

# Complex42™

## Trial: Dart Mining

**CHEMFORCE**



<b>PROJECT</b>	NQ Exploration Drilling – Hard granite
<b>SUBSTRATE</b>	Hard Grey and Pink Granite
<b>PLACE</b>	Mita Mita, Victoria, Australia
<b>DATE</b>	13 <sup>th</sup> September 2022
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<b>DRILL RIG</b>	Atlas Copco DIAMEC® 252
<b>DRILL BIT</b>	Boart Longyear 10 (Softest Matrix)

## SUMMARY OF RESULTS

### WITHOUT COMPLEX42™

### WITH COMPLEX42™

Rate of Penetration (ROP)	
44mm / minute	150mm / minute
Drill Bit Life	
100 – 120 meters	190 meters
Diesel Consumption	
80L / day	60L / Day
Additional Advantages	
	<ul style="list-style-type: none"><li>• 12.5 to 25% reduction in torque load</li><li>• Significantly less wear on drill rods</li><li>• ROP less affected by friable rock structures</li></ul>

### Starting Parameters

MUD: Potable water plus recommended dose of GeoBond 2.0 polymer.

Water management: 3 x IBCs at 90% capacity (2,700L). 2 IBCs use for water return and mud settling, 1 for adding polymers.

Starting depth: 47.6 meters (NQ diameter 75.7mm), approx. volume 214 Litres



## PART 1 – Control, NO Complex42™

Mud formulation: Potable water plus Geo Bond 2.0 @ recomm. dose  
Best 3m excursion: 67 minutes (44mm/minute)  
RPM:

## PART 2 – With Complex42™

Mud formulation: Potable water plus Geo Bond 2.0 @ recomm. dose PLUS 0.8% COMPLEX42™  
Best 3m excursion: 23 minutes (130mm/minute)  
RPM: 800

## PART 3 – With Complex42™ Geo Bond 2.0 dose HALVED

Mud formulation: Potable water plus Geo Bond 2.0 @ ½ recomm. dose PLUS 0.8% COMPLEX42™  
Best 3m excursion: 20 minutes (150mm/minute)  
RPM: 600 to 700

## POINTS OF INTEREST

- Once system is dosed, when there is little fluid loss due to fissures, only small amount (in this case 4L) of Complex42™ is required to maintain performance.
- Faster ROP, 12.5% to 25% decrease in fuel consumption, plus lower dose of viscosity modifying polymer = huge reduction in “all-in” sustaining costs (AISC) and significant increase in returns.
- Even in broken, friable ground average ROP is higher.

