



Verbrec

Model Time

17/02/2021 3:20:11 AM

Client: Running

Connection: Connected

Message: None

Sample - Fe

Fines

63.44% Clean
63.09% High
61.69% Good
61.34% Warning
61.34% Dirty

Lump

65.12% Clean
64.77% High
63.37% Good
63.02% Warning
63.02% Dirty

Uncertain Product Type
Unavailable
Not Calculated

Display Mode

Surface

Property to Explore

Sample - Fe

Investigate

Nothing

View

Custom

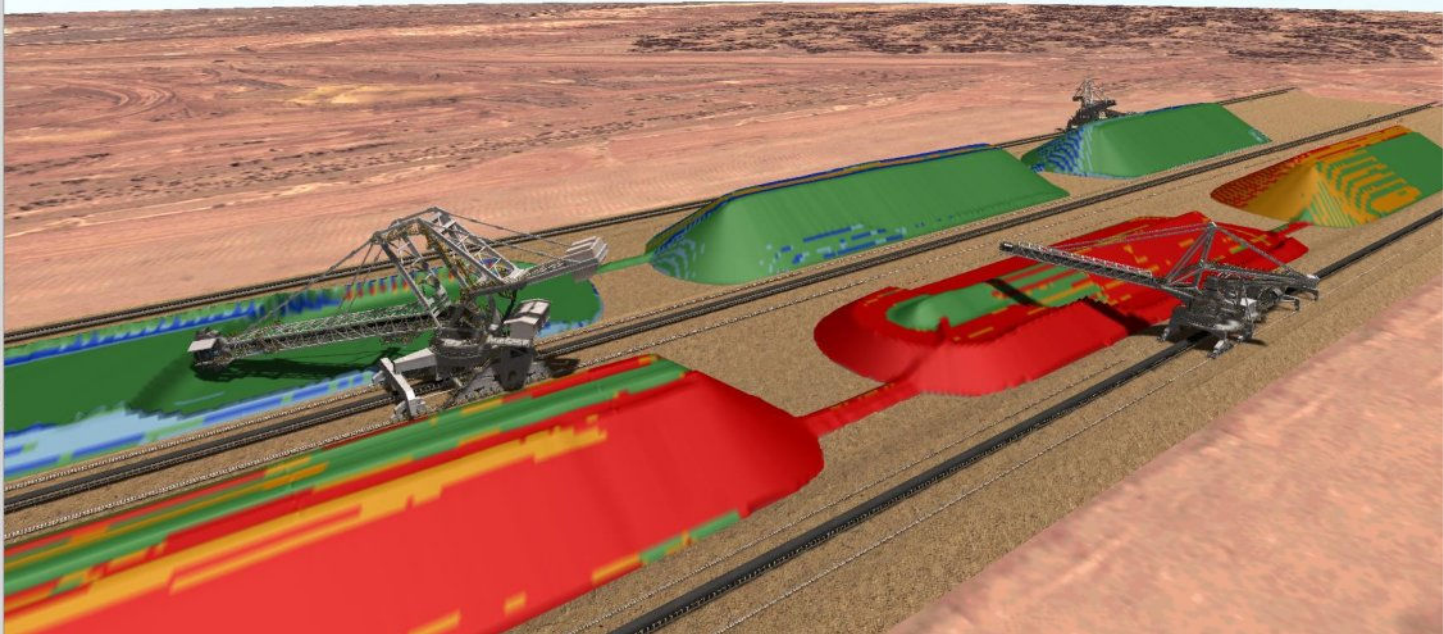
Free Camera

Settings

Tags Help About



StacksOn



Overview

- StacksOn is a grade tracking, prediction, and optimisation system for bulk material stockyards.
- It tracks material being added to and reclaimed from stockpiles in order to maintain a 3D model of material in the stockyard.
- Material properties such as material composition, origin and time since stacked are mapped and can be interrogated to ensure maximum operational and financial gain.

Highlights

- 3D visualisation of grade within the stockyard in real time.
- Instantaneous and accurate grade statistics on the product being reclaimed.
- Predicting and addressing off-spec shipments before they are filled
 - Accurately blend high spec and low spec material together to ship more product.
 - Prevent penalties for off spec product
 - Keep your clients happy by providing them with consistently on spec product.
- A major miner's first StacksOn installation was so well received that they placed orders for seven additional stockyards, at both mine and port.

