McLAREN MINERALS

ASX RELEASE

18th September 2025

Pre-Feasibility Study Update

Highlights

- **Engineering 95% complete** – The flowsheet has been confirmed and Capex and Opex estimates are close to final.
- **Assay Results** – The final assays are imminent and will flow into the Mineral Resource update. Mineralogical work is also underway.
- **Large, high-quality titanium deposit –** McLaren Project currently holds 280Mt @ 4.8% HM (JORC), containing approximately 4Mt of ilmenite.
- **Favourable logistics –** Located 350km by sealed road to Esperance Port, deep water with ability for vessels up to Capesize and abundant capacity due to recent mine closures.
- **Market Report from Specialised Mineral Services (SMS) Received**
    - Confirms McLaren ilmenite as a desirable feedstock for both sulfate pigment and chloride slag markets.
    - Reports new chloride slag capacity (10–12 furnaces), with a forecast TiO_2 supply deficit over coming years.
    - Supports McLaren PFS inputs and justifies pricing inputs
- **Low-risk development –** PFS designed around production of ~400ktpa ilmenite concentrate

Simon Finnis, Managing Director, commented:

"While it has taken far longer than we expected, or would have liked, the PFS for McLaren is now coming together. The last few steps are now underway and, notably, we have received our Independent Marketing Report that supports our development rationale regarding bringing a Sulfate Ilmenite product onto the market. Specifically, we have noted the growth in smelting of Sulfate Ilmenites for some time particularly in Europe and the Middle East, with the evolution in China now also clear; That process provides two product streams namely Pig Iron and Chloride Slag, rather than 1 using the Sulfate pigment process and means revenue is increased and waste generation is minimised. Our product has a very high combination of TiO_2 + Fe so a realistic consumption pathway would be through a smelter. Because of the high TiO_2 credits, Chloride Slag is a very popular feedstock for the Chloride Pigment producers. We have a very large inventory of Sulfate Ilmenite in our Resource already, so this market shift bodes well for McLaren as we move towards the production phase."

About Specialised Mineral Services Pty Ltd

Specialised Mineral Services is a bespoke independent consultancy and procurement business with expertise in the mineral sands and associated products area as well as the wider resource industry and logistics services, offering:

- Marketing services and offtake agreement negotiations
- Procurement of mineral sands concentrates and products
- Leading, supporting or reviewing project feasibility studies from scoping to bankable level.
- Supporting project funding and due diligences processes
- Management and corporate services

JORC classification	Tonnes (Mt)	HM grade (%)	In-situ HM tonnes (Mt)	Slimes (%)	Ilmenite (% of HM)	Rutile (% of HM)	Leucoxene (% of HM)	Zircon (% of HM)
Indicated	79	6.0	4.7	25.0	30.4	0.7	1.9	0.6
Inferred	201	4.4	8.8	25.4	29.0	0.7	2.1	0.6
Total	**280**	**4.8**	**13.5**	**25.3**	**29.4**	**0.7**	**2.0**	**0.6**

JORC classification	Tonnes (Mt)	HM grade (%)	Ilmenite tonnes (in situ) (kt)	Rutile tonnes (in situ) (kt)	Leucoxene tonnes (in situ) (kt)	Zircon tonnes (in situ) (kt)
Indicated	79	6.0	1,440	32	90	26
Inferred	201	4.4	2,550	60	182	54
Total	**280**	**4.8**	**3,980**	**92**	**272**	**80**

ERM Australia Consultants Pty Ltd (ERM), formerly CSA Global prepared a Mineral Resource estimate update for the McLaren heavy mineral sands (HMS) deposit. The purpose of the Mineral Resource estimate update was to incorporate assay and mineralogical analysis results received since the previous Mineral Resource estimate was completed in 2015. The Mineral Resource estimate is presented in Table 1 reported above a cut-off grade of 2% Heavy Mineral (HM) and less than 30% Slimes. The model has been classified as Indicated and Inferred in accordance with the JORC Code. The Mineral Resource estimate is an update to the Mineral Resource estimate prepared by CSA Global in 2015. Refer to ASX announcement dated 5 August 2024.

Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The JORC Code, 2012 Edition. Prepared by: The Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC).

This announcement contains references to announcements lodged on the ASX Platform on 5 Aug 24, 24 Sept 24, 29 Jan 25, 17 Feb 25, 24 Mar 25, 31 Mar 25, 24 Apr 25, 26 May 25, 18 August 25 and 29 August 2025. The Company confirms that there is no new information or data that materially affects these announcements, or the mineral resource estimates announced on 30 June 2022, 5 August 2024 and 9 September 2025, and that all assumptions underpinning the estimate continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

About McLaren Minerals Limited

McLaren Minerals is an exploration company focused on the future development of our high-value McLaren titanium project in the Eucla Basin of Western Australia. Titanium is considered a critical mineral and is essential for aerospace, defence and energy technologies.

This announcement has been authorised by the Board of Directors.

For further information, please contact:

Simon Finnis
Managing Director
McLaren Minerals
simon.finnis@mclarenminerals.com.au
+61 (0) 418 695 138

Paul Berson
Media and Investor Relations
Corporate Storytime
paul@corporatestorytime.com
+61 (0) 421 647 445

Appendix 1 – Sulfate Ilmenite Marketing Report Conclusions and Excerpts

McLaren Minerals Limited (ASX: MML) ("McLaren" or "Company"), has received a Sulfate Ilmenite Market Report from Specialised Mineral Services Pty Ltd, an expert in this field. The analysis confirms that the concentrate produced at McLaren will be in strong demand as the market pivots towards sulphate ilmenite as its preferred feedstock.

The main conclusions of the report were:

- Sulfate ilmenite is a key feedstock for the production of sulfate pigment and titanium slag;
- This is a growing segment with several ilmenite smelters coming online and quite a few more are under construction.
- These will have a preference for sulfate ilmenite as a feedstock;
- Low impurities are key to both applications with both processes having other distinct key quality considerations;
- One key quality criteria for titanium slag manufacture is the high TiO_2 + FeO + Fe_2O_3 content (>90%). The MML product has a combined content of ≥96%, well above the industry standard;
- Not all sulfate ilmenites are suitable for both pigment and titanium slag applications but the MML product meets the key criteria for both applications, so the product will be highly desirable in the market;
- Chloride slag has been, and will continue to be, a major contributor to the growth of the chloride pigment sector;
- With chloride pigment identified as the growth area for the production of titanium pigment, and with less natural titanium feedstocks available, the market will require new feedstock.

Titanium Minerals

Titanium Minerals – rutile, ilmenite, leucoxene and synthetic rutile – are the principal feedstock for pigment production which is the major use for titanium minerals, representing as much as 85-90% of the global consumption. Titanium minerals are used to make pure white, highly light refractive and ultra-violet light absorbing Titanium Dioxide (TiO_2) pigment for use in protective house and car paints; paper; plastics; ink; rubber; textiles; cosmetics; sun-screens; leather and ceramics. Titanium dioxide is non-toxic and biologically inert and can be safely used in foodstuffs and pharmaceuticals.

The only other significant application for TiO_2 feedstocks is the production of titanium sponge (metal). Titanium metal is super strong, lightweight and corrosion resistant and used in the construction of aircraft, spacecraft and motor vehicles, plus for medical implants. Its non-reactive properties make titanium one of the few materials the human body will not reject, consequently it is widely used in such medical operations as hip replacements and the installation of heart pacemakers. TiO_2 is designed, marketed, and sold based on specific end-use applications.

The current global demand for Titanium Feedstocks is ~8-9 million metric tonnes per annum of TiO_2 units, or c. 16-18Mt of 50% TiO_2 ilmenite, with demand expected to grow in excess of 9-10 million tonnes of Titanium Feedstock, or c. 16-18Mt of 50% TiO_2 per annum, in the coming years.

