From: <u>HBRC</u>

To: <u>Michaela Tinker</u>

Cc: janeen@sageplanning.co.nz

Subject: HBRC - (Ruataniwha Basin - Tranche 2) [#27]

Date: Tuesday, 14 December 2021 9:23:33 am

Which consent does your submission relate to::

APP-123563 APP-123591 APP-123541 APP-123547 APP-123565 APP-124498 APP-123566 APP-124500 APP-123546 APP-125281

Person Making the Submission: Thomas Frater

Address:

Phone Number: Mobile Number:

Email:

Are you a trade competitor for the purposes of section 308B of the RMA 1991: No

IF YES: Are you directly affected by an effect of the proposed activity that adversely effects the environment and does not relate to, or the effects of trade competition: No

: I/We oppose the above application

The specific parts of the application that my submission relates to are (please enter the relevant number): APP-123563; APP-123991; APP-123541; APP-123547; APP-123565, APP124498; APP-123566; APP124500; APP-123546; APP-125281

My submission is: (you may attach submission detail to this form)

\* Include the reasons for your views: Attached

I seek the following decision from the Hawke's Bay Regional Council:

\* Give precise details, including the parts of the application you wish to have amended and the general nature of any conditions sought: Included as "recommendations" in attached submission.

I wish to be heard in support of my submission: Yes

If others make a similar submission, I will consider presenting a joint case with them at the hearing: Yes I wish to attend any pre-hearing meeting that may be convened.: Yes

Attach a File: https://napier.wufoo.com/cabinet/c67a17e0-e0dd-4b90-b9b3-772dbee49deb - 27.79 KB

To: <u>Michaela Tinker</u>

Cc: janeen@sageplanning.co.nz

Subject: HBRC - (Ruataniwha Basin - Tranche 2) [#30]

Date: Tuesday, 14 December 2021 3:24:19 pm

Which consent does your submission relate to? Please click on the box below to select.:

APP-123563 APP-123991 APP-123541 APP-123547 APP-123565 APP-124498 APP-123566 APP-124500

APP-123546 APP-125281

Person Making the Submission: Simon Lusk

Associated Organisation (of applicable): SJ Lusk & Associates

Address:

Contact Person (if different to above, or if submitter is an organisation): Simon Lusk

Phone Number:

Email:

Are you a trade competitor for the purposes of section 308B of the RMA 1991: No

IF YES: Are you directly affected by an effect of the proposed activity that adversely effects the environment and does not relate to, or the effects of trade competition: No

: I/We support the above application

The specific parts of the application that my submission relates to are (please enter the relevant number): All of them.

My submission is: (you may attach submission detail to this form)

\* Include the reasons for your views: In the event that water is over allocated in the Tukituki & water quality fails to meet set levels I intend to test the law with regard to the liability of councillors & council staff. There is currently no case law testing liability of councillors or council staff, and while the initial reaction may be that I do not have a case, I believe the court will hear a claim of negligence, and if it does not my intention is to take it as far as the Supreme Court.

The reason for this is councils historically have made bad decisions about water allocation without consequence. I want to see how far the courts will hold councillors and council staff accountable for bad decisions, and how councillors and council staff react to the pressure of ongoing court action seeking to determine their liability.

I seek the following decision from the Hawke's Bay Regional Council:

- \* Give precise details, including the parts of the application you wish to have amended and the general nature of any conditions sought: 1. Adhere to all current environmental & water quality standards.
- 2. Treat decisions made as personal decisions that could end up in prolonged and expensive court action in the event that environmental standards degrade.

I wish to be heard in support of my submission: Yes

If others make a similar submission, I will consider presenting a joint case with them at the hearing: No I wish to attend any pre-hearing meeting that may be convened.: No

From: Paul Barrett
To: Michaela Tinker

**Subject:** FW: Tranche 2 Applications

Date: Tuesday, 14 December 2021 3:30:09 pm

Attachments: ATT00001.png
ATT00005.png

#### Submission below



#### **Paul Barrett**

Team Leader Consents 06 835 9200 | 027 318 6051

Hawke's Bay Regional Council | Te Kaunihera ā-rohe o Te Matau a Māui 159 Dalton Street, Napier 4110 | hbrc.govt.nz

Enhancing Our Environment Together | Te Whakapakari Tahi I Tō Tātau Taiao







Let us know how we're doing, give your feedback here

This communication, including any attachments, is confidential. Refer to the disclaimer on our website.

From: Laurie Gordon

**Sent:** Tuesday, 14 December 2021 3:21 PM **To:** Paul Barrett <br/> **Subject:** Tranche 2 Applications



Consents

Hawke's Bay Regional Council

Napier

## **Resource Consent Applications / Tranche 2**

14 December 2021

#### Dear Sir/Madam

I write as an Ongaonga resident of 26 years. I would urge the Council to reject all the current Tranche 2 applications. HBRC need to consider the inter-connected nature of water issues and how they impact both human and natural systems.

Our small block has a reliable bore that supplies the Ongaonga Hall and Playcentre as well as the domestic needs of our household and stock. Previous owners have also irrigated berry crops from the same bore supplemented by the Kahahakuri Stream which runs through our property.

When first drilled, our bore had a positive head of several metres. In 2004 our surface pump had to be replaced because the summer water levels had dropped to a point which the pump could not manage. Last summer, the current pump failed and was replaced by a submersible pump. In addition, in 2020, the Kahahakuri Stream was completely dry - all under current levels of water extraction.

I have the following concerns and questions:

- Sustainability. Current water use on the Ruataniwha Plains is not sustainable. What options will we have for access to water in the future if our new household pump fails? Based on the pattern of the last 26 years this would appear likely. Predictions are for continued and increasingly dry summer conditions.
- Equity. Do the private business agendas of 8 irrigators outweigh the public good of access to the water in the aquifer for the people living in Ongaonga? Well-

drilling, and pumping costs are significant. The incomes of home owners in Ongaonga vary. What responsibility do we share as a community to meet the needs of all, to access safe drinking water? I am aware of one neighbour without a domestic water supply because they cannot afford the costs involved in drilling and maintaining a bore.

- Environmental. It appears that the Kahahakuri Stream, which our children enjoyed as they were growing up, has now been reduced to a drain for winter run-off. An eco-system that supported bird, insect and stream life has died. What is the role of the Regional Council in managing and maintaining the health of the stream? How does this match with the proposed water applications and use? I have concerns that the applicants for Tranche 2 have taken little to no steps in mitigating their existing impact on the health of the waterways we all share.
- Health. Agricultural intensification has been shown to result in the chemical pollution of groundwater. For example, nitrate levels in Canterbury groundwater are a threat to human health. Is the HBRC monitoring nitrate levels in the Ruataniwha aquifer? What would be the effect of increased runoff from agriculture on our groundwater?

Human health and well-being are intimately connected to the health and well-being of our environment. With existing water takes, land, water and people in Ongaonga are under stress. I would urge the Council to look to the long term and make decisions that are sustainable, equitable and respectful of both the natural and social environment of our community.

I urge the HBRC to respect the fine words on your letterhead: 'Te whakapakari tahi i tō tātau taio' and to reject all Tranche 2 applications.

Yours sincerely,

Laurence Gordon.

From: <u>HBRC</u>

To: <u>Michaela Tinker</u>

Cc: janeen@sageplanning.co.nz

Subject: HBRC - (Ruataniwha Basin - Tranche 2) [#31]

Date: Tuesday, 14 December 2021 7:18:55 pm

Which consent does your submission relate to? Please click on the box below to select.:

APP-123563 APP-123991 APP-123541 APP-123547 APP-123565 APP-124498 APP-123566 APP-124500

APP-123546 APP-125281

Person Making the Submission: Tim Mouat

Associated Organisation (of applicable): Springvale Station ltd

Address:

Phone Number:

Mobile Number

Email:

Are you a trade competitor for the purposes of section 308B of the RMA 1991: No

IF YES: Are you directly affected by an effect of the proposed activity that adversely effects the environment and does not relate to, or the effects of trade competition: Yes

: I/We oppose the above application

My submission is: (you may attach submission detail to this form)

- \* Include the reasons for your views: water should be shared between all land owners based on hectares owned. I seek the following decision from the Hawke's Bay Regional Council:
- \* Give precise details, including the parts of the application you wish to have amended and the general nature of any conditions sought: stop a handful taking such a large take

I wish to be heard in support of my submission: No

If others make a similar submission, I will consider presenting a joint case with them at the hearing: No I wish to attend any pre-hearing meeting that may be convened.: No

To: <u>Michaela Tinker</u>

Cc: janeen@sageplanning.co.nz

Subject: HBRC - (Ruataniwha Basin - Tranche 2) [#38]

Date: Wednesday, 15 December 2021 12:36:32 pm

Which consent does your submission relate to? Please click on the box below to select.:

APP-123563 APP-123991 APP-123541 APP-123547 APP-123565 APP-124498 APP-123566 APP-124500

APP-123546 APP-125281

Person Making the Submission: tim gilbertson

Associated Organisation (of applicable): sheep city ltd and tim gilbertson

Address:

Contact Person (if different to above, or if submitter is an organisation): tim gilbertson

Phone Number:

Email:

Are you a trade competitor for the purposes of section 308B of the RMA 1991: No

IF YES: Are you directly affected by an effect of the proposed activity that adversely effects the environment and does not relate to, or the effects of trade competition: Yes

: I/We oppose the above application

The specific parts of the application that my submission relates to are (please enter the relevant number): all of it

My submission is: (you may attach submission detail to this form)

- \* Include the reasons for your views: 1 Taking 15 million cumecs out of the aquifer while at the same time replenishing the aquifer through MAR makes no sense.
- 2 HBRC should keep the 15 million cumecs as a strategic reserve as was originally intended
- 3 HBRC erred in giving up Tranche 2 Water. Now is the chance to rectify that mistake.
- 4 HBRC seems to think it is legally required to offer Tranche 2 water to applicants. However HBRC is legally required to action the Triennial Act and along with almost every other council in New Zealand has never done so .Therefore using a similar method, HBRC should be able to find a legitimate means of retaining tranche 2 water in public ownership
- 5 The process is unfair and unethical in that the cost of applying for the consents is such that very few people can afford the cost of the process and and the risk of applying and failing to gain a consent. The consent process therefore favours the large and well off, to the exclusion of the smaller and less affluent potential applicants. If HBRC wishes to be seen as a friend of the rich and powerful and to be seen to be encouraging inequality and effectively discriminating against the poor and disenfranchised, HBRC should go right ahead.
- 6 The report says that there are minimal timing effects if the applicants take water which they replenish much later . The effects depend very much on the severity of the season.
- 7 There is no mention of the carbon footprint and the carbon cost of pumping and re pumping 15 million cumecs back and forth .Should this not be a consideration.?.

I seek the following decision from the Hawke's Bay Regional Council:

\* Give precise details, including the parts of the application you wish to have amended and the general nature of any conditions sought: Do not issue the consents.

I wish to be heard in support of my submission: Yes

If others make a similar submission, I will consider presenting a joint case with them at the hearing: Yes I wish to attend any pre-hearing meeting that may be convened.: No

To: <u>Michaela Tinker</u>

Cc: janeen@sageplanning.co.nz

Subject: HBRC - (Ruataniwha Basin - Tranche 2) [#37]

Date: Wednesday, 15 December 2021 12:56:30 pm

Which consent does your submission relate to? Please click on the box below to select.:

APP-123563 APP-123991 APP-123541 APP-123547 APP-123565 APP-124498 APP-123566 APP-124500

APP-123546 APP-125281

Person Making the Submission: Bruno Chambers

Associated Organisation (of applicable): Horseshoe Farm

Address:

Contact Person (if different to above, or if submitter is an organisation): Bruno Chambers

Phone Number: Mobile Number:

Email:

Are you a trade competitor for the purposes of section 308B of the RMA 1991: No

IF YES: Are you directly affected by an effect of the proposed activity that adversely effects the environment and does not relate to, or the effects of trade competition: No

: I/We oppose the above application

The specific parts of the application that my submission relates to are (please enter the relevant number): I oppose the granting of all new water take applications

My submission is: (you may attach submission detail to this form)

- \* Include the reasons for your views: As a farmer with a water right to irrigate parts of my farm kms up stream of Red bridge, I believe my right to take water will be adversely affected by the increasing likelihood of water bans due to low river flows in summer. Plus, I believe the general health of the river will be negatively affected down steam, especially for swimmers and fisherman.
- -These water applications are huge and I do not believe the consent holders will be capable of augmenting the river flows and mitigating the negative effects of nutrient burdens especially nitrogen and phosphorous entering the waterways.
- -This conflicts with the Government directives to strive for cleaner water ways. Much of the area where the consents are being sought is on light and gravelly soils that leach nutrients readily. The nitrogen/phosphorous content in some streams and rivers in these areas already exceed the maximum allowable levels.
- Algae blooms are likely to increase.
- Insufficient study has been done on the effects of large ground water extraction on the nearby streams and water ways to allow a decision on these new water rights.
- -Now that the validity of Overseer has been discredited, this tool should not be used to measure the nutrient runoffs etc.
- -The future of NZ farming relies on us being, environmentally sensitive, producing high value goods with strong customer concern for the way the farms operate. Eg. Producing more bulk milk powder at a negative cost to the environment is not the way forward.

If some or all of these consents are granted, the river flows downstream will be affected. In my situation its like robbing Peter to pay Paul.

