



Muriwai Golf Project

Assessment of Environmental Effects **FARMING OPERATIONS REPORT**

Date: 2nd December 2021

Prepared for
The Bears Home Project Management Limited
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1. EXECUTIVE SUMMARY

- 1.1 The Muriwai Downs golf project is an exciting proposition for the Muriwai Downs farming business as it allows us to continue our focus on strategic investment into modern technology and practices, simplicity in terms of structures and excellence in execution. These basic objectives alongside a golf project which will have a close interest in farming and how food is produced gives us the opportunity to showcase and supply the premium products produced on Muriwai Downs.

Existing farm and operations

- 1.2 We currently farm sheep, beef and dairy. The last 24 months since the change in ownership the focus has been on compliance, simplicity and improving performance. The project will use our poorest land which is currently kikuyu dominant steeper land. The sheep and beef farm will remain largely unaffected but with improved facilities and per hectare performance. The dairy farm, which is of small scale, will be decommissioned to make way for the relocated sheep and beef unit. This will allow us to continue our current trajectory of improving farm viability.

Proposed farming activity and operations

- 1.3 The objective is to retain a commercially viable dry stock business that can provide a positive financial contribution. It is also intended that the farming business will add an “authentic” aspect to the visitor experience and enhance their engagement with rural New Zealand. The sheep and beef unit will have a reduced risk in terms of climate, health and safety and environmental impacts.

Quarry operations

- 1.4 Quarry operations are unaffected by the golf project. We anticipate operating as we do today with no material changes.

2. INTRODUCTION

Purpose of this report

- 2.1 This report forms part of a suite of reports prepared for the Project. Its purpose is to inform the AEE and to support the resource consent applications for the Project.
- 2.2 DNA Lands Ltd has been retained by the owner of the Muriwai Downs Property to oversee management, operations and provide strategic advice: The Bears Home Company Limited (the **owner**). The Bears Home Project Management Limited (the **applicant**) is a subsidiary of the owner.
- 2.3 The Bears Home Company Limited purchased the property in 2019 with possession in December of 2019.
- 2.4 The purpose of this report is to provide a summary of the current and proposed farming activities as part of the Project including an assessment of the rural productive capacity of the Site.

Project description

- 2.5 The Project comprises the following main physical components:
- (a) A 19-hole golf course with warm-up facility and short-game practice area;
 - (b) Groundwater and surface water abstraction facilities;
 - (c) Off-stream water storage reservoir;
 - (d) A clubhouse;
 - (e) A sports academy including golf training facility, a 9-hole short course, and indoor and outdoor tennis courts;
 - (f) A golf and property maintenance facility;
 - (g) A luxury lodge;
 - (h) Significant ecological restoration and enhancement works; and
 - (i) Various supporting infrastructure associated with the above items.

3. CURRENT FARMING OPERATION

- 3.1 The current farming layout is illustrated in Figure 1. Farm operations are summarised in Tables 1 and 2.
- 3.2 The dairy unit (Zone 1) currently supplies an average of 53,00KgMs to Fonterra each year on a 100% autumn calving system, supported by a 100KgMS/Day winter milk contract. The dairy unit is materially more profitable than the sheep and beef farm (Zone 2,3 & 4) , at \$2,300 budgeted nett profit per Ha (excluding overheads) vs just above breakeven for the sheep and beef unit. This profit is based on the current high milk price of \$8.00/Kg, and reduces significantly in an average milk price year.

3.3 Both the dairy unit and the sheep and beef unit individually are of marginal scale to support staff salaries plus overhead costs. The overheads involved with absentee ownership coupled with the value of land in this region mean we struggle to provide a consistent commercial return of any meaningful value.

