

41-43 Bringham Creek Road JV
C/ - The Property Group
Level 14
55 Shortland Street
Auckland 1010

Attention Natasha Rivai

Dear Natasha

41-43 Bringham Creek Road: Plan Change: further Clause 23 request regarding wetlands

We refer to the further information request dated 13 May 2022 from Todd Elder, Policy Planner at Auckland Council regarding Council's further information request for proposed private plan change at 41-43 Bringham Creek Road, Whenuapai.

We have provided an assessment of the ecological values and potential adverse effects on those values in our report dated 15 March 2022¹, and further information in our Clause 23 reply letter dated 15 March 2022². Auckland Council has reviewed this information and requested further information regarding one of the locations assessed as a potential wetland.

Auckland Council's query regarding ecological matters is presented below in italics, followed by our reply.

Request

Southern' and 'western' potential wetland areas on the neighbouring property

Based in the information provided I am satisfied that the 'southern' and 'western' potential wetland areas on the neighbouring property to the south are not Natural Wetlands under the NPS:FM due to the fact they meet the pasture exclusion clause in the NPS:FM definition of a Natural Wetland.

However, I note that dominance and prevalence test results have not been provided. I also note that while images of soil assessments have been provided these are not accompanied with the Mansell colour chart value, chroma and hue values.

'Pond'/'OLFP' on the subject site

1. *Can the applicant please provide the Dominance and Prevalence Test results (including species and percentages for each plot) for the 'Pond'/'OLFP' on the site.*

¹ RMA Ecology Ltd. 15 March 2022. 41-43 Bringham Creek Road: Plan Change. Report prepared for 41-43 Bringham Road JV Ltd. 9 pp.

² RMA Ecology Ltd. 15 March 2022. 41-43 Bringham Creek Road: Plan Change: information request regarding ecological effects. Letter prepared for 41-43 Bringham Road JV Ltd.

2. Can the applicant please provide the value, chroma and Hue values for soil cores 4, 5, and 6. From the photos provided these would appear to be low value and chroma (contrary to what is described in the c23 response). However, it is noted that dark topsoil colour values of 3 or less are not good indicators of hydric soils.
3. The c123 response provided considers:
'The flow chart within the guidance attached to the NPS-FM provides a step-wise sequence of assessment using vegetation, soil and hydrology indicators. The process requires that soils are hydric for a potential wetland site to qualify. It is not enough to have vegetation (or hydrology) as the only wetland indicators. Without qualifying soils, the site is not a wetland'.

Assuming the response is referring to the Wetland Delineation Protocols (WDP) referenced within the NPS:FM; can the applicant please explain the above rationale when following the flow chart in the WDP passing the dominance test with obligate and facultative wetland species only leads to a wetland vegetation conclusion with no need to assess soils or hydrology.

4. The c23 response provided also considers:
'When paired with the soils test, and the NPS-FM wetland classification flow chart, this area does not support the necessary characteristics (in particular hydric soils) to qualify as a wetland under the NPS-FM or the RMA. This site does not support a wetland.'

Again, assuming the response is referring to the WDP referenced within the NPS:FM; can the applicant please explain how the flow chart has been considered/applied given the Dominance and Prevalence Test results, as well as the soil assessment.

Our reply

The request for further information relates to the Basin/'Pond'/ OLFP area.

The two flow charts applied to the analysis are the flow chart in the NPS-FM Wetland Delineation Protocols and the flow chart in Fraser et al. 2018 for assessing hydric soils. These charts are shown in Appendix A.

The following steps were undertaken:

1. Rapid Test
2. Dominance Test
3. Hydric soils and hydrology
4. Prevalence Index.

The information used for this assessment was:

1. Soil cores obtained from coring work in March 2021 and December 2021. Soil cores were taken from within the central part of the 'pond' and around the periphery within vegetation that was 'wetland-like'.
2. Vegetation plots taken in May 2022. These were taken as four 2 m x 2 m plots within the pond. The wettest part of the pond (lowest-lying) is approximately 2 m x 2.3 m; therefore, most plots were taken in the peripheral areas where vegetation comprised 'wetland-type' species that were obviously different from the surrounding slope 'dryland vegetation'.

