HOMESTEAD BAY

WASTEWATER TREATMENT AND DISPOSAL

JOINT WITNESS CONFERENCING JOINT WITNESS STATEMENT

Introduction

1. This joint witness statement (**JWS**) relates to expert conferencing on the topic of wastewater.
2. The expert conferencing was held on 19-20 November 2025.
   Venue: SLR Christchurch
   Independent Facilitator: Sharon Dines
   Notes taken by Amanda Leith and Teagan Graham

3. Witness Conferencing Participants and their expertise are listed in Schedule 2:

Code of Conduct

4. This joint statement is prepared in accordance with section 9.4 of the Environment Court Practice Note 2023.
5. We confirm that we have read the Environment Court Practice Note 2023 and agree to abide by it.

Purpose and scope of conferencing

6. The questions posed are attached as Schedule 1. **Schedule 1** sets out the relevant background to the conference and the specific questions to be answered.

Experts' positions

7. Schedule 3 sets out the experts' positions on the items of the agenda.

Date: 21 November 2025

Sandy Ormiston, Ormiston Associates Ltd.

Rob Potts, Lowe Environmental Impact

NAME (Organisation)

Name (Organisation)

Shay McDonald, Otago Regional Council

Tim Baker, SLR Consulting for ORC

NAME (Organisation)

Name (Organisation)

Amanda Leith, Remarkable Planning

Neil Harkin, Queenstown Lakes District Council

NAME (Organisation)

Name (Organisation)

Ned Norton, Land Water People

Richard Powell, Queenstown Lakes District Council

NAME (Organisation)

Name (Organisation)

Brian Ellwood, Lowe Environmental Impact

NAME (Organisation)

Name (Organisation)

Dr Alayna Rā, Kā Rūnaka/Aukaha

NAME (Organisation)

Name (Organisation)

Schedule 1

Minute 5 (dated 11 November 2025) of the Expert Panel determining the Homestead Bay Application [FTAA-2506-1071] has directed witness conferencing to occur on the topic of wastewater from the proposed development.

A key outcome the Panel is looking to achieve from expert conferencing is whether there are gaps/weaknesses in the technical assessments and proposed consent conditions and what the experts positions on those matters are.

- Feasibility of a treatment plant / proposed treatment to meet the treated effluent standards;
- Treated effluent standards prior to discharge to ground for BOD_5, TSS, TN, TP, and E. coli, including hydraulic application rate and mass loading limits;
- Fix irrigation rate at 7.1mm/d average and maximum of 8.0mm/d.
- Groundwater monitoring piezometers upstream and downstream of land disposal areas, including monitoring trigger levels for further investigation;
- Surface water monitoring and trigger levels for further investigation;
- Preparation of a remedial action plan where monitoring results exceed specified trigger levels;
- Consideration of adaptive management for remedial action or works
- non-compliance in the proposed disposal fields resulting in the contamination or compromise of JPROA's water supply from Lake Wakatipu
- Suitability and sufficiency of proposed disposal areas for land application, including land slope, drainage, and buffer requirements;
- Extent of disposal area required for 1438 dwellings only;
- Removal of RCL's proposed disposal area that overlaps with JPROA's primary irrigation area.
- Storage or other management requirements for avoiding surface ponding and runoff.
- Wet weather risks for I/I plus increased runoff risk from steep slopes in Areas 1 & 2
- The risk to JPROA's water supply from the frequent flow of overland flow paths.
- Condition 29 requires no ponding or runoff. Proposed French Drains indicate ponding, and runoff is expected which is non-complying;
- Identification of reserve disposal areas.
- Condition 28 only requires servicing 12 monthly. Suggestion to increase frequency to a minimum of 3 monthly servicing.
- Potential mitigation measures for the cultural effects of discharges, including mauri disruption.

Schedule 2

EXPERTS NAME, ORGANISATION AND EXPERTISE	PARTY	NOTES
Sharon Dines		Facilitator
Tim Baker	ORC	Groundwater / wastewater expert
Shay McDonald	ORC	Planner
Rob Potts Absent 9am – 10am Thursday	Applicant	Wastewater
Ned Norton	Applicant	Water quality expert
Tegan Graham	Applicant	Planner (observer)
Brian Ellwood	Applicant	Wastewater
Amanda Leith	Applicant	Planner
Sandy Ormiston	Jacks Point Residents and Owners Association	Wastewater
Neil Harkin	QLDC	Planner
Richard Powell	QLDC	Engineer
Dr Alayna Rā Attended 9am – 11am Thursday	Kā Runaka	

INSERT QUALIFICATIONS AND EXPERIENCE STATEMENTS HERE

Qualifications and Experience of Rob Potts

I hold the qualification of NZCE (Civil), BE(hons)(Ag), Dip Hydrology(groundwater), CPEng (suspended) and Making Better Decisions (lapsed). I am a Member of Engineering NZ, Water NZ (ex Chairman of SWANS and Chairman of the Onsite Testing Facility)) and NZ Land Treatment Collective (ex President).

I am currently employed by Lowe Environmental Impact Limited . I have been involved in the land treatment of wastes for over 40 years, including preparing AEEs for Applicants, s42a Reports for Councils, expert witness for Appellants, and as a Hearing Commissioner.

Qualifications and Experience of Brian Ellwood

I am a Senior Environmental Engineer with 25 years' professional experience in the fields of wastewater treatment, nutrient management and irrigation. I have been a Senior Environmental Engineer with Lowe Environmental Impact (LEI) for nine years. I am a Director of LEI and the General Manager, leading the Christchurch office, managing staff across wastewater land application, irrigation development and consenting projects.

Relevant to this application, I have been directly involved with designing and consenting the land application system. Related to Otago and the QLDC region, I have designed and consented Kingston land treatment area, Gibbston Valley land treatment system, and Mt. Cardrona Valley land treatment system.

I have a BTech(Hons) in Environmental Engineering, Massey University 1996, MApplsc-AgEng (Hons) in Agricultural Engineering, Massey University 1997 and gained Project Management Professional accreditation from the Project Management Institute in 2013. I also have a Graduate Certificate – Irrigation from Charles Sturt University (NSW) 2006 and a Fertiliser and Lime Research Council FLRC Advanced Certificate in Sustainable Nutrient Management in NZ Agriculture from Massey University 2016. I am a certified Environmental Practitioner.

Qualifications and Experience of Ned Norton

I am a Director of LWP – a consultancy I founded with colleagues in Christchurch. I hold a BSc in Microbiology and Ecology, and an MSc (1st Class Hons) in Biochemistry, both from the University of Canterbury.

I have 30 years of experience working on water resource projects including environmental impact assessments, monitoring and assessing point and diffuse discharges, integrating knowledge across multidisciplinary technical science and planning teams, and contributing to development of national and regional level water policy and national implementation guidelines.

While my early career technical specialty was in freshwater quality and ecology I now have broad experience and a sound overview across most water resource management science issues and maintain particular specialties at the science-policy interface, in surface water quality, integrating land and water quantity and quality management, collaborative community processes, handling knowledge uncertainty, and limit setting under the NPSFM (2020) and associated regional policy statements and plans.

In addition to consultancy work, I've also contributed to multi-agency, government-funded research programmes and am a certified hearing panel commissioner.

Qualifications and Experience of Amanda Leith

I am a Senior Resource Management Consultant with 21 years experience. I worked in local government in Queenstown and Western Australia for 11 years and have spent the last 10 years as a planning consultant for many private clients, local governments and ministries. I formed Remarkable Planning in 2021.

I hold a Bachelor of Arts and the Masters in Regional and Resource Planning from the University of Otago. I am a member of the New Zealand Planning Institute and the Resource Management Law Association.

I prepared the Assessment of Environmental Effects for the Homestead Bay referral and substantive applications.

Qualifications and Experience of Tim Baker

I hold the position of Technical Discipline Manager – Hydrology & Hydrogeology at SLR Consulting New Zealand Ltd. I have been in this position since June 2021.

I have a total of 22 years' experience in the field of hydrogeology and water resources. I have been a consultant since 2008, prior to that I was a groundwater scientist at Greater Wellington Regional Council between 2003 and 2007.

I hold a Bachelor of Science (BSc) in Geography and Environmental Science (2000) and a Master of Science Degree with Honours in Physical Geography (2003) from Victoria University of Wellington.

I have been certified as an independent commissioner under the Making Good Decisions Programme since 2024.

I have acted as an Expert Witness in groundwater and discharge to land related consent hearings in New Zealand for the past 12 years. I have provided expertise in the effects of discharges to land on groundwater quality and groundwater dependent features, as well as general hydrogeological expertise.

Qualifications and Experience of Shay McDonald

I am a Principal Consents Planner at Otago Regional Council where I have worked for four years. I hold a Bachelor of Science (Honours) in Chemistry from the University of Otago. I am an associate member of the New Zealand Planning Institute and am certified as an RMA decision maker through the Making Good Decisions Programme (2023).

I am familiar with the proposal as set out in the substantive application having prepared the Otago Regional Council comments on the application. I confirm that I visited the site in July 2025. Throughout my time at Otago Regional Council, I have processed numerous resource consent applications relating to earthworks for residential development, contaminated sites, wastewater discharges, wetlands, and the taking and use of water.

Qualifications and Experience of Alexander (Sandy) Ormiston

I hold the qualification of Bachelor of Science (Geology) and a Master of Science (Engineering Geology) from the University of Canterbury. I am a Member of the New Zealand Land Treatment Collective (Past Chairman) and a Member of Water NZ (Past Chairman).

I am a founding Director of Ormiston Associates Limited. I specialise in both decentralised and individual on-site wastewater treatment and land disposal projects and reporting. I am also an author of a number of on-site wastewater design guidelines including for the Auckland and Horizons Regional Councils. I am also a key presenter of the two day NZQA on-site wastewater training course provided by WSP.

Qualifications and Experience of Dr Alayna Rā

Dr. Alayna Rā is a nationally and internationally recognised Indigenous Design Director, Landscape Architect and Landscape Planner with over 20 years of experience across Aotearoa, Australia, and Canada, specialising in embedding Indigenous values and agency into infrastructure, planning, and policy at all levels. She holds a PhD focused on Kāi Tahu voice in landscape and infrastructure policy, a Bachelor of Landscape Architecture (Hons), and multiple qualifications in te reo Māori and iwi environmental management.

Dr. Rā has authored and contributed to key industry guidelines, including the Australian Institute of Landscape Architects' Guidance Note for Landscape and Visual Assessment and the New Zealand Institute of Landscape Architects' Te Tangi a Te Manu – Aotearoa Landscape Assessment Guidelines. Her expertise spans landscape and visual assessments, cultural impact assessments, and the delivery of major infrastructure and built environment projects, including some of the Pacific's largest Public Private Partnerships, transport, mining, rail, energy, and urban development schemes.

