highlights include:

- **Denso Bitumen Mixing Facility Upgrade**

Denso has recently undertaken the relocation of its manufacturing operations to a new purpose built facility in Campbellfield, Victoria. As part of a relocation to the new facility, Denso took the opportunity to upgrade its bitumen storage



and manufacturing capability. Lycopodium assisted Denso with the design and construction of the new production facility including the detail design of the product blending tanks, heating, agitation and product transfer systems. The project was delivered on a greenfield site under a lump sum contract. The project was delivered on schedule with no safety or environmental incidents.

- **Pfizer Aseptic Manufacturing Facility**

Pfizer Inc. is the second largest pharmaceuticals company on a global basis. Lycopodium has been providing on-going project engineering support to Pfizer at its' Perth Aseptic Manufacturing Facility for several years. The facility manufactures plastic vials (Cytosafe®) containing liquid oncology medicines, and plastic ampoules (Sterisafe®) containing sterile solutions.

- **Altona Salt Reduction Plant**

Lycopodium designed and constructed on a Design and Construct basis a new hydrochloric acid (HCl) dosing system for delivery of HCl liquid to reverse osmosis units at the Altona Salt Reduction Plant of Victorian Government's City West Water. The project was delivered on a brownfield site under a lump sum contract with no interruption or impact to plant operations. We were responsible for the design of the concrete bund area, new pipe bridge, integration of pipe work and tie-in to the existing plant including installing new pipe work to the existing tanker unloading area.



• **EcoMag Magnesium Salt Recovery Project**

Lycopodium was recently awarded a detailed feasibility study for EcoMag Limited based on recycling bitterns generated by sea-salt production to extract high purity magnesium compounds.

Infrastructure

Lycopodium's Infrastructure group provides services across the general infrastructure, transport (road and rail) and asset management sectors with the following highlights:

• **Jimblebar Mobile Maintenance Facility**

BGC Contracting Pty Ltd (BGC) is one of Australia's largest private mining and construction contractors and provides mining and construction services across the resources, energy and infrastructure sectors. BGC was engaged to undertake the design and construction of new and refurbished Mobile Maintenance facilities at the Jimblebar Mine, one of the BHP Billiton Limited (BHP) iron ore sites in the Pilbara region of Western Australia, some 40 km east of Newman. The Mobile Maintenance facility upgrade will support expansion of the mine's fleet capacity. Previously, Lycopodium designed the warehouse and workshop at the Sino Iron Project, which was ultimately constructed by BGC. Recognising the quality of design and support provided on that project, BGC invited Lycopodium to tender and subsequently awarded design services for the Jimblebar project.

• **Pacific National RIM Services**

Pacific National Corporation (Pacific National) is Australia's largest rail provider, hauling coal, steel, automotive, agricultural, minerals and containerised freight to all mainland states and territories in Australia.

Lycopodium was engaged by Pacific National to provide RIM services, on a 3 year plus 1 year agreement to inspect, certify and manage defects at 62 sites Australia wide. Inspections at these sites commenced in April 2018 requiring substantial prior planning and groundwork.

RIM services comprise processes and systems to ensure infrastructure is fit-for-purpose, able to support safe and efficient operations. In addition and most importantly, the service ensures risk is managed in accordance with the requirements of rail safety legislation.

Since commencing, Pacific National has expanded our scope to include derailment investigations, special or ad hoc inspections and geotechnical investigations.

HSE and Community

Lycopodium's primary focus is on the health and safety of its staff and all personnel working on its projects. We continue to set and achieve a high standard of health and safety across all our projects and given the highly international nature of our activities we have worked proactively to ensure the security, safety and wellbeing of our personnel wherever they may be.

In 2017/18 there were 4.14 million manhours worked across the Lycopodium managed projects with a LTIFR of 0.23 against an 11.5 construction industry average.

On the community side, Lycopodium continued to focus on education as a means of strengthening communities and in line with this remained an active sponsor and supporter of the Clontarf Foundation, a charitable not-for-profit organisation in Australia improving the education, discipline, self-esteem, life skills and employment prospects of young Aboriginal men.

Support was also provided around a key annual event for the Murlpirrmarra Connection, a not-for-profit organisation that exists to provide Aboriginal youth in the remote communities of Wiluna,

Leonora and surrounding regions in Western Australia, with educational opportunities.

In terms of industry engagement, Lycopodium became a platinum sponsor of the Australian African Mining and Energy Group the peak body representing Australian companies engaged in the development of Africa's resource industry.

The Company also continued to provide material support to a number of charitable initiatives championed by staff.

ACKNOWLEDGEMENT

The Board of Directors recognises that the Company's ability to continue delivering world class services to our clients and to maintain and enhance the company's performance and capability is dependent on the continued commitment and support of our personnel. On behalf of my fellow Directors I take this opportunity to sincerely thank all personnel for their highly valued contribution.

We would also like to thank our clients for their continued trust in Lycopodium to deliver services to their projects and studies. We will as always work hard to maintain these valued relationships.

Peter De Leo
Managing Director

Board of Directors



Michael (Mick) Caratti

NON EXECUTIVE CHAIRMAN

Mick has nearly 40 years' experience in the mineral processing industry with involvement in conceptual evaluation, engineering, commissioning and study management for new and existing projects in Australia and overseas.

Mick has extensive experience in company management having been a director and shareholder of a successful engineering consulting company from 1982 to 1987, and then as a director and shareholder of Lycopodium from its formation in 1992.

Mick's primary role as Chairman is to take a global view of the engineering industry and Lycopodium's place in it whilst maintaining the Company's founding philosophies and strategies.

Peter De Leo

MANAGING DIRECTOR

Peter is the Managing Director of Lycopodium Limited. A professional engineer with over 30 years' experience in engineering and construction within the domestic and international resources and infrastructure sectors, Peter possesses strong business management and project implementation skills and has been responsible for the successful delivery of many of Lycopodium's pioneering and large scale projects. Given his various roles across the Company since 1994 Peter has a deep knowledge of the business and its markets.

A Fellow of the Institute of Engineers Australia, Peter is also a Director of the Australian and African Mining and Energy group (AAMEG).

Rodney (Rod) Leonard

EXECUTIVE DIRECTOR

Rod is one of the founding partners of Lycopodium and an Executive Director of Lycopodium Limited since listing in 2004. Rod is presently the Managing Director of Lycopodium Minerals and a Non-Executive Director of ADP Holdings.

His management roles within Lycopodium have included that of Managing Director of Lycopodium Limited and through earlier periods with Lycopodium Minerals the roles of Technical Director for the Risk Management Group, Managing Director, General Manager of Operations and Manager of Metallurgy.

Rod has nearly 30 years' experience in a variety of roles in the operation and project development of major projects in North and South America, Africa, Asia and Australia and has been involved in many aspects of the mineral processing industry from process development, feasibility studies, and design assignments as well as commissioning of projects.

