

# **BARRICK GOLD: PUEBLO VIEJO**

## **REVITALISING A REGION**





# REVITALISING A REGION

*The Barrick Pueblo Viejo gold mining complex remains the biggest single investment in the history of the Dominican Republic and continues to break new ground as it begins to realise its potential*

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RESEARCH BY: **VINCE KIELTY**





For many years tourism and agriculture have been the traditional drivers of economic growth for the Dominican Republic. However in more recent times a third pillar has been slowly emerging and developing and that is mining. Today the sector is a cornerstone of the country's economic prosperity, with the mining industry's contribution to its GDP rising by as much as 74 percent in 2011 alone.

Located approximately 100 kilometres northwest of the capital city of Santo Domingo, the Pueblo Viejo mine represents one of its most significant investments to date and the largest foreign investment in Dominican Republic history, with mine construction capital of approximately \$3.8 billion. With declared reserves of 23.7 million ounces of gold, Pueblo Viejo holds by far the richest deposits of gold ever identified in the country. The site, which is a sulphidic refractory gold deposit, is currently being developed to a 24,000 tonne-per-day design capacity.

The mine comprises two major oxide deposits known as Monte Negro and Moore, and three other small deposits. Moore is the largest deposit and is separated from Monte Negro by 500 metres of barren mud-stones.

The mine had been in production since 1975. It was operated by the state-owned mining company Rosario Dominicana. The mine had produced more than five million ounces (moz) of gold and 22moz of silver in its operational life. The mining operations had to be halted, however, in 1991 due to low gold and silver prices and a lack of



**We are** a company dedicated to the Engineering procurement and construction of projects, with a wide expertise that covers the most important sectors of the construction industries, such as Mining, Energy and Infrastructures.

SERVINCA was founded on December 29th, 1979, at its headquarters located at Santo Domingo; Dominican Republic. During 33 years of experience our professionals have specialized in developing projects covering a wide range of disciplines, such as Electrical Power generation, transmission and distribution networks, Steel Infrastructures, Mechanical & Industrial Installation. Piping and Civil works, including Engineering, Management, Procurement and Construction.



## Engineering & Construction Services

Our vast experience has become to be the best solution for the development of sustainable projects, with a large availability of professionals in all applicable Engineering areas, such as Civil, Electrical, Hydraulics and Mechanical, assuring full compliance to our customer by delivering quality and costs efficient products.

## Business Philosophy

Our major commitment is to comply with the highest quality standards, ensuring the safety of our workers and the environment with a strict scheduling plan for the on time delivery of our projects.

The good results obtained in the Engineering, Procurement, Management and Construction of large projects are resultant products of our own integrated management system, implemented by a specialized organization structure oriented to results that fulfills and supersedes the client's expectations.

"Our quality System is implemented and adjusted to each project to meet the best Engineering practices, followed by a strict Occupational safety and environmental plans carried by our Professional staff, whose experience and integrity are the main elements that has contributed to the success of SERVINCA, positioning our company as leader in the construction industry".

# SERVINCA

K136 Project, PVDC Pueblo Viejo, Dom. Rep.

**"SERVINCA have reached a total of 1,200,000 man hours without lost time incident PVDC BARRICK"**



Award nomination for energy industry CADOCON, PVDC BARRICK, Dominican Republic



SERVINCA was selected as the best company of the year in row energy industry for three consecutive terms (2002-2012) by the Dominican Chamber of Construction (CADOCON), catapulting Servinca well as the leader in energy and other areas of engineering in the Dominican Republic.



CADOCON 2013 Company of the Year Awards in the Energy Sector SERVINCA S.A.



METRO SANTO DOMINGO line I y II, Emergency Power Generation plant, 40MVA and Substation 138KV/40MW.



## Services we offer

SERVINCA, with over 33 years experience in the engineering and construction sector, has the ability to provide a high quality service in multidisciplinary projects complying with top standards for quality, health and occupational safety and environmental protection, while maintaining a key position in the construction industry current market. The main key activities covered by our business experience are:

## ELECTRICAL AREA

- Erection and EPC Power transmission lines in high, medium and low voltage.
- Erection and EPC in Energy generation and distribution: Diesel, Gas, combined cycle power plants, Hydroelectric, and renewables projects.
- Erection and EPC Electrical Substations.
- Electrical equipment installations.
- Fiber optic communication networks.



**FABRICATION WORKSHOP** Capacity of over 2000 Tons / months, Hato Nuevo, Santo Domingo.

## MANUFACTURING SERVICE

Our fabrication Workshop, located in Santo Domingo, Hato Nuevo, is specialized in the Design, Manufacture, Repairing and Technical Assistance for metal mechanical projects, covering a wide range that includes: Hydro mechanical Elements for Dams such as Gates Takes, Radial Gates, Grills, Overhead Cranes, Shields, Cofferdams, Penstocks, Suction tubes, Speed Reducers and Power Transmission mechanical equipment.

Our fabrication capacity is also oriented to Manufacture Mechanical parts, Design and Manufacture of Metal structures. Pipes, Dismantling Joints, Expansion Joints, Bifurcations, metal Coatings and accessories.