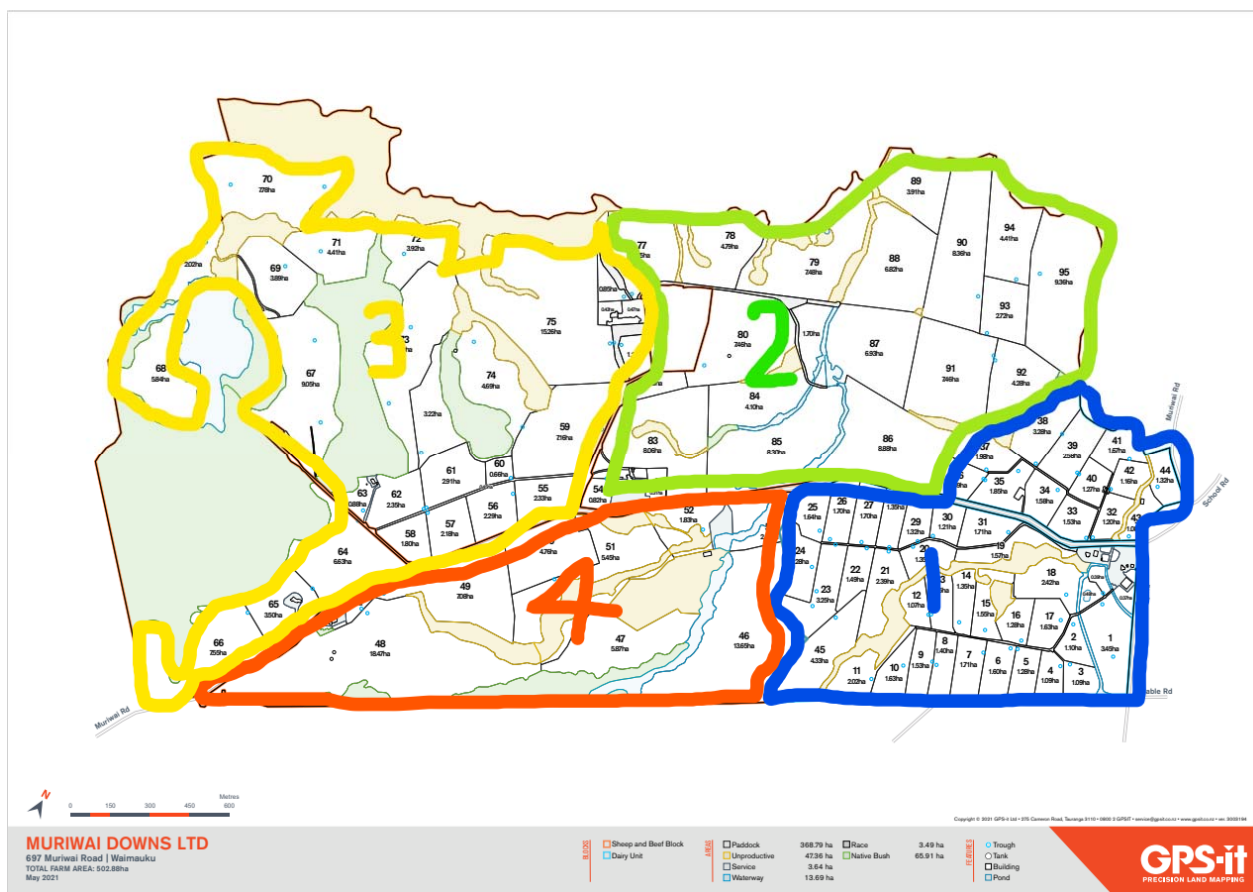


Figure 1: Current Farm Layout (Farming Areas 1, 2, 3 and 4 are detailed further in Tables 1 and 2)

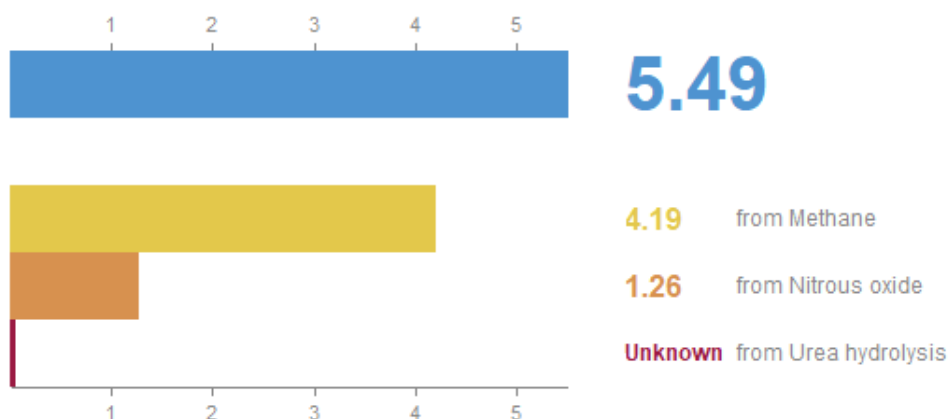
- 3.4 The current operation consists of two farming enterprises, Drystock and dairy. Since the owner took possession we have managed to integrate units to capture synergies and lowered risk across the business.
- 3.5 The summary below shows the 2022 forecast, we have plenty of scope for performance lifts. The focus of the Drystock unit is to lift pasture eaten to above 7.5T DM /Ha and lower the conversion efficiency to below 25 kg DM/ kg Product. This will be achieved through continuing the policy of changing the ratio and performance of the breeding stock to have more output per total KG liveweight carried plus by growing more total KgDM.

