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Advanced Scientific, Engineering & Technological Think Tank

EMPIRICAL VALIDATION OF THE SEISMIC ENERGY RELEASE METHOD SERRA / MEL

*Prospective Corroboration of the ESPOL 2005 Document:
National Seismic Reactivation · 2016 Pedernales Earthquake
SIGSAs of Guayaquil · Jambelí · Chongón-Colonche · Manabí-Esmeraldas*

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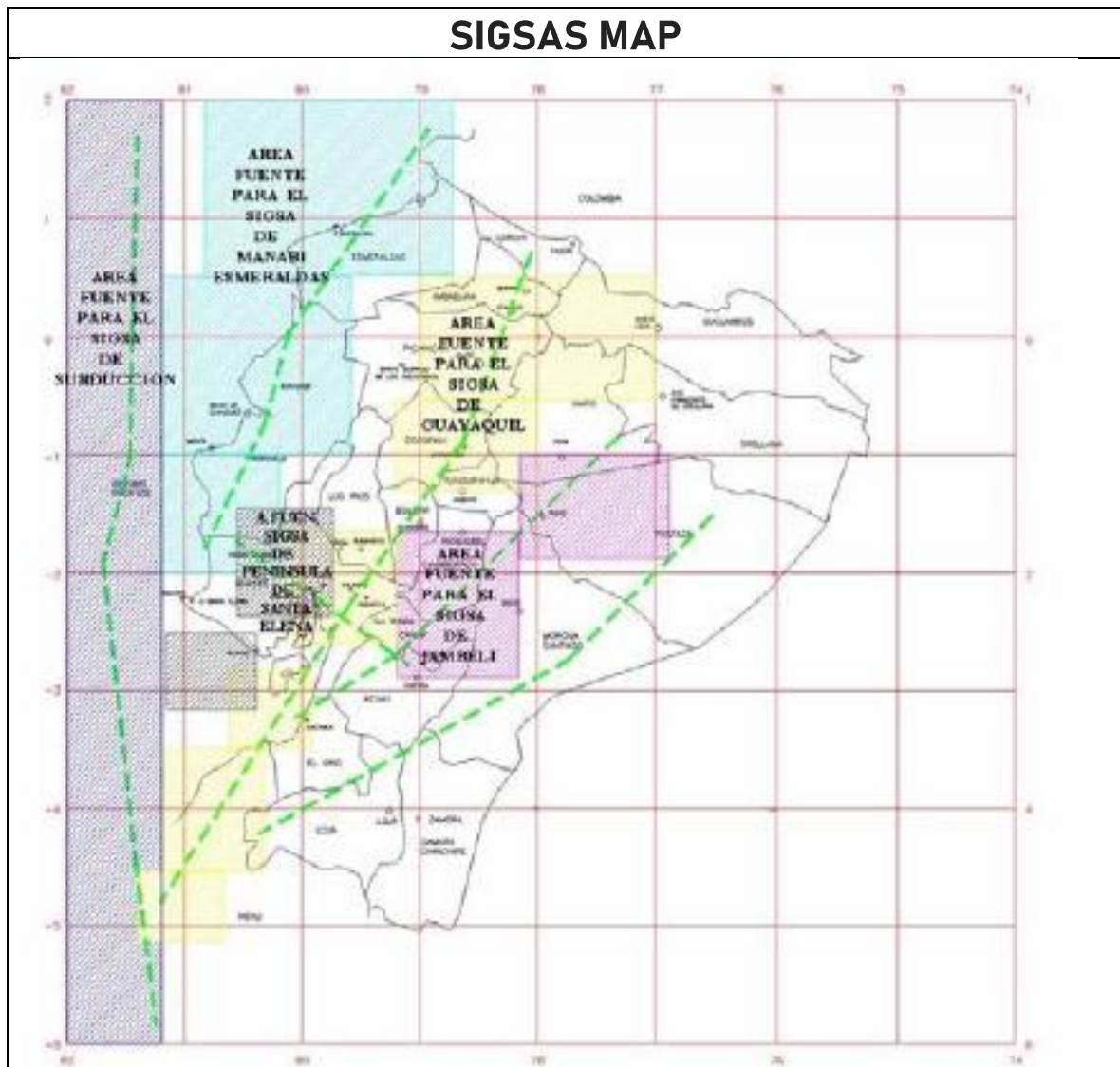


Figure 1. Generalized Seismically Active Systems (SIGSA) defined for the Guayaquil metropolitan region and area of influence.

The map shows the five SIGSAs identified by the SERRA/MEL method in the ESPOL 2005 study [3], each representing an integrated system of geologically related faults to which regional seismic activity is attributed. The SIGSAs are: (1) **Subduction SIGSA** — captures the seismic activity of the Nazca-South American plate contact in the Pacific Ocean; (2) **Manabí-Esmeraldas SIGSA** — follows the coastal fault system of Manabí and Esmeraldas provinces; (3) **Guayaquil SIGSA** — traverses the city of Guayaquil northeastward toward Quito, associated with the Caribbean plate vestige boundary; (4) **Jambelí SIGSA** — parallel to the Guayaquil SIGSA, captures activity of the southernmost fault system; (5) **Santa Elena Peninsula SIGSA (Chongón-Colonche)** — captures the intense fault activity of the Santa Elena Peninsula and the Cordillera Chongón-Colonche.

Source: Moncayo Theurer, M. (2005). Mapa de Potencialidad de Liberación de Energía Sísmica para la Ciudad de Guayaquil. ESPOL Proyecto Semilla [3].