Bruno Ruggiero

EXECUTIVE DIRECTOR

Bruno is a founder of the Lycopodium group and has had a number of key roles throughout the group's business units since its inception in 1994. He currently serves as the Technical Director for Lycopodium Minerals, having overarching responsibility for the Company's technical knowledge base, capabilities and direction. At an operational level Bruno's role involves extensive project involvement, responsibility for strategy and the definition and delivery of technical solutions in its EPC business.

Bruno is a mechanical engineer by training, with additional qualifications in process and structural engineering. His experience spans over 30 years in the minerals industry, having worked on various projects and studies in Australia, North America, South America, Europe, Asia and Africa in all capacities of the Company's business – engineering, procurement, construction and management.

Bruno is an Executive Director of Lycopodium Minerals and a Non Executive Director of ECG Pty Ltd.



Robert (Bob) Osmetti

EXECUTIVE DIRECTOR
 Bob is a Civil Engineer with over 39 years' experience in the project management and construction management of projects in an EPCM role and has worked for major construction contractors in the mining sector.
 He brings direct experience in all aspects of project implementation, estimating, scheduling and construction management as well as the management of a number of feasibility studies for major resource projects in Australia and overseas.
 Bob is one of the founding partners of Lycopodium and has held diverse positions within the group. Bob is currently the Managing Director of Mondium Pty Ltd, a fully incorporated JV between Monadelphous and Lycopodium, established to provide fully integrated engineering, procurement and construct services to the minerals sector.

Lawrence (Laurie) Marshall

NON EXECUTIVE DIRECTOR
 Laurie was Lycopodium Limited's Managing Director until early 2010 when, with the appointment of Rod Leonard, Laurie took up the positions of Non Executive Director and Consultant. He has also been a Non Executive Director of Lycopodium Process Industries, Lycopodium Infrastructure, ADP Holdings and Metco Global.
 As a founding partner and Certified Practising Accountant with over 40 years' experience in corporate, financial operational and risk management, Laurie has been instrumental in the development of Lycopodium from its early days as a privately owned engineering consultancy to that of a public company.

Steven Chadwick

NON EXECUTIVE DIRECTOR
 Steven is a Metallurgical Graduate of the WA School of Mines with over 40 years' experience in the mining industry, incorporating technical, operating and management roles, as well as a strong metallurgical background.
 Steven is now a metallurgical consultant specialising in project management with a range of local and international clients. He was a founding Director of BC Iron and a former Managing Director of Coventry Resources, PacMin Mining and, Northern Gold. Steven brings extensive industry and operating experience to the board.

Peter Dawson

EXECUTIVE DIRECTOR
 Peter is a metallurgist by training and has 30 years' experience in the resources sector, initially in operations and subsequently in corporate roles, including as an executive director of listed public companies and as a Partner in the Corporate Finance division of KPMG.
 He has been on both sides of the commercial equation as a client and as a service provider in mining and oil & gas, and so has a broad perspective of the resources sector. With a background that bridges technical and commercial, he has a history of successfully developing and managing strong multi-disciplinary teams in the execution of resource projects and resource-based M&A transactions.




Keith Bakker

COMPANY SECRETARY / CHIEF FINANCIAL OFFICER
 Keith has been with Lycopodium for over 20 years and in that time has carried out the roles of Commercial Manager and General Manager Finance.
 A Fellow of the Certified Practising Accountants of Australia, he brings to his role of Company Secretary and Chief Financial Officer, over 30 years' experience in company secretarial and finance roles within the airline, human resource management and mining services sectors.

About Lycopodium



LYCOPODIUM LIMITED

					
MINERALS	ADP	PROCESS INDUSTRIES & RENEWABLES	INFRASTRUCTURE	ORWAY MINERAL CONSULTANTS	MONDIUM
<ul style="list-style-type: none"> • Mineral processing • Materials Handling • Plant & Mine Infrastructure 	<ul style="list-style-type: none"> • Diamond Processing • Mineral processing • Fixed and Modular Process Plants • Underwater Mining 	<ul style="list-style-type: none"> • Specialty Chemicals • Pharmaceuticals • Research & Development • Food & Beverage • Manufacturing • Renewable Energy 	<ul style="list-style-type: none"> • Civil • Rail, Roads, Aviation • Mine Infrastructure & Accomodation • Planning & Land Development • Industrial, Commercial & Public Works Buildings • Asset management 	<ul style="list-style-type: none"> • Communion Circuit, Modelling and Optimisation • Hydrometallurgy • Process Plant Consulting and Commisioning 	<p>A Lycopodium Monadelphous JV</p> <ul style="list-style-type: none"> • Engineering (Minerals Processing and Handling) • Project Management • Construction Management • Large scale EPC

OUR COMPANY

Lycopodium is an innovative and value driven process, engineering and project management consultancy.

Our multidiscipline services are provided through our subsidiaries, which specialise in their industry segment. Through our focused approach Lycopodium is able to consistently meet our clients' expectations and develop long term relationships.

Established in 1992, Lycopodium is headquartered in Perth, Australia and is listed on the Australian Stock Exchange. Lycopodium has offices in Brisbane, Cape Town, Johannesburg, Manila, Melbourne, Newcastle, Perth and Toronto.

OUR BUSINESS

Lycopodium's business model is based on consistently delivering quality services to clients through feasibility studies, projects, operations and maintenance advice which are fit for purpose, objective and reliable. In this way Lycopodium adds value to a client's business leading to long term beneficial relationships.

We work closely with our clients to evaluate, develop and implement engineering solutions for their projects and our involvement starts from the early conceptual planning moving through the feasibility phases to the completion of design, construction, commissioning and handover, continuing with optimisations, reliability engineering and maintenance services on operational sites.

Our contracting model is flexible and always aligned to meet a client's requirements. We deliver projects on the basis of reimbursable and lump sum EPCM basis (Engineering, Procurement, Construction Management), which relates to professional services only, and on an EPC basis, also referred to as lump sum turnkey or design and construct,

which encompasses professional services as well as plant and equipment. We can also incorporate partial or fully integrated teams together with a client to best align with a client's internal capabilities.

Our work, reflecting diversity in not only client background, but commodity, technology, scale of operation and geographic location, falls into seven broad groups:

• Mineral Processing

Our Mining and Mineral Processing clients range from major multinational producers through to junior exploration companies and their projects involve a wide range of commodities: gold, copper, nickel, diamonds, iron ore, cobalt, zinc, lead, manganese, uranium, tin, tantalum, rare earth minerals and platinum group metals.

Projects, undertaken in diverse environments including tropical, arid, arctic and high altitude conditions, range in scope from large greenfield and brownfield projects involving process plant and equipment, civil and building works, control systems and supporting infrastructure to small skid-mounted, transportable plants.

• Infrastructure

Lycopodium has wide-ranging experience managing the assessment, design, planning and implementation of a variety of infrastructure elements, both independently and in conjunction

with mineral processing projects. Infrastructure elements include power supply, water supply and treatment, housing, commercial and industrial buildings, roads, aerodromes and general infrastructure.

• Process Industries

Our Process Industries clients, many of them household names, produce a wide variety of products in the manufacturing, pharmaceutical, chemical, food and beverage, healthcare, oil and gas and petrochemical sectors.