Dr. Rā is a Registered Landscape Architect in both New Zealand and Australia, and has held executive and directorship roles in leading design firms, government agencies, and professional bodies. She is the current Chair of the Māori Advisory Group to Te Waihanga – the Infrastructure Commission, Chair of the Landscape Foundation of Aotearoa, and a recently departing Board Member of both the New Zealand Institution of Landscape Architects (NZILA) and Infrastructure New Zealand. Her work is grounded in a commitment to intergenerational wellbeing, tino rakatirataka, and mana motuhake, and she is widely sought after as a keynote speaker, and strategic advisor to government, iwi, and industry on matters of infrastructure resilience, climate adaptation, social investment, and the integration of Indigenous knowledge systems.

Dr. Rā's career is distinguished by her ability to translate complex policy into culturally grounded, actionable strategies, her leadership in advancing Māori and Indigenous perspectives in planning and design, and her proven record in providing advisory on landscape, cultural, and environmental matters.

Qualifications and Experience of Neil Harkin

I am a Senior Resource Consents Planner with Queenstown Lakes District Council (QLDC). I have been employed by QLDC for over six years and have been practising as a planner for over 8 years, both in New Zealand and the UK. I am an Associate member of the New Zealand Planning Institute and have a Masters (MPlan) in European Planning (1st Class Hons) from Queen's University Belfast 2017.

During my time at QLDC I have processed and also acted in a decision-making capacity on a range of resource consent applications for subdivision and development throughout the district. More recently I have been responsible for managing QLDC's involvement in applications made under the Fast-Track Approvals Act 2024, including preparing QLDC's s53 comments on this particular application.

Qualifications and Experience of Richard Powell

I hold a degree in Land planning and Development from the University of Otago. I have 17 years' experience in Civil Engineering, 15 of those years working within the Queenstown Lakes District.

I am employed as the Infrastructure Development Engineering Manager at Queenstown Lakes District Council (the Council or QLDC) and have been employed by QLDC since 2019. My current role at QLDC involves assessing how proposed developments can be serviced. This requires a degree of knowledge around existing constraints within the networks as well as being aware of programmed upgrade works.

Schedule 2

	Agenda item	General discussion	Agreed position / Actions undertaken	Disagreements or reservations, with reasons
1	Feasibility of a treatment plant / proposed treatment to meet the treated effluent standards;	**Brian and Rob outlined that there are a number of technologies available to meet the standards proposed. Not having it specified in the consent conditions allows for innovations to be considered. The technology chosen does not influence the assessment of effects as it will still need to comply with the conditions (outcomes). PS1 requirement means that the onus is on the designer.** **Brian – Proposed ORC conditions 8 and 11(a) require that the certification of the treatment plant etc by ORC (and QLDC) occurs prior to each stage. Condition 6(a) also sets out that the treatment must be tertiary level.** **Sandy and Richard both agreed that there are technologies available to meet the performance standards.** **Shay – certification processes are a common occurrence. Generally happy with this approach.** **Sandy - As long as Council are reviewing the certification Sandy is happy with this process.**	**All experts agreed that there is a range of technologies available to meet the performance criteria.** **All experts agreed that the certification process for each stage to be administered by the ORC is suitable.**	**Nil**

2	Treated effluent standards prior to discharge to ground for BOD_5, TSS, TN, TP, and E. coli, including hydraulic application rate and mass loading limits	**Brian – Basis of design was considering the current nutrient loss from the farming activity. This was basis of the WW AEE. Converted to annual N loading for the various land loading. P has also been added in following Tim's feedback.** **Brian – In the early stages of the development there is flexibility to have a higher N concentration but larger area to still achieve the annual N loading. This provides the opportunity for the developer to provide less treatment in the early stages while still achieving the same loading and therefore the same level of effect. This flexibility is valuable because it provides the opportunity to have a lower level of effort in the treatment system when there is less waste to be managed i.e., less sludge, less chemicals, less energy, and there is likely to be less leaching because hydraulic loading rate is less.** **Brian - Table 3.7 in WW AEE sets out several different scenarios for how this might work in stages.** **Brian - This is also addressed in the various proposed conditions. Condition 13 is a maximum nutrient loading rate: daily flow x concentration to find mass. Condition 13 applies across all stages. A change to this condition could make this clearer. Condition 19 then provides certainty in**	**Amanda made a change to proposed condition 11(c) to add (v) to ensure that the ORC is informed of the concentration of N and P to achieve the annual loading rates under Condition 13 at each stage of certification.** **Amanda made a change to Condition 13 to clarify that the requirements apply to all stages of the development.** **Amanda made a change to proposed condition 19(d) reducing P from 15 to 12 millilitres.** **Brian's explanation as to how Conditions 12, 13 and 19 are intended to work together is**	**Nil**

		providing a higher standard that applies at full development. **Tim – if fully developed and Conditions 13 and 19 conflict. Which condition will apply? Shay agreed that this could be difficult for enforcement.** **Brian – all conditions need to be met at all times.** **Tim – the proposal is seeking a high degree of flexibility with options for discharge and low degree of certainty for ORC for what is provided by the plant and then this is passed on to the ORC compliance team.** **Brian – ORC Condition 11 sets out what the compliance is at each stage.** **Rob – Condition 11c could include requirement to provide treatment plant concentration rates to achieve Condition 13 to be shown at each stage.** **All agreed that this was a beneficial change that could be made.** **Sharon – should Condition 13 say 'at all times'? All agreed that this would be a good idea.** **Sharon queried whether everyone is ok with the other standards in Condition 19?**	**provided at the end of Schedule 3.**	

		Tim and Sandy raised issues with the application of Conditions 13 and 19 as they could be seen as contradictory. **Rob and Brian – Condition 19 adds certainty.** **Sharon – is there another condition that would resolve this?** **Brian – there are three conditions that cover this already.** **Tim suggested changing Condition 19(d) to what was said in WW AEE – 10 – 12mg/L for P. Brian is happy to change this to 12mg/L.** **Shay – could there be a situation where Condition 19 is met but Condition 13 is not?** **Brian / Rob - Upgrade would need to happen or chemicals added. Table 3.7 in the WW AEE shows how this will work.** **Sharon – need to comply with both but they are linked. Does is need further explanation for the Panel?** **Rob – N loading on to the treatment area is fixed but flexibility is being provided about how to achieve this. Suggests a further table to Table 3.7 or flow chart that shows how compliance is achieved with regard to the conditions.**		

3	Fix irrigation rate at 7.1mm/d average and maximum of 8.0mm/d	**Sandy – the main concern is the steep slope heading towards Jacks Point's (JP) existing land treatment area's (LTA), with loading rates and high risk of runoff, particularly in wet weather. There is a risk of compliance issues for JP. Typically, lower rates are used on steeper slopes but this is not proposed here.** **Brian – soil investigations were undertaken to understand the hydraulic loading rate. Proposed loading on the sloping areas of more than 15% slope is 5.4mm/day.** **Sandy – is this a maximum or average rate?** **Brian – Average which means you can put at a greater depth and leave for return period which allows for more assimilation and plant root depth, better aeration and lower likelihood of growing fungus. Table 5.1 of Design Report sets out zones, depths, loadings. Steepest area is C4 and C5.** **Rob – very comfortable that the hydraulic loading will not create ponding and saturation will not be forced. The effluent applied 200 mm below ground surface will not runoff. Very conservative design.** **Sandy would like the maximum rate applies for all areas upslope of JP LTA, not just for the steep slope. Suggests 3 millilitres based on soil texture.**	**All experts agreed to an average application rate of 7.1 millilitres (maximum daily rate of 21.3 millimetres) on LTAs that are on land with slope that is 15% or less.** **Amanda has drafted a proposed amendment to Condition 5 to apply 5.4mm on an average basis to the slopes greater than 15% and a maximum of 10.8mm.** **All experts are now in agreement on the proposed irrigation rates on the basis of the above proposed change to Condition 5 and on the basis of the agreement detailed in Point 9 below.**	**Nil**

		Brian / Rob - Based on soil hydraulics, the water will go down and there is a high quality effluent being discharged. Willing to go to 5.4 millilitres on average basis. In other areas could do a 2/3 day average – 10.8mm maximum. Not able to accept 3mm. **Tim understood the reduced loading rate on the sloping land. The condition stating no ponding etc is the fallback position. The other condition about the nitrates in groundwater also provides assurance. Comfortable with the package offered, including average per day rate. If it is going to go wrong then you will see very quickly if there is an issue.**		
4	Groundwater monitoring piezometers upstream and downstream of land disposal areas, including monitoring trigger levels for further investigation	**Brian – only outstanding issue with ORC is the monitoring of the water supply bores.** **Sandy – JP still investigating one of the bores for possible water supply.** **Shay – no consent for take from JP bore lodged / granted yet.** **Brian – there will be requirements for JP to monitor the bore water quality based on number of people serviced. What is the intent on monitoring these two bores?** **Tim – abundance of caution for this monitoring. There are a couple of ways to address it, either at P6, P1 and P13, if any**	**Amanda has amended Condition 6 to add (g) to require an additional (P15) piezometer within 10-20m of Well CC11/0158 to cover water quality monitoring of both water supplies to a depth of between 35m – 45m.** **Amanda has amended Condition 6(f) to require that the piezometers are**	**Nil**

		changes then trigger to monitor the two bores, or take a precautionary approach and monitor the whole time. **Brian – access to the bores is not guaranteed given its not RCL land and not their bores. Suggests a piezometer (P15) within proximity of the JP bore on the LINZ land in close proximity to Well CC11/0158 (between 10-20m) to cover water quality monitoring of both water supplies.** **Tim confirmed this would be suitable.** **Shay – suggested additional change to Condition 6(f) to ensure that piezometers are to meet actual groundwater level. Brian and Rob agreed that this should be clarified.** **Brian ran through how the monitoring regime is set up in the conditions to ensure that RCL is required to act first where monitoring identifies an issue.** **Sandy asked what happens if RCL has already triggered the Remedial Action Plan conditions for exceeding 1.2 trigger and then Jacks Point 1.5 trigger is exceeded and JP hasn't caused it.** **Brian confirmed that this situation is covered by Condition 26 where a panel can determine who is at fault. If it is obviously RCL then Jacks Point won't need to undertake the remedial steps.**	**to a depth that reaches groundwater.** **All experts agreed with the groundwater monitoring trigger levels in the conditions.**	

