



## **The 11th Century Collapse of Aqaba on the North Coast of the Gulf of Aqaba, Dead Sea Fault System, Jordan**

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The city of Aqaba is situated at the northern end of the Gulf of Aqaba along the southern part of the Dead Sea Transform Fault. Based both on the historical accounts and archaeological excavations, it is clear that earthquakes have played a significant role in the history of the region. The early Islamic city of Ayla was probably founded around 650 A.D., suffered some damage as a result of the 748 A.D. earthquake, and saw extensive reconstruction around the beginning of the Abbasid period (Whitcomb, 1994). Among other evidence of earthquake destruction at the Islamic city of Ayla is the leaning city Sea wall. Stratified pottery collections from our February 2009 excavation of the buttress of the city wall of Ayla strongly suggest a date for revetment construction in the early 11th Century. Based on the fact that the most recent pottery from sealed loci inside the buttress wall is late Abbasid – Fatimid and the absence of handmade pottery often found in the abandonment phases, the buttress was likely constructed after liquefaction damage from the 1033 earthquake. Damage from distant source earthquakes (748 and 1033) in the ancient city was repaired in antiquity. The destruction and loss of life (accounts claim that all but 12 residents who had been out fishing were killed) caused by the 1068 earthquake may account for the relative ease with which Baldwin I of Jerusalem took over when he arrived with a small retinue in 1116 A.D. Paleoseismic trenches in the modern city of Aqaba indicate that at least two earthquakes have occurred after deposits dated to 1045-1278 A.D. A preliminary analysis of the stratigraphy in new trenches in the Taba sabkha north of Aqaba shows at least three separate faulting events, with the most recent event located at a depth of 70 cm below the ground surface. This finding supports the initial ground penetrating radar survey conducted at the southern end of the Taba sabkha by Abueladas (2005). These data document a long period of quiescence since the last phase of intense earthquake activity along the southern Dead Sea Transform and highlight the elevated potential earthquake hazard in the region.