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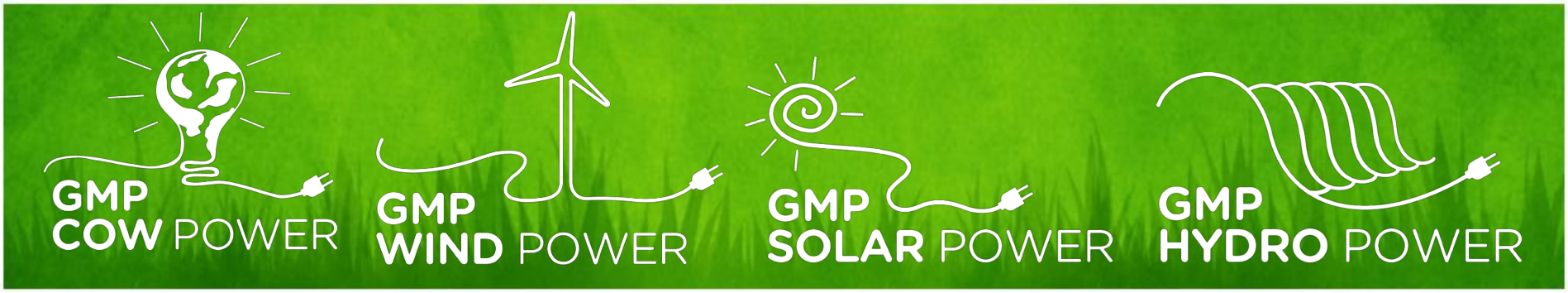
COMMERCIAL AVIATION ALTERNATIVE FUELS INITIATIVE

December 9, 2016

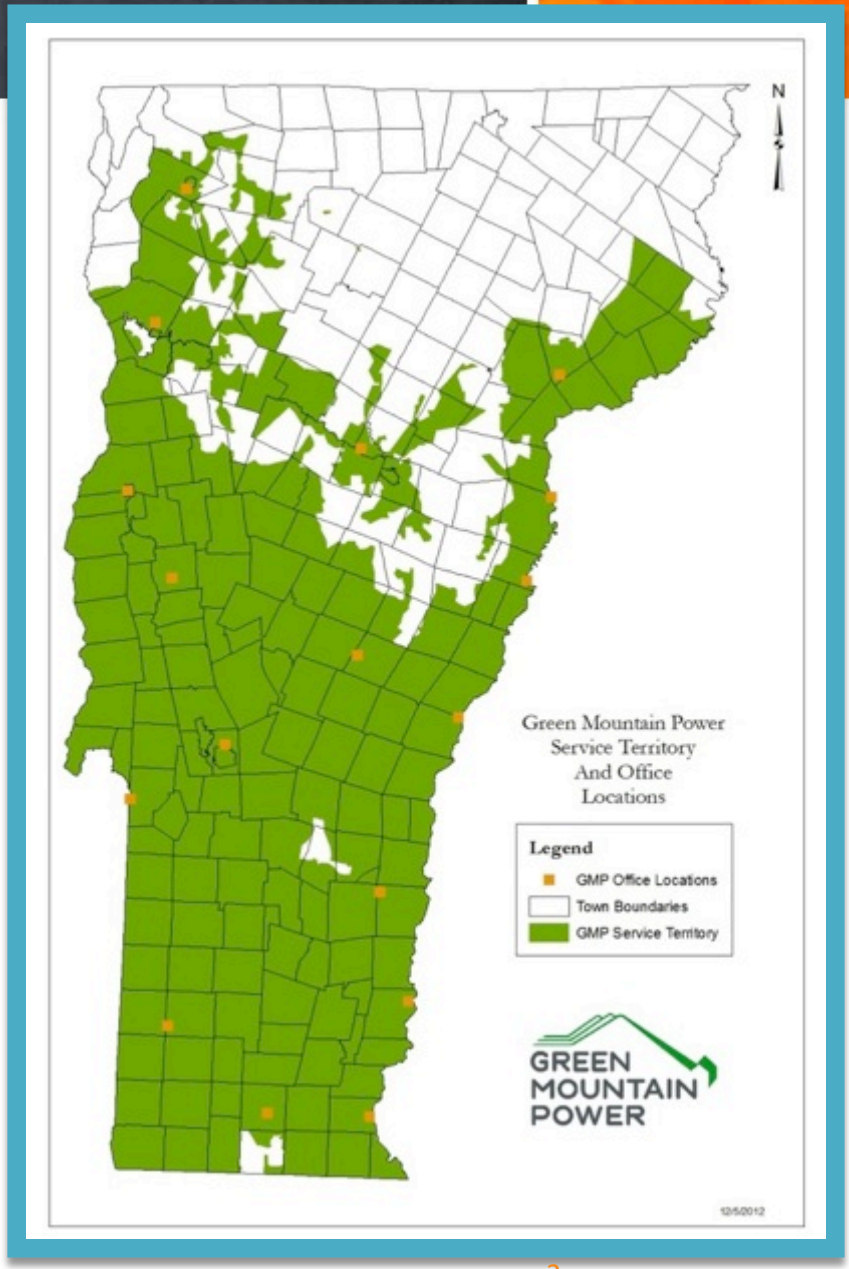
GMP Clean Energy Cleaner Water Projects in Vermont



