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Report to Rural Services and Wairarapa Committee
from Graham Sevicke-Jones, Section Leader, Resource Investigations

Annual Groundwater Hydrology Report 2000

1. Purpose

To inform the Committee of the completion of the Annual Hydrology Report and to summarise its key findings.

2. Background

This annual report summarises the results of groundwater quantity and quality monitoring activities undertaken throughout the Region during 2000. The report supplements the hydrological database and technical reports that contain more extensive data and analysis.

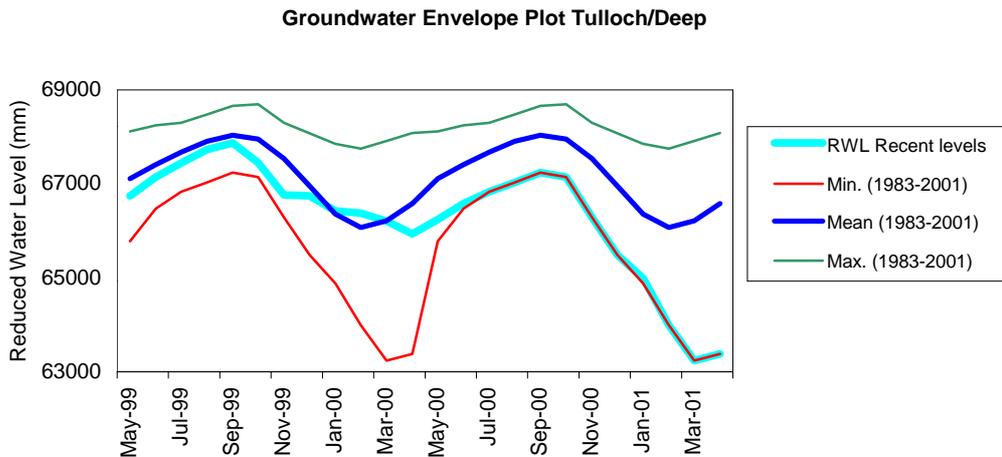
3. Significant Findings

During 2000 the condition of groundwater in the Wellington region was generally healthy with levels and quality within recorded maxima and minima. The drought period early in 2001 has since reduced water levels in many aquifers to record low values.

Notable features of the year include:

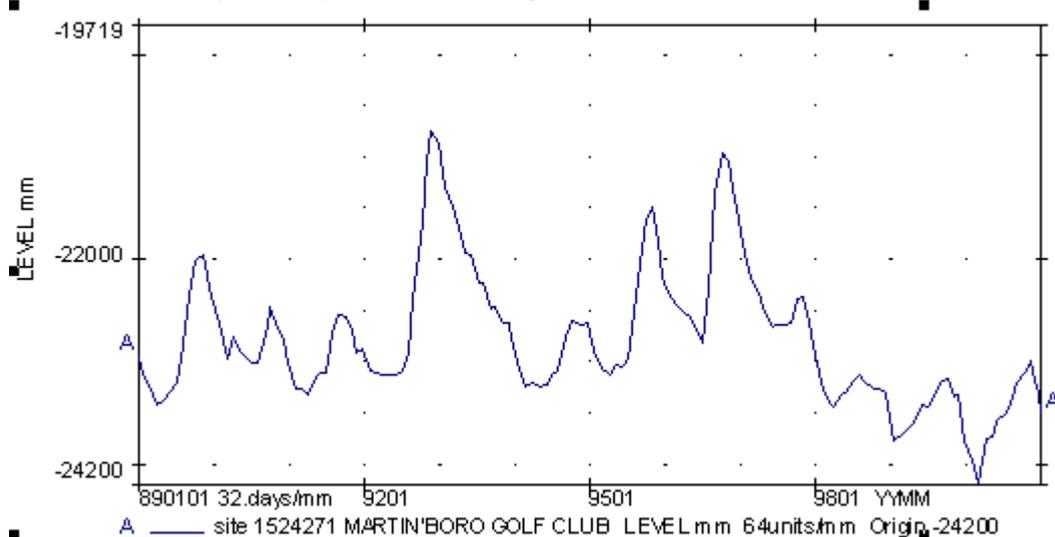
- Rainfall across the Region in 2000 was generally at or slightly below, long-term averages, particularly during the winter months. This pattern is reflected in most rainfall recharge aquifers where levels were at or below average levels during the year. The below average rainfall during winter has exacerbated the effect of the drought this summer on groundwater levels because winter is the predominant recharge period.

The figure below shows the Tulloch site in the Parkvale area near Carterton which monitors a rainfall-recharged aquifer. The below average rainfall in the Wairarapa Valley during 2000 is reflected in the low groundwater levels experienced during the year. The effect of the recent dry period from June onwards is clear to see with record low water levels measured at the site.



The Martinborough terraces (see figure below) and the deep aquifers in the Lower Valley Zone exhibited similar trends to Parkvale aquifers, with aquifers at their lowest recorded levels during the past few summers. Although aquifers did recover over the winter and spring period, back to similar pre irrigation season levels of the last two years, there still appears to be an overall trend of declining summer water levels.

Groundwater levels (1989-2001) in the Martinborough Terraces



- Flow in most of the Region's rivers was 65-100% below average. This pattern has resulted in the water levels of river-recharged aquifers being at or slightly below, average during 2000.
- Elevated nitrate levels continued to be detected under the Hautere Plain on the Kapiti Coast. Nitrogen isotope sampling and groundwater dating has been undertaken to determine the source of the contamination. Results of these samples are expected in July 2001.
- Chemical analysis from other groundwater zones were consistent with previous results.

- Significant increases in allocation occurred in a number of aquifers on the Kapiti Coast, the Lower Wairarapa Valley, Te Ore Ore and north of Masterton at Rathkeale.

4. Communication

Copies of the report are available to councillors on request.

The report will be sent to major groundwater users including territorial authorities, and the Utility Services Division of the Regional Council

5. RPS Implementation

The monitoring to which this report refers also helps implement the Regional Policy Statement. It provides the information basis for a range of freshwater quantity and freshwater efficiency and conservation implementation methods (section 5.5), contributes to the Regional Monitoring Strategy described in section 15.7, and helps assess the extent to which the anticipated environmental results set out in the Policy Statement are being achieved.

6. Recommendation

That the report be received.

Report prepared by:

Approved for submission by:

Graham Sevicke-Jones
Section Leader, Resource Investigations

Steve Blakemore
Manager, Planning & Resources