



World-Class Oil Seeps in Roadcuts above the Faja de Oro Trend in Eastern Mexico

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ABSTRACT

Over 20 roadcuts have been created along a new toll road that has been constructed between Tuxpan and Tampico in eastern Mexico. Geologic maps show the outcrops to be of Oligocene or Miocene age, mostly deposited in shallow-marine environments. Two of these outcrops are actively seeping oil and allow us to study the hydrocarbon migration process in detail and predict how migration has occurred in other parts of the basin. The outcrops are located just to the east of the Naranjos Field, which is part of the famous Faja de Oro trend. The best oil seeps occur exactly where the toll road crosses the productive trend. The oil migrates vertically through igneous dikes and vertical fractures to the exposed oxidation/reduction interface, where it then seeps down the roadcut face and forms a river of oil at the side of the road. Yellow sulphur deposits are common at the oxidation/reduction interface, depositing from the water which also seeps from that boundary. The most prolific seeps appear to be from near-vertical igneous dikes and brecciated dikes up to 15 m wide. Fracture sets also provide major vertical migration pathways and microfractures then provide the migration pathway from the larger fracture sets to sedimentary structures, such as parallel laminations which allow the oil to migrate laterally away from the fractures. One of the outcrops is channelized and the channels are completely oil-saturated. One of the roadcuts exposes a natural oil seep which used to be at the surface before the road was constructed. This allows us a 2D view of a natural oil seep which was above the oxidation/reduction interface.

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