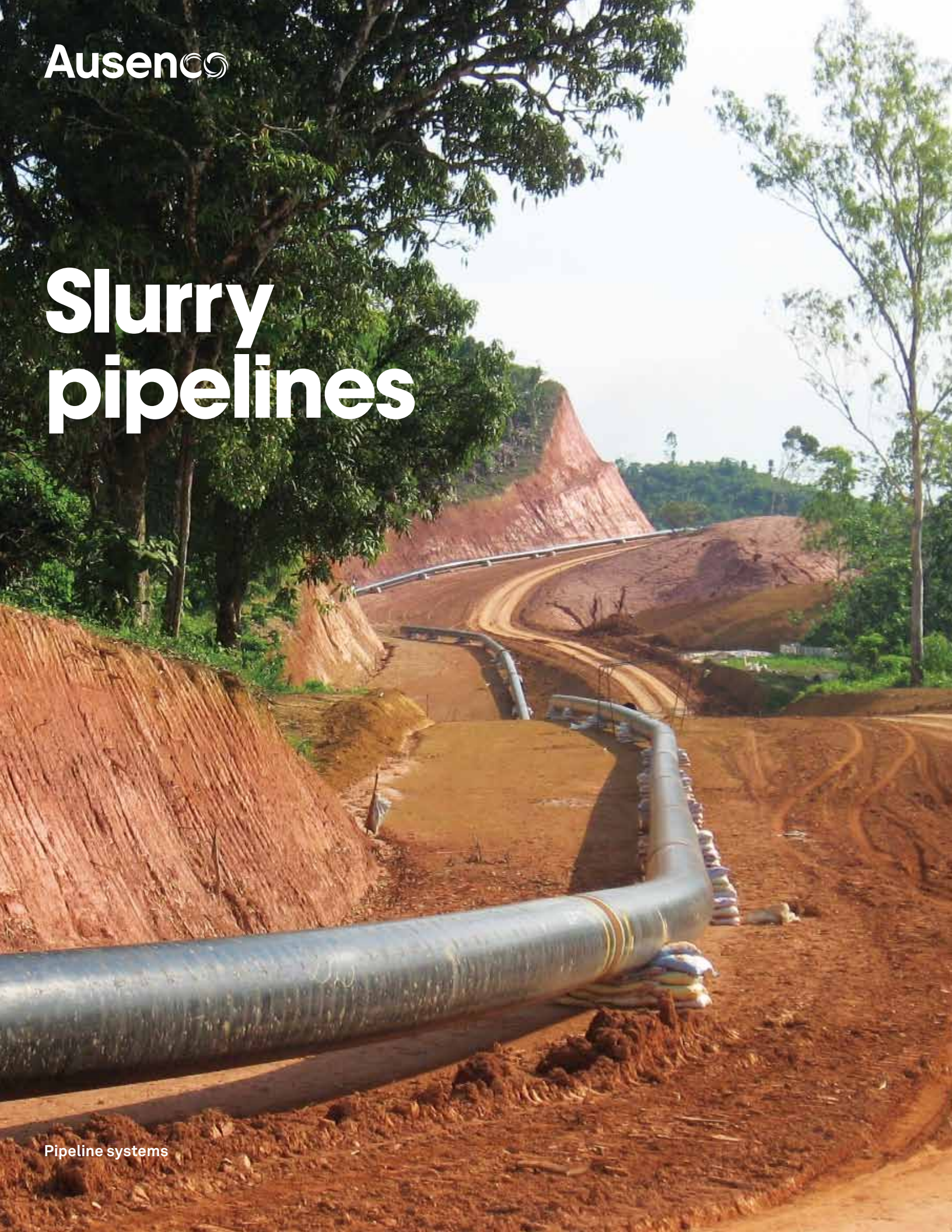


Slurry pipelines



Slurry pipelines



Ausenco is a leading global provider of engineering and project management services to the resource and energy sectors. We combine ingenuity with insight to deliver effective end-to-end solutions for our clients.

Our professionals offer expertise across every aspect of the resource and energy sectors — in areas including mineral processing; pipelines; transportation systems; ports and terminals; infrastructure; and conventional, renewable and alternative energies. We're also experts in optimising performance through tailored operations and maintenance solutions, and in providing environmental and sustainability strategies that deliver benefits for projects, communities and the environment.

