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## Quarterly Activities Report - March 2016

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Clean TeQ Holdings Limited  
ACN: 127 457 916  
(ASX: CLQ)

**Corporate Information:**

418.0M ordinary shares  
33.0M unlisted options  
2.6M performance rights  
\$4.9M cash at bank

**Directors:**

Executive Chairman  
Sam Riggall

Executive Director  
Peter Voigt

Non-Executive Director  
Eric Finlayson

Non-Executive Director  
Roger Harley

Non-Executive Director  
Ian Knight

**Company Secretary:**

Melanie Leydin

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### Highlights

- **First Production of High Purity (99.9%) Scandium Oxide from Demonstration Plant – samples dispatched to potential customers**
- **Scandium collaboration agreement signed with Universal Alloy Corporation and Deakin University**
- **Resource update confirms Syerston as one of the world's largest and highest grade scandium deposits**
- **Syerston Feasibility Study on track for completion in June 2016**

### Clean TeQ Overview

Clean TeQ Holdings Limited (**Clean TeQ** or **Company**) is a leader in environmental innovation. Our vision is to create a globally significant business which is focused on providing clean solutions to a range of industries using our proprietary Clean-iX<sup>®</sup> continuous ion exchange technology. We are focused on the markets and ventures where our unique technology is best placed to unlock significant long term value for shareholders – metals recovery and industrial water purification.

**Metals Recovery** – The Company's Clean-iX<sup>®</sup> Continuous Ion Exchange technology is an innovative hydrometallurgical process for the extraction and purification of a range of valuable metals from slurries and solutions that are not amenable to conventional separation.

Clean TeQ owns the Syerston Scandium Project in NSW. Through the development of Syerston, Clean TeQ has the opportunity to become the leading, and lowest cost, supplier of scandium to the global transportation industry.

**Water Purification** – Clean TeQ's Continuous Ionic Filtration & Exchange (CIF<sup>®</sup>) and Macroporous Polymer Adsorption (MPA<sup>®</sup>) resin technologies provide cost effective solutions to the mining, oil and gas and municipal industries for the treatment of waste waters. Our technologies are designed to cope with the most demanding waters to provide best in class performance in water recovery and operability.

## Clean TeQ Metals

### Syerston Scandium Project Feasibility Study

Clean TeQ is the 100% owner of the Syerston Scandium Project in central New South Wales. During the March 2016 quarter, activities were primarily focused on the ongoing feasibility study works for the project including:

- Pit optimisation studies focused on determining optimal pit dimensions and strip ratios for estimation of mining capital and operating costs and ore reserves;
- Finalisation of the flow-sheet design for the processing facilities and tailings storage facility; and,
- Commencement of detailed plant and equipment costing.

The feasibility study is progressing on schedule with results expected to be released to market in June 2016.

### Syerston Scandium Resource Update

The Scandium Mineral Resource was updated during the quarter based on the inclusion of data from drill programs undertaken in May and November 2015. The updated Mineral Resource estimate (detailed below) confirmed the significant high-grade scandium mineralisation present at shallow depths in the laterite soils.