		Sandy – happy with this. **Ned: Note that RCL would be triggered before Jacks Point. This acts as a mitigation offered by RCL to mitigate any potential effect on JP. This is not required from an environmental perspective but from an effects on a person perspective.**		
5	Surface water monitoring and trigger levels for further investigation	**Ned briefly outlined the proposed surface water monitoring in his memo (*Summary assessment of effects on water quality and aquatic ecology, resulting from wastewater and stormwater, during construction and in the long term, from proposed Homestead Bay housing development dated 30 August 2025* – lodged with the Panel on 19 September 2025).** **Everyone in agreement.** **Brian – the proposed conditions mirror the JP requirements. JP don't have to monitor until trigger level is reached whereas RCL are proposing monthly monitoring anyway.** **Sandy – Jacks Point protected from this monitoring by Condition 26.** **Shay – Condition 22 – is this prior to commencement of all works on the site or just wastewater?**	**Experts are in agreement that the monitoring and trigger levels are suitable as the monitoring matches JP consent requirements and expands on the frequency for monitoring of Lake Wakatipu and Māori Jack Stream. Key mitigation for Jacks Point is that RCL will need to do the monthly monitoring.** **Amanda has proposed a change to Condition 22 to clarify that the monitoring is to commence prior to**	**Nil**

		Brian / Amanda – ok with prior to earthworks.	**commencing earthworks.**	
6	Preparation of a remedial action plan where monitoring results exceed specified trigger levels	**Brian – Remedial Action Plan (RAP) is informed by the monitoring and what has caused the exceedance.** **Ned – the additional monitoring that RCL are proposing will result in more samples, more frequently at more targeted locations. The proposed monitoring improves upon the current situation. This will assist in providing better baseline data and therefore better ability to identify causes of any trigger exceedance, than is currently the case. This is of benefit to both the Applicant and the JPROA in complying with their respective conditions.**	**Everyone in agreement.**	**Nil**
7	Consideration of adaptive management for remedial action or works	**Brian - Condition 25(a) – (d) sets out a cascade of monitoring.** **Shay – if there is a non-compliance what are the options to remedy?** **Brian: The following details the likely matters for consideration of adaptive management options for remedial action:** **The plan to be developed is in response to the specific early warning triggers for nitrogen being breached via groundwater or surface water quality monitoring,**		**Nil**

		Possible actions for a groundwater quality trigger breach: • **Change irrigation regime, shorter return and increased pulsing of smaller doses of irrigation** • **Reduce WWTP N in discharge** • **Change landuse to add cut and carry** • **Add additional LTA areas** • **Implement water saving regimes to reduce flows** **Possible actions for a surface water quality trigger breach:** • **Catchment survey for source - groundwater and/or surface water** • **Identify if a point source failure of a LTA zone has occured (zone pressure and flow monitoring to identify leaks, breakage)** • **Improve WWTP levels of N, P or E.coli treatment** • **Look at catchment sediment loads** • **Improve landuse nutrient export – cut and carry** • **Improve sediment and stormwater management** • **Improve instream habitat, wetland enhancement, groundwater or surface water treatment** **The conditions set out the adaptive management, which duplicates the requirements for Jacks Point, while starting with an earlier (lower) environmental trigger than Jacks Point. Ongoing monitoring of groundwater and surface water will provide additional baseline and current-state information to inform future remedial actions.**		

		The adaptive management and compliance starts at the WWTP and the Zone nutrient loading: ○ **Monthly and annual assessments of WWTP N concentration, and Zone N and P loads** ○ **Monthly monitoring of Surface water** ○ **Quarterly monitoring of Groundwater up and down gradient** ○ **Soil quality monitoring shallow and at depth** **First trigger is groundwater upgradient and downgradient, not exceeding a difference of 1.2 mg/L.**		
8	Non-compliance in the proposed disposal fields resulting in the contamination or compromise of JPROA's water supply from Lake Wakatipu	**Brian/Rob – no change to the risk compared to existing situation (agriculture). Animals being removed from the land and replacing with highly treated wastewater.** **Sandy – agree with this.** **No issues from Council.** **Brian explained that the current JPROA water take directly from the lake is subject to varying levels of contaminants from the catchment, from farming runoff, onsite wastewater discharge, and JPROA's own discharges. These existing risks mean that a high level of treatment is required for the surface water take. The addition of RCL's LTA area into the catchment and reduction in farming does not change the risk that the JPROA's lake water supply currently faces. It is LEI's opinion that JPROA will not**	**Everyone in agreement.**	**Nil**

		require additional treatment equipment or quality standards for their drinking water supply following the development of RCL's proposed scheme.		
9	Suitability and sufficiency of proposed disposal areas for land application, including land slope, drainage, and buffer requirements	**Sandy – the land on which the wastewater is to be disposed has variable slopes and some of it is quite steep – 5-25%. Steep slopes should have a reduced application rate. There is an ephemeral water course that runs between the LTA's. Wastewater disposal poses a risk to the ephemeral water course in terms of bacteria and nutrients and also to the JPROA LTA. Setbacks from the surface waterbody should be applied.** **Brian - Application rate for steeper area has been reduced to 5.4 millilitres and this application rate is well within the hydraulic capacity of the soil to absorb. Maximum 10.8 millilitres has now been proposed in the conditions to apply to areas of slope greater than 15%. Drippers are 200mm below the surface. For treated wastewater to arrive at the surface, it will have flowed through at least 0.5m of soil – this should result in 3 log reduction in bacterial content therefore a significant reduction in bacteria anyway if the water moves laterally.** **Ned – the ephemeral streams being referred to by Sandy are grassed swales with very low aquatic habitat values.** **Sandy - Is it possible to apply dripper lines to the slopes?**	**All experts agreed that a condition requiring a 10m buffer from the ephemeral water courses below Jacks Point (including toe of slope area) for LTA's would mitigate the potential contamination effects on surface water. LEI has prepared a plan showing these proposed 10m buffer areas and this is attached to the JWS. Amanda has proposed changes to Condition 6(b) to cover this.** **All experts agreed with the land application rates on both the sloping land and all remaining land as set out in the**	**Nil**

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<td>Brian – all LTAs are able to be driven over by a tractor so all LTA’s are feasible for dripper lines to be installed.</td>
<td>amended Condition 5 is suitable subject to the above condition for buffers.</td>
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<td>10</td>
<td>Extent of disposal area required for 1438 dwellings only</td>
<td>Brian – 10.4ha – 28.5ha needed for LTA for 1,438 lots. This range is influenced by WWTP quality and hydraulic loading rate to meet N and P loading rates and flow per lot.

Table for flow 1,438 dwellings

<table>
<tr><th>Scenario</th><th>low flow high quality</th><th>High flow, low quality</th></tr>
<tr><td>Flow (L/Lot/day)</td><td>520</td><td>750</td></tr>
<tr><td>WWTP Nitrogen quality (mg/L)</td><td>7.5</td><td>14</td></tr>
<tr><td>Area (ha) to meet an average of 193 kg N/ha/yr</td><td>10.6</td><td>28.4</td></tr>
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<td>All experts agree that the calculation is correct.</td>
<td>Nil</td>
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<td>11</td>
<td>Removal of RCL's proposed disposal area</td>
<td>Sandy – including the overlap area will cause problems with meeting the nutrient requirements in terms of whole</td>
<td>Amanda has added a condition to the</td>
<td>Sandy - The proposed overlap by RCL of</td>
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	that overlaps with JPROA's primary irrigation area	**system design compliance. JPROA want this overlap area to be removed.** **Brian provided the following detail:** **From a technical point of view, the overlapping M area is assessed as being suitable for land treatment. The JPROA's consent already allows up to 12 mm/day to be applied here; it is more the access to use of area M that is the issue with this area. This is a legal and commercial matter. The access to area M is not considered necessary for the full development to be serviced.** **If Area M is not being used, the treatment area will have to work harder but output will still need to meet 193kg N/hectare/year condition (13). Expected flows are around 520L but have used 750L for the Design report to be consistent with the QLDC Code of Practice. QLDC however have used 600L for the Southern Corridor Structure Plan assessment.** **This area (M) is not planned as an initial area to be implemented in response to subdivision development flows. If Area M were never to become available, this would have a limited effect on the overall size of the scheme. Area M would only be needed where the full subdivision development's average daily flow exceeds**	**proposed ORC administered conditions that RCL will not use this overlapping land if JP are using it. Experts agree that the new condition (37) means that the overlapping area cannot be used twice.**	**easement XQ DP380128 poses a risk to the JPROA consented treated effluent land disposal area and the ability to discharge treated effluent into the ground. JPROA preference is that the overlap is removed from the proposed land disposal area as there is a risk of conflicting use.** **Proposed Condition 37 requiring surrender of the easement by JPROA prior to utilisation of the area by RCL reduces the risk and proves greater confidence to JPROA and reduces the risk of conflicting use**

		1,600m^3/day and which is only likely if the flows per lot were at the QLDC CoP level of 750 L/DE/day. **Flow per lot is expected to be 520 to 600 L/DE/day, so it is unlikely that Area M will be required to enable the development of the final stage/s. The full development dry weather flow is expected to peak at 1,300 to 1,500 m^3/day.** **Lower flow results in lower leaching loss and reduced effects. Since preparing the AEE, QLDC's reporting (undertaken by BECA) has shown that that the southern corridor is likely to have a dwelling unit equivalent (DUE) flow of 600 L/due/day, which is 20% lower than the assessed flows for the proposal.** **The measured flow at Hanley farm is 520 L/DUE/d and RCL proposed conditions require actual flows to be used for the area and loading rates of future stages with a minimum of 5 ha at day one.** **The staged development of the subdivision and the phased certification of LTA area, based on flow, provides the protection that if Area M was never available, the subdivision flow could not exceed a DWF of around 1550 m^3/day. As mapped there is a total of 29.735 ha with area M. Less Area M of 4.55 ha leaves 25.185 ha. After deducting 10% for reserve area, 22.66 ha remain. This equates to total subdivision flow of 1,586 m^3/day at 7 mm/day, at 600**		

		L/due/day, this is equivalent to 2,644 lots. This exceeds the proposed total of 2,531 lots. **Brian's calculations still demonstrate that there is enough land and technical feasibility to comply with the conditions that are being proposed without the overlapping area, including providing the 10% reserve area. The protection in the conditions requiring certification of each stage will ensure compliance.** **Tim – happy with that approach. Odd to have overlapping discharge areas.** **Amanda clarified that there is no intent for Area M to be used by RCL if Jacks Point are using it. Proposed QLDC condition states that the JP easement area will not be used unless the easement is surrendered or JP wont be using the area. The same condition can be included in the ORC conditions to provide this certainty.**		
12	Storage or other management requirements for avoiding surface ponding and runoff		**Experts agree that the above previously agreements in 3 and 9 address this matter.**	**Nil**

