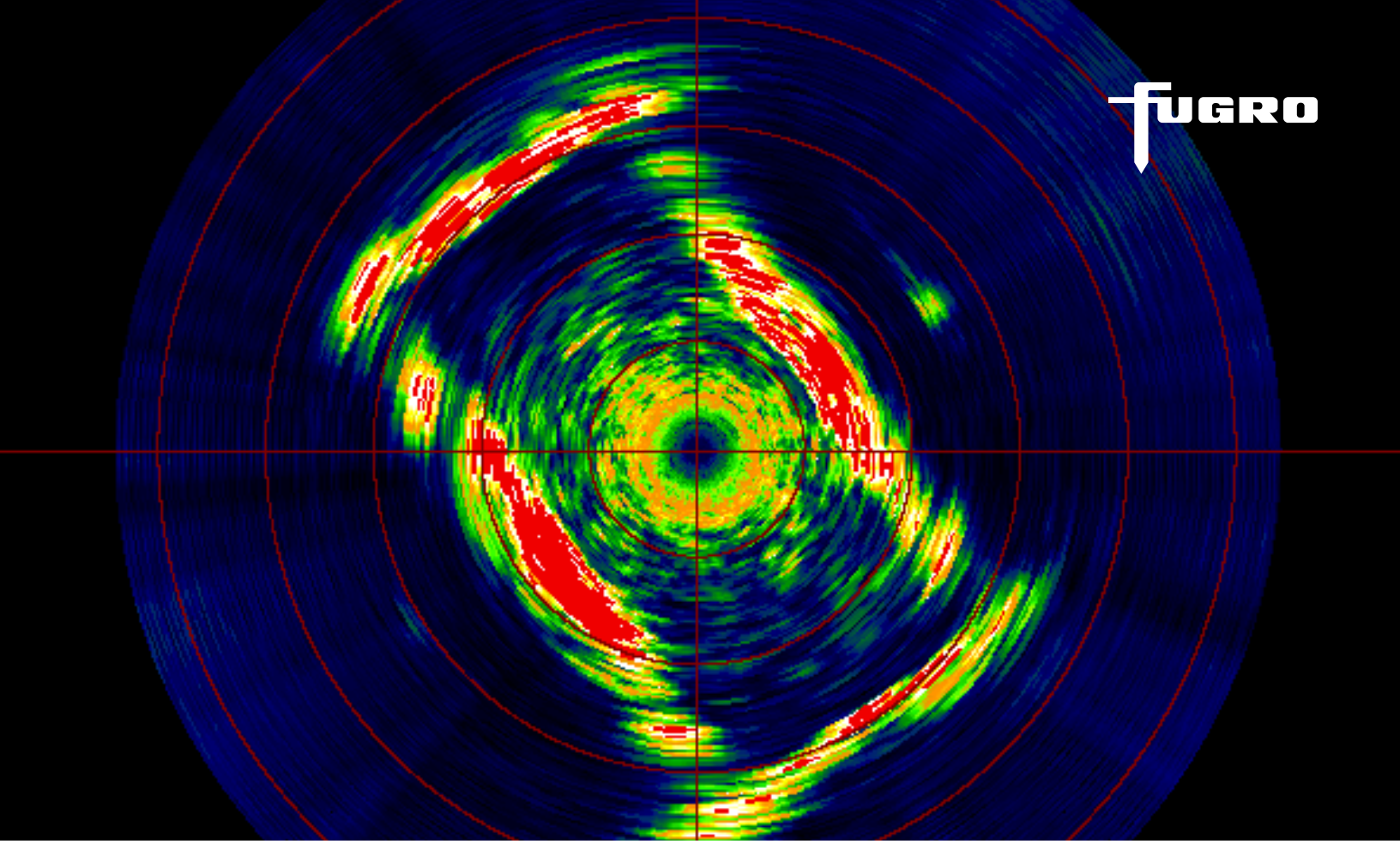


STAR-ORION SOUTH DIAMOND PROJECT

PRINCE ALBERT, SASKATCHEWAN, CANADA

In 2018, Star Diamond Corp. announced the positive results of the independent Preliminary Economic Assessment ("PEA") on the Star and Orion South Kimberlites, located in central Saskatchewan about 60 kilometers east of the city of Prince Albert. The PEA estimates that 66 million carats of diamonds could be recovered in a surface mine over a 38-year project lifespan.

