Attachment 3a – Supporting Figures

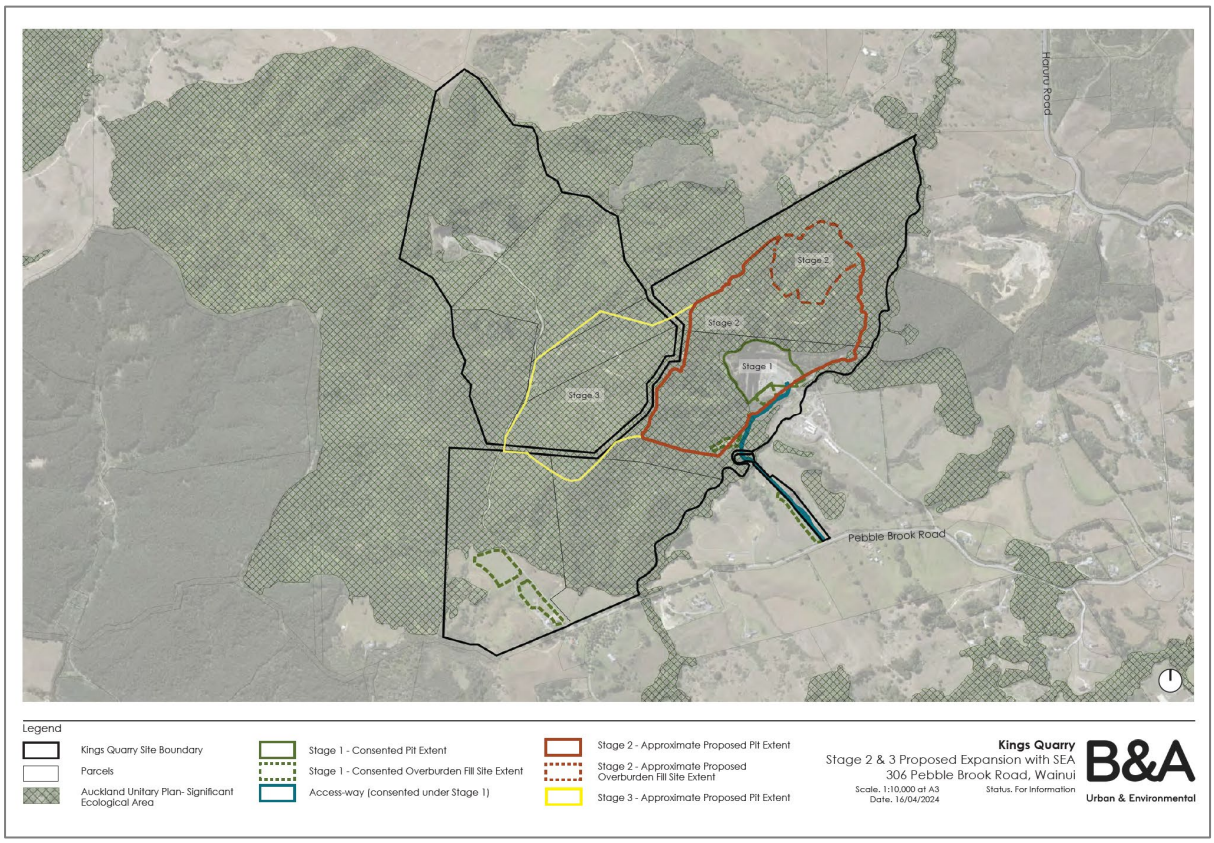


Figure 1: Kings Quarry Expansion – Stage 2 and 3

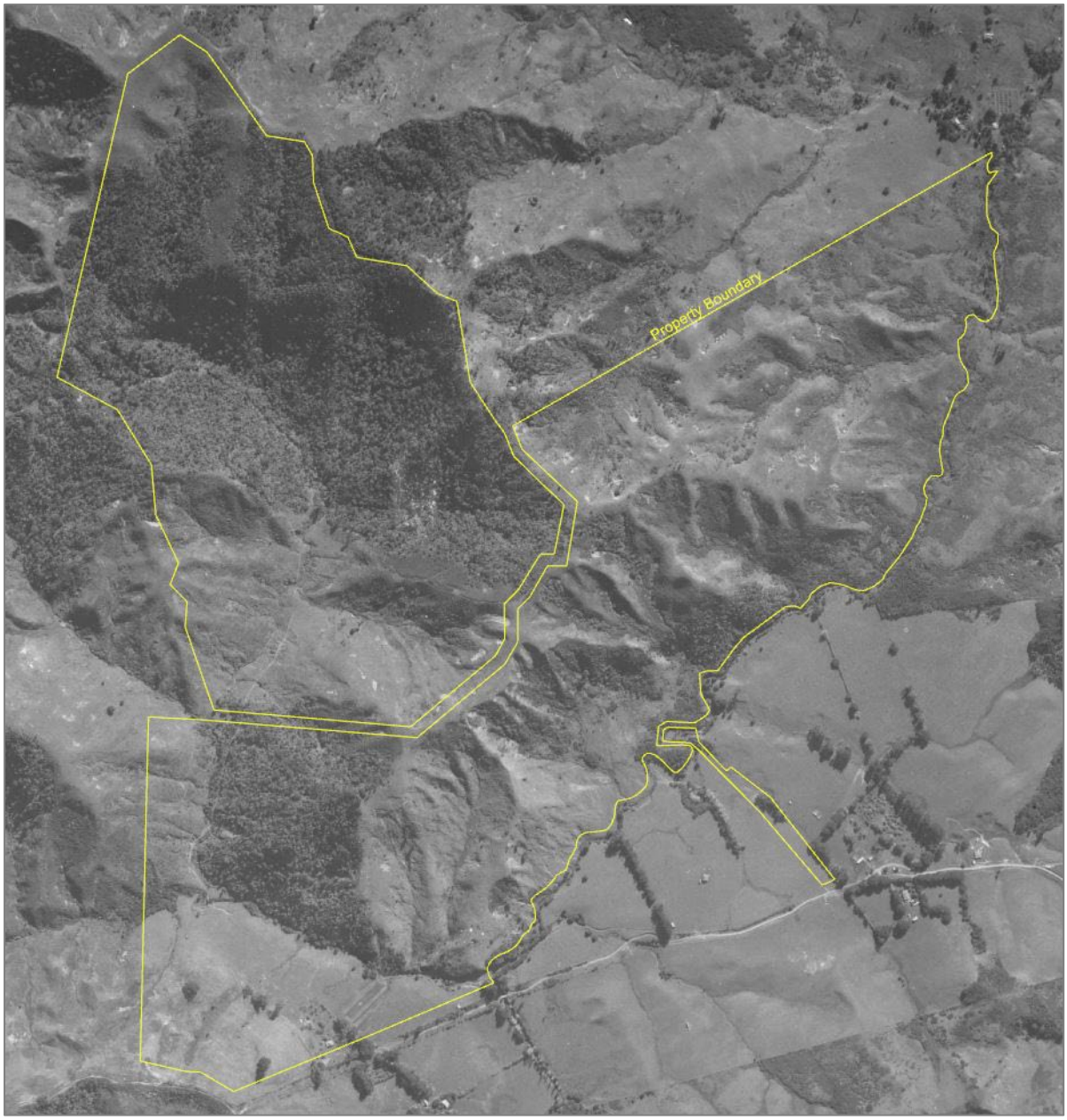


Figure 2: 1940 historic aerial photo, illustrating that the eastern part of the site was in pasture (not forested).

