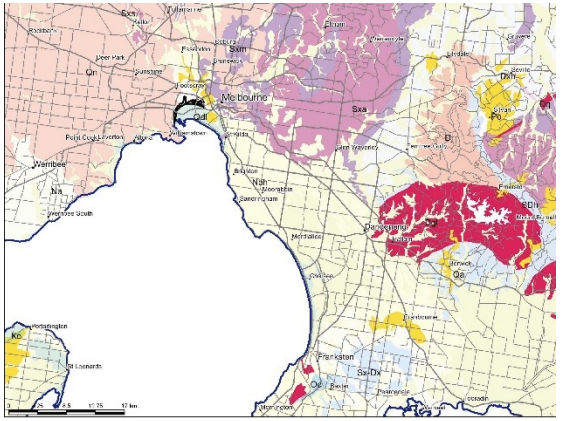
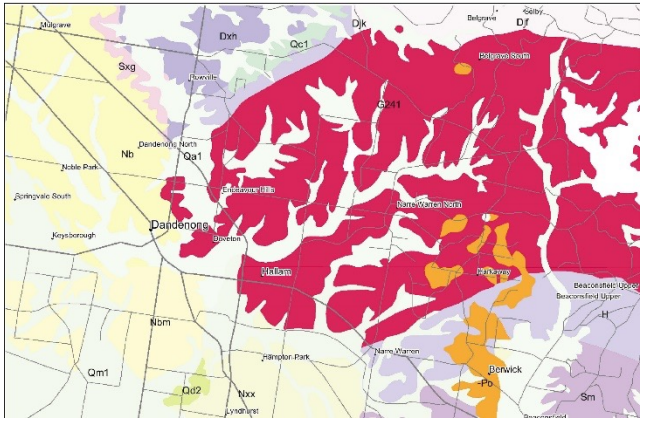
Diploma of Advanced Concrete Technology

- **Geology aggregates, Classification and Prospecting**

Section 4 – Prospecting Method and Tools

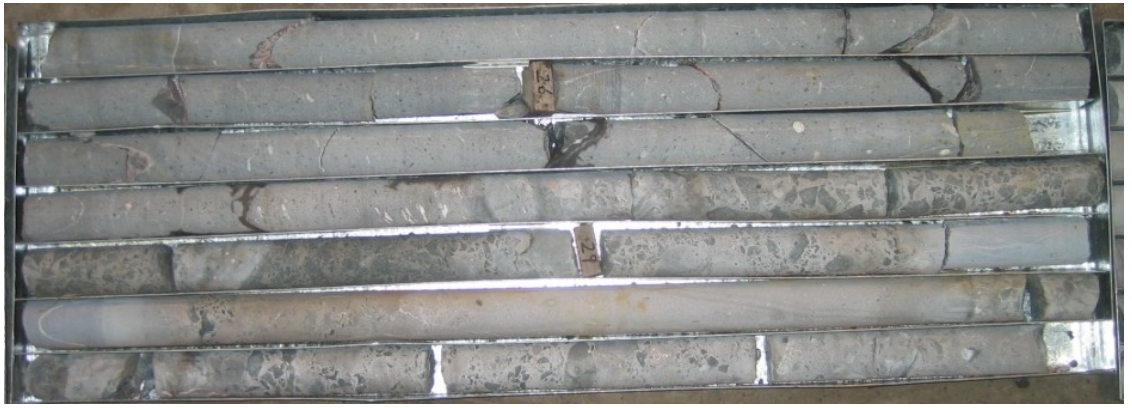
- ***Site Selection***
- Use geological maps
- Obtain Aerial surveys
- Select rock types suitable for purpose
- Incorporate environmental constraints
- Check legal constraints
- Do reconnaissance surveys
- Collect samples for preliminary analysis (petrology, mechanical testing)
- Check title details





