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E P Risk
Anambah

This report relates to a visit made on 12th September 2024. The report was undertaken to assess the possible impact of a proposed Manufactured Home Estate (MHE) development over this land and its possible impact on the regions primary industry production.

This property has been severely overgrazed for some time and continues to be stocked at unsustainable levels.

Typically, pasture quantity is measured as pasture mass or feed on offer (FOO). Feed-on-offer is simply a measure of all pasture/feed in the paddock, regardless of whether an animal can physically access this feed. Pasture mass typically assumes 300 kg DM/ha is unavailable to sheep and 600 kg DM/ha for cattle. This is because stock cannot effectively consume sufficient pasture to achieve maintenance requirements below this level. The table below indicates that a dry cow requires 700kg of Dry Matter (DM), however the pasture is below the unavailable level of 600kg/ha DM.

MINIMUM HERBAGE MASS (KG GREEN DM/HA) TO MAINTAIN SATISFACTORY PRODUCTION LEVELS IN CATTLE.

Cattle Class	Pasture	Digestibility 68%	60%
	75%		
Dry Cow	700	1100	2600
Pregnant Cow (7-8 months/not lactating)	900	1700	ns
Lactating Cow (calf 2 months)	1100	1100	ns
Growing Stock % of Potential Growth			
30 (0.39kg/d)*	600	1100	2900
50 (0.61kg/d)	800	1600	ns
70 (0.85kg/d)	1200	2600	ns
90 (1.12g/d)	2200	ns	ns

*Predicted growth rates in brackets are based on a weaned 13 month old steer of approximately 320kg from a cow with a standard reference weight of 500kg.

From Incitec Pivot, Upper Murray Seeds, dpi.nsw.gov.au

Livestock (cattle) on the property are unlikely to be acessing maintenance amounts of DM without supplementary feeding. The amount of degradation that can be done to the pasture ecosystem in one year of overgrazing is immense. From lowering soil health, to harming the native plant species and decreasing overall

forage production, to lowered weaning weights and breeding rates, the negative impacts will be seen and felt for years to come.
Recommendations to increase productivity have been made. Approximate costings for these recommendations are detailed below.

First Year Costs		
Item	**Unit Cost**	**Cost/ha**
Aerator	$100/hour	$50/ha
Lime and spread	$200/ha	$400/ha
DAP and spread	$225/ha	$225/ha
Seed and spread	$665/ha	$665/ha
Aerator	$100/hour	$50/ha
Herbicide	$100/ha	$100/ha
Extra Sul	$164/ha	$214/ha
		$1704/ha

Second Year Costs		
Item	**Unit Cost**	**Cost/ha**
Aerator	$100/hour	$50/ha
Lime and spread	$200/ha	$400/ha
Aerator	$100/hour	$50/ha
Herbicide	$100/ha	$100/ha
Extra Sul	$164/ha	$214/ha
		$814/ha

Third Year and Subsequent Year Costs		
Item	**Unit Cost**	**Cost/ha**
Aerator	$100/hour	$50/ha
After Graze	$225/ha	$225/ha
Aerator	$100/hour	$50/ha
		$325/ha

Gross Margins and Return to capital (Internal Rate of Return) estimates for a pasture improvement option compared to 'business as usual' with a gross margin of $20 and $26/DSE.

Business as usual		
Stocking rate DSE/ha	5 DSE/ha	
GM/DSE	$20/DSE	$26/DSE
GM/ha	$100/ha	$130/ha
Improved pasture		
Stocking rate when potential	14 DSE/ha	
GM/DSE at potential	$20/DSE	$26/DSE
GM/ha	$280/ha	$363/ha
Years to payback investment	12 years	9 years
IRR	13%	18%

Adapted from Evergraze

Assuming current carrying capacity is 5 DSE (8 DSE = 1 yearling steer), this may be an overestimation given the conditions seen at the time of visit. Current pasture growth is 2kgDM/day modelled from pasture at Singleton. Requirement to fulfill the needs of a yearling steer is 1.65kgDM/day. Therefore, requirements are only just being met at the time of peak growth rates. It would be reasonable to expect that growth requirements would not be sufficiently met in any period of adverse weather conditions (dry, wet, hot or cold periods) and supplementary feeding would be required - this has not been accounted for in the above example.