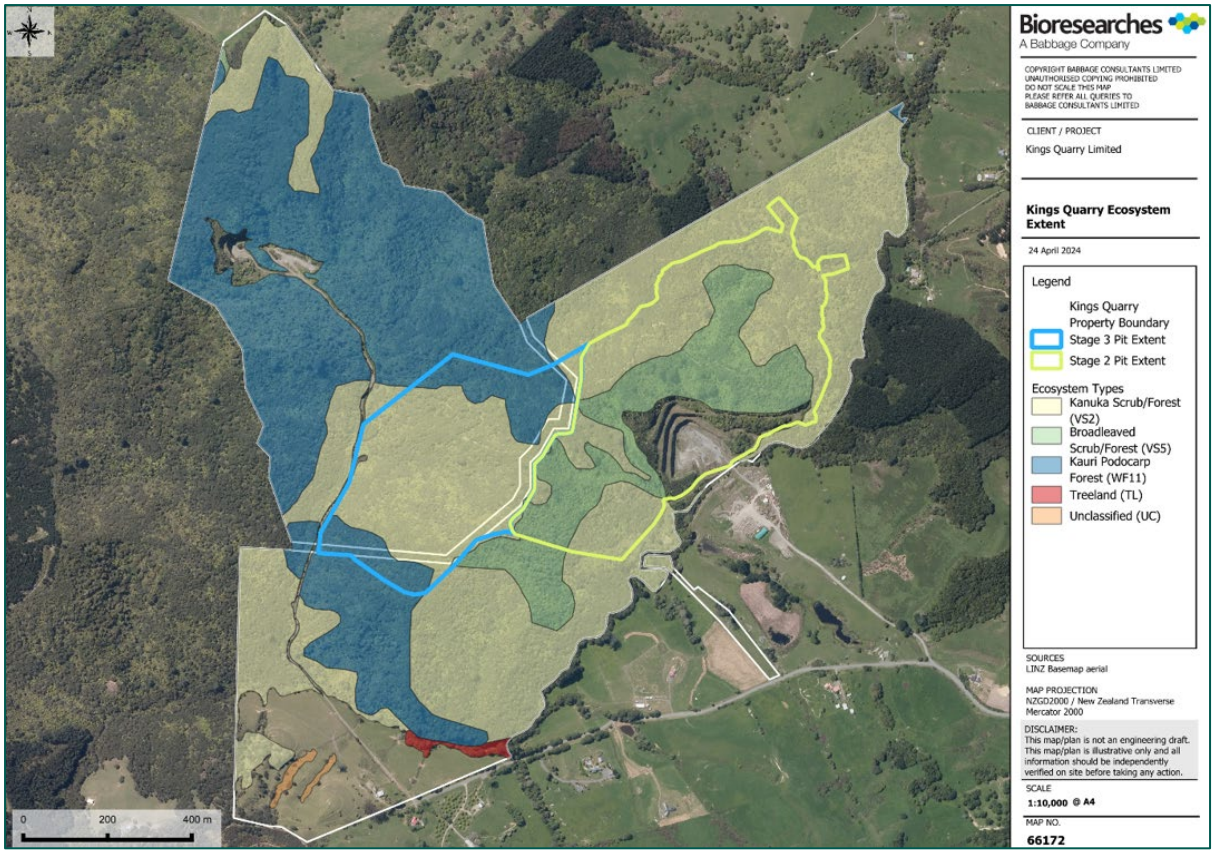


Figure 3: Vegetation types proposed to be removed.

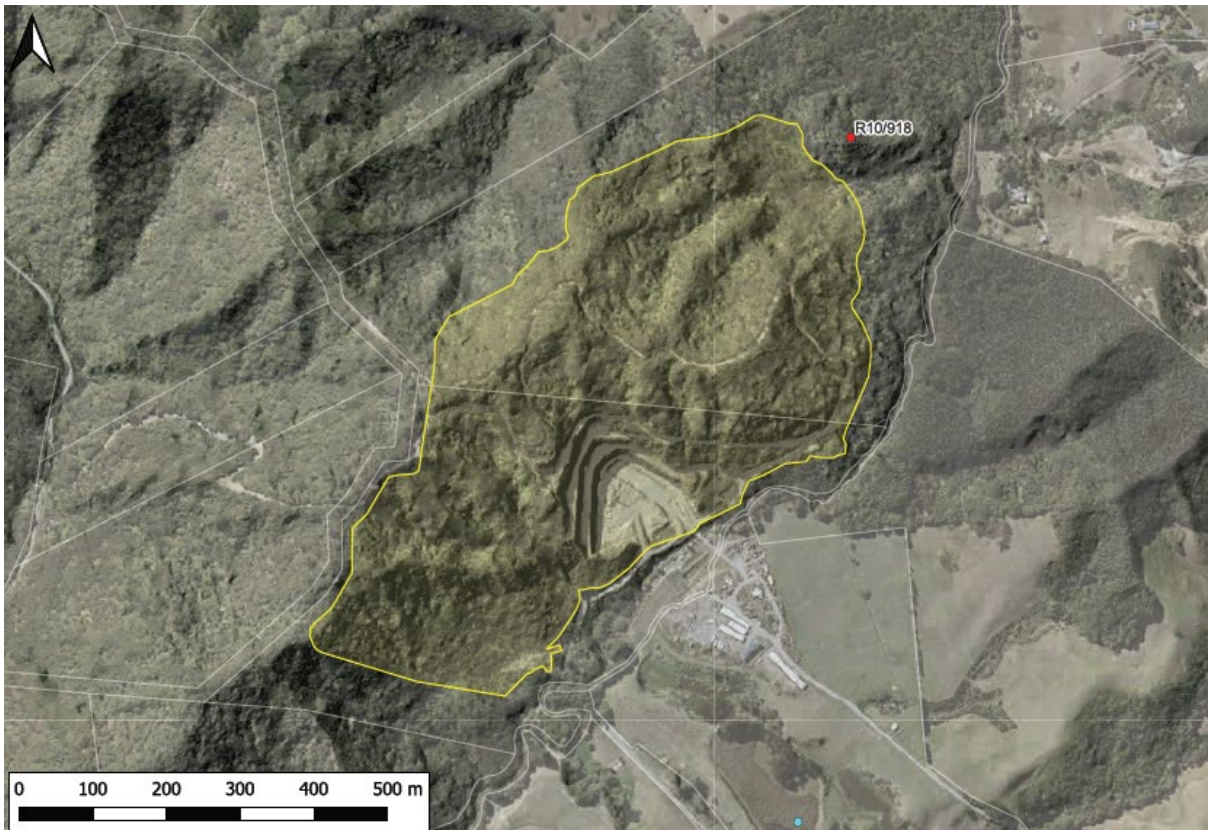


Figure 4: Stage 2 extent relative to RL10/918.

