



Kevin Matthews

From: "Kevin Matthews" <kble@xtra.co.nz>
Date: Thursday, 3 September 2020 8:05 a.m.
To: "kevin matthews" <kble@xtra.co.nz>
Subject: submission REQ. 596300 WATERTAKE APPLICATION

Kia Ora,

Subject: submission REQ. 596300 WATERTAKE APPLICATION

Evidence In Support of M.G Matthews(Malcolm Matthews') submission REQ. 596300 WATERTAKE APPLICATION.

My name is Kevin Matthews, son of Malcolm, we farm on a Kaitaia/Awanui property that has been in continual family ownership since 1835.

Malcolm and myself are local historians. I'm also a naturalist. I've been involved with the restoration of dune lakes on the Aupouri Peninsula for 30 years.

In regard to recharge values and the measured average age of the Sweetwater aquifer being older than 200 years its important that you take on board the past drainage of surface waters that will have contributed to the existing aquifer.

1. The drainage of Lake Tangonge which took place in the early 20th century . The expanse of the open lake was described by Thomas Frederick Cheeseman,(Auckland Museum's curator from 1874 to 1923) in December 1895 as covering an area of 3 miles by 1 and half miles. The then associated wetlands extended north to the upper reaches of the Rangaunu Harbour. Moreover Maori record of events state that when Lake Tangonge was full to overflowing it flowed via a channel in the vicinity of Brass Road to the west through the Wairoa river and exited at what is now known as the Waimimiha Stream into the Tasman. During these events great harvests of tuna (eel) were taken. This exit was approx. 2.7 km north of its present flow into the Tasman at Kaka Street Ahipara. The cause of this stream change was loss of coastal dunes in the early 20th century.

2. The flood schemes that began in the 1920's straightened and lowered the river beds of the Awanui and Whangatane rivers which now take water directly to the Rangaunu Harbour. The river beds continue to slowly scour out with each flood event, particularly the sand, gravel and peat. The lowering of the riverbeds and associated government district farm drainage schemes reduced and lowered the water tables and will have no doubt reduced recharge. The 1927 Kaitaia District Drainage Maps shows the extent of the scheme.

This drainage effectively dried up shallow water takes and wells which my grandparents and wider whanau relied on prior to lowering and straightening of the rivers. Ground water could be seen free flowing in places along these newly dug rivers. Consequently bores and windmills were constructed to access deeper water supplies at this time.

3.The Kauri Gum industry ran from the 1840's through to the 1950's when prices fell. Many lakes and wetlands on the Aupouri Peninsula were lowered or completely drained during the early part of the 20th century. Deep channels and tunnels were used to drain lakes which are still evident today. The tunnels were excavated through the consolidated sand. These tunnels were/are stable with layers of thin iron pan forming laterally through the substrate. Of note these tunnels remain generally drip free even during winter.

The extent of the kauri gum industry on the Aupouri Pen is evident on aerial photos taken in the 1940's.

Further consideration of evidence on recharge values:

When Ahipara Golf Club applied for resource consent to take water from Waimimiha South Lake, it was concluded by Sinclair Knights Mertz that up to 60 % of the water entered the lake through lateral flows from the surrounding dune systems and 40% by surface water.

I have observed these lateral flows over the iron pans at Lake Ngatu and many other sites across the peninsula.

There are barriers that prevent rainfall from entering the lower Aquifer through the substrate as noted in the Lincoln Agritech Aupouri Aquifer Review 1056-1-R1.

I know there are high iron levels within the aquifers on the limestone base within Kaitaia and further west including Ahipara. Further there are high levels of bacterial iron within the streams flowing onto or in the direction of Te Oneroa-a-Tohe (90 Mile Beach).

Five Hundred metres west of the Awanui Straight at Brott Road there are 3 levels of water, the first at 11 metres is full of bacterial iron, the 2nd is at 20 metres with some improvement, however at 30 metres on the limestone base in limited shell and sand there is minimal iron and the water is potable. The redox values improve as one heads further west, for example the FNDC water take at Lake Heather which extends to the shell bed on the limestone base at 100 metres. Heading south from Lake Heather towards Ahipara redox values increase as is evident by the iron stains on Landcorps travelling irrigator.

For the redox values to be very low in the Sweetwater Aquifer one assumes this equates to a slower recharge through the substrate.

The question that worries us given inevitable sea level rise and continued drier climate: Will the current recharge of the aquifer be sustainable with these proposed added water takes?

Moreover I remain unconvinced by the Applicants high recharge values.

An adaptive management approach, which I call "suck it and see" may in the end not be in best interest of current water users.

Nga Mihi

Kevin Matthews on behalf of Malcolm Matthews.