Vegetation plot information was also taken in December 2021. The May 2022 plot information was undertaken in a more systematic manner and is presented here. We note that the NPS-FM does not stipulate when vegetation plots should be undertaken at a site. The hydrological tool developed to support the NPS-FM delineation protocols notes that an assessment can be undertaken at any time during the growing season, which for the Auckland Region is from 12 July through to 23 June. If vegetation plot sample collection should adhere to the hydrology tool guidance, our samples were collected at an appropriate time of the year.

Table 1. Wetland protocol assessment for the wet basin area – plots, soils, overall wetland classification.

Plant species	Common name	Hydrotype	Score	Plot 1 (%)	Plot 2 (%)	Plot 3 (%)	Plot 4 (%)
Holcus lanatus	Yorkshire fog	FAC	3		5	5	
Juncus effusus	Soft rush	FACW	2	15	5	20	
Ranunculus repens	Creeping buttercup	FAC	3	15		40	
Paspalum dilatatum	Paspalum	FACU	4	25	35		25
Rumex obtusifolius	Broadleaved dock	FAC	3	5			5
Anthoxanthum odoratum	Sweet vernal	FACU	4				
Lolium perenne	Perennial ryegrass	FACU	4		10	25	10
Persicaria maculosa	Willow weed	FACW	2	10	25		25
Agrostis capillaris	Brown top	FACU	4	30	20	5	25
Plantago lanceolata	Narrowleaved plantain	FACU	4			5	10
Total cover				100%	100%	100%	100%
Dominant species ³				Shaded cells	Shaded cells	Shaded cells	Shaded cells
Rapid Test (all dominants OLB or FACW)				Fail	Fail	Fail	Fail
Dominance Test (>50% dominants OBL, FACW or FAC)				Fail (go to soils)	Fail (go to soils)	Pass	Fail (go to soils)
Are all/ most dominants FAC (i.e. not FACU or UPL)				-	-	Yes (go to soils)	-

³ 50/20 rule. Highest cover species when added achieve or exceed 50 % cover, plus any species with 20 % or more cover. As per Clarkson et al. 2013/14 & NSP-FM 2020 Wetland Delineation Protocols.

Hydric soils? ⁴				Fine, silty topsoil 0-300 mm 10YR 4/3 300-400 10YR 4/3 No mottles Not hydric	Fine, silty topsoil 0-300 mm 10YR 2/2 300-400 10YR 2/2 No mottles Possibly hydric	Fine, silty topsoil 0-300 mm 10YR 2/2 300-400 10YR 2/2 No mottles Possibly hydric	Fine, silty topsoil 0-300 mm 10YR 4/3 300-400 10YR 4/3 No mottles Not hydric
Hydrology?				Not undertaken	Not undertaken	Not undertaken	Not undertaken
Prevalence Index Score				3.3	3.4	3.2	3.5
Overall conclusion				Not wetland	Not wetland	Not wetland	Not wetland