Table 1: Summary of Current Drystock Farming Operation

		Physical Summary for Muriwai <small>Jun 21 - May 22</small>	
			Total
Area	Total Area (ha)		286
	Farm Area (ha)		286
	Grazing Area (ha)		272
Feeding	Pasture Eaten (t DM/Total ha)		5.88
	Supplements Eaten (t DM/Total ha)		0.69
	Total Eaten (t DM/Total ha)		6.57
Performance	Nitrogen Boost (tDM/Total ha)		0.00
	Stocking Rate (SU/Total ha)		11.9
	Feed Conversion Efficiency (kg DM/ kg Product)		28.5
	Gross Margin (\$/Total ha)		1,198
Species Ratio	Sheep (%)		58
	Beef (%)		42
	Deer (%)		0

NB. Previous versions of this report used a different [area definition](#).

Total CO₂ Equivalent (tonnes/Total ha)



- 3.6 Below is the report generated by Fonterra which is required to support regulatory reporting requirements.
- 3.7 This table shows we have a low stocking rate and have a low input system in place that has minimal environmental impact relative to many dairy systems.
- 3.8 The report illustrates that our environmental risk in operational areas is low or very low. This has been the result of changing practices since ownership passed to the owner.

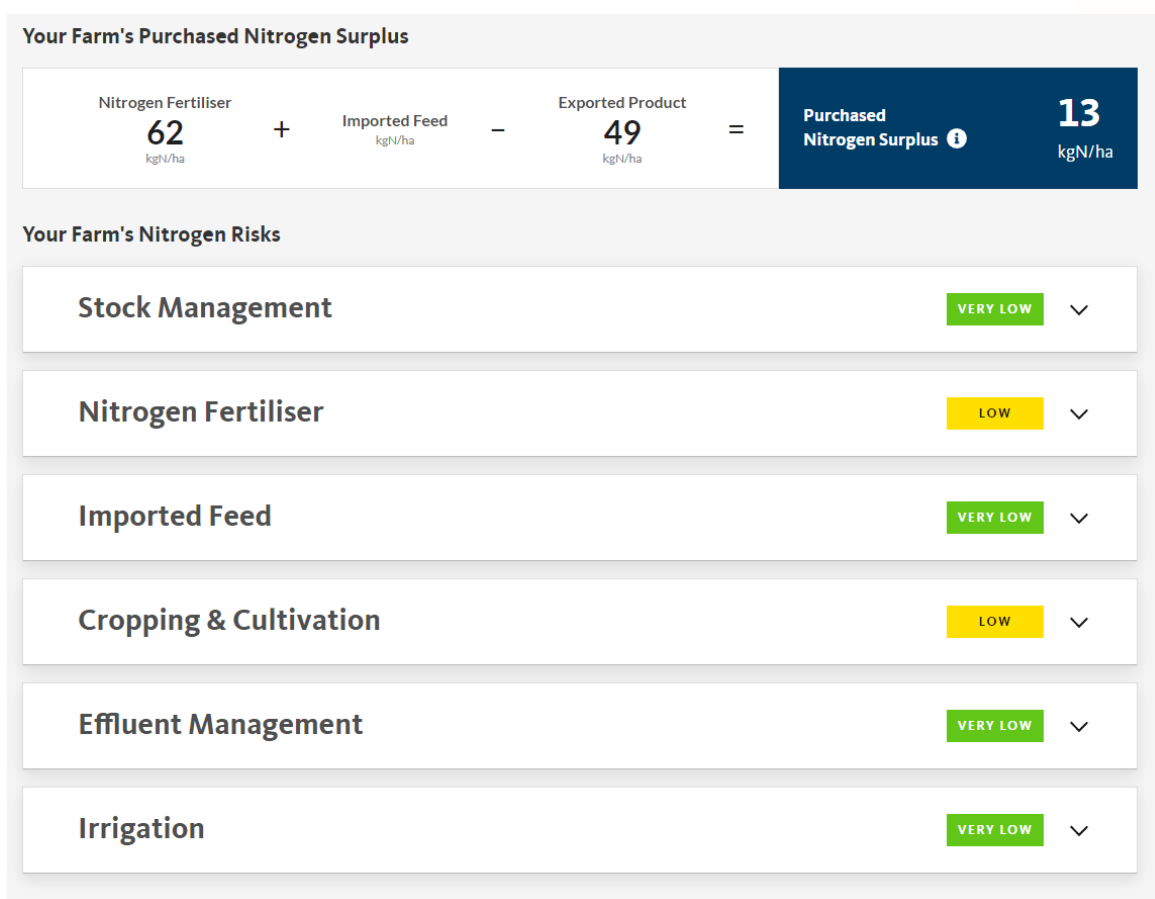
Table 2 Summary of Current Dairy Farming Operation

