

Exploration
Ultramatrix drill bit



Boart Longyear bits break ground

When comparing diamond coring bits, Boart Longyear's Ultramatrix (UMX) bits are distinctly unique in design.

The crown's Stage waterways and the Razorcut protrusions on the face are distinctive characteristics of these bits, which were launched in March 2011.

But, perhaps the most distinguishing feature is unseen, being inside the matrix of the bit. The innovative metallurgic formula provides drilling versatility and long life.

Traditionally, a diamond bit is carefully selected for specific ground conditions and often switched mid-process to accommodate changing rock formations, resulting in lost productivity.

The UMX uses advanced metallurgical formulas with larger, synthetic diamonds to provide increased penetration capabilities, turning easily from one ground formation to another.

The all-in-one quality of the UMX translates to less tripping, increased productivity and less inventory.

By utilising Boart Longyear's patented Stage waterway technology, UMX bits offer crown heights up to an unprecedented 25mm.

The geometry of these windows sustains the integrity of the bit through the entire 25mm, providing it with maximum life.

The Twin-Taper waterways design dramatically improves surface flushing, forcing debris through the windows while keeping the bit face clear and reinforcing the inner diameter.

The unique Razorcut protrusions, or bumps, on the surface of the bit contain diamonds, which enable the bit to begin cutting right out of the box.



The arrangement of these protrusions also improves tracking and balance in the hole when drilling begins.

200% INCREASED BIT LIFE

While much of the exploration industry is hesitant to implement new drilling technology, Canada's George Downing Estates Drilling Limited (Downing Drilling) has gained a competitive advantage with its early adoption of the UMX bits.

While exploring for iron ore near Schefferville in Northern Quebec, Canada, the crews faced very tough ground conditions with formations in excess of 70% iron ore.

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These conditions required a very free-cutting bit to remain sharp, as well as an abrasion-resistant matrix to attain acceptable bit life.

Downing Drilling tested Boart Longyear's 09UMX bit to see if it could tackle the harsh ground and immediately experienced dramatically improved productivity.

"With our previous bits, our drillers were never able to achieve the proper torque due to the bit continually polishing. The only method we had to sharpen the bits was to shut off the water, which resulted in many bits burning into the formation," comments Downing Drilling foreman Matt Mactavish.

"We are proud to say that Boart Longyear makes an amazing bit for our hard ground conditions. The 09UMX Stage 2 bits cut steady, offer long life and hold consistent penetration without any abuse on our rigs."

The 09UMX bits achieved an average 200% increase in life over the other bits in the same ground conditions.



In addition, the bits did not require extreme measures to remain sharp, and the drillers were able to maintain the proper torque on the rigs while sustaining a continuously sharp bit.

While the drillers had been reaching an average 15m of life with their previous bits, the 09UMX Stage 2 bits consistently achieved a bit life of 33-45m per bit.

As a result of the outstanding performance of the UMX bits – including the need to trip less often, and the reduction of wear and tear on drill rigs – Downing Drilling has become more efficient and profitable.

The 09UMX Stage 2 diamond bit is now their bit of choice for all iron ore exploration projects.

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