



Several university departments are being asked about their possible involvement on one-off days during the year. Previously, we have been able to offer a Geophysics Day when students could use modern hammer seismic and resistivity sets on site.

The seismic and resistivity surveys were carried out on the flood plain below the Centre, which was convenient, but bore little relation to prospecting for mineral bodies. A pilot resistivity survey carried out in 1978 by High Storrs School, Sheffield suggested that there was an anomaly over the Dutchman vein on the hillside.

It would be useful to see if this could be repeated and worked up into a student exercise.

## Some results from previous years are given below.

### 1. A resistivity survey on the hillside beside Dutchman Mine.

The survey was carried out using a simple Unilab resistivity kit, with the electrodes spacing set at a constant 3m apart. The electrodes were “walked” along the survey line.

A parallel line, 20m to the south, produced a very similar anomaly pattern, although the anomalies were not so pronounced.

The low resistivity anomalies could represent a clay infill in mineral veins, resulting from differential weathering, compared to the higher resistivity of limestone on either side of the vein.

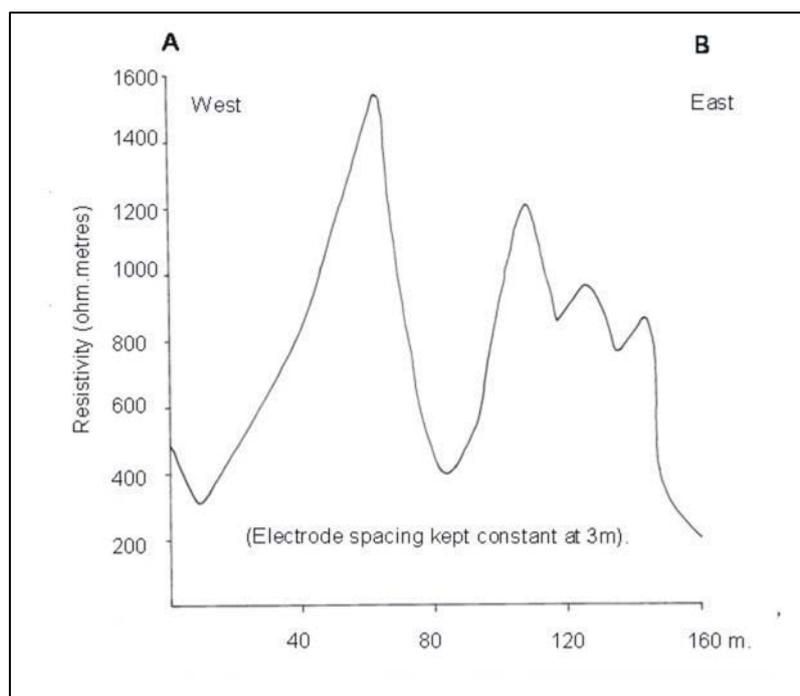


Fig 9.1. Resistivity profile on the hillside near Dutchman Mine.

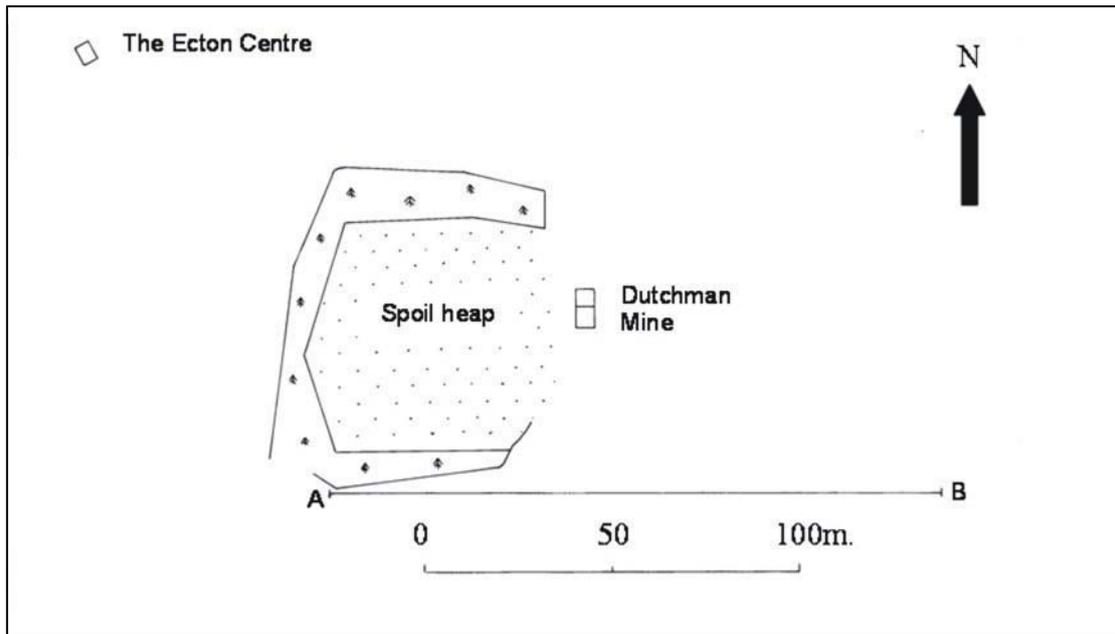


Fig 9.2. Sketch map showing the location of the resistivity line in Figure 9.1.  
(From a plane table survey).