Background

There is a need in most bulk storage facilities to understand the product characteristics within the stockpiles and to act upon this information in a timely fashion. The product characteristics are often obtained by analysing samples of the product in a lab or using on-stream analysers. A grade tracking system must be flexible enough to cater for both scenarios.

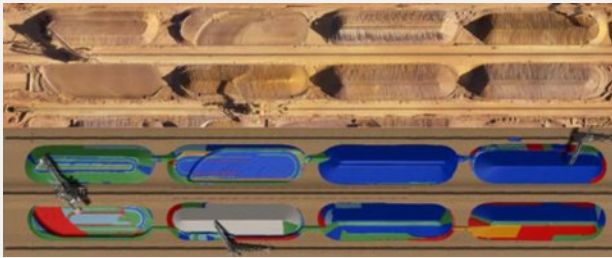
Many grade tracking systems rely on using manually manipulated spreadsheets or complex software packages. These may have the following shortcomings:

- Large inaccuracies due to data resolution and assumptions made.
- Limited to non-existent tooling around determining optimal reclaiming pattern.
- Not very intuitive.
- Data is not easily interrogated.
- Susceptibility to human error.

StacksOn was specifically designed to meet this need and overcome these limitations.

Impressively Accurate

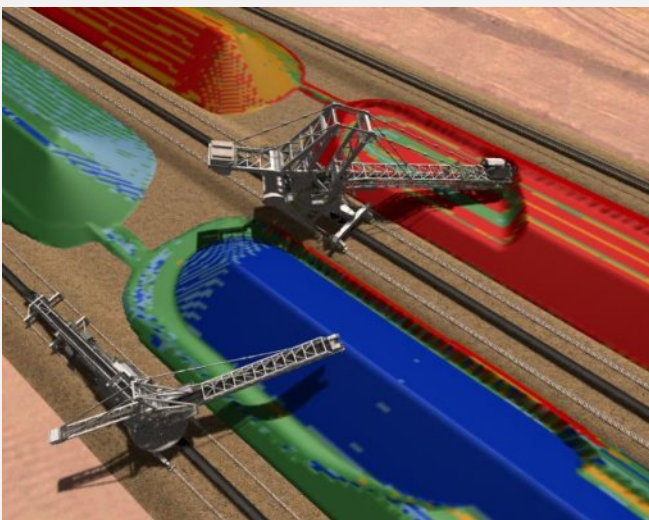
- Proven to have impressively accurate modelling of product location, tonnages, and analyte distribution.
- Provides what is likely the most accurate stockyard tonnages you have access to.



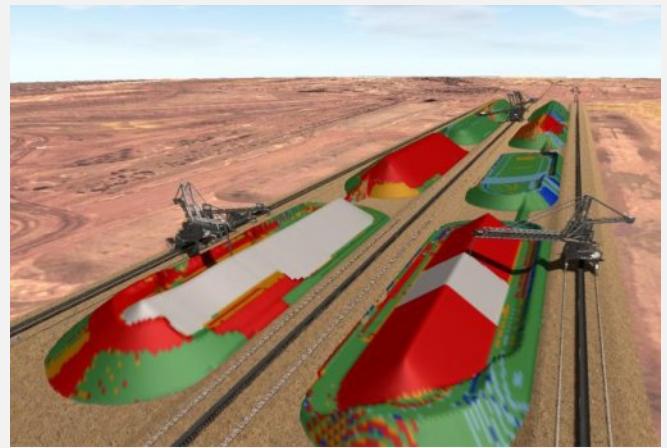
Intuitive Visualisation

The StacksOn 3D Client connects to the server and allows a user to view and interrogate the product data in an intuitive way. Immersive visualization and smooth controls lead to excellent operational awareness and minimal learning curve. It includes:

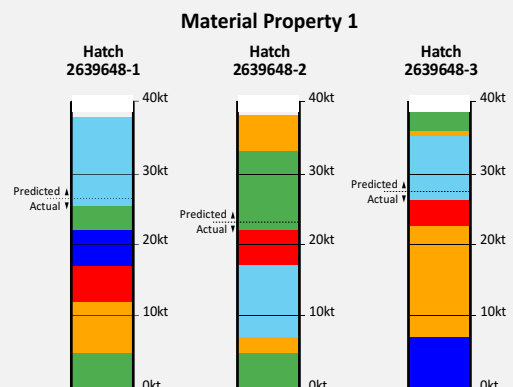
- A realistic representation of the stockyard including product location, canyons, conveyors and mobile machines.