We're skilled in every phase of the project lifecycle. From initial concept through operation, our people can assess, plan, cost, design and construct ingenious solutions that add value and support your return on investment.



Our personnel have participated in the development of the vast majority of long-distance slurry transportation systems constructed since 1979.



01
Los Bronces Copper Ore Pipeline, Chile

02
MBP Bauxite Ore Slurry Pipeline Pump Station, Brazil

Ingenious pipeline solutions

Our personnel have participated in the development of the vast majority of long-distance slurry transportation systems constructed since 1979, helping clients to transport a diverse array of products in challenging terrain, extreme climates and remote locations.

We've designed and engineered long-distance pipelines to transport virtually every type of mineral — from concentrates such as copper, zinc, lead and iron to crushed ore, bauxite, nickel laterite, phosphate, limestone and coal.

We also offer our clients expertise in SCADA systems and telecommunications. Our specialities include developing SCADA solutions for remote locations—stand-alone, self-sustaining systems that require a minimum of local staff and maintenance.

Our services include complete pipeline solutions from concept to commissioning, including:

- feasibility studies and conceptual design
- route reconnaissance and evaluation
- laboratory and loop testing programs
- complex hydraulic modelling
- basic and detailed engineering
- leak detection systems
- pipeline operations and simulation software
- pipeline SCADA and telecommunications
- procurement
- construction management
- start-up and commissioning
- pipeline operations optimisation and maintenance
- operator training and operations support.

Our expertise extends across the following:

- long-distance slurry pipelines (mineral concentrates, mineral ores, coal, industrial minerals)
- conventional and high-density tailings transport
- water and wastewater pipelines
- oil, gas and products pipelines
- ethanol and alternative fuels pipelines.

Breaking new ground in slurry pipeline technology

Slurry pipeline technology is a safe transportation alternative that minimises impacts on local communities and the environment. Its benefits include lower pollution levels, fuel costs and staffing requirements, and a reduced reliance on high-use transport corridors. Slurry pipeline technology offers a sustainable solution in many environments.

Ausenco's senior leaders are at the forefront of slurry pipeline technology development and we have worked on some of the world's longest and largest pipelines to deliver sustainable slurry transport solutions.

Our experience includes projects in extremely cold climates, over record-breaking distances, at high altitudes, and in mountainous terrain. With thousands of kilometres of pipeline projects at study stage, in design or in operation, our projects continue to push boundaries and break new ground.

Our experience



Project

Ambatovy Nickel Laterite Slurry Pipeline

Location

Madagascar

Client

Ambatovy Minerals S.A./SNC-Lavalin

Year

2011

Description

Ausenco was selected to perform a complete range of services, from design through start-up support, for the world's first commercial nickel laterite slurry pipeline system.

The pipeline system is designed to transport 7.2 Mt/y of laterite ore and includes a 208 km, 24-inch diameter buried concentrate pipeline, one pump station, three pressure monitoring stations, one main valve station and pipeline terminal/choke facilities.

Our controls group also provided a SCADA system with remote power systems, as well as Ausenco's Pipeline Advisor™ software package for leak detection and process optimisation.



Project

Samarco Iron Concentrate Pipeline

Location

Brazil

Client

Samarco Mineração S.A.

Year

1995-2012

Description

The Samarco project is an integrated open pit mine, pipeline and port operation in Brazil. The project includes the longest iron concentrate pipeline in the world, which currently spans 398 km with a peak altitude of 1,150 m above sea level.

Ausenco has provided Samarco with a variety of services throughout the development of this project, ranging from laboratory testing, simulations, studies and design through construction and start-up support. Though the original pipeline predates the formation of Ausenco, several key members of the design, construction, and start-up team are principals at our company today.



Project

Antamina Multi-Product Concentrate Pipeline

Location

Peru

Client

Compañía Minera Antamina S.A./Bechtel International

Year

1989-2009

Description

Ausenco provided a full range of engineering services on this 304 km copper-zinc concentrate slurry pipeline system—the first multi-product slurry pipeline system in a mountainous region.

Work began with a feasibility study, including route planning, constructability evaluation, conceptual design and a $\pm 15\%$ cost estimate. It continued to include basic and detailed engineering and expansion and repair projects throughout the life of the system.

The steel pipeline was designed to transport a maximum of 1.4 Mt/y of copper and zinc concentrates from Antamina mine site in northern Peru at an elevation 4,100 m above sea level to terminal facilities at Huarmey.