In this situation, despite the long payback period as illustrated in the cash flow, the real return on extra capital (IRR) of 13-18% is generally considered a good return relative to comparable real returns on capital investments available elsewhere on the farm or in the economy. This is before tax.

The risk of a failed establishment could be as high as 20%, this can be offset by adding 20% of the cost of the establishment (in this case this would be $133/ha) to account for the cost of re-sowing the pasture. Alternatively, consider going ahead with a more profitable enterprise that has a faster payback period and better return (IRR).

Summary

The topography of the area, the shallow, gravelly soils and rocky ridges, comprise the optimal biophysical conditions for beef and other livestock grazing. Whilst it is possible to make good improvements on the current pasture, the costs, risk and long-term nature associated with improving pasture on this area would need to be carefully considered.

The proposed Manufactured Home Estate (MHE) development over this land could be a suitable enterprise to consider, given the current poor state of the land and that it is not ideal pasture. Any development over this land, in its current condition, would not be impacting the regions current primary industry production.

Sample: Anambah 1

This area has been extremely overgrazed for some time.
The predominant species are:

- Couch Grass (*Cynodon dactylon*)
- Fire weed (*Senecio madagascariensis*)
- Giant Paramatta Grass (GPG) (*Sporobolus fertilis*)

There are traces of:

- Paspalum
- *Microlaena stipoides*
- Trefoil

There was little to zero Feed On Offer (FOO). Dry Matter (DM) measurements were not possible as pasture was too low to cut.

Soil was firm to hard – moisture infiltration will be compromised.

Sample: Anambah 2

This area has been extremely overgrazed for some time.
The predominant species are:

- Couch Grass (*Cynodon dactylon*)
- Fire weed (*Senecio madagascariensis*)
- Giant Paramatta Grass (GPG) (*Sporobolus fertilis*)

There are traces of:

- Paspalum
- *Microlaena stipoides*
- White Clover
- Trefoil

There was little to zero Feed On Offer (FOO). Dry Matter (DM) measurements were not possible as pasture was too low to cut.

Soil was Hard to gravel at 250mm - moisture infiltration will be compromised.

Sample: Anambah 3

Granite Ridge with outcrops of rocks.

This area has been extremely overgrazed for some time.
The predominant species are:

- Couch Grass (*Cynodon dactylon*)
- Fire weed (*Senecio madagascariensis*)

There are traces of:

- *Microlaena stipoides*
- White Clover
- Trefoil

There was little to zero Feed On Offer (FOO). Dry Matter (DM) measurements were not possible as pasture was too low to cut.

Soil was Firm to gravel at 250mm - moisture infiltration will be compromised.

Sample: Anambah 4 (EP 3864)

Undulating with wet areas (standing water) – confirmed by soil test – Sodium 0.35 cmol(+)/kg and 4.7% of Cations.

This area has been extremely overgrazed for some time.
The predominant species are:

- Couch Grass (*Cynodon dactylon*)
- Fire weed (*Senecio madagascariensis*)

There are traces of:

- Paspalum
- Rush *(Juncus)* – higher Chloride.
- White Clover
- Trefoil

There was little to zero Feed On Offer (FOO). Dry Matter (DM) measurements were not possible as pasture was too low to cut.

Observation Anambah 5 – No sample
Access to this area at the time of visit was difficult due to the wet conditions prevailing at the time.

This area has been extremely overgrazed for some time.
The predominant species are:

- Couch Grass (*Cynodon dactylon*)
- Fire weed (*Senecio madagascariensis*)
- Giant Paramatta Grass (GPG) (*Sporobolus fertilis*)

There are traces of:

- Paspalum
- *Microlaena stipoides* – in treed area
- White Clover
- Trefoil

There was little to zero Feed On Offer (FOO). Dry Matter (DM) measurements were not possible as pasture was too low to cut.