I have lived beside the Tuki tuki for most of my life and have had an irrigation consent for nearly 40 years. I know the river intimately and have observed the change in flows with the increased number of consents to take groundwater in its head waters. There is no doubt that the river stays low for longer in summers and high flows at other times are shorter.

- I used to have an apple and pear orchard on the farm but one of the reasons I removed it was the uncertainty of water for irrigation due to the low flow cutoffs in summer.

I seek the following decision from the Hawke's Bay Regional Council:

\* Give precise details, including the parts of the application you wish to have amended and the general nature of any conditions sought: I seek the HBRC to oppose the granting of any new water rights.

I seek a review of all large, (those exceeding 100, 000 cu metres per week,) irrigation consents, being sought for renewal. This would need to show that the river/streams flows are not significantly impacted before these consents are renewed.

I seek a postponement of any decision regarding new consents until such time as the Govt has come up with a replacement for Overseer.

I wish to be heard in support of my submission: Yes

\_

If others make a similar submission, I will consider presenting a joint case with them at the hearing: Yes I wish to attend any pre-hearing meeting that may be convened.: Yes

Submission to Hawkes Bay Regional Council on Resource consent applications to take Tranche 2 water from the Ruataniwha Basin

Marilyn Scott



(I do not wish to speak in person to my submission)

I submit that no consent be given to the 8 applicants.

As a Hawke's Bay resident of many years I am concerned generally about our water quality and the state of our aquifer and rivers in particular which have been impacted by the increasing amount of water that has been allocated, over recent decades in particular to support industrialized farming practices and large-scale agricultural operations.

Like many Hawke's Bay kids growing up in the 1960's the drinking water was heralded as artesian 'gold' and the rivers were our go-to-place for learning to swim and general recreation, but there is no way I would take my grandchildren to the river to swim these days. In my lifetime alone I have seen the pollution and degradation of our rivers and streams, due in large part to the pressure for more and more water to quench the insatiable thirst of fewer and fewer landowners wanting to expand their agricultural operations in the name of 'maximizing economic growth' – for whom and at what cost?

There is a tipping-point for everything and many of us believe we are already far advanced into ecological overshoot — we have already hit the limits of fresh water and fertile land not just regionally but nationally and globally as well.

Our resources are actually finite and at some point the elected guardians of our region have to say "Enough!" The longer we go on trying to double and re-double our efforts to 'grow' the more we will damage the earth we depend on and the overall health and wellbeing of all our environment and our people.

We rely on the Regional Council to protect our environment for the benefit of all not just for the few. The continued demand for water to support intensive dairying in CHB in particular (which many would argue is an unsuitable farming practice in this region at the outset) and which requires a degree of large-scale irrigation, is simply adding to the demand for more and more water to benefit fewer and fewer people. It is not just an equity issue but more importantly an environmental one and as *kaitiaki* of the environment I believe the HBRC needs to prioritise the environment and put the benefit of the many, ahead of the narrow self-interest of the few. We also rely on our Councils to lead the way in finding sustainable and lasting ways to conserve and use our water which should involve encouraging us to look at changing our farming practices and lifestyles to work in harmony with nature - to conserve and protect - not simply consume and deplete - our natural resources such as water.

I read in a HB Today newspaper article recently that if the Tranche 2 allocation is granted, it will equate to 8 corporate farming operations receiving "more than twice the 3.2 million m3 of water currently consented for all the townships of CHB" (that is on top of existing large water allocations that these agri-businesses already have.) How can this be fair, let alone sustainable, and when will it stop? Only when our Council says 'No!'

To: <u>Michaela Tinker</u>

Cc: janeen@sageplanning.co.nz

Subject: HBRC - (Ruataniwha Basin - Tranche 2) [#40]

Date: Wednesday, 15 December 2021 5:50:17 pm

Which consent does your submission relate to? Please click on the box below to select.:

APP-123563 APP-123591 APP-123541 APP-123547 APP-123565 APP-124498 APP-123566 APP-124500 APP-123546 APP-125281

Person Making the Submission: Gerald Wilson

Associated Organisation (of applicable): Consent Holder in CHB

Address:

Phone Number:

Email:

Are you a trade competitor for the purposes of section 308B of the RMA 1991: Yes

IF YES: Are you directly affected by an effect of the proposed activity that adversely effects the environment and does not relate to, or the effects of trade competition: Yes

: I/We oppose the above application

The specific parts of the application that my submission relates to are (please enter the relevant number): APP-123563, APP-123991, APP-123541, APP-123547, APP-123565, APP-124498, APP-123566, APP-124500, APP-123546, APP-125281

My submission is: (you may attach submission detail to this form)

The water opportunity is to a select few. This mentality of first up best dressed does not encourage equitable opportunity and creates division in the community. Tranche 2 is an excessive amount of water in a tightly held catchment that already has many problems with fair distribution

We have 2 very small consents on Ashcott Rd and both suffer from excessive days on ban. Consent has been on ban the last two seasons in excess of 100 days during the irrigation season making irrigation after Xmas extremely marginal

We would ask for guaranteed assurance and the science to prove it that Tranche 2 water does not make this even worse

What science has changed in the last 20 years to suggest that this aquifer will cope with Tranche 2 draw off without affecting existing surface consents

We are also extremely concerned that drawing water from a medium depth aquifer to augment water back into the river for offset in summer months has value and from where these consents are being sought there augmentation does nothing to correct any depletion to the west catchments. The very soure

Ce of all the catchments water.

To further add to this submission we ask

Is there an

Excessive water take from an already over allocated aquifer.

Risk of loss of water to stock water bores

Risk of loss of water to irrigation bores currently in place.

Risk to our on farm water infrastructure and investments to date. Especially to those in the immediate vicinity to proposed bores/water takes.

Clear directive for land use intensification following the allocation of tranche 2 water. Subsequent further negative effects on DIN levels in the catchment.

Higher stocking rates following on from high yielding pastures and feed crops, special risk around winter feed crops. Direct effect on Mangaonuku Stream

Negative effects on CHB underground water flows in general. Modelling lacks substance, appears subjective and claims unfounded.

<sup>\*</sup> Include the reasons for your views: We are strongly opposed to Tranche 2 for these reasons

Significant animal welfare concerns following loss of stock water due to stock water bores running dry.

Household water supply (from bore's) potentially running dry. Major risks to Tikokino and Onga Onga village's.

Less surface water available for fire fighting. eg. dams, creek and rivers.

Loss of surface water flows effecting the ability to service future sustainable irrigation incentives eg: water storage dams etc

Potential to alter current natural water flows (eg streams, creeks) directly effecting native biodiversity including (but not limited to) bush and birdlife.

I seek the following decision from the Hawke's Bay Regional Council:

\* Give precise details, including the parts of the application you wish to have amended and the general nature of any conditions sought: I strongly believe the HBRC should decline the applications for Tranche 2 water from all applicants.

I wish to be heard in support of my submission: No

If others make a similar submission, I will consider presenting a joint case with them at the hearing: Yes I wish to attend any pre-hearing meeting that may be convened.: Yes

To: <u>Michaela Tinker</u>

Cc: janeen@sageplanning.co.nz

Subject: HBRC - (Ruataniwha Basin - Tranche 2) [#41]

Date: Wednesday, 15 December 2021 7:34:43 pm

Which consent does your submission relate to? Please click on the box below to select.:

APP-123563 APP-123591 APP-123541 APP-123547 APP-123565 APP-124498 APP-123566 APP-124500 APP-123546 APP-125281

Person Making the Submission: Joseph Wuts

Address:

Phone Number: Mobile Number:

Descrit.

Email:

Are you a trade competitor for the purposes of section 308B of the RMA 1991: No

IF YES: Are you directly affected by an effect of the proposed activity that adversely effects the environment and does not relate to, or the effects of trade competition: Yes

: I/We oppose the above application

The specific parts of the application that my submission relates to are (please enter the relevant number): APP-123563/123991/123541/12356/123547/123565/123566/124498/124500/125281

My submission is: (you may attach submission detail to this form)

\* Include the reasons for your views: As the water take on the Heretaunga Plains has been over-allocated in the past, it would be irresponsible to now permit taking even more water than before. As a recent immigrant in 1967 I had great pleasure swimming in the Tukituki River at the end of Tennant Road. The river was swift flowing with a large volume of water. In the last 50 years I have seen a gradual deterioration in the river level and volume. To remedy this sad state of affairs we have to tackle the reasons for the decline in the health of the river. It does not take a science degree to realise that if you keep taking water out without replenishment, eventually this resource will dry up.

I seek the following decision from the Hawke's Bay Regional Council:

\* Give precise details, including the parts of the application you wish to have amended and the general nature of any conditions sought: Decline all of the current applications for the taking of water.

I wish to be heard in support of my submission: No

If others make a similar submission, I will consider presenting a joint case with them at the hearing: Yes I wish to attend any pre-hearing meeting that may be convened.: Yes

To: <u>Michaela Tinker</u>

Cc: janeen@sageplanning.co.nz

Subject: HBRC - (Ruataniwha Basin - Tranche 2) [#42]

Date: Wednesday, 15 December 2021 8:57:03 pm

Which consent does your submission relate to? Please click on the box below to select.:

APP-123563 APP-123591 APP-123541 APP-123547 APP-123565 APP-124498 APP-123566 APP-124500 APP-123546 APP-125281

Person Making the Submission: Duncan Smith

Address:

Phone Number

Email:

Are you a trade competitor for the purposes of section 308B of the RMA 1991: No

IF YES: Are you directly affected by an effect of the proposed activity that adversely effects the environment and does not relate to, or the effects of trade competition: No

: I/We oppose the above application

My submission is: (you may attach submission detail to this form)

\* Include the reasons for your views: I am highly concerned as to the possible effects on the water flows with further depletion of the aquifer.

We are already dealing with major issues from the lifting of the low flow limits and has had a major impact on our ability to finish stock for our two local butcher shops and run our farm in the way we planned to when we decided to make the investment in our irrigation system.

We were connected to the RWS as we knew the impact of the flow changes would have on the viability of our farming operation from the effects of PC6. Tranche 2 will add even more uncertainty in flow rates which would potentially have such a massive impact on our business it could become unsustainable to farm and produce protein for our shops or export markets. The effect on our businesses equity could be fatal.

I seek the following decision from the Hawke's Bay Regional Council:

\* Give precise details, including the parts of the application you wish to have amended and the general nature of any conditions sought: I would like to see the flows rates change back to the original settings if this plan was to succeed as that would be potentially more equitable on all users concerned if there is the augmentation required to balance the aquifer.

Other than that possible outcome i cant support tranche 2 as it is fundamentally unfair on other users and the science is not proven to say that flows would improve sufficiently to stop the potential devastation of ours and many others businesses.

I wish to be heard in support of my submission: No

If others make a similar submission, I will consider presenting a joint case with them at the hearing: Yes I wish to attend any pre-hearing meeting that may be convened.: No

To: <u>Michaela Tinker</u>

Cc: <u>janeen@sageplanning.co.nz</u>

Subject: HBRC - (Ruataniwha Basin - Tranche 2) [#43]

Date: Wednesday, 15 December 2021 9:37:35 pm

Which consent does your submission relate to? Please click on the box below to select .:

APP-123563 APP-123991 APP-123541 APP-123547 APP-123565 APP-124498 APP-123566 APP-124500

APP-123546 APP-125281

Person Making the Submission: Colin Schaw

Associated Organisation (of applicable): Schaw Partnership

Address:

Phone Number:

Mobile Number:

Email:

Are you a trade competitor for the purposes of section 308B of the RMA 1991: No

IF YES: Are you directly affected by an effect of the proposed activity that adversely effects the environment and does not relate to, or the effects of trade competition: No

: I/We oppose the above application

The specific parts of the application that my submission relates to are (please enter the relevant number): Excessive water take from an already over allocated aquifer.

My submission is: (you may attach submission detail to this form)

\* Include the reasons for your views: I have recently spent \$250,000 to be proactively more water efficient and environmentally friendly. I am very concerned that if the aquifer drops I will lose the usage of my bore for my house, livestock and irrigation.

I am also very concerned the affect this will have on all farmers, lifestylers and our village communities in the Ruataniwha catchment areas.

Excessive water take from an already over allocated aquifer.

Risk to our on farm water infrastructure and investments to date. Especially to those in the immediate vicinity to proposed bores/water takes.

Clear directive for land use intensification following the allocation of tranche 2 water. Subsequent further negative effects on DIN levels in the catchment.

Higher stocking rates following on from high yielding pastures and feed crops, special risk around winter feed crops. Direct effect on Mangaonuku Stream

Negative effects on CHB underground water flows in general. Modelling lacks substance, appears subjective and claims unfounded.

Significant animal welfare concerns for the hundreds of thousands of livestock would be astronomical if there was a loss of stock water, due to stock water bores running dry. This will also put hundreds of farmers livelihoods at risk and would have a major effect on our local communities. We are already seeing this with the bores in the Onga Onga community drying up.

Household water supply (from bore's) potentially running dry. Major risks to Tikokino and Onga Onga village's.

Less surface water available for fire fighting. eg. dams, creek and rivers. This could be hugely problematic in a drought year when grass fires and hay fires are common.

Loss of surface water flows effecting the ability to service future sustainable irrigation incentives eg: water storage dams etc

Potential to alter current natural water flows (eg streams, creeks) directly effecting native biodiversity including (but not limited to) bush and birdlife.

I seek the following decision from the Hawke's Bay Regional Council:

\* Give precise details, including the parts of the application you wish to have amended and the general nature of any conditions sought: I strongly believe the HBRC should decline the applications for Tranche 2 water from all applicants.