**EGE HAINA 40 MW COAL POWER PLANT** Installation of new precipitators, Barahona, Dominican Republic.



**METRO SANTO DOMINGO** Power Generation plant, 40 MVA.



**MONCION HIDROELECTRIC DAM** 50 MVA, Dominican Republic.



**JIGÜEY - AGUACATE HYDROELECTRIC DAM** 50 MVA, Dominican Republic.



**MONTE GRANDE AND SABANA YEGUA - Hydroelectric and irrigation Dams, 8 MVA and 15 MVA, Dominican Republic.**



**BARRICK PVDC GOLD MINE F336** Underground piping, 25 Kms of pipelines installed.



**METRO SANTO DOMINGO - Construction of tunnel and electrical installations for Metro Substations - 350 Lineal meters.**



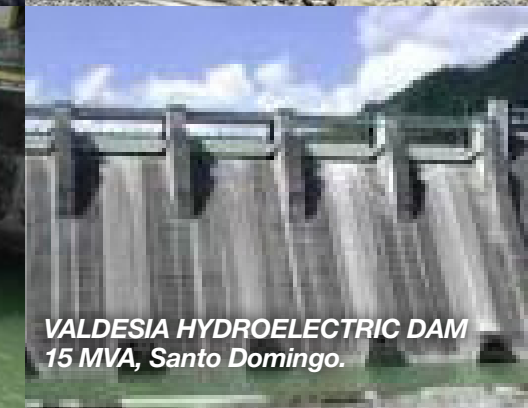
**PINALITO HYDROELECTRIC DAM** 69KV Transmission lines and 50 MVA Substation, Dominican Republic.



**PELIGREE HYDROELECTRIC DAM** Haiti, ALSTOM, 3 x18 MVA.



**LAS BARIAS HYDROELECTRIC DAM** 2.5 MVA, Santo Domingo.



**VALDESIA HYDROELECTRIC DAM** 15 MVA, Santo Domingo.

## MECHANICAL AREA

- Industrial Mechanical installation and Fabrication.
- Hydro mechanical projects.
- Potable water, sewer systems, fire protection and freshwater pipeline systems.
- Fabrication, supply and installation of steel structures, fittings, supports, etc.
- Thermal insulation of piping and Industrial Painting.
- Pump stations.
- Water treatment plants.
- Sheet piling.
- Drilling and construction of water wells.
- Fire Alarm and Protection Systems.
- Installation and maintenance of HVAC systems.

## CIVIL AREA

- Excavation.
- Earthworks
- Filling and compaction.
- Sandblasting.
- Encofrados.
- Piles.
- Shotcrete.

## ELECTRICAL AREA

- Industrial electrical installations in general: Beer plants, airports, water treatment plants, cement plants, gold mine process plant, metro stations and others.
- Instrumentation, panels, installation devices, control and instrumentation cable, panels, installation devices, control cable pulling, testing and inspection.



**INDRHI AND INTERNATIONAL WORLD BANK IRRIGATION PROJECTS** Lote 10, Jima Camu siphon and irrigation pumping system, La Vega, Dominican Republic.

## ENGINEERING DESIGN SERVICES:

- Design of mechanical installations.
- Distribution System Design and delivery of water, wastewater and storm drainage.
- Design of steel structures, doors, fittings, supports, etc..
- Engineering and construction of concrete piles, drilling wells, infiltration wells, etc..
- Electrical systems in general.
- Supply and transportation of local and imported
- Materials related to electromechanical installations.



**Profile** SERVICIOS DE INGENIERIA, SERVINCA, was contracted by BARRICK Pueblo Viejo Dominicana Corporation for the construction of 30 Kms – 4’ to 36” HDPE and carbon steel underground piping utilities for the potable, freshwater, firewater and storm sewer systems of the Gold mine Process plant site.

SERVINCA is proud to be part of the construction of the 34.5kv Overhead Transmission Lines for BARRICK PVDC process plant site and surrounding areas, with the responsibility of the Engineering, Procurement, Management and Construction of over 35 Kms - 34.5KV and 4.16KV Over Head line systems.

As a general contractor specialized in the Engineering, Procurement, Management and Construction of Electrical, Civil and Mechanical Works, SERVINCA executed several projects at PVDC in the disciplines of Piping, Metal-Mechanical, Steel Structure Fields and others such as Sheet Piling, Geomembrane, Geotextile, Gabions and Concrete Structures.

With over three years working in the construction of one of the most important projects in the Dominican Republic, BARRICK Pueblo Viejo Dominicana Corporation Gold Mine, SERVINCA have consolidated the position as a leader company in the Industrial-Mining market, providing cost efficient EPC solutions adhered to the highest quality and safety standards of the mining industry.

SERVINCA have achieved a total of 1,200,000 Manhours milestone achievement without lost time incidents for all projects executed at BARRICK Pueblo Viejo Dominicana Corporation by December 2012, result obtained by the proper risk evaluation and implementation of our own Health, Safety and Environmental plans.