With this diversity of sectors, Lycopodium's expertise is wide, ranging from greenfield production facilities through to cutting-edge biotechnology and scientific research projects.

• Rail

Lycopodium provides rail infrastructure asset management services, feasibility study and detailed design services to the heavy rail industry. These services are often complimentary in nature to larger projects undertaken within the group which include a rail component.

• Renewables

Lycopodium is at the forefront of developments in renewable energy and energy efficiency including the implementation of projects in solar, biofuels, waste to energy and heat energy recovery.

About Lycopodium *continued*



• Agriculture

Given our extensive technical capabilities, we have had an increasing involvement in the agricultural sector. This has included large irrigation systems, food handling and processing facilities, food and animal by-product processing to generate energy as well as new value adding by-products. Often these agricultural projects encompass other industry segments in which Lycopodium operates.

• Maintenance and Reliability

Maintenance and reliability engineering clients come from the oil and gas, petrochemical, power and water utilities, infrastructure, mining and minerals processing and marine industries.

In this sector, there is significant experience in re-engineering existing systems for brownfield operations as well as developing and implementing new maintenance management systems for greenfield operations.

Project examples of the various commodities and industry sectors in which Lycopodium has worked during the recent year follow later in this shareholder report.

OUR SERVICES

Throughout our 26 year history, Lycopodium has developed a reputation for providing technically innovative and cost effective engineering solutions and delivering projects which exceed the Client's project criteria and performance targets.

Lycopodium operates with comprehensive and mature systems and processes to ensure consistency in our approach across all aspects of project delivery. Our services fall generally into four areas of expertise:

Process

Lycopodium's process group has a wide range of experience to undertake the development of new processes and determine the viability of new and existing processes, including:

- Planning, design, supervision and interpretation of laboratory, bench scale and pilot-scale test programs.
- Flowsheet development, mass and energy balances, process modeling, process design specification.
- Management and coordination of necessary skills in the production of studies. These studies are done at different levels of confidence depending on the stage of investigation and are usually defined as concept study, pre-feasibility study and detailed or bankable feasibility study.
- Evaluation and selection of new and alternative processes at the conceptual and pre feasibility study stages to determine the viability of new and existing processes.
- Comminution circuit design using specialist database and in-house software to design crushing and grinding circuits and predict their performance.
- Hydrometallurgy for base metals, uranium and rare earths.
- Commissioning, training and operations services.
- Design, construction management and operation of pilot plant installations.
- Plant audits, debottlenecking evaluations and staged development planning.

Environmental compliance processes, e.g. cyanide recovery and destruction, arsenic fixation and disposal, metal precipitation and water management

Engineering

Lycopodium's engineering group can offer a wide range of capabilities for the development of a project, including:

- Conceptual and detailed design of processing plants.
- Conceptual and detailed design of infrastructure including earthworks, roads, drainage, power supply and transmission systems, buildings and, accommodation villages with amenities, water and wastewater systems.
- Design expertise covering all relevant disciplines including:
 - > Architectural
 - > Civil
 - > Structural
 - > Mechanical
 - > Piping
 - > Electrical
 - > Instrumentation
 - > Process Controls
- Design, program, test and commission plant automation control systems.
- Plant refurbishment and relocation.
- Conceptual and detailed design of large modular and panelised plants for major projects down to small transportable and skid-mounted plants.
- Plant debottlenecking, upgrading and improvements.
- Troubleshooting and modification of mechanical and electrical installations.
- Design expertise in tropical, arid, arctic and high altitude locations.
- General engineering consulting services including due diligence reports, project valuations and debottlenecking studies.



About Lycopodium *continued*

Project Delivery

Lycopodium undertakes the project and construction management of clients' projects, including:

- Full project and construction management to deliver complete projects.
- Health, safety, environmental, community relations, quality management services.
- Project controls including cost control and scheduling.
- Tender preparation and evaluation.
- Procurement, expediting and inspection services.
- Plant evaluations and assessments for insurance or sales purposes.
- Capital and operating cost estimates.
- Financial evaluation of projects.
- Client representation.
- Development and implementation of project accounting services.
- Development and implementation of project maintenance and reliability engineering services.
- Logistical and transport management.

Maintenance and Reliability Engineering Services

Lycopodium can assist plant site operators to reduce operating costs and increase productivity, whilst complying with statutory regulations and duty of care obligations, by refining or re-engineering their operating methods, maintenance management practices and implementing the required change processes.

These services fall within the following areas:

- Maintenance System Development - the preparation of work instructions to provide comprehensive maintenance actions.
- Optimisation – the fine tuning of systems, procedures and processes to cost effectively provide the highest productivity, availability and reliability for an operational site.
- Materials Management and Optimisation – encompasses all aspects of identifying, categorising and organising equipment in a facility or system.

- Operational Readiness – the provision of services to assist clients to initiate operation of new projects.
- Planning – the detailed processes and practices that form the maintenance planning cycle.

Our People

Engineering consulting is a service industry and Lycopodium is dependent on its people for the quality of service it provides. Lycopodium is proud of the professionalism and loyalty of the team it has assembled and their achievements in the innovative and cost effective design and construction of projects in diverse industries and regions.

Lycopodium uses a team approach to its work where each project has a team drawn from the disciplines required and is led by a project manager. Each discipline is headed by a discipline manager who is responsible for monitoring and controlling the quality of work within the discipline and ensuring each project manager has sufficient resources to run the project team. Regular formal management meetings are held to review progress, cost and quality and ensure all projects are fully resourced, on time and on budget.

Lycopodium provides a team of respected professionals in each of the disciplines required in a process, engineering and project delivery business.

Our Projects

Lycopodium, while Australian headquartered, operates in many locations across the world. Through our subsidiaries, Lycopodium has undertaken over 5,000 projects, studies and consulting briefs in over 50 countries spanning Australia, Africa, Asia, North America and South America. Projects have ranged from small, prototype facilities to demonstrate new processes or technologies through to world class, greenfield and brownfield projects incorporating the largest equipment items in the world. Many projects have been delivered into remote locations with limited existing infrastructure and services.

Our Clients

Lycopodium services a wide range of organisations headquartered throughout the world including large international companies, mid-tier and

emerging companies, and junior and start-up companies. The majority of our services are the result of long standing relationships with our clients, built over years of high quality services specific to their requirements. Lycopodium's highly customer focused approach and ability to deliver tailored, value adding solutions has been fundamental to our success. customer focused approach and ability to deliver tailored, value adding solutions has been fundamental to our success.

Lycopodium focuses on achieving each client's aims as its primary objective and its success is demonstrated by the high level of client satisfaction and repeat business the company enjoys.

Lycopodium continues to deliver innovative and fit for purpose outcomes, tailored to the needs of individual clients.

Our Goals

Lycopodium's aim is to be the best in its field through the delivery of techno-economic solutions which optimise a project's returns to each of our clients. We believe our success is intimately tied to the success of our clients' projects.

