

OIL & GAS ACCESS ROAD

*Geo Products, LLC | EnviroGrid® GeoCell
Syntex Geosynthetics | EcoPetrol*

Background

Ecopetrol, one of the principal petroleum companies in Latin America, has been expanding its reach deeper into the forests of Colombia. Drilling exploratory wells in remote locations such as Putumayo basin, concurs with a very aggressive growth strategy. The area around Orito is an extremely dense, undulating forest with poor soils and wet sub-grades, making it nearly impossible to drive through without proper access.

Technical Information

MATERIALS USED:

EnviroGrid® EGA20 6" and 8"

APPLICATION:

Base Stabilization

PROJECT LENGTH:

43 Days
8 man crew, 1 vibrocompactor,
10 dump trucks, 2 bulldozers



Geo Products, LLC

12626 N. Houston Rosslyn Rd.

Houston, Tx 77086

Phone: 281.820.5493 | Fax: 281.820.5499

www.geoproducts.org



Putumayo Basin
Pre-EnviroGrid® Soil Stabilization System



Putumayo Basin
With EnviroGrid®

Problem & Objective

Ecopetrol sought to build a 2.6 kilometer access road to a new well site in the middle of the jungle. The road would allow heavy machinery and drilling equipment to access the exploratory well site for production. The problems they ran into were fully saturated soils with CBRs of 0.5% that swallowed vehicles whole. Men sunk to above their knees. On top of the difficult operating conditions, the project was only given a 90 day deadline for completion.

Design Solution

The Envirogrid cellular confinement system was chosen by Ecopetrol engineers as a pilot project with a goal of reducing long-term costs. After analyzing several other products including geogrids, geotextiles, and rocks, they decided upon a cellular confinement system. Local river soils were utilized as an infill material, further reducing the cost of bring in outside material for fill.

Construction Overview

A 150mm or 200mm EGA20 material was utilized depending upon the depth of the foundation needed for different sections of the road. A geotextile was placed directly on top of the soils and stakes were set up to anchor the EnviroGrid® panels. The panels were extended and filled with a mix of granular soils and river rock, followed by grading and vibrocompaction. Once the road itself was installed, channels were created on the sides to allow for lateral drainage.

Results

The project was completed in a record time of 47 days ahead of schedule. Improving the timeline allowed Ecopetrol to begin exploratory drilling almost two months earlier than projected.

With a permeable surface access road, infilled with local materials, environmental impact was kept to a minimum while reducing the dirtwork required. Time and costs for maintenance were decreased and road safety was improved through better surface water control.



Pre-EnviroGrid® Soil Stabilization System