HDPE Termofusion Work – F336 Project, PVDC



K136 Project- BARRICK PVDC



F336 Project- BARRICK PVDC



Lifting Pole Maneuver - 34.5KV and 4.16KV OH Line Systems K136 Project, PVDC

SERVINCA received in the month of October 2013 the award for best company of the year three times in a row in the Energy Sector awarded by the Dominican Construction Chamber (CADOCON).



We have successfully executed Electrical, Instrumentation, Fiber Optic Networks, Substations, Pole mounted Transformers, Civil Works, medium and low voltage installations along the process plant site. BARRICK PVDC electrical systems are built with the highest quality standards, providing an efficient service that meets the top international mining levels.

*“Our extensive experience is supported by a group of highly qualified professionals, with the use of specialized certified tools and plants, that ensures the constant improvement of our company vision and provides cost efficient Engineering solutions to our clients in the Construction Industry”*

The construction process of BARRICK PVDC process plant site is completed and commissioned, starting full production process since 2012. SERVINCA is pleased to be selected by BARRICK as one of the main general contractors to support the operation process by providing Engineering, Procurement, Construction and Maintenance services for the operation and extension of the process plant site facilities.





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appropriate technology to process the ore.

The Dominican Government first invited tenders for the project in 2001. One key aspect of the work required remediation of the site which had been badly damaged by earlier abandoned mining operations. The other centred on the development of new operations to extract and process the gold containing sulphurs of the mine.

The tender was initially won by Placer Dome Inc., which was subsequently acquired by Barrick. By 2009 the complex negotiations to develop Pueblo Viejo were complete and a 60/40 consortium with Goldcorp – the Pueblo Viejo Dominicana Corporation (PVDC) – in which Barrick holds the controlling interest, was busy constructing this multi-billion dollar facility.

Barrick Gold carried out the feasibility study and appointed Ruscan Environmental Sciences of Canada to perform the environmental and social impact

### AGGREKO

Aggreko, the world leader in the provision of temporary power and temperature control solutions, provided a reliable source of commissioning, construction and backup power from 2011 to 2012 for a period of 18 months to the Pueblo Viejo Gold Mine in the Dominican Republic. Aggreko supplied a Full Turnkey 30MW Power Plant at the mine in Cotui, Sanchez Ramirez province, which was used as a source of electricity for the commissioning of facilities and large-horsepower motors and to provide critical backup power for construction.

“Aggreko was selected because of their technical expertise and global experience. Our goal was uninterrupted / guaranteed power and Aggreko delivered that in a safe, reliable and professional manner,” said Richard Williams, Senior Project Director at Barrick.

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# 23.7 MILLION

Declared reserves (in ounces)  
of gold at Pueblo Viejo



Construction in progress on the primary ore crusher, ore stacker foundation, and ore reclaim feeder chamber





GyM develops and executes a broad range of Projects in Latin America in various contractual forms: turnkey, BOOT, BOO, EPC, among others. In 2012, we have executed over 65 million man hours. Since 2005 we have built concentrators for the largest mining companies like: Barrick Gold, BHP, Freeport McMoran, Goldfields, Teck, Xstrata Copper, Newmont, etc. These have been built, either in Joint Associations or as subcontractors, with the most important EPCM contractors such as Bechtel, Fluor, Jacobs, SNC Lavalin, etc. Our core values Commitment, Quality, Efficiency and Reliability are part of our integrated service for our customers.

Av. Paseo de la República 4675 | Lima 34, Perú | [www.gym.com.pe](http://www.gym.com.pe)



**GYM S.A.\***



GyM S.A., established in 1933, is the largest contractor in Peru, and has executed works in several Latin American countries like Chile, Dominican Republic, Bolivia, Panama, etc. GyM provides construction services such as earthworks, concrete works, structural erection, mechanical installation, electrical and instrumentation works to the mining industry as well as the oil & gas, energy and infrastructure sectors. GyM is well known for its “ahead of schedule policy” that goes beyond contractual obligations.

GyM’s scope of work in Pueblo Viejo included two main activities:

- Concrete and civil works: Earthworks, installation of concrete, foundations for the crushers, conveyors, recuperation tunnels, thickeners, etc. The scope also included the construction of five anti acid brick tanks for acid storage, each of 19 meter diameter, using Stebbins technology. GyM completed over 57,000 m<sup>3</sup> of concrete works
- Mechanical works: GyM performed the structural erection and equipment installation for the wet area which included , four ball mills, and a smaller SAG Mill in the regrinding area. GyM installed 8,000 tons of steel structures and 2,600 tons of equipment.

GyM completed over 5.5 million man hours on the job without any Loss Time Incident (LTI) “GyM has worked with large EPCM contractors in other countries,” said Mr. Victor Cuadros, COO of GyM’s Electromechanical Division and sponsor of the project. “However this was our first experience in a mining project outside South America. The heavy rainfall, extreme weather conditions and the difficulties encountered in finding local skilled personnel were some of the challenges we faced. “While other contractors were leaving the job, we supported the client by providing manpower and skilled workers to finish what was impossible for others. We not only brought in skilled workers, but also we established a training program for Dominican personnel from areas around the project who actively participated in the execution of the work. Our experience working with local communities in the past 30 years was fundamental to accomplish what was done in Pueblo Viejo. At the end of the project, we executed more than twice the initial scope of work due to the client’s satisfaction for our outstanding performance.”

