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Attention: Hannah Goslin, Consultant Consents Planner, Otago Regional Council

Kia ora Hannah,

Hydrogeology Review – RM25.034: Southern Link Inland Port FTAA

Scope of Review

Beca Limited has been engaged by Otago Regional Council to provide technical hydrogeology advice in relation to the Southern Link Inland Port application at 270–292 Dukes Road North, North Taieri. This memorandum provides my comments on groundwater-related matters relevant to the section 53 comment process under the Fast-track Approvals Act 2024.

My review is limited to hydrogeological matters, including groundwater levels, groundwater flow direction, groundwater-surface water interaction, stormwater infiltration, groundwater quality, contaminated land interactions with infiltration, and the proposed trade waste discharge to land.

Documents Reviewed

The following documents and information have informed this review:

- Southern Link Inland Port Groundwater Assessment, prepared by Stantec New Zealand, dated 16 April 2026.
- Southern Link Inland Port Stormwater Assessment Report, prepared by Stantec New Zealand, dated 15 April 2026.
- Updated proposed consent conditions for the Southern Link Inland Port application (15 June 2026).
- Stantec response to Beca peer review comments, dated 15 July 2026.
- Beca hydrogeology review comments and subsequent responses provided to ORC during July 2026.
- Relevant contaminated land, stormwater and freshwater ecology review material, where it provides context for groundwater-surface water interaction, infiltration, contaminant migration pathways, and monitoring.

Overall Hydrogeological Reviewer Position

In my opinion, the Stantec Groundwater Assessment provides a reasonable conceptual basis for understanding the hydrogeology of the site and the general groundwater pathways relevant to the proposal. The assessment indicates that the site is located within a groundwater recharge setting on the Lower Taieri Plains, that Silver Stream is generally a losing stream in the vicinity of the site, and that groundwater levels are typically well below the expected depth of bulk earthworks.

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I do not disagree with the general conceptual hydrogeological setting presented in the Groundwater Assessment. I also agree that significant adverse groundwater effects are unlikely based on the information presented.

However, the proposal includes several activities where groundwater remains a relevant effects pathway, including:

- stormwater infiltration and discharge to land;
- changes to recharge beneath a large developed site;
- contaminated land remediation and any residual contamination;
- groundwater-surface water interaction with Silver Stream; and
- the proposed trade waste discharge to land.

The proposed consent conditions have improved through the review process. My remaining comments are therefore focused on ensuring that groundwater-related assumptions relied on during assessment and detailed design are appropriately verified during implementation and early operation.

Key Groundwater Matters

Linkage Between Groundwater Monitoring and Detailed Design

I support the inclusion of groundwater monitoring requirements to improve understanding of groundwater levels, groundwater flow direction, seasonal variability, and groundwater-surface water interaction with Silver Stream.

However, if groundwater monitoring is required specifically to inform detailed design, then the consent framework should also require the detailed design documentation to demonstrate how the monitoring results and recommendations have been considered. This does not need to be onerous. The purpose is simply to provide a clear link between the groundwater monitoring programme and subsequent design decisions for stormwater, wastewater, infiltration areas, and other site infrastructure.

I therefore recommend that the conditions retain an explicit requirement for the relevant detailed design documentation to demonstrate how the findings of the groundwater monitoring report have been considered.

Stormwater Infiltration and Groundwater Recharge

The stormwater design may include infiltration or discharge-to-land components, depending on the final detailed design. I acknowledge Stantec's response that the stormwater management system is not dependent on achieving a specific recharge rate, and that the proposal could function from a stormwater perspective even if infiltration opportunities are not ultimately adopted.

However, where infiltration devices are adopted, I consider it reasonable for the final design and commissioning process to verify that those devices perform broadly in accordance with the assumptions adopted in design. This is not intended to require a specific recharge outcome. Rather, it is intended to confirm that the infiltration components, if used, operate as assumed and do not introduce unforeseen groundwater-related effects.

I therefore recommend that any infiltration devices adopted through detailed design are subject to field verification prior to operation, and that any material difference between actual and assumed infiltration performance is reviewed and addressed where necessary.