Ph
All these samples are in the Medium to Strong Acidity range. In this range Aluminium can often be a problem – as in this case.

Acid Soils
In acidic soils, the solubility of Al increases and, in excess, is a growth-limiting factor for plants, as it restricts roots access to water and nutrients.
Applications of Lime will increase pH and add calcium to the soil. Applying lime (generally calcium carbonate), the carbonate reacts with the hydrogen ions in the soil and precipitates the available Al into an unavailable form, thus eliminating its toxicity. These tests are indicating medium to strong acidity which is likely to affect the levels of Aluminium.

Aluminium
This soil is high in Aluminium, which in most cases is severely plant growth limiting.
In acidic soils, the solubility of Al increases and, in excess, is a growth-limiting factor for plants, as it restricts roots access to water and nutrients.
The most common effect of Al on plant growth is the reduction of root elongation and proliferation, thereby leading to poor water and nutrient extraction.
These tests are indicating high levels of Aluminium which is limiting root growth and overall productivity.

Organic Carbon/Matter
Soil Carbon gives an indication of Organic Matter levels in the soil using mathematical formulas.
Soil organic matter probably plays the most important role in the health and productivity of your soil. It comprises a diverse collection of living components (e.g. fungi, bacteria, actinomycetes and earthworms) and non-living components (decaying and decomposing plant and animal material). Typically, the top 20 cm of soil has higher numbers of soil organisms and higher levels of biological activity than soil lower in the profile, so your management practices can have a great impact on them. Most of them rely upon organic matter as their energy source and, during the decomposition process in aerobic conditions, release a large reservoir of plant-available nutrients (i.e. nitrogen, phosphorus, potassium, sulphur, calcium, magnesium and trace elements).
Maintaining good organic matter levels in your soil as a reserve of soil S is good practice. Soil biological processes can mineralise this S over time. More than 95% of the S in the soil is contained in the organic matter. Through biological processes similar to those of nitrogen, S is mineralised by soil organisms to plant-available sulphate ions. These biological processes are negatively influenced by a low pH and waterlogging.
Sandy soils and cultivation burn out organic matter readily, so it is important to build up organic matter in these soils by limiting the amount of cultivation and through careful grazing management allowing residues to build up. These tests indicate low levels of OM and grazing management will be important to increase these levels.

Nitrogen
Nitrogen (N) is essential for all plant growth processes and plants need it in large quantities. In plants, it is a key element in amino acids, proteins, enzymes and chlorophyll. In simple terms, N produces bigger leaves and bigger plants, with dark green growth.
Nearly all the nitrogen (N) present in the soil originates from the atmosphere, which is made up of about 80 % nitrogen. The rocks and minerals from which soils are formed do not contain nitrogen.
Most of the nitrogen present in the soil is in the form of organic matter. Organic nitrogen, however, is not available for plant uptake. It must first be converted to simple inorganic forms, i.e. ammonium (NH+4) and nitrate (NO3-).
Nitrogen can be lost from the soil in various ways, through volatilization and denitrification to the atmosphere and leaching below the root zone following heavy rain.
Agronomists use levels of nitrate-N and ammonium-N on soil tests to indicate how much N is currently available and how much is likely to become available. Nitrate-N is readily available for plant uptake, but (in high rainfall events and free-draining soils) is more easily leached out of reach of the plant root system. When considering these, however, it is important to note that N levels in soils fluctuate widely, depending on seasonal

conditions and rainfall. Levels greatly depend on biological activity, and the nitrate-N form is highly mobile and easily leached.
Urine and faeces patches that are growing better than the rest of the paddock indicate nitrate deficiency.
These test results indicate very low Nitrate and Ammonium Nitrogen levels, growth is being severely restricted.