13	Wet weather risks for I/I plus increased runoff risk from steep slopes in Areas 1 & 2		**Experts agree that the above previously agreements in 3 and 9 address this matter.**	**Nil**
14	The risk to JPROA's water supply from the frequent flow of overland flow paths		**Experts agree that the above previously agreements in 3, 8 and 9 address this matter.**	**Nil**
15	Condition 29 requires no ponding or runoff. Proposed French Drains indicate ponding, and runoff is expected which is non-complying	**Rob – ponding and lateral flow are not anticipated and there is a proposed condition (35) to this effect. Happy for the French drains to be removed as they were only to provide comfort and were not required to manage potential adverse effects.**	**French drains were included in the application to provide comfort to Jacks Point that overflows will be intercepted if they occurred, even though they were not expected and were not considered to be needed for the design. With the changes now proposed to the conditions, all experts agree that the French drains can be removed. There are no**	**Nil**

			changes to the proposed conditions in this regard.	
16	Identification of reserve disposal areas	**Brian – the 29.735ha (as shown in the drawing referenced in condition 6(b) and contained in Appendix R of the application) incorporates all of the LTA's including the 10% reserve area. Certification under Condition 8(e) will occur at each stage showing that there is a 10% reserve.** **At the initial stage there will be 5ha of LTA and the remainder is reserve area. As each stage proceeds this will be checked through the certification process by ORC.** **The 10% reserve area is embodied in the design already.**	**All experts agree that the certification process under Condition 8(e) will address this.**	**Nil**
17	Condition 28 only requires servicing 12 monthly. Suggestion to increase frequency to a minimum of 3 monthly servicing		**This has been agreed by all experts. Condition has already been updated by the Applicant in the set provided to the Panel on 14 November.**	**Nil**
18	Potential mitigation measures for the cultural effects of discharges, including mauri disruption	**Kā Rūnaka have living intergenerational interests in this landscape, both historic and for future generations. We hold to our position that we do not wish to see any discharge of waste into this whenua or wai, including puna, streams, tributaries, the lake or rivers. We consider any discharge to land or water, either at site or after treatment**		**Kā Rūnaka consider that the disruption of the mauri of the wai cannot be mitigated.**

		at a wastewater treatment plant, to be a disruption to the mauri of the wai. Such impacts cannot be mitigated. **Amanda pointed out that there is unlikely to be the ability to discuss this matter further today. The Applicant has a Process Agreement with Kā Runaka and this agreement to continue to engage on these matters is enduring. The Applicant and Kā Runaka are continuing to discuss this separately to the Fast Track process.**		

Brian's further detail below addressing JWS Topic 2: Treated effluent standards prior to discharge to ground for BOD_5, TSS, TN, TP, and E. coli, including hydraulic application rate and mass loading limits

Structured Process for Meeting Consent Conditions in staged Subdivision Development

How conditions 12, 13 and 19 work together to provide a comprehensive package of limits to mitigate the potential adverse effects.

Proposed conditions 12, 13 and 19 state:

12 The annual total nutrient loading of the land treatment area shall at full development average:

a) Nitrogen 193 kg N/ha/yr across the total required ~~28.5ha~~ LTA and not exceed 220 kg N/ha/yr in any LTA.

b) Phosphorus 64 kg P/ha/yr across the total required ~~28.5ha~~ LTA and not exceed 73 kg N/ha/yr in any LTA.

13 The annual nutrient loading to the land treatment area must not exceed the following limits at all stages of the development:

Nitrogen

a) *220 kg N/hectare/year for cut and carry landuse;*

b) *150 kg N/hectare/year for grazing or cut and leave, landscape planting;*

Phosphorus

c) *73 kg N/hectare/year for cut and carry landuse;*

d) *64 kg N/hectare/year for grazing or cut and leave, landscape planting;*

Advice note: The land treatment area nutrient loading rate of 193 kg N/ha/yr and 64 kg P/ha/yr is calculated based on the daily flow data collected under Condition 16 multiplied by the Total Nitrogen or Total phosphorus sampling collected under Condition 19 of this consent and divided by the Land Treatment area utilised at that time. At a design flow of 2,005 m^3/day average dry weather flow, to achieve Total nitrogen load of 193 kg N/ha/yr or less, the average Total nitrogen concentration equals 7.5 milligrams per litre. To achieve a Total phosphorus load of 64 kg P/ha/yr or less, the average Total phosphorus concentration equals 2.5 milligrams per litre.

19 *The quality of the wastewater samples collected from the outlet of the wastewater treatment system before the wastewater is discharged to any land treatment area, as required by Condition 21~~16~~, must not exceed the lesser of the concentration calculated in Condition 11 c (v) to meet the annual mass loading or the following 12 month rolling mean limits:*

a) *20 milligrams per litre of biochemical oxygen demand (5 day);*

b) *20 milligrams per litre of total suspended solids;*

c) *25 milligrams per litre of total nitrogen;*

d) *~~15~~ 12 milligrams per litre of total phosphorus;*

e) 1,000 colony forming units per 100 millilitres of Escherichia coli (rolling 12-month geometric mean).

Condition 19 provides a minimum level of treatment the system must achieve, and the concentration required from the WWTP plant for compliance. The compliance level will change as each stage is certified and implemented.

The concentration from the WWTP ensures the zone's nutrient loading rate is achieved.

At full development and at 750 L/lot flow, a concentration of 7.5 mg/L for Nitrogen and 2.5 mg/L for phosphorus is required to meet the mass loading condition.

Subdivision Development Consent Compliance Process at each stage.

The steps to ensure subdivision development complies with consent conditions, focusing on land area sufficiency, irrigation, nutrient loading, and treatment requirements. The process is designed for RCL and regulatory authorities to address and administer.

1. Subdivision Development Flow to Date (m^3/day)
   Establish the current + proposed wastewater flow used for compliance checks.

2. Review progression & documentation
   Confirm the stage, drawings, certification, and any prior adjustments that affect land treatment use.

3. LTA sufficiency vs. irrigation requirement (Condition 5)
   Check that mapped Land Treatment Area (LTA) can meet the required irrigation depth for the current + proposed stage and that ≥10% mapped LTA remains available as operational reserve.

   - If No → take one or more actions: add LTA zones, implement water-saving measures; then reassess sufficiency of the area.

   - If Yes → proceed to nutrient assessment.

4. Calculate nutrient concentration to achieve zone N and P loading at the irrigation rate for use in Condition 19 compliance.

Calculate nitrogen (N) and phosphorus (P) loading rates at the minimum WWTP treatment level for the total flow (current + proposed). Zone-specific nutrient limits (Condition 13)

- If too high → increase WWTP treatment level or increase LTA area; reassess until limits are met and check average loading.

Annual compliance monitoring

1. Is the treatment plant meeting the quality limits in condition 19 with reference to condition 11?
2. Is the LTA area nutrient loading achieved for each landuse (condition 13)?
3. Is the average nutrient loading rate achieved (condition 12)?
4. Is the irrigation rate less than condition 5?

All conditions must be complied with to achieve compliance.

Tables below showing nitrogen as an example, as to how the different wastewater treatment plant quality and Lot Flow rate affect the land treatment area needed for varying levels of subdivision development. All examples meet the average nitrogen location rate of 193 kg N/ha/yr for different combinations of flow, quality, lots number and land treatment area.

Example set one based on 750 L/lot

	Example WWTP and LTA combinations QLDC 750 L/lot/day							
WWTP	Example 1	Ex 2	Ex 3	Ex 4	Ex 5	Ex 6	Ex 7	Ex 8
Design Flow Rate (m3/day) (750 L/lot)	375	375	750	750	1,078	1,079	1,898	1,898
Lots developed	500	500	1,000	1,000	1,438	1,438	2531	2,531
Nitrogen concentration at WWTP (mg/L)	25	15	10	7.5	14	7.5	10	7.5

Nitrogen mass (kg/yr)	3,422	2,053	2,738	2,053	5,511	2,952	6,929	5,196
Area required to meet 193kg N/ha/yr	17.7	10.6	14.2	10.6	28.6	15.3	35.9	26.9
Total LTA with 10% reserve	19.5	11.7	15.6	11.7	31.4	16.8	39.5	29.6
Hydraulic loading mm/day	2.1	3.5	5.3	7.1	3.8	7.1	5.3	7.1

Example set two based on 600 L/lot

	Example WWTP and LTA combinations QLDC 600 L/lot/day							
WWTP	Example 1	Ex 2	Ex 3	Ex 4	Ex 5	Ex 6	Ex 7	Ex 8
Design Flow Rate (m3/day) (600L/lot)	300	300	600	600	863	863	1519	1,518
Lots developed	500	500	1,000	1,000	1,438	1,438	2,531	2,531
Nitrogen concentration at WWTP (mg/L)	25	15	10	7.5	15	10	10	7.5
Nitrogen mass (kg/yr)	2,738	1,643	2,190	1,643	4,724	3,149	5,543	4,157
Area required to meet 193kg N/ha/yr	14.2	8.5	11.3	8.5	24.5	16.3	28.7	21.5
Total LTA with 10% reserve	15.6	9.4	12.5	9.4	26.9	17.9	31.6	23.7
Hydraulic loading mm/day	2.1	3.5	5.3	7.1	3.5	5.3	5.3	7.1

Proposed Conditions - Wastewater

Conditions administered by ORC

Wastewater Discharge to Land (RMFT25.003.10)

Specific

1 This consent authorises the discharge of treated wastewater to land from the Homestead Bay subdivision.

2 The activities authorised by this consent must be undertaken in accordance with the plans and all information submitted with the application. If there are any inconsistencies between the application information and the conditions of this consent, the conditions of this consent will prevail.

3 This consent must be exercised in conjunction with Discharge Permit RMFT25.003.11.

4 The total volume of wastewater discharged shall not exceed:

a) 3,974 cubic metres per day; or
b) a 30 day average of 2,005 cubic metres per day.

5 The rate of application shall not exceed ~~a 30 day average of:~~

(a) A 30 day average of 5.4 millimetres per day, and a maximum rate of application of 10.8 millimetres per day across each land treatment area that contains a slope of greater than 15%; and
(b) A 30 day average of 7.1 millimetres per day, ~~averaged~~ and a maximum rate of application of 21.3 millimetres per day across all other ~~the~~ land treatment areas.

Commented [AL1]: JWS topic 3 - Fix irrigation rate...