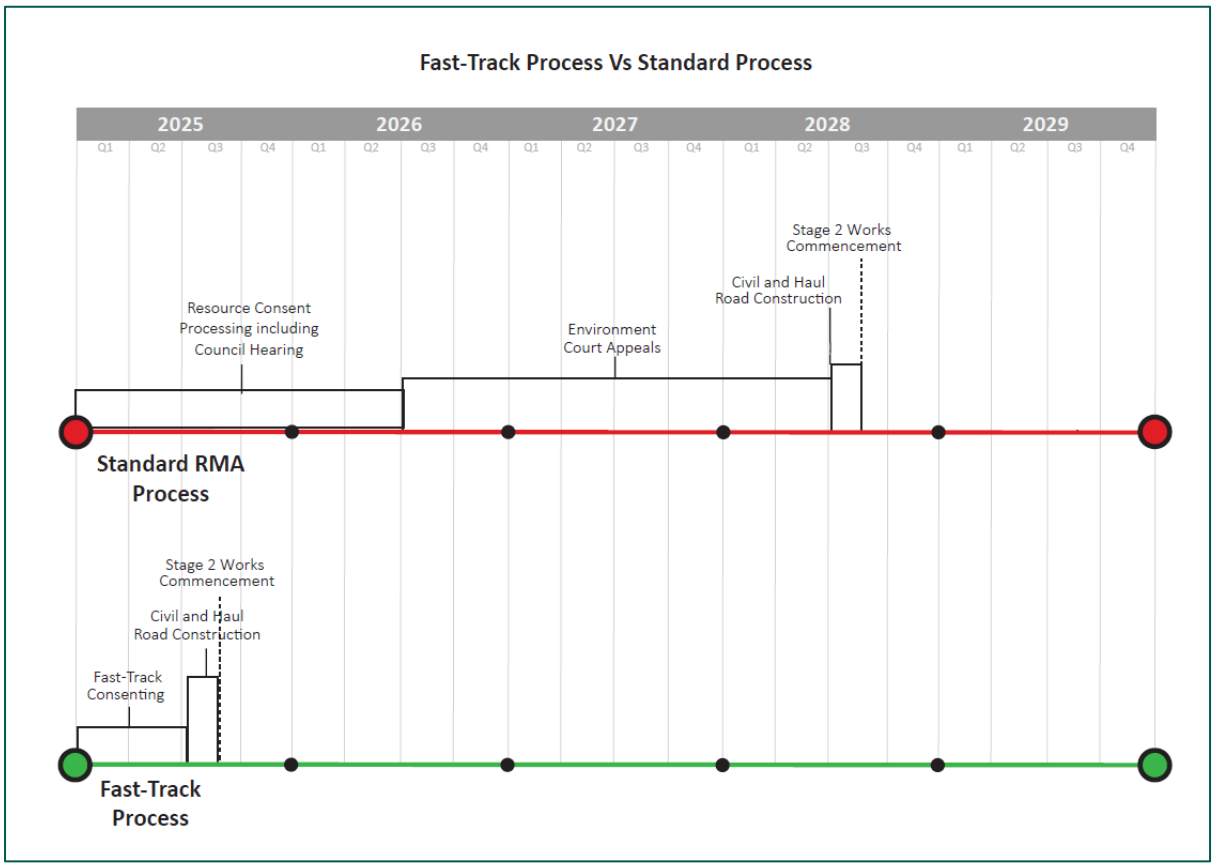


Figure 5: Timeline for RMA process versus FTCA process.

Attachment 3b – Ecological Memos – Terrestrial and Freshwater

TO:	Kings Quarry Limited (Alex Semenoff)	Date:	2 May 2024
COPY TO:	Pamela Santos (Barkers and Associates)	Job No:	66172
FROM:	Dr. Michael Anderson		

HIGH LEVEL TERRESTRIAL ECOLOGY ASSESSMENT OF KINGS QUARRY: STAGE 2 AND 3

This memorandum provides a high-level assessment of the terrestrial ecology values and characteristics within the proposed Stage 2 and 3 expansion areas (Zone of Influence, ZOI) of Kings Quarry, Wainui, North Auckland. For this assessment, the ZOI includes the proposed pit expansions and overburden disposal. This assessment is informed by a desktop review of the Stage 3 area, and detailed investigations of the Stage 2 area.

We understand that with respect to the Fast-Track Approvals Bill (Bill), this initial report supports a request to include Kings Quarry Stage 2 and 3 as a listed project under Schedule 2A of the Bill. If successful, then a more comprehensive assessment would be undertaken and will be lodged with appropriate offset, compensation and management plans as part of the substantive application.

A desktop review was undertaken to determine locations and extents of protected vegetation (riparian margins, Section E15.4.1 (A18, 19) of the Auckland Unitary Plan: Operative in Part (AUP:OP) and SEA, Section E15.4.2 of the AUP:OP), Unitary Plan Zones, and biodiversity overlays (Ecosystems current extents, GEOMAPS, Auckland Unitary Plan GIS viewer)).

In summary, provided the potential adverse effects of the Stage 2 and Stage 3 expansion on terrestrial ecological values are appropriately minimised, offset or compensated (in accordance with the effects management hierarchy) we are comfortable that ecological effects can be managed through the implementation of fauna management plans and a comprehensive biodiversity offset and compensation actions.

Overview of ecological values within ZOI.

The Stage 2 and Stage 3 areas sit entirely within an indigenous vegetation cover, represented by a mosaic of indigenous ecosystem types, including:

- Mature kauri, podocarp, broadleaved forest (WF11, Regionally 'Endangered', Singers *et al.* 2017[1])
- Regenerating kanuka scrub / forest (VS2, Regionally 'Least Concern', Singers *et al.* 2017[1])
- Regenerating broadleaved species scrub / forest VS5, Regionally 'Least Concern', Singers *et al.* 2017[1])

All of the vegetation within the ZOI is subject to a Significant Ecological Area (SEA, AUP:OP) overlay (SEA_T_6454). SEA_T_6454 is considered to meet criteria 2 (Threat status and rarity) and 3 (Diversity).

While the ZOI consists predominantly of regenerating vegetation types (VS2 and VS5, both 'Least concern') these areas support well established communities of flora and fauna, including rare and threatened species within the wider forest fragment. In addition, Stage 3 contains 5.51 ha of more established vegetation (WF11, 'Endangered'). Overall, the ecological value within the ZOI is considered to be **Very High**, and in particular:

- The ecosystems within the ZOI are dominated by indigenous species and flora and fauna. The representativeness of these ecosystem types is considered **High**.
- Throughout both mature and regenerating ecosystems, the ZOI supports a range of threatened and At Risk species, both permanently (plants, invertebrates, lizards) and intermittently (long-tailed bats). The Rarity / Distinctiveness criterion for the ecosystems within the ZOI is therefore considered **High**.
- The ZOI contains a high level of natural diversity compared to other similar areas of vegetation. This includes three indigenous ecosystem types (WF11, VS2, VS5), a relatively diverse community of native fauna (at least three species reptiles), as well as invertebrates, birds, and long-tailed bats. While the vegetation patterns are typical of the vegetation types generally found on the types of landforms present at the site (ridge tops, and riparian communities), diversity and pattern is considered **High**.
- The SEA as a whole is an important steppingstone habitat between native habitat on the west coast and habitats to the east, north of Orewa. Therefore, the ecological context of the site for vegetation is considered **High**.

Anticipated adverse effects.

The ZOI for Stages 2 and 3 include 50.22 ha of approximately 338 ha of indigenous forest associated with this fragment (see **Error! Reference source not found.**). This includes:

[1] Singers N. J. D., Osborne, B., Lovegrove, T., Jamieson, A., Boow, J., Sawyer, J., Hill, K., Andrews, J., Hill, S.,Webb, C. (2017). Indigenous terrestrial and wetland ecosystems of Auckland. Auckland.

