

An aerial photograph of a large dairy farm in New Zealand. The farm features a long, modern dairy shed with a green roof, several large circular effluent ponds, and various smaller buildings and storage tanks. The surrounding landscape is green and hilly. Overlaid on the image are logos for Williams, Yardmaster, Shoof Irrigation, and Halo Farm Systems, along with a large title at the bottom.

**WILLIAMS**

**Yardmaster**  
EFFLUENT PUMPS & SYSTEMS

**SHOOF**  
**IRRIGATION**

**HALO**  
FARM SYSTEMS

# Farm Dairy Effluent Systems in New Zealand



# Evolution of effluent systems in New Zealand





# Evolution of effluent systems in New Zealand

Fully compliant land application systems



# The need for compliant effluent system

Comply with regulatory requirements.

- To capture all Farm Dairy Effluent (cowshed yard, feed/stand off pad, feed storage)
- To spread FDE only at times when can be absorbed by the soil
- To uniformly spread the FDE to the desired depth and at the desired rate (volume).
- To control the FDE within the boundaries of the application area.

***Retain all nutrients in the root zone!!***



# Purpose of a good farm dairy effluent system

- Protect the environment.... Particularly waterways!
  - Public/customers perception of dairy farming
  - No one wants to damage the environment
  - More important as stocking rates rise





# Purpose of a good farm dairy effluent system





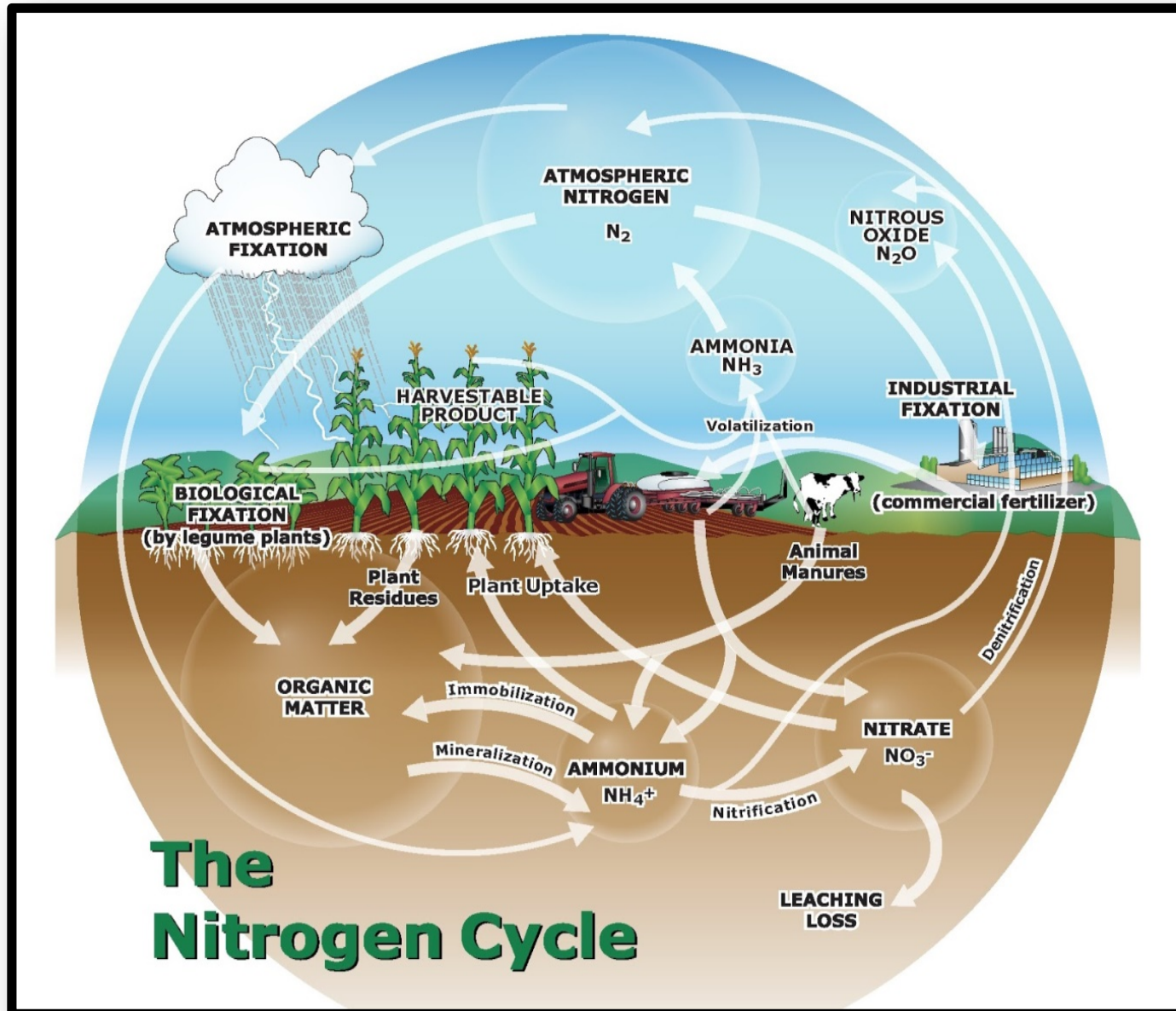
# Purpose of a good farm dairy effluent system

