

BUN60449474 - FTAA-2503-1037 - Drury Quarry Sutton Block

Auckland Councils combined responses to Minute 10 - invitation to comment on draft conditions; are outlined in Table 1 below.

Philip Kesley (ECL) has subsequently also considered and responded to Minute 11 – groundwater and ecology matters, in table 2 below.

Table 1:

| Comment / Question Reference | Number of Condition in question | Respondent from Auckland Council | Notes | Comments |
|-------------------------------------|--|---|---|--|
| CSF1 | 1 | Doug Fletcher (Principal Project Lead) | Relates to dates information submitted with the application | Doug Fletcher - Council defers to the applicant team for any response regarding their documents referred to in the table within condition 1. |
| CSF2 | 1 | Doug Fletcher (Principal Project Lead) | Relates to updated lodged documents | Doug Fletcher - Council defers to the applicant team for any response regarding dates to be stated in condition 1. |
| CSF3 | 14 | Doug Fletcher (Principal Project Lead) | Relates to Table 1 | Doug Fletcher - I agree updating table 1 to include/describe a monitoring period for each monitoring plan will be useful. Council defers to the applicant team for any updates to Table 1. |
| CSF4 | 17 | Doug Fletcher (Principal Project Lead) | Relates to compliance period for each monitoring plan | Doug Fletcher - I agree updating table 1 to include/describe a monitoring period for each monitoring plan will be a useful tool for both the applicant team/consent holder and council monitoring teams. Council defers to the applicant team for any updates to Table 1. |
| CSF5 | 33+30A | Doug Fletcher (Principal Project Lead) | Relates to streamworks plans | Doug Fletcher - I consider that condition 33 is intended to sit within the SDEP conditions (conditions 29-30) I also agree that an equivalent condition should be created to sit within the StMP condition – or update existing wording of condition 33 to reference StMP rather than SDEP. |
| CSF6 | 44(b) | Philip Kelsey (ECL) re Groundwater | Relates to Groundwater monitoring plan | Philip Kelsey - Williamson Water and Land Advisory (WWLA) and Earthtech Consulting Limited (ECL) are both requesting groundwater level monitoring within the Mangawheau Stream Catchment within the 7.5km radius of dewatering effects. ECL (2025a) – The Technical Memo, dated 19 September 2025; recommended MG1 shallow and MG1 deep monitoring bores at Sinclair Road adjacent to the Mangawheau Stream. WWLA has recommended an alternative |

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| | | | | location closer to the quarry. From ECL (2025b) ¹ , the Sinclair Road position is still preferred as this location provides important groundwater-surface water monitoring information which cannot be achieved at the WWLA location. |
| CSF7 | 44(b) | Philip Kelsey (ECL) re Groundwater | Relates to Groundwater monitoring plan | Philip Kelsey - ECL requests that the monitoring plan incorporates the Sinclair Road MG1 shallow and MG1 deep monitoring bore locations at associated map reference coordinates, as shown in Figure 1 and amended Appendix 1 attached to the ECL (2025a) Technical Memo. |
| CSF8 | 44(b) | Philip Kelsey (ECL) re Groundwater | Relates to Groundwater monitoring plan | Philip Kelsey - Agree. Appendix 1 – Schedule A Groundwater Monitoring Bores and Trigger Levels to be attached to the conditions. |
| CSF9 | 56 | Doug Fletcher (Principal Project Lead) + Andrew Rossaak (Ecology) | Relates to Lizard Management Plan | <u>Doug Fletcher</u> - I consider that the formatting of the sub-clauses should be changed from (i) to (v) to (g)-(k). <u>Andrew Rossaak</u> - The details of condition are fine; however I agree the formatting isn't correct. |
| CSF10 | 116 | Bin Qiu (Noise and Vibration) | Relates to blasting – any difference between production blasting and any other forms of blasing? | Bin Qiu - I am not a blast or quarry expert; my comments are based on my general experience gained from reviews of other blasting assessment reports. The applicant's comments may be more relevant to the site and their operation. <ul style="list-style-type: none"> • Production blasting is to fragment and displace a designed volume of rock. Production blasting uses large explosive charges and is a high-volume and high energy process. • Other forms of blasting may include <ul style="list-style-type: none"> ○ secondary blasting which is a blast used to fragment rock that was not adequately fragmented by the initial production blast. ○ controlled blasting may include presplit blasting, trim blasting, smooth blasting, and other types of blasting, it is used for removing material along the final slope face or creating an artificial fracture along the final cut slope |