1. 5.51 ha of mature kauri, podocarp, broadleaved forest.
2. 32.01 ha of regenerating kanuka scrub / forest (including approximate vegetation removal for stormwater ponds).
3. 12.7 ha of regenerating broadleaved species scrub / forest.

Anticipated adverse effects are expected to be of a high magnitude, and therefore a **very high-level adverse effect**, and would be expected to include:

1. Direct mortality to indigenous flora and fauna, including nationally at risk and threatened species.
2. Loss of habitat and displacement of indigenous flora and fauna, including nationally at risk and threatened species.
3. Edge effects impacting the forest by altering the shape with larger areas becoming narrower fragments with high ratio of edge to area.
4. Degradation of at least 17.4 ha of retained indigenous forest by creation of new edge effects (50 m) in at the edge of the ZOI.

These effects would require offset and compensation actions to counterbalance expected biodiversity losses. Management of the adverse effects of activities on the environment must adhere to the effects management hierarchy in order of priority, being avoid, minimise, remediate, and mitigate. Following these processes and actions, biodiversity offsetting can be applied to counterbalance any significant residual effects that remain, to achieve a net biodiversity gain.

Anticipated Mitigation

Minimisation and mitigation of adverse effects at Kings proposed Stage 2 and 3 Pit would include fauna management:

- Timing of vegetation removal to avoid the main bird breeding season (or preclearance nesting surveys to guide avoidance of nesting native birds).
- Implementation of a lizard management plan to provide for capture, relocation and any associated habitat enhancement.
- Adoption of a bat tree-felling protocol, with provision of roost boxes, and monitoring where native bat roosts are identified from survey and monitoring.
- Dense buffer planting of all newly created vegetation edges.

Following the mitigation measures detailed above, the overall level of effect would be expected to remain very high as a result of the overall loss of habitat to indigenous biodiversity, including threatened and At Risk species.

Anticipated Offset

The remaining vegetation within the Kings Quarry landholdings will be retained and protected where possible to support a biodiversity offset or compensation plan. We are comfortable that any ecological effects can be managed through conditions of consent. We would expect these conditions to address matters such as:

- Surveying requirements to confirm presence of indigenous fauna and flora in the site area, and if so, their prevalence in specific locations and any seasonal movements/changes in numbers.
- Where appropriate, controls on timing and location of works to minimise impacts on flora and fauna (for example to avoid works in some locations during any nesting/breeding seasons).
- Relocation of any fauna to appropriate locations to maximise survival rates.
- Replanting programme of relevant offset locations, including weed clearance, planting specifications, and weed/pest management.
- Ongoing pest control in balance and offset areas.

Dr. Michael Anderson

Senior Ecologist

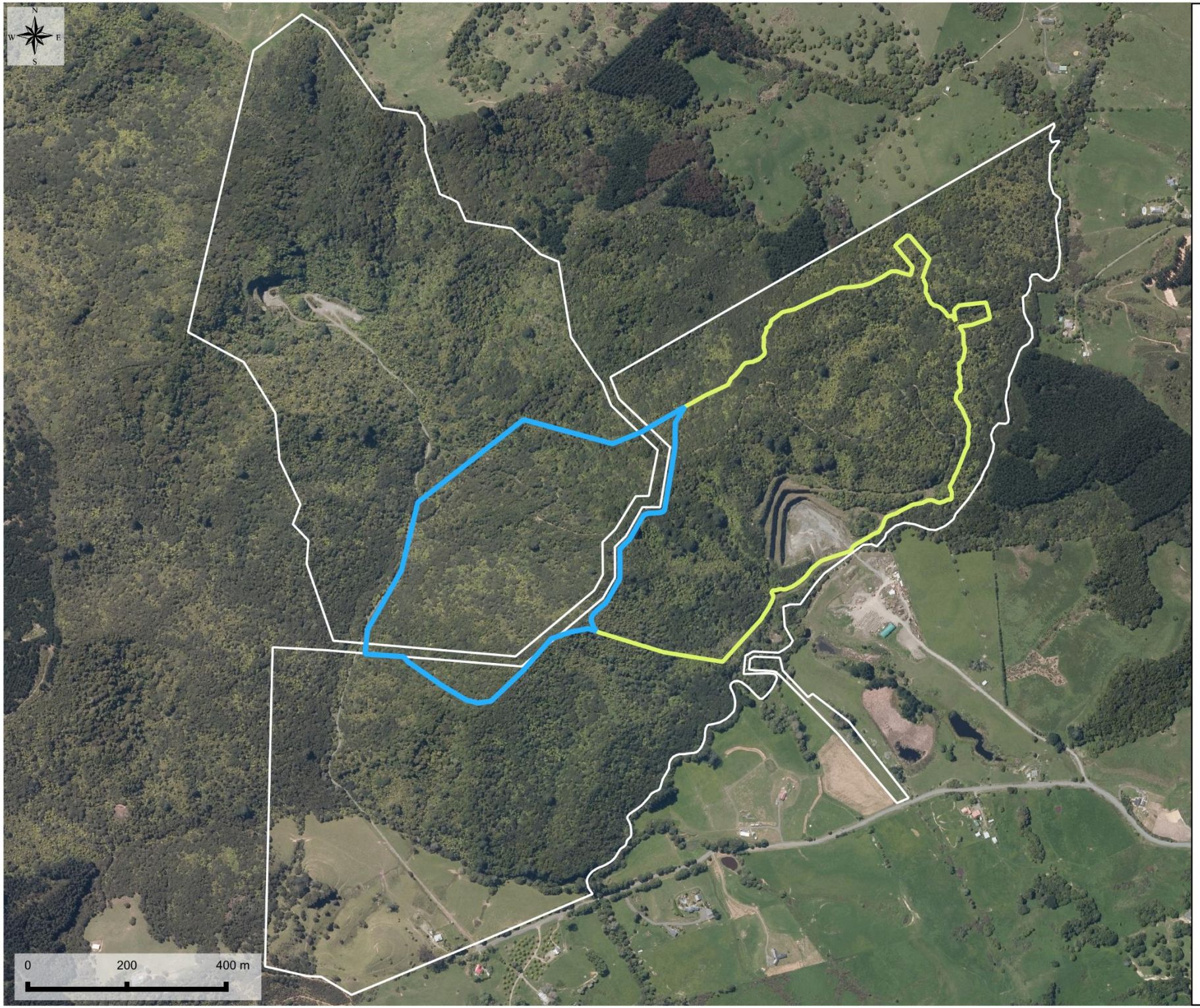
Bioresearches

Attachments:

Appendix 1: The location and areas of the proposed Stage 2 and 3 pit extent.

Appendix 2: Stage 2 & 3 pit extent with associated ecosystem types within Kings Quarry property (ecosystem extent sourced from Auckland Council Geomaps).

Applicability and limitations



Bioresearches
A Babbage Company

CLIENT / PROJECT

Kings Quarry Ltd

Stage 2 and stage 3 pit extent

10 October 2023

Legend

- Kings Quarry Property Boundary
- Stage 2 Pit Extent
- Stage 3 Pit Extent

SOURCES
LINZ Basemap aerial

MAP PROJECTION
NZGD2000 / New Zealand Transverse Mercator 2000

DISCLAIMER:
This map/plan is not an engineering draft. This map/plan is illustrative only and all information should be independently verified on site before taking any action.