~~5~~6 Prior to receiving any wastewater, the treatment and land application system shall comprise as a minimum:

a) Wastewater Treatment plant providing primary, secondary and tertiary treatment;
b) Land treatment areas with an initial minimum area of 5 ha available, within the areas shown on 'Proposed Reserves to Vest and Indicative Wastewater Areas' prepared by Patersons, Drawing No Q7557-009, Sheets 001 – 010, Rev 0, dated 10 April 2025 and a 10m setback area for all land treatment areas from the ephemeral streams on Lot 12 shown on the LEI plan "Proposed LTA Area: Jacks Point Lot 12 Ephemeral Stream Buffer", dated 20.11.25 to come;
c) Subsurface pressure compensating drip irrigation buried to a depth greater than 200 millimetres below the ground surface;
~~d)~~ Dripper lines at a maximum of 1 m spacing and emitters spaced at a maximum of 0.6 m centres in accordance with best management practices and supplier recommendations at 1.6 litres per hour per emitter;
e) Management of the land treatment areas can be via a cut and carry, cut and leave, light sheep grazing, and native plantation management regime; and

Commented [AL2]: JWS topic 9 - Suitability and sufficiency of proposed disposal areas for land application...

f) Installation of the groundwater monitoring piezometers labelled P1, P5, P6, P7 and P8 shown on the plan titled: "Monitoring" prepared by Lowe Environmental Impact, dated 17.09.2025 (or as otherwise agreed by the Otago Regional Council) to a depth that intercepts and screens the regional aquifer.

g) Installation of a further groundwater monitoring piezometer to be referred to as P15 to monitor water quality effects on Bore F42/0150 and Well CC11/0158. This piezometer is to be located within 10-20m of Well CC11/0158 and to be at a depth of between 35m – 45m to intercept the regional aquifer.

Commented [AL3]: JWS topic 4 - Groundwater monitoring piezometers upstream....

~~6~~7 Following the initial installation in Condition 6, the wastewater treatment plant and land treatment area may be developed in stages aligning with the development of the Homestead Bay subdivision accommodation units, commercial and retail buildings, and community facilities.

~~7~~8 No less than 15 working days prior to each new stage of subdivision commencing the following details are to be submitted to the Otago Regional Council for certification:

a) The quantity of wastewater generation from and the number of lots occupied for the preceding stages and the wastewater quality discharged from the wastewater treatment plant.
b) Identification of sufficient land treatment area for the proposed stage to allow for an average rate of discharge of between 5-8 mm/day for dry weather flow.
c) Details of the vegetation management regime for the additional land treatment areas.
d) Details of the monitoring bore locations for the land treatment area within that new stage and if new bore(s) are required, details of new bore locations to be drilled as aligned with plan titled: "Monitoring" prepared by Lowe Environmental Impact, dated 17.09.2025 or as otherwise agreed by the Otago Regional Council
e) Confirmation that the total land treatment area available maintains a discharge area capacity that is 10% larger than required to apply the average measured daily flow at a rate of 7.1 mm/day for the total current and proposed development area serviced (including the preceding number of lots created within the subdivision) at the same measured average daily flow per lot.

Commented [AL4]: JWS topic 2 - Treated effluent standards prior to discharge....

~~8~~9 The land treatment area shall not be used:

a) For roading whether sealed or unsealed;
b) As a hardstanding area;
c) For erecting buildings or any non-effluent systems structures;
d) For activities that require intensively manage grass surfaces (e.g. grass tennis courts or bowling greens or golf tees and greens); and
e) For grazing stock other than sheep.

~~9~~10 The land treatment areas shall be located in Lot 8 Deposited Plan 443832 and Lot 12 Deposited Plan 364700 within the areas marked for land disposal on 'Proposed Reserves to Vest and Indicative Wastewater Areas' prepared by Patersons, Drawing No Q7557-009, Sheets 001 – 010, Rev 0, dated 10 April 2025.

~~10~~11 Prior to commissioning the treatment and disposal system for each stage of the subdivision, the Consent Holder must supply the Otago Regional Council with a Producer Statement 4, Code Compliance Certificate or Certificate of Acceptance, certifying that the treatment and

disposal system has been installed. These must include, but are not limited to, the following for the new stage being commissioned:

a) plans of the treatment system described in Condition 6 of this consent;
b) plans of the land treatment area clearly showing all the irrigation zones;
c) details of the area of each zone,
   i. The design application rate
   ii. The nitrogen loading rate
   iii. The phosphorus loading rate
   iv. Land management regime
   ~~iv.~~v. The 12 month average c~~C~~oncentration of nitrogen and phosphorus from the WWTP to achieve the annual loading rates stipulated in Condition 13
d) confirmation that the total installed and operational land treatment area is sufficient to meet Condition 8(e) application depths for the total commissioned treatment plant capacity;
e) photographs of each of the new irrigation zones; and
f) the monitoring bore locations installed for that stage (if additional).

12 The annual average total nutrient loading of the land treatment area shall at full development average:

a) Nitrogen193 kg N/ha/yr across the total required ~~28.5 ha~~ LTA and not exceed 220 kg N/ha/yr in any LTA.
b) Phosphorus 64 kg P/ha/yr across the total required ~~28.5 ha~~ LTA and not exceed 73 kg N/ha/yr in any LTA.

13 The annual nutrient loading to the land treatment area must not exceed the following limits at all stages of the development:

Nitrogen
a) 220kg N/hectare/year for cut and carry;
b) 150kg N/hectare/year for grazing or cut and leave, landscape planting;

Phosphorus
c) 73 kg N/hectare/year for cut and carry;
d) 64 kg N/hectare/year for grazing or cut and leave, landscape planting;

***Advice note**: The land treatment area nutrient loading rate of 193 kg N/ha/yr and 64 kg P/ha/yr is calculated based on the daily flow data collected under Condition 16 multiplied by the Total Nitrogen or Total phosphorus sampling collected under Condition 19 of this consent and divided by the Land Treatment area. At a design flow of 2,005 m³/day average dry weather flow, to achieve Total nitrogen load of 193 kg N/ha/yr or less, the average Total nitrogen concentration equals 7.5 milligrams per litre. To achieve a Total phosphorus load of 64 kg P/ha/yr or less, the average Total phosphorus concentration equals 2.5 milligrams per litre.*

Performance Monitoring

14 Prior to commissioning the land treatment system, the land treatment areas shall be marked out by any means that ensure the extent of the areas are identifiable on the ground surface and shall remain marked out for the term of the consent.

Commented [AL5]: JWS topic 2 - Treated effluent standards prior to discharge.....

Commented [AL6]: JWS topic 2 - Treated effluent standards prior to discharge

Commented [AL7]: JWS topic 2 - Treated effluent standards prior to discharge

15 The Consent Holder must follow the process set out below for any plans, documents, designs or specifications (hereafter referred to as 'documents') requiring written certification from the Otago Regional Council:

a) Documents requiring written certification must be submitted to the Otago Regional Council in electronic form, or in hard copy form if requested, within the timeframe specified in the relevant condition.
b) Works to which the documents relate must not commence until the Consent Holder has received written certification from the Otago Regional Council.
c) If the Otago Regional Council's response is not able to certify the documents, the reasons and recommendations are to be provided in writing and the Consent Holder must consider the Council's reasons and recommendations and resubmit amended documents for written certification.
d) If provided for in conditions, certified documents may be amended at the request of the Consent Holder subject to written recertification undertaken in accordance with Conditions (a) to (c) with references in those clauses to certification to be read as recertification.

Advice Note: The written certification process is confined to confirming that the documents adequately give effect to the relevant condition(s).

16 The Consent Holder must:

a) Prior to the first exercise of this consent, install:
    i. a suitable water meter to record the discharge rate and volume take, within an error accuracy range of +/- 5% over the meter's nominal flow range at the point wastewater is discharged from the wastewater treatment plant; and
    ii. a telemetry compatible datalogger that time stamps a pulse from the flow meter at least once every 15 minutes and that has the capacity to hold at least 12 months data of wastewater discharged.
b) The water meter must record the hourly volume to an uncertainty of no greater than 1 percent.
c) Data must be provided by an Otago Regional Council-approved data host to the Otago Regional Council once daily in 15-minute period volumes by means of telemetry. The Consent Holder must ensure data compatibility with the Otago Regional Council's time-series database and conform with the Otago Regional Council's data standards.
d) The water meter, datalogger and telemetry unit must be installed by a Otago Regional Council-approved installer and installed and maintained according to the manufacturer's specifications and instructions. There must be enough space in the pipe to allow for verification of the accuracy of the meter under part (e) of this condition.
e) Within 20 working days of the installation of the wastewater discharge measuring system and within 20 working days of any subsequent replacement of any part of the wastewater discharge measuring system, the water meter must be verified for accuracy.

i. If a mechanical insert water meter or clamp on ultrasonic meter is installed it must be verified for accuracy each and every year from the first exercise of this consent.

ii. If an electromagnetic or built-in ultrasonic flow meter is installed it must be verified for accuracy every five years from the first exercise of this consent.

iii. Each verification must be undertaken by a Consent Authority approved operator and a Water Measuring Device Verification form (Form RS1) must be completed and submitted to the Consent Authority within 5 working days of the verification being performed, and at any time upon request.

iv. The Consent Holder must have a measuring device reverified by a Consent Authority approved operator within 30 working days if a measuring device does not meet the verification requirements. The reverification must include an explanation of what changes were undertaken to the measuring device prior to any subsequent test(s).

v. The Consent Holder must verify the correct pulse rate output is used if a correction is completed and submit this to the Consent Authority within 5 working days of the correction.

f) The Consent Holder must ensure the full operation of the wastewater discharge measuring system at all times during the exercise of this consent. All malfunctions of the water meter and/or datalogger and/or telemetry unit during the exercise of this consent must be reported to the Consent Authority within 5 working days of observation. Appropriate repairs must be performed within 30 working days of observation of the malfunction or within a timeframe agreed with the Consent Authority.

g) Once the malfunction has been remedied, a copy of the calibration record, Water Measuring Device Verification form (Form RS1) with photographic evidence and any non-transferred data must be submitted to the Consent Authority within 5 working days of the completion of repairs. Photographs must be in colour and be no smaller than 200 X 150 millimetres in size and be in JPEG form.

***Advice Note**: The water meter, data logger and telemetry unit should be safely accessible by the Otago Regional Council and its contractors at all times. The Water Measuring Device Verification Form and Calibration Form are available on the Otago Regional Council's website.*

17 Prior to commissioning the treatment and land treatment system, the consent holder shall establish adequate facilities and access for wastewater quality sampling, such as a hand operated tap/valve that is on the outlet pipe from the treatment system before the wastewater discharges to the land treatment area.

18 Within three months of the exercising of this consent, and thereafter annually, the consent holder shall obtain representative samples of the groundwater from the monitoring bores:

Sample location	Parameters	Monitoring Frequency
The groundwater from bores P1, P3, P4, P5, P6, P7 and P8 and bores	(a) Nitrate nitrogen *(b) Escherichia coli*	January, April, July and October each year

added under Condition 5(d)	(c) Groundwater levels	

The results of these samples shall be reported to the Otago Regional Council annually. If the Consent Holder is not granted permission to establish or sample from bores P3, P4 or P14 or loses access to the site/s at any time during the exercise of this consent, the Consent Holder is not required to collect a sample from those monitoring bores. An alternative sampling location may be proposed and agreed by the Otago Regional Council.

