Recording seismic on geophones within ground screws

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ABSTRACT

Seismic records were obtained from geophones installed within devices known as ground screws, normally used as bases for small buildings. The data were acquired along with other records at CREWES' Priddis test site in November/2014. Analysis is at a preliminary stage, but comparisons may be made with surface geophones at the same recording stations. A patent on this type of recording is held by Ross Huntley.

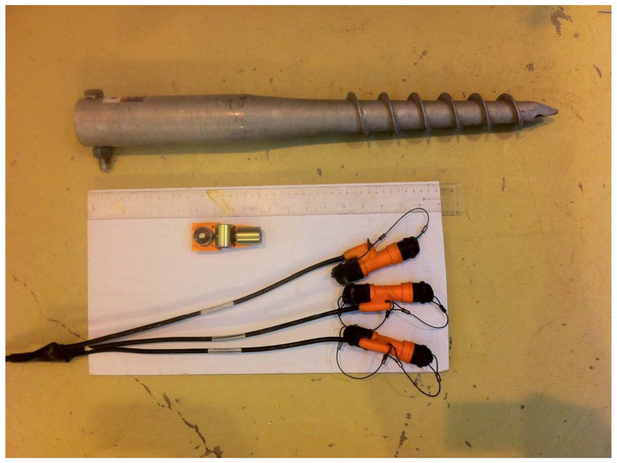

Figure 1: The Krinner ground screw is at the top, a set of three elements in an opened casing is on the paper, and the Cooter connectors are below. The transparent ruler is 30 inches long.

Figure 2: The sensors under test at station 165. The top of the ground screw appears slightly above and right of center. The comparable 3-component SM7 surface geophone is to the left in the orange case.

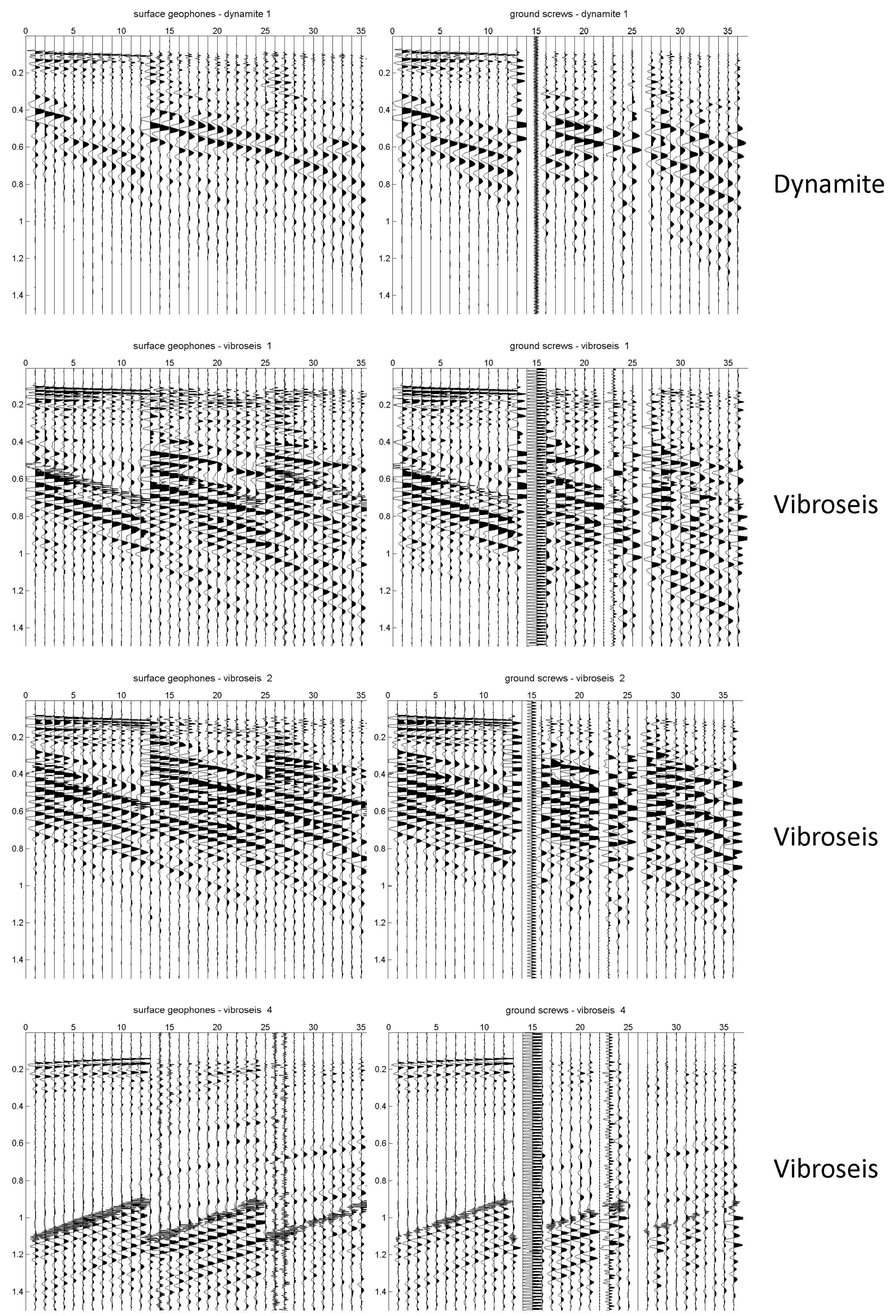

Figure 3: Selected 3-component ground screw records (right) and comparable conventional 3-components records (left). On each record, left is vertical, followed by horizontal in-line, and horizontal cross-line.

CONCLUSIONS

The vertical components have reduced air-blast on the ground screw data. The horizontal components are not coupled adequately within the ground screws, but there are still some suggestions of small ground screw advantages.