# Coal Terminal Utilization Analysis

| Title: | summary | Reclaimers | RL1 | RL2 | Stacker Reclaimers | SR1 |
|---|---|---|---|---|---|---|

## Coal Terminal Utilization Analysis

Task: Coal Reclaimer Machines require maintenance in the upcoming month. These machines run literally round the clock 24/7 for 365 days a year. Every minute of downtime equates to millions of dollars lost revenue, that is why it is crucial to identify exactly when these machines require maintenance. Currently a reclaimer machine requires maintenance when within the previous month there was at least one 8-hour period when the average idle capacity was over 10%. Task is to find which of the 5 machines exceeded this level.

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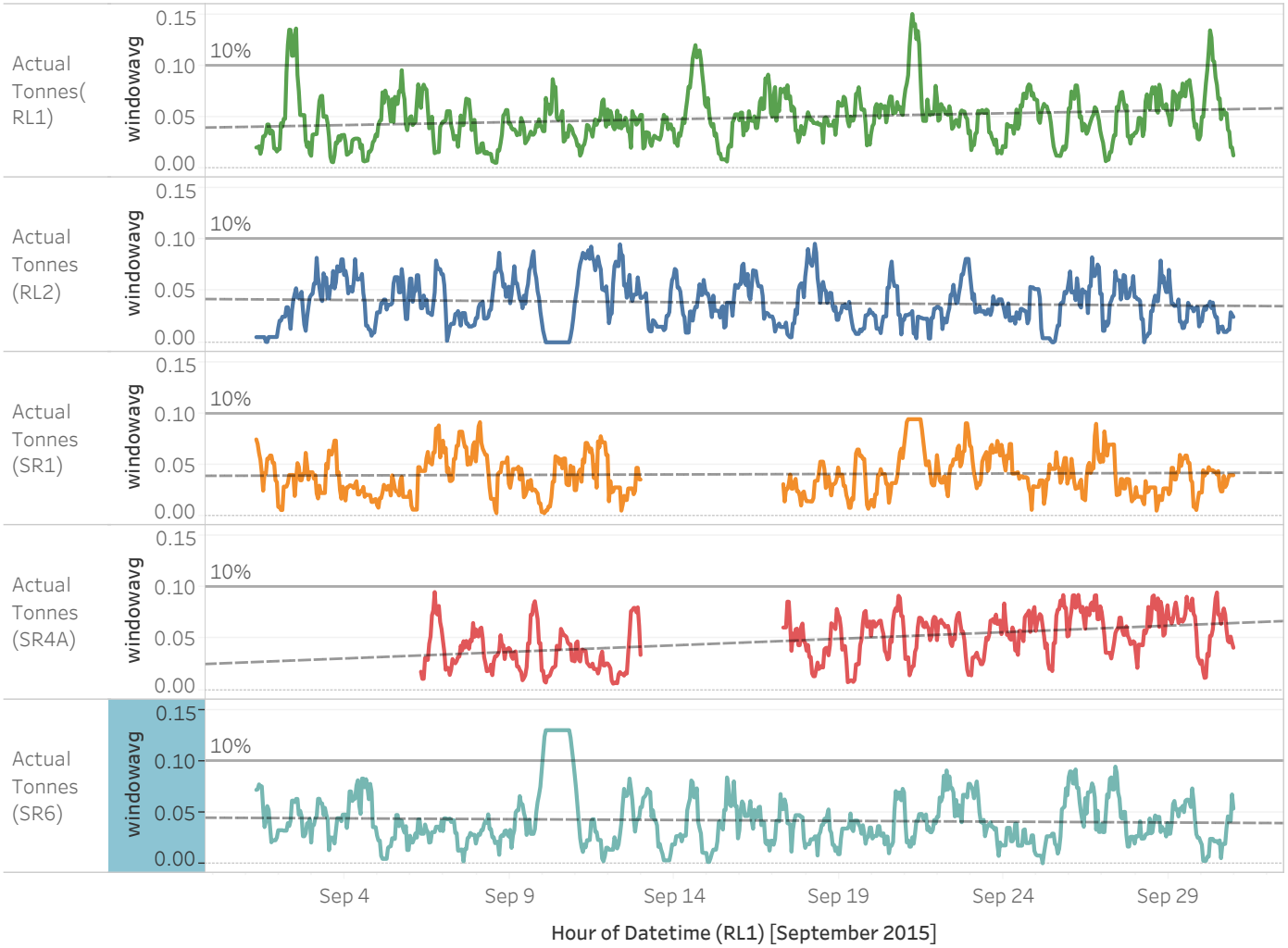
|---|---|---|---|---|---|---|