[www.gym.com.pe](http://www.gym.com.pe)



\*GyM, a Graña y Montero company.



Mine equipment being assembled at Pueblo Viejo

assessment, and associated infrastructure studies. Understandably for a project of this size a number of challenges had to be overcome in bringing the mine to where it is today, not least of all the challenge that centred on leading one of the mining industry’s most ambitious environmental rehabilitation projects. Before the building phase could commence, the land

had to be cleared and restored. A massive clean-up effort was required as a result of the improper closure of a former mine on the property in 1999.

**130,000M<sup>3</sup>**

**Amount of soil removed to rid the ground of contaminants**

Initial findings showed heavy metal concentrations, acidity and sediment in local waterways. The primary sources of soil and water contamination were the historic open mine pits, waste rock piles, the





## Partners in Excellence

Hatch. A partnership that works for you — and with you.

We are helping Barrick Gold Corporation develop resources around the world—including EPCM services for the Pueblo Viejo gold project in the Dominican Republic. There, Hatch delivered four of the largest autoclaves ever built as well as the Pressure Oxidation Facility and oxygen plant.

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Hatch has worked with Barrick around the world to deliver engineering, procurement and construction management services to marquee projects such as the Pueblo Viejo gold project in the Dominican Republic and the Goldstrike Roaster Facility in the United States.

The Pueblo Viejo project is a refractory gold deposit in the Dominican Republic with sizeable levels of silver and copper to be recovered using pressure oxidation technology. The mine is approximately 100 kilometres northwest of the country's capital city, Santo Domingo. The mine's life is expected to be more than 25 years with annual production of about one million ounces per year during the first five years. Hatch provided EPCM services for the pressure oxidation facility and air separation unit (ASU), including four autoclave trains and a 4,000-tonne-per-day ASU plant. At 780 tonnes each, the brick-lined autoclaves are some of the largest ever built. The logistics included delivering the autoclaves by sea from the manufacturing facility in Malaysia. All told, the project teams have achieved about 4,000,000

hours of work without a lost-time injury. Pueblo Viejo poured its first gold in the third quarter of 2012—on schedule and within capital guidance. The mine is ramping up to commercial production, expected in December 2012.

At Barrick's Goldstrike Roaster Facility in Nevada, Hatch was retained to provide full EPCM services. Engineering was split into basic engineering, including vendor and detailed engineering. Process design included process definition development and construction of a METSIM process simulation.

The Goldstrike Facility is a greenfield ore gold processing plant located on the Carlin Trend, the most prolific gold mining area in the western hemisphere, northwest of Elko, Nevada. The facility consisted of primary and secondary crushing, ore storage, reclaim to dry grinding, whole ore roasting, gas cleaning, carbon-in-leach with carbon stripping and gold refining, also included are tailings treatment and disposal.

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abandoned plant facilities and tailings storage areas. The Margajita River that passes through the hills near the site had been dubbed the “Coca-Cola river” by locals because of its dark colour—the result of having absorbed so much acid rock drainage from the former mine.

The final team consisted of Barrick Gold employees, hazardous materials experts and new employees hired locally and specially trained for the operation. One of the first tasks was to take over a thousand samples to define soil in the area into different categories and determine future treatment and landfill options. Buildings on the property also contained different types of



Interior of the autoclave building

### MAERZ

Maerz Ofenbau AG was founded in 1950 in Zurich, Switzerland, by Austrian magnesite producers to design and sell open hearth furnace technology to the world-wide steel industry. In 1965 Maerz began the design and construction of a patented “MAERZ® Parallel Flow Regenerative (PFR) Lime Kiln” with high thermal efficiency and superior lime quality. It finally became the generally known “MAERZ® Kiln”, continuously improved with - again patented - new features. Since March 2006 Maerz is a member of the German based ThyssenKrupp Resource Technologies GmbH, a world-wide renowned supplier for kilns and grinding technology to the cement and minerals industries. Today Maerz offers designs for PFR-Kilns with nominal capacities between 100 and 800 tpd and with firing systems for all types of

liquid, gaseous and pulverised solid fuels. Maerz has so far designed and constructed over 600 MAERZ® Kilns in more than 65 countries around the world. In 2009 Barrick - Pueblo Viejo Dominicana Corporation - awarded Maerz the contract for the installation of three heavy fuel oil fired PFR lime kilns with a capacity of 500 tpd each of burnt lime. Burnt lime is required for the neutralization of the gold processing plant's tailings. Maerz supplied all material and equipment for the kilns whereas PVDC took care of the erection of the lime plant. After completing erection work, start up and commissioning of the Maerz lime kilns started in July 2012. By the end of 2012 all three kilns had reached the industrial production stage thereby successfully completing commissioning.

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hazardous waste that had to be categorized and disposed of in a safe manner.

