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Audit says Peru's Camisea gas-pipeline system flawed

An audit of the pipelines carrying natural gas and gas liquids from Peru's Camisea gas field to the Pacific coast found that the pipelines were not designed to withstand the harsh geological and geotechnical conditions along the 350-mile (560-km) route, particularly the section in the Amazon basin and on the east slope of the Andes.

The audit, issued last month, was ordered by the Peruvian government after five leaks occurred in the gas liquids pipeline between December 2004 and March 2006, including one that sparked a fire in which several people were injured and about 12 acres (five has) of field and forest burned. (See "Fifth Camisea pipeline spill spurs official review" — EcoAméricas, March '06). A sixth leak occurred after the audit began.

The audit found that the pipelines were designed to withstand the internal pressures to which they would be subjected, but not external pressures from shifting earth, which caused most of the ruptures. All of the breaks occurred in the gas liquids pipeline, which is narrower and has thinner walls than the parallel natural gas pipeline.

The company that conducted the audit for the Peruvian government, Germanischer Lloyd, found that the studies used to assess the pipeline route "were not sufficiently detailed" to detect areas where unstable soil might pose problems.

A similar conclusion was reached in an audit released in June by the Inter-American

Development Bank (IDB), which provided a US\$75 million loan for gas transportation and \$5 million for oversight of that phase of the \$1.6 billion gas-development project.

According to the more recent audit, investigation and planning of a route in a "remote region, crossing challenging lands" should take two to three years, but Transportadora de Gas del Perú (TGP), the consortium responsible for the pipeline, devoted only three or four months to the task.

The auditors also questioned the welding process used for pipe in the areas where the line would be subject to the greatest external stress, saying that while this process met recommended standards, it was not as suitable as it could have been. They suggested improved monitoring of the pipeline.

According to TGP general manager Ricardo Ferreiro, the company has invested more than \$60 million in shoring up the pipeline route and controlling erosion, and is developing a plan to implement the auditors' recommendations and ensure the pipeline "operates reliably." The IDB audit says that the measures have reduced the risk of rupture along the route by about 90%.

Bill Powers, chief engineer of E-Tech International, a California-based public-interest engineering firm that has been following the Camisea pipeline case, says the auditors' findings demonstrate "the absolute necessity of establishing independent monitoring" of the pipelines before natural gas operations expand in the Peruvian Amazon.

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Summary of Inter-American Development Bank audit: www.iadb.org/news/docs/Audit1.pdf.



Ecuador creating travel card to slow Galápagos migration

Cracking down on illegal migration to the Galápagos Islands, Ecuador's government will require that non-residents who go to the threatened archipelago must first obtain special travel cards.

The government-run Galápagos National Institute (Ingala) ordered that an initial 160,000 cards be printed for distribution to Galápagos visitors starting next month.

The cards, which will cost \$10 each, will be used in conjunction with a database to determine who has exceeded the maximum 90-day stay established under the special law governing the Galápagos. Violators will be sent back to the mainland and forbidden from returning.

Ingala Manager Fabian Zapata estimates 3,000 to 4,000 people live illegally on the Galápagos, where population growth has been cited as a key cause of environmental pressures.

Travel agencies and offices in the Quito and Guayaquil airports will issue the cards, the first step in a broader migration-control effort aimed at slowing the growth of the Galápagos' human population.

The last census, conducted in 2001, reported 17,451 inhabitants on the islands—more than double the 8,611 counted in 1990. Park authorities estimate the archipelago's current population at about 30,000.

Scientists rank human migration to the Galápagos among the islands' three prime environmental threats. The others are invasive plant and animal species and growing tourism.

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