Effluent ‘need to know’

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“What should I be looking for?”

- The 3 S’s - what successful systems have in common
  - **S**torage
  - **S**olids are managed
  - **S**ufficient reuse area

- Common risks and warning signs

The 3 S's of successful systems

- **S**torage for effluent
  - Reduce risk of runoff, enable strategic use of water and nutrients
- **S**olids are managed
  - prevent blockages, desludging is carried out
- **S**ufficient reuse area
  - reuse area at agronomic rates

Examples of pond (& tank) systems

Overall objective

- To provide a winter containment option (storage) before strategic use
- But treatment also happens; reduced organic loading = easier distribution

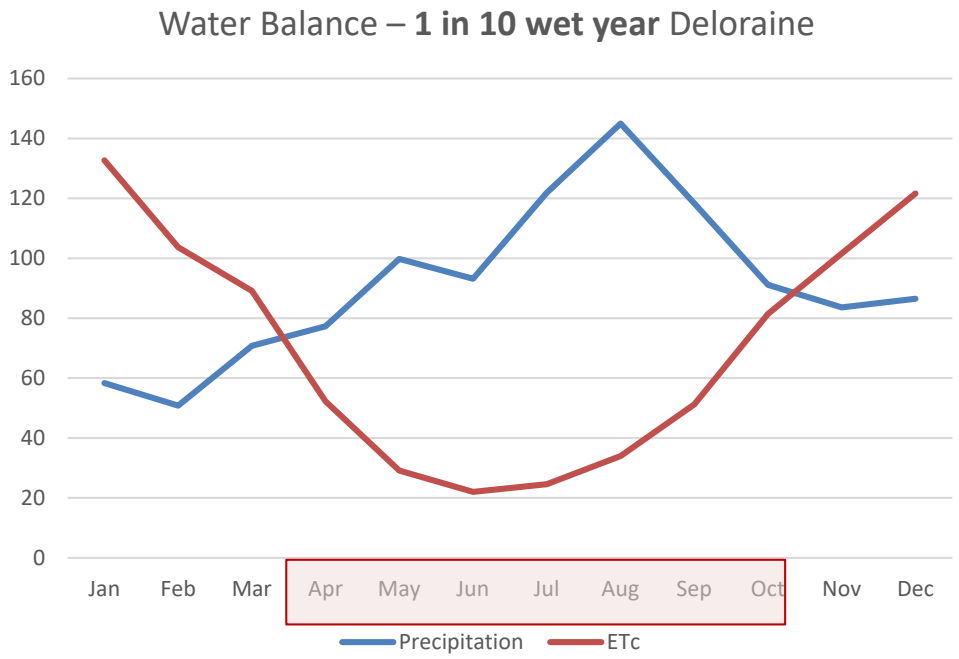
How much storage?

Storage requirement

is based on:

