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Studies

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renovates water
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Palermo renovates water main to cope with seismic activity

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A B S T R A C T

Seismic activity and landslides in the region surrounding Palermo, Italy, convinced officials of AMAP SpA, the operating company of the Integrated Water Service of Palermo, to replace steel pipes of one of the main drinking water distribution lines with Primus Line. The Nuovo Scillato water main is one of the primary drinking water conduits of Palermo and the coastal municipalities east of the city. Built in the 1980s to supplement and reinforce the old Vecchio Canale Scillato system (dating back to the late nineteenth century), it conveys water from four springs that issue from Mount Fanusi, near Madonie, at a variable flow rate of 500 to 1000 liters per second (l/s), delivering an average annual volume of about 22 million cubic meters (m³) of water to users. The conduit is made from DN 900 steel pipes with a total length of 62 kilometers (km). It was designed to convey up to 1000 l/s. As a result of seismic activity in 2003, the localities of Burgitabus (Cerda) and Scacciapidocchi (Termini Imerese) along the valley of the Imera Settentrionale River have experienced slow landslide movements, primarily affecting areas with outcrops of Argille Varicolori clay. Over the years this movement has led to repeated and increasingly frequent episodes of pipe damage that have resulted in service interruptions. The drought of the past 2 years and the problems with the Rosamarina Dam, which supplies more than 30 million m³ of water annually to Palermo, has considerably reduced available water reserves. In January 2017, pending completion of the layout variant to avoid the landslide areas – a long job estimated to take at least 2 years – AMAP SpA acted to avert a serious water crisis and asked Danphix S.p.A. to devise a quick provisional solution to help restore the Nuovo Scillato aqueduct to full operation.