## Analysis



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|---|---|---|---|---|---|---|

# RECLAIMERS

# Coal Terminal Utilization Analysis

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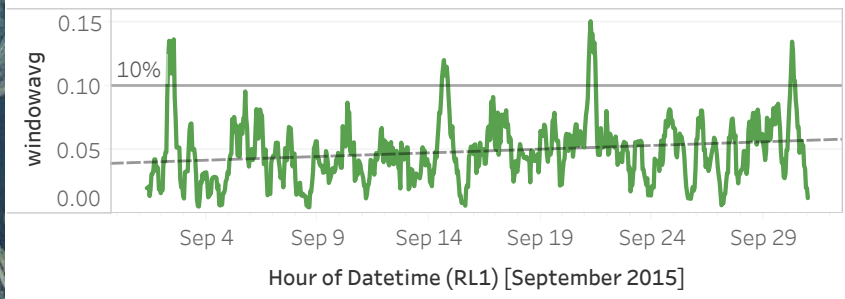
|---|---|---|---|---|---|---|

## RL1


### Analysis



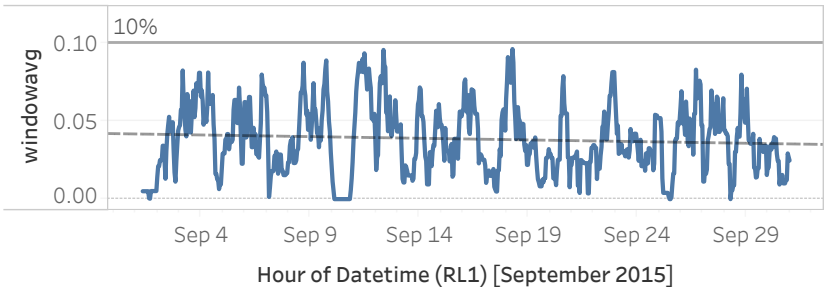

The Above image shows the 8-hr moving average of idle capacity for Reclaimer RL1 expressed as a % of nominal capacity.
Throughout the month RL1 exceeded the allowable threshold multiple times.
2/9 rolling average peaked at 14%
14/9 rolling average peaked at 12%
21/9 rolling average peaked at 15%
21/9 rolling average peaked at 13%
Data shows upward trend in the unused capacity for this machine. If this trend continues, every hour of operation there will be an increase in idle capacity by approx 0.05% in the long run.
It is evident that this machine requires maintenance in the upcoming month.

# Coal Terminal Utilization Analysis

summary | Reclaimers | RL1 | RL2 | Stacker Reclaimers | SR1 | SR4A

## RL2


### Analysis




The Above image shows the 8-hr moving average of idle capacity for Reclaimer RL2 expressed as a % of nominal capacity.
This chart shows that at no given point in time did the 8-hr average exceeded the threshold of 10%. This suggests that the machine is running smoothly and does not require the maintenance. The chart peak at 10th sep 205 suggests that the machine was working at full capacity for a prolonged period of time. Further investigation of the data showed that possibly this may have been acheived at the expense of sacrificed utilization of machine SR6.

# Coal Terminal Utilization Analysis

| Reclaimers | RL1 | RL2 | Stacker Reclaimers | SR1 | SR4A | SR6 |
|---|---|---|---|---|---|---|

