CAT® MINESTAR™ SYSTEM

ROBINSON MINE // RUTH, NEVADA // JANUARY, 2012

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ROBINSON MINE AND CAT® MINESTAR™ SYSTEM: REDUCING MANAGEMENT GUESSWORK, DELIVERING RESULTS

The Robinson Nevada copper and gold mine is a big place, but it has no room for guesswork. Just ask Production Analyst Leatham Hendrix.

Located in rugged White Pine County near Ruth, Nevada, the Robinson site—operated by Robinson Nevada Mining Company, a division of QuadraFNX Mining, Ltd.—employs 510 people and runs a large mixed fleet that includes 29 haul trucks of 150- and 240-ton capacities. That's a lot of equipment and manpower for Hendrix to keep tabs on, and small data collection errors can add up quickly to big management problems.

"It's one thing to capture data manually," Hendrix says, "but there's always the question of the 'human factor.' Somebody puts the wrong number in the wrong place and everything looks different from that point on."

To minimize those compounding errors, the Robinson site has used Cat® MineStar™ System since 2007.

TIRE SHORTAGE DROVE THE NEED FOR ENHANCED MONITORING

The company recently upped its stake in Caterpillar's integrated mining technology system. Hendrix notes, "Caterpillar came to us with a proposal and said, 'Would you like to try out our new fleet management system?' It went into full-fledged production in 2010."

Hendrix says the ability to monitor tire temperatures was a key selling point. "The thing that we really drove forward on was tire monitoring and the ability to link the tire temps to where the truck was. We were just coming out of the industry shortage and tires were a very precious commodity. We were actually at one point down to a single spare tire. It was nuts.

Literally, one spare tire. If we have one failure, I'm done. If we have two failures, we park trucks.

"We decided we were going to monitor the first and last hours of shifts, so we had Caterpillar set us up with a few different reports that would kick us out our KPIs to monitor our progress. That's how it came to be a permanent fixture here."

REPORTING TURNS RAW DATA INTO USEFUL INFORMATION

For Hendrix, those KPI reports were just a toe in the water. They have since put many more Fleet reporting functions to work, using Business SATs and Business Objects to break down the data. "The ability to pull standardized reports on a daily basis is extremely advantageous," he says.

"For example," Hendrix adds, "this morning I was comparing daily tons to utilization and availability so we can see if there is a correlation between tons moved and grader availability. We get pretty significant snow out here, so I'm looking at that data in the sense of 'Do we need one more grader to keep our haul roads plowed? Are we falling behind on tons because my grader availability is low?' It gives me the ability to dissect data that otherwise would take days to pull together."

In fact, Hendrix thinks Cat MineStar System's ability to turn raw data into useful information is its biggest benefit to the Robinson operation. He explains, "It allows the mill to see real-time what material is coming to the crusher. It allows maintenance to see exactly what their downtimes will look like. There are endless benefits from the data that we are able to collect and utilize. And it's all on a single source, so you can trouble shoot your mine site as a whole."

REDUCED TRUCK QUEUING AND FUELING TIMES

Robinson also applied the Fleet fueling module to help reduce queuing at the site's fuel island. "With our mixed fleet of trucks, everything demands fuel at a different interval," Hendrix says.

Splitting the fleet manually, so half the trucks fueled during the day and half fueled at night, didn't work. Hendrix explains, "What we ultimately saw was two and three trucks at the fuel line at a time because we would just get out of sequence."

Now, he says, "the system dictates when we fuel, at any given point within a day. Actually, the trucks dictate when they need fuel. What that's done for us is lowered our fueling time per fuel event as well as our overall fueling time per day. And now there are no queued trucks at the fuel island."

TRACKING AND DISPOSING OF ACIDIC MATERIALS

One of the unique aspects of Hendrix's job as Production Analyst is the perspective it gives him on how Robinson handles environmental issues and regulatory compliance. He says, "If you aren't in a role like mine, you probably wouldn't notice that Fleet has a link to environmental concerns."

One example Hendrix points out is the tracking of acidic soils. "We have several soil types out here. Some of them are an acid-generating soil type mixed with ground water at the surface level. Fleet has given us the ability to track what materials we have moved to where."