Approximately 130,000 cubic metres of soil were removed to rid the ground of contaminants. Bioremediation, a process that relies on microorganisms to return altered land to the natural environment, was successfully used to treat almost 100,000 cubic metres of

hydrocarbon contaminated soil.

In addition to the clean-up of hazardous substances within the mining areas, it was proposed that the clean-up of the surrounding areas would cost the Dominican Government an additional \$75 million and the company would contribute \$37.5 million with the other half coming from state funds. In the end, Barrick offered to take on the full estimated cost of remediation of the surrounding areas to help improve local living conditions. To complement the clean-up, Barrick has also sponsored a significant reforestation project in the area.



A large majority of people working at Pueblo Viejo are from the Dominican Republic

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## EXCLUSIVE RENTAL

Motor Plan S. A. is the exclusive representative of the multinational franchises National Car Rental and Alamo Rent A Car in the Dominican Republic. It is one of the leading and fastest growing car rental companies in the country and has almost forty years in the car rental market since its opening on December 17, 1973. Motor Plan S.A. acquired the National Car Rental franchise in 1974, this brand mainly focuses on serving the corporate market. In its beginnings, it started operating in Las Americas International Airport, main airport terminal in the country, as a solid option for the retail customers arriving to the Dominican Republic. As the business grew, offices were opened in Santo Domingo, Santiago,

La Romana, Punta Cana and San Francisco de Macorís, forming a network of eighteen points of sale which support the transportation needs of customers from different businesses located throughout the country. In 2001, Motor Plan acquired the Alamo Rent Car brand, consolidating its position in the car rental retail tourism sector.

Grupo Ambar, a multinational vehicle group with more than 90 years' experience in the market, is the parent company of Motor Plan and is one of the leading vehicles distributors in the Dominican Republic with brands such as Nissan, Infinity, Chevrolet and Suzuki. Grupo Ambar includes Santo Domingo Motors, Ambar Motors, and Auto Ambar, vehicle companies

in the Dominican Republic, Puerto Rico, Virgin Islands and Venezuela respectively; Equipos Diesel, representative of recognized brands of generators, construction equipment, agricultural vehicles and equipment and trucks; Todopieza, distributor of brands of auto parts and after-sales articles for vehicles; and Motor Crédito, a bank that is among the national leaders in the vehicle financing market. Motor Plan, with its brand National Car Rental, began its business relationship with Placer Dome in the year 2003. Placer Dome was initiating its work in the Pueblo Viejo mine, later to be acquired by Barrick Gold. In order to satisfy Barrick Gold's needs of renting a fleet in optimum conditions, functional at all times and given the location of the mine far from the service centers, Motor Plan created its modality of onsite service. With this, offering preventive maintenance in the client's facilities thus minimizing time of service, prolonged interruptions and transportation of the fleet to another city.

After forty years, Motor Plan continues innovating, creating new products and services which help customers improve their operations providing new business opportunities and solutions.

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**SAFETY AND ENVIRONMENT**  
 Banlaw's highly skilled and experienced technicians are up to date with the latest mine safety and environmental standards and operations. Banlaw staff have never had an LTI at a client site in over 30 years.

**FUEL MANAGEMENT SOLUTIONS**  
 Banlaw is a global leader in fuel management solutions. They are specialists and have the people, products and system capabilities to help your operations control its fuel usage from 'buy to burn', globally and locally, saving time and money.



## A Global Leader in Fuel Management Solutions

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Plant site at Pueblo Viejo

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Banlaw's facilities management and maintenance services are supported by a global help desk servicing from Africa to the Americas and staffed by specialists who can solve issues on the spot. The Help Desk also proactively monitors the health of your system, alerting you to issues before you even notice them on the ground.

### ONGOING SERVICE AND SUPPORT

Your refuelling systems need to be properly maintained to ensure you gain the maximum benefit from them. Regular inspection is also a legislative requirement in some countries for some systems.

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Barrick also has a proud record of helping to improve the health status of the area through its use of a community-based approach to partnership with local agencies. Cholera and dengue fever are endemic in the locality and since 2009 Barrick has funded a health prevention educational programme that reached tens of thousands of people. Two hundred Dominicans, mainly young people, were trained to work with the local municipalities of Cotuí, Fantino and Maimón. The teams visited households with the goal of educating residents on hygiene, family, and environmental health.

The importance of this programme has been recognised as a significant factor in reducing the presence of dengue fever in the province, according to the local Health







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Incorporated in 1987, Central Drill Parts started as a source of parts and service for the drilling industry. Over the years we have diversified into other industries. We provide parts and service for the following industries:

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- Underground mining equipment
- Construction
- Road Construction • Mining



Department. Since the completion of the second phase of the programme, which was sponsored by the Ministries of Labour and Public Health, Barrick and the local municipalities of Cotuí, Fantino and Maimón, there have been no reports of cholera or dengue fever cases in the region.