Cation Exchange Capacity (CEC)
The cation exchange capacity (CEC) shown on your soil test is an indication of the amount of nutrient your soil can hold. This gives you a general idea of the fertility of your soil: a sandy soil, for example, will generally have a low CEC (i.e. low fertility); that of clay soils will be higher, and soils with good levels of organic matter have the highest (in each case due to the particle surface area). The low level of CEC indicate smaller more frequent applications will be most effective.

Calcium
Calcium (Ca) is essential for many plant functions, including cell division, root and shoot growth, cell wall development and strength, legume nodulation and nitrogen fixation processes, enzyme activity, and seed set in clover. Calcium has a correlation to Cation Exchange Capacity. The amount of Ca and the ratios and percentage of cations can cause imbalances which will affect the percentage of Aluminium cations. These test results indicate low levels of Ca.

Magnesium (Mg)
Magnesium (Mg) is a key element of the chlorophyll molecule and so plays a vital role in plant photosynthesis. It is also involved in the transport of phosphorus in the plant, and has an important part in enzyme activity, protein and sugar synthesis and other functions. Soils often contain less exchangeable Mg than Ca. It is a component of several minerals in the soil and is released into the soil during weathering processes. Magnesium is usually present in sufficient quantities to satisfy plant requirements. An important measure, however, in your soil test is the calcium:magnesium ratio. These results indicate high Mg which is exacerbated by low Ca level.

Phosphorous
Australian soils are characteristically low in phosphorus (P) in their native state, with the exception of a few soils of basaltic origin and some alluvial soils. This reflects the geological age of the continent and its soils. Agriculture can further deplete soil fertility, even in soils that initially are high in phosphorus, due to the removal of nutrients in farm produce.
The target range of P with a low to moderate PBI is (mg/kg or ppm) for pasture systems aiming for 90 - 95% potential pasture yield (higher stocking rate) is 35mg/kg
These soils are indicating very low levels of Phosphorous which is important for energy storage and transfer, early shoot and root growth (i.e. vital for seedlings and young plants), this is exacerbated by elevated levels of Aluminium which inhibits root growth. The Phosphorous Buffering (PBI) indicates how tightly P will held by the soil.
Even though P is not highly mobile in the soil, it is now recognised that the loss of P in surface run-off during heavy rain events amounts to a major loss of P to soils and contributes considerably to the pollution of waterways.
These tests are indicating lower levels of P which is exacerbated by high Aluminium levels.

Potassium
Potassium (K) is one of the three major (macro-) nutrients (with phosphorus and nitrogen) for plants and is important for regulating water and nutrient uptake, flowering and seed set, and plant resistance to environmental stresses and disease.
High levels of Potassium will affect soil structure and can make soils dispersive and affect water infiltration. Too much potassium disrupts the uptake of other important nutrients, such as calcium, nitrogen and magnesium, creating deficiencies that usually produce visible effects, which is not applicable in this case. Excess potassium affects overall plant nutrition by preventing the plant from taking up other mineral nutrients, in particular magnesium, iron, zinc, and calcium. This phenomenon is called ion antagonism or cation competition (cation refers to positively charged ions), where the presence of one element limits the absorption

of others. A potassium deficiency encourages plants to absorb substitute minerals at a high rate (especially magnesium) while a potassium excess will stop other minerals from being taken up. Excess potassium in grazing pasture can be problematic for sheep and cattle farmers for this reason: their animals may become magnesium deficient by eating plants too high in potassium. These test results are indicating acceptable levels of K

Sulphur
Sulphur (S) is an essential element for growing plants as it aids in nitrogen fixation by legumes and is involved in the formation of several important amino acids, proteins and vitamins. It also has a key role in the synthesis of chlorophyll. More than 95% of the S in the soil is contained in the organic matter. Through biological processes similar to those of nitrogen, S is mineralised by soil organisms to plant-available sulphate ions. These biological processes are negatively influenced by a low pH and waterlogging. All tests are indicating low Sulphur.

