Section 1: Channel Tunnel to Fawkham Junction
Construction of Section 1 provides a high speed railway line from the Channel Tunnel Rail Link (CTRL) through the county of Kent to Fawkham Junction. The new line follows the existing railway from the Channel Tunnel terminal to Ashford, and serves Ashford International station.

Section 2: Southfleet Junction to St. Pancras
This phase of the project will see the line extended from Section 1 at Southfleet Junction near Gravesend to central London. The line travels northwest through the Ebbsfleet Valley to a new international and domestic station at Ebbsfleet and a new junction with the existing North Kent Line.

Several major Contractors including Balfour Beatty, Skanska, Hochtief-Norwest Holst JV, Alfred McAlpine – AMEC JV, Costain and Vinci Grands Projets, Hochtief-Murphy JV were all involved in projects where deep excavation & tunnelling required the need for deawatering.

Geosense worked closely with W J Groundwater on all projects to provide sensors for monitoring of the groundwater levels for their dewatering schemes.

Vibrating wire piezometers and data loggers were used to monitor in ‘real time’ using Monitoring Point software via the internet the status of water levels and pumps. In addition preset trigger levels for the groundwater levels allowed alarms to be raised which provided the project with additional safety cover.

All projects were carried out successfully and the web-based software allowed the client and engineers to be able to view the data anywhere, at any time and in ‘real time’.

### Project Summary

<table>
<thead>
<tr>
<th>NAME: Channel Tunnel Rail Link (Contracts 103, 220, 230, 240, 250, 310, 320, 430)</th>
</tr>
</thead>
<tbody>
<tr>
<td>YEAR: 2000 - 2004</td>
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<tr>
<td>CLIENT: Union Railways</td>
</tr>
<tr>
<td>MAIN CONTRACTOR: Various</td>
</tr>
<tr>
<td>INSTRUMENTATION SPECIALIST: W J Groundwater Ltd</td>
</tr>
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<td>CONSULTANT: Various</td>
</tr>
</tbody>
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### Overview

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### Monitoring

To monitor groundwater levels and pore water pressures in and around deep excavations.

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### Products used

- **VW piezometers**
  - To monitor groundwater levels and pore water pressures in and around deep excavations.
- **Data loggers**
  - Allows data to be collected, stored and uploaded via MonitoringPoint software to the internet.