Infiltration Within Areas of Residual Contamination

The contaminated land conditions and proposed remediation framework are generally relevant to reducing contaminant-related risk at the site. I acknowledge Stantec's response that contaminated material is expected to be removed or managed through the contaminated land process.

However, infiltration devices can increase the potential for mobilisation of residual contaminants if they are located in areas where contamination remains, or where residual contamination is identified during site works. I consider there is value in maintaining a direct link between the contaminated land framework and the final stormwater infiltration design.

I therefore recommend that stormwater infiltration devices should not be located in areas where contamination remains, or where residual contamination is identified following remediation, unless a suitably qualified contaminated land practitioner and hydrogeologist demonstrate that infiltration will not increase the risk of contaminant migration to groundwater or to Silver Stream via groundwater pathways.

Maintenance of Infiltration Devices

If infiltration devices are adopted through detailed design, their ongoing performance will depend on appropriate inspection and maintenance. I understand Stantec does not object to a condition requiring inspection, maintenance, and record keeping for infiltration devices where such devices are included in the final design.

I recommend that the conditions include a requirement for any operational infiltration devices to be inspected at least annually and maintained as necessary to ensure continued infiltration capacity and stormwater treatment performance. Records of inspections, maintenance activities and remedial works should be retained and provided to ORC on request.

Groundwater Level and Groundwater Quality Monitoring

I consider there remains merit in retaining some form of groundwater monitoring and review framework. My concern is not that the current Groundwater Assessment is flawed, but that the proposal includes several activities where groundwater is a relevant pathway and where verification is appropriate given the scale of development.

The groundwater assessment provides a reasonable assessment of the site hydrogeology and general stormwater-related groundwater effects. However, the specific groundwater implications of the proposed trade waste discharge to land do not appear to have been assessed in the same level of detail.

For that reason, I consider that targeted groundwater verification monitoring is appropriate. This does not need to be as extensive as the broader monitoring regime initially suggested during earlier condition review. A more focused programme would provide an appropriate balance between verification of effects and monitoring effort.

I recommend that the conditions retain a targeted groundwater monitoring and review framework that includes:

- continuous groundwater level monitoring for an initial baseline, construction, and early operational period;
- periodic groundwater quality sampling from the existing monitoring bore network, or alternative bores approved by ORC if any existing bore becomes unsuitable;
- inclusion of parameters relevant to the groundwater pathways associated with stormwater infiltration, contaminated land remediation, and trade waste discharge to land;

- reporting of groundwater monitoring results alongside the Silver Stream monitoring framework, where relevant; and
- a hydrogeologist-led review after an initial operational period to assess whether monitoring should continue, be modified, or cease.

In my opinion, this type of targeted monitoring is proportionate to the residual groundwater-related uncertainty and provides a mechanism to verify whether groundwater quality and groundwater flow conditions remain generally consistent with the assumptions adopted during assessment and design.

Recommendations

I recommend that the consent conditions retain or incorporate requirements that address the following matters:

- Demonstrate how groundwater monitoring results have informed detailed design of stormwater, wastewater, infiltration areas, and other site infrastructure.
- Verify the performance of any infiltration devices adopted through detailed design before operation.
- Avoid locating infiltration devices in areas where contamination remains or residual contamination is identified, unless supported by contaminated land and hydrogeology assessment.
- Require annual inspection, maintenance, and record keeping for any operational infiltration devices.
- Retain a targeted groundwater monitoring and review framework focused on groundwater levels, groundwater quality, and a hydrogeologist-led review following an initial operational period.

Conclusions

The Stantec Groundwater Assessment provides a reasonable conceptual basis for the site hydrogeology and I do not consider that significant adverse groundwater effects are likely based on the information provided.

My remaining concerns relate to verification rather than fundamental disagreement with the hydrogeological setting. In particular, I consider that the conditions should provide a clearer link between groundwater monitoring, detailed design, infiltration performance, contaminated land remediation outcomes, trade waste discharge to land, and early operational review.

Subject to the inclusion of proportionate groundwater verification and review conditions, I consider the residual hydrogeological matters can be appropriately managed through the consent framework.

Yours sincerely



Mike Thorley
Principal – Hydrogeology
on behalf of
Beca Limited

[Redacted contact information]