SCALE
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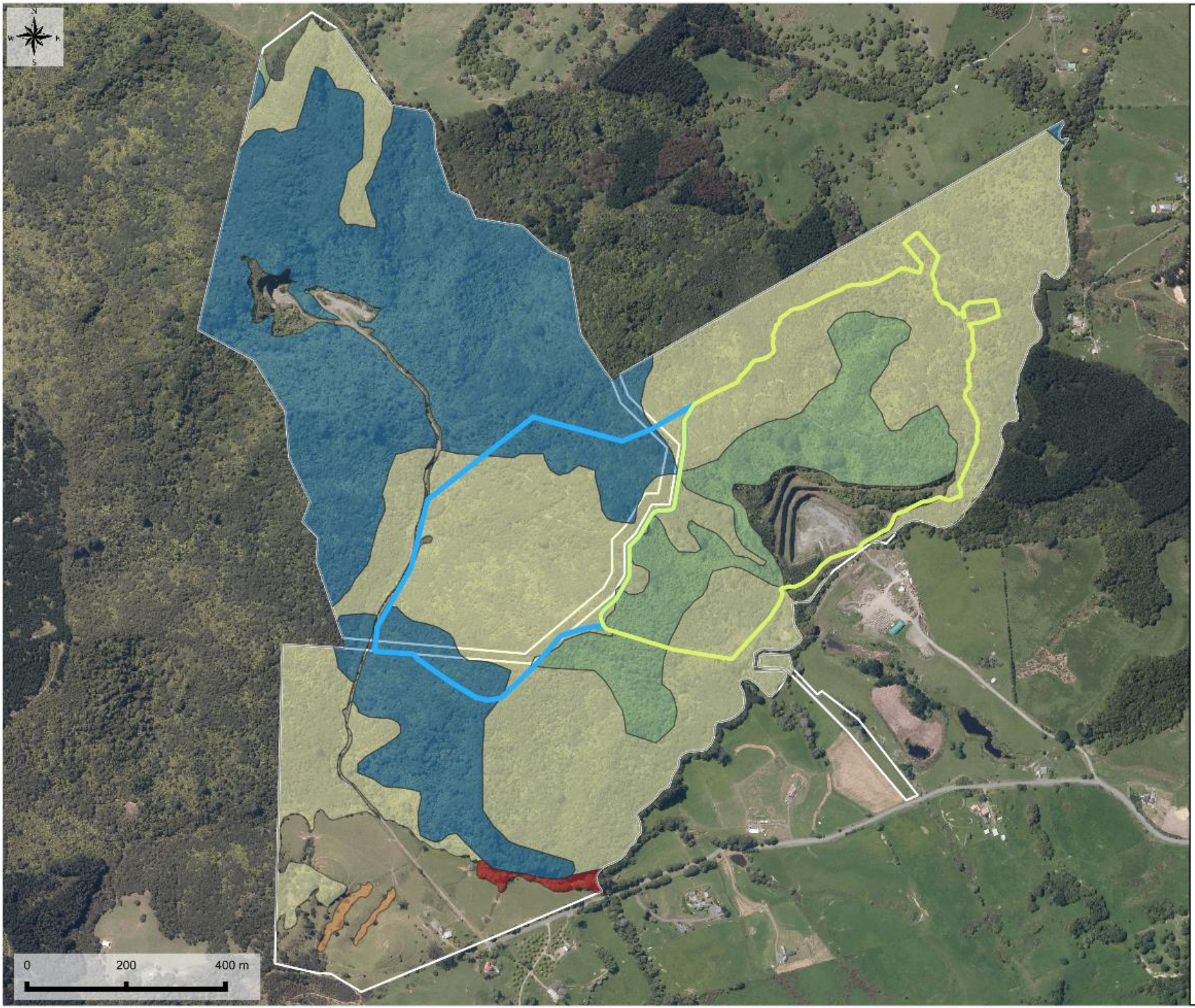
MAP NO.
66172



Bioresearches
A Babbage Company

CLIENT / PROJECT

Kings Quarry Limited

Kings Quarry Ecosystem Extent

24 April 2024

Legend

- Kings Quarry Property Boundary
- Stage 3 Pit Extent
- Stage 2 Pit Extent

Ecosystem Types

- Kanuka Scrub/Forest (VS2)
- Broadleaved Scrub/Forest (VS5)
- Kauri Podocarp Forest (WF11)
- Treeland (TL)
- Unclassified (UC)

SOURCES
LINZ Basemap aerial

MAP PROJECTION
NZGD2000 / New Zealand Transverse Mercator 2000

DISCLAIMER:
This map/plan is not an engineering draft. This map/plan is illustrative only and all information should be independently verified on site before taking any action.

SCALE
1:10,000 @ A4

MAP NO.
66172

MEMORANDUM

Bioresearches
A Babbage Company

TO:	Kings Quarry Limited	Date:	2 May 2024
COPY TO:	Alex Semenoff, Pamela Santos (Barkers)	Job No:	66172
FROM:	Laura Drummond		

KINGS QUARRY STAGE 2 AND STAGE 3 - FRESHWATER

This memorandum provides a high-level assessment of the freshwater ecological values and characteristics within the proposed Stage 2 and Stage 3 expansion area (Zone of Influence, ZOI) of Kings Quarry, Wainui, North Auckland. For this assessment, the ZOI includes the proposed pit expansion and overburden disposal, a smaller footprint to the northeast of the proposed pit.

In summary, provided the potential adverse effects of the Stage 2 and Stage 3 expansion on freshwater ecological values are appropriately minimised, offset or compensated (in accordance with the effects management hierarchy), there should be no significant barriers to the expansion of the Kings Quarry for Stage 2 and 3, in terms of freshwater ecology effects.

We understand that with respect to the Fast-Track Approvals Bill (Bill), this initial report is required to support a request to include Kings Quarry Stage 2 and 3 as a listed project under Schedule 2A of the Bill. If successful, a more comprehensive assessment would be undertaken and will be lodged as part of the substantive application.

Bioresearches
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Auckland 1140, New Zealand
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E admin@babbage.co.nz **www.bioresearches.co.nz**