I wish to be heard in support of my submission: Yes

If others make a similar submission, I will consider presenting a joint case with them at the hearing: Yes I wish to attend any pre-hearing meeting that may be convened.: Yes

To: <u>Michaela Tinker</u>

Cc: janeen@sageplanning.co.nz

Subject: HBRC - (Ruataniwha Basin - Tranche 2) [#17]

Date: Wednesday, 15 December 2021 9:51:28 pm

Which consent does your submission relate to? Please click on the box below to select.:

APP-123563 APP-123991 APP-123541 APP-123547 APP-123565 APP-124498 APP-123566 APP-124500

APP-123546 APP-125281

Person Making the Submission: George Williams

Associated Organisation (of applicable): Temco Ag ltd

Address:

Contact Person (if different to above, or if submitter is an organisation): George Williams

Phone Number:

Mobile Number:

Email:

Are you a trade competitor for the purposes of section 308B of the RMA 1991: No

IF YES: Are you directly affected by an effect of the proposed activity that adversely effects the environment and does not relate to, or the effects of trade competition: Yes

: I/We oppose the above application

The specific parts of the application that my submission relates to are (please enter the relevant number):

Excessive water take from an already over allocated aquifer.

My submission is: (you may attach submission detail to this form)

\* Include the reasons for your views: Risk of loss of water to stock water bores

Risk of loss of water to irrigation bores currently in place.

Risk to our on farm water infrastructure and investments to date. Especially to those in the immediate vicinity to proposed bores/water takes.

Clear directive for land use intensification following the allocation of tranche 2 water. Subsequent further negative effects on DIN levels in the catchment.

Higher stocking rates following on from high yielding pastures and feed crops, special risk around winter feed crops. Direct effect on Mangaonuku Stream

Negative effects on CHB underground water flows in general. Modelling lacks substance, appears subjective and claims unfounded.

Significant animal welfare concerns for the hundreds of thousands of livestock that are at risk of losing drinking water when stock water bores run dry.

This will put hundreds of farmers livelihoods at risk, which in turn will have a major effect on all CHB business's!

Household water supply (from bore's) potentially running dry. Major risks to Tikokino and Onga Onga village's.

Less surface water available for fire fighting. eg. dams, creek and rivers.

Not one more drop of water can be taken from our over allocated aquifer!!!

Loss of surface water flows effecting the ability to service future sustainable irrigation incentives eg: water storage dams etc

Potential to alter current natural water flows (eg streams, creeks) directly effecting native biodiversity including (but not limited to) bush and birdlife.

I seek the following decision from the Hawke's Bay Regional Council:

\* Give precise details, including the parts of the application you wish to have amended and the general nature of

any conditions sought: I strongly believe the HBRC should decline the applications for Tranche 2 water from all applicants.

I wish to be heard in support of my submission: Yes

If others make a similar submission, I will consider presenting a joint case with them at the hearing: Yes I wish to attend any pre-hearing meeting that may be convened.: Yes

### **Pauline Elliott**



# Submission: Ground Water Takes (Ruataniwha Basin Tranche 2)

My submission strongly opposes the allocation of Tranche 2 water to any/all of the eight farming group applicants.

Each of these farming groups wishes to further grow their crop and pasture / horticulture businesses commercially at the expense of community water supply and the health of our rivers.

As we see increasing evidence of dramatic climate change it is not feasible or acceptable to allocate any Tranche 2 water, especially to a select few.

Sage Planning; Bay Geological Services Ltd; & Aqualinc; provided a 287 page report supporting the group's application. This report does not appear to have considered the seriousness of the climate change threats facing this Region.

The requirement for augmentation is a box easily ticked, but the reality is not so easily ticked. What happens if the agreed augmentation cannot be met? We cannot cry 'too late!' Because it will be too late!

The report states (p28) "There may be the occasional time when low flows are reached during winter, but the augmentation volume is fully used, and augmentation cannot continue. Based on historical records, this would occur infrequently (1 year in 10)" and;

"The reported irrigation and augmentation volumes are based on a 90-percentile year. Therefore, it is possible that in extreme dry years (e.g., 1 year in 10), low flows could still be triggered after irrigation and augmentation volumes have been exhausted".

In today's environment, historical records cannot predict an uncertain climate future. The applications are for 20 year consents. While we cannot know what our climate/environment might look and feel like in 10,15,20 years, we do know it will not be the same as 'historical records'

As a region, we must prepare for climate change collectively. A huge part of that is managing our water. We simply cannot afford to approve allocating 15,000,000 cm of Tranche 2 water to a select few farming entities.

Thank you for considering my submission.

**Pauline Elliott** 



To: <u>Michaela Tinker</u>

Cc: janeen@sageplanning.co.nz

Subject: HBRC - (Ruataniwha Basin - Tranche 2) [#44]

Date: Thursday, 16 December 2021 7:39:20 am

Which consent does your submission relate to? Please click on the box below to select.:

APP-123563 APP-123991 APP-123541 APP-123547 APP-123565 APP-124498 APP-123566 APP-124500

APP-123546 APP-125281

Person Making the Submission: Barry Hume

Associated Organisation (of applicable): CHB Forest & Bird

Address:

Phone Number:

Mobile Number

Email:

Are you a trade competitor for the purposes of section 308B of the RMA 1991: No

IF YES: Are you directly affected by an effect of the proposed activity that adversely effects the environment and does not relate to, or the effects of trade competition: No

: I/We oppose the above application

The specific parts of the application that my submission relates to are (please enter the relevant number): This submission relates to applications for resource consent to take groundwater from the 'tranche 2' allocation in the Ruataniwha Basin

My submission is: (you may attach submission detail to this form)

\* Include the reasons for your views: I have significant concerns about the issuing of consents to take groundwater from the 'tranche 2' allocation of the Hawke's Bay Regional Resource Management Plan (RRMP).

I feel that it is premature to issue any groundwater consents of this scale until the study of the Hawke's Bay aquifers undertaken a couple of years ago has been completed and made public.

I am worried that issuing these resource consent in an area where rivers, streams, lakes, and wetlands are already under significant stress could effectively destroy these ecosystems. Water draw off in the Ruataniwha basin is already causing issues for residents of Tikokino and Ongaonga.

I understand the need for a more stable water supply with predictions of the NI east coast experiencing more frequent droughts, but these applications will only benefit a few at the expense of the rest. It seems to me that the size of the resource is not accurately known, how it will be effected by climate change etc, so any consent is likely to lead to over-consenting of a finite resource

I consider the issuing of these consents would be contradictory to the legislation, policies, and plans guiding the management of freshwater and the environment in NZ and Hawke's Bay.

Like other submitters, I am confident that there are better ways to develop health and resilience for the region, and its industries, in the face of climate change. This requires industries to work within environmental health limits (ecosystem health limits) and, given our current trajectory, actively restore the natural environment as part of a shared catchment plan. Climate change is, in essence, driven by over exploitation of the natural environment and its ongoing degradation. I find that it is not logical to increase exploitation and drive degradation with our activities as a response build resilience against an issue of over exploitation and environmental degradation.

I seek the following decision from the Hawke's Bay Regional Council:

\* Give precise details, including the parts of the application you wish to have amended and the general nature of any conditions sought: I would urge the HDRC to reject these applications for water consent I wish to be heard in support of my submission: No

If others make a similar submission, I will consider presenting a joint case with them at the hearing: No I wish to attend any pre-hearing meeting that may be convened.: No

From: Paul Barrett Michaela Tinker Subject: FW: Tranche 2 submission

Thursday, 16 December 2021 8:40:29 am

ATT00001 png ATT00005 png Attachments:

ATT00001 png ATT00005 pnc

FYI

#### **Paul Barrett**

**Team Leader Consents** 06 835 9200 | 027 318 6051

Hawke's Bay Regional Council | Te Kaunihera ā-rohe o Te Matau a Māui 159 Dalton Street, Napier 4110 | hbrc.govt.nz

Enhancing Our Environment Together | Te Whakapakari Tahi I Tō Tātau

**Taiao** 







HAWKES BAY

REGIONAL COUNCIL

TE KAUNIHERA Ä-ROHE O TE MATAU-A-MÂU

Let us know how we're doing, give your feedback here.

This communication, including any attachments, is confidential. Refer to the disclaimer on our website

From: Peter Butler

Sent: Thursday, 16 December 2021 8:39 AM To: Paul Barrett <barrett@hbrc.govt.nz> Subject: Re: Tranche 2 submission

On 16/12/2021, at 8:36 AM, Paul Barrett < barrett@hbrc.govt.nz > wrote:

Thanks Peter,

Can you also please confirm a contact phone number?

Cheers

<mime-

Paul

**Paul Barrett** 

**Team Leader Consents** 06 835 9200 | 027 318 6051

attachment.png>

Hawke's Bay Regional Council | Te Kaunihera ā-rohe o Te Matau a Māui

159 Dalton Street, Napier 4110 | hbrc.govt.nz

Enhancing Our Environment Together | Te Whakapakari Tahi I To Tatau

Taiao

 $\underline{<} mime-attachment.gif>\underline{<} mime-attachment.gif}$ 

**HBRC Consents** <mime-Section is ISO

Let us know how we're doing, give your feedback here.

attachment.png>9001:2015 certified

This communication, including any attachments, is confidential. Refer to the <u>disclaimer</u> on our website

----Original Message---

From: Peter Butler

Sent: Thursday, 16 December 2021 8:35 AM To: Paul Barrett < barrett@hbrc.govt.nz >

Subject: Tranche 2

My submission on the Tranche 2 applications.

I strongly believe the H B R C should decline the application for Tranche 2 from all applicants, My reason:—-From 2010 to 2016 I was the elected Mayor of the C H B District Council.

It was during this period in each of the six summers I would have residents of the Onga Onga village knocking on

my office door. Their problem, and it was major, when the irrigators started on the east side of the village, the water levels in their wells and bores ran dry. These wells and bores had never faulted in the years before the irrigation of the Ruataniwha Plains These residents then had the expense buying tanks and water to fill them or deepening the wells and bores or having to have a bore drilled when the well could not be deepened.

To see these retirees, widows, solo parents, one income or low income families so angry or worse in tears because of the greed of so few was one of the worst parts of my six years in office.

Now these "few" want to extend their water take. What can I say?

The Onga Onga villagers do not have C H B D C supplied water scheme or sewage disposal. These people have to supply their own and if Tranche 2 is enacted it will only exacerbate their problem.

I now plead with you duly elected HBRC Councillors to give thought (much of it) to the village people of Onga Onga before you decide on the Tranche 2 decision.

Peter Butler J.P.



I am willing to speak to this submission.

Sent from my iPad

To: <u>Michaela Tinker</u>

Cc: janeen@sageplanning.co.nz

Subject: HBRC - (Ruataniwha Basin - Tranche 2) [#46]

Date: Thursday, 16 December 2021 9:38:16 am

Which consent does your submission relate to? Please click on the box below to select.:

APP-123563 APP-123591 APP-123541 APP-123547 APP-123565 APP-124498 APP-123566 APP-124500

APP-123546 APP-125281

Person Making the Submission: Hay Rose

Address:

Contact Person (if different to above, or if submitter is an organisation): Rose Hay

Phone Number:

Email:

Are you a trade competitor for the purposes of section 308B of the RMA 1991: No

IF YES: Are you directly affected by an effect of the proposed activity that adversely effects the environment and does not relate to, or the effects of trade competition: No

: I/We oppose the above application

The specific parts of the application that my submission relates to are (please enter the relevant number): All of the above

My submission is: (you may attach submission detail to this form)

\* Include the reasons for your views: Re: Submissions to the Proposal to Grant Resource Consents for Groundwater Takes (Ruataniwha Basin-tranche 2)

I am opposed to the granting of tranche 2 consents on environmental grounds.

The water in the Ruataniwha Basin is already over allocated.

There are only a few applicants for this proposal but those applicants are asking for a large volume of groundwater. These additional water takes would mean over a 50% increase in extracted water from the aquifer, up to 15 million cubic metres. Once granted, these consents will be impossible to take back.

The effect of this level of extraction on the aquifer, and the flow on effect to springs, streams and rivers is hard to know but can only mean that the river level and flow will be less, especially in drought years. For all the people of Central Hawkes Bay, this would mean recreational use of rivers will be more limited; biodiversity within the river ecosystems will become more stressed; the spiritual and cultural values of the river will be compromised and it will not be as aesthetically pleasing and "good for the soul" to look at and walk or cycle beside as we get out into nature. Is this what we want for our district?

It is time to show our respect to these awa and revere them. It is not the time any more to let a few take, take, take from nature, for short term gains. With Climate Change firmly in the forefront of any thoughtful decision making, I urge the HBDC to consider the wise use of water.

I oppose the granting of tranche 2 consents.

Rose Hay

I seek the following decision from the Hawke's Bay Regional Council:

\* Give precise details, including the parts of the application you wish to have amended and the general nature of any conditions sought: I oppose the granting of tranche 2 consents.

I wish to be heard in support of my submission: No

If others make a similar submission, I will consider presenting a joint case with them at the hearing: No I wish to attend any pre-hearing meeting that may be convened.: No

I seek the following decision from the Hawke's Bay Regional Council:

\* Give precise details, including the parts of the application you wish to have amended and the general nature of any conditions sought

I strongly believe the HBRC should decline the applications for Tranche 2 water from all applicants.

