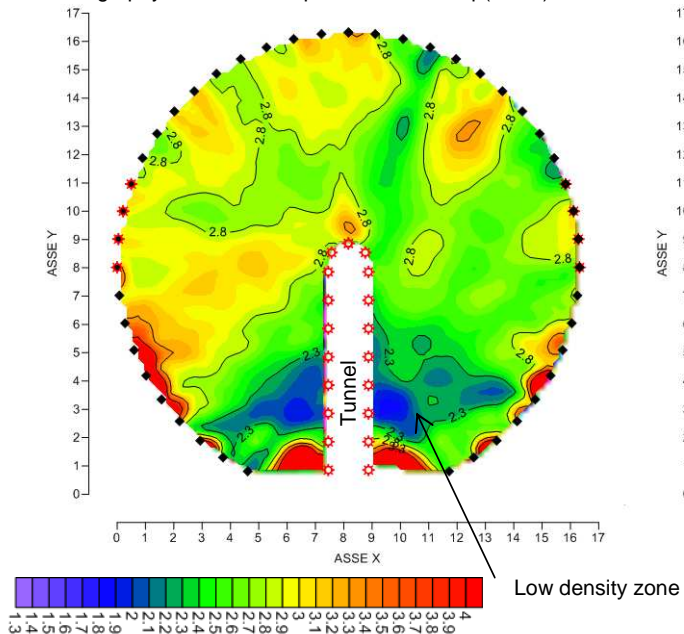


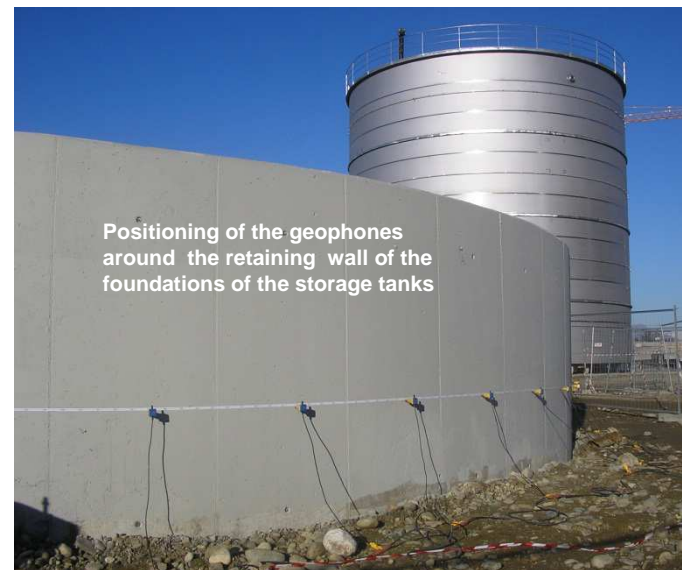
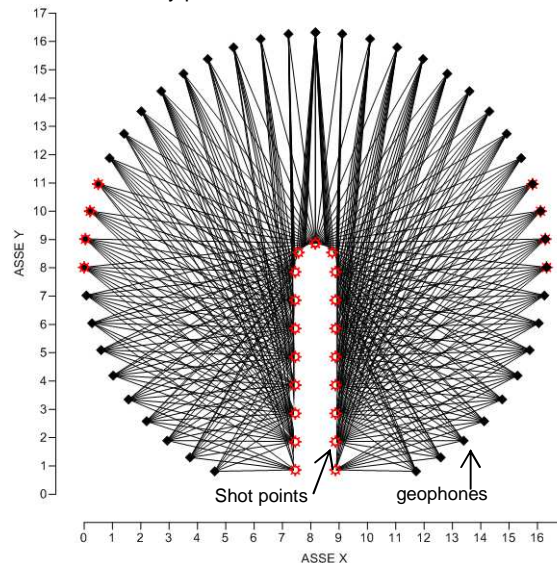
# EVALUATION OF THE DEFORMABILITY PROPERTIES OF SOIL AND CONCRETE STRUCTURES SEISMIC «TRASPARENCY» METHOD

**Caso 1** – evaluation of the degree of density of a storage tank soil foundation

Tomography model of compression waves Vp(KM/S)

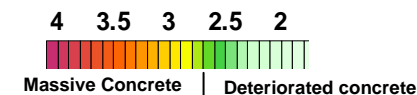


Seismic ray paths

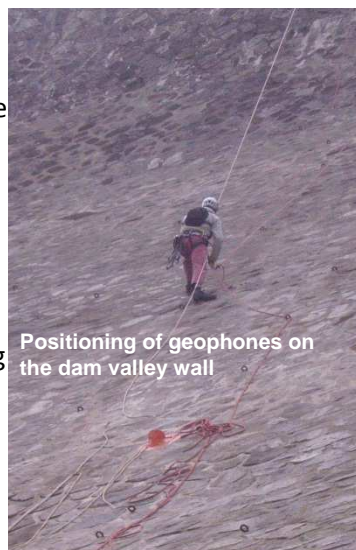


**Cas2e2** – Evaluation of the concrete deterioration degree of a dam

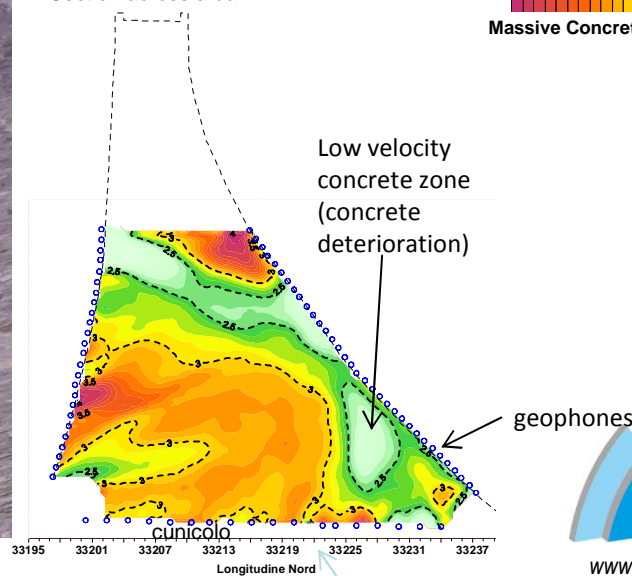
Velocity Vp (m/s)



The "transparency seismic method" uses the first arrival times of compression waves between an energy source and a receiver disposed on opposite sides. Paths of the seismic rays are, therefore, direct, and allow to evaluate with great precision the velocity of propagation of seismic waves. The availability of multiple paths allows the reconstruction of a two-dimensional tomographic model with the algorithm "SIRT" (simultaneous iterative reconstruction tomography) that provides an overview on the velocity distribution of the compression waves Vp on horizontal planes (the case 1) or vertical sections (the case 2). The correlation between the velocity of the compression waves Vp and the density of soils / structures allows to highlight areas of potential settlement or structural problems



Section across a dam



Positioning of the geophones in the basal tunnel