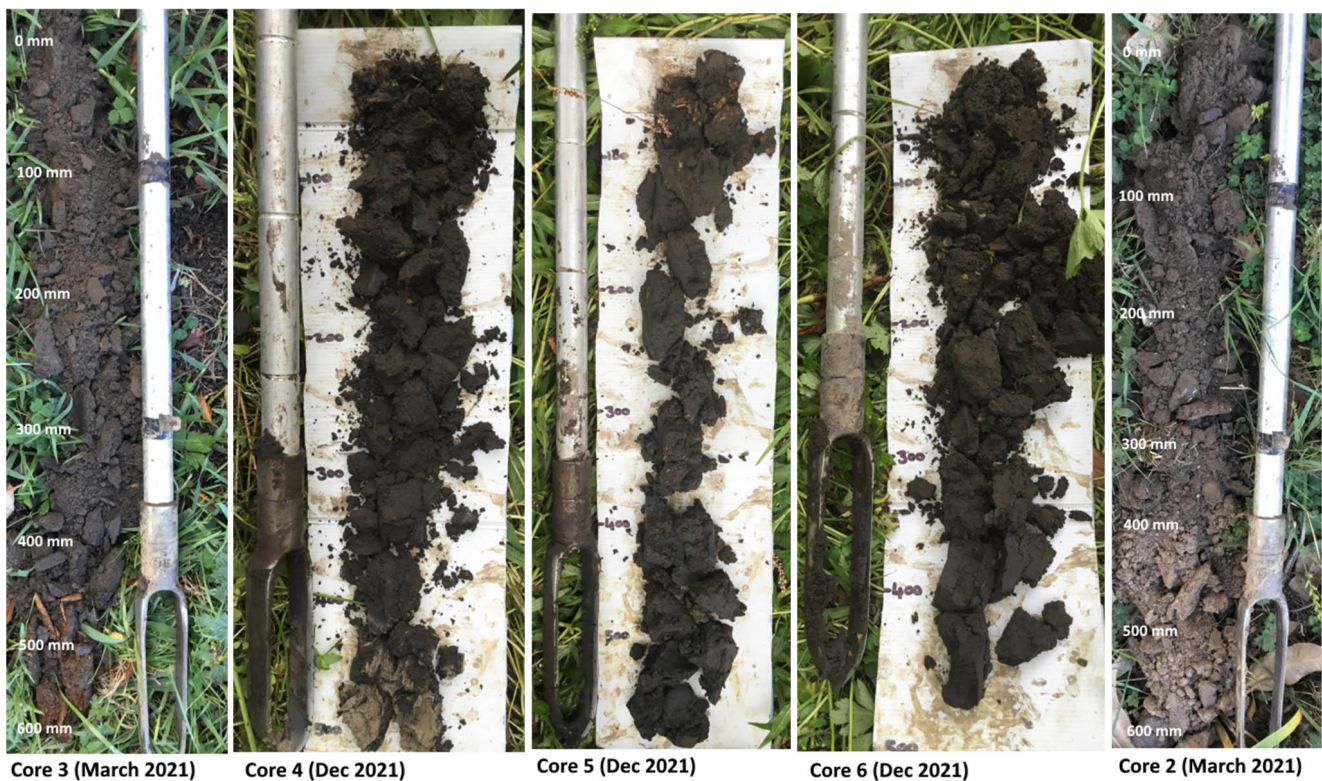
⁴ Soil cores were taken at different times of the year to vegetation plots. Soil core locations are within 0.5 m of the respective vegetation plot. Dark low chroma topsoils are not good indicators of hydric soils.

Table 1 shows the assessment of plots and soils within the basin area.

The vegetation indicates a mix of dryland species and 'wet' pasture species with pasture weeds prevalent throughout. None are native - all plants are exotic. The presence of ryegrass and sweet vernal most likely relate to when the site was used as a grazing paddock and indicate that pasture grasses were actively sown in here in the past.

Across multiple plots, the vegetation does not meet the minimum Index score for a hydric (wetland) plant community. The soils are all fine topsoils for at least 500 mm and show signs of organic deposition – or are simply indicative of past farming and fertiliser use and rich loamy soils of this location – and hence show as dark chroma colours.

Overall, the combination of vegetation and soils indicates that the basin is not a natural inland wetland under the NPS-FM (and neither is it a wetland under the RMA/AUP).

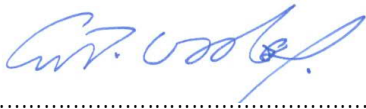


(above). Soil cores taken within the wet basin on the site, and a core taken outside of the basin on the nearby slope/ spur (Core 2). Core 3 is taken after summer and shows dry soils. Cores 4 – 6 are taken just after the wet season and show moist profiles. None of the cores show redox mottling in the upper 300 mm. The cores indicate that the basin comprises accumulated fine sediments associated with topsoil deposition.

Note that the following soil-vegetation plot associations have been linked for this analysis (as the soil cores are within the respective plot or are close to it).

- Vegetation plot 1 + soil core 5
- Vegetation plot 2 + soil core 4
- Vegetation plot 3 + soil core 6
- Vegetation plot 4 + soil core 3

We trust that this provides the information that Council has requested.

