Problem Statement Worksheet (Hypothesis Formation)

What opportunities exist for Monalco to lower their ore-crusher maintenance costs by 20% through operational improvements or decreased frequency of maintenance-events?

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1 Context

The cost of iron ore has dramatically fallen by 50%. In order to stay profitable, Monalco needs to lower its operating costs, and has chosen to do so by streamlining costs and maintenance expenditures. Ore-crusher equipment maintenance accounts for a huge portion of the annual maintenance budget, and these costs are expected to continue to increase. Therefore, scaling back on ore-crusher maintenance costs is our target.

2 Criteria for success

Solutions will reduce ore-crusher maintenance costs by 20% this fiscal year.

3 Scope of solution space

Solutions will focus exclusively on bringing down the costs of ore-crusher maintenance, which is the biggest chunk of the maintenance budget, and not on other equipment work flows.

4 Constraints within solution space

- **The reliability engineering team is going to push back against efforts to reduce maintenance costs**
- **We must maintain each ore-crusher machine at least every 50,000 tons of ore crushed**
- **The volume of product processed by the ore-crushers is much greater than intended by the manufacturer**

5 Stakeholders to provide key insight

Chanel Adams – Reliability Engineer
Jonas Richards – Asset Integrity Manager
Bruce Banner – Maintenance SME
Jane Steere - Principal Maintenance
Fargo Williams – Change Manager
Tara Starr - Maintenance SME

6 Key data sources

Data Historian - contains ore crusher process volume data
Ellipse - contains historic maintenance work order details
SAP - current information source on our equipment logs and work order requests
T3000 DCS - sends raw ore data to the data historian
Ore Crusher System - process map that shows how the equipment works