19 The quality of the wastewater samples collected from the outlet of the wastewater treatment system before the wastewater is discharged to any land treatment area, as required by Condition 21~~76~~, must not exceed the lesser of the concentration calculated in Condition 11 c (v) or the following 12 month rolling mean limits:

a) 20 milligrams per litre of biochemical oxygen demand (5 day);
b) 20 milligrams per litre of total suspended solids;
c) 25 milligrams per litre of total nitrogen;
d) ~~15~~ 12 milligrams per litre of total phosphorus;
e) 1,000 colony forming units per 100 millilitres of Escherichia coli (rolling 12-month geometric mean).

Commented [AL8]: JWS topic 2 - Treated effluent standards prior to discharge...

Commented [AL9]: JWS topic 2 - Treated effluent standards prior to discharge...

20 Following the first exercise of the consent:

(a) The consent holder shall notify the Otago Regional Council within 7 days of receiving the groundwater monitoring results required by Condition 18 if the average nitrate-nitrogen concentration within the down-gradient monitoring bores P1, P3, P5, P6 is 1.2 milligrams per litre or greater than the average of up-gradient monitoring bores P4, P8 and P11, or if the *Escherichia coli* concentrations are greater than 1 coliform unit per 100 millilitres.

(b) If there is an exceedance of Condition 20(a), the consent holder shall investigate and submit a written report to the Otago Regional Council within 30 days of receiving notice of the exceedance outlining the likely reasons for the exceedance and methods to reduce the adverse effect (e.g. disinfecting the effluent prior to discharge, increasing the size of the land application areas).

(c) If the downgradient Bore P1 shows an annual (January to December) median increase of 1.2 milligrams per litre of nitrate-nitrogen above the upgradient Bore P4 then the following ecological studies must be undertaken:

a) An ecological study on Maori Jack Stream during the next summer period after the reported increase at the location between the Mid Stream Point and the Lower Stream Points shown on the plan titled: "Monitoring" prepared by Lowe Environmental Impact, dated 17.09.2025. The study must be undertaken during the months of November to February being the same as the baseline study in report required by Condition 20(a)c Jacks Point Consent RM2009.312.V1 e3Scientific (2020) "Baseline Study 2022" appended to this consent. The ecological study

must be undertaken by a suitably qualified and experienced freshwater ecologist. The study must include monthly water quality sampling (November to February inclusive) at two locations, if the Maori Jack Stream is flowing. The samples must be analysed for:

- Escherichia coli;
- Total phosphorus,
- Dissolved reactive phosphorus
- Total nitrogen; and
- Dissolved inorganic nitrogen.

ii) An ecological study of the Lake Wakatipu lake margin during the next summer period after the reported increase at the location shown on the plan attached as Appendix 3 to this consent. The study must be undertaken during the months of November to February being the same as the Baseline Study. The study must be undertaken by a suitably qualified and experienced freshwater ecologist. The study must include monthly water quality sampling (November to February inclusive) for:

- Chlorophyll-a;
- Water clarity;
- Escherichia coli;
- Total phosphorus;
- Total nitrogen;
- Calculation of Lake Trophic Level Index (TLI).

(d) If the monitoring undertaken in accordance with Condition 20(c) shows that:

i. The average TLI difference between the Baseline Study 2022 and the most recent monitoring period has increased by one TLI score; or

ii. More than 20 percent of the samples at the lake margin exceed the following parameter limits:
- Water clarity – 3 nephelometric turbidity units;
- Escherichia coli – 10 coliform forming units per 100 millilitres;
- Total phosphorus – 0.005 milligrams per litre;
- Total nitrogen – 0.1 milligrams per litre; or

iii. More than 20 percent of the samples in Maori Jack Stream exceed the following parameter limits:
- Escherichia coli - 14 coliform forming units per 100 millilitres;
- Total phosphorus - 0.139 milligrams per litre,
- Total nitrogen - 0.636 milligrams per litre; or

iv. Any of the lake chlorophyll-a, total nitrogen, total phosphorus or dissolved reactive phosphorus attribute states as detailed in the NPS- FM2020 have decreased from the Baseline Study 2022.

Then the consent holder must prepare and implement a Remedial Action Plan in accordance with Condition 25 and prepare a report for the Otago Regional Council by 31 August of the same year as the breach. The report must be prepared by an

appropriately qualified and experienced freshwater ecologist. The report must include, but is not limited to:

- Changes in the nutrient concentrations in the monitoring bores;
- Changes in nutrient concentrations or ecological conditions in Maori Jack Stream;
- Chlorophyll-a levels in the lake margin and potential for phytoplankton bloom;
- Comparison of parameters to relevant guidelines.

21 Following the commissioning of the treatment and land treatment system, the consent holder shall in any one day of January, March, May, July, September and November each year, obtain representative samples of the treated wastewater from the tap/valve installed under Condition 17 of this consent. The samples shall be analysed for the following parameters and results submitted with the annual report required by Condition 29:

a) Biochemical oxygen demand (BOD_5);
b) Total suspended solids;
c) Total nitrogen;
d) Total phosphorus;
e) Escherichia coli; and
f) pH.

22 Prior to commencing ~~construction~~ earthworks approved by RMFT25.003.01, the following surface water quality monitoring programme shall commence in Māori Jack Stream and Lake Wakatipu:

Commented [AL10]: JWS topic 5 - Preparation of a remedial action plan....

a. Monthly sampling of Māori Jack Stream at the two locations shown on the plan titled: "Monitoring" prepared by Lowe Environmental Impact, dated 17.09.2025 The "Lower" site is for monitoring attainment of water quality criteria defined in condition 20(c) below. The "Mid" site is to provide a dataset that may assist with understanding nutrient transport and transformation processes occurring in the anaerobic wetland mid-section of Māori Jack Stream, hence potentially assisting future interpretation of results and reporting when acting in accordance with conditions requiring an Assessment Report (Condition 22(c)) and a Remedial Action Plan (Condition 25). Sampling of the "Lower" site need only occur if, at the time of each monthly field visit, there is continuous connected surface water flowing in the lower-most 100m of Māori Jack Stream down to the landward edge of the gravel beach barrier, but not necessarily through the barrier to Lake Wakatipu. Sampling of the "Mid" site need only occur if, at the time of each monthly field visit, there is surface water present at the site. The samples must be analysed for:

i. *Escherichia coli; (at the lower site only)*
ii. Total phosphorus,
iii. Dissolved reactive phosphorus
iv. Total nitrogen;
v. Nitrate-nitrogen;
vi. Ammoniacal nitrogen;
vii. Total Kjeldahl nitrogen; and
viii. Dissolved inorganic nitrogen.
ix. Dissolved metals (copper, lead, zinc) at the lower site only
x. pH; and
xi. Conductivity

b. If the Consent Holder is not granted permission to sample from the "Mid" site or loses access to the site at any time during the exercise of this consent, the Consent Holder is not required to collect a sample.

c. Monthly sampling of the Lake Wakātipu lake margin at three locations 5 metres from the lakeshore at 0.5 metres depth, at the locations shown on the plan titled: "Monitoring" prepared by Lowe Environmental Impact, dated 17.09.2025. Only the central of the three Homestead Bay waterfront site (SMP5) needs to be sampled for dissolved metals as indicated below. The samples must be analysed for:

    i. Chlorophyll-a;
    ii. Water clarity;
    iii. Escherichia coli;
    iv. Total phosphorus;
    v. Total nitrogen;
    vi. Nitrate-nitrogen;
    vii. Ammoniacal nitrogen;
    viii. Total Kjeldahl nitrogen;
    ix. Calculation of Lake Trophic Level Index (TLI);
    x. Dissolved metals (copper, lead, zinc) – at the one central site only (SMP5) on Homestead Bay waterfront;
    xi. pH and;
    xii. Conductivity.

d. For each monthly field visit the following conditions must be recorded as a minimum:

    i. Date and time samples taken;
    ii. Weather conditions including wind speed at time each sample is taken, as recorded at near real time on Otago Regional Council's website for the mid-lake Wakatipu monitoring buoy "Open Water 10m" site;
    iii. Preceding general weather conditions over the week prior to sampling including general description of rainfall in that week;
    iv. Description and photograph of each sampling site and the state of the gravel beach barrier at the mouth of Māori Jack Stream to Lake Wakatipu.

23 The field observations and laboratory results for Condition 22 must be compiled into a spreadsheet at least quarterly and made available to the Otago Regional Council annually, and at any other time on request from the Otago Regional Council. The spreadsheet file must also contain a copy of these resource consent conditions, sampling location plans and sufficient descriptive detail to enable a suitably qualified scientist to understand the raw data being made available.

24 If the monitoring undertaken in accordance with Condition 22 shows that:

a. More than 20 percent of the samples collected at the lake margin sites, in any single year or over a rolling 5-year period, exceed the following parameter limits:

    i. Water clarity – 3 nephelometric turbidity units;
    ii. *Escherichia coli* – 10 coliform forming units per 100 millilitres;
    iii. Total phosphorus – 0.005 milligrams per litre;

iv. Total nitrogen – 0.1 milligrams per litre;
v. Ammoniacal nitrogen – 0.01 milligrams per litre; or
vi. Dissolved copper - 0.00047 milligrams per litre (ANZG DGV 95%);
vii. Dissolved lead - 0.0034 milligrams per litre (ANZG DGV 95%);
viii. Dissolved zinc - 0.0041 milligrams per litre (ANZG DGV 95%); or
ix. pH – compliant if in range 5.5-8.5.

b. More than 20 percent of the samples in Māori Jack Stream exceed the following parameter limits:

i. *Escherichia coli* - 50 coliform forming units per 100 millilitres;
ii. Dissolved reactive phosphorus - 0.005 milligrams per litre,
iii. Nitrate nitrogen - 0.075 milligrams per litre;
iv. Ammoniacal nitrogen – 0.01 milligrams per litre; and
v. total phosphorus 0.1392 milligrams per litre*see note below;
vi. total nitrogen 0.636 milligrams per litre*see note below; or
vii. Dissolved copper - 0.00047 milligrams per litre (ANZG DGV 95%);
viii. Dissolved lead - 0.0034 milligrams per litre (ANZG DGV 95%); or
ix. Dissolved zinc - 0.0041 milligrams per litre (ANZG DGV 95%).

c. Any of the lake chlorophyll-a, total nitrogen or total phosphorus attribute state bands as detailed in the NPS-FM 2020 have decreased from the Baseline Study 2022 level of "A" band for all three attributes at all three lake-edge sites (SMP-4, SMP-5, SMP-6).