Green Mountain Power

- Founded in 1893 in Vergennes, VT
- 261,294 customers in 202 VT towns
- 92% GMP Customer Satisfaction
- Vermont's energy company of the future!
- First utility in the World to earn B-Corp certification.
- 250,000 gallons of fleet diesel/year

Employees	560
Customers served (VT)	70%
Area served (VT)	63%
Line miles	12,000
In-State Hydro	32 stations 103 MW



B-Corp Certified: 1st Utility in the World

Why B-Corp ?

A redefined success in business that meets a higher standard of social and environmental performance, accountability and transparency.

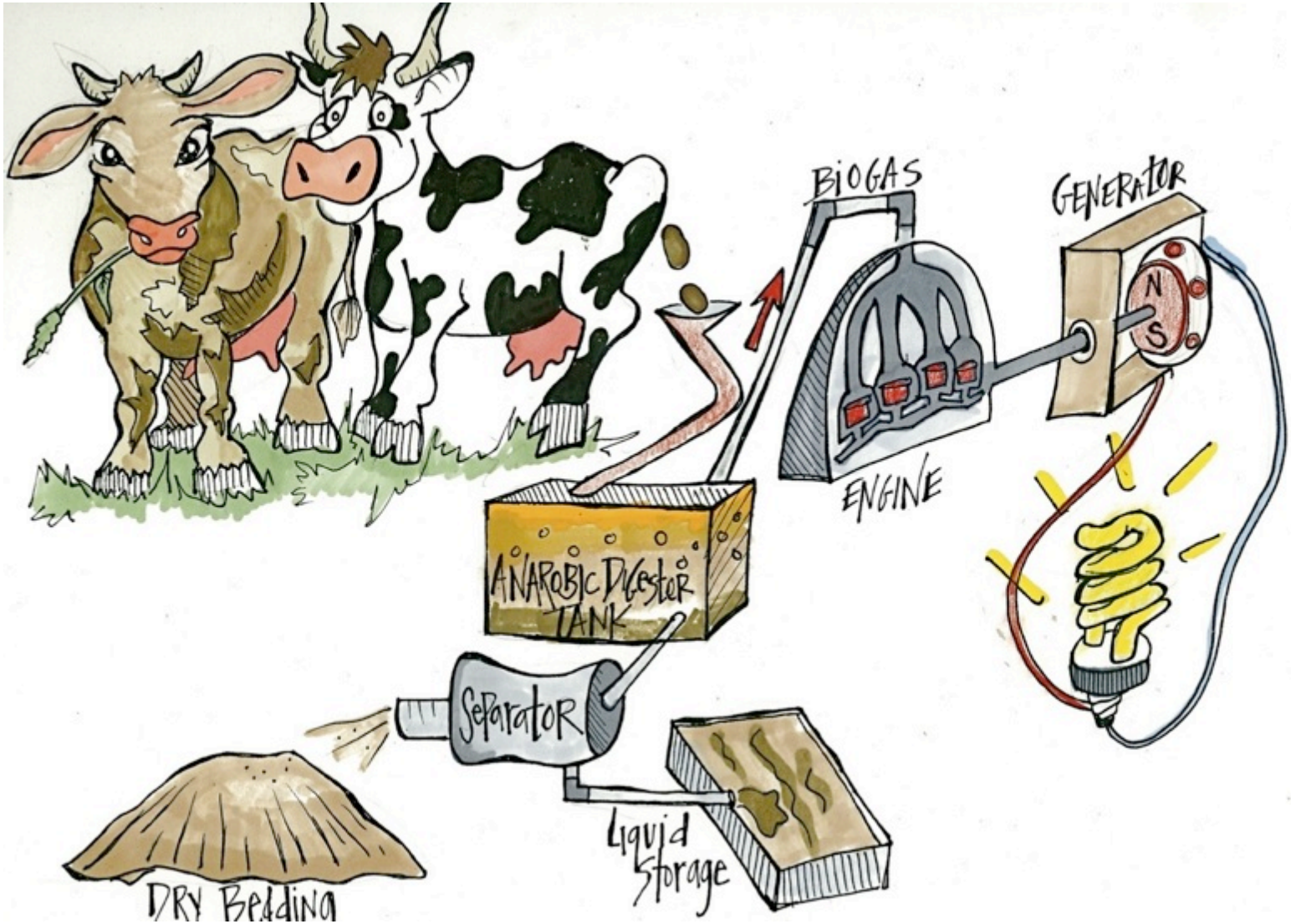
Green Mountain Power

Directly linking customers to farms.