\* Indicated my mason to support H.S.M.C declining

Tranche 2 water. i.e I oppose Tranche 2 being approved.

Rob Wilson.



# My submission is: (you may attach submission detail to this form) \* Include the reasons for your views

×	Excessive water take from an already over allocated aquifer.
	Risk of loss of water to stock water bores
M	Risk of loss of water to irrigation bores currently in place.
×	Risk to our on farm water infrastructure and investments to date. Especially to those in the immediate vicinity to proposed bores/water takes.
¥	Clear directive for land use intensification following the allocation of tranche 2 water. Subsequent further negative effects on DIN levels in the catchment.
	Higher stocking rates following on from high yielding pastures and feed crops, special risk around winter feed crops. Direct effect on Mangaonuku Stream
¥	Negative effects on CHB underground water flows in general. Modelling lacks substance, appears subjective and claims unfounded.
	Significant animal welfare concerns following loss of stock water due to stock water bores running dry.
	Household water supply (from bore's) potentially running dry. Major risks to Tikokino and Onga Onga village's.
	Less surface water available for fire fighting. eg. dams, creek and rivers.
*	Loss of surface water flows effecting the ability to service future sustainable irrigation incentives eg: water storage dams etc
×	Potential to alter current natural water flows (eg streams, creeks) directly effecting native biodiversity including (but not limited to) bush and birdlife.

Paul Barrett From: Michaela Tinker

Subject: FW: [Scan] 2021-12-15 19:04 Thursday, 16 December 2021 10:50:54 am

Attachments: ATT00001 png

FYI



#### **Paul Barrett**

**Team Leader Consents** 06 835 9200 | 027 318 6051

Hawke's Bay Regional Council | Te Kaunihera ā-rohe o Te Matau a Māui 159 Dalton Street, Napier 4110 | hbrc.govt.nz

Enhancing Our Environment Together | Te Whakapakari Tahi I To Tatau **Taiao** 









Let us know how we're doing, give your feedback here

This communication, including any attachments, is confidential. Refer to the disclaimer on our website

From: Robert Wilson

Sent: Thursday, 16 December 2021 10:48 AM To: Paul Barrett <barrett@hbrc.govt.nz> Subject: Re: [Scan] 2021-12-15 19:04

Morning Paul, I am available for support of this submission if required, probably wouldn't do the pre-hearing meeting.

Regards

Rob

On 16/12/2021, at 8:37 am, Paul Barrett < barrett@hbrc.govt.nz > wrote:

Hi Rob,

Thanks for this. Can you also please confirm if you would like to be heard in support of you submission and if you would be willing to attend any pre-hearing meeting?

Cheers

Paul

**Paul Barrett** 

**Team Leader Consents** 06 835 9200 | 027 318 6051

<Mail Attachment.png>

Hawke's Bay Regional Council | Te Kaunihera ā-rohe o Te Matau a Māui

159 Dalton Street, Napier 4110 | hbrc.govt.nz

Enhancing Our Environment Together | Te Whakapakari Tahi I To Tatau

**Taiao** 

<Mail Attachment.gif> <Mail Attachment.gif> <Mail Attachment.gif>

**HBRC Consents** <Mail Section is ISO Attachment.png>9001:2015

Let us know how we're doing, give your feedback here.

This communication, including any attachments, is confidential. Refer to the <u>disclaimer</u> on our website.

From: Robert Wilson

Sent: Thursday, 16 December 2021 8:35 AM To: Paul Barrett < barrett@hbrc.govt.nz > Subject: [Scan] 2021-12-15 19:04

certified



Office Use	
Application No	
Submission No	

# Submission on Resource Consent Application (Form 13, Resource Management Act 1991(RMA))

Chief Executive C/- Consents Coordinator Hawke's Bay Regional Council Private Bag 6006 NAPIER 4142

NAFILIX 4 142
Person Making Submission
Full name: Nei Graham Bay 155.
Postal address:
Post code
Property address, if different:
Contact person (if different to above, or if submitter is an organisation):
Telephone Number: Cell:
E-mail:
Application
Name of applicant:
Consent Number(s) Submitted on:
Location of activity Tranche 2 ground wate Ruadanula Basn.
Consent Activity: Seeking make water uptake.
Submission close Date: 17.12.2021
Are you a trade competitor for the purposes of section 308B of the RMA 1991 Yes A No
If yes: Are you directly affected by an effect of the proposed activity that adversely effects the environment and does not relate to trade competition or the effects of trade competition.
and does not relate to trade competition or the effects of trade competition  Yes  No  I/We support the above application
I/We oppose the above application
I/We neither support nor oppose the above application
number of wells approach for or any further increase in the
appears of water from Tranche 2 groundwater from Kueloning Bas
My submission is: (you may attach submission detail to this form)
*Include the reasons for your views The regative effect of the depletion of ground
water is becoming more obvious as the demand increases
The need to deepen existing boxes the drying up of springs,
and water ways at the death of trees, indicate the reduced war

		Malen	17-1-
		COM	
	South Inc.		
of water from Tranche 2 of the R	malanin	ease the	esin,
		of Chappin	
wish to be heard in support of my submission			
OO NOT wish to be heard in support of my submission		1/	
others make a similar submission, I will			
onsider presenting a joint case with them at the hearing			
wish to attend any pre-hearing meeting that may be convened	Yes No		
request that Council delegate its functions, powers, and duties required decide the application to 1 or more hearings commissioners who a	ed to hear	ā	
embers of the local authority  Please note that a fee of \$3000.00 is required to be lodged with your r		ional costs will	be billed t
signature of submitter:  per person authorised to sign on behalf of submittery	Date (6 /	12/2021	

Please note the person/s making this submission must also serve a copy on the applicant as soon as reasonably practicable

To: <u>Michaela Tinker</u>

Cc: janeen@sageplanning.co.nz

Subject: HBRC - (Ruataniwha Basin - Tranche 2) [#47]

Date: Thursday, 16 December 2021 12:27:03 pm

Which consent does your submission relate to? Please click on the box below to select.:

APP-123563 APP-123991 APP-123541 APP-123547 APP-123565 APP-124498 APP-123566 APP-124500

APP-123546 APP-125281

Person Making the Submission: David Hamilton

Associated Organisation (of applicable): Mynthurst Farm, Lindsay Rd

Address:

Contact Person (if different to above, or if submitter is an organisation): Ros Hamilton

Phone Number:

Mobile Number:

Email:

Are you a trade competitor for the purposes of section 308B of the RMA 1991: No

IF YES: Are you directly affected by an effect of the proposed activity that adversely effects the environment and does not relate to, or the effects of trade competition: No

: I/We oppose the above application

The specific parts of the application that my submission relates to are (please enter the relevant number): APP-123547

My submission is: (you may attach submission detail to this form)

\* Include the reasons for your views: The changing face of my dear friend.

In regard to the Ruataniwha aquifer concerns, I have lived in the Ruataniwha district for 84 years and farmed here on Lindsay Rd for 65 of those 84 years.

I grew up on the Onga Onga end of Lindsay Rd attending Ruataniwha School where my father and uncle farmed in my formative years. During this time the 'Mate' creek was a loyal friend to me, a constant companion that never let me down. Coupled with this, the Mate creek was my family's livelihood, our main source of water. It was a thriving creek with abundant fresh water fish including eels, crayfish, trout, Inangas (white bait) and the occasional flounder. A dream for a boy growing up.

Over the last 20 years I have seen a huge change in my friend. In 2019/2020 the creek very nearly went dry. As an older farmer today it shook me rigid to see such an abundant creek nearly go dry. I feel the regional council let me down as they didn't appear to take any notice of this drastic change.

However last year, 2020, the creek was back to flowing normally, but...

.....early November this year, I spent half an hour on my quad bike sitting beside a deep part of my old friend and noticed there was none of the abundance of fresh water fish I knew....nothing. To me my friend was dead.

Late November, about 15 days later, I again spent half an hour sitting alongside my friend before it joins with the Tuki Tuki river (under the new bicycle track bridge) and there the water appeared similar to what I have seen 3 weeks previously....dead.

Over the last 4-5 years I have noticed there is a much larger type of water cress, huge stems, which are literally strangling my friend creek. I believe this sizeable water cress is thriving on the nitrogen fertiliser, a 'supposed' part of modern day farming.

I believe if you, the regional council and everyday people, want to enjoy a creek in the form I enjoyed for many years in my youth we need to stop this fertiliser. Coupled with this, those with access to higher water levies than others, due to past arrangements, should be taxed relative to the amount of water used, as two key starting points.

I feel we owe it to my old friend, which never let me or many others down, a chance to thrive again as it did for me when I was a boy.

I seek the following decision from the Hawke's Bay Regional Council:

\* Give precise details, including the parts of the application you wish to have amended and the general nature of

any conditions sought: 1. Lower water take requested and/or tax relative to the amount of water used by the applicant.

2. Research direct effects of nitrogen fertiliser on the water , ultimately to understand the effect this fertiliser has on the watercress that is strangling the water ways (as I write this submission, there is a massive blockage in the 'Mate' creek waterway only due to the abundant watercress).

I wish to be heard in support of my submission: Yes
If others make a similar submission, I will consider presenting a joint case with them at the hearing: Yes
I wish to attend any pre-hearing meeting that may be convened.: No



C	ffice Use	
Application No		
Submission No		

# **Submission on Resource Consent Application**

(Form 13, Resource Management Act 1991(RMA))

To: Chief Executive
C/- Consents Coordinator
Hawke's Bay Regional Council
Private Bag 6006
NAPIER 4142

Property address, if different:  Contact person (if different to above, or if submitter is an organisation):  Telephone Number:  E-mail:  Buckering Trystron Parawai pathership; Inferency Limit Application  Name of applicant: Te Awah hary freest Trust Springhill Directory Trystrong Limit Consent Number(s) Submitted on:  Application Applicant: Te Awah hary freest Trust Springhill Directory Trystrong Limit Consent Number(s) Submitted on:  Application of activity Central Hawke Bays  Consent Activity: To take and use Tranche 2 groundwater from the Ruataniwha Basin  Submission close Date:  To December 2021  Are you a trade competitor for the purposes of section 308B of the RMA 1991  Yes No of the second use trade competition or the effects of trade competition  If yes: Are you directly affected by an effect of the proposed activity that adversely effects the environment and does not relate to trade competition or the effects of trade competition  IWe support the above application  IWe neither support nor oppose the above application  IWe neither support nor oppose the above application  I'me application in its entirety.  My submission is: (you may attach submission detail to this form)—See encal attachments.  *Include the reasons for your views are already and adverse effects on the environment. These will work if more water is take from groundwater it is unknown if or use the proposed in the submission if or use the surface water is take from groundwater it is unknown if or use the surface water is take from groundwater if is unknown if or use the surface water is take from groundwater if is unknown if or use the surface water is take from groundwater if is unknown if or use is take from groundwater if is unknown if or use is take from groundwater if is unknown if or use is take from groundwater if is unknown if or use is take from groundwater if is unknown if or use is the proposed activity that adversely is unknown if or use is the proposed activity that adversely is unknown if or use is the proposed activity that	ostal address:		
Contact person (if different to above, or if submitter is an organisation):  Telephone Number:  Cell:  E-mail:  Application  Name of applicant: Te Awah hony forest Trush Sparsh Will Direstationship: Tuk Tuk I Consent Number(s) Submitted on: APPS = 123563; 123544	reconstitution of the second		Post code
Telephone Number:  Cell:  E-mail:  Application  Name of applicant: Te Awahhory Forest Trust Springly Daires Partnership: Telefarning Limit  Consent Number(s) Submitted on: APPS - 123565, 124	roperty address, if different:		
Application  Planta from Road Daires, Paramai Trust hp; Infaming Limit Planta from Road Daires, Paramai pathershp; Infaming Limit Road Daireshp; In	ontact person (if different to above, or if submitter is an orga	anisation):	
Application  Plantation Road Paires; Papawai pathership; Terfaming Limit Plantation Road Paires; Papawai pathership; Terfaming Limit Plantation Road Paires; Papawai pathership; Terfaming Limit Plantation Road Road Road Road Road Road Road Road	elephone Number:	Cell:	
Name of applicant: Te Awahahany Forest Trush Springhill Direstatroship Tukituk / Consent Number(s) Submitted on: APPS - 123563: 123541, 123547, 123546	-mail:		
Consent Activity: Totake and use Tranche 2 groundwater from The Ruataniwha Basin  Submission close Date: 17 December 2021  Are you a trade competitor for the purposes of section 308B of the RMA 1991 Yes No 16 fyes: Are you directly affected by an effect of the proposed activity that adversely effects the environment and does not relate to trade competition or the effects of trade competition Yes No 16 liwe support the above application 16 liwe oppose the above application 17 liwe neither support nor oppose the above application 17 limits entirely.  My submission is: (you may attach submission detail to this form)—See enail attachments.  *Include the reasons for your views Ground water level declines are already.	pplication Plantation Road Paires	Papawai partner	Ship; IRPFORMING LIMIT
Consent Activity: Totake and use Tranche 2 groundwater from The Ruataniwha Basin  Submission close Date: 17 December 2021  Are you a trade competitor for the purposes of section 308B of the RMA 1991 Yes No of the second directly affected by an effect of the proposed activity that adversely effects the environment and does not relate to trade competition or the effects of trade competition Yes No of two supports the above application to the above application of the above application that my submission relates to are:  The application in its entirety.  My submission is: (you may attach submission detail to this form)—see email attachments.  *Include the reasons for your views are already.	ame of applicant: Te Awahohony Forest Trus	· Sperchill Dairies	Partneship: TukiTuki /
Consent Activity: Totake and use Tranche 2 groundwater from The Ruataniwha Basin  Submission close Date: 17 December 2021  Are you a trade competitor for the purposes of section 308B of the RMA 1991 Yes No 16 fyes: Are you directly affected by an effect of the proposed activity that adversely effects the environment and does not relate to trade competition or the effects of trade competition Yes No 16 liwe support the above application 16 liwe oppose the above application 17 liwe neither support nor oppose the above application 17 limits entirely.  My submission is: (you may attach submission detail to this form)—See enail attachments.  *Include the reasons for your views Ground water level declines are already.	onsent Number(s) Submitted on: APPS - 12356	3 123541 1239	91, 123545, 123546, 1-
Consent Activity: Totake and use Tranche 2 groundwater from The Ruataniwha Basin  Submission close Date: To December 2021  Are you a trade competitor for the purposes of section 308B of the RMA 1991 Yes No If yes: Are you directly affected by an effect of the proposed activity that adversely effects the environment and does not relate to trade competition or the effects of trade competition  I/We support the above application  I/We oppose the above application  I/We neither support nor oppose the above application  The specific parts of the application that my submission relates to are:  The application in its entirety.  My submission is: (you may attach submission detail to this form)—See enail attachments.  *Include the reasons for your views are already.			,
Are you a trade competitor for the purposes of section 308B of the RMA 1991 Yes No If yes: Are you directly affected by an effect of the proposed activity that adversely effects the environment and does not relate to trade competition or the effects of trade competition    No	consent Activity: Totake and use Trans	•	water from the
If yes: Are you directly affected by an effect of the proposed activity that adversely effects the environment and does not relate to trade competition or the effects of trade competition    We support the above application   We oppose the above application   We neither support nor oppose the above application    The specific parts of the application that my submission relates to are:   The application in its entirety.    My submission is: (you may attach submission detail to this form) - See email attachments.  * Include the reasons for your views are already.		021	
I/We support the above application  I/We oppose the above application  I/We neither support nor oppose the above application  The specific parts of the application that my submission relates to are:  The application in its entirety.  My submission is: (you may attach submission detail to this form)—See email attachments.  *Include the reasons for your views are already.			
I/We neither support nor oppose the above application  The specific parts of the application that my submission relates to are:  The application in its entirety.  My submission is: (you may attach submission detail to this form)—See enail attachments.  * Include the reasons for your views are already.	nd does not relate to trade competition or the effects of	trade competition	Yes No No
The specific parts of the application that my submission relates to are:  The application in its entirety.  My submission is: (you may attach submission detail to this form)—See enail attachments.  *Include the reasons for your views are already.	We support the above application		
The specific parts of the application that my submission relates to are:  The application in its entirety.  My submission is: (you may attach submission detail to this form)—See enail attachments.  * Include the reasons for your views are already.	We oppose the above application		
The application in its entirety.  My submission is: (you may attach submission detail to this form)—See enail attachments.  *Include the reasons for your views are already.	We neither support nor oppose the above application		
*Include the reasons for your views Ground water level declines are already			
* Include the reasons for your views Ground water level declines are already	My submission is: (you may attach submission detail to	this form)—See Ema	il attahinants.
hading adverse effects on the environment these will work			
	hading adverse effects on the	Philippment	These will work