- Capture & make best use of the nutrient value of effluent
  - Effluent from 400 cows milked twice a day up to \$10,000 in fertiliser value





# Purpose of a good farm dairy effluent system





# The Rules....

## **YOU MUST NOT:**

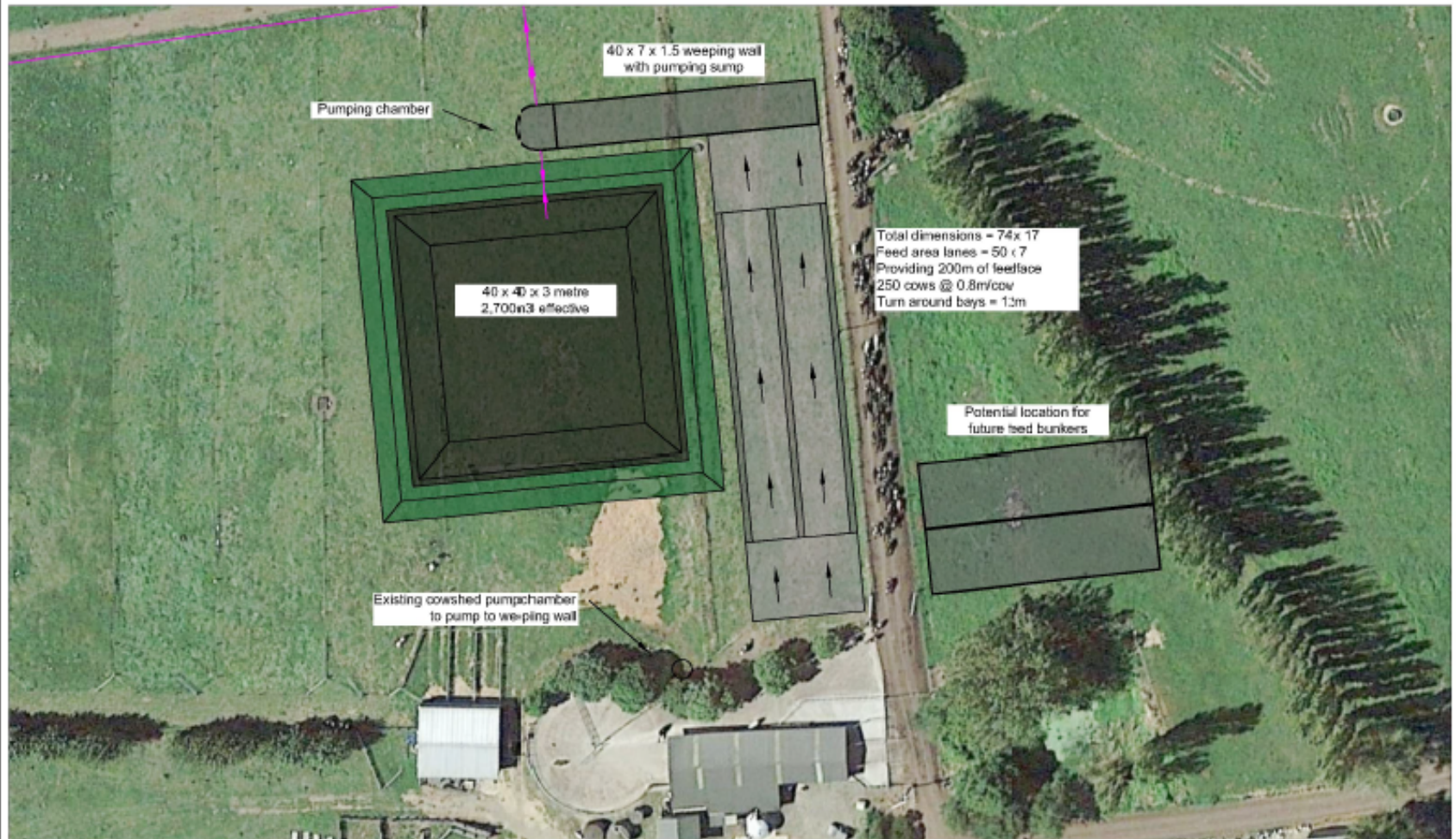
- Allow any effluent to enter streams, drains or groundwater.
- Exceed any application rate of 150 kg of nitrogen per hectare per year (200kg per hectare per year on cropping land)
- Exceed an application depth of 25mm per application.
- Irrigate in a manner that causes objectionable odour beyond your boundary or may effect the health of others.

