What is under the Huntly Section of the Waikato Expressway?

Building four lanes over a reclaimed lake.

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Photos courtesy of NZ Transport Agency and FHHJV
Huntly Section of the Waikato Expressway

Building four lanes over a reclaimed lake.
Lake Kimihia

Extent of original Lake and future McVie Road Overbridge (1941 Aerial)

Possible extents of hydraulically placed and mechanically placed minefill (2010 Aerial)

Building four lanes over a reclaimed lake.
Embankment Design

Building four lanes over a reclaimed lake.

CH3470-3700 LHS:
1.8m thick brown rock toe buttress over BDM A383. Crest of buttress to extend min 10m beyond toe of permanent embankment. Extend soil drain from drainage blanket through rock buttress.

CH3500-3600 RHS:
1.6m thick cohesive overburden buttress. Crest of buttress to extend min 5m beyond toe of permanent embankment. Extend soil drain from drainage blanket through rock buttress.

Extend preload detail basal geosynthetic reinforcement, rock buttress, and rock drains over chutes to 1.4m.
Construction – temporary works

Building four lanes over a reclaimed lake.
Construction – permanent work

Building four lanes over a reclaimed lake.
Construction – monitoring

Building four lanes over a reclaimed lake.
Construction – monitoring

Building four lanes over a reclaimed lake.
Lessons Learnt

1. Construction on very soft ground can involve a high level of risk. A high level of supervision and ongoing design input can effectively mitigate the risks.

2. Effectively managing soft ground risks requires an understanding of limitations in design and construction practices.

3. Quality instrumentation and monitoring is important to ensure construction does not result in soft ground failure.

4. Flexibility is required to be able to revise design predictions based on observed behaviour.