

# Pippingarra HPQ Testwork and Ore-Sorting

## Stage 2 HPQ Processing Completed and Laboratory Analysis in Progress

### 80t Bulk Sample Prepared for Shipping Last Week

#### Highlights

- Stage 2 HPQ testwork has commenced on a two-tonne pegmatite sample from Pippingarra, showing positive preliminary observations pending final verification. This follows the promising Stage 1 testwork completed in late 2024 that justified proceeding to this advanced testing phase.
- Significant market interest has been generated based on general information shared by IND, with an 80 tonne bulk samples being prepared for dispatch to interested parties.
- Market assessment activities are expanding beyond China to include potential HPQ consumers in Japan, South Korea and Taiwan.
- Implementation of on-site ore-sorting technology is being investigated as a potential pathway to enhance production efficiency at Pippingarra.
- Initial ore-sorting trials have demonstrated potential for feldspar and mica recovery as valuable co-products.



Figure 1: Processed ore samples in 1.5 tonne bulka bags ready for shipment

Industrial Minerals Ltd (ASX: IND or the Company) is pleased to provide an update on the High Purity Quartz (HPQ) beneficiation testwork program and ore-sorting trials being conducted in China. IND is focused on the development of high-value industrial mineral resources, with its flagship Pippingarra project targeting the growing global market for high purity quartz products used in advanced manufacturing, semiconductor, solar, and electronics industries.

**IND's Managing Director Jeff Sweet commented:**

*"The Stage 2 testing program represents an important milestone in our evaluation of the Pippingarra HPQ potential. We look forward to receiving the detailed analytical results which will require appropriate verification before they can be disclosed to the market."*

*"The bulk sample now ready for shipment from Port Hedland will allow interested parties to conduct independent evaluations, which is a necessary step in the assessment process."*

*"The preliminary ore-sorting trials have provided valuable insights about potential processing approaches. The ability to produce feldspar and mica as co-products could significantly enhance overall resource utilisation and project economics. We are continuing to evaluate options that may optimise the project's development pathway."*

**High Purity Quartz Beneficiation Testwork**

IND has established a strategic partnership with NANCHANG HENGSHUI INDUSTRIAL & COMMERCIAL COMPANY LIMITED (NHICCL) to oversee a comprehensive HPQ Beneficiation test program in Lianyungang, China. NHICCL has leveraged its established industry connections, engaging HPQ processing experts to conduct the testwork in conjunction with its team. The China HPQ market is predominantly located around Lianyungang, where NHICCL has access to specialised HPQ pilot laboratory facilities that have been utilised for this test work.

The test work program has been structured in progressive stages, with Stage 1 being successfully completed in late 2024. Building on those promising results, IND has now completed the processing phase of Stage 2 by processing a larger two-tonne sample in March 2025. Laboratory analysis of the processed material is currently underway, with results pending.



Figure 2: HPQ processing testwork

### Stage 2 Testwork Process Steps

The Stage 2 testwork encompasses the following sequential process steps aligned with industry-standard HPQ beneficiation practices:

- Calcination followed by controlled quenching to volatilize certain impurities
- Precision crushing and sizing to yield quartz sand, optimized for subsequent purification processes
- Multi-stage magnetic separation to remove magnetic mineral contaminants
- Advanced flotation techniques to eliminate feldspar and mica minerals
- Specialised acid leaching to dissolve metal contaminants
- Hot chlorination for final purification to meet stringent industry specifications

To ensure the highest standards of verification, IND has retained Keypointe Pty Ltd to be in attendance for the Stage 2 test work and to conduct an independent audit of the beneficiation testwork.

### Ore-Sorting Trial Results

Prior to commencing Stage 2 test work, IND representatives conducted trials at Anhui Zhongke Optic-electronic Color Sorter Machinery Co., Ltd. (AMD), a leading manufacturer of ore-sorting equipment in China. These trials focused on sorting pegmatite-quartz samples from the Pippingarra deposit.



Figure 3: Ore sorting trial

The trial program involved processing samples across three size fractions through AMD's advanced dual-sensor ore-sorting technology. Initial results have proven highly encouraging and will be further refined through additional sensor calibration. These trials have demonstrated the potential to not only isolate high-purity quartz but also to produce feldspar and mica as co-products, significantly enhancing potential resource utilisation from the deposit.

The ore-sorted samples have been sent to Portable Spectral Services (PSS) for detailed mineralogical assessment and XRF analysis to determine quartz content and analyse associated minerals. Discussions with potential buyers have established that a minimum quartz content of 80% will be required for their HPQ production needs.

