Checklist for Aquifer Test Reports Submitted to Hawke's Bay Regional Council

An aquifer test report is to re-create the aquifer test conditions and events for a person who did not participate, including all items that affect the test results. Specifically, a test report should include the following.

Title page to include

- ☐ Report title including nearest town and pumping well number
- ☐ Author(s) and date presented

Abstract (executive summary) less than 250 words to include:

Site description and tested aquifer

- ☐ Test location
- ☐ Date the test started and ended
- ☐ Formation or lithology description that the aquifer test represents
- ☐ Aquifer thickness and confining layer thickness (where applicable)

Test results

Aquifer

- ☐ Transmissivity value that represents the aquifer test results, range of values.
- ☐ Storativity value that represents the aquifer test results, range of values
- ☐ Hydraulic conductivity value that represents the aquifer test results, range of values

Confining layer (applicable for semiconfined analysis)

- ☐ Vertical hydraulic conductivity

Aquifer water chemistry (if applicable)

- ☐ Range of field values, such as pH, electrical conductance, temperature
- ☐ Parameter values determined by laboratory analysis

Test conditions

- ☐ Aquifer condition, such as semiconfined, confined, etc.
- ☐ Pumping rate and whether it was maintained constant
- ☐ Pumping duration and recovery duration
- ☐ Pumping well number and observation well(s) number(s)

Analysis summary

- ☐ Note any data corrections applied (such as antecedent trends, barometric, etc.)
- ☐ Note analysis method(s) applied to determine aquifer characteristics, such as Walton, Theis, etc.

Table of contents

- ❑ Text: list section headings, subheadings, references, appendices, page numbers
- ❑ List of tables: a unique identifier to every table used in the report or appendices, page numbers
- ❑ List of figures: a unique identifier to every figure used in the report or appendices, page numbers
- ❑ Appendices: list every appendices item, page numbers

Report text

Introduction

- ❑ List previous reports that describe the area's hydrogeology or aquifer tests
- ❑ Map of test site, including pumping well, observation wells, discharge line and point, landforms, any recharge/discharge boundaries, distances, etc.

Discussion and analysis

- ❑ Any hydrographs or data used to correct observed data
- ❑ Plotted test data as time-drawdown, semi-log or log-log; labelled:
  - Well number
  - Test date
  - Axes description and units (such as *drawdown (m)*)
  - Matchpoints, intersection points, etc.
- ❑ Include all calculations that lead to the determination of aquifer characteristics
- ❑ Discussion data reliability and analysis; aquifer test assumptions
  - Note any unmet or partly met assumptions
  - Note general factors that affected test or analysis results, such as weather or equipment failure

References

- ❑ Include all publications cited in the text, tables, and figures; use the following format:
  - Author(s), publication date, book or article title (if part of a larger work, cite the journal or collected work): city published in, Publisher, total pages of the publication (or specify the pages referenced)

Appendices to include:

- ❑ Aquifer test summary form supplied by Hawke's Bay Regional Council --*mandatory*
- ❑ Test data (prefer on forms supplied by Hawke's Bay Regional Council)
- ❑ Well completion illustrations showing the follow, for each well number
  - bore (hole) diameter
  - casing diameter
  - screen placement
  - backfill material in annulus (gravel, bentonite, cement, etc.)
  - lithology adjacent to hole (from well log)
  - all relevant dimensions, such as depths and diameters