¹ ECL (2025b). Drury Quarry Consenting, BUN60449474-FTAA-2503-1037. Peer Review of WWLA Hydrogeological Report Fast Track Sutton Block. Letter report ref L3690, dated 11 November 2025

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| | | | | <ul style="list-style-type: none"> ○ Controlled Blasting uses lighter charges to create a clean precise rock face or a fracture plane. <p>So, production blasting would use larger charges and excavate larger volume of rock than secondary or controlled blasting, hence may produce higher noise and vibration.</p> |
| CSF11 | 154 | Andrew Rossaak (Ecology) | Relates to Ecology related conditions associated with monitoring | Andrew Rossaak - Within 12 months of the monitoring is a long time to wait for a monitoring report. I also do not agree with the advice note - it is likely that new monitoring technology would be based on different assumptions and is unlikely to be a direct substitution for the current methodology. This will result in potentially skewed results in monitoring. |
| CSF12 | 174(d)(ii) | Doug Fletcher (Principal Project Lead) + | Relates to whether the change the conditions provides for requires a s127 or not. | Doug Fletcher - As the conditions relate to drawdown and trigger levels associated with drawdown, any changes need to be carefully considered. Therefore, I agree that condition 174(d)(ii) should be rewritten to state "The Council approves a s127 variation for changes to trigger level(s) in Appendix 1. Any s127 application must be informed by the Consent Holders technical review required by (c) above". |
| CSF13 | 174(d)(ii) | Doug Fletcher (Principal Project Lead) + | Relates to whether the change the condition provides for requires a s127 or not. | Doug Fletcher - As the conditions relate to drawdown and trigger levels associated with drawdown, any changes need to be carefully considered. Therefore, I agree that condition 174(d)(ii) should be rewritten to state "The Council approves a s127 variation for changes to trigger level(s) in Appendix 1. Any s127 application must be informed by the Consent Holders technical review required by (c) above". |
| CSF14 | 182 | Doug Fletcher (Principal Project Lead) | Relates to whether plan required by condition needs to be certified by Council | Doug Fletcher - The condition requires a mitigation plan which will outline mitigation measures to ensure compliance with freshwater quality thresholds to be submitted to Council. As this plan will outline mitigation measures to ensure compliance with the freshwater thresholds, the conditions should be updated to confirm the monitoring plan needs to be certified by Council. Therefore, the freshwater mitigation measures plan required by condition 182 should also be included in the table of management plans that need to be certified (Table 1 located between conditions 14 and 15). |
| CSF15 | 184 | Philip Kelsey (ECL) re Groundwater + Andrew Rossaak (Ecology) | Relates to stream augmentation and thus relates to hydrology but also has touch points with | <u>Philip Kelsey</u> - From Figure 17A, the stream flow monitoring sites listed in a) to f) are all new. A check of stream monitoring coordinates has been completed on PDP Figure 17A. |

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| | | | freshwater Ecology – if augmentation not appropriate may impact freshwater ecology of streams | <p>The check Figure ECL 17A (attached below) shows agreement with the coordinate positions for NT1-8, NT1-1 and Hingaia Tributary Downstream. However, the coordinates provided for Mangawheau Stream Upstream and Hingaia Tributary Upstream do not match the plotted monitoring positions shown in Figure 17A. The correct monitoring positions at these locations need to be clarified with the Applicant.</p> <p><u>Andrew Rossaak</u> - I am presuming RL datum is sea level in the statement that station that needs to be established prior to quarrying below RL 170? Consent doesn't state (could be in definitions?). I would anticipate station NT1-1 needs to be established prior to any works to establish flows required to maintain the existing consented offsets.</p> |
| CSF16 | 188 | Philip Kelsey (ECL) re Groundwater | Relates to stream augmentation and thus relates to hydrology | <p>ECL agree with WWLA and has responded in ECL (2025b). The suggested replacement Condition 188 is as follows:</p> <p>188. Augmentation rates must maintain mean annual low flows as determined by baseline stream flow gauging.</p> |
| CSF17 | 194 | Philip Kelsey (ECL) re Groundwater | Relates to stream augmentation and thus relates to hydrology | <p>Suggest advice note defining specific discharge with:</p> <p>Advice Note: Specific discharge – <i>volume of water flowing through a stream per unit of time, divided by the area of its catchment (expressed as units such as litres per second per square kilometre).</i></p> <p>Also, augmentation trigger for reduced specific discharge over three consecutive years. Addressed in ECL (2025b) as follows:</p> <p>Condition 194(a) requires stream augmentation when monitoring shows an established trend of reduced specific discharge over three consecutive years.</p> <p>WWLA (2025) is concerned that in order to observe any quarry dewatering effect, three back-to-back dry years would be required which is unlikely.</p> |