This ore sorting test work has provided IND with its first comprehensive assessment of potential commercial by-products from ore separation. The capability to produce feldspar and mica as co-products alongside the primary HPQ material presents a significant opportunity to enhance overall project economics through improved resource utilisation.

The Company notes the historical significance of the Pippingarra mine, which operated successfully as a high-grade feldspar and mica mine from 1989, delivering over 380,000 tonnes of feldspar to Asian customers while also generating revenue from mica by-products.

### Production Strategy and Implementation

IND holds an 80% interest in the non-construction mineral rights to the operating Pippingarra Quarry (Mining Lease M45/258). The operator, North West Quarries (NWQ), is a private contractor offering mining, quarrying and rock production services.

IND is evaluating the implementation of ore-sorting technology at Pippingarra, with a phased installation approach designed to align with growing sales. This strategy enables low initial capital expenditure to commence production and establish IND's product in the market, with the ability to scale up as demand increases.

The combined production of quartz and feldspar creates opportunities for more economical shipping solutions, including:

- Initial shipments using 1.5 tonne bulka bags loaded loose in ship's holds
- Intermediate stage utilising rotainers<sup>1</sup> for part-shipments
- Future potential for bulk shipments as volumes increase

The project benefits from NWQ's comprehensive operational capabilities, including:

- Drill and blast services
- Load and haul operations
- Crushing and screening
- Stockpile management of feed rock for the ore sorting plant
- Fleet of road trains for efficient transport to Port Hedland, located just 50km from the mine

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<sup>1</sup> A Rotainer is a type of container which is rotated to be emptied, minimising dust, spillage and other potential product loss



This staged approach to production, combined with NWQ's existing infrastructure and services, provides a capital-efficient pathway to market entry with significant potential for expansion as market demand grows.

### HPQ Market Development

Further information about the Company's HPQ materials has been shared with potential buyers through IND's partner NHICCL. NHICCL has leveraged their industry connections, engaging HPQ processing experts to conduct the testwork and facilitating introductions to potential customers. Several parties have expressed interest in evaluating IND's material, primarily focused on HPQ for crucible production applications.

Market information from NHICCL suggests:

- Indicative price range for HPQ products favourable for Pippingarra financial metrics
- Strong interest in pegmatite-quartz deposits due to scale and consistency advantages
- Importance of long-term supply capability for industrial customers
- Opportunities created by recent changes in international trade conditions
- Critical role of quality assurance processes and documentation

### Bulk Sample Progress

In March, IND worked with North West Quarries to produce a bulk sample for shipment to China. The sample preparation included:

- Processing of Run of Mine material from the historical mine
- Crushing and screening to -50mm +15mm specification
- Packaging in 1.5 tonne bulka-bags
- Loading into 20' sea containers
- Delivery to Port Hedland stevedores for shipment to Lianyungang Port, China



Figure 4: Bulk sample production

## HPQ Value Chain Activities

IND is currently progressing activities across several key areas:

- Resource Assessment: Evaluation of material from Pippingarra to identify potentially suitable zones
- Primary Processing: Assessment of crushing, screening and ore-sorting options
- Beneficiation Research: Collaboration with NHICCL on specialised HPQ processing requirements
- Testing and Verification: Independent third-party analysis of material characteristics
- Market Assessment: Research on potential customer requirements across multiple geographic markets

## Next Steps

IND is planning the following activities over the coming months:

- Receipt and verification of complete Stage 2 testwork results, with appropriate review by qualified technical experts
- Shipment of bulk sample material to China for evaluation by interested parties
- Assessment of ore-sorting technologies and their potential application at Pippingarra
- Evaluation of feldspar and mica co-product opportunities
- Continued market research with potential customers in Asia
- Evaluation of processing options and potential development pathways

**This announcement has been approved by the Board of Industrial Minerals.**

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## About IND

Industrial Minerals Ltd is a critical minerals explorer and a developer of high purity silica sand and quartz. The Company holds high purity silica sand (HPSS) and high purity quartz (HPQ) advanced projects in Western Australia, positioned to supply the rapidly expanding solar PV industry.

The Company has a strategy of defining high quality resources near key infrastructure and located on granted mining leases to fast-track the pathway to production. IND's advanced testwork and large portfolio of projects gives the company a competitive advantage in presenting a range of product specifications to its broad network of potential customers.