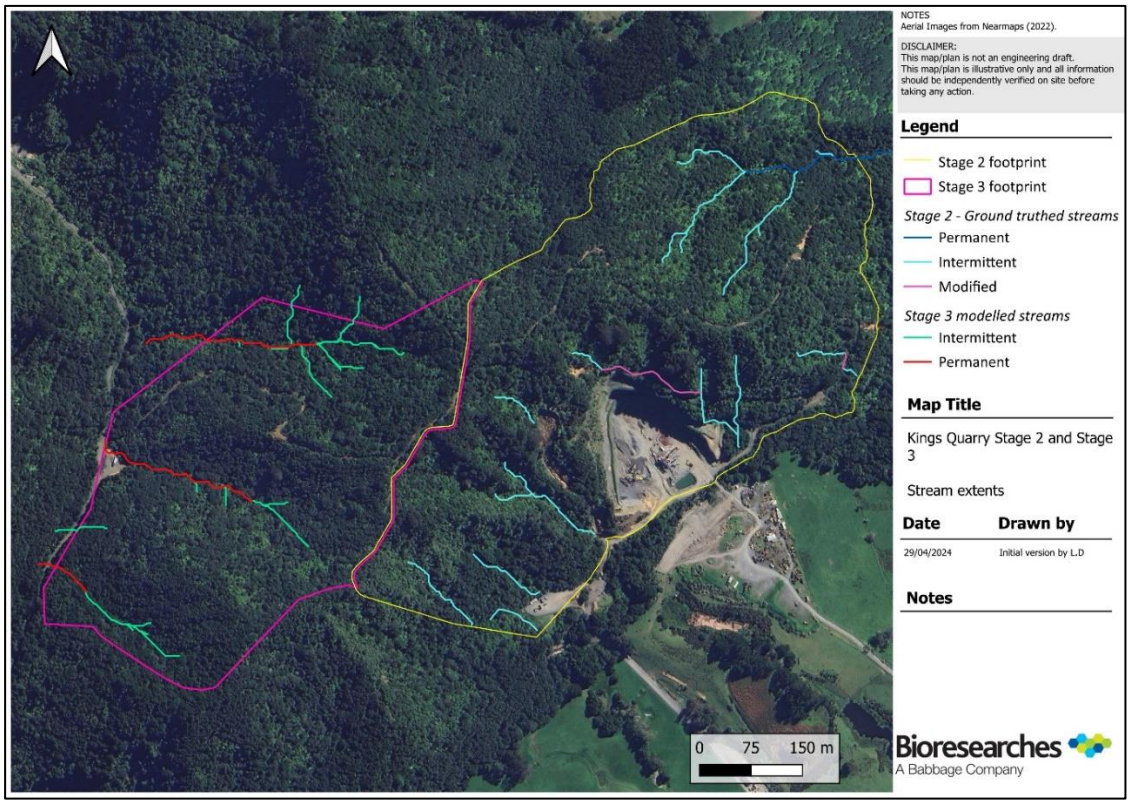

Figure 1. Kings Quarry site at Wainui, North Auckland, showing ground-truthed overland flow paths present within the proposed expansion and overburden disposals.

Auckland Council Geomaps indicate several potential permanent and intermittent tributaries of the Waitoki Stream are within the Kings Quarry Stage 2 and Stage 3 ZOI. Ten tributaries of the Waitoki Stream were observed within the expansion area, and two tributaries were observed within the overburden area.

No ecosystems extents indicative of natural wetlands (palustrine or riverine ecosystems) were observed within the ZOI, and floodplain data does not indicate the ZOI to be saturated enough to support a riverine wetland on the boundaries of the streams.

The Stage 2 and Stage 3 ZOI is covered entirely by indigenous forest, with a diverse range of vegetation observed throughout the riparian yards. The riparian vegetation provided very high shade to the watercourse, and high filtration and bank stability. Ground cover throughout the ZOI consisted of juvenile native trees and a thick layer of leaf litter.

Records from the New Zealand Freshwater Fish Database indicate īnanga (*Galaxias maculatus*), longfin eel (*Anguilla dieffenbachii*) and common bully (*Gobiomorphus cotidianus*) have been recorded within the wider King's Quarry site. Fish surveys undertaken by Bioresearches further have recorded redfin bully (*Gobiomorphus huttoni*), shortfin eel (*Anguilla australis*), smelt (*Retropinna retropinna*), banded kōkopu (*Galaxias fasciatus*) and torrentfish (*Cheimarrichthys fosteri*) within the Waitoki Stream. Due to the

topography of the site, it is unlikely īnanga, common bully and torrent fish would be able to access and reside within the streams present in the ZOI, due to their poor climbing ability.

Assessment of Effects

The predicted aquatic habitat within the ZOI that will be affected by the Stage 2 and Stage 3 expansion and overburden area comprises of approximately 2,842 linear metres of intermittent stream and 553 linear metres of permanent stream. A total of an estimated 3,395 linear metres of stream will be impacted.

The magnitude of effect of stream loss, without offset or compensation, is assessed as being 'Very High'. This is due to the complete loss of all stream habitat within the ZOI. The likelihood of this effect occurring will be definite and will have a direct impact on the stream habitat. The loss of stream will be permanent and irreversible. The proposed Stage 2 and Stage 3 works will result in a 'High' level of effect.

In addition to the proposed offset for the loss of the streams, it is also proposed to remediate the loss of stream extent through the removal of the weir within Waitoki Stream which will restore the connectivity of approximately 3.4km of stream extent. This will result in the restoration of stream hydrology, sediment transportation and the movement of aquatic fauna through all life stages. This will increase fish biodiversity, and restore habitats and natural stream processes through the upper Waitoki Catchment.

Reclamation of streams presents the potential for the injury or mortality to freshwater fauna, which are anticipated to be within the streams. As such, the potential magnitude of effects on freshwater fauna without minimisation or mitigation is expected to be 'High'.

Mitigation

The potential for injury or mortality to indigenous freshwater fauna can be mitigated by implementing native fish recovery management prior to the reclamation of streams. Intermittent streams provide less habitat for native fish in comparison to permanent streams and are temporary in nature ceasing to flow during the drier, summer periods. The implementation of a fish recovery plan and undertaking stream reclamation during summer months would minimise the potential effects on fish.

Following the implementation of appropriate fish management, the magnitude of effect on freshwater fauna is expected to be low, resulting in an overall 'Low' level of effects.

Offset

It is not possible to remediate or mitigate stream reclamation as there is a complete and permanent loss of aquatic habitat. While stream reclamation cannot be mitigated, it can be offset or compensated. The loss of the estimated 3,395 linear metres of stream in the Stage 2 and Stage 3 expansion area is

considered a significant residual adverse effect under the Auckland Unitary Plan – Operative in Part (AUP) and the National Policy Statement for Freshwater Management (NES-FM) and would require offset environmental compensation.

Recommendations for offset

Offsetting, restoration and enhancement recommendations that be captured in the conditions of consent should include the twelve principles for offsetting in Appendix 6 of the NPS-FM.

Accordingly, and subject to the above recommendations being included in the conditions package, it is concluded that the potential effects of the Stage 2 and Stage 3 pit expansion on the freshwater ecological values could be appropriately offset or compensated, and therefore we are not aware of any barriers to the expansion of the Kings Quarry for Stage 2 and 3, in terms of freshwater ecology effects.

Regards,

Laura Drummond MSc. (Hons) | Ecologist | Bioresearches
Level 3, 68 Beach Road | s 9(2)(a)

Attachment 3c – Transportation Memo

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Newmarket 1023
Auckland
www.commute.kiwi

Ms P Santos
Barker & Associates
PO Box 1986
Shortland Street
Auckland 1140

1 May 2024

Copy via email: s 9(2)(a)

Dear Pamela

TRAFFIC ASSESSMENT REPORT – KINGS QUARRY STAGE 2 AND 3

Further to your instruction, we are pleased to provide this traffic assessment in respect to Stage 2 and Stage 3 of Kings Quarry at Pebble Brook Road, Wainui (Proposal). We have assessed at a high-level, the expected transport related effects as a result of the proposed Stage 2 and Stage 3 expansions, including in relation to safety effects, effects on the surrounding roading network and sight distance.