Key Information

Purchased Nitrogen Surplus ⓘ 13 kgN/ha	Greenhouse Gas Emissions ⓘ 6,480 kgCO ₂ e/ha
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YOUR FARM

Dairy farm effective area	78 ha
Peak cows	145 cows
Stocking rate (milking cows)	1.9 cows/ha
Production (milk solids produced)	53,264 kgMS
Production per cow	367 kgMS
Production per hectare	683 kgMS/ha
Nitrogen fertiliser applied per hectare	62 kgN/ha
Imported supplementary feed fed	0 t
Imported supplementary feed fed per cow	0 t/cow



4. INVOLVEMENT IN FARMING OPERATIONS AND PROJECT

- 4.1 I was approached in 2019 to help the owner complete the purchase of Muriwai Downs. Post-acquisition, I was engaged to help establish the team, develop operational plans and implement systems for the farming and quarry business.
- 4.2 The owner took possession just before the Christmas of 2019 and over 2020 we slowly built the team that is in place today. Priorities were establishing the farm's capabilities and carrying capacity so we could best match systems to the environmental challenges and opportunities of the farm. Facilities needed improvement to allow efficient operations in line with industry Good Practice.
- 4.3 We implemented a Development Programme that allowed us to provide suitable housing, safe facilities, sustainable stock management and lastly increase pasture harvest by sowing new pastures and investing into overdue capital fertiliser to ensure we could be sustainable. These benefits are just starting to show up in the 2021-2022 production season.
- 4.4 The primary focus has been to lift productivity by:
- Reducing the amount of capital breeding stock in both Cattle herd and Sheep flock.
 - Mating animals a year earlier than the existing program, to improve the rate of genetic improvement and produce a higher level of terminal stock relative to breeding stock.
 - Ensuring we had programs in place to lift the fertility levels of the sheep flock.

- (d) Putting strategies in place for the dairy herd to improve levels of non-pregnant cows and losses each year these metrics which are now showing improvement in operational KPIs.
- (e) Developing a labour structure to ensure we have full-time, sustainable employees available.
- (f) Reduce the wasted and surplus resources so we are capital-efficient.

5. OPERATING THE FARM ALONGSIDE THE PROJECT

- 5.1 The objective is to retain a commercially viable Dry Stock business that can provide a positive margin. It is also intended that the farming business will add an “authentic” aspect to the visitor experience and enhance their engagement with rural New Zealand.