Lycopodium has a proven track record of meeting budgets and schedules and achieving project performance criteria on both large and small projects and in greenfield (new) and brownfield (existing operating plant) environments.

A successful process, engineering and project management consulting company does not stand still – it grows through consistency and reliability in project delivery, accepting new challenges and resetting goals, which for Lycopodium reflects in larger, more complex projects and work in new areas, be they technical or geographic.

Long Term View

Lycopodium continues to focus on the longer term horizon. Our growth has always been the product of delivering excellence to our clients on a consistent basis. In turn we are rewarded through repeat work, references to new clients and industry recognition for technical and project delivery excellence. This approach has enabled the business to expand through organic growth in alternative geographic locations and through strategic acquisition where clear added value to the business can be demonstrated.



Project Reviews

Project Houndé

Client: Endeavour Mining

Location: Burkina Faso

Sector: Minerals – Gold

In April 2016, Lycopodium was awarded the EPCM contract for the delivery of Endeavour Mining Corporation's (Endeavour) 90% owned Houndé project in Burkina Faso, located some 250 km south west of the capital Ouagadougou. With an initial capital cost estimated at \$328 million, the project comprised the delivery of a gold processing plant and associated infrastructure, including a fully integrated owner operated mining fleet. The asset is capable of treating 3 Mtpa of gold bearing ore.

Having undertaken the detailed feasibility study and participated in project optimisation reviews, Lycopodium was able to commence detailed engineering immediately with site activities commencing shortly after. Duration for project construction was estimated to be 18 months with Endeavour planning to self-perform the project infrastructure, while Lycopodium focussed primarily on the processing facility and mine services areas.

With the first gold pour occurring in October 2017, Endeavour officially announced to the markets that the mine had been successfully built, ahead of schedule and below budget. Commercial production was announced one month later in November 2017 more than two months ahead of schedule following the rapid construction and ramp-up periods. Nameplate capacity was achieved within weeks following the introduction of ore into the mill.

Not only was construction completed \$15 million below the initial budget but an excellent safety record was achieved with no Lost Time Injury occurring over the 7 million manhours worked during the construction period.

Endeavour Mining is an intermediate gold producer with a proven track record of exploration, project development and operational experience in the highly prospective Birimian greenstone belt in West Africa. Endeavour operates five mines across Côte d'Ivoire, Burkina Faso and Mali.

Construction of this project is a continuation of a successful development and construction partnership between Lycopodium and Endeavour on three other African projects: Nzema, Agbaou and ITY CIL (currently under construction), it also continues Lycopodium's track record of undertaking projects in the developing mining industry of Burkina Faso.

In 2008 the country poured just 5.5 tonnes of gold from two large scale projects, in 2013 that figure increased to 33 tonnes and the 2018 projection is for a tenfold increase in industrial production on a decade earlier.



Project Mako

Client: Petowal Mining Company S.A. / Toro Gold

Location: Senegal

Sector: Minerals – Gold



The Mako project, located in eastern Senegal approximately 650 km ESE of the capital Dakar, is within the prolific Birimian age 'Kenieba Window' geological complex that hosts multiple world class gold mining operations in eastern Senegal and western Mali.

Mako is the flagship asset of Toro Gold Ltd (Toro Gold) a private exploration, development and production company focused on West Africa. The mine is operated by Toro Gold's 90% owned Senegalese subsidiary Petowal Mining Company S.A. with the Government of Senegal holding the remaining 10%.

Following completion of the pre-feasibility and definitive study phases in 2015 and 2016, Lycopodium successfully delivered the contract scope on an EPC basis. Lycopodium scope of work included the development of the treatment plant, mine services area, tailings management facility, river abstraction facility, raw water storage dam, camp and support infrastructure.

The project operation includes:

- Ore extraction by open pit using a conventional truck and shovel operation
- Processing operations designed to treat 1.8 Mtpa via the use of an industry standard carbon in leach (CIL) plant comprising a crushing circuit, an 8 MW SAG mill and gold extraction circuit prior to discharge to a lined tailings facility via a cyanide destruct circuit
- Electricity provided by a diesel fuelled 14 MW power station
- Water being taken from the Gambia River during higher flow periods and is stored in a ~1 million m³ facility for use during the dry season.

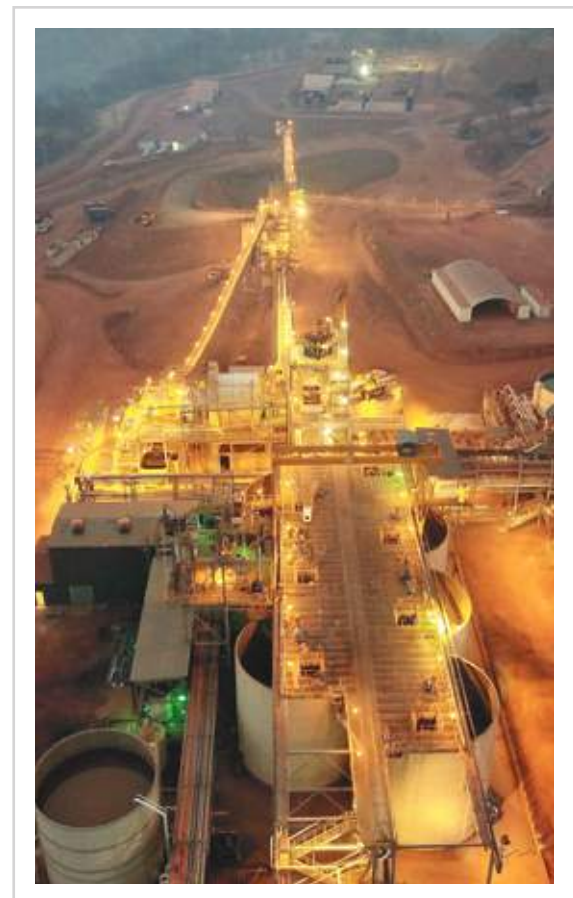
This project was challenging due to the ore characteristics received by the plant, some of the hardest and abrasive ore Lycopodium has encountered. Ensuring that the wear rates were manageable within the process plant was an important focus during the design phase.

The comminution circuit best suited, was a single toggle jaw crusher followed by single stage SAG milling incorporating recycle pebble crushing. The circuit including a large single stage variable speed mill was selected to reduce operational complexity, capital costs, ongoing wear-related operating costs and overall risk of achieving design.

The Mako mine poured its first gold of 1,325 ounces (41.2 kg) in January 2018 ahead of the planned date in the project schedule. The plant was ramped up to nameplate capacity by Lycopodium/PMC and handed over following successful completion of the performance test.

The Project borders a UNESCO listed park so that very high environmental protection standards were implemented in design and construction in terms of other benefits to the community very high local employment levels maintained throughout construction.

Senegal has only a handful of operating mines and limited construction and commissioning experience available on gold plants. Lycopodium was required to take a hands-on approach with all contractors to ensure that safety and quality standards were met.



Project Reviews *continued*

Project Fekola

Client: B2Gold Corp.

