



DR. FRANK WROBEL

CONSULTING GEOLOGIST

CAPABILITY STATEMENT

Exploration & Geological Modelling | Competent Person Services | Aggregates & Quarrying | GIS

Name	Credentials	Location	Contact
Dr. Frank Wrobel	EurGeol 1136 Dr. rer. nat.	Hannover (Garbsen), Germany	+49 (0)172 43 44 820 www.geoconsult-sw.de

1. PROFILE

Dr. Frank Wrobel is an independent consulting geologist with over 26 years of professional experience in the global mining and mineral sector. He holds a Doctorate (Dr. rer. nat.) and Diploma in Geology from the University of Hannover, Germany, and is registered as a European Geologist (EurGeol 1136) under the European Federation of Geologists. He is a member of BDG (German Association of Professional Geoscientists), DGG (Deutsche Gesellschaft fuer Geowissenschaften), and GTV (Geothermische Vereinigung).

Operating since 2004 through his own company, Dr. Frank Wrobel – Consulting Geologist, he provides specialist services in exploration geology, 3D geological modelling, resource/reserve evaluation, and Competent Person (CP) sign-off under all major CRIRSCO-family reporting codes. He has worked in more than 25 countries and maintains a network of associate relationships with leading international engineering and mining consultancies ensuring all areas relevant to mining are covered.

2. SERVICES

Competent Person (CP) Services

- Mineral Resource and Mineral Reserve estimation and reporting (JORC, NI 43-101, PERC, UN, and other CRIRSCO-family standards)
- Reporting of exploration results under international standards
- Independent Resource/Reserve audits and expert witness services
- Due diligence support for transactions, financing, and stock exchange listings
- Exploration program planning, supervision, and management

3D Geological Modelling

- 3D geological modelling for mining, environmental, and geothermal applications
- Coverage of igneous, hydrothermal, and sedimentary ore deposit types
- Application of SURPAC™ (licence owner with maintenance contract), and other 3D modelling packages
- Applied geostatistics: variogram analysis, kriging, geostatistical simulation
- 3D-PDF creation using TETRA 4D™ and Adobe 3D Reviewer™ for professional visualisation and presentation
- Training courses in 3D geological modelling

Aggregates & Quarrying (Steine & Erden)

- Geological inventory and resource calculation for quarrying operations
- Field mapping, sampling, and drilling programme management
- Core logging and geophysical survey interpretation
- Reporting per DIN EN 932-3 / TL Gestein-StB 04 and BN 918 065 (Deutsche Bahn AG – track ballast standard)

GIS Services & Digital Site Management

- GIS-based site management using QGIS platform
- Data capture, digitisation, structuring, and georeferencing of legacy datasets
- Data migration and pipeline management for centralised geodata management
- Operational decision support for planning, extraction scheduling, and permitting

3. COMMODITY COVERAGE

- Iron Ore – extensive international experience (Egypt, Saudi Arabia, Estonia, Algeria, South Africa, Chile, Peru, Iran, Myanmar, Libya, Turkmenistan, Azerbaijan)
- Base Metals – Copper-Cobalt (DRC), Lead-Zinc-Silver (Turkey, Kosovo), Nickel-Iron (Greece)
- Coal & Lignite – Kazakhstan, DRC, Turkey, Kosovo, Venezuela, Germany
- Fluorite – Mongolia, Germany
- Rare Earth Elements (REE) – Mauritania
- Potash – UK
- Tin – Germany
- Aggregates & Construction Materials – Basalt, Quartzite, Limestone, Greywacke, Diabase, Quartz Porphyry (Germany, extensive)
- Geothermal Resources – Germany
- Oil Sands – Kazakhstan

4. SOFTWARE & TOOLS

- SURPAC™ – licence owner (incl. maintenance contract); primary 3D modelling platform
- TETRA 4D™ + Adobe 3D Reviewer™ – 3D-PDF creation for reporting and client presentation
- QGIS platform for GIS-based mining site management
- Applied geostatistics tools