Magnesium (Mg)
Magnesium (Mg) is a key element of the chlorophyll molecule and so plays a vital role in plant photosynthesis. It is also involved in the transport of phosphorus in the plant, and has an important part in enzyme activity, protein and sugar synthesis and other functions. Soils often contain less exchangeable Mg than Ca. It is a component of several minerals in the soil and is released into the soil during weathering processes. Magnesium is usually present in sufficient quantities to satisfy plant requirements. An important measure, however, in your soil test is the calcium:magnesium ratio. These tests are indicating high levels of Mg which is affecting Ca:Mg ratios.

Calcium : Magnesium Ratio
Ca:Mg ratio is an indication of soil structure, the lower the ratio (higher Mg) the tighter the soil will be. Tightness of soil affects water infiltration rates. All these tests have low ratios.

Recommendations

To increase pH, add Calcium and improve CEC apply:

Ag Lime @ 2 tonnes/ha
At any time of the year preferably before rainfall. Lime should be applied 6 – 8 weeks before any other amendments.
Repeat this application after one year.

Six to eight weeks after the lime application - to increase both Phosphorous and Nitrogen levels apply:

DAP (Diammonium Phosphate) @ 200kg/ha (DAP $1460/tonne bulka bag) = $292/ha

Re-seeding or over-seeding the pasture can be done at the same time as DAP application.
A basic seed recommendation is suggested below, once the pasture has established and is growing well it will then be possible to add different species to improve production.

EP Risk — **Sow at 25kg/ha**

Anambah MHE - Option 1 — **$425.75/ha**

Variety	%	**$17.03/kg**
Rhodes (Callide)	32%	Good hardy all-rounder, fertile moderate acid soils, good for horses, palatable
Paspalum (Broadleaf)	20%	Good rainfall, competes with Couch, V. persistent, rhizomes, sands/clays, acidic
Panic	20%	V. Palatable, drought/shade/waterlogging and salt tolerant, rhizomatous, more vigour than Green P
Clover (Arrowleaf)	16%	Erect, Acid soil tolerant, Spring early Summer, low bloat risk
Chicory VNS (Puna type)	*13%*	Late mat, Winter and spring, Acid soils, stony or cracking soils
Rounded	101%	

Once germination has been achieved and the pasture is growing, to improve both Nitrogen and Sulphur level apply:

> Extra Sul @ 100 kg/ha (Extra Sul $825/tonne bulka bag) = $82/ha
> Repeat this application approximately 3 weeks later.

References

https://www.evergraze.com.au/library-content/investing-in-pasture-improvement/index.html

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https://onpasture.com/2019/09/09/when-high-density-hurts-remediating-overgrazed-land/

https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0008/1363526/Prograze-Seg-2.pdf

559 ANAMBAH ROAD, GOSFORTH

ATTACHMENT 3: WATER MANAGEMENT ACT OUTCOME

Legend

- Site Boundary
- Cadastral Boundary
- Contours (5 m)

Land Zoning

- R1
- RU2

Watercourse

- 1st Order Stream
- 2nd Order Stream
- 3rd Order Stream
- 9th Order Stream

Vegetated Riparian Zone

- 10 m
- 20 m
- 30 m
- 40 m

N
W E
S

0 140 280 420 560

Metres
1:7000

MJD Environmental

Aerial: Nearmap (2023) | Data: MJD Environmental (2024), NSW Spatial Services (2023) | Datum/Projection: GDA2020 / MGA zone 56 | Date: 2024-01-30 | Version: 1 | Z:\23071 - 559 Anambah Road, Gosforth | This plan should not be relied upon for critical design dimensions.