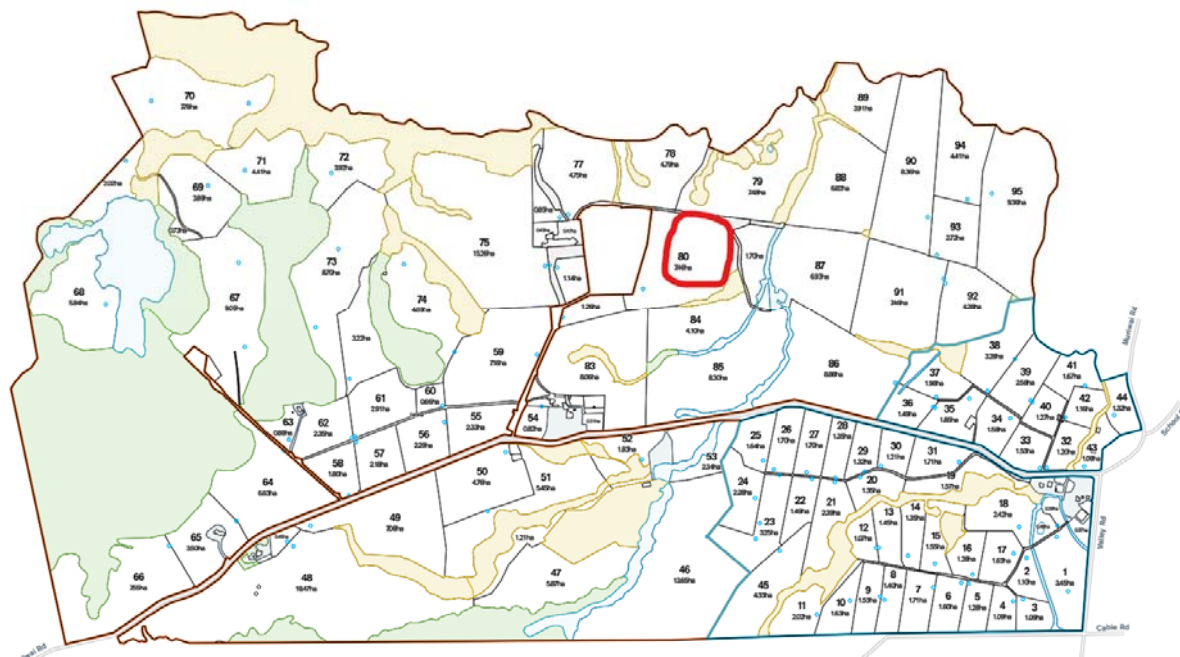
Cease Dairy

- 5.2 The Project will result in the displacement of approximately 6Ha of dairy farmland because of the proposed water storage reservoir, and approximately 97Ha of drystock farmland because of other elements of the Project. This has required a full review of farming operations.
- 5.3 The intention is to cease Dairy Farming if the Project proceeds as planned. The dairy Unit is currently viable, but any reduction in available area will make it further compromised in terms of scale. With the storage reservoir consuming approximately 6Ha of our effluent area, this reduces the available Dairy area. The existing infrastructure is tired and needs investment to remain compliant in future years. Adding additional investment for effluent ground and infrastructure means the total capital required to continue dairy is a challenging proposition.
- 5.4 Staffing on smaller units continue to be a challenge, so having a smaller dairy unit and a smaller sheep and beef farm is not an option. The decision is to continue with sheep and beef at the same scale and close the dairy unit down.

Continue with Drystock

- 5.5 The Farming of Drystock will fundamentally be the same as it currently is. Any area lost to golf will be replaced by area gained from ceasing dairy farming.
- 5.6 The Drystock farm will need to reorientate its operations around a new woolshed and cattle handling facilities; it is envisaged that we would build new facilities somewhere near paddock 80 – see Figure 1 below.
- 5.7 This location is preferred because of:
- (a) Existing entry and exit on the roads.
 - (b) Reasonably close to electricity supply.
 - (c) It is a dry area with relative elevation.
 - (d) Privacy from the road.
 - (e) Easily manageable in terms of water run-off and free from wetlands.

Figure 2 - New Woolshed and Cattle handling Facilities



5.8 We have built a set of satellite yards on the southern side of Muriwai Road to limit the need to move stock across the road on regular basis. This is a material health and safety risk that we have minimised as much as we can. Without the dairy farm, the Drystock unit will now have stock access to both sides of the road via the underpass currently utilised by the dairy unit. This will materially, if not completely, remove the need for stock to cross the main Muriwai Road, creating a safer environment for our staff and the public in general.

5.9 The farm is very visible to the public and we currently carry a higher level of staff to ensure our practices are at a high level to avoid any complaints or issues with perceived welfare or environmental matters. Under the stewardship of the current owners, we have had nothing but praise from the local community in terms of how the farm is managed. With the Project, and the anticipated level of clientele/visitors, we expect this scrutiny to lift to a point where we must go beyond current New Zealand compliance and best practice level. Our new objective will be to exceed visitor expectations of a New Zealand food system, which will require us to invest in smart technology, whilst retaining a traditional feel to the operations.

5.10 In terms of staff this means that after investing into new and more efficient facilities and adoption of time-saving technologies, it is likely that:

- (a) We will need an additional 0.5 FTE on the sheep and beef unit.
- (b) We will reduce staff by 1.5 FTE by losing the dairy team

Whilst the Project area taken is greater than the area gained from the exit of dairy, the land gained is materially more fertile and productive than that lost.

5.11 The daily farm operations are unlikely to be affected by the golf and lodge activities and can be run alongside each other with no problems.

