SOLUTION SPOTLIGHT

AllScan Significantly Improves Iron Ore Stockpile Management, Driving Profit up 5%.

Introducing the AllScan system into the mine site resulted in:

5% Increase in yearly profit

100% Real-time stockpile visibility

COMMODITY

Iron

TYPE OF MINE

Surface

APPLICATION

Stockpile Management

Background

Effective stockpile management is critical to maximising ore value and maintaining grade specifications in iron ore operations. However, many sites still rely on delayed lab results, often delivered 6–8 hours after stacking, leaving operators with outdated information during critical decision-making windows. A mining operation in Australia faced exactly this issue—manual lab data uploads limited their ability to blend effectively and track high-value ore

The Challenge

The mine processed various grades of iron ore daily, but lacked visibility into the real-time composition of material being stacked and reclaimed. This created a risk of inadvertently "giving away" high-grade ore when it was mixed with lower grades or dispatched without recognising its full value. The limitations of delayed lab analysis were directly impacting blending strategy, downstream efficiency, and profitability.

The Solution

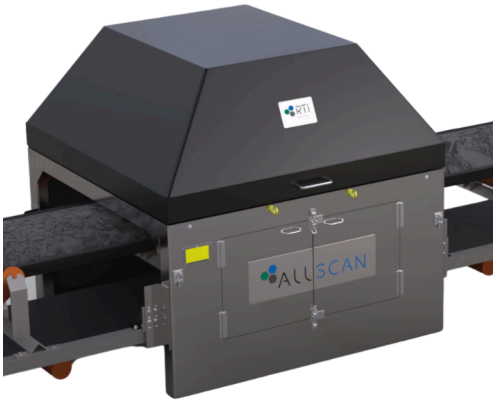
Real Time Instruments (RTI) addressed the issue by installing the AllScan Cf-252 elemental analyser on the stockyard's conveyor belts. This non-intrusive system continuously monitored the iron (Fe) content of the ore as it was stacked. By integrating the analyser's live data feed into the existing stockpile management software, RTI created a seamless solution that provided operators with minute-by-minute updates on ore quality, quantity, and location.

Operators could now access real-time dashboards showing exactly where high-grade ore had been placed. This visibility empowered the team to plan reclaim strategies more effectively, reduce dilution, and ensure strategic use of premium material.

Implementation & Discovery

RTI collaborated with the mine's digital and engineering teams to determine optimal installation points and calibrate the AllScan to local ore conditions. During commissioning, real-time readings were benchmarked against lab samples, confirming strong correlation and immediate usability.

Once integrated, site personnel quickly adapted to the new data streams. They began using the real-time dashboard to identify grade trends and reclaim high-value ore with precision—transforming what had previously been a reactive process into a proactive, data-driven workflow.

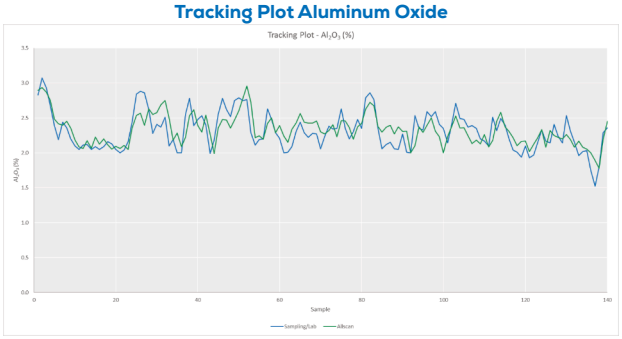


The Results

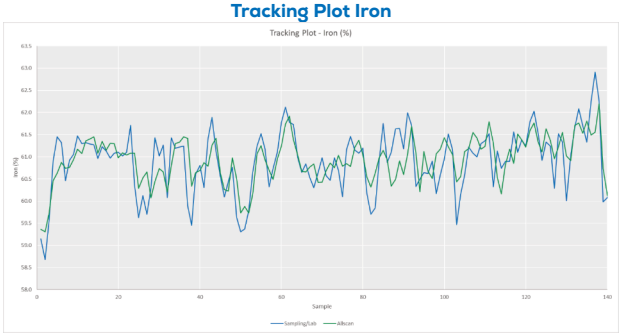
The integration of AllScan into the mine's stockpile management system delivered tangible operational benefits. With live data at their fingertips, operators no longer needed to make decisions based on outdated or estimated information. Instead, they could confidently track and blend material in real time, resulting in immediate gains in efficiency, consistency, and profitability.

- **Real-Time Monitoring:** Operators could continuously monitor stockpile iron content, ensuring strategic use of high-grade ore.
- **Optimised Blending:** Live data allowed for effective blending of premium material with lower grades, increasing overall product value.
- **Increased Profitability:** Improved grade control and blending precision led to more than a 5% annual increase in profitability.

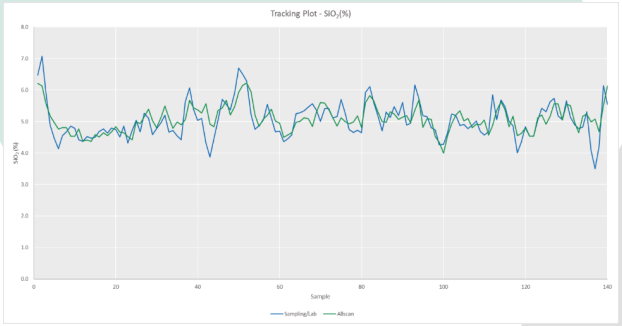
Tracking Plot Aluminum Oxide



Tracking Plot Iron



Tracking Plot Silicon Dioxide



Conclusion

The integration of AllScan into stockpile management gave the mine a significant competitive edge—combining accurate, immediate data with smarter decision-making. RTI's solution enabled operators to reclaim and blend more effectively, leading to higher-quality output and better financial outcomes.

Future Applications and Industry Impact

This case demonstrates how real-time elemental analysis can transform stockpile management in iron ore mining. With continuous quality data, operations can make smarter decisions about stacking, blending, and reclaiming material. The implications extend beyond iron ore:

- **Coal Stockpile Control:** Managing ash and energy content in real time.
- **Bauxite Yard Management:** Monitoring alumina and silica distribution for refining efficiency.
- **Blending Terminals:** Ensuring product consistency at port stockyards.
- **Process Plant Feed Optimisation:** Delivering homogenous material to maximise downstream plant efficiency.

REAL TIME INSTRUMENTS

GLOBAL HEADQUARTERS
Real Time Instruments
Mackay Marina Village
Mackay QLD 4740
Australia

T: +61 7 4955 5944
E: sales@rtiaustralia.com
realtimeinstruments.com