Then the Consent Holder must:

d. Prepare a report for the Otago Regional Council by 31 August of the same year as the breach. The report must be prepared by an appropriately qualified and experienced freshwater ecologist. The report must include, but is not limited to:

i. Changes in the nutrient concentrations in any groundwater monitoring bores;
ii. Changes in nutrient concentrations or ecological conditions in Māori Jack Stream;
iii. Changes in nutrient concentrations or ecological conditions in the near-shore (5 metre) margins of Lake Wakatipu within the 1.8 km stretch of shoreline between Māori Jack Stream and the jetty at the end of Lakeshore Drive in Drift Bay;
iv. Chlorophyll-a levels in the lake margin and potential for phytoplankton blooms;
v. Comparison of parameters to relevant regional plan criteria and guidelines where relevant.
vi. Relationship of any changes observed as listed above with monitoring over the same time period of Homestead Bay wastewater treatment plant effluent quality and the application rate of effluent to land treatment areas.

e. Prepare an implement a Remedial Action Plan in accordance with Condition 25.

25 The Remedial Action Plan must:

a. Be submitted to the Otago Regional Council by 30 September of the same year as the monitoring results report required by Conditions 18 and/or 24.

b. Set out the methods and timeframes for alternating and adapting wastewater treatment and disposal practices or catchment mitigation measures to ensure that water quality is improved such that:

   i. The average Lake TLI at each of the three lake monitoring sites as identified in the plan titled "Monitoring" prepared by Lowe Environmental Impact, dated 17.09.2025 is returned to a state that is less than one TLI score greater than the average baseline for each site as recorded in the "Baseline Study 2022" (i.e., averages of the reported TLI score baselines are: Site SMP-4 2.23; SMP-5 1.96; SMP-6 1.71). .
   ii. The 80th percentile total nitrogen, total phosphorus and *Escherichia coli* concentrations are below the limits in Condition 19.
   iii. The chlorophyll-a, total nitrogen, total phosphorus and dissolved reactive phosphorus attribute states under the NPS-FM 2020 are not decreased.

c. Any wastewater treatment plant actions required by the Remedial Action Plan must be incorporated into the Operations and Management Manual (O and M). The Consent Holder must provide the Otago Regional Council an amended O and M within 5 working days of it being finalised. The amended O and M must not be implemented until written notice is received from the Otago Regional Council.

d. The amended Operations and Management Manual must be implemented within 3 months of the receipt of the Otago Regional Council's written notice or within a timeframe agreed with the Otago Regional Council.

26 The Remedial Action Plan required by Condition 19 or 25 will not be required if a two-person expert scientist panel (with one expert nominated by the Otago Regional Council) both conclude, after considering the relevant available information (including wider catchment resource consent compliance), that the cause of the breach of the water quality limits in Condition 19(a-c) or 24 was unlikely to have been caused in any part by nutrient loss associated with the discharge authorised by this consent. If agreement between the experts is not reached then the investigation and actions required by Condition 25 must be undertaken.

27 Following commissioning of the wastewater treatment plant, an assessment of the soil conditions shall be undertaken by a suitably qualified and experienced practitioner on a biennial basis until such time as the Otago Regional Council determines the effects of the disposal to land are acceptable. The assessment shall include:

a) Four soil samples shall be from each LTA zone, at the following depths
   i. 0 -20 cm
   ii. 30 – 50 or at the application depth
   ii. 80 – 100 cm

b) The four soil samples from each depth shall then be composited and analysed for the following:

   i. Exchangeable Cations (Sodium, Potassium, Magnesium, Calcium);
   ii. Olsen P;
   iii. Total P
   iv. Cation exchange capacity;
   v. Base saturation;

vi. Total carbon;
vii. Total nitrogen;
viii. pH; and
ix. Suite of seven heavy metals (Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Zinc)

c) At the application depth, soil shall also be tested for:

i. in situ infiltration capacity (Ksat) at the application depth;
ii. indications of oxidation reduction potential (gleying) of the soil;
iii. an infield assessment of soil structure

c) A control site shall be chosen outside of the LTA, and samples collected and tested in accordance with condition's 22(a)-(c). The control samples shall not be composited with the LTA samples.

d) The results of the soil assessment shall be submitted to the Otago Regional Council within 6 months of undertaking the field work.

28 All sampling techniques employed in respect of the conditions of this consent shall be in accordance with the National Environment Monitoring Standard Water Quality Part 1 – Sampling, Measuring, Processing and Archiving of Discrete Groundwater Quality Data and be acceptable to the Otago Regional Council . All analyses undertaken in connection with this consent shall be performed by an IANZ registered laboratory or otherwise as specifically approved by the Otago Regional Council .

29 By 31 August of each year following the commissioning of the wastewater treatment plant, the Consent Holder must forward an annual report in writing to the Otago Regional Council. The annual report shall cover the preceding calendar year 1 July to 30 June and shall report on compliance with the consent. As a minimum, the report shall include:

a) A copy of all analytical results for the year;
b) A summary of the year's monitoring results, in context of the previous years' results;
c) Comments on compliance with the conditions of this discharge permit;
d) Details of the cut and carry operation including the number of harvests, mass harvested, N concentration;
e) A summary of complaints received, the validity of each complaint and the corrective action taken;
f) A summary of any malfunctions or breakdowns and the corrective action taken; and
g) Any other issues considered relevant by the consent holder.

30 Prior to commissioning the treatment and land treatment system, the consent holder shall prepare and forward an Operations and Management Manual for the wastewater treatment plant and land treatment system and provide this to the Otago Regional Council for certification. The purpose of the Operations and Management Manual is ensure its effective and efficient operation of the wastewater treatment plant and land treatment system at all times.

The manual must include, as a minimum:

a) A brief description of the treatment and land treatment system, including a site map that shows the location of the treatment system, discharge location and sampling transcends;
b) Key operational matters including weekly, monthly and annual maintenance checks;
c) Monitoring requirements and procedures;
d) Contingency plans in the event of system malfunctions (including provision for the removal and disposal of effluent by tanker truck should there be prolonged system failure);
e) The means of receiving and dealing with any complaints;
f) Key personnel and contact details; and
g) Emergency contact phone numbers.

31 At all times, the consent holder shall ensure that the Otago Regional Council has a copy of the most recent version of the Operations and Management Manual.

32 Records of maintenance, complaints, malfunctions and breakdowns shall be kept in a log and be made available on request.

33 The wastewater treatment and land treatment system shall be serviced at least once every 3 months by a suitably qualified and experienced person. The servicing shall be in accordance with the Operations and Management Manual.

34 The Consent Holder must maintain a record of any complaint relating to the treatment of wastewater or the discharge of wastewater to land. The register must include, but not be limited to:

a. The date, time, location and nature of the complaint;
b. The name, phone number, and address of the complainant, unless the complainant elects not to supply this information;
c. action taken by Consent Holder to remedy the situation and any policies or methods put in place to avoid or mitigate the problem occurring again.
d. The Consent Holder must, within 24 hours, inform the Consent Authority of any complaints received from any person about activities on the site associated with the consented works. A record of the complaints must be included within the annual report required by Condition 33.

General

35 No ponding or surface run-off of effluent shall occur as a result of the exercise of this consent.

36 This permit does not authorise the discharge of sludge to land or water.

37 If Easement Area XQ DP 380128 as shown on the "Existing Easements on Lot 12 DP 364700" plan prepared by Patersons, dated 10.04.25 is to be utilised as a land treatment area, the Consent Holder shall confirm that Easement 7802746.10 in favour of the Jacks Point Residents and Owners Association has been surrendered for the area of the proposed land treatment area or confirmation to the satisfaction of the ORC shall be provided by the Consent Holder that the land within that area is not being utilised for a conflicting purpose such as wastewater disposal under another resource consent.

Commented [AL11]: JWS topic 11 - Removal of RCL's proposed disposal area...

~~37~~38 Where information is required to be provided to the Consent Authority in the conditions of this consent this is provided in writing to compliance@orc.govt.nz and the email heading is to reference RMFT25.003.10 and the condition(s) the information relates to.

Review

3~~9~~8 The Otago Regional Council may, in accordance with Sections 128 and 129 of the Resource Management Act 1991, serve notice on the consent holder of its intention to review the conditions of this consent within three months of each anniversary of the commencement of this consent, for the purpose of:

a) Determining whether the conditions of this consent are adequate to deal with any adverse effect on the environment which may arise from the exercise of the consent and which it is appropriate to deal with at a later stage, or which becomes evident after the date of commencement of the consent; or
c) Ensuring the conditions of this consent are consistent with any National Environmental Standards, Regulations, relevant plans and/or the Otago Regional Policy Statement; or Reviewing the frequency of monitoring or reporting required under this consent;
d) Amending the monitoring programme set out in accordance with conditions of this consent; or
e) Requiring the Consent Holder to adopt the best practicable option, in order to prevent or minimise any adverse effect on the environment arising as a result of the exercise of this consent. Best practicable option includes, but is not limited to, connecting to a reticulated community sewerage scheme, should such an option become available to the Consent Holder.

Conditions administered by QLDC

4 This subdivision may be staged. For the purposes of issuing approvals under sections 223 and 224(c) of the Resource Management Act 1991, the conditions of this consent shall be applied only to the extent that they are relevant to each particular stage proposed.

This consent may be progressed in any order and any stages may be combined, provided all necessary subdivision works (such as servicing, provision of formed legal access and other works required to satisfy consent conditions of this consent) are completed for each stage, prior to certification being issued as necessary under Sections 223 and 224(c) of the Resource Management Act 1991. Any residual land within the title shall be contained within a balance allotment. Delineations between road lots may be shifted to match the completed extents for each stage.

The following requirements must also be met:

(a) The first stage of the subdivision requires the completion of the following works:

i. vesting of Recreation Reserve Lot 9008
ii. completion of a roundabout at the State Highway 6 entrance to the development
iii. completion of the highway bund/diversion channel (including landscaping) within Lot 9013 from the State Highway 6 entrance to the northern side of the Southern Gully
iv. construction of the initial phase Water Treatment Plant and Reservoir completed along with conveyance infrastructure between the bore, the Water Treatment Plant, the Reservoir and the lots within the first stage
v. construction of the initial phase Wastewater Treatment Plant completed with conveyance infrastructure and land treatment areas to service the lots within the first stage , or alternative connecting infrastructure to the existing QLDC wastewater network.

(b) Stage 2 is to include the vesting of Recreation Reserve Lot 9001.

(c) The highway bund / diversion channel (including landscaping) within Lot 9012 from the State Highway 6 entrance to the Northern Channel and the capacity upgrades to the Northern Channel and detention basins on Lots 9010, 9011, 9019, 9020, 9021, 9022 and 9024 are to be completed prior Section 224(c) for lots (excluding balance and infrastructure lots) located on the northern side of Road 01.

(d) The highway bund / diversion channel (including landscaping) within Lot 9015 from the southern side of the Southern Channel to the southern boundary is to be completed prior to Section 224(c) for Lots 1372 – 1438.