LAB RESULTS REPORT

ED RISK
ANAMBAH ROAD
MAITLAND
NSW 2320

Service Provider: Farmland Co Pty Ltd
Advisor/Contact: Martin Mead
Phone: 0487 707 005
Purchase Order: 34754

Sample No	130731588
Paddock Name	ANAMBAH 1
Sample Name	#1
Sample Depth (cm)	0 - 25
Sampling Date	12/09/2024
Test Code	E82
Sample Type	Soil

Analyte	Unit	Result
Soil Colour		Brown
Soil Texture		Clay
pH (1:5 Water)		6.1
pH (1:5 CaCl2)		5.1
Electrical Conductivity (1:5 water)	dS/m	0.05
Electrical Conductivity (Sat. Ext.)	dS/m	0.3
Chloride	mg/kg	14
Organic Carbon (W&B)	%	2.15
Nitrate Nitrogen	mg/kg	1.1
Ammonium Nitrogen	mg/kg	3.0
Phosphorus (Colwell)	mg/kg	5.2
Phosphorus Buffer Index		160
Phosphorus Environmental Risk Index		0.03
Potassium (Colwell)	mg/kg	160
Sulphur (KCl40)	mg/kg	3.6
Cation Exch. Cap. (CEC)	cmol(+)/kg	15.0
Calcium (Amm-acet.)	cmol(+)/kg	8.3
Magnesium (Amm-acet.)	cmol(+)/kg	6.1
Sodium (Amm-acet.)	cmol(+)/kg	0.22
Potassium (Amm-acet.)	cmol(+)/kg	0.36
Aluminium (KCl)	cmol(+)/kg	<0.10

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Analyte	Unit	Result
Aluminium % of Cations	%	<1
Grass Tetany Risk Index		0.025
Calcium % of Cations	%	56
Magnesium % of Cations	%	41
Sodium % of Cations (ESP)	%	1.5
Potassium % of Cations	%	2.4
Calcium/Magnesium Ratio		1.4

The results in this report pertain only to the sample submitted. Analyses performed on soil dried at 40°C and ground to 2mm or less, excluding moisture tests, or as otherwise indicated. Analyses performed on plant dried at 70°C and ground to 1mm or less, excluding moisture tests, or as otherwise indicated. Water analyses performed on an 'as received' basis. Analytical results reported by the laboratory as 'less than' the level of reporting, will be deemed by NA Pro as being equivalent to the level of reporting for both calculation and interpretive purposes. This document shall not be reproduced except in full.

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MAITLAND
NSW 2320

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Purchase Order: 34754

Sample No	130731589
Paddock Name	ANAMBAH 2
Sample Name	#1
Sample Depth (cm)	0 - 25
Sampling Date	12/09/2024
Test Code	E82
Sample Type	Soil

Analyte	Unit	Result
Soil Colour		Grey
Soil Texture		Clay Loam
pH (1:5 Water)		5.8
pH (1:5 CaCl2)		4.7
Electrical Conductivity (1:5 water)	dS/m	0.05
Electrical Conductivity (Sat. Ext.)	dS/m	0.4
Chloride	mg/kg	10
Organic Carbon (W&B)	%	1.60
Nitrate Nitrogen	mg/kg	1.7
Ammonium Nitrogen	mg/kg	2.8
Phosphorus (Colwell)	mg/kg	20
Phosphorus Buffer Index		140
Phosphorus Environmental Risk Index		0.14
Potassium (Colwell)	mg/kg	210
Sulphur (KCl40)	mg/kg	4.3
Cation Exch. Cap. (CEC)	cmol(+)/kg	4.95
Calcium (Amm-acet.)	cmol(+)/kg	2.5
Magnesium (Amm-acet.)	cmol(+)/kg	1.4
Sodium (Amm-acet.)	cmol(+)/kg	0.18
Potassium (Amm-acet.)	cmol(+)/kg	0.41
Aluminium (KCl)	cmol(+)/kg	0.46

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Analyte	Unit	Result
Aluminium % of Cations	%	9.4
Grass Tetany Risk Index		0.11
Calcium % of Cations	%	50
Magnesium % of Cations	%	28
Sodium % of Cations (ESP)	%	3.7
Potassium % of Cations	%	8.3
Calcium/Magnesium Ratio		1.8

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NSW 2320

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Purchase Order: 34754

Sample No	130731590
Paddock Name	ANAMBAH 3
Sample Name	#1
Sample Depth (cm)	0 - 25
Sampling Date	12/09/2024
Test Code	E82
Sample Type	Soil