Location: Mali

Sector: Minerals – Gold



B2Gold Corp. (B2Gold) is the world's newest senior gold producer, founded in 2007. Today, the company has five operating mines and numerous exploration and development projects in various countries including Finland, Nicaragua, Philippines, Namibia, Mali, Burkina Faso and Columbia.

This reporting year Lycopodium has continued working with B2Gold on the construction and commissioning of the Fekola mine in south western Mali, some 400 km west of the capital Bamako.

Lycopodium scope of services included the process design, detailed engineering and design of the new facilities; delivering procurement services for equipment and materials purchases as well as providing a team of engineers who were integrated with B2Gold's construction and commissioning teams to deliver site technical and scheduling support.

The process plant was originally designed to process nominally 4 Mtpa primary run of mine ore through single stage primary crushing, a SAG mill circuit with recycle pebble crushing, and a closed circuit ball mill with hydrocyclones, leach feed thickening with thickener overflow treated through a carbon in column circuit, leaching followed by carbon in pulp adsorption, elution and gold recovery to doré, cyanide detoxification, tailings thickening, and disposal circuits.

In 2016 B2Gold announced that, as a result of positive drill results and exploration potential, they had decided to expand throughput at Fekola and proceed with an

expansion of the mill. Design factors built into the Optimised Feasibility Study by Lycopodium / B2Gold included 5 Mtpa assumptions for plant design, general infrastructure and tailings dam design and location, thus enabling ore throughput capacity to reach up to 5 Mtpa from the onset of initial production.

Construction of the project started February 2015 and in November 2017 B2Gold announced that Fekola had achieved commercial production, one month ahead of the revised schedule and four months ahead of the schedule announced in the Optimised Feasibility Study. First gold pour was achieved in October 2017.

Lycopodium commissioning engineers assisted with operations training / support for 3 months following the first pour. Production ramp-up to design throughput was achieved very rapidly and B2Gold reports that plant operation continues to exceed both throughput and gold recovery nameplate design.

The design scope also encompassed project infrastructure including process plant, administration, mine offices and workshops as well as bulk fuel and lube storage and distribution.

Lycopodium's involvement in the development of this project was a continuation of a successful association with B2Gold following on from previous involvement on their Otjikoto Project in Namibia and Masbate Project in the Philippines. This association continues with the current involvement with the expansion projects / studies for both the Masbate mine and the El Limon mine in Nicaragua.



Project Karma Optimisation

Client: Endeavour Mining
 Location: Burkina Faso
 Sector: Minerals – Gold

Project Magino Gold Project

Client: Argonaut Gold
 Location: Canada
 Sector: Minerals – Gold



The Karma mine is an open-pit mine located approximately 185 km north west of Ouagadougou, the capital of Burkina Faso.

Acquired by Endeavour Mining (Endeavour) in 2016, Karma includes six identified gold deposits and a shallow open pit with little blasting required and a low strip ratio, making it a low-cost operation.

First gold production was announced in April 2016 with commercial production being declared in October 2016. When first completed, the plant had a nameplate capacity of 4 Mpta, however specific aspects of the design required remediation.

Lycopodium was engaged and through an Engineering Cost Study, identified several opportunities that could improve the performance of the plant and the associated costs of implementing these changes.

In October 2016, Endeavour awarded Lycopodium the contract to provide EPCM services on a lump sum basis for this remediation. The scope included the process design, engineering design, procurement, construction management and commissioning of the new crushing circuit, a new absorption, desorption and refining (ADR) plant and associated infrastructure.

Specifically, these upgrades included:

- A new dry crushing plant connected to the existing leach pad conveyor network
- An upgrade to the cement addition plant
- A new ADR plant for the pregnant solution from the existing heap leach and to provide an eluted solution to the existing gold plant
- The modification and upgrade to the existing gold plant.

The project was successfully completed in November 2017.

Argonaut Gold (Argonaut) is a Canadian gold mining producer with a portfolio of operational mines in Mexico as well as projects at an advanced development stage including the San Antonio and Cerro del Gallo gold projects in Mexico and the Magino project in Ontario, Canada. It also has several North American projects at the exploration stage.

Argonaut plans to mine the Magino deposit using conventional open pit mining methods and extract gold from the ore using a 10,000 tpd, carbon in pulp mineral processing facility. A complete on-site gold ore processing facility would be constructed and built to support the mining operations and process the mineralized rock into gold-silver doré.

The proposed processing plant will be equipped with a single stage SAG mill grinding circuit, a gravity recovery circuit, a cyanide leach circuit, carbon in pulp gold recovery facilities, a carbon handling and treatment circuit, as well as electrowinning and smelting facilities.

Located in Finan township, some 195 km north of Sault Sainte Marie, Ontario the project benefits from its proximity to existing road and rail infrastructure but will require the upgrade of an existing road near the project site.

The preliminary feasibility study for the project was completed in January 2014 and a definitive feasibility study was completed in 2017. Lycopodium was involved in this feasibility study with a scope of work that included:

- Recommendations on the execution and development of the metallurgical testwork programme
- Interpreting the past and current testwork results and developing the process design criteria
- Developing an appropriate process flowsheet, preliminary mass and water balance
- Undertaking preliminary design of the process plant including development of the plant layout, preliminary civil and structural design, and sizing and selection of mechanical and electrical equipment
- Preparation of layouts, drawings, lists, and other deliverables to support the plant design basis
- Providing process equipment pricing and quantity take-offs for the capital cost estimate
- Preparing an operating cost estimate for the process plant.

Since the release of the Feasibility Study in 4Q2017, Argonaut is continuing to examine development options in parallel with work to complete Indigenous Agreements and permitting.

Project Reviews *continued*

Project Cobré Panama

Client: Minera Panama S.A. / First Quantum Minerals

Location: Republic of Panama

Sector: Minerals – Copper, Gold, Molybdenum



During the 2017/18 year Lycopodium continued working on the Cobré Panama project for Minera Panama S.A. (MPSA) a subsidiary of First Quantum Minerals Ltd (FQML), continuing our relationship with FQML on various projects globally.

TSX listed FQML through its' Panamanian subsidiary MPSA, are developing this US\$6+ billion copper project in the Republic of Panama. The Cobré Panama project is located approximately 120 km west of Panama City and lies fairly close to the Caribbean Sea coast.

The topography in the concession area is low elevation but rugged, with considerable local relief covered by dense vegetation. Climatic conditions are tropical with high rainfall levels, high humidity and relatively moderate temperatures of 25°C to 30°C year-round.

Plans for the Project involve mining from open pits, overland conveyor transportation, a concentrator treatment plant adjacent to the mine with the concentrate being pumped 25 km to a dedicated MPSA built port for filtration and export. The Project's mine life has been estimated at more than 30 years.

Awarded work on the project in 2013, Lycopodium scope of services is to carry out detailed engineering design for the process plant, earthworks, architectural, civil, structural, mechanical and piping and provide technical input into the procurement process for the construction of the process plant, services and associated infrastructure. The process plant will have an installed nameplate capacity of 85 Mtpa for the first period of operation with the capacity to expand up to 100 Mtpa.