We understand that with respect to the Fast-Track Approvals Bill (Bill), this initial report is required to inform the Ministers whether to include Kings Quarry Stage 2 and 3 as a listed project under Schedule 2A of the Bill. If successful, then a more comprehensive assessment would be undertaken and will be lodged as part of the substantive application.

A consent has been granted for Stage 1 of the quarry site. The Stage 1 quarry consent included a suite of upgrades to the Site and the local traffic network, including:

- Establishment of new site access to Pebble Brook Road to allow two-way truck movement;
- Establishment of internal site accessways;
- Widening of Pebble Brook Road to allow two-way truck movement along its length; and
- Improvements to the Pebble Brook Road / Waitoki Road intersection, including:
    - Change from Give-Way to Stop controlled intersection;
    - Shifting of the posted speed limit signage 150m to the west. This reduces the speed limit from 100km/h to 80km/h for eastbound vehicles through the intersection;
    - Installation of high friction surfacing for 100m west of the intersection; and
    - Changes to paint markings and installation of truck turning signage.

With regards to the proposal to establish Stage 2 and Stage 3 of the quarry 162-306 Pebble Brook Road:

- The quarry activity is not expected to exacerbate the safety record within the area (subject to the recommendations detailed below);
- The minor increase in traffic generation as a result of the Stage 2 and Stage 3 quarry (over that considered for Stage 1) is considered to have a minimal effect on the surrounding road network;
- The proposed access point satisfies relevant sight distance requirements;
- The Waitoki Road / Pebble Brook Road intersection satisfies Austroads Safe Intersection Sight Distance requirements for trucks for a 70km/h speed limit; and
- The surrounding road network is designed to accommodate trucks and have sufficient capacity to accommodate the additional truck movements.

It is recommended that:

- The existing speed limits on Waitoki Road should remain, however the change to 60km/h should be relocated to 150m west of the Pebble Brook Road intersection (location as per previous Stage 1 TAR); and
- The Stage 1 consented road upgrades are implemented.

Accordingly, and subject to the above recommendations, it is concluded that there are no traffic engineering or transportation planning reasons that would preclude the expansion of the Kings Quarry for Stage 2 and 3. As with Stage 1 we are comfortable that any traffic effects can be managed through standard practice conditions of consent.

Yours sincerely

Commute Transportation Consultants

Josh Brajkovic

Senior Transport Consultant

s 9(2)(a)

Leo Hills

Director

leo@commute.kiwi

Attachment 3d – Greenhouse Gas Emission Assessment

KINGS QUARRY LIMITED

Pebble brook Road
Wainui

Kings Quarry - Stage 2 and 3 Development - Greenhouse Gas Emission Assessment

Report 24171

Report date 2/05/2024

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enquiries@airmatters.co.nz
17 Banks Avenue, Mount Manganui 3116
PO Box 96 256, Balmoral 1342, Auckland, NZ
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Report prepared for Kings Quarry Limited by Air Matters Limited

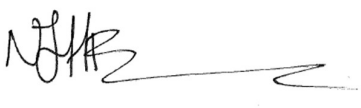
Air Matters Report: 24171
Date: 3 May 2024

Report Written by:

Nigel Goodhue

Environmental Scientist

Report peer reviewed by:



Nick Browne

Environmental Scientist

 This assessment is intended as a GHG emission report and has made a number of assumptions regarding the aggregate supply market. These assumptions have been based on the best available information and are clearly identified throughout the report where used. This report is not intended as an economic assessment of aggregate supply and demand.

Document History

No	Version	Amendments made	Issue Date
1	Final		3 May 2024

Introduction

Kings Quarry Limited (KQL) engaged Air Matters Limited to assess the potential impacts on greenhouse gas (GHG) emissions and climate change as a result of the proposed Stage 2 and 3 expansions of Kings Quarry at Pebble Brook Road, Wainui (Proposal).

We understand that with respect to the Fast-Track Approvals Bill (Bill), this initial report is required to support a request to include Kings Quarry Stage 2 and 3 as a listed project under Schedule 2A of the Bill. If successful, then a more comprehensive assessment would be undertaken and will be lodged as part of the substantive application.

For the purpose of supporting the consenting process Air Matters have reviewed the available information to determine the high-level aggregate supply chains within the Auckland Region and the potential impact of the Stage 2 and 3 expansions.

AGGREGATE SUPPLY

Aggregates are typically supplied from nearby sources because of the geographic dispersion of quarry locations (Welvaert, 2018) and the cost to transport. Due to these typically short distances, aggregates within New Zealand are almost entirely transported by road as opposed to rail or coastal shipping (Waka Kotahi, 2022).

Total demand in Auckland cannot currently be supplied within the region (Waka Kotahi, 2022). Currently the wider Auckland Region imports a share of its aggregate from Northland and Waikato and a high percentage of inter-region supply is provided from South Auckland quarries.

The Stage 2 and 3 expansions of Kings Quarry are expected to increase supply of local aggregate with a high proportion of the supply meeting the demand in the North Shore and West Auckland areas. For the purpose of this assessment, it is assumed that the entire annual volume of aggregate (500,000 tonnes) supplied from Kings Quarry would be used within the Auckland Region.

In addition to bulk aggregate for construction and roading, Kings Quarry will produce decorative rock in the form of pebbles. Supply into Auckland for this type of rock is currently from Manawatu and the South Island (Alex Semenoff, pers comms). The additional supply of decorative pebble as a result of the Stage 2 and 3 expansions will likely supply throughout the Auckland Region.

As detailed above, a portion of the aggregate demand from the North Shore and West Auckland is currently supplied from South Auckland and areas outside of Auckland Region including Waikato and Northland. Over time aggerate demand in Auckland is expected to increase with further supply constraints resulting in potentially higher reliance on out-of-region supply.

The Stage 2 and 3 expansions of Kings Quarry will provide long term security for an inner region supply of aggregates. Given the cost to transport bulk material, Kings Quarry is expected to favourably displace more distant supplies.

An initial quantitative assessment has been undertaken that followed standardised GHG reporting methodologies including Ministry for the Environment guidance (MfE, 2022a). Reductions in GHG emissions were calculated based on changes in cartage distance. Kings Quarry supply of aggregate to key markets (Northshore and West Auckland) was compared to existing quarries in South Auckland, Waikato and Northland Regions with Kings Quarry's proposed annual volume (500,000 tonnes) displacing the supply of these more distant quarries. Standardised GHG emission factors where then applied to the change in cartage distance to calculate the annual reduction in CO_2 equivalent GHG's.

Given the potential savings in bulk transport, the Kings Quarry Stage 2 and Stage 3 expansions will have a positive immediate benefit in reducing New Zealand's transport related greenhouse gas emissions. Based on current available information it is estimated that a reduction of 12,551 tonnes of CO_2 equivalent GHG's could be achieved annually. A moderate level of uncertainty should be considered given the number of high-level assumptions that have been made. To provide context this equates to ~0.35% of New Zealand's total heavy vehicle CO_2 equivalent GHG emissions, using Ministry of the Environment's transport data from 2019 as a base year.

The Stage 2 development is expected to provide an operational lifetime of up to 60 years at an annual average extraction rate of 500,000 tonnes. Stage 3 is expected to provide an additional operational lifetime of up to 40 years at an annual extraction rate of 500,000 tonnes. Once operational, the quarry can provide a range of aggregate with capacity to crush and screen onsite.