Hendrix says that kind of tracking used to be done on a "scout's honor" basis, but now he has the data to back it up. "Fleet allows us to track the tons we've moved, what types of material the waste is and the placement of those materials. We can go back at any point and tell an environmental inspector, or even our own environmental department, how much material we placed and what area it's in."

TRACKING OPERATOR LOCATIONS FOR MEDICAL EMERGENCIES

Fleet also helps Hendrix track every piece of equipment on the Robinson site, along with who is operating each machine. That information can make a life-or-death difference in a medical emergency.

"It allows us to see a big-picture view of where everything is," Hendrix explains. "We know that when we have an operator who says, 'I've really got some chest pains' or whatever that situation might be, we don't have to look any further than the computer to know right where we need to send help."

Plus, Hendrix adds, "once you put a dispatcher in that seat, you now have a centralized information center. It helps the dispatcher to control these situations when they do arise by parking equipment or whatever the need may be."
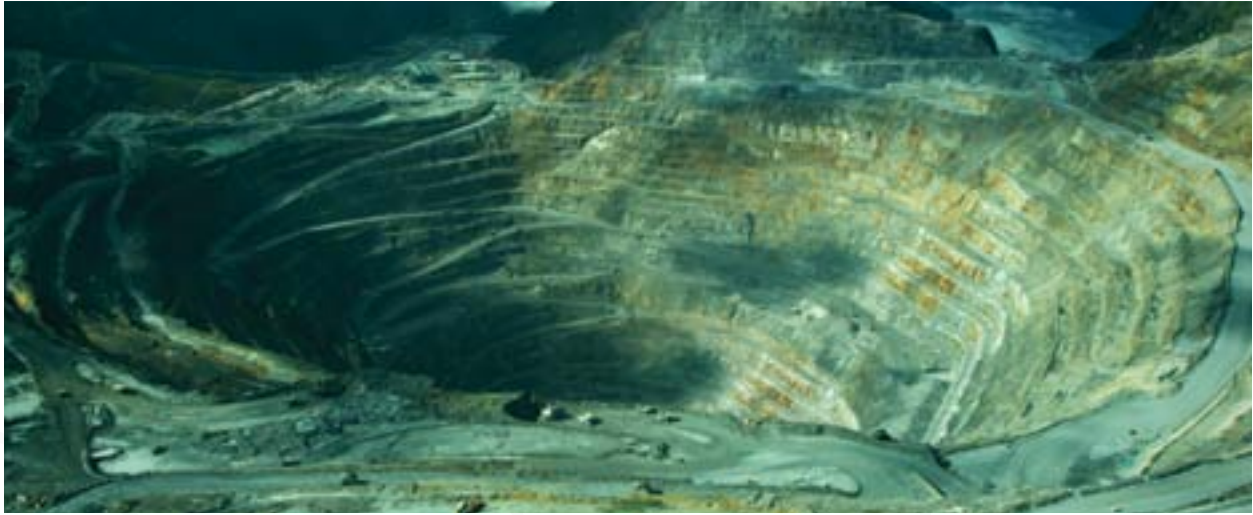
EXPANDING SYSTEM CAPABILITIES

Robinson is currently expanding its Cat MineStar System to meet other needs. The company is now bidding to upgrade to high-precision tracking on loading tools and mid-precision on trucks, while adding other capabilities such as object detection and accident avoidance.

Hendrix is particularly enthusiastic about the ability get data access when he's on the road. "Just recently, we investigated some opportunities for going mobile with all of that information," he says. "We can have it on our iPads and our iPhones, and at any given moment we can look and tell you the availability of our trucks for the day.

"When I'm traveling, it will be great to be able to go, 'I wonder what the site's doing for tons today?' I can pull that up. We won't have to wait till end of shift or wait till we get a report at the end of the night."

CAT MINESTAR SYSTEM VERSUS THE COMPETITION

Although the Robinson mine runs equipment from a number of manufacturers, Hendrix is committed to Cat MineStar System to help him monitor and manage the company's fleet.

That judgment is not based on guesswork. Hendrix recently had the opportunity to see the "latest and greatest" mining technology systems from other manufacturers, but he says, " We would still choose the Caterpillar system based on the fact that it has more flexibility for the dispatcher."

Hendrix concludes, "Ultimately, we look at it in those terms: What's best for the dispatchers? They're the ones that have to manage the system, and if they can't manage it your data will be no good. I've seen everything else and I still have Cat MineStar System for a reason."

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