The process plant includes:

- 4 semi mobile gyratory in pit crushers
- 2 x 1.6 km 12,000 tph overland conveyors
- 4 x 2,800 tph secondary (cone) crushers
- 600,000 tonne coarse ore stockpile
- 28 x 600 m³ tank cells
- 4 x SAG mills (40 foot diameter, 28 MW)
- 5 x ball mills (26 foot diameter, 16.5 / 22 MW)
- 4 x 800 tph tertiary cone crushers

Over the past year, Lycopodium has been completing the process plant design and the services to non-process infrastructure buildings and, as of end May 2018, its scope of work is 97% complete. Lycopodium personnel are being mobilised as required to the Project site to assist in project construction and commissioning.

This Project involves some of the largest unit processing equipment in the world and Lycopodium has worked collaboratively with FQML to support FQML's 'self perform' construction project development style and generally based on previously built and operated FQML plants.

Project Natougou

Client: SEMAFO Inc / SEMAFO Boungou S.A.
 Location: Burkina Faso
 Sector: Minerals – Gold

Project XRT Technology Acquisition Project

Client: De Beers Consolidated Mines
 Location: South Africa
 Sector: Diamonds

SEMAFO Inc (SEMAFO) is a Canadian-based mining company with gold production and exploration activities in West Africa. The company operates the Mana mine and is almost into commercial production of the Natougou deposit in Burkina Faso. This deposit, now identified as the Boungou Mine by SEMAFO, is located 320 km from the capital of Ouagadougou, in the south east of the country.

Working from the Toronto office, Lycopodium completed a positive Feasibility Study in February 2016 which confirmed the economic viability of an open pit, carbon in pulp project. In May 2016 Lycopodium was awarded the contracts for the provision of offshore EP (engineering, procurement and project management) services, and onshore CM (field engineering, construction management and commissioning) services. Approval of SEMAFO's mining permit was received from the Government of Burkina Faso in December 2016 and site works commenced soon after.

Lycopodium's scope of work included the EPCM for the greenfield process plant and associated facilities.

The process plant concrete works commenced in April 2017, plant construction work was completed in May with the wet commissioning completed in June 2018. The Lycopodium scope was completed under budget and ahead of schedule.

On June 28, 2018 SEMAFO reported to the markets that it had completed its first gold pour at the Boungou Mine, ahead of the original schedule.

"Dry and wet commissioning of the Boungou processing plant is now complete, as is its construction. The vertimill and SAG mill are working according to design and have achieved the designed hourly throughput and grind size. Commercial production is expected in August."

"The first gold pour at Boungou marks an important milestone in SEMAFO's growth trajectory as it signals the beginning of a significant increase in production and cash flow," said Benoit Desormeaux, President and CEO of SEMAFO. "This achievement reflects a true team effort that involved the hard work and commitment of our in-house construction team and external contractors, combined with the strong support of our local communities. This major milestone was achieved while maintaining an exceptional safety record of 5.5 million hours without lost-time injury."



The Venetia diamond mine, which opened in 1992, is De Beers Consolidated Mines' flagship operation. Situated 80 km from Musina in the Limpopo Province in South Africa, and involving an initial investment of \$400M (1990), the mine is South Africa's largest diamond producer. In 2015, Venetia produced 3.1 million carats of diamonds.

De Beers is now in the process of developing an underground mining operation at Venetia as it is approaching the depth limit of open-pit operations. The underground mine, which will replace the open pit mine, is expected to commence operation in 2022. During its lifetime, it will treat about 132 million tonnes of ore containing an estimated 94 million carats. It is expected to extend the life of the mine to 2046.

Lycopodium, through its South African subsidiary Lycopodium ADP (LADP), has been involved in successfully implementing various Plant Improvement Projects at the mine since 2011, specifically in the Reconcenrate Area as well as in the Recovery Plant.

LADP was engaged at the end of 2017 on a cost reimbursable basis to undertake the detail design of an X-Ray Transmission (XRT) facility to be incorporated into the Dense Media Separation (DMS) concentrate stream, in order to alleviate the bottle-neck that high yielding material creates in the final Recovery process.

The scope includes a modification of the existing Reconcenrate Building to incorporate a screening facility feeding an XRT machine and transferring the various products securely to the Recovery Plant. Tailings is fed back into the existing plant processing streams.

The project is scheduled for completion at the end of 2018.

Project Reviews *continued*

Project Aquarium New Integrated Sorthouse

Client: Debswana Diamond Company (Pty) Ltd

Location: Botswana

Sector: Diamonds

Project Upulo Graphite Project

Client: Triton Minerals Ltd (Grafex Lda)

Location: Cabo Delgado Province of Northern Mozambique

Sector: Minerals – Graphite



The Jwaneng mine is located in Southern Botswana, approximately 120 km west of the city of Gaborone, and is owned by Debswana (a partnership between De Beers and the Government of Botswana).

Debswana currently has an old stand-alone Sorthouse facility located at Jwaneng that is handling concentrate produced from all of the Debswana mines. A decision was made to relocate and integrate this final diamond sorting facility into the existing Fully Integrated Sorthouse (FISH) building (located at the mine). The objective of the new Sorthouse facility is to handle up to 50 million carats of diamonds per annum.

Debswana engaged Lycopodium, through its local Botswana office ADP Kukama (ADPK), on a cost reimbursable basis to undertake the detail design of the new Sorthouse.

The scope includes the integration of various gloveboxes into an existing materials handling system (including inventory control, transaction recording and auditing integration) and providing the required office space and recreational areas required for the Sorters. The gloveboxes are used to manually sort tailings from the source material and will export a minimum of 99.5% diamond by weight to the Debswana Diamond Trading Centre located in Gaborone.

The project is scheduled for completion at the end of 2018.

In February 2018, Lycopodium ADP was awarded a Project Management Consultant (PMC) contract for the delivery of Upulo Graphite project, located near Pemba in the Cabo Delgado Province of Northern Mozambique. Lycopodium ADP personnel are working on behalf of the Owner's team, providing engineering, project management, procurement and construction management services on a cost reimbursable basis.

The project comprises the delivery of an open pit mine and a processing plant. The plant includes crushing, milling, flotation, drying, filtering and associated infrastructure and is capable of producing 60,000 tonnes per year of high quality graphite concentrate.

The project's capital cost is estimated at US\$90 million and the forecast completion date is November 2019.

Triton intends delivering the project with a single Chinese EPC contractor, with the contract scope including detailed engineering design, procurement and construction of the process plant and infrastructure.

The PMC scope comprises three stages:

- Stage 1a – Front End Engineering & Design (FEED).
- Stage 1b – Preparation of a procurement package for the EPC contractor.
- Stage 2 – Providing PMC services in China during the detailed engineering and procurement phase.
- Stage 3 – Providing PMC services in Mozambique during the construction and commissioning phase.

The Stage 1 services are almost complete, with EPC bid adjudications currently underway.