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| | | | | <p>ECL agrees with the WWLA concern and proposes the following change to Condition 194(a).</p> <p>194(a). The augmentation must be undertaken only if reduced specific discharge is established from stream flow gauging for the total monitoring record for the new gauging stations that:</p> <p>(a) Can be attributed to the Site’s dewatering; and</p> <p>(b) Is not caused by drought conditions.</p> |
| CSF18 | 196 | Philip Kelsey (ECL) re Groundwater | Relates to stream augmentation and thus relates to hydrology but also has touch points with freshwater Ecology – if augmentation not appropriate may impact freshwater ecology of streams | <p>The augmentation triggers (specifically) Condition 194(b) require assessment with greater frequency than annually. Suggest Condition 196 is revised as follows:</p> <p>196. The augmentation rates for the Mangawheau Stream and Hingaia Tributary must be reported in the annual monitoring report in accordance with Condition 203.</p> |
| CSF19 | 197 | Philip Kelsey (ECL) re Groundwater + Andrew Rossaak (Ecology) | Relates to stream augmentation and thus relates to hydrology but also has touch points with freshwater Ecology – if augmentation not appropriate may impact freshwater ecology of streams | <p><u>Philip Kelsey</u> - Panel’s concern is addressed in ECL (2025b) as follows:</p> <p>Condition 17 requires stream augmentation when monitoring shows an established trend of reduced specific discharge over three consecutive years.</p> <p>WWLA (2025) is concerned that in order to observe any quarry dewatering effect, three back-to-back dry years would be required which is unlikely.</p> <p>ECL agrees with the WWLA concern and proposes the following change to Condition 197.</p> <p>197. The augmentation must be undertaken only if three consecutive years (i.e. 6 rounds of flow gauging) of reduced specific discharge (L/s/km²) is detected.</p> |

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| | | | | <p>Reduced specific discharge is established from stream flow gauging using the total monitoring record for the new gauging stations.</p> <p>Augmentation must only be undertaken if reduced specific discharge for the new gauging stations have been detected that:</p> <p>(a) Can be attributed to the Site's dewatering; and</p> <p>(b) Is not caused by drought conditions.</p> <p><u>Andrew Rossaak</u> - From an ecological perspective, augmentation must occur at the first instance the activity could have an adverse effect on flows and continue until the activity can be demonstrated to have no effect on flows (possibly in perpetuity).</p> |
| CSF20 | 193(a) | Philip Kelsey (ECL) re Groundwater | Relates to stream augmentation and thus relates to hydrology | See advice note provided in response to CSF17 above. |
| CSF21 | Appendix 1 | Philip Kelsey (ECL) re Groundwater | Relates to additional groundwater monitoring piezometer. | Appendix 1 needs to be revised to provide location and coordinates for ECL requested MG1 shallow and deep monitoring bores located on Sinclair Road. These are attached as Appendix 1 revision from ECL (2025a) Technical Memo. |

Additional Earthtech Responses to Minute 11: 25 November 2025

Table 2:

| Paragraph from Minute 11 | Matter in question | Earthtech Response |
|--------------------------|---|--|
| 3. and 4. | MGI Additional Piezometer | No further response to that provided in CSF6 above. |
| 5. | Three year wait on augmentation trigger in Mangawhaeu and Hingaia tributary streams. | |
| 6. and 7. | Revisions to Conditions 194a and 197 to require augmentation unless Applicant demonstrates that flow losses are not from quarry dewatering. Review of augmentation approach and management plan controls. | In terms of hydrology, it is considered that three years of gauging would be a minimum requirement to determine changes in stream base flow. ECL reviewer supports panel's approach in requiring augmentation unless the Applicant demonstrates that losses are not associated with quarry dewatering. |
| 8. | Augmentation rates for Mangawhaeu and Hingaia tributary streams. | ECL reviewer recommends that the augmentation rates be primarily determined by the maintenance of mean annual low flows (MALF conditions) as defined by baseline stream flow gauging. |
| 10. to 11. | Baseline survey. | In response to the panel's concerns, suggest that the new gauging stations in Condition 184 and baseline stream flow monitoring be carried out prior to quarrying below the RL170m regional groundwater level. |