- Provides customers a renewable **choice**.
- Provides farmers with new **revenue**
- Provides tools to **protect** the environment.

Green Mountain Power

Annette Compton 1959-2012



Lake Champlain– Critical Need

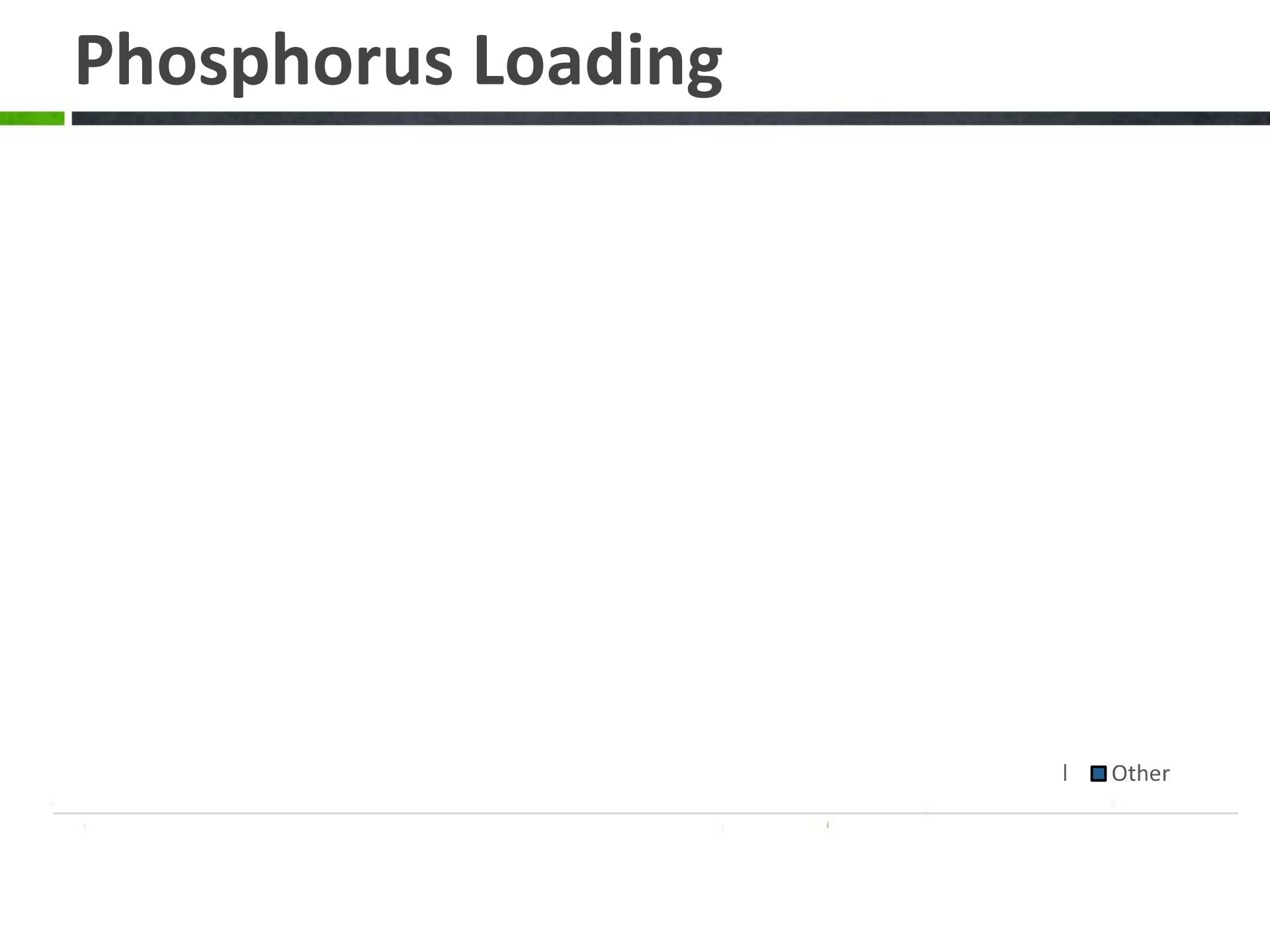
- Heavy phosphorus loading in Lake Champlain hurts water quality
- Persistent and recurring algae blooms are symptomatic of the nutrient problem
- GMP wants to help address root causes

GMP proposed the **St. Albans digester <u>with nutrient capture</u>** -- its water quality capabilities extend beyond a typical Cow Power project