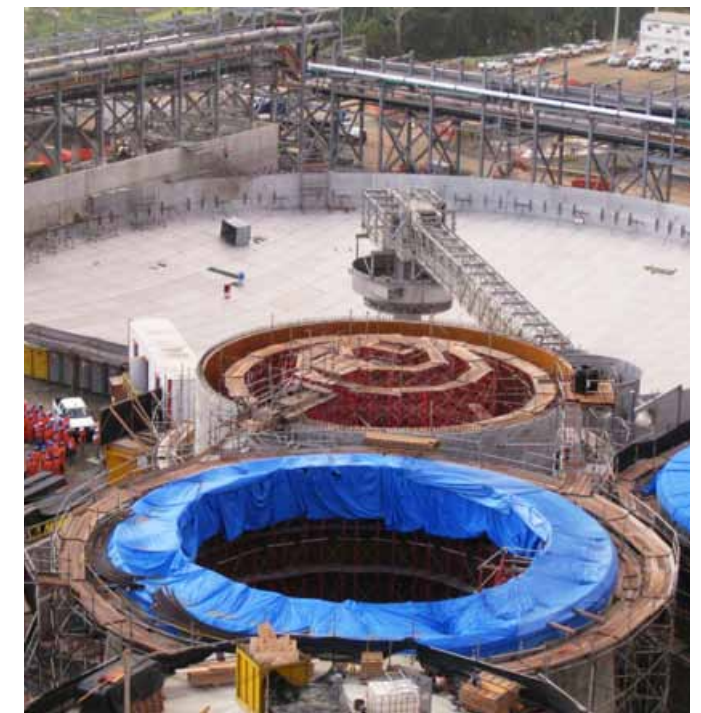
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In August 2012, Barrick Gold Corporation announced that the Pueblo Viejo mine had achieved first gold production, with ore being processed through the first two of four autoclaves. “Bringing this mine successfully into production on schedule, within capital guidance and with an excellent safety record is the result of tremendous efforts from across the company,” said Jamie Sokalsky, President and Chief Executive Officer of Barrick at the time. “Pueblo Viejo is a world-class asset, one of only a handful of mines that will produce more than one million ounces of gold per year. We expect it to be a major contributor of low cost production to Barrick for decades to come.”

Five months later, in January 2013, the company announced it had achieved



Efforts are now concentrated on building a working mine



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Construction of the Ancillary Buildings

EPSA-LABCO was awarded the engineering, procurement and construction management for the Ancillary Buildings at the Pueblo Viejo Mine Site. This included more than 8,000 Sqm of building construction area. EPSA-LABCO was also awarded the Construction Quality Control for El Llagal Tailing Dam.

The Construction of the Ancillary Buildings and the Construction Quality Control for El Llagal Tailing Dam for a large gold mine project in the Dominican Republic were successfully completed this year for Pueblo Viejo Dominicana Corporation, in which Barrick Gold Corporation, the operator, holds 60% and Goldcorp holds the remaining 40%.

EPSA-LABCO, was awarded the engineering, procurement and construction management of the Ancillary Buildings at the Mine Site. This included more than 8,000 Sqm of construction that will hold the offices for mine site operations and administration, security points and workshops.

Also EPSA-LABCO was awarded the Construction Quality Control of El Llagal Tailing Dam. The main objective of EPSA-LABCO in the project was to guarantee the execution of the construction works within the project specifications. This was achieved by developing a Quality Control Program at all stages of the project, including the material borrowing pits, stored materials, processing plant materials, moisture control and compaction methods proposed in the Project specifications. About 2.5 million cubic meters of the different fill materials were placed in the Tailing Dam, such as dental concrete, Riprap, limestone rockfill, low permeability fill, material for erosion protection, fine and coarse filters among others.

Other challenges completed by EPSA-LABCO was the engineering and management of the construction process providing roadway clearances and adequate structural support over 125 kilometers and 27 bridges, four (4) autoclaves with 1050+ tons each, and 120+ equipment parts for industrial machinery of oversized dimension and weights. Each Transport exceeded by as much as 10 times the official codes for standard vehicle loadings on bridges and roads.



