



GEOISA

DESARROLLOS GEOLOGICOS, S.A.



"... our commitment: experience, productivity and efficiency ..."
since 1991 executing underground works



Was founded in 80's, in the north Spain coal mines. First we achieved the Mine equipment supplies to do machinable the preparation and exploitation Works through **EMCOR** company, with miners roadheaders to dig the roadways, with shearers to coal production.

The mine companies that were interested in these equipments did not know how to use and operate these. So also to supply the machines, we founded our first company to Operate in Coal Mines, **SATRA**, which main activity is the Infrastructure works.

In these works the average roadways advances were improved higher that were multiplied by six the average of the traditional methods of drill and blasting, so quickly were improved the infrastructures contracts.

That is the reason why a great trust in mines companies is generated, and began to ask for more various services (mineral exploration drilling, Inclined galleries up 40°, ventilation shaft to communicate different levels,...), reason why the second of the companies of the Group, **GEOSA**.

Likewise, a highest mechanization level was being offering and particularly the long wall method coal exploitation with shearers and shield support, boring **CARBOMECH**, that analogously improved notably the average coal production that they had obtained until then. Due to the engineers and operators high qualification to operate this kind of equipments, we got to apply in coal seams where then never had been used with a high result.

A contract to develop and exploit one of the largest underground coal mines in Colombia was given to Carbomech who got the biggest productions by underground methods performed in South America.

In the year 1997, Carbomech was awarded the preparation and operation of one of the largest underground coal deposits in Colombia, where the largest inland production in South America was achieved in the coal sector.

Since the year 2000, the group was a step further, taking advantage from the high technical and operational skills gained during previous years in mining and expanded its activity to the Civil Engineering sector, in the implementation of drilling and microtunnels, and later also cover the tunnels in any section.



UNDERGROUND WORK



MINING



CIVIL WORK



Presentation

Desarrollos Geológicos , S.A. (GEOSA) was born as a company dedicated to the execution of *drilling works and special projects for the mining industry.*

It subsequently expanded its activities into the field of *Civil Engineering* and particularly into the execution of pipe jacking works *(microtunneling)*. Nowadays our company's production line has two divisions that carry out mining and civil works..

Products y services

MICROTUNNELING

Standing and Prestige

In the wide world of pipe jacking techniques GEOSA has devoted its main efforts to the construction of pipelines using pipe jacking/microtunneling methods. The company's high standing and prestige in this field are widely acknowledged.

Internationalización

Having achieved a prominent role in the Spanish market, GEOSA is currently expanding its activities to other countries.

Purpose of our work

- Sanitation sewers
- Water supply tunnels
- Service galleries
- Outfalls (desalination plants, wastewater, power plants)
- Drainage for linear works
- Highway and railway underpasses, etc.

MICROTUNNELLING

RAISE BORING

STEEP INCLINED PLANES

SHAFTS AND UNDERGROUND PITS

Resources

- Being a company with **a high degree of skill and specialization** one of GEOSA's pillars is its human capital.
- Likewise, said human capital has been provided with state-of-the-art equipment.

Human Resources:

- 2 Civil Engineer.
- 1 Geologist and Occupational Health and Safety Technician.
- 1 Mining Engineer specialized in drilling and boring.
- 1 Technical Mining Engineer specialized in drilling and boring.
- 1 Technical Mining Engineer and Occupational Health and Safety Technician - Health and Safety Department head
- 1 Business Administration Graduate.
- 6 Working teams specialized in pipe jacking , each team consisting of a head of shift, an electrician, a pilot, a mechanic and an hydraulic technician, plus assistants.
- 1 Raise-Boring equipment operation team (6 persons).
- 2 Mining work teams (mining guards, drillers, explosive experts, etc...).

5 microtunneling equipments

Diameters **DN 600 to DN 2000**

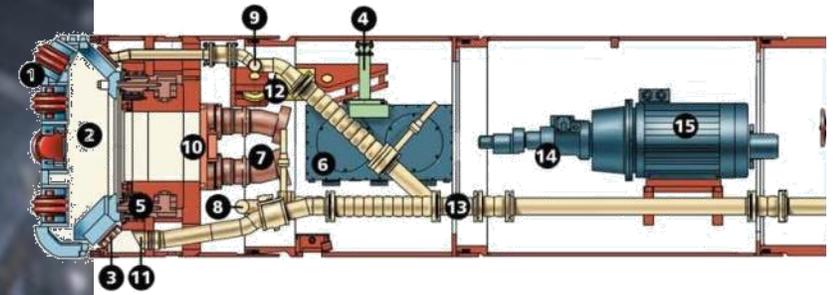
Over 45.000 meters completed (2001- 2016)

in total **230 stretches**

7.000 m on curved alignment

6.000 – 8.000 m/year microtunnelling

Link Tunnel and Deep
Borehole 16. Herrerochacra
TUBO (C) S.A.S. - S.A. -
control en San Diego's
Borehole Tunnel System
German Program IETSP.



Material Resources :

Raise-Boring:

- 1** Tamrock RHINO 400 H Equipment.
- 2** Turmag P-600 y P-1200 Equipment.

Closed shield drilling (MICROTUNNELLING):

- 3** full **HERRENKNECHT AVN 1200 T** equipments, plus **1400 y 1500** extension kits (covering a diameter range of 1200-1400-1500).
- 1** full **HERRENKNECHT AVN 1800 T** equipment, plus a **2000** extension kit (covering a diameter range of 1800 -2000).
- 1** **HERRENKNECHT AVN600** microtunnelling equipment (shares some resources with **AVN 1200**).

Mining equipment :

Manual drilling equipment, a drilling jumbo for small section galleries, loaders, scrapers, winches, etc...

Desarrollos Geológicos, S.A.



Quality and Environmental

QUALITY AND ENVIRONMENTAL MANAGEMENT SYSTEM

DESARROLLOS GEOLÓGICOS, S.A. (GEOSA) was born as a company dedicated to providing services related to underground and drilling works. In this way it is essential to get involved with a full commitment to HSQE policies carried its effect through the development of its activities with a close relationship with its customers and setting clear strategic objectives in the context of relations company- customers and society. GEOSA pursued established as market leader in the execution of pipe jacking/microtunnelling, promoting the achievement of the objectives, the quality of service, environmental respect and care about his workers' H&S, making available all technical and human resources.

Our mission is to carry out works and services in accordance with the purposes required by our customers, optimizing prices and meeting deadlines, and quality and environmental requirements specified, with the highest possible return.

Through its Management System, based on the Standards UNE-EN-ISO 9001, UNE-EN ISO 14001, GEOSA Manager acquires a firm commitment to meet requirements applicable to the product and all actors (Customer, Property and Society) meet prevention, environmental protection and conservation, the promotion of improved working conditions, and to improve the effectiveness of the management system so ongoing and planned, and to provide returns for shareholders.

This commitment is articulated by GEOSA Manager

- *Our customers are the focus of our business.*
- *Our business has to be profitable as a guarantee of future*
- *The commitment must be for everyone*
- *Establishing channels and continuous improvement processes, we improve all*
- *Customers-Company-Vendors relationship must ensure quality and environmental premises*
- *Respect for the environment is respect for our society*
- *Customer satisfaction*



 **CARBOMECH**

 **SATRA**

 **GEOLOGOS**
DESARROLLOS GEOLOGICOS, S.A.

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