Any additional extraction of groundwater will inverse the risk to
wetlands trees that taking lives and steams a security of
supply to existing water users; biodiversity, assystems; land subsidence; contaminated water including assenic + nitrate
land subsidence; contaminated water including assenic + nitrate
in groundwater.
Iggrease intensification by imagation will lead to possible
in crease in use of fertilisers, pesticides, herbicides, stock effluent
all which have negative effects on people and he environments.
Money and time has been spent planting creating and protecting
wetlands riparian margins, remanent bush flood constrol-all
These greatrisk with a lower watertable and orier = soils.
With more water taken go here will be further depressurisation
in the aguifer which will invease the risk to spring fed streams of
declining water or springs ceasing to flow.
HBRC are doing a Water Security Programme including 3D Aquiter
Mapping (Skytem) Manaye Aguifer Recharge trial and Regional Water Stock These skould be completed and recults Jublished before any first.  I seek the following decision from the Hawke's Bay Regional Council:
These should be completed and recults Jubilshed before any first.  I seek the following decision from the Hawke's Bay Regional Council:
* Give precise details, including the parts of the application you wish to have amended and the general nature
of any conditions sought
Decline the application in its entirety.
I wish to be heard in support of my submission
I DO NOT wish to be heard in support of my submission
If others make a similar submission, I will consider presenting a joint case with them at the hearing
I wish to attend any pre-hearing meeting that may be convened  Yes
No 🗖
*I request that Council delegate its functions, powers, and duties required to hear
and decide the application to 1 or more hearings commissioners who are not
members of the local authority *Please note that a fee of \$3000.00 is required to be lodged with your request, additional costs will be billed to you
Signature of submitter: <u>KABaylus</u> Date 13 / 12 / 2021 (or person authorised to sign on behalf of submitter)
(or person detronate to sign on earlies of earlines)

Please note the person/s making this submission must also serve a copy on the applicant as soon as reasonably practicable

Part 2 from Kathryn Anne Bayliss.

Submission on Applications for Resource Consents –Tranche 2 Groundwater Takes from the Ruataniwha Basin.

I am very concerned about the negative effects by Tranche 2 groundwater extraction from the Ruataniwha Basin. Groundwater extraction and lowering of the ground water-table could have long term consequences for our life and our future generations.

The Maharakeke Stream has run through our family property which we have owned for about 114 years. It is big part of our history, as well as of great importance to our present life and hopefully our future generations. Our property also has wetlands and springs, some native flora and fauna. We have spent money and time protecting our wetlands and planting flora for the benefit of the environment. The Maharakeke Stream also has aesthetic, recreational and amenity values to us and provides us with water for some of our domestic use and animal drinking water. It is vital for my well-being.

Watercress and eels from the river and riparian edges have been obtained by Maori, and I sometimes get watercress. There are often trout to be seen.

Augmentation water by the applicants will have no benefit or mitigate the negative effects which will appear over time in the majority of streams and sub-catchments of the Tukituki.

I have significant concerns about the issuing of consents to take Tranche 2 groundwater from Ruataniwha Basin.

I am worried that issuing these resource consent in an area where rivers, streams, lakes, and wetlands are already under significant stress could destroy these ecosystems.

I also think the issuing of these consents would be contradictory to the legislation, policies, and plans guiding the management of freshwater and the environment in Aotearoa and Hawke's Bay.

In particular, the Resource Management Act (RMA) and National Policy Statement for Freshwater Management 2020 (NPSFM) set out direction for the environment and freshwater. For example, the core principle of the RMA is to "promote the sustainable management of natural and physical resources", which means:

...managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while—

sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and

safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and avoiding, remedying, or mitigating any adverse effects of activities on the environment.

And the NPSFM sets out an objective for freshwater that is based in the concept of Te Mana o te Wai – the idea that the health and wellbeing of freshwater and its ecosystems must be put first in all decisions relating to freshwater.

The objective of this National Policy Statement is to ensure that natural and physical resources are managed in a way that prioritises:

first, the health and well-being of water bodies and freshwater ecosystems second, the health needs of people (such as drinking water)

third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

The policies of the NPSFM speak to this vision—e.g. to give effect to Te Mana o te Wai (Policy 1), to phase out over allocation and avoid future over-allocation (Policy 11), and to manage freshwater as part of New Zealand's integrated response to climate change.

I do not think that these resource consents, the 'augmentation' that supposedly mitigates them, or the land uses that will be associated with them are consistent with te mana o te wai.

I am also worried about the potential effect of the water takes on other values of groundwater, such as:

Physical habitat, including for microbes, archaea, biofilms, and stygofauna—whose functions include degrading contaminants and enhancing groundwater quality.

Water purification and disease control

Genetic resources (e.g., enzymes and compounds which might be useful for medical applications)

Buffering of floods and droughts

Social values (e.g., reliance on groundwater as an essential component of everyday life for many communities)

Indigenous cultural values

Spiritual values

Nutrient cycling

Biodiversity conservation (e.g., of genotypes and species)

Bequest values (the ability to pass on a system of all values to future generations, whakapapa, kaitiakitanga, whanau ora, wairuatanga, etc.

I am also worried about what the impact of the proposed activity will be with the impacts of climate change, which is predicted to have a significant drying effect in Hawke's Bay, and could result in reduced levels of aquifer recharge (and 'mining' of the water in the aquifer). In the face of climate change, long-term access to water is essential.

Irrigation has been widely promoted as a means to enhance productivity, ensure water security, and promote regional economic development.. However water for irrigation can act as a maladaptation where it allows unsustainable farming intensification in areas threatened by lower rainfall, drought, and other climate disruptions.

I am sure that there are better ways to develop health and resilience for the region, and its industries, in the face of climate change. This requires industries and people to work within environmental health limits (ecosystem health limits) and actively restore the natural environment as part of a shared catchment plan. Climate change and the biodiversity crisis is, in essence, driven by over exploitation of the natural environment and its ongoing degradation. I find that it is not logical to increase exploitation and drive degradation with our activities as a response build resilience against an issue of over exploitation and environmental degradation.

\*Some of the potential effects of the proposed groundwater takes are summarised in a leader Paul Barrett, Team Leader Consents at HBRC, who recently wrote regarding the proposed tranche 2 groundwater takes:

"Summary

The proposal involves abstraction of a relatively large volume of groundwater from the Ruataniwha Basin. While the modelling is helpful for understanding the effects on river flows resulting from abstraction and augmentation, it is not as useful for estimating effects occurring inside the Basin. There remains significant uncertainty over the scale of residual adverse effects resulting from Tranche 2 abstraction. We have concerns over the potential scale of adverse effects on wetlands, streams and wells across the Basin, but particularly in areas where there is already significant Tranche 1 abstraction occurring. We also still have concerns about how the Tranche 2 proposal will work in extreme years (worse than a 1 in 10 year event) and the scale of effects in these years when augmentation may not be able to continue. Furthermore, we have concerns over the impacts on water quality from farm system changes as a result of irrigation and note that a number of the properties are located in catchments where the instream nitrogen target is already significantly exceeded. Land use consent is already required for these properties and would not likely be granted to allow for any increase in nitrogen loss. We note that for dairy farms wishing to expand irrigation, land use and discharge consents are required under the NES FW and that a consent cannot be granted unless they are able to demonstrate that expansion will not lead to any increase in load or concentrations of contaminants in the catchment."

\*The replies by the applicants did not, in my opinion, address many of my concerns about the negative effects of Tranche 2 Groundwater Takes from the Ruataniwha Basin which could occur over the entire Ruataniwha Basin in the long term. If 20 year consents were given any problems that occur could be unable to be rectified.

Already negative effects are appearing due to increased use of groundwater. These will be further increased by the Tranche 2 Groundwater Takes.

\*HBRC is doing various projects which should be finished, with final results published, before allowing further extraction water consents to be given.

# Skytem.

The 3D Aquifer Mapping project uses the airborne electromagnetic technology developed by SkyTEM that provides imagery of our sub surface to depths of approximately 300m. It will provide a detailed coverage horizontally and to depths we haven't seen before. The data captured through this project will significantly enhance our understanding of the region's key aquifer systems in the Heretaunga, Ruataniwha and Poukawa/Otane Basins and provide information critical for effectively managing our freshwater resources in the future. The aerial operation was recently completed within budget and ahead of schedule. Now follows a two and half year comprehensive science work programme to process, analyse, interpret the data and develop (or enhance) select models.

"We are undertaking an airborne electromagnetic survey, known as SkyTEM, throughout the major aquifer systems.

This survey will provide rich, detailed information of entire aquifer systems that has never been available before.

This will enable us to manage the groundwater resources more effectively."

Water Security Programme: The programme is capital funded with \$5m through the current Long Term Plan and guided by the Freshwater Security Scheme Policy approved by Council in March 2019. Council has also secured approx. \$6.0m co-funding from the Provincial Growth Fund to support and accelerate the delivery of the programme's objectives:

- 4.1. the completion and delivery of the Regional Water Assessment
- 4.3. the conclusion of a pilot trail of below-ground water storage option(s)/solution(s) for improving Tukituki water security.

# Central Hawke's Bay Managed Aguifer Recharge Pilot

The primary purpose of the 2-3 year trial is to understand the impacts and effects of the processes of MAR, and as such much of the effort will focus on the water monitoring and testing regime that is established as part of the pilot.

# Regional Water Assessment

- 60. The data phase of the RWA currently underway required an assessment of:
- 60.1. The current categorisation and volume of the uses of water in the region
- 60.2. Projections of the likely increased demand for water for these categories
- 60.3. Projections of the likely change of supply of freshwater in the context of climate change (e.g. changing rainfall and evapotranspiration patterns).

\*Provincial Growth Fund Announced Projects – Hawke's Bay Region 20 February 2020 included:

Direct Grants to landowners, including private landowners, farmers and Māori landowners, to help with the costs of planting trees or assisting reversion to native forest. \$5,193,905. 30/11/2018

Hawke's Bay Regional Water Mapping and Assessment

Strategic regional freshwater assessment for the Hawke's Bay region. a) Regional freshwater

assessment b)SkyTEM aquifer mapping project. \$2,964,000. 10/06/2019 These will be put at risk if Tranche 2 groundwater abstraction is allowed.