- Ability to move around the 3D environment in a natural way.
- Near real-time display of stockpile shapes, stockpile statistics and machine positions.



- Detailed breakdown of what has and will be loaded in each batch (coming soon).



Track Any Number of Material Properties

StacksOn can track many different material properties into and out of the stockyard including:

- Product type
- Product grade
- Contaminants
- Stacked time

These properties are displayed intuitively by colouring the product based on current targets which makes it easy to see when product is off spec.

StacksOn can even refresh its data as samples become available, even if the product has already been stacked.

Sample - Fe

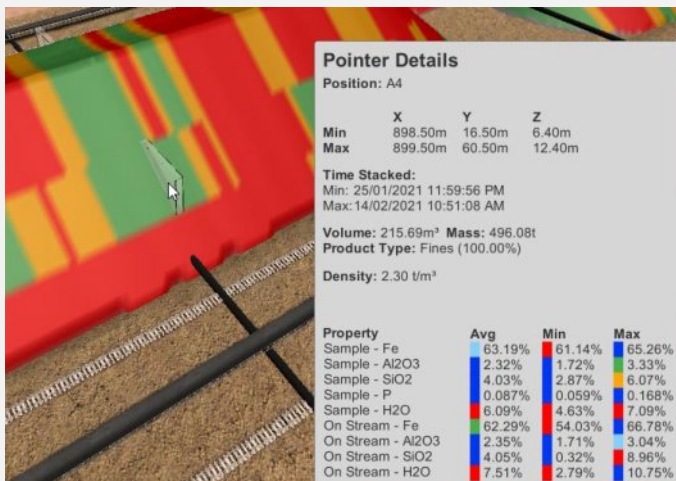
Fines	
63.44%	Clean
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61.69%	Good
61.34%	Warning
	Dirty

Lump	
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64.77%	High
63.37%	Good
63.02%	Warning
	Dirty



Detailed Tooling - Precise Information at your Fingertips

The user can get detailed information about any product in the yard by simply pointing at it.



The product can be coloured and explored:

- At the surface of the stockpile.
- As a mass weighted average per 1m slice through each bench.
- As a mass weighted average per bench.
- As a mass weighted average per stockpile.

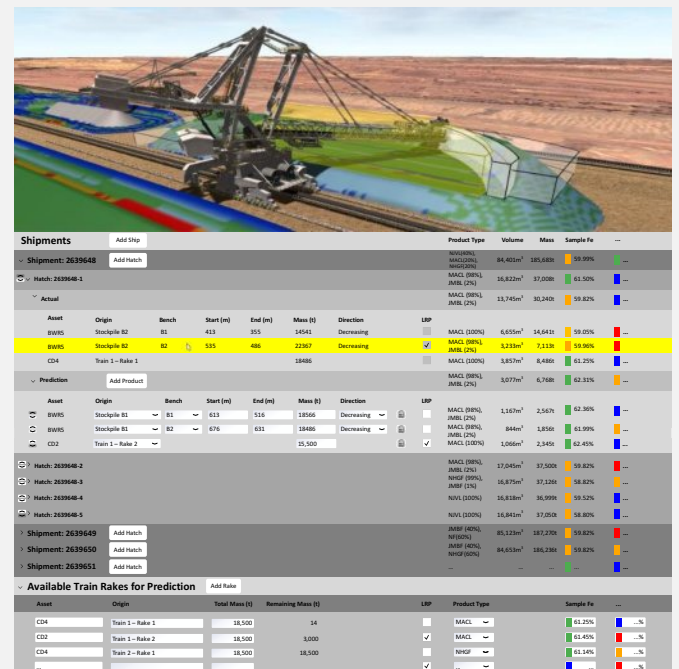
There are a variety of other investigation tools such as:

- Grade distribution graphs.
- Custom region selection.
- Stacked time selection.
- Reclaim batch prediction.