5. GEOGRAPHIC REACH

Dr. Wrobel has documented project experience in more than 25 countries across six continents:

W. Europe Germany, Spain, Italy, UK, Greece, Kosovo	E. Europe / C. Asia Poland, Estonia, Azerbaijan, Kazakhstan, Turkmenistan	Africa & Middle East Algeria, Egypt, Libya, Mauritania, DRC, South Africa, Saudi Arabia, Iran	Americas Peru, Chile, USA, Venezuela	Asia & Pacific Myanmar, Mongolia, Australia
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6. REPRESENTATIVE PROJECTS

Iron Ore

- Bahariya, Egypt (2024–ongoing): CP; resource definition and metallurgical sampling; JORC standard (SST/Ferropro)
- Wadi Sawawin, Saudi Arabia (2022–2023): CP; NEOM exploration programme; JORC reporting (SOFRECO/NEOM)
- Jõhvi, Estonia (2019–2022): CP; PERC reporting on iron ore and PGM exploration (Geological Survey of Estonia)
- Gara Djebilet, Algeria (2016–2019): CP; 3D modelling and JORC resource reporting for FERAAL (DMT Consulting)
- Shougang Hierro Peru, Peru (2008–2011): Geological modelling expert across three expansion phases (IMC Montan/SURPAC/DATAMINE)

Base & Precious Metals

- LARCO FeNi, Greece (2017–2018): auditor for all ferronickel mine Resource/Reserve statements
- Deziwa Cu-Co, DRC (2014): CP; JORC Reserve calculations for feasibility study (HPC AG)
- Trepca Pb-Zn, Kosovo (2016–2017): CP; exploration and project development support (HPC AG)
- Eti Gumus Pb/Zn, Turkey (2012): 3D geological modelling and JORC Reserve calculation (IMC Montan, DMT / TÜV Nord)

Coal & Industrial Minerals

- Karaganda Coal Basin, Kazakhstan (2006–2007): JORC Reserve evaluation for ArcelorMittal underground mines (IMC Group, DMT / TÜV Nord)
- Luena Lignite, DRC (2013): CP; JORC Resource/Reserve for PFS/BFS (HPC AG / GECAMINES)
- REE, Mauritania (2017): Mineral Resource estimation with SURPAC (SST)
- Fluorite Mine Phoenix, Germany/Thuringia (2022–ongoing): 3D modelling and NI 43-101 Mineral Resource reporting (EC Terra Pty Ltd)
- York Potash, UK (2017): Geotechnical 3D model for underground mine design (Thyssen Schachtbau)

Aggregates & Quarrying (Germany)

- Adelebsen, Fritzlar, Walbeck, Flechtingen, Grosssteinberg, Silbernaal, Badenhausen, Bramburg, and others (2000–present): Resource assessment, 3D modelling, exploration, and approved expert petrographical reporting across basalt, quartzite, limestone, greywacke, and diabase quarries throughout Germany (u.a. Wegener / Basalt / Nüdling / Mütze / Rhode)
- Approved expert; thin-section analysis and reporting (TL Gestein StB 04; DIN EN 932-3)

Geothermal & Environmental

- Geothermal projects, Germany (2013–ongoing): 3D geological modelling for drilling programme development (GeoDienste GmbH)
- Bisperode Quarry Landfill, Germany (2011): 3D geological model for groundwater numerical model (GeoDienste GmbH)
- Nachterstedt Lignite Mine, Germany (2010): 3D model supporting slope stabilisation concept (HPC AG)

7. CORPORATE INFORMATION

Entity	Dr. Frank Wrobel – Consulting Geologist
Location	Garbsen / Seelze, Germany
Phone	+49 (0)172 43 44 820
Website	www.geoconsult-sw.de
Credentials	Dr. rer. nat. (University of Hannover) EurGeol 1136
Memberships	BDG (Corporate Member) DGG GTV
Years of experience	26+ years in mining industry
Reporting standards	JORC, NI 43-101, PERC, UN (CRIRSCO family)
Version	April 2026