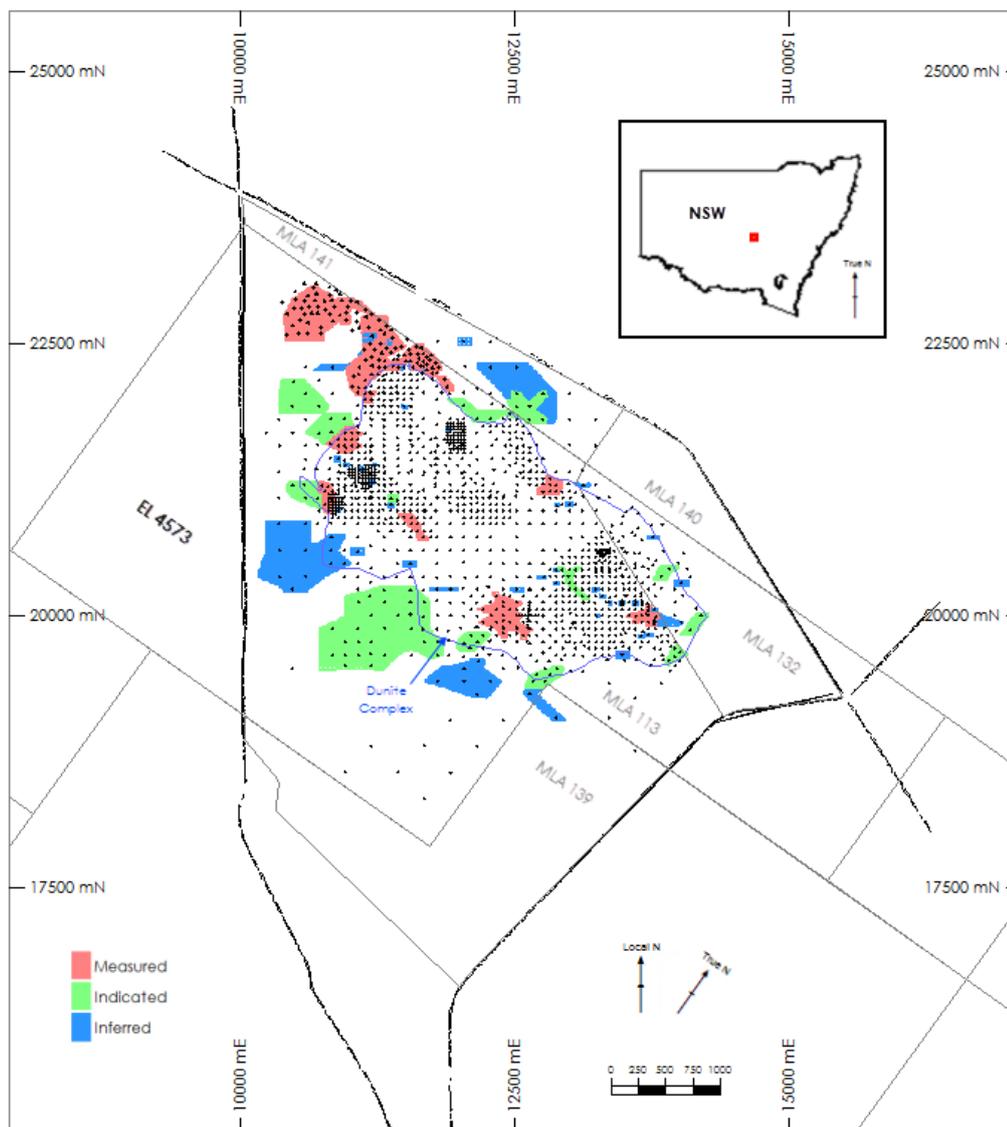
#### Syerston Scandium Mineral Resource Estimate (for full details see announcement of 17 March 2016)

Cut-off	Classification Category	Tonnage Mt	Sc Grade ppm	Sc Tonnes	Sc <sub>2</sub> O <sub>3</sub> Equiv Tonnes*
Sc >300ppm	Measured	5.8	454	2,635	4,032
	Indicated	15.9	420	6,697	10,247
	Inferred	6.4	386	2,487	3,805
	<b>Total</b>	<b>28.2</b>	<b>419</b>	<b>11,819</b>	<b>18,083</b>
Sc >600ppm	Measured	0.6	685	394	603
	Indicated	0.8	663	545	834
	Inferred	0.1	630	57	87
	<b>Total</b>	<b>1.5</b>	<b>670</b>	<b>996</b>	<b>1,524</b>

\* Sc tonnage multiplied by 1.53 to convert to Sc<sub>2</sub>O<sub>3</sub>.