Sophisticated Reclaim Batch Prediction

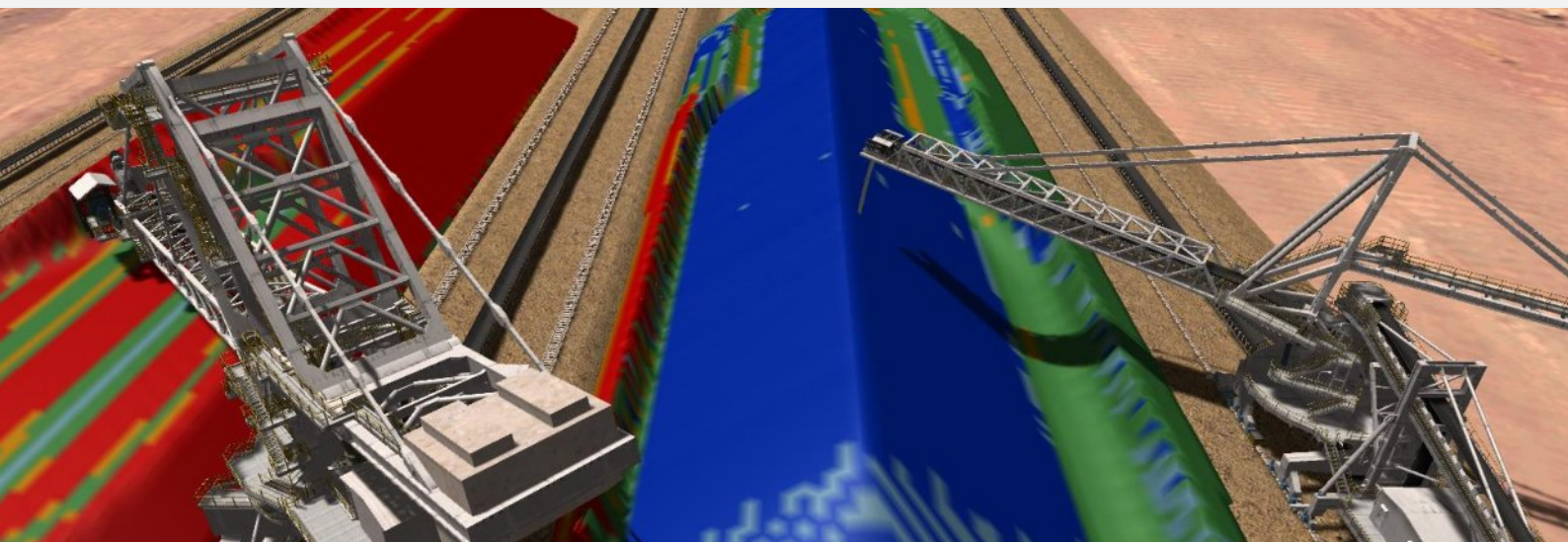
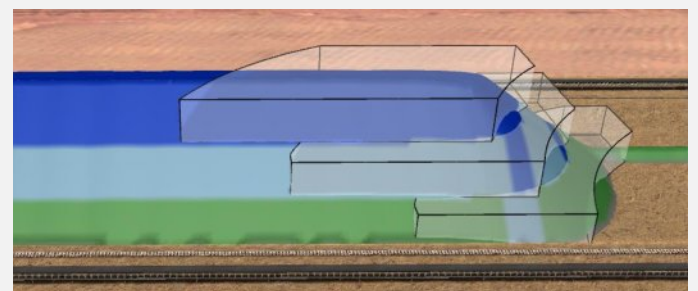
Know what you will get before you start reclaiming:

- StacksOn is able to provide the statistics for a batch before it is reclaimed.



Make changes to hit your grade targets before committing:

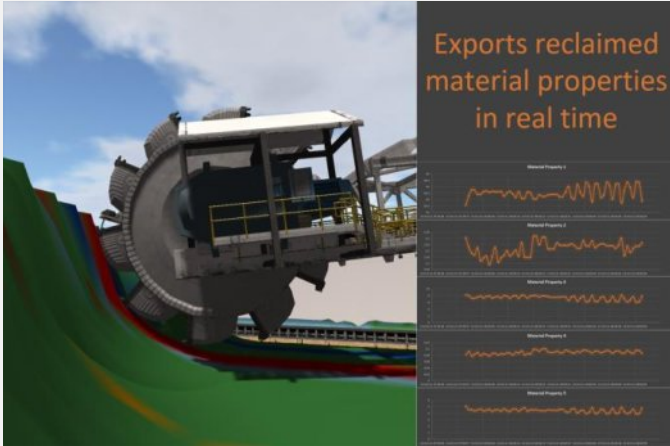
- StacksOn allows you to compare multiple different reclaim algorithms, parameters, and stockpile blends to ensure optimal reclaiming of stockpiles.



