

From: Christopher DuRoss

Subject: Liquefaction in M 4.9 Randolph, Utah earthquake

Folks,

Here is a brief report from Greg McDonald and I regarding evidence for liquefaction in the April 15, 2010, M 4.9 Randolph, Utah earthquake.

We mapped sand blows (and a few bank-parallel ground cracks) along about 1 km of the Bear River (see attached map and photos). The area of liquefaction coincides well with the mapped epicenter, which plots about 100 m east (41.7033 -111.0942 according to the U.S. Geological Survey).

The sand blows occurred mostly in fine-grained sediment exposed along the banks of the Bear River. They consisted of fine to coarse sand and reached a maximum diameter of about 100 cm; however, most were about 10 to 50 cm in diameter. Very close to the epicenter we mapped a 30–40 m-long zone of numerous large (50–100-cm-diameter) sand blows (red line on map), including one composite blow about 200 cm wide.

We field checked several other stream crossings and marshes in the area (up to about 3 km from the epicenter), but did not find additional geologic evidence for strong ground shaking.

Chris

Christopher B. DuRoss  
Utah Geological Survey  
1594 West North Temple  
P.O. Box 146100  
Salt Lake City, UT 84114-6100  
Office 801.537.3348  
Fax 801.537.3400  
Cell 801.641.4008