Given the expected life span of Stage 2 and 3, assumptions on aggregate supply and demand and transport methods used in this assessment may not remain consistent over this period of time. Annual GHG emissions would therefore also fluctuate depending on these factors. Consequently, a high level of uncertainty would apply to extrapolating the estimated annual GHG savings over the life of the Kings Quarry Stage 2 and 3 expansions.

The impacts of establishing and operating the quarry itself have not been included in this assessment. It is assumed that the GHG emissions from these activities would be similar to any other existing aggregate quarry. In the case of a greenfield quarry development the GHG emissions from Kings Quarry Stage 2 and 3 are likely to be significantly less. This is based on the site already having established infrastructure including access road and a historic quarry face.

Accordingly, it is expected that the proposed expansion of the Kings Quarry for Stage 2 and 3 will have positive effects on GHG emissions.

1. References

Waka Kotahi NZ Transport Agency (2022). Aggregate supply and demand in New Zealand, Waka Kotahi NZ Transport Agency research report 693.

Ministry for the Environment (2022a). Measuring emissions: A guide for organisations. 2022. Detailed Guide. Wellington

Ministry of Transport (2017) Transport Outlook: Future State. A starting discussion on the future of transport in New Zealand

Ministry of Transport (2022) Mahere Hohenga kia Whakakorea te Waro ā-Kawenga 2022-25 | Decarbonising Transport Action Plan 2022–25.

Aggregate & Quarry Association of NZ (2020). The Tyranny of Distance: Counting the cost of transporting aggregates (presentation sourced online at:

Attachment 3e – Economics Assessment

Kings Quarry – Stage 2 and 3 Expansion

High level assessment of economic effects for Fasttrack approval

2 May 2024

m.e consulting

Prepared for

Semenoff Group Ltd.

Document reference:	SSG 003.24	
Date of this version:	2 May 2024	
Report author(s):	Lawrence McIlrath	021 042 1957
	Greg Akehurst	021 896 537

www.me.co.nz

Kings Quarry Limited (KQL) engaged Market Economics (M.E) to provide a high-level economic overview of the proposed Stage 2 and 3 expansions of Kings Quarry at Pebble Brook Road, Wainui (Proposal).

We understand that with respect to the Fast-Track Approvals Bill (Bill), this initial overview is required to support a request to include Kings Quarry Stage 2 and 3 as a listed project under Schedule 2A of the Bill. If successful, then a more comprehensive assessment would be undertaken and will be lodged as part of the substantive application.

Urban Growth in Auckland

Auckland is New Zealand's largest economy[1] and generates 38% of the national GDP. Auckland is experiencing strong population growth, and despite challenging economic conditions associated with the slowing business cycle, investment in buildings and infrastructure is ongoing.

Economic growth is in part related to urban development and expansion, meaning that the ability to cater for increases in population and economic shifts is heavily reliant on and directly linked to the sustained availability of aggregate.

Aggregate is a high volume, low value commodity – transporting it from source to where it is used is expensive. Access to suitable, and sufficient high-quality aggregate, from appropriate locations is critical to delivering infrastructure and housing as well as facilitating economic activity across a range of industrial and productive sectors. Using local sources of sustainably quarried aggregate ensures that it can be provided to market at a cost-effective price.

Auckland's aggregate sector

Auckland's total quarrying capacity is concentrated in a handful of large operations with most of these located towards the south – near Brookby and Drury. Flat Top quarry is located to the north. Auckland's production is estimated at around 10m tonnes. However, Auckland does not produce enough aggregate to satisfy local demand. At present, the deficit is filled via importing aggregate from Northland and the Waikato. Without increasing local aggregate supply, demand growth can only be achieved through additional imports.

There are direct costs associated with carting aggregate to Auckland. The greater the distance between the origin (quarry) and destination points, the greater those additional costs. Conservative estimates[2] suggest that the cost to transport aggregate to Auckland's border is $166 million per year – this excludes the distribution costs relating to movements from the border to end users. Clearly, aggregate shortfall has direct transport implications, and the economic costs are material. Enabling the city to supply aggregate from within, using local resource will reduce reliance on imported aggregate, generating immediate economic benefits. These benefits relate to avoiding direct costs, emissions savings and avoiding social costs.

Expected benefits from Kings Quarry expansion

The construction sector is regionally significant. It generates $8.7bn of GDP, equal to 6.1% of the City's total GDP. Further, construction is a significant employer, with 10% of Auckland employment falling in this sector.

[1] Sourced from Infometrics.
[2] M.E analysis of aggregate industry.

Enabling aggregate to be extracted from Kings Quarry will support the Auckland aggregate market, and substitute regionally imported aggregate. Using local aggregate will have direct benefits associated with the construction sector. However, the true benefits that enabling Kings Quarry will deliver relate to the facilitated effects i.e., by supporting construction, it will lift the productivity of infrastructure delivery. The immediate benefits of high quality infrastructure in the city-wide context are:

- Hard infrastructure requires concrete, and these investments include economic assets such as roads, bridges, ports, and railways. It is critically important to ensure that infrastructure supports and improves the efficiency of moving goods, people, and information. If aggregate is not available, or if infrastructure cannot be delivered in a cost-efficient or timely manner, then this will lead to cost/budget increases, travel delays and disruptions, long travel times and productivity losses for both individuals and businesses. Overall, these impacts reduce welfare standards.
- Infrastructure enables trade by reducing transaction costs between local boards within Auckland, and the other regions. These connections stimulate and support growth.
- Well-developed infrastructure attracts domestic and foreign investment. The investment case is stronger for regions with reliable and robust transportation, communication, and energy networks.
- Infrastructure investments in areas such as healthcare, education, and three waters contribute to improving the quality of life. This, in turn, enhances productivity, innovation, and economic competitiveness.
- Infrastructure investments can enhance resilience to natural disasters, climate change, and other shocks. For example, flood defences can reduce the economic costs associated with disruptions and damages. In addition, addressing damage after an event requires strong supply chains, with an ability to access raw materials and processing capacity from diverse sources critically important.
- Infrastructure projects have long-term benefits that extend beyond immediate economic gains.

Using the Kings Quarry resource offers a new opportunity to deliver aggregate from within Auckland, and to avoid some costs. Using this resource offers an ability to supply aggregate to Auckland in a way that not only satisfies marked demand but does so in a way that delivers a range of wider economic benefits.

Combined, Stage 2 and 3 of Kings Quarry will deliver an additional 500,000 tonnes of rock annually (over a period of 100 years) to the Auckland market. Transporting aggregate is expensive, with costs directly linked to distance. Any unnecessary travel distance will have an adverse effect on total costs, and therefore any project budget that relies on aggregate. The potential benefits of enabling Kings Quarry's Stage 2 and 3 include:

- direct transport costs savings that arise because the need to transport aggregate over land is reduced and a more efficient transport function is used to deliver aggregate to end-users. This can result in lower aggregate prices that will reduce, or at least suppress, the concrete price component of infrastructure project budgets, and will create extra competition which ensures that the market remains efficient.
- Avoiding aggregate delivery trips, or using a distribution approach with less total distance, will avoid environmental costs associated with emissions, as well as the social costs associated with deaths and injuries.

Accordingly, it is concluded that the expansion of the Kings Quarry for Stage 2 and 3 will be regionally significant in terms of the economic benefits it will provide to the construction sector.