Publishes Valuable Data

Publishes a ton of data to keep you informed including:

- Real time feed of the material composition each reclaimer is reclaiming.
- Tonnages per stockpile and bench.
- Material properties per stockpile and bench.
- Material properties per reclaim batch including predicted reclaim batch.



The StacksOn Team

Our team consists of experienced Software Engineers and Control System Engineers with hands on experience programming stockyard control systems and robust next gen applications.

We are known for our responsiveness to client enhancement and integration requests to better meet their needs.

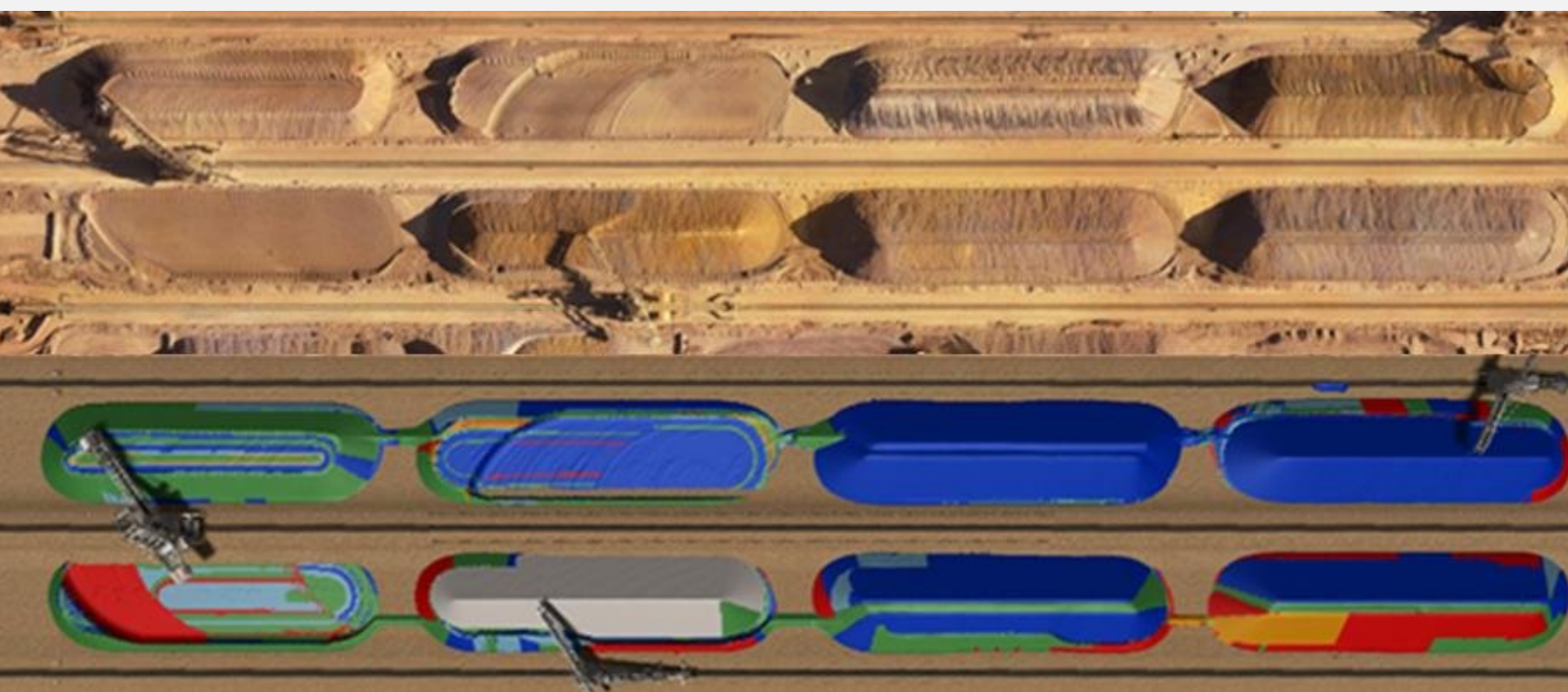
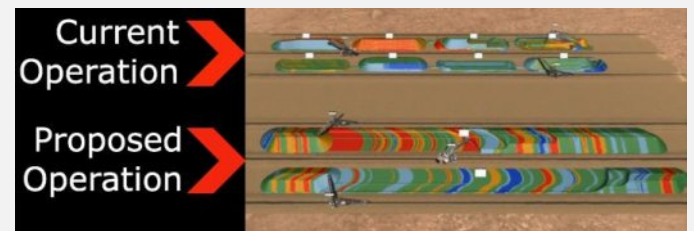
Accurate Yard Investigations – What If...?