Star Diamond needed to accurately determine the volume of the record setting excavations. The volume was necessary to calculate the yield from the bulk sampling process. Concern that initial exploration sampling methods had negatively influenced the first site evaluation drove the selection of the second site evaluation excavation method to a hydro-mill. Validity of the second evaluation process depended on the accurate measurement of the excavation volumes in the vein of interest. Adding to the challenge, the veins zone of interest lay deeper than 350 feet and extended to almost 800 feet. An accurate dimensional measurement of an 800 feet deep barrette was needed for a true preliminary economic assessment.

Fugro Loadtest along with DGI Geoscience provided SONICaliper equipment and personnel to perform the excavation surveys. These were the deepest hydromill panels to be profiled with the SONICaliper. The accelerated schedule required it to be deployed using two cables (100 and 200 meters) connected over the excavation. The SONICaliper accurately determined the shape with 360-degree data collected in a single pass.

PROJECT INFORMATION

- Owner: Star Diamond Corporation
- Client : Rio Tinto
- Completion Date: November 2019

SERVICES PROVIDED

- SONICaliper shaft inspection

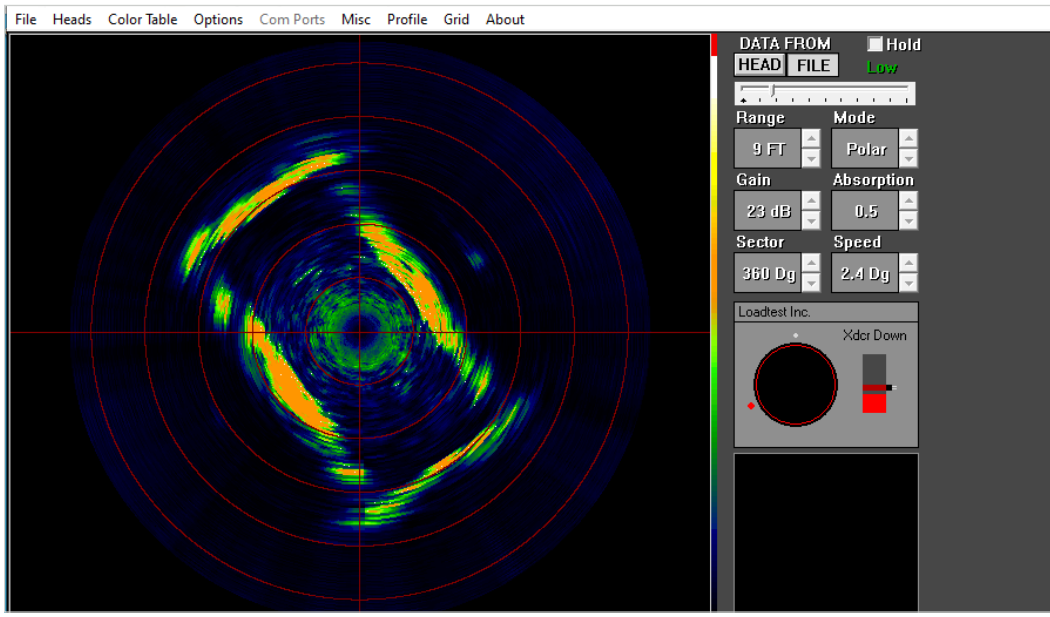
SONICaliper characteristics fit the project's needs.

- Self-suspension as a plumb bob
- Extendable cable while in use
- Rotating data head gathering 400 points in 360-degree rotation
- Error calculation and calculated volume output

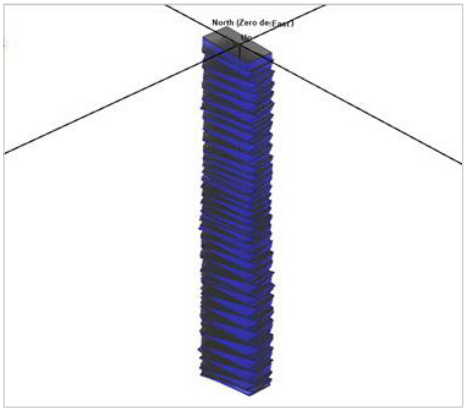
Adding to this, the SONICaliper capability to not only measure circular caisson excavations, but its ability to measure rectangular barrettes and slurry wall dimensions made it the tool of choice for the project.

When the hydro-mill excavations were made the slurry was extensively cleaned of particulate, with that from the vein of interest retained for mineral evaluation. SONICaliper inspections were then made of the extreme excavation, splicing cable extensions into the system as needed.

SONICaliper measurements, calibrated to known dimensions at the surface, proceeded at general 4-foot vertical spacings until the vein of interest was reached when the measuring interval became a 2-foot spacing. Performed in November 2019 these hydro-mill panels are the deepest ever profiled by SONICaliper.



SONICaliper's real-time results



Excavation model

LOADTEST™

info@loadtest.com
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