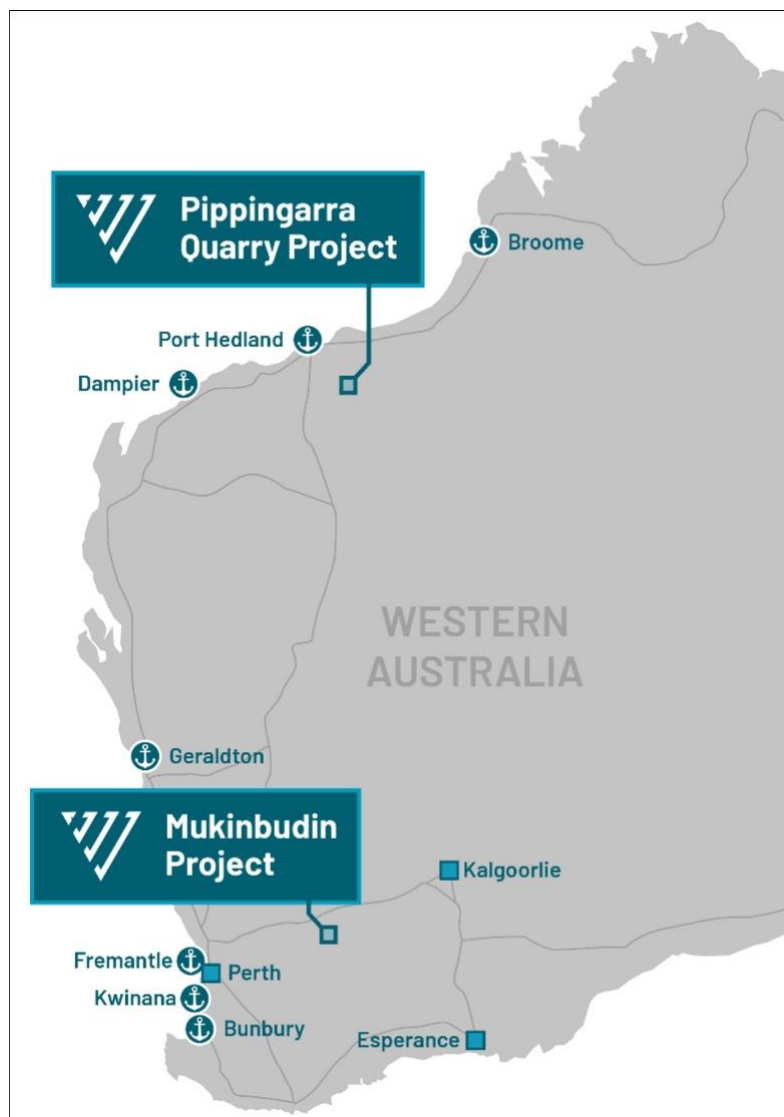


Figure 4. IND High Purity Quartz Projects in Western Australia

### Competent Person Statement

Where statements in this announcement refer to exploration results which have previously been reported, the Company confirms that it is not aware of any new information or data that materially affects the information included in the original announcements, and in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. These announcements may be viewed at [www.industmin.com](http://www.industmin.com) and [www.asx.com.au](http://www.asx.com.au). The Company confirms that the form and context in which the Competent Persons' findings are presented have not been materially modified from the original market announcements.

ASX Announcements referenced in this release:

- 27 October 2023 – Option to Acquire Pippingarra Lithium Project, Pilbara WA
- 28 August 2024 - IND HPQ Drill Program and Testwork Update
- 31 October 2024 - Quarterly Activities / Appendix 5B Cash Flow Report
- 25 November 2024 – HPQ Marketing and Exploration Update
- 30 January 2025 – IND Quarterly Activities Report

### Forward-looking Statements

Certain statements contained in this document may be 'forward-looking' and may include, amongst other things, statements regarding production targets, economic analysis, resource trends, pricing, recovery costs, and capital expenditure. These 'forward-looking' statements are necessarily based upon a number of estimates and assumptions that, while considered reasonable by IND, are inherently subject to significant technical, business, economic, competitive, political and social uncertainties and contingencies and involve known and unknown risks and uncertainties that could cause actual events or results to differ materially from estimated or anticipated events or results reflected in such forward-looking statements. Forward-looking statements are often, but not always, identified by the use of words such as 'believe', 'expect', 'anticipate', 'indicate', 'target', 'plan', 'intends', 'budget', 'estimate', 'may', 'will', 'schedule' and others of similar nature. IND does not undertake any obligation to update forward-looking statements even if circumstances or management's estimates or opinions should change. Investors should not place undue reliance on forward-looking statements as they are not a guarantee of future performance.

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