Proposed ECL Location of MG1 Shallow and Deep, from ECL (2025a) Technical Memo.

Appendix 1: Schedule A Groundwater Monitoring Bores and Trigger Levels

| Schedule A: Recommended Groundwater Monitoring Bores and Trigger Levels | | | | | | | | | | |
|---|---------------|-------------------------------|----------------------|-------------------------|-------|--|-------------------------|--|---------------------------------------|--------------------------------|
| Bore Intake Zone | Bore ID | Map Reference NZTM 2000 (E/N) | Ground Level (m, RL) | Screen Interval (m, RL) | Geol. | Seasonal Variations in Shallow Bores (m) | Predicted Drawdowns (m) | Estimated Pre-Quarry Groundwater Level (m, RL) | Groundwater Level (m, RL) August 2024 | Proposed Trigger Level (m, RL) |
| Deep greywacke bores within Hunua Greywacke Block | SG3L | 1776542/5890385 | 157.38 | 0 to -5 | G | - | 121 | 64 | 43.95 | -60 |
| | SG3U | 1776542/5890385 | 156.35 | 50-44 | G | - | 121 | 64 | 85.53 | -60 |
| | SG7 | 1777162/5892100 | 202.34 | -3.66 to -11.66 | G | - | 61 | 64 | 48.1 | -60 |
| Deep greywacke bores east of Hunua Fault | SG11L | 1777712/5890556 | 222.5 | 4.5 to -7.5 | G | - | 200 | 172.23 | 166.43 | -27.77 |
| | SG12L | 1778101/5890213 | 277 | 6 to -3 | G | - | 206 | 179.46 | 179.59 | -26.54 |
| | SG13 | 1777736/5889520 | 249 | 8 to -1 | G | - | 145 | 108.95 | 102.85 | -36.05 |
| | MK1 – Deep | 1778421/5889312 | TBC | TBC | G | TBC | 100 | TBC | TBC | TBC |
| | MG1 – Deep | 1782676/5890996 | TBC | TBC | G | TBC | 18 | TBC | TBC | TBC |
| | BH103 | 1777212/5888550 | 128.12 | 77-71 | G | - | 78 | 127.5 | 96.83 | 49.5 |
| | BH109 | 1776798/5888474 | 81.53 | 50.03-47.03 | G | - | 72 | 79.91 | 80.33 | 7.91 |
| | BH113-1 | 1776744/5888268 | 115.67 | 22.47-20.47 | G | - | 65 | 100 | 77.13 | 35 |
| Shallow bores within Hunua Greywacke Blocks | 22498 (SG6) | 1776905/5887425 | 100 | 42-20 | G | - | 47 | 62 | 51.23 | 15 |
| | SG1U | 1775928/5891217 | 39.32 | 24-18 | V | 1.1 | (SV+2) | 38.22 | 38.17 | 35.15 |
| Shallow bores East of Hunua Fault | SG1L | 1775928/5891217 | 39.17 | 0 to -5 | V | 1.98 | (SV+2) | 28.73 | 27.84 | 24.75 |
| | BH113-3 | 1776744/5888268 | 115.67 | 76-74 | CM | 7.25 | (SV+2) | 95.52 | 95.47 | 86.27 |
| | BH104 | 1777227/5888410 | 135.97 | 107-101 | CM | 5.57 | (SV+2) | 123.20 | 122.84 | 115.63 |
| | SG11U | 1777709, 5890549 | 222.5 | 202.94 to 153.5 | G | 3.45 | (SV+2) | 172.92 | 171.87 | 167.47 |
| | SG12U | 1778105, 5890132 | 277 | 221 - 212 | G | 7.18 | (SV+2) | 224.39 | 224.01 | 215.21 |
| | MK1 – Shallow | 1778421/5889312 | TBC | TBC | G | TBC | (SV+2) | TBC | TBC | TBC |
| Shallow bores west of Drury Fault | MG1 – Shallow | 1782676/5890996 | TBC | TBC | G | TBC | (SV+2) | TBC | TBC | TBC |
| | SG9 | 1775804/5888767 | 25 | 5 to -5 | V | 1.06 | (SV+2) | 22.65 | 22.66 | 19.59 |
| | SG10 | 1775488/5888702 | 26.74 | 9.74 to -3.26 | V | 0.91 | (SV+2) | 24.15 | 24.15 | 21.24 |
| | 21134 | 1776144/5887966 | 26.7 | -2 to -33 | V | 2.83 | (SV+2) | 22.11 | 22.29 | 17.28 |
| | SG4 | 1775830/5897720 | 39.34 | 20 to 9 | A/V | 1.15 | (SV+2) | 37.61 | 37.97 | 34.46 |
| | SG8 | 1776311/5888663 | 52.75 | 24.75 to 12.75 | V | 1.47 | (SV+2) | 39.41 | 39.43 | 35.94 |
| | BH03-New | 1776243/5888470 | 46.77 | 21.77 to 11.77 | A | 0.52 | (SV+2) | 31.72 | 31.92 | 29.20 |