Construction activities commenced in May 2018 (focusing on the access road and the water storage facility). The Stage 2 services are scheduled to commence in August 2018, with the EPC contractor mobilising to site in February 2019. The forecast project completion date is November 2019.

Project Altona Salt Reduction Plant – HCL Plant Upgrade

Client: City West Water
 Location: Victoria
 Sector: Environmental

Project Bitumen Mixing Facility Upgrade

Client: Denso (Australia) Pty Ltd
 Location: Victoria
 Sector: Manufacturing

Lycopodium designed and constructed on a D&C basis a new HCL dosing system for delivery of HCL liquid to RO units at the CWW Altona Salt Reduction Plant. The project was delivered on a Brownfield site under a lump sum contract with no interruption or impact to plant operations.

Lycopodium was responsible for the design of the concrete bund area, new pipe bridge, integration of pipe work and tie-in to the existing plant including installing new pipe work to existing tanker unloading area.

Lycopodium’s scope of supply included:

- Fill point
- Chemical delivery pipework (double containment) to new Storage tank
- Storage Bund
- Roofing (over the bunded area)
- Mechanical Equipment (GRP tank, catch pot, pumps, valves and internal pipework)
- Instrumentation
- Chemical delivery pipework (double containment) from storage area to process tie-in.

The project was delivered under budget and on schedule.



Denso has recently undertaken the relocation of its manufacturing operations to a new purpose built facility in Campbellfield, Victoria. As part of a relocation to the new facility, Denso took the opportunity to upgrade its bitumen storage and manufacturing capability.

Lycopodium assisted Denso with the design and construction of the new production facility including the detail design of the product blending tanks, heating, agitation and product transfer systems. The project was delivered on a Greenfield site under a lump sum contract.

Lycopodium performed all project services including the Detail Design and Engineering, chairing Design Review and HAZOP workshop, Procurement, Construction Management, Pre-commissioning and assistance with Client product commissioning.

The project was delivered on schedule with no safety or environmental incidents..

Project Reviews *continued*

Project Concentrate Treatment Plant Define Phase Study

Client: OZ Minerals – CTP Operations Pty Ltd

Location: South Australia

Sector: Infrastructure

Listed on the Australian Securities Exchange, OZ Minerals is a copper-focused international company. From its base in South Australia, the company owns and operates Prominent Hill, a high quality copper-gold mine and Carrapateena, a copper-gold project at an advanced development stage.

Prominent Hill is solely owned by OZ Minerals and produces one of the highest grades of copper concentrate traded on the open market. The asset comprises an open pit mine, underground mine and a conventional crushing, grinding and flotation processing plant.

Carrapateena is one of Australia's largest undeveloped copper deposits, and when operational, will be a 4.25 Mtpa underground mine operation with an estimated mine life of 20 years. Once completed, infrastructure on site will include an accommodation village, airstrip, processing plant and tailings storage facility. Commissioning is scheduled for 4Q2019 after which the project will ramp up to steady state production.

Oz Minerals is also currently completing a Definition Phase Study for the development of a Concentrate Treatment Plant (CTP) to significantly increase copper-in-concentrate grades and reduce impurities to very low levels. The plant combines new chemistry with existing technology, converting chalcopyrite and bornite into chalcocite by leaching out iron and other impurities.

It is considered a strategic differentiator, producing a very high-grade, clean concentrate to set OZ Minerals apart from other concentrate producers.

Lycopodium is providing civil engineering support services for the DFS phase which comprises earthworks, road design, rail design, hydrology and general non-process infrastructure.

Project Rail Infrastructure Maintenance (RIM) Services

Client: Pacific National

Location: Australia wide

Sector: Infrastructure



Pacific National is Australia's largest rail provider, hauling coal, steel, automotive, agricultural, minerals and containerised freight to all mainland states and territories in Australia.

The company was formed back in 2002 with Toll's acquisition of the National Rail Corporation and FreightCorp. Since then, the business has expanded exponentially across Australia.

Pacific National has a fleet of more than 600 locomotives and 12,000 wagons and offers 900 services a week across Australia. With a network of intermodal freight terminals, the company offers a large network of rail freight capabilities to some of Australia's biggest companies located in rural and regional communities.

Lycopodium has recently been engaged by Pacific National, on a 3 year plus 1 year agreement, to inspect, certify and manage defects at 62 sites Australia wide.

Inspections at these sites commenced in April 2018 requiring substantial prior planning and groundwork. The contract has allowed for three inspectors to be fully utilised between routine track inspections and detailed yearly inspections, in addition to the required office staff.

The take up of Pacific National inspections allows for significant economic benefits of existing RIM (rail infrastructure maintenance) business through mobilisation sharing and the use of local inspectors. Since take up, Lycopodium's scope has already grown to derailment investigations, special / adhoc inspections and geotechnical investigations.

RIM services provide strategies and systems to provide infrastructure which is fit-for-purpose and ensure risk is managed as per the requirements of rail safety legislation and deliver a safe and efficient operation. These services also focus on maintenance, longer-term issues and use the latest technology to optimise life cycle costs and facilitate informed and timely decision making.

Project Jimblebar Mobile Maintenance Facility

Client: BGC Contracting Pty Ltd
 Location: Western Australia
 Sector: Infrastructure

Project Mining Area C – Maintenance Strategy Development Services

Client: BHPIO Pty Ltd
 Location: Western Australia
 Sector: Infrastructure

BGC Contracting Pty Ltd (BGC) is one of Australia’s largest private mining and construction contractors and provides mining and construction services across the resources, energy and infrastructure sectors.

BGC has been engaged to undertake the design and construction of new and refurbished Mobile Maintenance facilities at the Jimblebar Mine, one of BHP Billiton’s (BHP) iron ore sites in the Pilbara region of Western Australia, some 40 km east of Newman. The Mobile Maintenance Facility Upgrade will support expansion of the mine’s fleet capacity.

Previously, Lycopodium designed the Citic Pacific Mining warehouse and workshop which was ultimately constructed by BGC. Recognising the quality of design and support provided on that project, BGC invited Lycopodium to tender and subsequently awarded design services for the Jimblebar project.

To date Lycopodium has completed detailed design, working collaboratively with BGC in the design process to ensure that construction considerations were captured at the design stage. Lycopodium continues its involvement in the construction phase of the project with ongoing secondment and design support services.



Mining Area C (MAC) is a BHP Iron Ore (BHP) open cut iron ore mine, 92 km from Newman in the Western Australia Pilbara region.

Operating 24 hours a day, 365 days of the year, the MAC mine activities include drilling, blasting, loading, hauling, processing, train loading, maintenance and infrastructure management.

To enable Maintenance Department of BHP to operate and maintain their assets to increase reliability and availability, Lycopodium is providing Maintenance Strategy Development services in two separate areas of the MAC site: the Top Laboratory (where quality assurance / quality control of the iron ore takes place) and the Power Station.