The outcomes of the program of work were highly successful:

- Approximately 94% of the high-grade mineralisation (calculated at a cut-off grade of >600ppm scandium), which is the focus of the Feasibility Study development plan currently underway, is now classified as Measured or Indicated.
- Of the global resource (calculated at a cut-off grade of >300ppm scandium), 77% of the deposit is now classified as Measured or Indicated.



**Syerston Scandium Resource Area**

The drill program was also successful in increasing the scandium Mineral Resources:

- A 22% increase to contained scandium in the high-grade portion of the Mineral Resource.
- A 12% increase to contained scandium in the global Mineral Resource.

The large volume of contained scandium provides Clean TeQ with the opportunity to create a long life mining operation with the ability to scale up production in future years to meet anticipated growth in demand for scandium oxide.

The updated Mineral Resource confirmed the very high grade of the deposit, with increases to the grades of the global resource as well as the high grade (>600ppm scandium) portion. The very high scandium grade in the Mineral Resource significantly increases the potential for Syerston to be the one of the lowest cost sources of primary mine production in the world.

The updated Mineral Resource estimate will be used as the basis for the Feasibility Study currently underway to confirm the capital and operating costs of a full-scale operation. Opportunities for by-product nickel and cobalt production are also being considered in the Feasibility Study to optimise the economics of the project.

### Syerston Scandium Marketing

Clean TeQ entered into a collaboration alliance agreement with Universal Alloy Corporation and Deakin University's Institute for Frontier Materials to investigate and promote the use of scandium in current and new aluminium alloys for aerospace components.

Universal Alloy Corporation (UAC), headquartered in USA, is a global supplier of extruded alloy aerospace components with a vertically integrated manufacturing process incorporating casting, extrusion, machining, surface treatment, kitting, and assembly.



*Universal Alloy's production facilities in Canton, Georgia USA*

Recognised as one of Australia's leading materials research organisations, Deakin University's Institute for Frontier Materials (IFM) focuses on innovation and development in materials science and engineering, with the aim of commercialising new, more cost-effective manufacturing technologies.

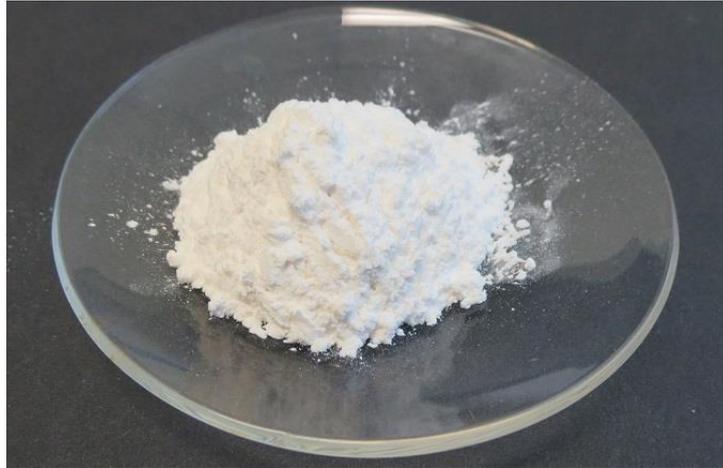


*Deakin University's IFM Facilities in Waurn Ponds, Victoria, Australia*

The collaboration alliance is focused on developing the next generation of lightweighting solutions for the commercial aerospace industry. The program of works, which is currently underway, includes casting and functional testing of a range of aluminium-scandium alloys. A critical objective is to identify the optimum scandium content to allow rapid and broad-based adoption of aluminium-scandium alloy components in lighter, more fuel-efficient commercial aircraft.