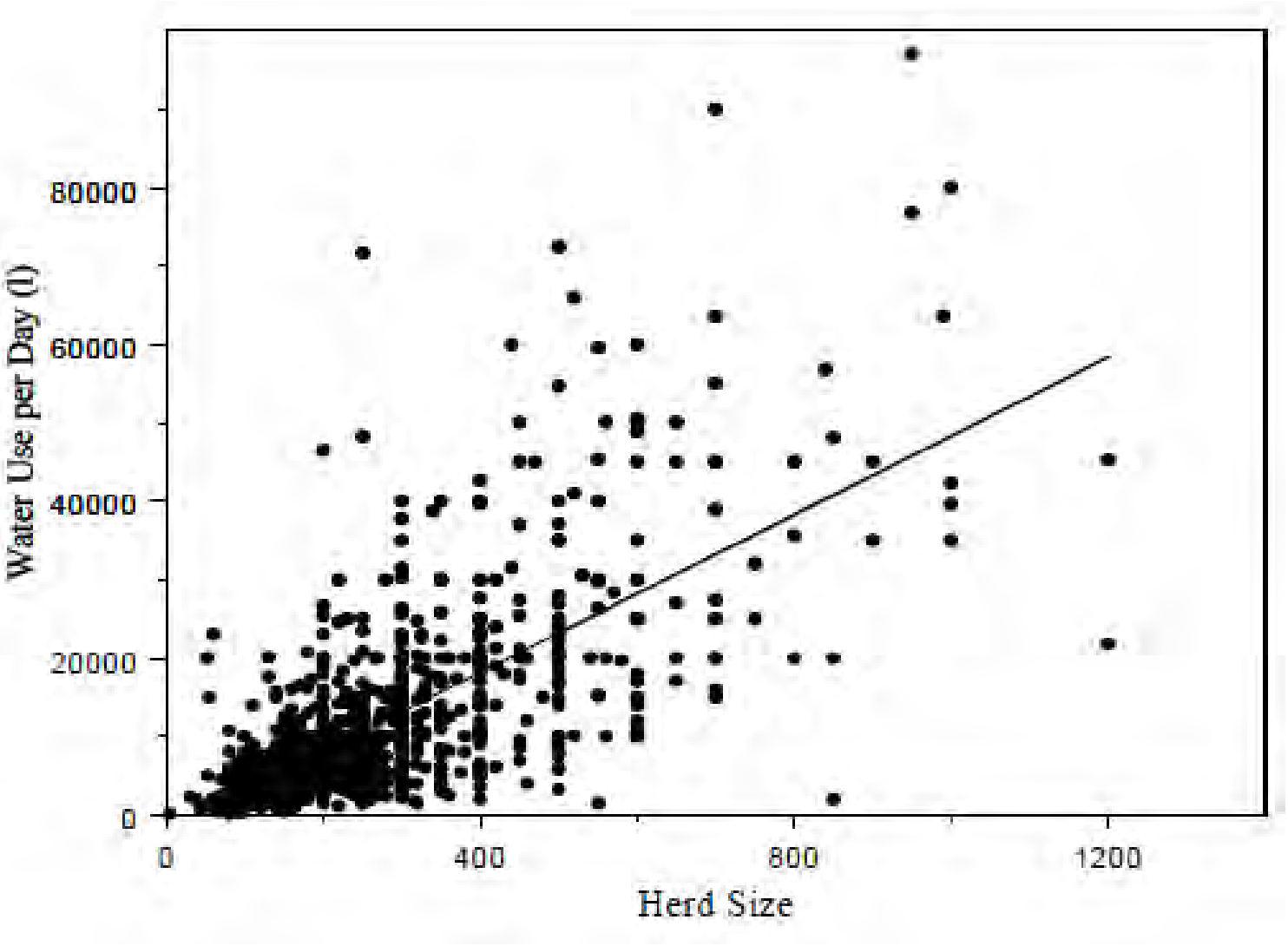
- **Your** climate,

and



- Manure and urine collected over that period
- Water use over the storage period (ANY REDUCTIONS POSSIBLE?)
- Runoff from catchment areas (EXCLUDE IF UNNECESSARY) and rain on ponds

Low hanging fruit – water use!



What should I be looking for?

- Clean water excluded
- Stable batters
- Fenced, preferably with warning signs
- Stored volume is being managed
- Up-to-date with scale and nature of operation

Final comment on storage (from NZ)…

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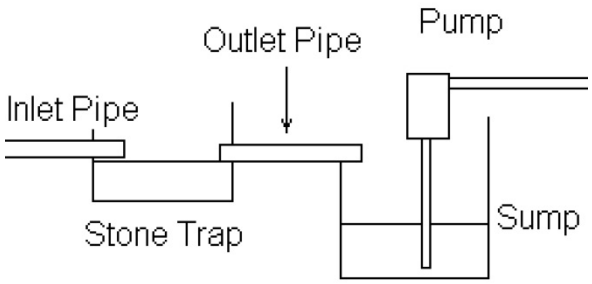
2nd 'S' = solids are managed

- "Just greenwater – no problem"
- MANURE SOLIDS and FOREIGN DEBRIS in wastewater and recycled effluent is the real challenge!

‘Pre-treatment’ solids separation – simple to complex



Sand/gravel trap

Trafficable solids trap

Multi-bay trap

Rotary screen

Screw press

Inclined screen

900 cows

1.5 ML

$200 000

Solids separation requires solids management

Some solids accumulation is inevitable

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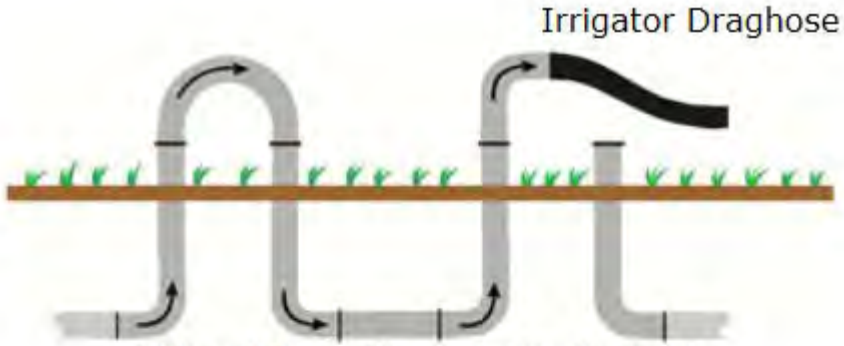
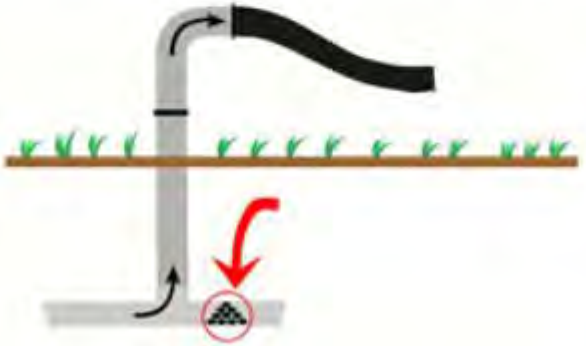
Avoid ‘dead’ zones in irrigation mainline

- Use a 2 way hydrant



Effluent flows through this hydrant avoiding any debris build up.