(e) Section 224(c) is not to be sought for any residential lot located within the 55 dB contour of the NZone activity as 'Proposed Subdivision Plan - NZONE Skydive Noise Contours', prepared by Patersons, Drawing No Q7557-007, Sheet 001, Rev 0, dated 10 April 2025 until such time as NZone have permanently ceased operating from the site. Written confirmation of the cessation of the activity is to be provided to QLDC.

23 Prior to commencing works on the site, with the exception of earthworks including associated controls approved through the Environmental Management Plan (EMP) process within this consent, the consent holder shall obtain 'Engineering Review and Acceptance' from the Queenstown Lakes District Council for development works to be undertaken and information requirements specified below.

The application shall include all development items listed below unless a 'partial' review approach has been approved in writing by the Manager of Resource Management Engineering at Council.

The 'Engineering Review and Acceptance' application(s) shall be submitted to the Manager of Resource Management Engineering at Council for review, prior to acceptance being issued. At Council's discretion, specific designs may be subject to a Peer Review, organised by the Council at the applicant's cost.

The 'Engineering Review and Acceptance' application(s) shall include copies of all specifications, calculations, design plans and Schedule 1A design certificates as is considered

by Council to be both necessary and adequate, in accordance with Condition (17), to detail the following requirements:

Wastewater

Connection to QLDC network

v) Details of the connection to Council's reticulated wastewater network in accordance with the QLDC Code of Practice 2025 and terms agreed, including in respect of the amount of development serviced by that connection;

Or

On-site land disposal

w) For Stage 1, detailed plans and specification shall be supplied for the following:

(i) The construction of a pump station within future Lot 9018 or alternative location to be able to service the stage. The pump station shall include suitable emergency storage and/or generator backup and shall be connected to a SCADA (Supervisory Control and Data Acquisition) system or suitable alternative monitoring system, to be approved by Council, to protect the pump station against any system failure and/or overloading. The pump station design shall also include a water supply connection and provision of a vehicle crossing and access driveway from the surrounding Council road network and set down area to allow for ongoing maintenance access by heavy vehicles (if required).

(ii) A rising main to the wastewater treatment plant within Lot 9025.

(iii) A sludge activated wastewater treatment plant within Lot 9025 in general accordance with the details in the Stantec Engineering Feasibility Report dated 11 April 2025.

(iv) Land treatment areas of sufficient size to service the full wastewater treatment capacity of the first stage of the wastewater treatment plant.

x) For all stages, detailed plans and specifications for any wastewater treatment and disposal infrastructure or works, including land treatment areas required for the disposal of treated effluent from each specific stage. This shall include details of:

(i) Identification of sufficient land treatment area to allow for an average rate of discharge of between 5 – 8 mm/day for dry weather flow. This shall include an excess 5-10% of land treatment area to account for the possibility of areas needing to be deactivated on occasions.

(ii) Details of the vegetation management regime for the land treatment areas in (i).

(iii) Locations of the sub-surface drip irrigation system within the nominated land treatment area.

(iv) If Easement Area XQ DP 380128 as shown on the "Existing Easements on Lot 12 DP 364700" plan prepared by Patersons, dated 10.04.25 is to be utilised as a land

treatment area for the subdivision, the Consent Holder shall confirm that Easement 7802746.10 in favour of the Jacks Point Residents and Owners Association has been surrendered for the area of the proposed land treatment area or confirmation shall be provided by the Consent Holder that the land within that area is not being utilised for a conflicting purpose such as wastewater disposal under another resource consent.

y) The Consent Holder shall monitor the following:

(i) The quantity of wastewater generation from and the number of lots occupied for the preceding stages.
(ii) The wastewater quality discharged from the wastewater treatment plant.

In the event that an application for Engineering Review and Acceptance is submitted proposing to service a stage utilising a lesser per household wastewater generation assumption than the QLDC Code of Practice 2025, this shall be supported by a Monitoring Report with the above information. A wet weather peaking factor will be required to be included in the demand calculations.

z) The provision of a foul sewer connection from each residential and commercial lot to the wastewater pump station in accordance with Council's standards and connection policy. These connections shall be installed with an invert suitable to drain the full buildable area within each lot while maintaining minimum grade and pipe cover.

Where these connections are via gravity they shall be installed with an invert suitable to drain the full buildable area within each lot while maintaining minimum grade and pipe cover. Where these connections are via a pressure sewer they should include a boundary kit in accordance with the QLDC pressure sewer policy.

aa) The provision of a minimum 150mm wastewater disposal lateral (or otherwise approved suitable sized lateral) to all recreational reserve areas, in accordance with Council's standards and connection policy.

Design

gg) Prior to commencement of construction of any of the following infrastructure, details of the design of the following utility buildings and reservoirs (and ancillary buildings and structures) are to be provided to QLDC for certification:

- Borefield and manifold building
- Water treatment plant
- Wastewater treatment plant
- Reservoirs

The designs are to meet the following standards:

(i) All above-ground utility buildings and reservoirs are to be clad in external cladding materials finished in the range of browns, greys and black with a light reflectance value of 20% or less.

(i) The water and wastewater treatment plant buildings and associated structures are to be constructed within Lot 9025 and are not to exceed a total floor area of 6,000m² and a maximum height of 6m above ground level.

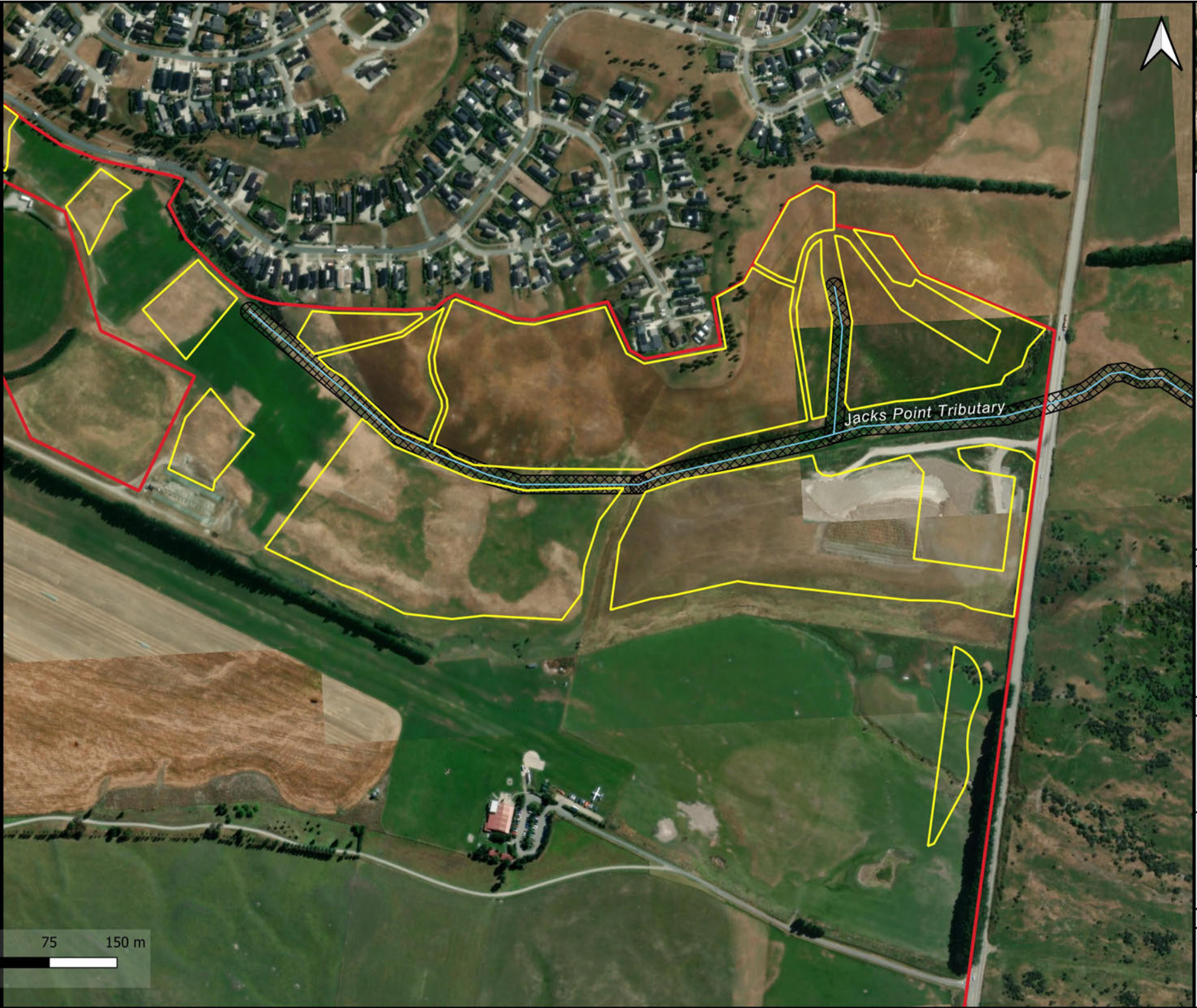
(ii) The reservoir tanks are to have an internal diameter not exceeding 30m and a total height not exceeding 6m above ground level.

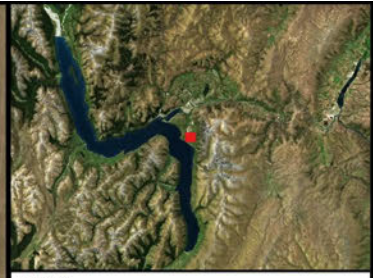
(iii) The borehead and manifold buildings over the bores are to have a maximum floor area of 35m² and a maximum height of 5m. Ancillary electrical buildings are to each have a maximum floor area of 40m² and a maximum height of 3.5m and are to be located adjacent to the borehead buildings.

51 Prior to certification pursuant to section 224(c) of the Resource Management Act 1991, the consent holder shall complete the following works as applicable to each stage of the subdivision:

c) Where the water and/or wastewater treatment plant are not being vested in QLDC under Conditions 5-7, evidence of a design, build and operation contract for the wastewater plant shall be provided to QLDC.

d) Where any infrastructure or device (wastewater treatment plant, water treatment plant, water reservoirs, bores or booster pumps and the like) are agreed to be vested in QLDC under Conditions 5-7, an Operations and Maintenance Manual is to be submitted to QLDC





LEGEND

Planning & Infrastructure

Indicative LTA Area

Background

site boundary

Hydrology

Ephemeral Stream

JP-Lot12 Ephemeral Stream Buffer

ESRI Satellite (ArcGIS/World_Imagery)

CLIENT

RCL Homestead Bay Ltd

TITLE

Proposed LTA Area
Jacks Point Lot 12 Ephermal Stream Buffer

L O W E
Environmental
I m p a c t

STATUS DRAFT

SCALE	DATE/TIME
1:3750	2025-11-20 13:03
JOB NUMBER	MAP ID
10934	04