Section 4 – Prospecting Method and Tools

- Drilling
- *Diamond drill*
- Advantages
  - See all core, measure faults and fractures, can test material
- Disadvantages
  - Some coring loses clays
  - Difficult in highly fractured material

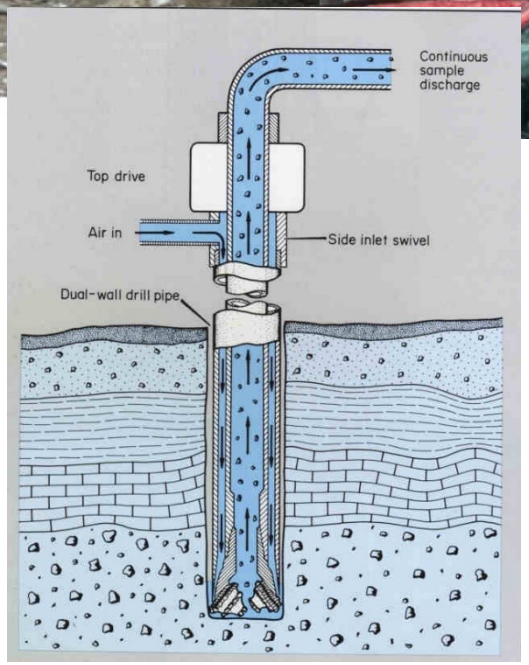


Section 4 – Prospecting Method and Tools

- Drilling
- *Percussion drill*
- Advantages
  - Fast, can collect some sample, gives indicator of weathering
- Disadvantages
  - Difficult to get precise depths, does not give information regarding fracturing, and other geological information

Section 4 – Prospecting Method and Tools

- Drilling
- *Reverse circulation drill*
- Advantages
  - Fast, can collect some sample, gives indicator of weathering
  - good in non consolidated sediments
- Disadvantages
  - Difficult to get precise depths, does not give information regarding fracturing, and other geological information



Section 4 – Prospecting Method and Tools

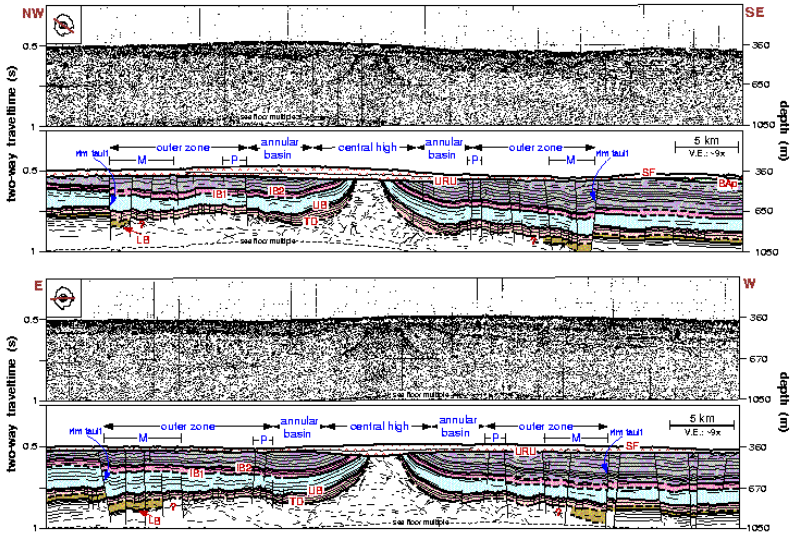
- Drilling
- *Auger drill*
- Advantages
  - Fast, can collect sample, gives indicator of weathering
- Disadvantages
  - Difficult to get precise depths, does not give information regarding fracturing, and other geological information, sample may be contaminated from shallower intervals. Limited value under the water table.