6. PRODUCTIVITY CAPACITY OF PROPOSAL FOR FARMING

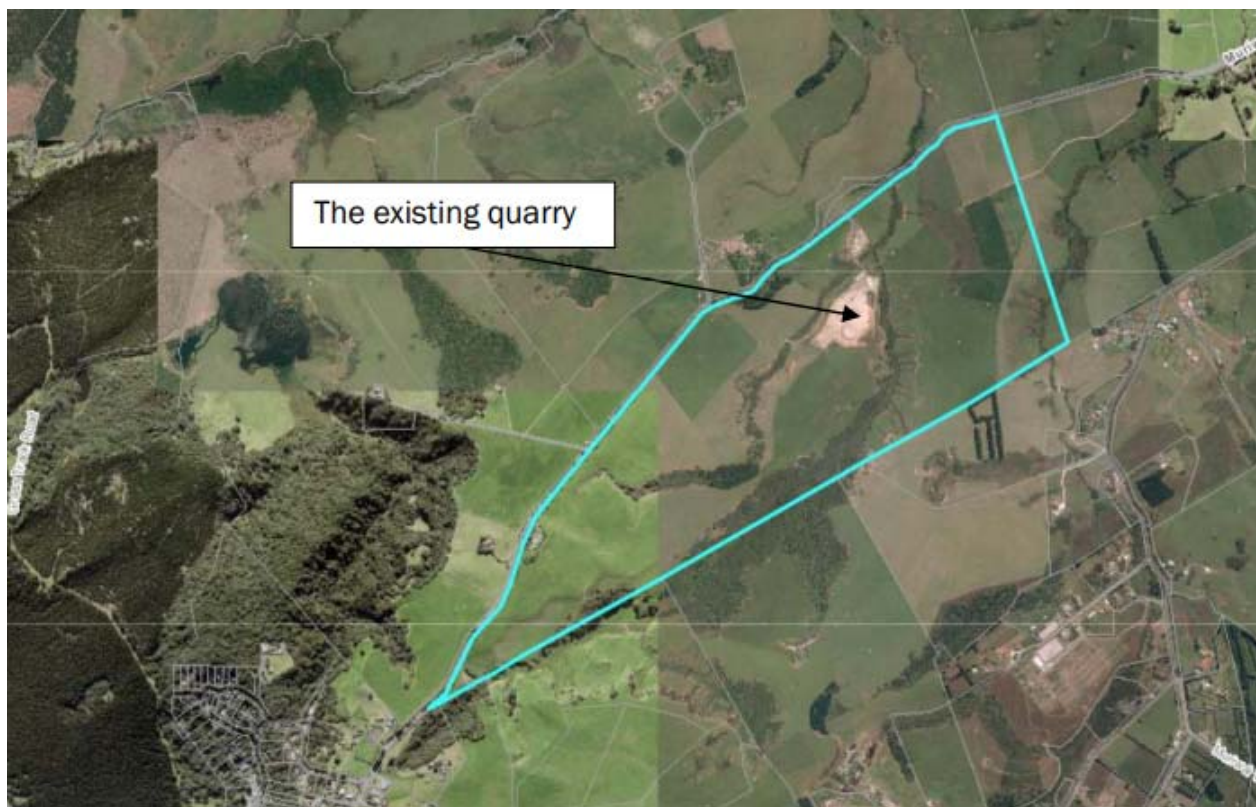
- 6.1 Given the Project will take reasonably unproductive land away from the existing operation, it is commercially sensible that we focus on one farming type to simplify management and reduce overhead costs. This land is not all suited to dairy, so the realistic outcome is to decommission the dairy unit and look to integrate that land into sheep and beef production.
- 6.2 The land currently used for dairy is some 35% more productive than the Lake block, which is going into the Project, harvesting around 9.7 Tonne DM/Ha vs around 6.4 Tonne DM/Ha on the area going into the Project.
- 6.3 The Lake block has tracts of consolidated dune-country (Pinaki sand), comprising a thin layer of topsoil over a mainly loose sandy subsoil; the western portion includes a steeper hill contour and sidling's around the gullies, which extend up into the property where the pastures are of poorer quality, established on lighter sandy soils and with a moderate scattering of lupin. Soil type, contour, fertility, and grass species are not ideal for profitable, modern farming practices.
- 6.4 Losing the Lake block and a small amount of the Woolshed block to a Project is therefore not considered to be detrimental, and with the addition of the productive dairy land we do not expect to see any production loss for the sheep and beef system.
- 6.5 Removing dairy will have an added benefit of reducing the environmental footprint. Because this land is the better land it can also offer up more valuable cropping and horticulture options to the sheep and beef business
- 6.6 Finally, the area being offered up to the Project would require further investment in order to be fully compliant with the requirements of the National Policy Statement for Freshwater Management in order to continue farming cattle in this area. We are better placed to meet the needs of Te Mana o te Wai with infrastructure and investment already in place on the dairy unit land.
- 6.7 In essence, we expect that the sheep and beef farm ratios, key KPIs, and performance metrics will remain largely the same, if not improved from a physical and efficiency perspective
- 6.8 Once we are transitioned to the new system, we will continue to enhance the model, to ensure we meet the objectives of being a safe, responsible, efficient, and proud farming enterprise.