Sulfate ilmenite is predominantly used as a direct feedstock for sulfate pigment production or for slag manufacture, sulfate and chloride. Chloride ilmenite is the principal feedstock for production of synthetic rutile and chloride slag. Very few pigment producers can use chloride ilmenite (as a blended feedstock) to produce pigment directly.

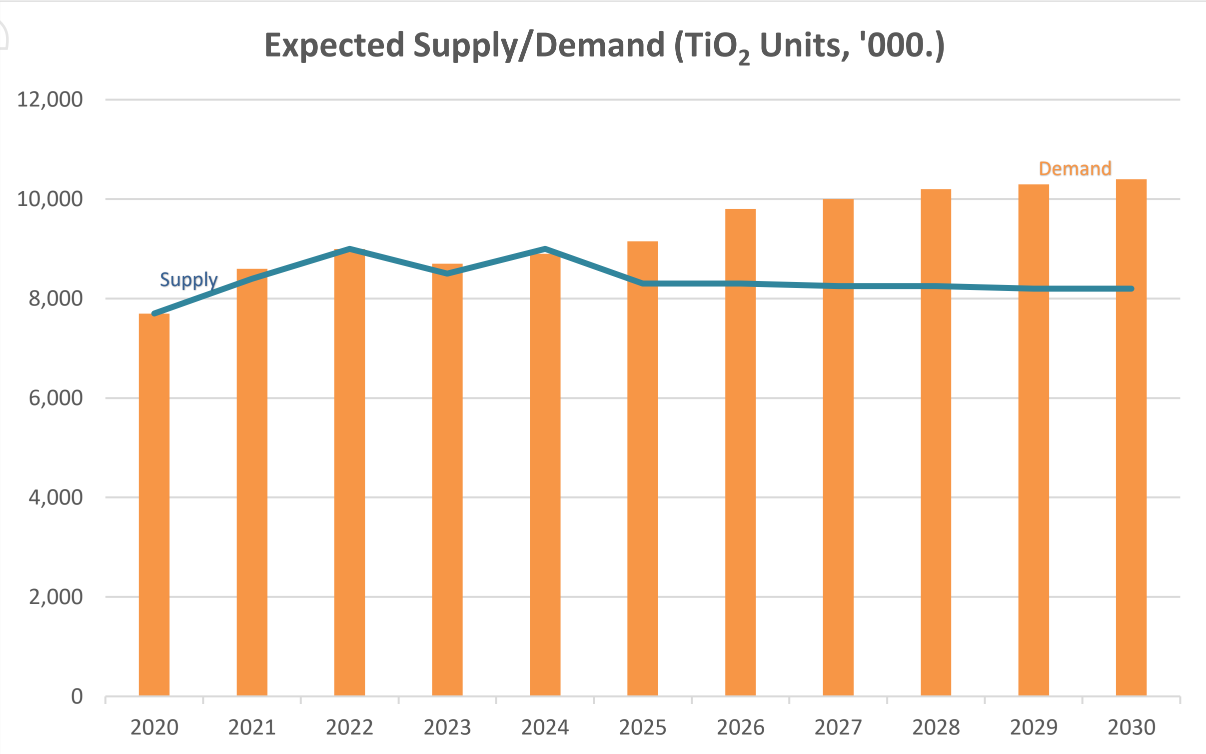

Figure 1 – Supply/Demand chart for TiO_2 Units globally.

