

CONSULTING SERVICE

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ENGINEERING CONSULTING AND EXECUTION

We provide comprehensive technical solutions for civil engineering, mining, and geotechnical instrumentation projects. We focus on detailed studies to construct tailings dams, leach pads, landfills, and more; we also design roads, bridges, drainage works, and river defenses.

We also perform specialized analyses of the physical, geochemical, and operational stability of structures, along with hydrogeological, hydrological, and numerical modeling studies using advanced technological tools.

Our team performs complete geomechanical studies, covering rock mass characterization, proppant design, and mining methods. We ensure that we offer personalized advice, innovative design, constant monitoring, training, and quality audits.

In every project, we seek to ensure sustainability, efficiency, and compliance with the highest technical and environmental standards..



SERVICES

- ✓ Detailed engineering for the construction of Tailings Dams, Leaching Pads, and Landfills.
- ✓ Detailed engineering for the construction and/or remediation of landfills.
- ✓ Profile and Definitive Studies for the Construction of Roads, Bridges, and Works of Art.
- ✓ Profile and Definitive Studies for sanitation works.
- ✓ Profile and Definitive Studies for riparian defense work.
- ✓ Physical, geochemical, and operational stability studies for tailings dams, leach pads, and waste dumps.
- ✓ Slope stability studies, subway, and surface mining works.



SERVICES

- ✓ **Hydrogeological Studies and Numerical Modeling for groundwater (Certificates according to Directorial Resolution N°013-2017-ANA-DARH and Letter N°088-2021-ANA-DARH with undetermined validity).**
- ✓ **Surface and groundwater monitoring; with environmental diagnosis for the delimitation of critical areas and identification of contamination sources.**
- ✓ **Vulnerability and Hazard studies for mining and natural activities.**
- ✓ **Hydrological and hydraulic modeling of rivers and streams with debris flow simulation; use of FLOW 2D and IBER software.**
- ✓ **Soil sampling for geochemical characterization. Application of guidelines D.S. 002-2013-MINAM, R.M. 034-2015-MINAM and R.M. 137-2016-MINAM.**



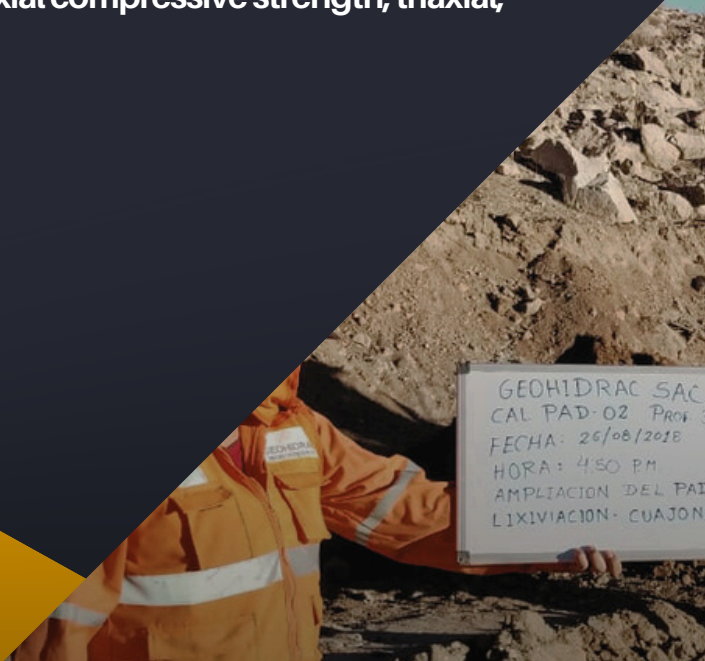
SERVICES

- ✓ **Soil Mechanics and Rock Dynamics studies:**
 - * For the design of shallow and deep foundations.
 - * For the design of buttresses, and retaining walls.
 - * For the design of slope support, inside the mine, and tunnels.
 - * For pavement design.
- ✓ **Preparation and interpretation of structural geological maps and sections with borehole, geochemical, and geophysical data using Target and Geochemistry software for ArcGis.**
- ✓ **Soil and rock mechanics laboratory tests.**
- ✓ **Georeferencing, Topographic surveying (Total Station and DRON), and Bathymetry.**
- ✓ **Mining operations:**
 - * Design and construction of road, hydraulic, civil, and mining tunnels.
 - * Construction of subway and surface mining works.
 - * Execution of subway workings stabilization and slope stabilization works.
 - * Application of Shotcrete for civil and mining works.
 - * Construction of camps and administrative offices at the mining operation sites.

SERVICES

✓ Comprehensive geomechanical studies:

- * We offer advice and consultancy in Geomechanics, slope stability in open-pit and underground open-pit mining, and support of subway mining works.
- * Geomechanical field studies, applying subway and surface Geomechanical mapping techniques by: cells, Geotechnical windows or stations, and detail lines.
- * Construction of three-dimensional geomechanical models from information taken in situ - Geo structural field surveys, stability analysis by application of numerical methods and computational software.
- * Geomechanical characterization of rock masses.
- * Simulation of mechanical, static, pseudo-static, and dynamic behavior of rock massifs of the rock massif around the excavation, using computational software.
- * Design of exploitation methods, according to the geometry of the deposit and according to the parameters and properties of the rock mass.
- * Design of support systems to control the stability of subway workings.
- * Analysis of rock samples in rock mechanics laboratory. Tests of:
Point load to determine RMR and GSI, uniaxial compressive strength, triaxial, tensile, direct shear, and elastic constants.



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- * Construction of three-dimensional geomechanical models from information taken in situ - Geo structural field surveys, stability analysis by application of numerical methods and computational software.
- * Geomechanical characterization of rock masses.
- * Preparation of guidelines for the management and development of the geomechanical management and rock mass control management plan of a GCMP mining operation.
- * Integral advice on Concrete Plants for the application of Shotcrete in subway mining and civil works.



SERVICES

- * Technical specifications and design of different types of shotcrete and Shotcrete resistance tests at ages 7, 14, and 28 days.
- * Advice on the selection of mechanized or manual equipment for the application of Shotcrete according to the operational characteristics of the mine or civil work.
- * Study for the selection, design, and installation of various rock bolting systems in subway and surface workings in subway mining and civil works.
- * Elaboration of Geomechanical manuals and primers.
- * Development of protocols, standards, and Geomechanical procedures for the installation of various types of support.
- * Quality audits and follow-up to the Geotechnical - Geomechanical management of a mining operation.
- * Qualification and training of technical and professional personnel in charge of the Geomechanical and support management of mining operations and civil works.
- * Construction of operational scale models for dynamic analysis of mining or civil structures in diverse rock massifs.



CONTACT US!



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