



DIGESTER DOC

*Through Science, We Eliminate
The Mystery Of The Black Box*

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Expansive knowledge of the Anaerobic Digester Industry, with various feedstock varieties and digester technologies throughout the industrial world. With over a decade of experience in project development, feedstock procurement, mass balance calculations, plant start-up and operational monitoring, post digestion solids conditioning, fertilizer and soil amendment production, as well as digester evaluations. Strengths lie in understanding & optimizing Biogas plant operations, research and development and microbial health of biogas facilities. Leadership skills currently focused on the custom development and implementation of Biogas composition monitoring and sampling of digester materials to determine the microbial conditions of facilities throughout the world.

Areas of Expertise

- Aerobic and Anaerobic microbial population behaviors in various environmental and feedstock conditions
- Research and Development on systems/protocols for biogas facilities
- Digester System Technology evaluations
- Biogas enhancement and filtration
- Soil sciences and soil amendments
- Feedstock evaluations for biogas potential
- Digester optimization through Biological selection

Experience/Work History

- **2012-Current** Digester Doc, President. Optimization, Monitoring and Lab services focused on the biological health of digesters and improving Biogas production, as well as researching solutions to other biogas related issues.
- **2009-Current** Renewable Agricultural Energy, Director of Research and Development, Focused on development of energy crops for digestion and biomass facilities. Maximizing the energy value in USA marketplace of Closed Loop Energy sources. Co patent owner on a sustainable agricultural pulping system.
- **2003-2009** Soil Guys, Owner. Developed conditioning technology for digestate solids from biogas facilities and developed marketplaces for product. Developed fertilizer technique derived from digesters.



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Previous Project Experience

Agri Energy Producers Association, Nyssa, OR – Development of Energy crop (high Biomass Sorghum) for production of biomass pellet and biogas) 10 MW Biogas + 10 MW Biomass. Chose technology provider, developed patent pending process for developing maximum energy potential per ton of Sorghum. Developed fertilizer product derived from Sorghum crop digestate.

Agri Energy Development, Delevan, Ca – Development of a Biomethane production converted to natural gas, and sold on the California market. Executed an RFP process for a digester technology to be used, narrowed the choice to 3 main systems, then conducted a cost, benefit ratio to narrow to final two choices. Established preliminary contracts with end users of BioMethane, and solid derived pellets.

Cargill – Dry Creek Dairy, Rock Creek, ID – Purchased solids from digester and produced enhanced conditioned fiber which was resold.

Cargill Environmental Finance Group, Minnesota – Consulted Cargill team on contract to develop digester program for 4 months. Evaluated various technologies and fiber product, as well as reviewed several digesters that CEF was looking to purchase.

Lake Breeze Dairy Digester, Fond Du Lac, WI – Located CO₂e and REC markets for dairy, and assisted with new PPA agreement with utility, which included REC's.

DeRuyter Dairy Digester, Sunnyside, WA – Developed a market for conditioned product post digester ranging from Seattle, to Portland.

ASET, Portland, OR – Reviewing Digester technologies, conducting technology analysis for Build, Own, Operate, maintain program with US Dairys for Digester facilities. Developed relationship with Energy fund groups. Arranged \$100 mill letter of intent.

Rickreall Dairy, Salem, OR – Aligned relationship with ASET and various subsequent digester technologies for dairyman. Established marketplace for fiber, and arranged sales of product with Pro Gro Mixes and Scotts Company.

Global Commons, New York, NY – reviewed fiber marketplace for region and conducted market study

King County, Seattle, WA – Worked with CH2M Hill, and Terra Resources on Seattle market for composted product from digester, conducted testing to review products from various digesters throughout the US.