\*Lowering of the groundwater water-table could have negative effects on the following streams, rivers and bush reserves included in the Heretaunga Tamatea Claims Settlement Act 2018

Heretaunga Tamatea and its hapū is one of six large natural groupings represented by He Toa Takatini who negotiated settlement of the historical Treaty of Waitangi claims of Ngāti Kahungunu, signed on the 26 September 2015. Settlement assets for Tamatea sit with the trustees of the Heretaunga Tamatea Settlement Trust, the post-settlement governance entity. Included as part of the deeds of settlement are statutory acknowledgements.

Statutory Acknowledgement Areas within the Central Hawkes Bay District include the following areas:

Inglis Bush

Karamu Stream and its Tributaries

Monckton Scenic Reserve

Springhill Scenic Reserve

Māharakeke Stream and its Tributaries

Mākāretu River and its Tributaries within the Heretaunga Tamatea Area of Interest Tukipō River and its Tributaries

Tukituki River and its Tributaries within the Heretaunga Tamatea Area of Interest Waipawa River and its Tributaries within the Heretaunga Tamatea Area of Interest.

\*Lowering of the groundwater water-table could have negative effects on the streams, rivers and bush areas of known nature conservation significance currently identified within the Central Hawke's Bay District and the new Proposed Central Hawke's Bay District. They represent plant and animal communities and habitats which are representative, rare or unique within the District. Areas have been identified from the Hawke's Bay Regional Council database, and is sourced from the Department of Conservation.

Some areas of significant nature conservation value have largely been derived from the following sources:

Heretaunga Ecological District Survey Report for the Protected Natural Areas Programme, 1994.

Eastern Hawke's Bay Ecological District Survey Report for the Protected Natural Areas Programme. 1994.

Additional Significant Natural Areas have been identified by Gerry Kessels, consultant ecologist to Central Hawke's Bay District Council.

\* The dead and dying trees and other flora at Inglis Bush show the water shortage is affected by lowering of the water-table large scale irrigation. Springs nearby have also failed. Graphs of dairy conversions, water allocation, and a falling water table all coincide over time, showing direct links between land use change and environmental degradation.

## \* Let's cherish the little we have left.

We have lost about 98 per cent of the original wetland areas in Hawke's Bay. This is compared to 90 per cent across New Zealand. These are sobering numbers when we consider the importance of wetlands to our environment.

Similar to riparian areas, wetlands are vital for a number of reasons. They are home to a range of unique and important local flora and fauna. They work to retain water, sediment and nutrients.

And the soil in wetlands is home to a biological community that can process and break down nutrients and purify the water. Wetlands also retain excess surface water, a function known as flood attenuation, which is helpful in times of flooding. Hawke's Bay wetlands have been home to eel and whitebait populations and provide other resources such as harakeke (swamp flax). While most of our original wetland areas are gone, what remains is extremely important

as a representation of what the environment in our region used to be.

It doesn't take much for a wetland system to be altered and compromised.

"We have lost 98 per cent of the original wetlands in Hawke's Bay. We need to look after what we have left."

Keiko Hashiba Terrestrial Ecologist HBRC. HBRC-State-of-our-environment-Summary-report-2014-18.pdf

\* Riparian zones are crucial to the health of our land and waterways. The soil and vegetation in these areas act as a buffer, trapping nutrients, sediment and pathogens before they enter the waterway and potentially harm its quality. Riparian areas are an important habitat for water and land-based plants and animals, and act as safe passageways for the movement of species. Well maintained riparian zones with dense vegetation cover and effective fencing can improve bank stability, enhance ecosystem biodiversity and support sustainable farming. Riparian vegetation also provides shading to streams, which helps to regulate water temperature.

#### \*Goundwater

\*State of the Environment Summary Report 2010: Groundwater Ruataniwha Basin:

Results shown that pumping over the last 20 years have cause a decline in aquifer storage of approximately

66 million m3. This has resulted in declines in spring and river flows of between 5-8%. Some further declines in groundwater water levels and river flows are expected until a new aquifer equilibrium is reached.

\*State of the Environment Five-Yearly report Groundwater level trend and patterns (1989-2108)

"Treading lightly on our vital natural resource."

Groundwater resources

Monitoring of groundwater levels in the major Hawke's Bay aquifer systems show that declines have manifested slowly over time. In many areas, the long-term changes are masked by the natural variability between seasons. The most persistent changes have occurred in the Heretaunga and Ruataniwha Plains, where most trends indicate declining water levels.

The greatest changes in groundwater levels occur in areas of the Ruataniwha Plains with the largest pumping interference. Groundwater in the Ruataniwha Basin is sourced from less transmissive aquifers, with lower storage properties, and is pumped at greater rates resulting in deeper drawdown impacts and slower recovery.

Many of the long-term declines are associated with groundwater abstraction and are an expected response to pumping. Groundwater use in Hawke's Bay has steadily increased over the last 30-40 years. On the Ruataniwha Plains, groundwater use began accelerating in the late 1990s and quadrupled between 1998 and 2008, from approximately 5 Mm3/year to 20 Mm3/year.

"Our monitoring data indicates groundwater levels at some locations in the Ruataniwha Plains have continued to decline and therefore the source of pumping is still coming from the aquifer storage. This indicates the system is still developing and is yet to reach a new equilibrium."

Investigating our aquifer systems enables us to understand how the water flows through them. We know that all water drawn from wells is balanced by a loss of water somewhere else. When groundwater is pumped, water is taken from storage in the aquifer. This results in groundwater level declines or depressurisation. To account for this change in storage, the system may respond by increasing the volume of water entering the aquifer, decreasing the volume of water leaving, or some combination of these.

Changes in groundwater levels manifest slowly.

In many areas, long-term changes are masked by natural variations between seasons. The most persistent changes we've noted are declining water levels in parts of the Heretaunga

and Ruataniwha Plains. This follows previously identified changes in patterns and trends. Many groundwater level declines are associated with groundwater pumping in response to demand: mostly for irrigation, industrial use and town supplies.

Over the last five years, drinking water standards were exceeded for Escherichia coli (E. coli) at 23 wells, nitrate at one well, manganese at 14 wells and arsenic at three wells. These standards relate to human health and indicate that health could be impacted by consuming water with certain concentrations.

"The effects of groundwater pumping must be balanced with environmental needs and the values of public and stakeholders."

Simon Harper Senior Scientist (Groundwater). HBRC-State-of-our-environment-Summary-report-2014-18.pdf

State of the Environment Five-Yearly report Groundwater level trend and patterns (1989-2108). HBRC Report No. RM 19-246.

#### \* It is unsustainable.

From an email from my Aunt and Uncle (who had owned a farm in the Porangahau for many years) on 1 December 2021:

"The Porangahau Stream went dry in summer but only in the last few years. When we first retired to the farm 11 years ago we could happily swim in quite deep chest high pools but latterly that was not possible at all and the stream bed was covered in green slime and abundant weed. One trout survived a whole summer going round and round in a small pool until the waters returned. I will look through my photos and see if I have any that show the summer stream bed. I am amazed and frustrated that farmers have been granted permission to take and more water because the Porangahau Stream arises in a spring and does not have the benefit of snow melt water."

05 December 2021. From cousins who regularly visit and go fishing in CHB in answer to my question "When you visited and said when in CHB you looked over a bridge and saw no water in the river i.e. it had stopped flowing. When and where was this, what river was it?" "It was the Tukituki above the bridge on the Onga -Waipukurau Road. He isn't certain of the

"It was the Tukituki above the bridge on the Onga -Waipukurau Road. He isn't certain of the date but possibly a year or even 2 ago."

Other people in CHB have commented on springs, streams and rivers drying up, for the first time in memory, in recent years .

#### Extracts:

Managed Aquifer Recharge (MAR)
Hawke's Bay Regional Council
Central Hawke's Bay MAR Pre-feasibility Assessment
SUMMARY REPORT
Project No. 189740
Doc No. WGA189740-RP-HG-0004 Rev B
17 April 2019

Page 1. The CHB area has been reported to have challenges with respect to low river flows, protecting aquatic habitat and the reliability of water supplies from river takes. Declining water quality is an issue that has been identified by other studies and remains a critical management issue. Groundwater shows signs of declining storage levels and degradation of quality. The security of drinking water supplies have also been reported to be of concern to the local community.

Page 2. Limited information is available with respect to the Young Gravels Aquifer on the western side of the basin has as it is not widely used for abstraction (few wells). In the midbasin and eastern side, the Young Gravels Aquifer plays an important role in providing baseflows to rivers and streams. For the potential implementation of MAR, more information is needed about this shallow aquifer and the development of a fit-for-purpose numerical

groundwater model will greatly increase the ability to quantify how MAR may be applied to manage this shallower system.

The deeper, Salisbury Gravel Aquifer is better understood as it is the primary target for groundwater abstraction in the basin and is showing a long-term pressure decline in some monitoring wells. The proposed approach to improve management of this aquifer is a stepwise process of stabilise, restore and sustainably manage the yield. The groundwater quality in the Salisbury Gravel Aquifer is generally good. The design of any GRS targeting this aquifer will need to incorporate measures to protect the aquifer water quality.

Page 30-31. 4.9.2 West and Southern Basin

The seasonal groundwater level fluctuations on the western edge of the Ruataniwha Basin are considered to be influenced by no-flow boundaries and limited recharge sources, with these factors likely to exacerbate pumped drawdown in these areas (Harper 2015). Groundwater levels are declining along the western edge of the basin. These declines emphasise the uncertainty of the hydraulic connection between recharge to the outcropping Salisbury Gravel Aquifer in the elevated terraces further west and the Salisbury Gravel Aquifer tapped by 50 to 120 m deep wells near Ongaonga.

Harper (2015) concluded that groundwater level declines associated with reduction of aquifer storage during winter are observable in four monitoring wells located on the western and southern edges of the basin. Trends in the winter levels are considered to show the long-term groundwater storage losses. These monitoring wells are averaging between 0.11 m and 0.18 m decline annually. Over a 20 to 25-year monitored period, for example, there has been a decline of approximately four metres in winter groundwater levels in the Forest Gate monitoring well (1426; Figure 4-5).

Seasonal fluctuations are observed in the groundwater levels in many of the Ruataniwha Basin wells and in monitoring wells in the nearby Otane Basin. Fluctuations in the seasonally high groundwater levels are considered to reflect variations in rainfall and therefore recharge conditions. However, in addition to these seasonal fluctuations, there are long-term declines in seasonal highs associated with an imbalance in the groundwater system. Furthermore, the amplitude in seasonal fluctuations has been increasing over time as groundwater abstraction during summer has increased.

WGA estimated the potential spatial extent of the long-term decline of groundwater levels in the Salisbury Gravel Aquifer to be approximately 342 km2.. Page 33-34.

.... there is one monitoring well (number 3076) in the mid basin with a hydrograph similar to a river recharge signature and exhibiting a slightly declining trend over the last 10 years. This decline could be associated with reduced recharge or pumping induced flow from the underlying aquifer.

#### 4.9.4 Central Basin

There are several monitoring wells in the area of the interpreted palaeochannel north of Ongaonga and close to the main groundwater abstraction area in the Salisbury Gravel Aquifer. Well 2220 is located north of Ongaonga, within the palaeochannel area described above, but it has an overlying clay layer which confines the Salisbury Gravel Aquifer. It is located 1.7 km from the Waipawa River and has been monitored since 1988. Increasing abstraction since about 1998 has caused increased seasonal amplitude in groundwater level fluctuations recorded in this well. Other monitoring wells in the area have also shown pressure declines and increasing amplitudes in seasonal fluctuations (Figure 4-8).

### Page 41-42. 4.13 GROUNDWATER STORAGE

Previous water balance work for the basin, based on the modelling carried out in Baalousha (2010), concluded that over a 20-year period there was a groundwater storage decline of 67 million m3.

A high-level assessment on groundwater storage response in the Salisbury Gravel Aquifer to the current pumping regime has been carried out (Table 6). The calculations are based on observed changes to groundwater storage and divided into two parts:

1. Long-term declines in groundwater storage in the confined Salisbury Gravel Aquifer, estimated using area of decline and magnitude of decline reported in HBRC (2015).

2. Estimated declines in the overlying unconfined Young Gravels Aquifer.

The sum of these two annual storage depletion volumes was calculated to be 265,000 m3/year. Which represents the volume required to stabilise declines in groundwater under the current allocation.

Salisbury Gravel Aquifer Estimated area 325,000,000 m2, Groundwater level decline over 20 years - 4 metres Total groundwater storage decline 1,300,000 m3. Annual decline from current use 65,000 m3/year.

Unconfined aquifer area 10,000,000 m2
Groundwater level decline over 20 years 2 metres Total groundwater storage decline 4,000,000 m3
Annual decline from current use 200,000 m3/year

#### Page 46-47

In order to assess the requirements for a GRS, an initial high-level assessment on storage responses to current pumping was carried out. The storage estimates summarised here are preliminary only and need to be more fully tested and refined through MAR-specific groundwater modelling to provide more accurate estimates.