We can use StacksOn to model different yard operation patterns to determine the best fit for current requirements. For example, given current grade profiles and shipping requirements, is it better to stack:

- Using chevron ply or cone ply?
- Long or short stockpiles?
- One long continuously extending stockpile?

Features include:

- Direct grade, operability, capacity and reclaim rate comparisons between current operation and proposed operation.
- Allows you to know the exact changes to grade that will accompany a yard philosophy change before committing to implementing and commissioning the change.
- Has led to impressive increases in yard throughput in the real word.



Case Study – Ship Tones Faster

The Brief

A client wanted to speed up their train loading times, increase their yard capacity and limit the number of times their mobile machines were waiting for a place to stack and reclaim.

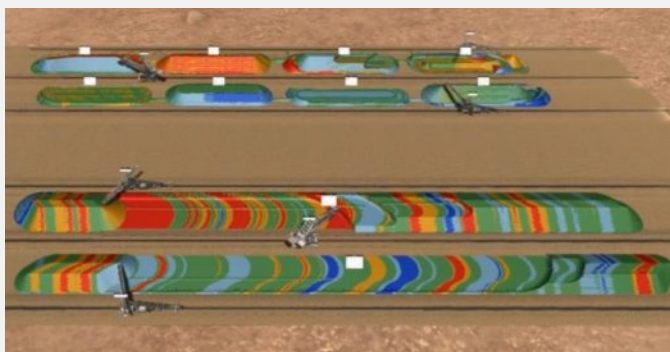
The Process

Firstly, we used StacksOn to model what the ramifications would be in moving from their current operation (discrete stockpiles stacked in Chevron Ply and reclaimed using Pilgrim Step) to a more desirable operating philosophy (Continuous Stockpiling stacked in Cone Ply Arc and reclaimed using Dynamic Bench Reclaiming).

We were able to use trends from the actual machines to accurately model the current operation of the yard. We were then able to accurately model what the yard would have looked like if the exact same product was stacked at the exact same rate but using the new yard operating philosophy. Similarly, we accurately modelled what the reclaimer would do if presented with the continuous stockpile instead of the discrete ones and changed its reclaim algorithm to Dynamic Bench Reclaiming, all along matching the product type and reclaim rate of the actual yard.

We presented our client with:

- A video which directly juxtaposed the current operation with the proposed operation.



- An interactive graph and tabulated breakdown showing the actual chemical breakdown of each rake placed within a train over a 3 week period alongside what that rake would have contained if the exact same product was

stacked and reclaimed in the proposed operation.



- A report which outlined changes to reclaim rate, reclaimer relocation times, yard capacity and yard operability.

The Result

- The client decided to go ahead with the changes to their control system.
- We rolled out StacksOn to the clients site to track grade within the continuous stockpile. Not only did this allow for the successful completion of the project, but it greatly improved their grade and tonnes tracking over their existing systems whilst fostering engagement within their different departments.
- The client reported a significant reduction in the average amount of time the reclaimer took to fill a train.
- The client noted a reduction in overall grade variability within the stockyard due to increased awareness and tooling which allowed them to make better decisions.
- The client was so impressed with the increased visibility, accuracy, timeliness, investigative features, and prediction features of StacksOn that they placed orders to roll StacksOn out to seven more stockyards, both mine and port.

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StacksOn.com