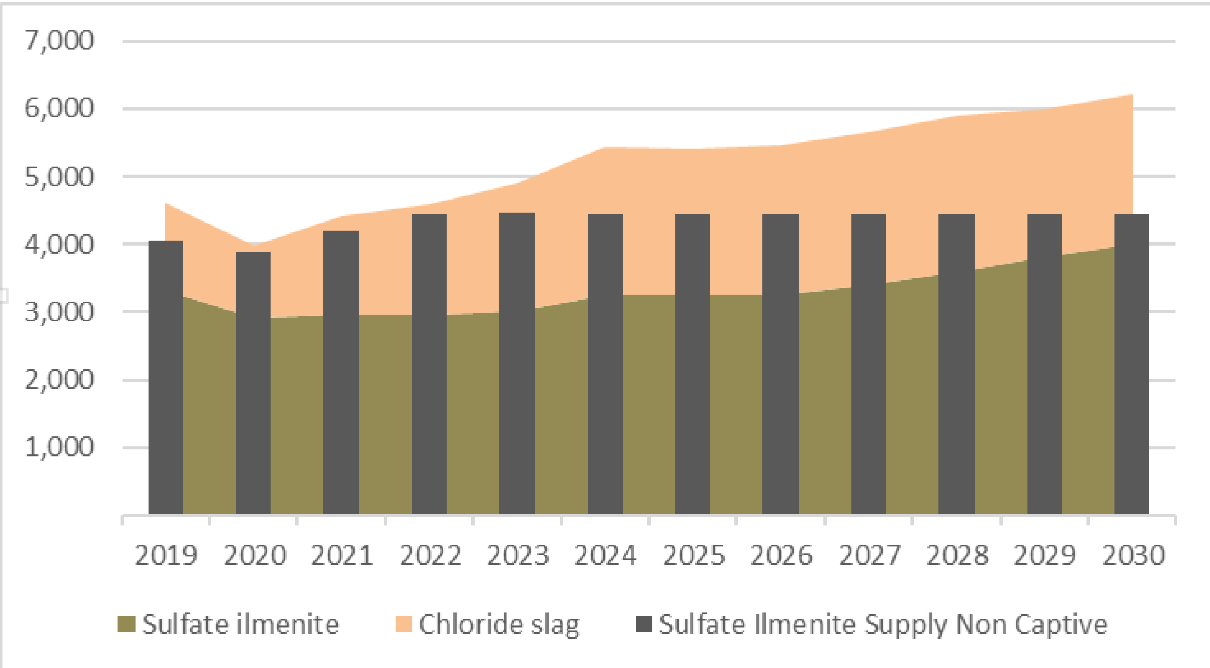

Figure 2 - Sulfate Ilmenite Demand Profile

Feedstock	TiO_2 Units	TiO_2 (%)	Metric Tonnes
Rutile	700,000	94%	744,681
Synthetic Rutile	650,000	92%	706,522
Chloride Ilmenite	750,000	64%	1,171,875
Chloride Slag	1,850,000	88%	2,102,273
Sulfate Slag	600,000	82%	731,707
Sulfate Ilmenite	3,000,000	50%	6,000,000
Other (Lx, UGS, CF)	850,000	85%	1,000,000
	8,400,000		12,457,058

Table 1 - Demand for titanium pigment feedstock – 2024 (+/- 10%)

Demand for titanium minerals has shown steady growth in recent years and with this strong demand, commodity pricing has been on the high side. Supply and demand dynamics are a fine balance and circumstances can change quickly. Twelve months ago, demand was extremely strong, and prices responded accordingly, with no clear sight to a slowing down of demand. In recent months with a slightly subdued China and global uncertainty around tariffs and anti-dumping there are concerns that we are heading into a difficult time to predict the market. Indications are that there could be a slow-down, however with the introduction of trade restrictions, it may be that there is a shift in the market in terms of the location of titanium pigment production.

Putting the current period aside, the long-term market fundamentals remain strong with demand expected to grow. The supply/demand graph shows a supply deficit of potentially ~2Mt of TiO_2units or circa 4Mt of 50% TiO_2 ilmenite, however it does not include any potential new supply entering the market. There are always a number of projects both in Australia and overseas that could come on stream, and equally, some existing older operations that start to reduce mineral output as they head towards mine depletion as mining becomes less economic or resources are depleted.

Titanium Pigment Production

There are two production methods for producing TiO_2 pigment. The sulfate pigment process, which is a batch process using sulfuric acid to upgrade the TiO_2, and the chloride pigment process, a continuous process that uses chlorine gas and petroleum coke to upgrade the material to TiO_2 pigment.

TiO_2 pigment producers use a range of feedstocks with varying levels of TiO_2, which is generally blended (price driven). Higher quality feedstocks (rutile, synthetic rutile, chloride slag) are usually associated with the production of chloride TiO_2 pigment.