The high-level analysis based on observed changes to groundwater storage involved several steps in the calculations:

- 1. The sum of the two annual storage depletion volumes was calculated to be 265,000 m3/year as outlined in Section 4.13. This represents the volume required to stabilise declines in groundwater under the current groundwater allocation of 29 million m3 per year.
- 2. The volume required to replenish the previous depletion of the Salisbury Gravel Aquifer is calculated as the annual depletion multiplied by the number of years that the groundwater levels had been in decline (20 years). This storage debt was allocated as double the annual stabilisation volume, enabling replenishment over 10 years.
- 3. Further volumes were added to the annual requirement to allow for the assumed future allocation of 15 million m3 per year (Tranche 2). This volume was added at a nominal 1 million m3 per year as a minimum. However, the replacement volume to stabilise for Tranche 2 may be more similar to the future pumped volume. A replacement scenario at 65% of paper allocation was assessed as an upper limit.

The results of this analysis gave an estimated annual MAR volume of 5 to 12 million m3 per year for the Salisbury Gravel Aquifer. In addition to this MAR could involve baseflow protection and spring restoration and water quality through recharge to the shallow aquifers.

In addition to the assessment based on observed groundwater storage changes outlined above, WGA carried out an assessment on MAR storage based on the modelled changes in storage documented by Baalousha (2010). Based on the documented groundwater storage decline of 67 million m3 over 20 years, this is equivalent to a decline in groundwater storage of approximately 3.3 million m3 per year.

If the community sought to recover this storage over 10 years it is equivalent to 6.6 million m3 per year. Based on recovering lost groundwater storage, accommodating for annual storage declines from current allocation and an addition allocation of 15 million m3 per year for Tranche 2, the range of potential MAR annual volumes would be between 13 and 20 million m3 per year.

\* High risk of increased contamination of the ground water and surface water.

Nitrates are chemical compounds that can be found in drinking water supplies. While harmless in small amounts, high levels of nitrates can affect humans and animals negatively. This is especially true for infants and pregnant women.

Nitrates infiltrate drinking water through several sources. Runoff from fertilizers is the most

common source of nitrate.

High levels of nitrate in the body can cause Methemoglobinemia, also known as blue baby syndrome. The most common symptom of methemoglobinemia is a bluish color of the skin, headache, dizziness, weakness or trouble breathing. Infants under six months of age, pregnant women, adults with low amounts of stomach acidity, or adults deficient in the methemoglobin reductase enzyme (which converts methemoglobin to hemoglobin) are especially susceptible.

\*Overpumping can increase arsenic in groundwater. Arsenic has been found in HB ground water in recent years.

Stanford University

JUNE 5, 2018

Stanford researchers find groundwater pumping can increase arsenic levels in irrigation and drinking water

Pumping an aquifer to the last drop squeezes out more than water. A Stanford study finds it can also unlock dangerous arsenic from buried clays – and reveals how sinking land can provide an early warning and measure of contamination.

By Josie Garthwaite

For decades, intensive groundwater pumping has caused ground beneath California's San Joaquin Valley to sink, damaging infrastructure. Now research published in the journal Nature Communications suggests that as pumping makes the ground sink, it also unleashes an invisible threat to human health and food production: It allows arsenic to move into groundwater aquifers that supply drinking water for 1 million people and irrigation for crops in some of the nation's richest farmland.

Groundwater is the main source of drinking water for 1 million people in California's San Joaquin Valley, part of the arid Central Valley that supports a \$17 billion agricultural industry. (Image credit: Shutterstock)

The group found that satellite-derived measurements of ground sinking could predict arsenic concentrations in groundwater. This technique could be an early warning system to prevent dangerous levels of arsenic contamination in aquifers with certain characteristics worldwide. "Arsenic in groundwater has been a problem for a really long time," said lead author Ryan Smith, a doctoral candidate in geophysics at the School of Earth, Energy & Environmental Sciences (Stanford Earth). It's naturally present in Earth's crust and a frequent concern in groundwater management because of its ubiquity and links to heart disease, diabetes, cancer and other illnesses. "But the idea that overpumping for irrigation could increase arsenic concentrations is new," Smith said.

Importantly, the group found signs that aquifers contaminated as a result of overpumping can recover if withdrawals stop. Areas that showed slower sinking compared to 15 years earlier also had lower arsenic levels. "Groundwater must have been largely turned over," said study co-author Scott Fendorf, a professor of Earth system science and a senior fellow at the Stanford Woods Institute for the Environment.

Releasing arsenic from clay

The research team analyzed arsenic data for hundreds of wells in two different drought periods alongside centimeter-level estimates of land subsidence, or sinking, captured by satellites. They found that when land in the San Joaquin Valley's Tulare basin sinks faster than 3 inches per year, the risk of finding hazardous arsenic levels in groundwater as much as triples.

Aquifers in the Tulare basin are made up of sand and gravel zones separated by thin layers of clay. The clay acts like a sponge, holding tight to water as well as arsenic soaked up from ancient river sediments. Unlike the sand and gravel layers, these clays contain relatively little oxygen, which creates conditions for arsenic to be in a form that dissolves easily in water.

When pumping draws too much water from the sand and gravel areas, the aquifer compresses and land sinks. "Sands and gravels that were being propped apart by water pressure are now starting to squeeze down on that sponge," Fendorf explained. Arsenic-rich water then starts to seep out and mix with water in the main aquifer.

When water pumping slows enough to put the brakes on subsidence – and relieve the squeeze

on trapped arsenic – clean water soaking in from streams, rain and natural runoff at the surface can gradually flush the system clean.

However, study co-author Rosemary Knight, a professor of geophysics and affiliated faculty at the Woods Institute, warns against banking too much on a predictable recovery from overpumping. "How long it takes to recover is going to be highly variable and dependent upon so many factors," she said.

The researchers said overpumping in other aquifers could produce the same contamination issues seen in the San Joaquin Valley if they have three attributes: alternating layers of clay and sand; a source of arsenic; and relatively low oxygen content, which is common in aquifers located beneath thick clays.

The threat may be more widespread than once thought. Only in the last few years have scientists discovered that otherwise well-aerated aquifers considered largely immune to arsenic problems can in fact be laced with clays that have the low oxygen levels necessary for arsenic to move into most groundwater. "We're just starting to recognize that this is a danger," said Fendorf.

Satellite insights

The revelation that remote sensing can raise an alarm before contamination threatens human health offers hope for better water monitoring. "Instead of having to drill wells and take water samples back to the lab, we have a satellite getting the data we need," said Knight.

While well data is important to validate and calibrate satellite data, she explained, on-the-ground monitoring can never match the breadth and speed of remote sensing. "You're never sampling a well frequently enough to catch that arsenic the moment it's in the well," said Knight. "So how fantastic to have this remote sensing early warning system to let people realize that they're approaching a critical point in terms of water quality."

The study builds on research led in 2013 by Laura Erban, then a doctoral student working in Vietnam's Mekong Delta. "That's where we started saying, 'Oh no,'" said Fendorf, who coauthored that paper.

As in the San Joaquin Valley, areas of the Mekong Delta where land was sinking more showed higher arsenic concentrations. "Now we have two sites in totally different geographic regions where the same mechanisms appear to be operating," said Fendorf. "That sends a trigger that we need to be thinking about managing groundwater and making sure that we're not overdrafting the aguifers."

Scott Fendorf, the Terry Huffington Professor, is also senior associate dean for academic affairs and a member of the Stanford Child Health Research Institute. Rosemary Knight is the George L. Harrington Professor.

The work was funded by the National Science Foundation and the U.S. Department of Energy. Josie Garthwaite, School of Earth, Energy & Environmental Sciences: (650) 497-0947, josieg@stanford.edu

Stanford University

© Stanford University. Stanford, California 94305.

See attachment "Overpumping leads to California groundwater arsenic threat 41467 2018 Article 4475"

\* Groundwater depletion is primarily caused by sustained groundwater pumping. Some of the negative effects of groundwater depletion:

Lowering of the Water Table

Excessive pumping can lower the groundwater table, and cause wells to no longer be able to reach groundwater.

**Increased Costs** 

As the water table lowers, the water must be pumped farther to reach the surface, using more energy. In extreme cases, using such a well can be cost prohibitive.

Reduced Surface Water Supplies

Groundwater and surface water are connected. When groundwater is overused, the lakes,

streams, and rivers connected to groundwater can also have their supply diminished. Land Subsidence

Land subsidence occurs when there is a loss of support below ground. This is most often caused by human activities, mainly from the overuse of groundwater, when the soil collapses, compacts, and drops.

\* Further extraction of water will affect existing legal use of water by water users.

Extract from report by aqualinc.co.nz for Central Hawke's BaySurface take consent holders group –

Ian McIndoe Date: 21 Aug 2018 Summary of position

Potential further effect of Tranche II Ground Water allocation:

The PC6 process also increased the available groundwater allocation from the Tukituki Basin. Called Tranche 2 groundwater, the Plan allowed for an additional 15 million m3 of deep groundwater to be abstracted, subject to the effects of the abstraction on surface water low flows being mitigated. It is likely that the mitigation of the effects of groundwater abstraction would have originally have been expected to be carried out by releases of water from the Ruataniwha Dam.

By referring to the data generated for the Plan Change 6 / Board of Inquiry development process, we know that the likely impact of the proposed Tranche 2 groundwater allocation / abstraction was estimated to be in the vicinity of 650 litres/sec in terms of mean annual low flow (MALF). This represents a significant flow, when compared with the PC6 low flow levels in total.

While there is a requirement for the Tranche 2 applicants to make provision to mitigate the impact of their abstraction on river flows, this provision would only be triggered by, and target maintenance of. low flow levels.

This means that should the Tranche 2 allocation proceed, the river flows can be expected to hit the low flow cut-offs earlier and for longer than had previously been the case. In this case, the historic river flow data would overstate the expected future flows. The result is that the impact of restrictions on Surface Water Consent holders would be more severe than this report suggests.

\* HBRC has been aware of issues caused by excess water extraction in CHB for many years. These have been often been published in State of the Environment Report, many other HBRC reports and many other publications included in The Tukituki Tukituki Catchment Proposal which went through the Board of Inquiry, Plan Change 6 and the Ruataniwha water storage scheme documents.

In the HBRIC Ltd Ruataniwha Water Storage Scheme Business Case (March 2014) it was stated:

"Water is over-allocated with too much water authorised to be taken from rivers and groundwater."

"...the Ruataniwha Basin is characterised by a high level of interaction between groundwater and surface water. While the contribution of surface water to groundwater through river bed losses is small, the contribution that groundwater makes to the river flow at eastern side of the Basin is large. Therefore, extraction of groundwater from the Basin decreases the contribution to river flows."

Tranche 2 was introduced by the Board of Inquiry. This was supported by the Evidence in Chief of the' Ruataniwha Water users Group'. The Evidence in Chief of HBRC did not agree with it.

see: Husam-Baalousha-Rebuttal-Evidence-Final.pdf

\* A high priority should be a Plan Change to the RRMP to delete Tranche 2 Groundwater Takes from the Ruataniwha Basin and make any further Groundwater Takes from the Ruataniwha Basin a prohibited activity.

# HAWKE'S BAY REGIONAL COUNCIL ENVIRONMENT AND SERVICES COMMITTEE Agenda

Wednesday 04 July 2018

Subject: TUKITUKI TRANCHE 2 GROUNDWATER

Reason for Report

- 1. The purpose of this paper is to provide an update on the status of the applications for the take of groundwater, known as Tranche 2, from the Tukituki catchment. Background
- 2. The following provides a background to the Tranche 2 allocation:
- 2.1. The Tranche 2 groundwater allocation sits within Plan Change 6 (the Tukituki catchment).
- 2.2. It was developed solely by the Board of Inquiry during its deliberations on Plan Change 6 and the RWSS consents and provided for an additional 15 million cubic meters of water to be taken from the Ruataniwha Basin.
- 2.3. The Hawke's Bay Regional Council (HBRC) submitted to the Board that there are significant uncertainties around this allocation and that the science suggested the Tranche 2 allocation was unsustainable. This was not accepted by the Board of Inquiry
- 2.4. Consequently Policy TT8 in Plan Change 6 enables additional groundwater to be abstracted as a discretionary activity provided that augmentation to river flow occurs so as to maintain minimum flows, proportionate to the scale of effect of the Tranche 2 take.
- 2.5. HBRC, via HBRIC, was intending to apply for most of the Tranche 2 water and mix it in with RWSS water to manage the resource sustainably (use stored water offset effects) but these consent applications were relinquished with RWSS not proceeding.
- 2.6. HBRC staff consider that Tranche 2 water should be revisited in a Plan Change to the RRMP and it is on the list of matters to be addressed, but the Regional Planning Committee has higher plan change priorities at present.

Current status of activity

- 3. The current state of play with regard to the Tranche 2 allocation is as follows:
- 3.1. Eight groups have applied for a combined total of 17.1M m3/p.a, of which 11.9M m3/p.a is irrigation water and 5.3M m3/p.a is "augmentation water".
- 3.2. All consent applications under the Tranche 2 need to demonstrate that any effects on the surface and groundwater resources are acceptable.
- 3.3. As outlined in 2.3 above HBRC's science suggests that the allocation is not sustainable. Therefore the applications have been placed "on hold" until further information is provided by the consent applicants.
- 3.4. Aqualinc have been engaged by the resource consent applicants to undertake numerical modelling to quantify the stream depletion effects and subsequent need for augmentation as a result of the proposed Tranche 2 groundwater takes.
- 3.5. Aqualinc's Ruataniwha Basin numerical model will be used to quantify the approximate stream depletion effects of the proposed takes and the subsequent surface water augmentation requirements. The proposed modelling work will provide an indicative magnitude, location and timing of the stream depletion effect of the proposed groundwater takes.