Quality Control for El Llagal Tailing Dam



Construction of the Ancillary Buildings



Construction of the Ancillary Buildings

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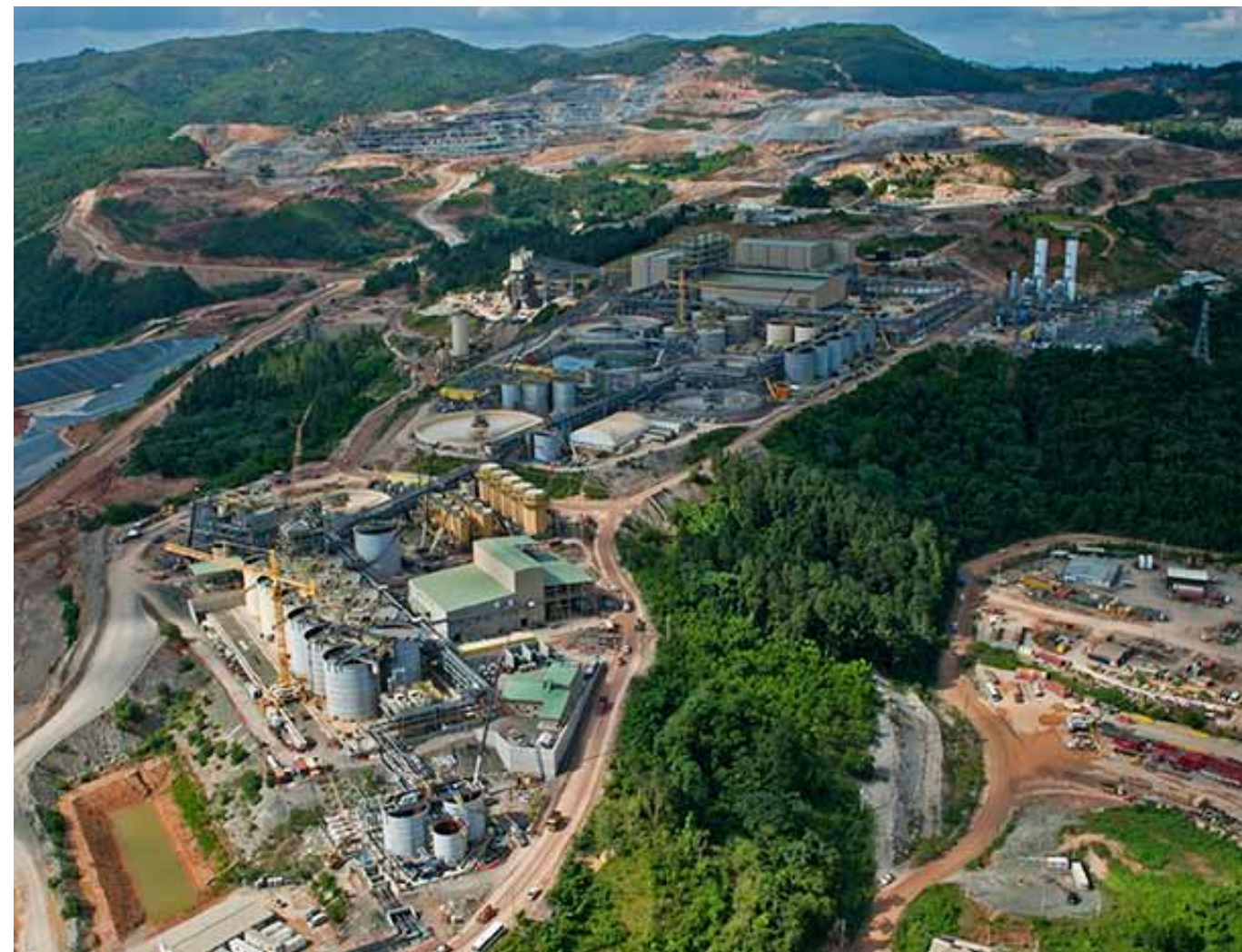
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## BARRICK GOLD: PUEBLO VIEJO



The process plant site at Pueblo Viejo where gold, silver and copper will be processed

commercial production at the mine. Pueblo Viejo was completed at a capital cost of \$3.7 billion and created more than 11,000 direct jobs during the construction phase of the project. The operation is expected to support about 2,000 direct jobs plus nearly 10,000 indirect jobs over its 25-plus year mine life, with Dominicans accounting for nearly 90 percent of the full-time workforce.

With commercial production achieved, Barrick is now in the midst of plans to ramp up to full capacity in the first half of 2014. Barrick's share of full-year 2013 production from Pueblo Viejo is anticipated to be about 500,000 ounces of gold at all-in sustaining costs of \$700-\$750 per ounce.

Barrick's share of average annual gold production in the first full five years of operation

**25**

Number of years the production phase should last for



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is anticipated to be 625,000-675,000 ounces at all-in sustaining cash costs of \$500-\$600 per ounce and total cash costs of \$300-\$350 per ounce. Including depreciation of mine construction capital, costs are expected to be \$650-\$750 per ounce.

In other news, a 215 MW dual fuel power plant at an estimated cost of approximately \$180 million was successfully commissioned towards the end of 2013 by its Finnish manufacturer Wärtsilä. The plant has the ability to transition from heavy fuel oil (HFO) to lower cost liquid natural gas (LNG).

It goes without saying that a number of contractors and businesses have helped contribute to the success of the Pueblo Viejo mine since Barrick became involved with the project. One such business that has been playing a crucial role is SERVINCA, which was contracted to construct 30 kilometres



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## BARRICK GOLD: PUEBLO VIEJO



Steam and oxygen are injected into the autoclaves to oxidize the ore

of four-to-thirty six foot long HDPE and carbon steel underground piping utilities for the potable, freshwater, firewater and storm sewer systems of the mine's process plant site, as well as the power distribution and communications networks from the Main Substation to all of the process plant site facilities and surrounding areas.