Notes:

- Any existing monitoring bores with screen intervals above proposed trigger levels need to be replaced with deeper bores (to depth of at least 20m below trigger levels) prior to Stage 3 Quarry Floor at RL60m.
- MK1L (deep) and MK1U (shallow) and MG1L (deep) and MG1U (shallow) shall be drilled 6 months after consent.
- SV (Seasonal Variation) + 2m incorporated into trigger levels for all shallow bores.



FIGURE ECL 17A
 Check Stream Monitoring Locations
 Ref: 3690 dated 25/11/25

Project:
DRURY QUARRY, SUTTON BLOCK
 Auckland Council
 Earthtech Markup in Red

EARTHTECH Earthtech Consulting Ltd.
 P.O. Box 721, Pukekohe
 Phone: 64 9 238 3669
 Email: admin@earthtech.co.nz

KEY :

- PROPOSED NEW GAUGING SITE
- ▲ PROPOSED MONITORING AND POTENTIAL AUGMENTATION BORE
- EXISTING STREAM FLOW GAUGING SITE
- NEW MONITORING BORE
- EXISTING MONITORING BORE
- ▲ EXISTING AUGMENTATION BORE
- ⊗ PROPOSED LOWEST AUGMENTATION DISCHARGE POINT
- ⊗ PROPOSED LOWEST SUMP DISCHARGE POINT TO NT1
- ESTIMATED ZONE OF INFLUENCE FOR STAGE 2
- ESTIMATED ZONE OF INFLUENCE FOR STAGE 3
- ESTIMATED ZONE OF INFLUENCE FOR STAGE 4
- ESTIMATED ZONE OF INFLUENCE FOR STAGE 5
- SHALLOW AND NATURAL REGIONAL GROUNDWATER CATCHMENT
- - - INFERRED FAULT
- STREAM

pdp

0 0.5 1
 KILOMETRES
 SCALE : 1:30,000 (A3)

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| NO. | REVISION | DATE | BY |
| A | ISSUED FOR RESOURCE CONSENT APPLICATION | OCT 25 | MS |

SOURCE:
 1. AERIAL IMAGERY SOURCED FROM GOOGLE EARTH (FLOWN APRIL 2022) AND PILBROW SURVEYS (FLOWN 2022)
 2. CADASTRAL/TOPOGRAPHICAL INFORMATION AND INSET DERIVED FROM LINZ DATA.
 3. SHALLOW GROUNDWATER CATCHMENTS DERIVED BY PDP
 4. FAULT LINES PROVIDED BY GNS SCIENCE (2020) (NZI: GNS1:250K GEOLOGY (3RD EDITION)) AND, MURRAY, S., GRAEME, F., (2005), PDP (2021).

CLIENT

STEVENSON

FIGURE
FIGURE 17A: RECOMMENDED MONITORING PLAN FOR SUTTON BLOCK

PROJECT
 PROPOSED SUTTON BLOCK EXPANSION – GROUNDWATER & SURFACE WATER EFFECTS ASSESSMENT