



Vacuum-Insulated-Tubing

Low Temperature Geothermal Well Design Options

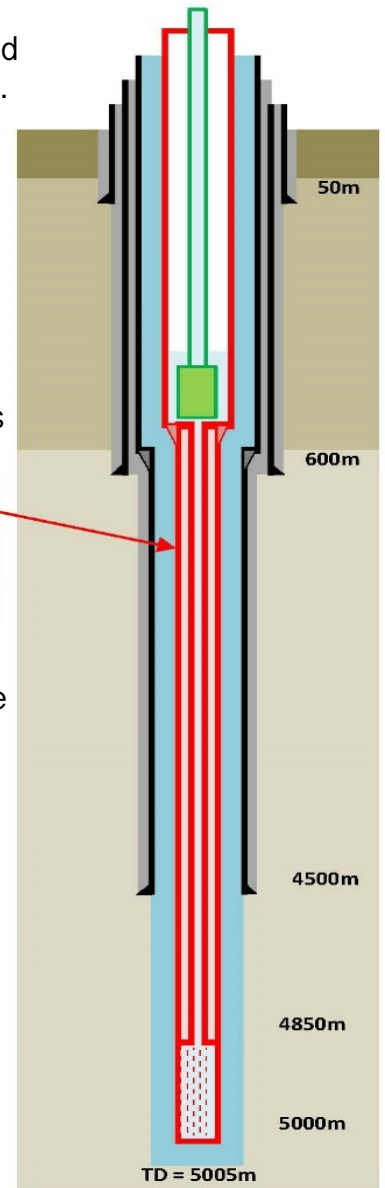
Southern Cross Energy was recently engaged to think outside the box and design a bespoke solution for a 5,000m low-temperature geothermal well.

Due to the low temperature nature of the well, various solutions were utilized such as the use of a dual string Vacuum-Insulated-Tubing (VIT) completion.

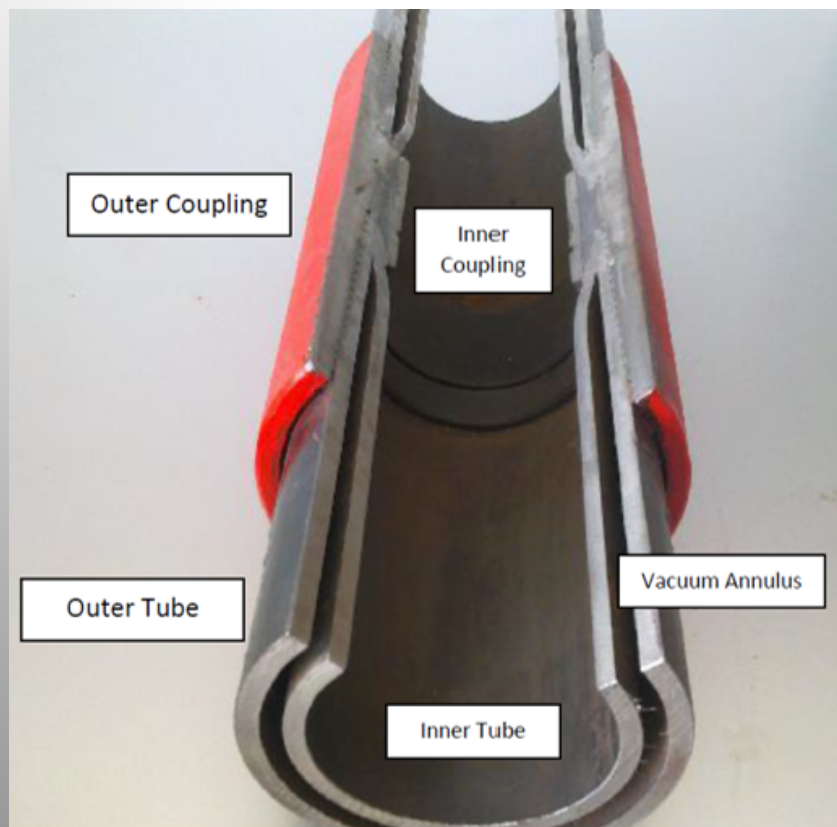
This completion was chosen in order to minimize the thermal losses during circulation from TD to surface and was incorporated into a closed loop binary cycle system.

The final design report was used in the project application phase and was subsequently operationalized in 2019.

Lower Section of Casing	
Casing Size	5"
Casing Type	P110 - 17 lb/ft
VIT = 5" outer + 3-1/2" Inner	
Setting Depth	connect to slotted
Section Length	4350m



Through our established network of suppliers in Mainland China, we were able to provide a cost effective yet high quality outcome for our client.



	W.m ⁻¹ .K ⁻¹
	W/m. °C
VIT (lower limit)	0.0020
Carbon Dioxide	0.0146
Argon	0.0160
Pure Oxygen	0.0265
Polyurethane Foam	0.0300
Methane	0.0328
Ploystyrene Foam	0.0330
Fibre Glass	0.0450
VIT (upper limit)	0.0800
Hydrogen	0.1819
Teflon	0.2500
HDPE	0.4100
Water	0.5600
Concrete	0.8000