

To:	Auckland Council
Subject:	Response to initial Council RFI's – 116 Waihoehoe Road, Drury
Date:	29 August 2025
Project Ref:	J00983
Document ID:	644657

1 BACKGROUND

We are in receipt of Auckland Council's request for information for resource consent BUN60450091. Our response for geotechnical and groundwater S92 request 3a to 3g is as follows.

2 AUCKLAND COUNCIL REQUEST

2.1 Query 3a

a. Clarification of interface with and effects on the neighbouring basement at 159 Edgewater Drive

LDE Response

The proposed basement at 153 Edgewater Drive is expected to have a minimal drawdown effect on the neighbouring basement at 159 Edgewater Drive, given the 4m offset and the partially drained nature of the existing basement.

In addition, the neighbouring property at 155 -159 Edgewater drive is owned by our A & L Sargeant Ltd client. It was agreed with Auckland Council groundwater specialist ENGCEO in the approved Consent No BUN60403972 that monitoring for this building is not required as part of the RC process, although we may include it in our final GSMCP for the benefit of our client.

2.2 Query 3b

b. Further description required as to the SLIDE model and how it estimated the groundwater drawdown

LDE Response

The steady-state FEA method was used to estimate groundwater drawdown, with boundary conditions set to model 3D effects. The calculated radius of influence is 6 times higher than the CIRIA 113 method, and this approach was previously accepted by the council for the same site. Also, this method is accepted by Council for our report dated 3/02/2023 for the same site for Consent No BUN60403972.

2.3 Query 3c

c Inconsistency noted between the soil compressibility figure used in Section 7.1.2 and Table 11 to be reviewed and updated

LDE Response

The soil compressibility is consistent. Noting that in Table 11, the recommended mv value is at (x10⁻³ m²/kN) rather than m²/kN.

The 0.0001m²/kN is the lower bound of firm clay, therefore upper limit for stiff clay in accordance with Carter 1983. It is also the best estimate based on the three CPTs undertaken, by calculating inverse of the M value at the CPTs locations, the calculated mv are 0.000071m²/kN, 0.000067m²/kN and 0.00017m²/kN respectively for CPT4 to CPT06. Also, this mv value was accepted by Council for our report dated 3/02/2023 for the same site, for Consent No BUN60403972.

2.4 Query 3d, 3e

d. Justification of trigger levels in Section 7.1.1 with respect to GSMCP

e. Justification of trigger levels in Section 7.2 with respect to GSMCP

LDE Response

The trigger levels for wall deflection and settlement monitoring are set based on what is generally considered acceptable for the proposed wall and public accessway/pipe. Setting lower trigger levels to match analysis results could lead to false alarms due to soil expansivity and survey margin of error.

The criterion listed in Section 7.1.1 and 7.2 were also accepted by council for our RC report dated 3/02/2023 for the same site for Consent No BUN60403972.

2.5 Query 3f

f. Relationship between groundwater inflow to basement collector sump and stormwater infrastructure design.

LDE Response

This query is beyond the scope of geotechnical engineering, and the project civil engineer will address it in their response.

2.6 Query 3g

g. Potential settlement effects due to both groundwater drawdown and mechanical effects on 4 Susanne Place

The proposed retaining wall and stormwater infrastructure are not expected to have adverse settlement effects on 4 Susanne Place, given the design geometry and distance from the property of these features.

Our report was prepared without reviewing Dodd Civil's civil drawings. At the time settlement effect due to the proposed development was not assessed as Block B has no basement proposed.

We have now sighted the work in progress civil CAD file titled "Retaining wall and drainage layout 49603", and understand that up to 1m high retaining walls are proposed at the eastern boundary to the southeast of the proposed Block B, and a row of new stormwater manholes and pipes are proposed below the proposed retaining wall.

In term of mechanical settlement, we consider retaining wall of 1m height designed to standard would only result in negligible deflections when supporting cohesive soil (i.e. a few millimetres). Therefore, the mechanical settlement effect on 4 Susanne Place is also negligible.

In term of groundwater drawdown, while Block B has no basement, the proposed trench excavation for the stormwater manhole SWMH1-1, SWMH1-1-1, SWMH1-1-3, and associated pipes were assessed against E7 and is considered permitted activity, refer to Table 1 below:

Table 1: E7 6.1.6 and E7.6.1.10 Assessment

Rule	Activity	Applicability to Site
E7.6.1.6 (1)	The water take must not be geothermal water.	Complies: There is no evidence of geothermal activity at the site in question.
E7.6.1.6 (2)	The water take must not be for a period of more than 10 days where it occurs in peat soils, or 30 days in other types of soil or rock.	Complies: Temporary trench excavation will not exceed 30 days.
E7.6.1.6 (3)	The water take must only occur during construction.	Complies: Water take is limited to construction period.
E7.6.1.10 (2)	Any excavation that extends below natural groundwater level must not exceed: 1ha in total area; and 6m depth below the natural ground level	Complies: Excavations are less than 1ha in total area and less than 6m below ground level.
E7.6.1.10 (3)	The natural groundwater level must not be reduced by more than 2m on the boundary of any adjoining site.	Complies: Maximum drawdown at stormwater manhole trench location is 2m, and no more than 2m drawdown is expected at neighboring boundaries.
E7.6.1.10 (4)	Any structure, excluding sheet piling that remains in place no more than 30 days, that physically impedes the flow of groundwater through the site must not: Impeded the flow of groundwater over a length of more than 20m; and Extend more than 2m below the natural groundwater level	Complies: Proposed pipes and manholes do not significantly impede groundwater flow.

Rule	Activity	Applicability to Site
E7.6.1.10 (5a)	The distance to any existing building or structure (excluding timber fences and small structures on the boundary) on an adjoining site from the edge of any trench or open excavation that extends below natural groundwater level must be at least equal to the depth of the excavation	Complies: The excavation depth for the trench would be limited to less than 3m based on the IL level of the pipes (critical at MW1-1 location, LL level 4.93 IL level 2.62 for outfall, there is room for 700mm of over excavation) The distance from the manholes to the 4 Susanne place shed is measured to be 6m from Auckland council GEOMAP.

3 LIMITATIONS

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This report was prepared in general accordance with current standards, codes and best practice at the time of this report. These may be subject to change.

For and on behalf of LDE Limited

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Attachments

Dodd civil drawings showing proposed manholes