Table 3: Summary of Current and Post-Project Farming Production

Area	Production Zone	DM Production /HA		Total Pasture Production	Area Lost to Golf Project		Total Pasture Production
		Eff Ha	Tonnes		Project	Retained	
Dairy	1	72	9,768	703,296	6	66	644,688
Woolshed	2	136	8,370	1,138,320	29	107	895,255
Lake	3	89	6,439	573,071	68	21	135,219
Quarry	4	61	6,439	392,779	0	61	392,779
		358		2,807,466	103.04	255	2,067,941
Current Sheep and Beef		286	7,357	2,104,170			
Proposed Sheep and Beef		255	8,111	2,067,941			
Difference		31		36,229	-1.7%		

7. QUARRY OPERATIONS

- 7.1 Extraction of sandstone commenced around 1955 with a corner of Muriwai Road being progressively removed to both straighten the road as well as providing a source of sand. Sand extraction continued here for approximately 10 years. In 1968 the operation then shifted to its present location with sand being initially removed from a hill next to the road. This area was progressively quarried and is now the present stockpile area. Extraction operations then moved across the small watercourse into the present location.
- 7.2 The West Auckland Quarry produces a range of products suitable as hard fill and base material, ideal for use in the formation of roads, building sites, farm and bush tracks, horse arenas, landscaping, earth building and many other applications requiring the use of compacted material.
- 7.3 This sector of the business has operated for over 60 years, with the sandstone-based material being used extensively by the building and roading industry as compacted hard fill beneath everything from concrete slabs to main roads and driveways.
- 7.4 In more recent years, the material has been milled to provide a coarse sand, ideal for use in rammed earth construction and a wide array of landscaping and functional applications such as pathways, tennis and volleyball courts, baseball diamonds, the Giraffe and Rhino enclosures at Auckland Zoo and beneath Alexandra Park and Waikaraka Park Speedway.
- 7.5 The main Quarry area is located across a stream (with a culvert crossing) and centrally located on the site. This area is approximately 2.0 Ha and includes a storage shed, various stockpile, aggregate processing areas.
- 7.6 A small sediment pond is located at the north-eastern edge of the operation. Either side of the Quarry are three streams and wetland systems that generally flow from the south-west to the north-east.



7.7 The Quarry has:

- (a) An Air Discharge Consent, expiring August 2040.
- (b) Land Use Consent, which expired in October 2020. The applicant has applied to renew this consent and the application is currently being assessed by Auckland Council. It is anticipated the consent will allow further extraction whilst restricting the Quarry to an active area of approximately 2Ha at any point in time.

7.8 When the owner took possession, the Quarry was not operating within the existing consent conditions, and we have progressively re-established pastures and reduced the area to the point where we are now within the required footprint.

7.9 Future expansion to the southwest is contemplated as required, but the impact will not be significant in the medium term as sales are low.¹

7.10 The golf project is not expected to impact the quarry operations other than we will potentially have another client.

¹ Product details can be found in this link. <http://www.sdquarry.co.nz/about-us/>

APPENDIX 1 - CV OF DEAN NIKORA

Experience

I have worked at a several levels in the New Zealand and International Agricultural Industry over the past 30+ years.

Starting my career in Waikato, I moved to Hawkes Bay and became an equity manager, being part of developing one of the biggest privately own dairy business in New Zealand, this was fully integrated with copping and grazing support units.

I then went on to sole ownership of farms and now own several farming enterprises.

Over the years I have held a number of leadership roles, including Governance roles with AsureQuality, Balance Agri-Nutrients, as well as private companies and leadership roles within the Fonterra Shareholders Council in its formative years.

I have managed the turnaround of several complex farming business through the insolvency process, which has taken me across the country and also spans not only all farming types but also Agri related industries beyond the farm gate.

As a previous winner of the prestigious Ahuwhenua Trophy for excellence in Māori farming, I continue supporting this important industry as Chief Judge – dairy for the past eight years.