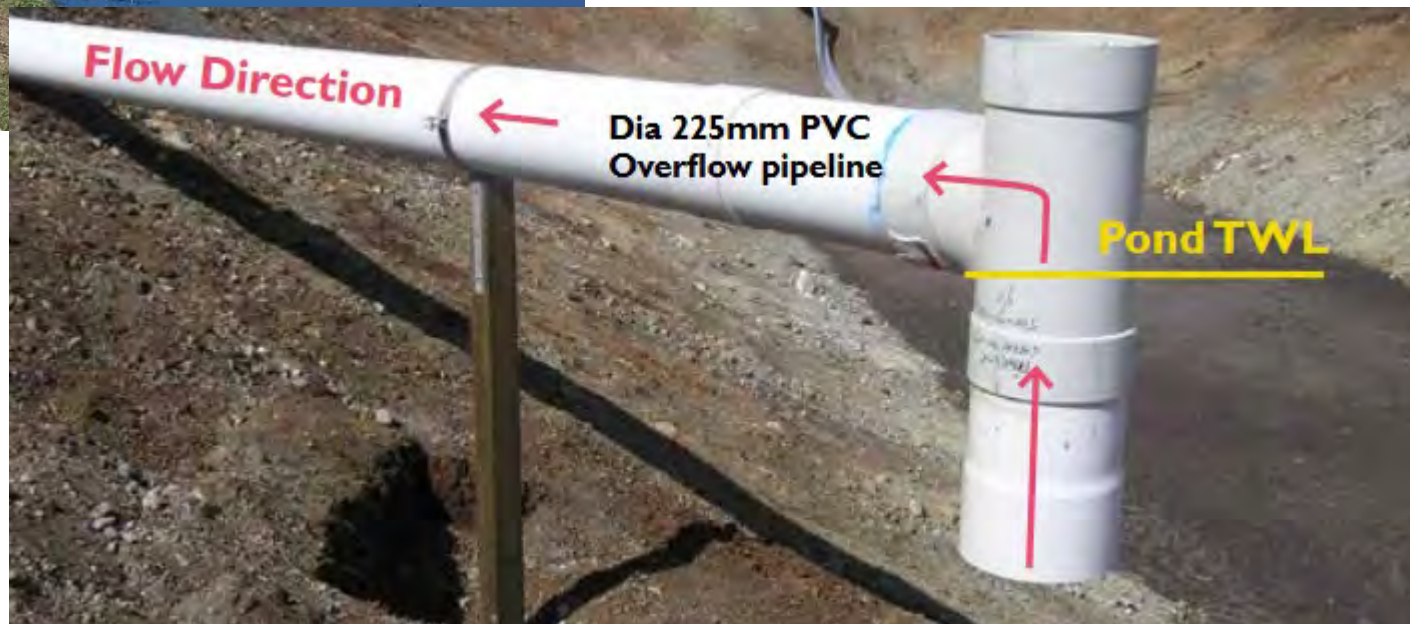
“Why Other Hydrants Block”



Debris always accumulates here and will travel and block the next hydrant in use.

Distributing slurry/sludge

T-piece transfer pipe



Crusting on ponds (good, bad or ugly?)

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3rd 'S' = sufficient reuse area

- To get the best results farm needs to:
  - Understand the amount and availability of nutrients available in the effluent (invest in local sampling & analysis)

  OR

  - Apply at conservative rates as ***regular and comprehensive soil testing provides proof of sustainable reuse regardless of whether effluent is sampled or not***

❖ Identify options for where to best utilise effluent for forage production within the farm (Fert$mart)

3rd 'S' = sufficient reuse area

- Rules of thumb:
  - » **Effluent** spread over 5 ha per 100 cows (without feedpad)
  - » Limit **effluent** application rate to 8-15 mm per application unless tested
  - » Limit **sludge** application rate to 5-10 mm per application unless tested

Fert$mart Dairy Soils and Fertiliser Manual, Chapter 13 - Using Dairy Effluent

http://fertsmart.dairyingfortomorrow.com.au

Looking for system risk

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Questions?

Where does the nutrient go?