

# Underground Pipeline Re-levelled by JOG

## INDUSTRY

Infrastructure

## STRUCTURE

Pipeline

## PROBLEM

Earthquake remediation

## LOCATION

Christchurch, New Zealand

## DURATION / YEAR

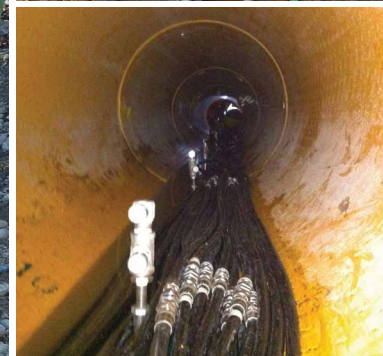
4 days / 2013

## TECHNOLOGY

JOG Computer  
Controlled Grouting

## BUSINESS UNIT

Mainmark New Zealand



## Summary

A new manhole chamber and section of 900mm diameter sewer pipeline, 4000mm below the ground had been constructed. Due to ground conditions and seismic events a section of the pipeline was outside design grade.

Mainmark rectified the settlement, with JOG integrated computer grouting, to the required level.

This was the first JOG project of this kind to be undertaken anywhere in the world.

## Objectives

The asset owner, Christchurch City Council, would not accept pipeline outside of design grade. The line was unable to perform to capacity. They were concerned to prevent silt build-up in the low sections of line.

It was necessary to correct the levels as a new section of pipeline being constructed would need to join at this manhole chamber upon completion.

## Solution

A continuous JOG circuit of 24 primary injection needles were installed within approximately 25m of pipeline.

Rectification proceeded with a controlled, uniform, incremental lift from directly beneath the pipeline.

After initial installation of the injection needles, the requirement for personnel to be inside the pipeline was minimised for safety reasons to 'for survey purposes only'.

The JOG method was completely successful. An average lift of 35mm was achieved with a maximum of 45mm. The manhole chamber and pipeline section were raised back to design levels.