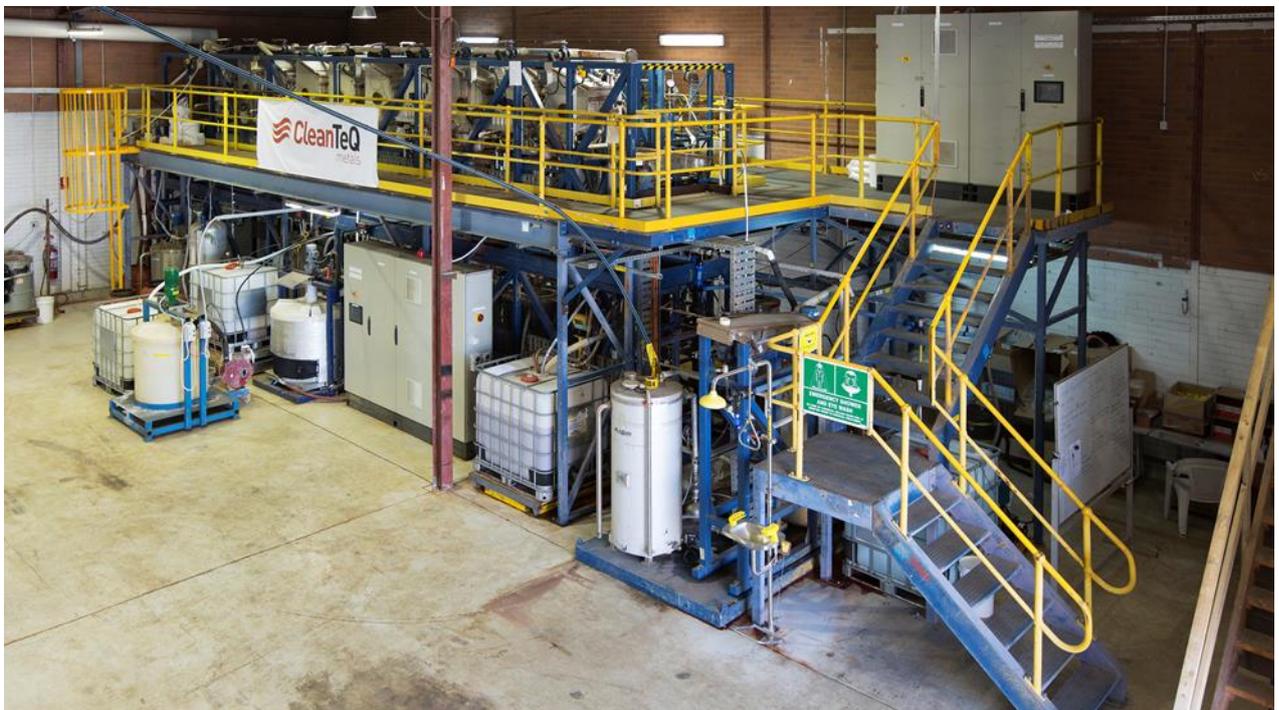
During the quarter the Company produced samples of high purity (99.9%) scandium oxide ( $\text{Sc}_2\text{O}_3$ ) which were dispatched to potential offtake customers in the aluminium and solid oxide fuel cell sectors. The samples were produced from processing of Syerston ore at Clean TeQ's scandium recovery and purification demonstration plant at ALS Metallurgy in Perth and the Clean TeQ laboratory facility in Victoria. Potential customer counterparties confirmed that the samples of scandium oxide met their required analytical (quality) specifications.

Clean TeQ also assisted in securing a supply of scandium master alloy for our collaboration partner, Universal Alloy Corporation (UAC). The master alloy will be used by UAC for testing in the development of extruded aluminium alloy components for the aerospace sector.



*High purity (99.9%) scandium oxide produced from processing of Syerston ore*

A key focus for the Company is securing offtake contracts to eventually support the levels of scandium oxide production proposed in the Scoping Study. As per the ASX announcement of 3 March 2016, Clean TeQ marketing personnel are working with a number of counterparties in the global aerospace and solid oxide fuel cell sectors with the aim of securing scandium oxide offtake contracts. In addition to these opportunities, a number of opportunities have been highlighted in automotive and space using Al-Sc sheet, welding wire, extruded parts and powder, which will provide other additional sources of offtake in the future.



*Clean TeQ's proprietary Resin-In-Pulp (cRIP) process demonstration plant*

With the Feasibility Study due to be completed in June 2016, the Company will continue its work over coming months to determine offtake requirements, including timeframes for supply, as well as pricing and other commercial terms, with the aim of securing binding offtake commitments.