Boasting over 33 years of experience in the execution of multidisciplinary projects covering the electrical, mechanical and civil areas for the private and public sectors, the main focus of SERVINCA in the Engineering and Construction of Electromechanical and

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In the past 40 years HITACHI has been focusing on haulers and front shovels, they put more design, engineering, and expertise into building them better. Every single component – from the smallest to the largest – is specifically designed for more efficient hauling and digging. They have also invested a large amount of resource on their mining truck as well. Their investment has brought more productivity, faster work, daily reliability, cost-saving efficiency and a better bottom line.

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SERVINCA's vast experience allows it to provide multiple engineering solutions to its clients for energy generation, transmission, distribution and electrical or mechanical industrial projects such as beer plants, airports, hydro electrical dams, metro, substations, structural steel fabrication and similar works for the mining sector.

As a general contractor, SERVINCA has executed several projects at the mine that fall under the disciplines of piping, metal-mechanical, steel structures, earthworks, concrete works and others such as sheet piling, geomembrane, geotextile, gabions and concrete structures.

SERVINCA is understandably proud to be part of the construction of the 34.5kV overhead transmission lines for the mines process plant site and surrounding areas. To date it has successfully executed electrical,

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“THE MINE'S LIFESPAN IS LIKELY TO BE LONGER THAN PROJECTIONS SUGGEST”



A flash vessel for the pressure oxidation process is off loaded





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instrumentation, fibre optic networks, substations, pole-mounted transformers, civil works, and medium and low voltage installations along the process plant site. As demanded by its client the electrical systems that have been built have been done so to the highest quality standards, providing an efficient service that corresponds with the top international mining levels.

One particularly impressive statistic, released in December 2012, showed that SERVINCA has achieved a total of 1.2 million man hours without experiencing a single lost time incident in the course of carrying out any of its projects at the Pueblo Viejo mine.

The construction of the process plant site was completed, commissioned and commenced full production in 2012, and SERVINCA is proud to have been selected by Barrick as one of the main general contractors supporting the operation



Coconut mats are laid along the slopes of a recently-constructed access road to aid in soil stabilisation

# 1.2 MILLION

.....  
**Man hours achieved by SERVINCA without experiencing a single lost time incident in the course of carrying out its projects at the Pueblo Viejo mine**





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process by providing engineering, construction and maintenance services for the process plant site facilities.

It should be highlighted that Barrick does indeed recognise that the mine has a finite life, despite the fact the production phase should last for at least 25 years. There is therefore a strong emphasis on planning for a sustainable and diverse future. Barrick has just provided seed capital for

a business incubation bureau in Cotuí to assist the start-up of new businesses in the area that are non-mining related.

When the mine finally closes, significant reserves will have already been placed in trust with the Dominican government to deal with the eventuality. Meanwhile, Barrick does retain the belief that the mine's lifespan is likely to be significantly longer than current projections suggest.

It believes strongly that there is additional gold at Pueblo Viejo, but the declaration process is very complex and it is extremely

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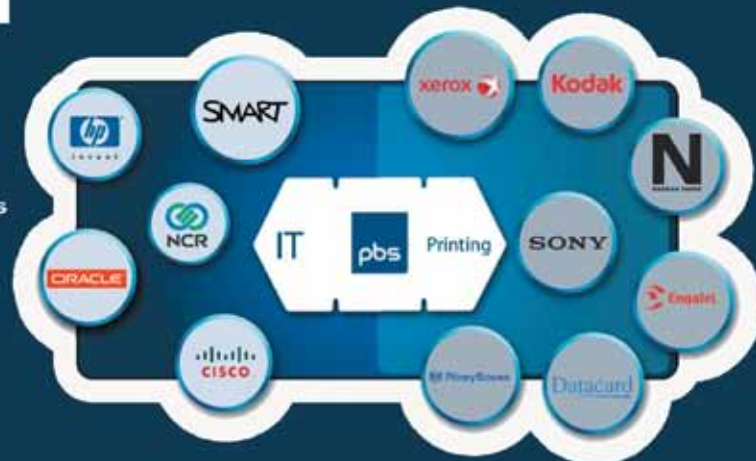
Process facilities

“WHEN THE MINE FINALLY CLOSES, SIGNIFICANT RESERVES WILL HAVE ALREADY BEEN PLACED IN TRUST WITH THE DOMINICAN GOVERNMENT TO DEAL WITH THE EVENTUALITY”



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**\$3.7 BILLION**

Capital cost completion of Pueblo Viejo

common in this industry for mines to have undeclared reserves. Also, the steady rise in the price of gold allows it to mine ever smaller concentrations of gold and if this trend continues it is likely to extend the life of the mine still further.

One thing that the company is absolutely certain of is that it will be leaving this site in a much better condition than it found it. When the mining operation closes it will be done in a proper manner to international standards. At Pueblo Viejo Barrick intends to bring to bear all the know-how and experience gleaned from mining operations across the globe and leave behind a vibrant and dynamic local community and economy.

Whatever the long term future holds, it cannot be disputed that Pueblo Viejo has the potential to revitalise a region where nearly half the population lives below the national poverty line. This potential is already starting to be realised as the mine continues to bring much-needed diversification to the Dominican economy. **BE**

For more information about  
Barrick Gold Pueblo Viejo visit:  
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