**2. Resistivity and refraction seismic surveys on the floor of the Manifold Valley**

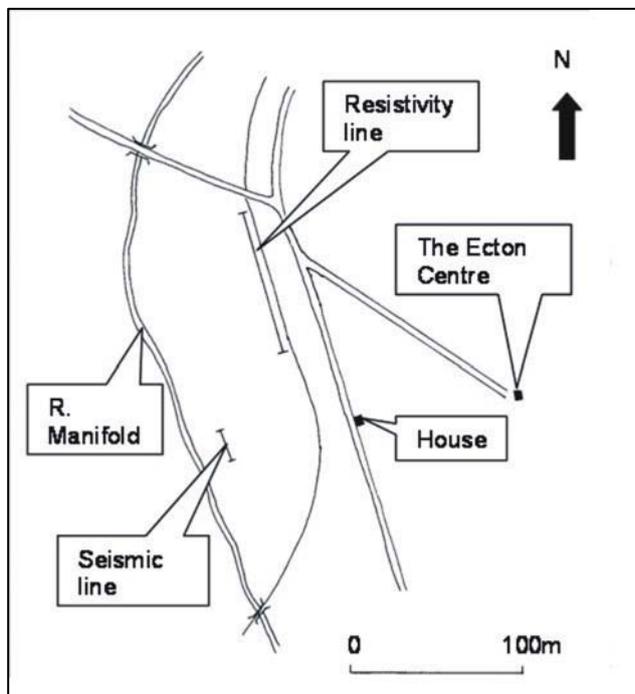


Figure 9.3. Location of the seismic refraction and resistivity lines on the valley floor.

- A resistivity survey was conducted beside the former light railway track, using the expanding electrode system in the Schlumberger configuration.
- A one-way hammer seismic line was shot, by hammer, using a 12 channel refraction seismic set, on the levelled remains of a mine waste dump, near the river bank.

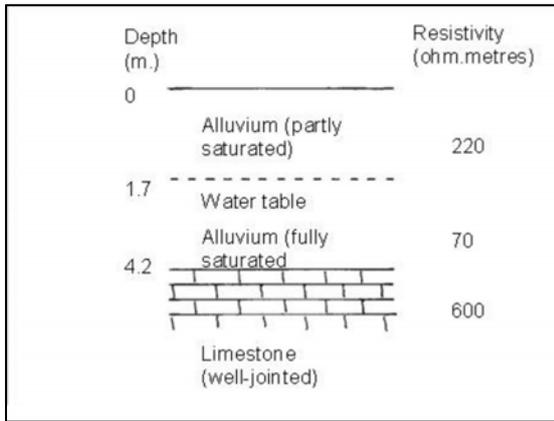


Fig 9.4 a) An interpretation of the geology



Fig 9.4 b) A resistivity survey in progress

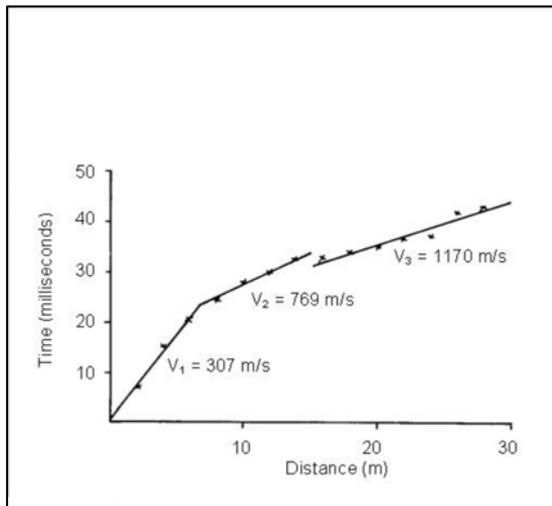


Fig 9.5 a) Seismic refraction profile along the line shown in Figure 9.3



Fig 9.5 b) 12 channel seismic shot –results!

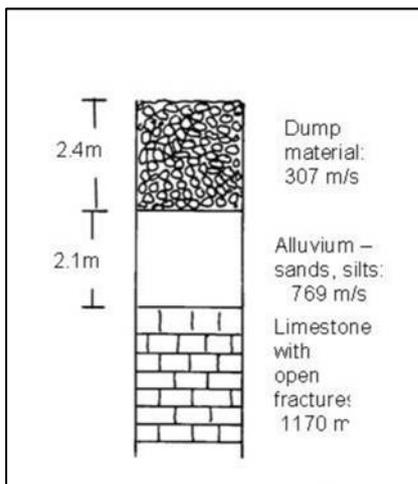


Fig 9.6 a) An interpretation of the geological profile below the seismic shot point



Fig 9.6 b) Wielding the hammer on the valley floor