

Client: GDF Suez Energy

Value: R3.5 million

Services: Geotechnical investigation; rotary core drilling

Project Duration: Mar 2015 – April 2015

# Kathu Solar Plant, Northern Cape

## Geotechnical Investigation

### The Task

The Kathu Solar Plant is a thermoelectric generation power plant, consisting of a 100MW water steam cycle plant, harvesting solar energy by means of a Parabolic Trough Collector field. The site is located in the Northern Cape Province of South Africa, approximately 10km north-west of the town of Kathu.

### Design Services

Nurizon was appointed to undertake a geotechnical investigation for the solar plant development, which consisted of a desktop study, site investigation works, laboratory testing and technical analysis.

The site investigation consisted of the following elements.

- 26 rotary core boreholes, drilled to a depth of 15-20m each and within the Solar Field area;
- 2 rotatory core boreholes, drilled to a depth of 40m each. The first borehole was located in the Salt Tank area and the second in the Turbine area;
- 100 percussion boreholes to a depth of 5m each. The purpose of these boreholes was to determine the subsoil thickness;
- Test pit profiling and sampling for borrow pit areas;
- Pressure meter testing; and
- Laboratory testing.

The rotary borehole cores were required to determine the soil properties, rock depth and any potential cavities and were logged as part of the investigation



## The Result

The geotechnical investigation technical report provided information regarding the geology, in-situ material/rock properties (level of bedrock), founding recommendations (prediction of bearing capacities), the presence of ground water, excavatability, material stability, identification of problematic soil conditions and the suitability of in-situ material for foundation design, road building material and general fill.



## Kathu Solar Plant, Northern Cape

Geotechnical Investigation