Historically, the production of either sulfate or chloride pigment was dominated by western groups, however in the last 20-25 years the Chinese have developed their own capacity to produce sulfate pigment. Today the Chinese dominate the sulfate pigment sector and have been developing their chloride pigment technology over the past 10-15 years. Chloride pigment plants take many years to perfect their operations.

Both processes have distinct advantages and disadvantages. The sulfate process is cost-effective and flexible, while the chloride process offers higher purity and less waste but requires higher-grade materials. Cost versus quality.

The sulfate pigment process is older technology and has developed over time to be flexible in terms of the selection of raw material. It primarily uses sulfate ilmenite, chloride fines or titanium slag, all of which are more readily available and generally less expensive than the raw materials required for the chloride pigment process. This flexibility allows producers to source feedstock from a wider range of suppliers, which potentially lowers costs.

In contrast, the chloride pigment process uses high-grade feedstocks (usually rutile or upgraded titanium feedstock). This ensures that the end product, the titanium pigment, is of higher purity, which results in better performance in most applications. Pigment produced using the chloride pigment method usually has less waste and superior whiteness, however, is much more expensive to produce.

An alternative market for sulfate ilmenite is the welding electrode market, estimated market size of circa 280,000-340,000 TiO_2 units. Although the preference for feedstock in this market is rutile, leucoxene and or chloride slag, these products are priced significantly higher than sulfate ilmenite and consumers use sulfate ilmenite as a cheaper feedstock option. Grain size is an important quality consideration with coarse grained material preferred, >90-micron D-50. Chemically sulphur and phosphorus levels are the key considerations and MML sulfate ilmenite fits into this market as a potential feedstock.

Titanium Slag Production

Titanium slag manufacture is not a new technology and has been used globally to produce suitable feedstocks for the production of both sulfate and chloride pigment for a number of years. To produce slag each process uses an electric arc furnace (EAF) to upgrade the titanium content to the suitable level for either application. The furnaces are used to separate the two main minerals contained within the ilmenite (titanium and iron). The iron content in the ilmenite provides suitable thermodynamic conditions for smelting to take place and high-grade pig iron (HPPI) is produced as a valuable co-product of the process.

A key component for chloride slag manufacture is the combination of TiO_2 + Fe_2O_3 + FeO, chloride slag producers prefer this level to be >90%. A major competing product to titanium slag is synthetic rutile (SR). Titanium slag, as a feedstock for chloride pigment production, has a distinct advantage over SR as the TiO_2 + Fe_2O_3 + FeO at > 90% has very little waste in comparison to SR, plus the HPPI that is produced is of value and can be sold easily into the steel industry.

As mentioned, there are two types of titanium slag that are produced, sulfate and chloride slag. Sulfate slag is used for the production of sulfate pigment and typically has a TiO_2 grade of 75-80% TiO_2 and with suitable low levels of impurities. The feedstocks for the production of sulfate slag are typically lower grade ilmenites.

Chloride slag is used for the manufacture of chloride pigment and typically has a grade of >85% TiO_2 and low level of contaminants. The typical feedstock is higher grade sulfate ilmenite. For production of either titanium slag there needs to be consideration of the level of impurities. The impurities for sulfate slag are in line with the requirements for sulfate ilmenite.

Key quality considerations for chloride slag manufacture consider both the manufacture of chloride slag and also chloride pigment, as the slag is the feedstock to produce the pigment.

Titanium slag is a major source of raw material that is supplied to pigment companies. In more recent year's titanium slag has replaced other TiO_2 minerals, including synthetic rutile as the main source of feedstock for titanium pigment manufacture. The growth in the chloride slag sector has been driven by the lack of other high end TiO_2 products, in particular rutile. Over the past 3-4 years there has been a major decline in rutile availability forcing the change to feedstock requirements for chloride pigment. Therefore, the higher quality chloride slag is driving the forecast growth in the titanium pigment industry as many new plants are being built, particularly in China, to meet the forecast growth for chloride pigment.