South Lake – Evidence of Nutrient Problem

Spring → Summer

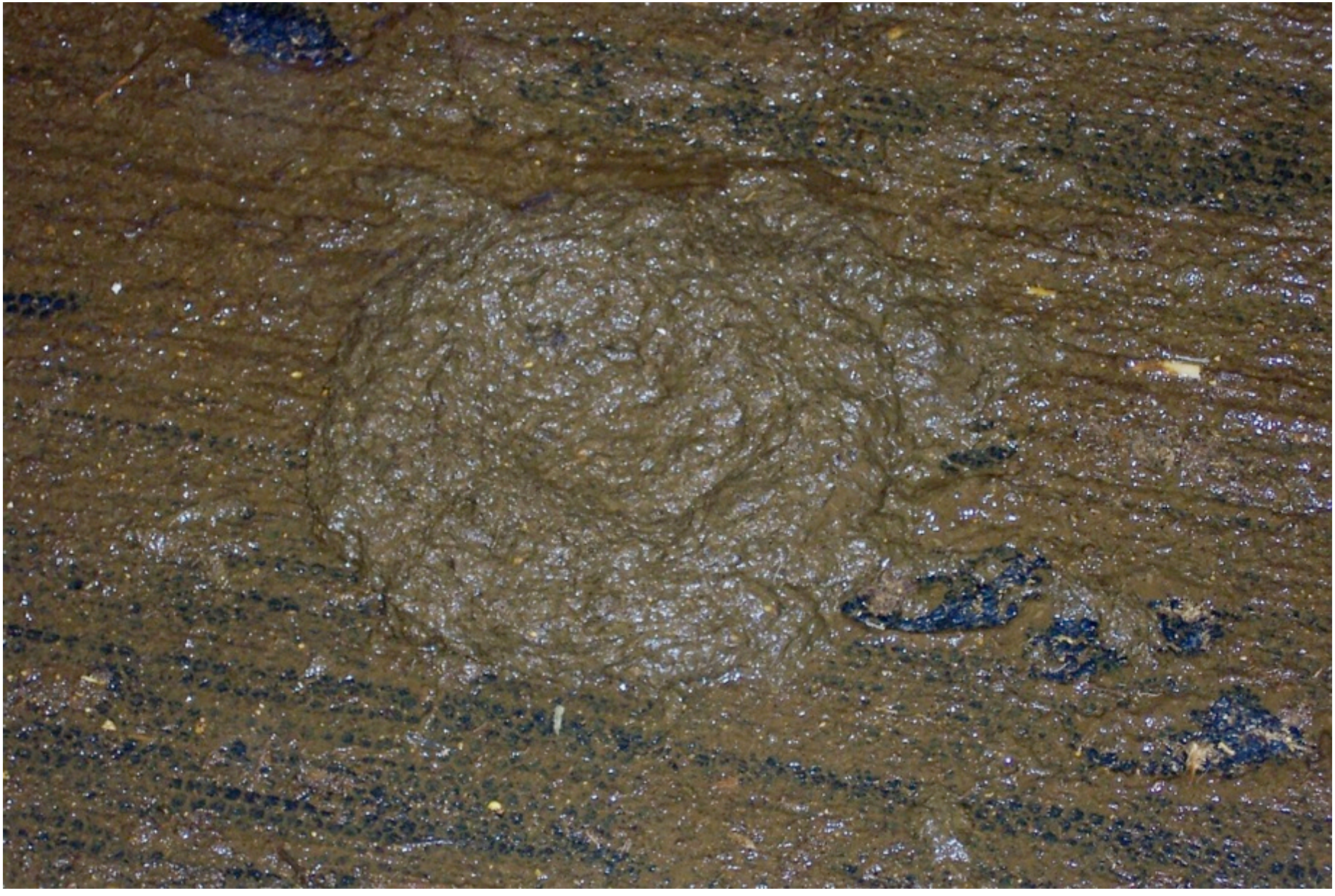
Phosphorus Loading



The GMP Digester project

- Project Goals to create multiple benefits
  - **Clean Energy *and* Clean Water**
  - Remove up to 80% of the phosphorus from farm effluent
  - Reduced nutrient runoff potential
- Local renewable generation with important benefits for:
  - GMP Customers
  - Local Dairy Farms
  - Reduced nutrient loading of St. Albans Bay
  - GHG and odor reduction

Whole Raw Manure



DVO Digester

Genset Technology

Stage 1: Bedding Fiber Separation

Liquid After Bedding Fiber

Stage 2: Dissolved Air Flotation (DAF)

- Project will include primary and secondary separation systems including (DAF).
- Systems can remove *up to* 80% (39 MT) of the phosphorus from the effluent returning only what the farm needs for crops.
- Liquid effluent coupled with GSR algae culture system, using the high nitrogen, low solids liquid to produce algal biofuels will further sequester nutrients in a granular fertilizer.

Recovered DAF Solids

Prototype Algae Culture