## **YOU MUST:**

- Have enough storage so that you don't have to irrigate on wet soils.
- Manage your storage so that it never overflows.
- Ensure that all storage is properly sealed.
- Be able to provide information which shows you are complying with the rules, if requested



# Have a plan in place!



Grant Clune  
Churchill East Road  
Rangiriri

Weeping Wall Option



1800 4 EFFLUENT  
www.williamsirrigation.com

Designer: Brook Evans

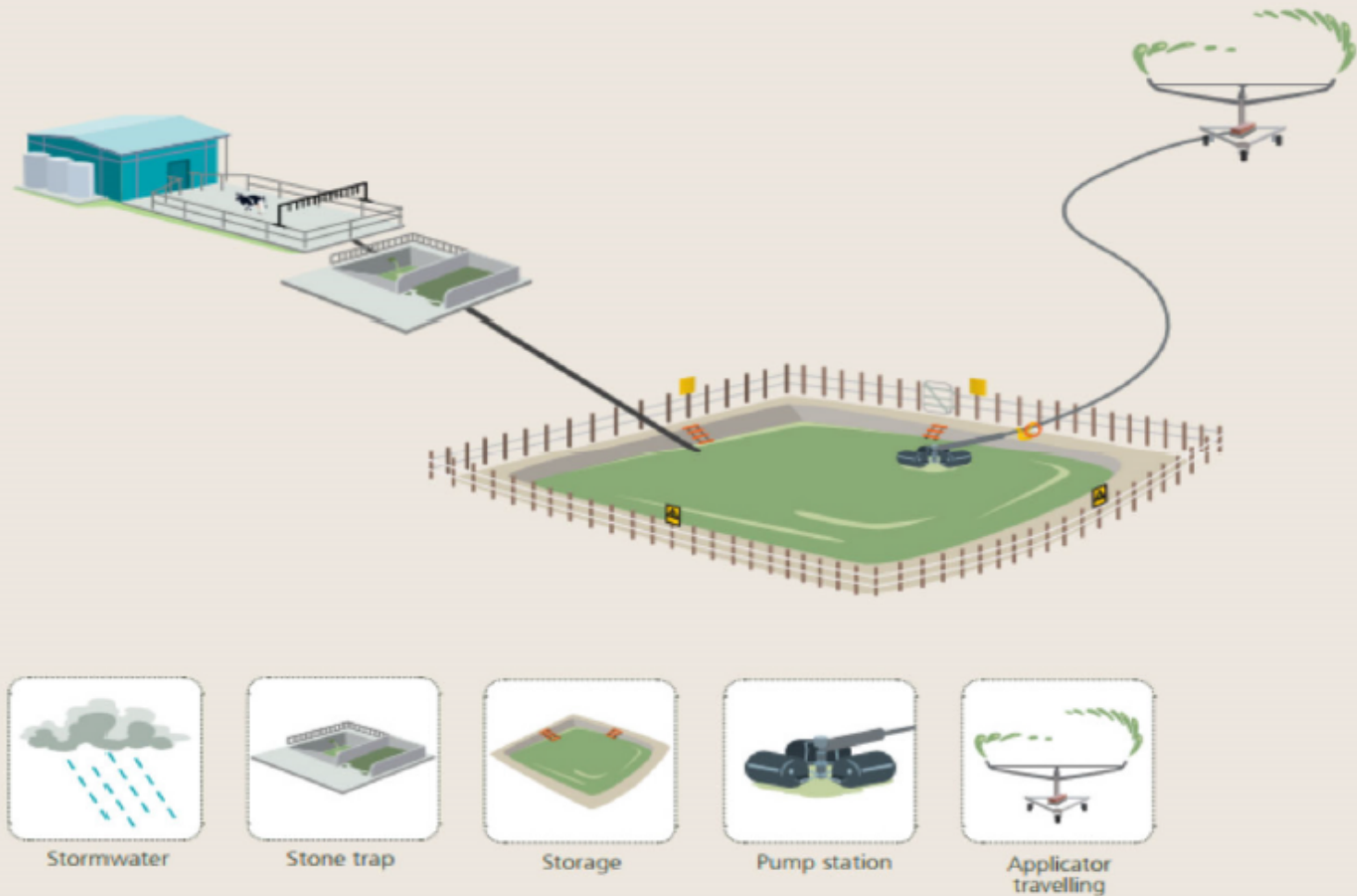
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Scale: NTS

File: .DWG



# Typical system for cowshed only effluent



Effluent from cowshed yards captured and directed into a stone trap to remove abrasive grit & stones.