Analyte	Unit	Result
Soil Colour		Grey
Soil Texture		Clay
pH (1:5 Water)		5.7
pH (1:5 CaCl2)		4.6
Electrical Conductivity (1:5 water)	dS/m	0.06
Electrical Conductivity (Sat. Ext.)	dS/m	0.4
Chloride	mg/kg	<10
Organic Carbon (W&B)	%	2.50
Nitrate Nitrogen	mg/kg	3.5
Ammonium Nitrogen	mg/kg	3.5
Phosphorus (Colwell)	mg/kg	14
Phosphorus Buffer Index		160
Phosphorus Environmental Risk Index		0.09
Potassium (Colwell)	mg/kg	490
Sulphur (KCl40)	mg/kg	6.8
Cation Exch. Cap. (CEC)	cmol(+)/kg	8.89
Calcium (Amm-acet.)	cmol(+)/kg	3.3
Magnesium (Amm-acet.)	cmol(+)/kg	3.1
Sodium (Amm-acet.)	cmol(+)/kg	0.75
Potassium (Amm-acet.)	cmol(+)/kg	1.0
Aluminium (KCl)	cmol(+)/kg	0.70

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Analyte	Unit	Result
Aluminium % of Cations	%	7.8
Grass Tetany Risk Index		0.16
Calcium % of Cations	%	37
Magnesium % of Cations	%	35
Sodium % of Cations (ESP)	%	8.5
Potassium % of Cations	%	11
Calcium/Magnesium Ratio		1.1

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Sample No	130731591
Paddock Name	ANAMBAH 4
Sample Name	#1
Sample Depth (cm)	0 - 25
Sampling Date	12/09/2024
Test Code	E82
Sample Type	Soil

Analyte	Unit	Result
Soil Colour		Grey
Soil Texture		Clay
pH (1:5 Water)		5.9
pH (1:5 CaCl2)		4.6
Electrical Conductivity (1:5 water)	dS/m	0.05
Electrical Conductivity (Sat. Ext.)	dS/m	0.3
Chloride	mg/kg	17
Organic Carbon (W&B)	%	2.33
Nitrate Nitrogen	mg/kg	0.78
Ammonium Nitrogen	mg/kg	3.3
Phosphorus (Colwell)	mg/kg	6.3
Phosphorus Buffer Index		160
Phosphorus Environmental Risk Index		0.04
Potassium (Colwell)	mg/kg	410
Sulphur (KCl40)	mg/kg	3.7
Cation Exch. Cap. (CEC)	cmol(+)/kg	7.32
Calcium (Amm-acet.)	cmol(+)/kg	2.6
Magnesium (Amm-acet.)	cmol(+)/kg	2.8
Sodium (Amm-acet.)	cmol(+)/kg	0.35
Potassium (Amm-acet.)	cmol(+)/kg	0.84
Aluminium (KCl)	cmol(+)/kg	0.71

LAB RESULTS REPORT

ED RISK
ANAMBAH ROAD
MAITLAND
NSW 2320

Service Provider: Farmland Co Pty Ltd
Advisor/Contact: Martin Mead
Phone: 0487 707 005
Purchase Order: 34754

Analyte	Unit	Result
Aluminium % of Cations	%	9.7
Grass Tetany Risk Index		0.16
Calcium % of Cations	%	35
Magnesium % of Cations	%	39
Sodium % of Cations (ESP)	%	4.7
Potassium % of Cations	%	12
Calcium/Magnesium Ratio		0.93

The results in this report pertain only to the sample submitted. Analyses performed on soil dried at 40°C and ground to 2mm or less, excluding moisture tests, or as otherwise indicated. Analyses performed on plant dried at 70°C and ground to 1mm or less, excluding moisture tests, or as otherwise indicated. Water analyses performed on an 'as received' basis. Analytical results reported by the laboratory as 'less than' the level of reporting, will be deemed by NA Pro as being equivalent to the level of reporting for both calculation and interpretive purposes. This document shall not be reproduced except in full.