

CASE STUDY

Tharisa Minerals Vulcan Project

tharisa

2023

INTRODUCTION



Tharisa, the platinum group metals (PGMs) and chrome co-producer, has announced that cold commissioning of its Vulcan ultra-fine chrome recovery and beneficiation plant has commenced. Vulcan is, Tharisa says, the first large-scale plant to produce chrome concentrates from chrome ultra-fines.

At present, Tharisa Mine is the world's largest single chrome deposit. Due to the anticipated growth in demand for chrome, which is largely used in stainless steel, the Group had an advantageous position.

To assist in the expansion project for the Tharisa Mine, 4Sight OT Automation was contacted to provide modern digital automation and control solutions. “Tharisa Minerals is 74% owned by Tharisa and is uniquely positioned as the world's only co-producers of both PGM and chrome concentrates. Tharisa Minerals' core asset is the Tharisa Mine, which is situated on South Africa's Western Limb of the Bushveld Complex - host to more than 70% of the world's platinum and chrome resources [Source: www.tharisa.com].

The Tharisa Mine expansion project would ultimately process 3.6-million tons of ROM (run-of-mine) ore a year. The Vulcan project was completed by 4Sight OT Automation in collaboration with Wood PLC as the engineering procurement and construction management contractor, and was completed over a period of 7 months, going live on 1 November 2021.

4Sight OT Automation is part of 4Sight Holdings - leaders in Digital Transformation Technologies & Solutions.



PROJECT SCOPE AND REQUIREMENTS

The Siemens PLC hardware (S7-1500) and Siemens SCADA software (WinCC) solutions were to be designed, developed and provided by 4Sight OT Automation. The project also included the production and supply of 58 x IPDB Panels, 65 x Remote IO, Panels with IO Link modules, one Server Panel and one PLC Panel with two S7-1500 CPU's...

Two commissioning engineers from 4Sight OT Automation helped with process commissioning and I/O testing (I/O count: 2039). Furthermore, 4Sight OT Automation conducted the configuration of all networks using Siemens Scalance Switches and supplied general supplies of cable, junction boxes, and any other equipment required throughout the project.

BENEFITS AND RESULTS OF THE THARISA MINERALS VULCAN PROJECT COMPLETION

Siemens' cutting-edge technology was seamlessly integrated into the PLC hardware and SCADA software solution by 4Sight OT Automation, enabling effective process control and communication.

The scalable and open SCADA system from Siemens provides an innovative process-visualization system with a range of high-performance functionalities for monitoring automated processes, enabling maximum plant transparency and productivity. The SCADA System was designed and built according to the ISA101 standard utilising Abnormal Situational Awareness to improve the operational experience by the operational staff.

Vulcan is a key component of Tharisa Mine's sustainable growth plan and helps to guarantee that the business will continue to generate sustainable returns for all of its stakeholders. The project of about R28 million took 7 months to complete, cementing 4Sight Asset Automation's reputation as a trustworthy provider of Automation and Control solutions.



VULCAN PLANT

- Under construction
- Nameplate capacity: 340 ktpm ROM
- Proprietary ground-breaking use of existing technologies in fine chrome recovery
- Targeting improved chrome recovery from 65% to 82%

Tharisa has started cold commissioning its Vulcan plant, pictured under construction, in South Africa



4sight | OT | AUTOMATION

4Sight @ Germiston
Unit 22, Knightsgate
Industrial Park
1401

4Sight @ Fourways
28 Roos Street
Fourways
2191

Tel: (+27) 012 640 2600
Email: ot.sales@4sight.cloud
Web: www.4sight.cloud

Directors: Danie Badenhorst (Managing Director) | Tertius Zitzke | Eric van der Merwe | Christiaan Leboho
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