Effluent gravity fed or pumped into a sealed storage pond that has been sized to suit the farm.

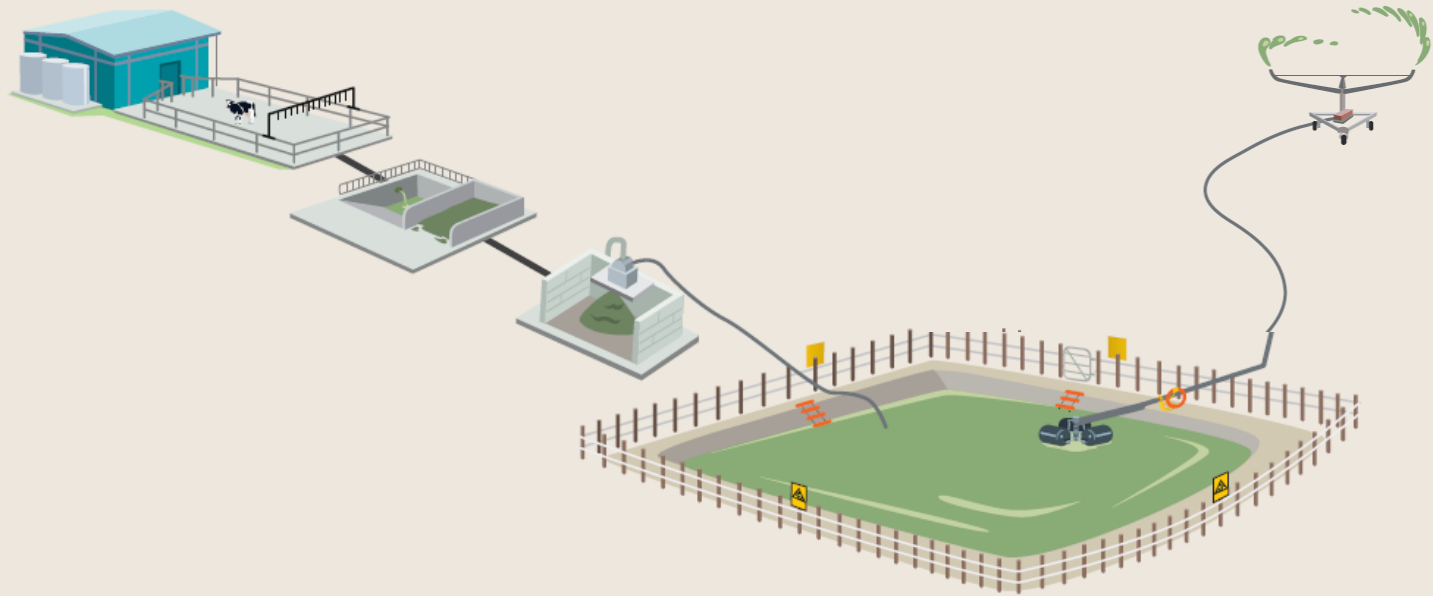


Effluent irrigated to pasture at times when amount of effluent applied can be absorbed by the receiving soils.

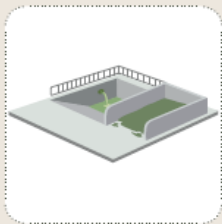




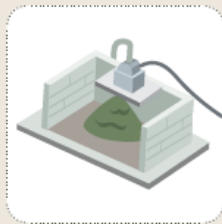
# Typical system for cowshed & feedpad effluent



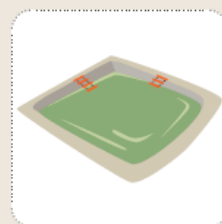
Stormwater



Stone trap



Solids separator



Storage



Pump station



Applicator travelling

Solids removed from effluent via mechanical separator or weeping wall system.



Effluent gravity fed or pumped into a sealed storage pond that has been sized to suit the farm.



Effluent irrigated to pasture at times when amount of effluent applied can be absorbed by the receiving soils.





# Design Considerations

- System needs to be as simple & easy to manage
- Must work in with farming practices and available machinery
- Equipment must be backed up by reliable service (Shoof)
- Provision for breakdowns - compliant for 365 days of the year
- Monitoring & reporting with HALO
- Future proof



## Examples of what compliance looks like in NZ





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# *Muchas gracias!*



*Taranaki – New Zealand*