Section 4 – Prospecting Method and Tools

- Drilling
- *Vibrocore drill*
- Advantages
  - Gives continuous sample, reflects, all lithologies, gives precise depth changes. Useful in saturated conditions
- Disadvantages
  - Some methods cannot give precise sample

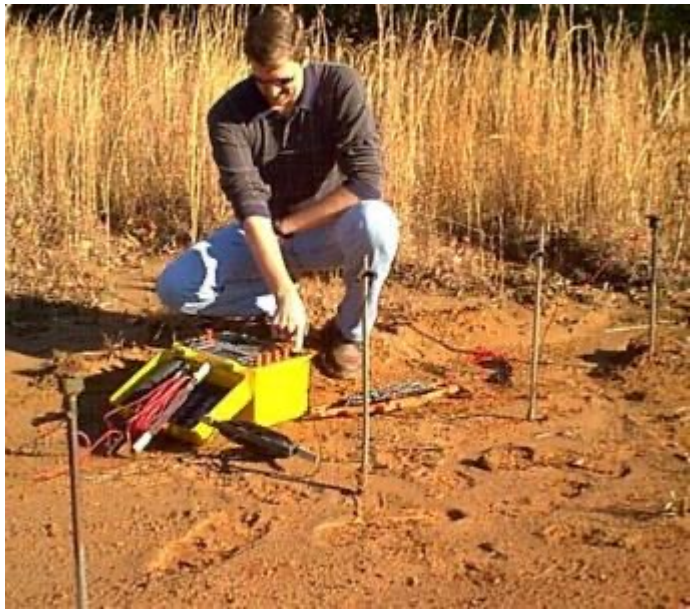
Section 4 – Prospecting Method and Tools

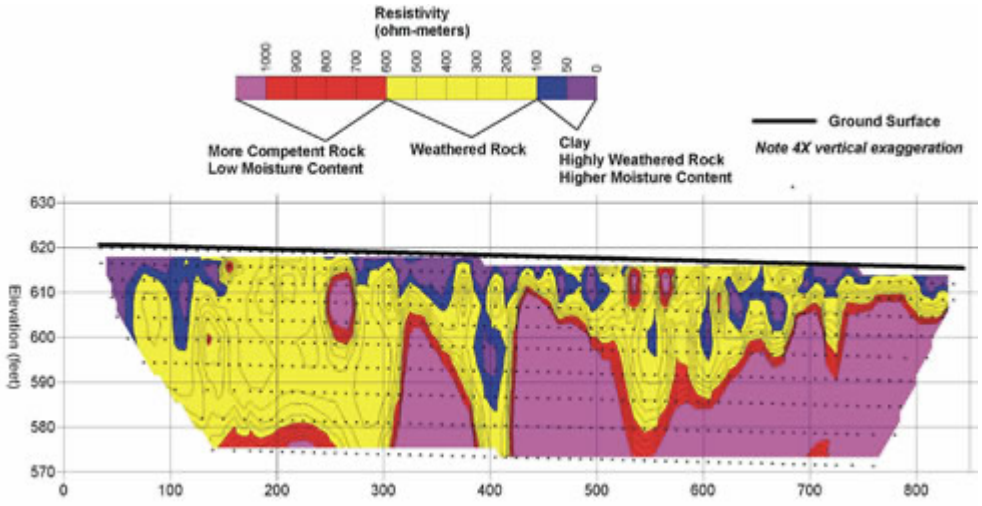
- Geophysics
- *Seismic*
- Advantages
  - Gives detailed information on bedding and faulting
- Disadvantages
  - Interpretative, good as assistance tool, with drill hole correlation



Section 4 – Prospecting Method and Tools

- Geophysics
- *Resistivity*
- Advantages
  - Fast and gives broad area analysis. Is a good indicator of clay in sand deposits
- Disadvantages
  - Interpretative, good as assistance tool, with drill hole correlation





Section 4 – Prospecting Method and Tools

- Mine Modelling
- Inputs:
- Drill holes are completed
- Testing done
- Petrology report
- +/- geophysics
- Groundwater investigation
- Output:
- Mine model
- Staging plan
- Rehabilitation plan