Traditional chloride slag manufacturers include:

Rio Tinto - Operations in Canada, South Africa and Madagascar;

Tronox - Operations in South Africa and Europe;

AMIC – Reasonably new entrant who acquired the previously owned Cristal Mining chloride slag plants in Saudi Arabia. AMIC are looking to increase their chloride slag capacity as they finalise commissioning of the furnaces.

A new plant is also being built in Oman which will further support growth opportunities globally.

However, the biggest growth area is in China as the Chinese look to advance their chloride pigment production. There are a number of chloride pigment groups perfecting their operations and looking to increase production, plus there are a number of new entrants into the titanium pigment industry. It is reported there are at least 10-12 new slag furnaces either close to completion or expected to be in operation in the next 1-2 years.

Growth of Titanium Slag Production

The AMIC chloride slag furnaces located in Jazan, Saudia Arabia have a capacity to produce circa 500kmt/year of chloride slag and 250kmt/y of pig iron in their two slag furnaces, requiring up to 900kmt/y of slag feedstock, i.e. Sulfate ilmenite at 50% TiO_2. Reports are that AMIC has successfully commissioned furnace-1 and has plans to commission furnace-2.

A new operation is currently under construction in Oman which is owned by a consortium and reports indicate that this group plan to build three new electric arc slag furnaces with a chloride slag output of 150kmt/y, requiring up to 300kmt/y of Sulfate ilmenite (at 50% TiO_2) as feedstock.

China is a major growth market for chloride pigment and as such there are several new chloride slag furnaces either planned for, or under construction. There is a least six new furnaces, all in an advanced stage of construction with up to 750kmt/y capacity, requiring up to 1.3Mmt/y of Sulfate ilmenite (at 50 TiO_2 %). There are also reports of several existing operations looking to expand their capacity with chloride slag and chloride pigment production volumes unclear.

Table 2 (below) tabulates current operations, including newer entrants. The range is used because of the opaque nature of the Chinese participants. Wherever there is any doubt, the figures used are conservative and the expectation is that volume quoted is underestimated.

The main conclusion is that slag capacity is growing and is supporting growth particularly in chloride pigment production. The increase in slag production flows onto increased demand for sulfate ilmenite that meets the quality requirements for the slag operations.

This does not change the demand for sulfate ilmenite required for sulfate pigment production, in fact, it puts more pressure on both routes for pigment production.

This growth provides a compelling argument for bringing additional Sulfate ilmenite into the market.

	Slag Production Capacity		**Feedstock Requirements**	
	(Tonnes in a Range)		**(Approx. Tonnes at 50% TiO_2)**	
Existing Projects	Low	High	Midpoint of Capacity Range	**Location**
RBM	900,000	1,100,000	2,000,000	South Africa
Tronox	380,000	420,000	800,000	Multiple
Lomon Billions	370,000	420,000	790,000	Multiple
RTFT	280,000	320,000	600,000	Canada
AMIC	230,000	270,000	500,000	Saudi Arabia
Ineos Norway	200,000	240,000	440,000	Norway
Yansteel	150,000	180,000	330,000	Tangshan
Mengda	140,000	160,000	300,000	Mongolia
Fengcheng	55,000	65,000	120,000	Liaoning Province
Jiuxing	22,000	27,000	49,000	Liaoning Province
Kunming Yungao	22,000	25,000	47,000	Yunnan Province
China Other (Approx)	500,000	600,000	1,100,000	China
Current Capacity	**3,249,000**	**3,827,000**	**7,076,000**	
New Projects				**Location**
Sohar Titanium	150,000	150,000	300,000	Oman
Yansteel Stage 2	320,000	320,000	640,000	Tangshan
Anhui Titanium	200,000	200,000	400,000	Anhui
AMIC	250,000	250,000	500,000	Saudi Arabia
Total under construction	**920,000**	**920,000**	**1,840,000**	
Potential Total	**4,169,000**	**4,747,000**	**8,916,000**	

Table 2 – Slag production Capacity – Existing and under construction.