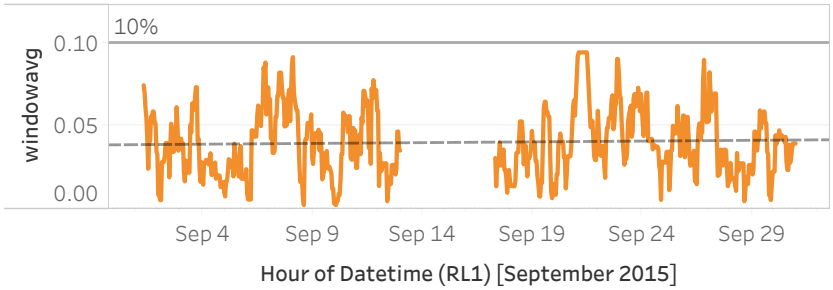
# STACKER RECLAIMERS

# Coal Terminal Utilization Analysis

| Reclaimers | RL1 | RL2 | Stacker Reclaimers | SR1 | SR4A | SR6 |
|---|---|---|---|---|---|---|

## SR1


### Analysis



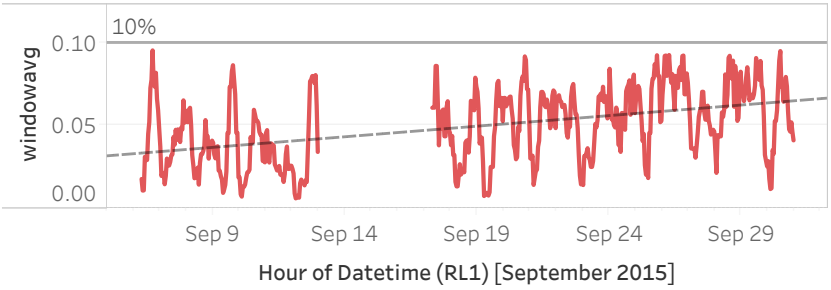

The Above image shows the 8-hr moving average of idle capacity for Stacker-Reclaimer SR1 expressed as a % of nominal capacity.
This chart shows that at no given point in time did the 8-hr average exceeded the threshold of 10%. This suggests that the machine is running smoothly and does not require the maintenance.Gap in the chart is due to unavialable data.

# Coal Terminal Utilization Analysis

| Reclaimers | RL1 | RL2 | Stacker Reclaimers | SR1 | SR4A | SR6 |
|---|---|---|---|---|---|---|

## SR4A


### Analysis



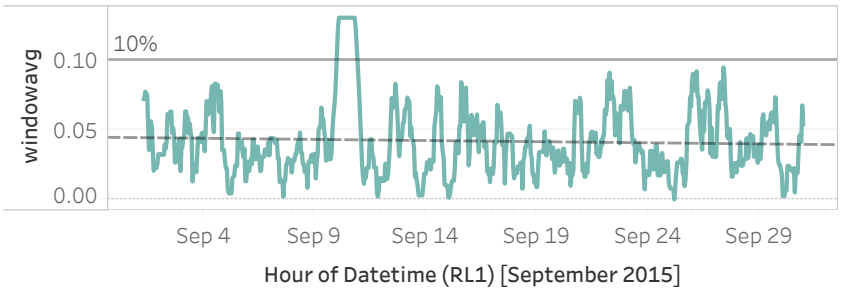

The Above image shows the 8-hr moving average of idle capacity for Stacker-Reclaimer SR4A expressed as a % of nominal capacity.
There is an evident upward trend in the machine performance. If this trend continues then the 8-hr moving average of idle capacity is predicted to increase at a rate of approximately 0.12% per hour in the long run. It is recommended to review the performance of this machine in the coming weeks.

# Coal Terminal Utilization Analysis

| Reclaimers | RL1 | RL2 | Stacker Reclaimers | SR1 | SR4A | SR6 |
|---|---|---|---|---|---|---|

## SR6


### Analysis




The Above image shows the 8-hr moving average of idle capacity for Stacker-Reclaimer SR4A expressed as a % of nominal capacity.
The chart shows a surge in the 8-hr moving average of the idle capacity around 10th sep 2015. Although standard criterion suggests that SR6 requires maintenance but the surge is not normal. For the period between 9th sep 19:00 and 10th sep 19:00 this machine was operating at the constant reduced capcity of 3000 tonnes flat.This happens to be the same period when machine RL2 was operating at its maximum capacity.
Given that both this machine are situated on the same line it may be the case that there was a conflict of tasks between the two machine and prority was given at RL2. If this is the case then it appears SR6 does not require maintenance since it has not exceeded the 10% at any other point during the month.