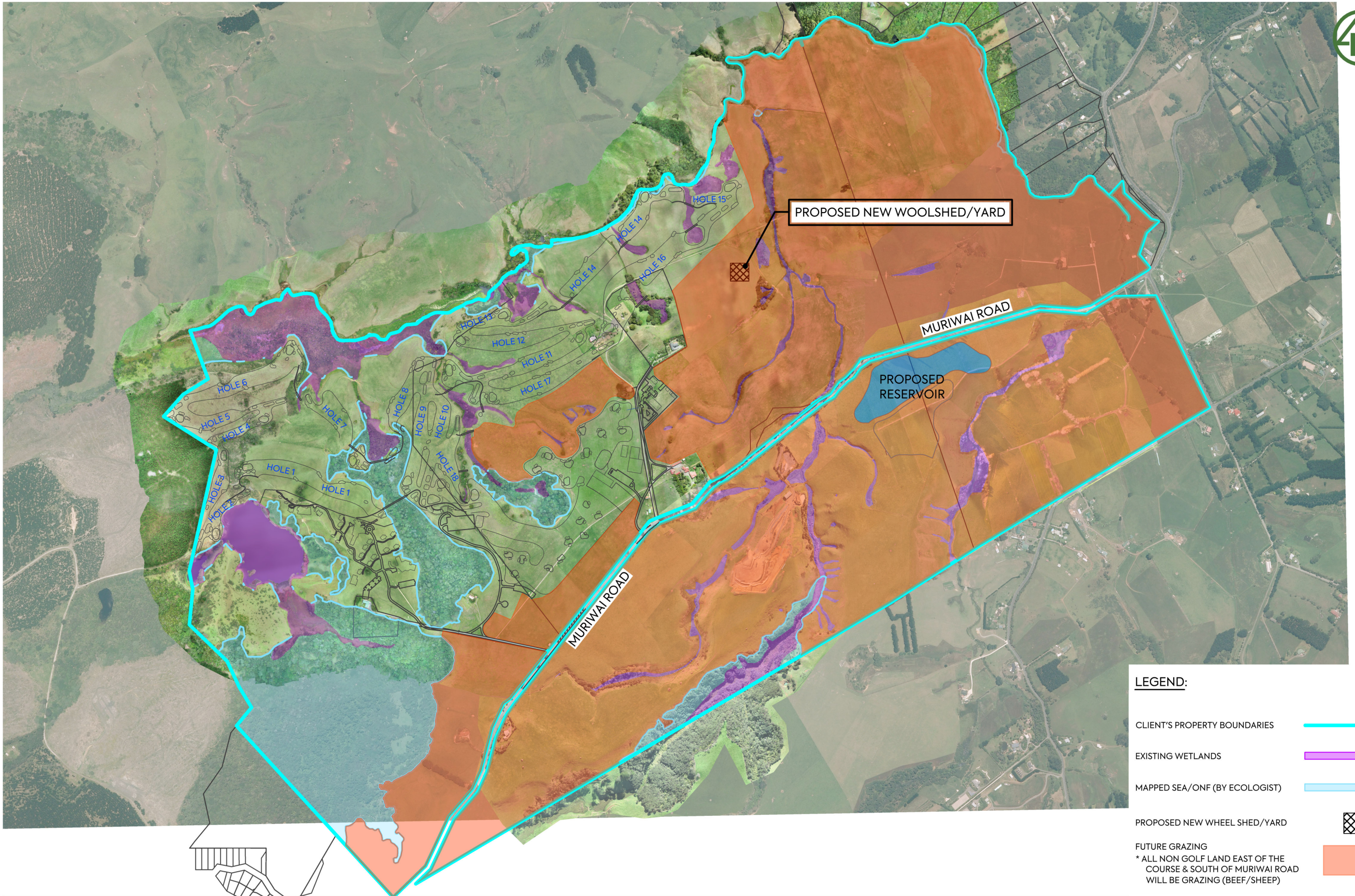
Recently I was engaged to set up a consultancy company which focused on agriculture investments and due diligence for food production systems in China.

Outside of the farm I currently Chair the governance group for Resilient dairy, which is a \$25 million research programme aimed at driving improvements in the health and wellbeing of the national dairy herd, jointly funded by Ministry for Primary Industries and the industry.

My family and I now enjoy a diverse Agri-portfolio including dairy, Horticulture, Pork production, Cropping and Drystock, with other business interests including tourism and manufacturing/export.

My work with The Bears Home Company gives me great satisfaction, particularly in overseeing their dairy farm as it is run by my son who is his 2nd year of dairy management.

APPENDIX 2 – MAP OF PROPOSED FARMING ACTIVITY ALONGSIDE THE PROJECT



LEGEND:

- CLIENT'S PROPERTY BOUNDARIES —
- EXISTING WETLANDS —
- MAPPED SEA/ONF (BY ECOLOGIST) —
- PROPOSED NEW WHEEL SHED/YARD ▣
- FUTURE GRAZING —
- * ALL NON GOLF LAND EAST OF THE COURSE & SOUTH OF MURIWAI ROAD WILL BE GRAZING (BEEF/SHEEP)

CLIENT: THE BEARS HOME PROJECT LIMITED	PROJECT: MURIWAI DOWNS GOLF COURSE 610 & 697 MURIWAI ROAD MURIWAI VALLEY	TITLE: FUTURE GRAZING AREA OVERALL PLAN	PURPOSE OF ISSUE: FOR INFORMATION
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REV	DESCRIPTION	DRN BY	CHK BY	APP BY	DATE
A	FIRST ISSUE	MO	CIM	JSD	09/11/21

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