Groundwater allocation, community concerns and uncertainty

A day in the life of a local government officer

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Tapora





Land use change in Tapora





Resource consent applications

- Applicant must provide evidence that enough water is available
- Applicant must provide evidence that their water take does not have adverse effects on:
 - groundwater resources and availability
 - surface water flows
 - terrestrial and freshwater habitat
 - seawater intrusion
 - neighbouring bores/existing lawful water takes
 - ground settlements
- Applicant pays for the necessary investigations
- Review of application in-house or external
- Resource planner decides on application



Tapora groundwater system

Available information

- Bore locations and bore logs
- 3 investigation reports submitted with consent applications from avocado growers



Tapora groundwater system





Tapora groundwater system

Proposed aquifer layers

Consultant 1	Consultant 2	Consultant 3	Reviewer
Sand aquifer	Shallow Sand aquifer	Cond or uitor	Shallow Sand aquifer
	Deep Sand aquifer	Sand aquiler	Doop Sand L
Waitakere/Waitemata aquifer	Waitakere aquifer	Waitakere aquifer	Waitakere/Waitemata
	Waitemata aquifer	Waitemata aquifer	aquifer





Guidelines:

- 15% of average annual recharge for shallow coastal aquifers
- 35% of average annual recharge for all other aquifers with connection to surface water body
- 65% of average annual recharge for all other aquifers without connection to surface water body



Availability estimation for (Shallow) Sand Aquifer

	Consultant 1	Consultant 2	Consultant 3	Reviewer
Recharge area (km ²)	8.3		5.5	11
Av. annual rainfall (mm)	1135		1140	1150
Recharge = x% of rainfall	27%		27%	23%
Av. annual recharge (m ³ /yr)			1,661,000	6,462,500
Availability = x% of recharge	35%		35%	15%
Availability (m³/yr)	947,210		581,350	969,375



Availability estimation for Deep Aquifer

	Consultant 1	Consultant 2	Consultant 3	Reviewer
Recharge area (km ²)	15.5 + 39	8.9	43.3	23.5
Av. annual rainfall (mm)	1135	1140	1140	1150
Recharge = x% of rainfall	4%	10%	4%	4%
Av. annual recharge (m ³ /yr)		1,005,400	2,727,900	1,081,000
Availability = x% of recharge	85%	65%	85%	85%
Availability (m ³ /yr)	660,383 + 1,949,559 = 2,726,480 (?)	653,510	2,318,715	1,035,000



Remaining availability (%)

	Consultant 1	Consultant 2	Consultant 3	Reviewer
Shallow Sand	92		86	97
Deep Sand		28		2
Waitakere	68		92	
Waitemata				

Council's position



Community meeting

Dairy farmers raised concerns that avocado growers' water takes may affect their wells, asked for meeting with Council

Meeting was held for whole Tapora community

Presentation on:

- Hydrogeology of peninsulas
- Hydrogeology of Tapora
- Water availability and consents
- Consenting process









Meeting outcomes

Dairy farmers:

- Little knowledge of groundwater processes
- Not prepared to invest in groundwater investigations
- Not planning to apply for consents
- Think that Council should undertake the investigations
- Satisfied that Council uses their best knowledge to make decisions

Avocado growers:

- Good knowledge of groundwater processes
- Invest a lot of money in groundwater investigations
- Planning to apply for further consents
- Challenge Council's position, may take it to Environment Court









Community was very happy with the meeting

Sharing hydrogeological information helped the community understand and evaluate the issue

Decisions have to be made despite uncertainty









Thanks for your attention



Kia ora!