Using SAP (the Computerised Maintenance Management System), at the Top Laboratory, Lycopodium services include:

- Review existing Functional Location structure, a review of the asset register to ensure it matches assets in the field
- Review Equipment Criticality, developing the maintenance strategy for the equipment
- Construct Maintenance Strategies for all lab assets, for example the Laboratory Robot, Crusher / Splitters, Mills, Liner Conveyors, Weigh Scales, Dust Extraction System and Automatic Ovens
- Develop Preventative Maintenance Documents, checklist documents that itemise the assets requiring maintenance inspections and those tasks required for each asset
- Develop Work Instruction Documents, step by step instructions as to how to do a certain task, usually for the bigger more complex tasks like a crusher / splitter overhaul

At the Power Station, key activities include:

- Technical Object Structure and Construction Assemblies, a review of the asset register to ensure it is correct as per the assets in the field
- Work Strategy Worksheet Development, spreadsheets that contain the compiled existing maintenance tasks for the assets for ease of review / modification
- PMI and Record Form Development, to itemise assets that require maintenance inspections and the tasks required
- Load Work Strategy Master Data into SAP
- Delete redundant Data, data that may have been replaced by any new maintenance
- Maintenance Work Centre Resource Levelling, to ensure the newly implemented maintenance can be fully resourced and executed.

Finance Results *(Unaudited)*



Consolidated

	2018 \$	2017 \$
Revenue	194,568,891	216,616,442
Employee benefits expense	(67,562,580)	(61,898,213)
Depreciation and amortisation expense	(1,228,479)	(1,171,764)
Project expenses	(17,418,251)	(9,843,966)
Equipment and materials	(23,838,936)	(74,207,912)
Contractors	(41,753,703)	(38,255,322)
Occupancy expense	(8,577,494)	(8,052,368)
Impairment of goodwill	(1,095,048)	(263,242)
Other expenses	(8,793,785)	(9,540,001)
Loss on disposal of asset	(2,080)	(1,634)
Finance costs	(120,741)	(93,651)
Share of net profit of associate and joint venture accounted for using the equity method	1,112,681	1,019,251
Profit / (Loss) before income tax	25,290,475	14,307,620
Income tax (expense) / benefit	(6,957,088)	(3,934,091)
Profit / (Loss) for the year	18,333,387	10,373,529
Non Controlling Interests	(163,201)	(81,446)
Profit/Loss attributable to owners of Lycopodium Limited	18,170,186	10,292,083
Dividend (fully franked) (cents)		
Interim	12.0	9.0
Final	18.0	9.0
Total Dividend	30.0	18.0
Shares on issue	39,732,373	39,732,373
(\$ Share price as at 30 June	4.65	3.15
Earning per share (cents)	45.7	25.9
Price earnings ratio	10.2	12.2
Net tangible assets per share (cents)	182.6	155.5

Balance Sheet *(Unaudited)*

	<i>Consolidated</i>	
	2018 \$	2017 \$
ASSETS		
Current assets		
Cash and cash equivalents	74,287,788	85,334,769
Trade and other receivables	37,616,637	36,919,288
Inventories	819,844	327,430
Derivative financial assets	-	164,994
Current tax receivables	1,334,151	1,344,040
Other current assets	1,740,851	2,149,687
TOTAL CURRENT ASSETS	115,799,271	126,240,208
Non current assets		
Investments accounted for using the equity method	2,767,690	2,227,735
Available-for-sale financial assets	1,256,106	102,963
Property, plant and equipment	3,434,487	3,174,174
Intangible assets	6,792,017	7,421,173
Other receivables	332,356	442,616
Deferred tax assets	8,350,798	3,797,930
Total non current assets	22,933,454	17,166,591
Total assets	138,732,725	143,406,799
LIABILITIES		
Current liabilities		
Trade and other payables	31,749,229	64,080,967
Borrowings	696,905	509,731
Derivative Financial Liabilities	27,694	-
Current tax liabilities	9,568,881	3,978,266
Provisions	16,361,009	4,280,795
Total current liabilities	58,403,718	72,849,759
Non current liabilities		
Borrowings	562,066	832,912
Provisions	416,531	500,796
Total non current liabilities	978,597	1,333,795
Total liabilities	59,382,315	74,183,467
Net assets	79,350,410	69,223,332
EQUITY		
Contributed equity	20,823,772	20,823,772
Reserves	(689,039)	(988,042)
Retained earnings	56,238,757	46,412,369
Parent entity interest	76,373,490	66,248,099
Non-controlling interest	2,976,920	2,975,233
Total equity	79,350,410	69,223,332

Shareholder Information

The shareholder information set out below was applicable as at 31 August 2018.

A. Distribution of equity securities

Analysis of numbers of equity security holders by size of holding:

		Total Holders
1	-1000	338
1001	-5000	464
5001	-10000	135
10001	-100000	163
100,001+		28
		1,128

There were 76 holders of less than a marketable parcel of ordinary shares.

B. Equity security holders

The names of the twenty largest holders of quoted equity securities are listed as:

Name	Number held	percentage of Units
1 Reesh Pty Ltd	9,104,367	22.91
2 HSBC Custody Nominees (Australia) Limited	4,981,300	12.54
3 BNP Paribas Nominees Pty Ltd	3,235,157	8.14
4 Luala Pty Ltd	3,167,332	7.97
5 JP Morgan Nominees Australia Limited	3,067,569	7.72
6 Caddy Fox Pty Ltd	2,154,215	5.42
7 Accede Pty Ltd	1,272,332	3.20
8 Citicorp Nominees Pty Ltd	821,000	2.07
9 Monadelphous Group Limited	603,511	1.52
10 Mr David James Taylor	447,635	1.13
11 De Leo Nominees Pty Ltd	407,900	1.03
12 Mr Peter De Leo & Mrs Tiana De Leo	407,071	1.02
13 De Leo Nominees Pty Ltd	348,800	0.88
14 RBC Investor Services Australia Nominees	252,484	0.63
15 Citicorp Nominees Pty Limited	265,475	0.67
16 Selso Pty Ltd	266,148	0.67
17 Lycopodium Share Plan Pty Ltd	235,000	0.59
18 Fifty Second Celebration Pty Ltd	202,947	0.51
19 Botech Pty Ltd	188,959	0.48
20 Nancris Pty Ltd	175,000	0.44
TOTAL	31,604,202	79.54

C. Substantial holders

Substantial holders in the company are set out below:

Name	Number held	percentage of Units
1 Reesh Pty Ltd	9,104,367	22.91
2 HSBC Custody Nominees (Australia) Limited	4,981,300	12.54
3 BNP Paribas Nominees Pty Ltd	3,235,157	8.14
4 Luala Pty Ltd	3,167,332	7.97
5 JP Morgan Nominees Australia Limited	3,067,569	7.42
6 Caddy Fox Pty Ltd	2,154,215	5.42

Corporate Directory

Directors

Michael (Mick) John Caratti
Peter De Leo
Rodney (Rod) Lloyd Leonard
Bruno Ruggiero
Robert (Bob) Joseph Osmetti
Lawrence (Laurie) William Marshall
Steven (Steve) Chadwick
Peter Dawson

Company Secretary

Keith Bakker

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Auditor

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