**Mt Morgan Gold/Copper Project**

Clean TeQ and Carbine Resources Limited (ASX: CRB) entered into a memorandum of understanding in November 2014 to investigate commercial avenues for the companies to work together for the development of the Mount Morgan Gold/Copper project. As part of the Mt Morgan Feasibility Study process, Clean TeQ is working with Carbine to integrate the Clean-iX® process into the Mt Morgan processing flow sheet to recover copper, reducing cyanide consumption in the gold circuit, as well as producing a valuable copper by-product to improve overall project economics.

**Clean TeQ Water**

The Clean TeQ Water Division continues to promote our Continuous Ion Exchange technology with a particular emphasis on the Chinese water market.

In October 2014 Clean TeQ signed a Heads of Agreement (HOA) with Shanghai Investigation, Design and Research Institute Co. Ltd (SIDRI) to establish a local joint venture to target opportunities for projects in China deploying Clean TeQ's unique technology platform for water treatment. SIDRI is majority-owned by China Three Gorges Corporation, the state-owned Chinese power company responsible for construction of the Three Gorges Dam Project (the world's largest hydroelectric power plant) and one of the world's largest energy companies.

Although Clean TeQ and SIDRI have not yet agreed the detailed terms for the establishment and operation of the formal joint venture, both parties are continuing to work together to market the Company's technology and to seek commercialisation opportunities.

Given the extensive geography and market size for water treatment, we have also been engaging with other Chinese water companies to extend our reach and increase the potential of the technology being adopted. Since the signing of the SIDRI HOA we have conducted extensive trials of the technology platform in applications including the treatment of coal gasification wastewater and municipal wastewater treatment.

Clean TeQ has presented the technology and its applications to expert panels at a range of seminars in a number of northern Chinese counties and conducted local test work on several surface waters for remediation. The results of the test work have been very encouraging and, in particular, the positive results for the removal of deleterious nutrients (nitrogen and phosphorus) from surface waters. Surface water runoff from farms and the discharge of sewage effluent are the main causes of the eutrophication of rivers and lakes and this problem is a major concern for China. Eutrophication is the enrichment of an ecosystem with chemical nutrients, typically compounds containing nitrogen, phosphorus, or both. These chemical nutrients promote the growth of algae which have devastating effects on natural ecosystems.

Given the potential of this market, Clean TeQ has been working in cooperation with the Queensland Institute of Technology, on the development of an innovative treatment process based on our Continuous Ion Exchange technology. Local laboratory trials and field trials of the innovative CIF® process at potential customers' facilities have been successful in meeting Chinese water quality regulations and economic benchmarks. Our CIF® process has been accepted with enthusiasm by representatives of the counties and we are in discussions to implement our water solutions locally. These water treatment projects are aimed at reducing the inflow of polluted waters from industry into rivers and lakes and to upgrade the water quality of effluent discharged from wastewater treatment plants. We expect to be in discussions on the contractual arrangements of the first project in the next quarter.

The Company continues to have high expectations for the water market and is working towards securing commercial contracts in the near future.

## **Corporate**

As at 31 March 2016 cash at bank was \$4.9 million with an additional \$0.3 million cash on deposit securing performance guarantees.

**For more information about Clean TeQ contact:**

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**About Clean TeQ Holdings Limited (ASX: CLQ)** – Based in Melbourne, Clean TeQ, using its proprietary Clean-iX<sup>®</sup> continuous ion exchange technology, is a leader in metal recovery and industrial water treatment.

For more information about Clean TeQ please visit the Company's website at [www.cleanteg.com](http://www.cleanteg.com).

*This release may contain forward-looking statements. The actual results could differ materially from a conclusion, forecast or projection in the forward-looking information. Certain material factors or assumptions were applied in drawing a conclusion or making a forecast or projection as reflected in the forward-looking information.*