

VR 1957/63

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15th April, 1957

MEMORANDUMDIAMOND DRILLING EQUIPMENT

I have opened and inspected a parcel of six EX "Oriented" bevel wall diamond core bits from Mindrill Ltd. From my long experience with diamond bits I readily observed that these bits have two major faults.

- (1) The "oriented" points of the diamonds on the face of the bits are protruding too far from the matrix, and could only be expected to survive under ideal drilling conditions.
- (2) The most wear and loss of gauge in a properly run bit frequently takes place on the outside of the bit, because this part besides being the largest area on the bit, it is continually shouldering and cutting its way through the new ground. It then only follows that the diamond strength on the outside should be well provided for.

These bits have 28 cutting rows of diamonds across the face while the edge of shoulder and outside of bit only have 16 rows of similar sized diamonds to take the cut and strain on the part that has the most cutting to do. In short the outside cannot keep up with the rate of face cut.

Suggested remedy.

- (1) All face stones to be set nearly flush with the metal (or matrix).
- (2) At least 28 cutting rows of diamonds down edge of shoulder and outside of bit.



(K.L. Evans)

DRILLING SUPERINTENDENT.

The Director of Mines,  
Department of Mines,  
HOBART.