# ITEM 9 TUKITUKI TRANCHE 2 GROUNDWATER PAGE 49

- 3.6. The concept of augmentation is based on using groundwater stored in the aquifer system to mitigate effects on surface water from pumping groundwater during drier periods. Augmentation will also result in additional stream depletion effects, but this may be delayed and spread over space and time through the storage response of the aquifer system. The model results can be used to consider changes in river flows and groundwater levels.
- 3.7. The model results can be compared to the baseline scenario (status quo, without the proposed takes) to ascertain the change in flows at key flow measuring sites, such as Tukituki at Tapairu Road, Waipawa River at SH2, Mangaonuku Stream and Tukipo River sites. The future
- 4. The Aqualinc investigations are expected to be concluded within the next 2-3 months.

HBRC will then have a better understanding of the effects of the takes and will then proceed through the consenting process, including a decision on public notification of the consents.

- 5. Through the Long-Term Plan HBRC has included resourcing for subsurface electromagnetic mapping of the Ruataniwha Basin and associated groundwater modelling in the years 2 and 3. This will dramatically increase HBRC's understanding of the resource and the effect of users on it to inform future planning and consent allocation.
- 6. HBRC has the option of a wider review of Plan Change 6 and considering amendments to the Tranche 2 groundwater provisions at that time although, as stated previously, this is not a priority for the Regional Planning Committee at this time.

**Decision Making Process** 

7. Staff have assessed the requirements of the Local Government Act 2002 in relation to this item and have concluded that, as this report is for information only, the decision making provisions do not apply.

Recommendations

That the Environment and Services Committee receives and notes the "Tukituki Tranche 2 Groundwater" staff report.

Authored by:

Liz Lambert

**GROUP MANAGER REGULATION** 

Approved by:

Iain Maxwell

GROUP MANAGER INTEGRATED CATCHMENT MANAGEMENT

Attachment/s

There are no attachments for this report.

MINUTES of the Meeting of the Environment and Services Committee 4 July 2018

9. Tukituki Tranche 2 Groundwater

Liz Lambert provided an update on the status of the applications for Tranche 2 takes including the background. Discussions traversed:

- \* PC6 Board of Inquiry decision provided for this additional allocation and people are allowed to apply for resource consents to take it.
- \* Eight groups applied for a combined total of 17.1 million m3/pa, of which 11.9 M is irrigation and 5.3M is for augmentation.
- \* All applications required to demonstrate that any effects on the surface and groundwater resources are acceptable HBRC's science suggests that the allocation is not sustainable and the applications have been put "on hold" until further information is provided by the consent applicants.
- \* Aqualinc engaged by the applicants to undertake modelling to quantify the stream depletion effects and subsequent need for augmentation the model will be used to quantify the approximate stream depletion effects of the proposed takes and the subsequent surface water augmentation requirements, with investigations expected to be concluded in 2-3 months. HBRC will then better understand the effects and proceed through the consenting process, including a decision on public notification.
- \* HBRC is obliged to process the applications whether they are fit for purpose or not.
- \* HBRC option of a wider review of Plan Change 6 and amendments to the Tranche 2 provisions at that time although, as stated previously this is not currently a priority. Resolution

That the Environment and Services Committee receives and notes the "Tukituki Tranche 2 Groundwater" staff report.

Beaven/Wilson CARRIED

\* Use of groundwater has related negative environmental issues all over the world. For example, polluted groundwater is less visible and more difficult to clean up than pollution in rivers and lakes. Groundwater pollution can result from excessive fertilizers and pesticides

used in agriculture.

Surveys of Bangladesh that followed the initial discovery of cases of arsenicosis attributable to elevated groundwater arsenic in the mid-1980s in West Bengal, India, indicate that about one third of the existing wells yield groundwater that does not meet the local standard of 50  $\mu$ g/L for arsenic in drinking water. Two thirds of the wells tested exceed the guideline value of 10  $\mu$ g/L of the World Health Organization for arsenic in drinking water set in 1993. There are troubling signs that other South Asian countries such as Vietnam, Cambodia, Pakistan, Myanmar, and Nepal are also significantly affected. Even if the entire population of Bangladesh could be switched to low-arsenic water overnight, past exposure is predicted to result in many thousands of additional deaths from various cancers each year, and this for the next several decades.

Additionally, groundwater can cause land subsidence when extracted unsustainably. E.g leading to sinking cities (like Bangkok and Venice), and loss in elevation (such as the multiple metres lost in the Central Valley of California). These issues are made more complicated other changes caused by climate changes which will change precipitation and water scarcity.

Problems have beset the use of groundwater around the world. Just as river waters have been over-used and polluted in many parts of the world, so too have aquifers. The big difference is that aquifers are out of sight.

The effects of groundwater overdraft may take decades or centuries to manifest themselves. The science has been available to make these calculations for decades; however, in general water management agencies have ignored effects outside a short timeframe. Appropriate timeframes in the groundwater planning must be used. This will mean calculating groundwater withdrawal permits based on predicted effects decades, sometimes centuries in the future. Salinity from irrigation can occur over time wherever irrigation occurs, since almost all water (even natural rainfall) contains some dissolved salts. When the plants use the water, the salts are left behind in the soil and eventually begin to accumulate. This water in excess of plant needs is called the leaching fraction. Salination from irrigation water is also greatly increased by poor drainage. As water moves through the landscape, it collects soluble salts, mainly sodium chloride. Where such water enters the atmosphere through evapotranspiration, these salts are left behind. In some irrigation districts, poor drainage of soils and surface aquifers can result in water tables' coming to the surface in low-lying areas. Major land degradation

Four important effects are worthy of brief mention. First, flood mitigation schemes, intended to protect infrastructure built on floodplains, have had the unintended consequence of reducing aquifer recharge associated with natural flooding. Second, prolonged depletion of groundwater in extensive aquifers can result in land subsidence, with associated infrastructure damage.

problems of soil salinity and waterlogging result, combined with increasing levels of salt in surface waters. As a consequence, major damage has occurred to local economies and

environments.

Another cause for concern is that groundwater drawdown from over-allocated aquifers has the potential to cause severe damage to both terrestrial and aquatic ecosystems – in some cases very conspicuously but in others quite imperceptibly because of the extended period over which the damage occurs.

Groundwater is often considered as a highly useful and often abundant resource. However, over-use, over-abstraction or overdraft, can cause major problems to human users and to the environment. The most evident problem (as far as human groundwater use is concerned) is a lowering of the water table beyond the reach of existing wells. As a consequence, wells must be drilled deeper to reach the groundwater in some places.

A lowered water table may, in turn, cause other problems such as groundwater-related subsidence.

Groundwater is also ecologically important. Groundwaters sustain rivers, wetlands, and lakes, as well as subterranean ecosystems within karst or alluvial aquifers.

Groundwater is in fact fundamental to many of the world's major ecosystems. Water flows between groundwaters and surface waters. Most rivers, lakes, and wetlands are fed by, and (at other places or times) feed groundwater, to varying degrees. Groundwater feeds soil moisture through percolation, and many terrestrial vegetation communities depend directly on

either groundwater or the percolated soil moisture above the aquifer for at least part of each year. Hyporheic zones (the mixing zone of streamwater and groundwater) and riparian zones are examples of ecotones largely or totally dependent on groundwater.

#### Subsidence

Subsidence occurs when too much water is pumped out from underground, deflating the space below the above-surface, and thus causing the ground to collapse. The result can look like craters on plots of land. This occurs because, in its natural equilibrium state, the hydraulic pressure of groundwater in the pore spaces of the aquifer and the aquitard supports some of the weight of the overlying sediments. When groundwater is removed from aquifers by excessive pumping, pore pressures in the aquifer drop and compression of the aquifer may occur. When the aquifer gets compressed, it may cause land subsidence, a drop in the ground surface.

The city of New Orleans, Louisiana is actually below sea level today, and its subsidence is partly caused by removal of groundwater from the various aquifer/aquitard systems beneath it. In the first half of the 20th century, the San Joaquin Valley experienced significant subsidence, in some places up to 8.5 metres due to groundwater removal. Cities on river deltas, including Venice in Italy, and Bangkok in Thailand, have experienced surface subsidence; Mexico City, built on a former lake bed, has experienced rates of subsidence of up to 40 cm per year.

## **Pollution**

Movement of water and dispersion within the aquifer spreads the pollutant over a wider area, its advancing boundary often called a plume edge, which can then intersect with groundwater wells or surface water such as seeps and springs, making the water supplies unsafe for humans and wildlife. Different mechanism have influence on the transport of pollutants, e.g. diffusion, adsorption, precipitation, decay, in the groundwater.

Around one-third of the world's population drinks water from groundwater resources. Of this, about 10 percent, approximately 300 million people, obtains water from groundwater resources that are heavily polluted with arsenic or fluoride. These trace elements derive mainly from natural sources by leaching from rock and sediments.

From: HBRC

To: <u>Michaela Tinker</u>

Cc: janeen@sageplanning.co.nz

Subject: HBRC - (Ruataniwha Basin - Tranche 2) [#49]

Date: Thursday, 16 December 2021 4:39:59 pm

Which consent does your submission relate to? Please click on the box below to select .:

APP-123563 APP-123991 APP-123541 APP-123547 APP-123565 APP-124498 APP-123566 APP-124500

APP-123546 APP-125281

Person Making the Submission: Teone Sciascia

Associated Organisation (of applicable): Ngarangikaunuhia

Address:

Phone Number:

Email:

Are you a trade competitor for the purposes of section 308B of the RMA 1991: No

IF YES: Are you directly affected by an effect of the proposed activity that adversely effects the environment and does not relate to, or the effects of trade competition: No

: I/We oppose the above application

The specific parts of the application that my submission relates to are (please enter the relevant number): We oppose all applications

My submission is: (you may attach submission detail to this form)

\* Include the reasons for your views: We oppose the consent applications to extract more groundwater for reasons detailed below:

1)

We believe that HBRC seek long term trusted and effective relationships with Mana Whenua that empower partnership through participation and the protection of rights.

The continuation of the tranche 2 application process will create significant tension moving forward with not the very near future.

2)

The potential effects of the proposed groundwater takes, and the degree of concern around them, was summarised in a letter Paul Barrett, Team Leader Consents at HBRC, recently wrote[1] regarding the proposed tranche 2 groundwater takes:

... There remains significant uncertainty over the scale of residual adverse effects resulting from Tranche 2 abstraction. We have concerns over the potential scale of adverse effects on wetlands, streams and wells across the Basin, but particularly in areas where there is already significant Tranche 1 abstraction occurring. We also still have concerns about how the Tranche 2 proposal will work in extreme years (worse than a 1 in 10 year event) and the scale of effects in these years when augmentation may not be able to continue. Furthermore, we have concerns over the impacts on water quality from farm system changes as a result of irrigation and note that a number of the properties are located in catchments where the instream nitrogen target is already significantly exceeded. Land use consent is already required for these properties and would not likely be granted to allow for any increase in nitrogen loss. We note that for dairy farms wishing to expand irrigation, land use and discharge consents are required under the NES FW and that a consent cannot be granted unless they are able to demonstrate that expansion will not lead to any increase in load or concentrations of contaminants in the catchment.

We believe when organisations disregard technical expertise, other mitigating factors of unethical practices will reveal themselves by the end.

I seek the following decision from the Hawke's Bay Regional Council:

\* Give precise details, including the parts of the application you wish to have amended and the general nature of any conditions sought: We wish to present these in person if the option is made available

I wish to be heard in support of my submission: Yes

If others make a similar submission, I will consider presenting a joint case with them at the hearing: Yes I wish to attend any pre-hearing meeting that may be convened.: Yes

From: HBRC

To: Michaela Tinker

Cc: janeen@sageplanning.co.nz

Subject: HBRC - (Ruataniwha Basin - Tranche 2) [#52]
Date: Thursday, 16 December 2021 7:41:23 pm

Which consent does your submission relate to? Please click on the box below to select.:

APP-123563 APP-123591 APP-123541 APP-123547 APP-123565 APP-124498 APP-123566 APP-124500 APP-123546 APP-125281

Person Making the Submission: Tony Murphy

Address:

Phone Number

Email:

Are you a trade competitor for the purposes of section 308B of the RMA 1991: No

IF YES: Are you directly affected by an effect of the proposed activity that adversely effects the environment and does not relate to, or the effects of trade competition: No

: I/We oppose the above application

The specific parts of the application that my submission relates to are (please enter the relevant number): APP-123563 APP-123991 APP-123541 APP-123547 APP-123565 APP-124498 APP-123566 APP-124500 APP-123546 APP-125281

My submission is: (you may attach submission detail to this form)

\* Include the reasons for your views: Water use in Central Hawkes Bay is unsustainable at current levels of consented abstraction. Adding further abstraction will only worsen the current situation.

I also feel the issuing of these consents would be contradictory to the legislation, policies, and plans guiding the management of freshwater and the environment in Aotearoa and Hawke's Bay.

I do not think that these resource consents, the 'augmentation' that supposedly mitigates them, or the land uses that will be associated with them are consistent with te mana o te wai or the aspirations New Zealanders have for freshwater

I seek the following decision from the Hawke's Bay Regional Council:

\* Give precise details, including the parts of the application you wish to have amended and the general nature of any conditions sought: I seek that all applications be declined

I wish to be heard in support of my submission: No

If others make a similar submission, I will consider presenting a joint case with them at the hearing: No I wish to attend any pre-hearing meeting that may be convened.: No