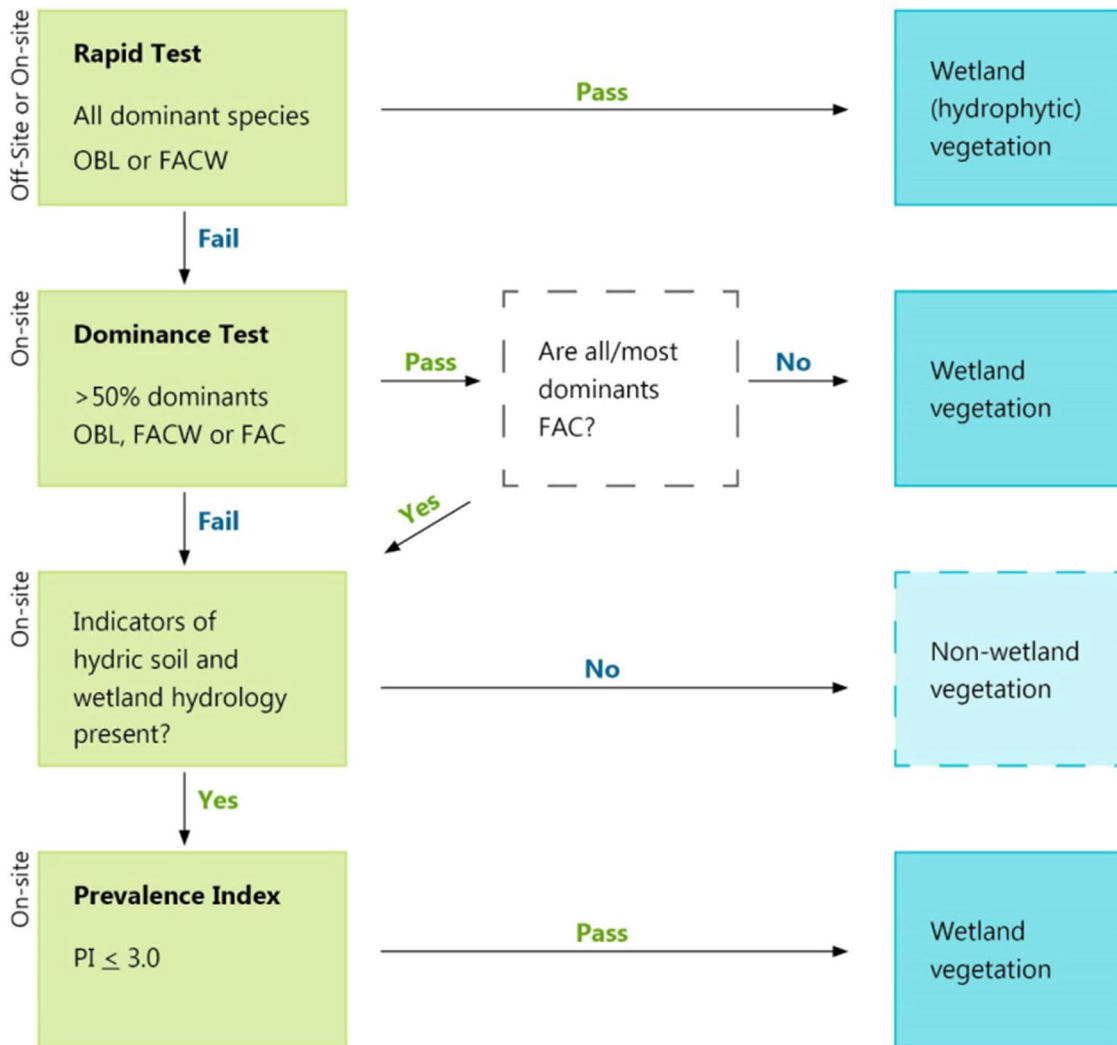


Graham Ussher

Principal Ecologist

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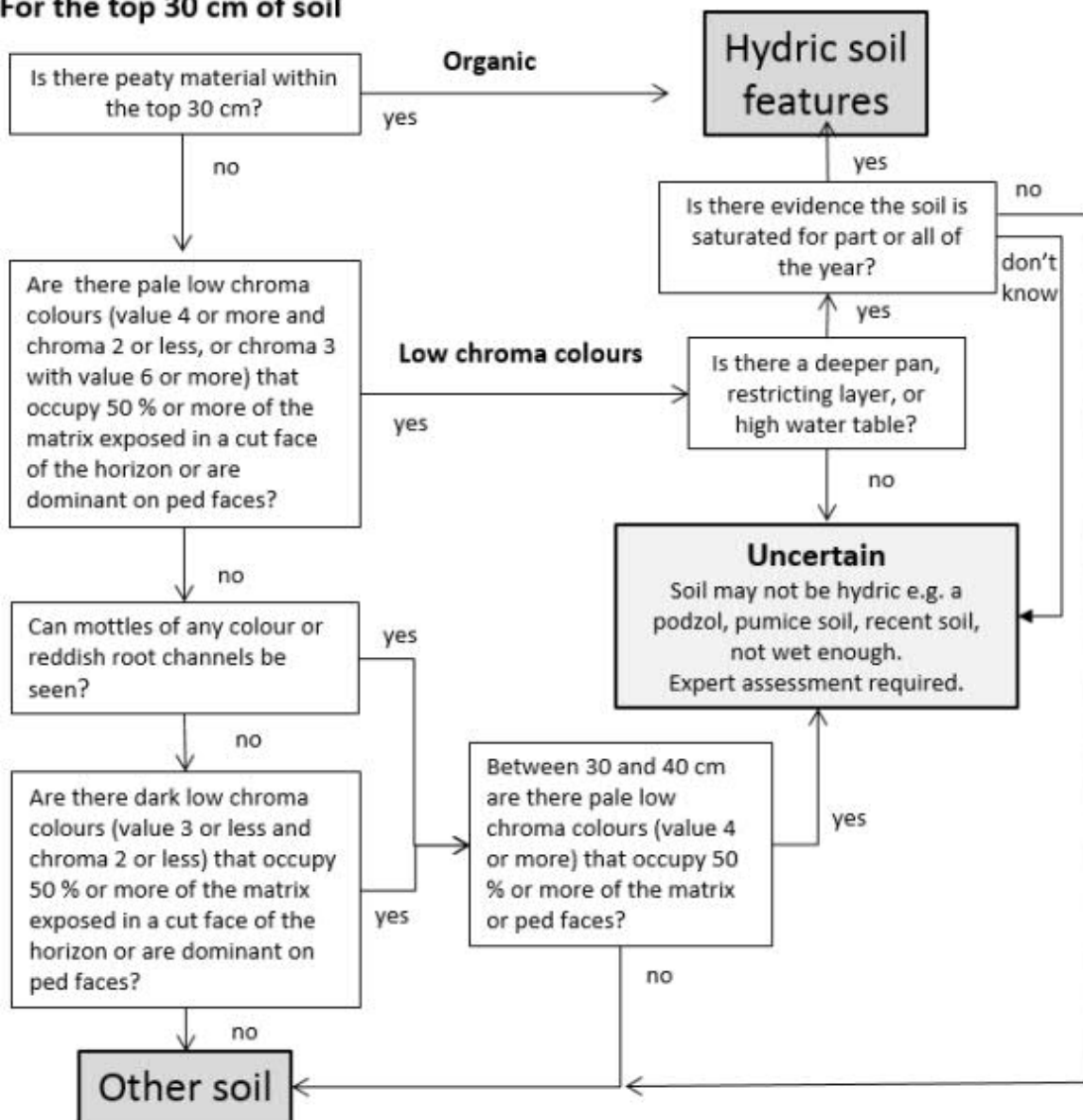
Appendix A



Flow chart 1. Steps for hydrophytic (wetland) vegetation determination. Wetland indicator status abbreviations: FAC= facultative; FACW = facultative wetland; OBL = obligate wetland (NPS-FM Wetland Delineation Protocols).

Simple key to identify hydric soil features

For the top 30 cm of soil



Flow chart 2. Simple key to identifying hydric soil features (Fraser et al. 2018).