NEWTRIENT
INNOVATIVE SOLUTIONS IN RESOURCE RECOVERY

TECHNOLOGY PROVIDER
BUSINESS INFORMATION REQUEST

Date: 01/05/17

COMPANY INFORMATION

Company Name:	Gryphon Environmental, LLC		
Phone:	270-485-2680	**Web Site:**	http://www.2gryphon.com/technology/
Address:	2920 Fairview Drive	**City:**	Owensboro
State:	KY	**Zip Code:**	42303

BUSINESS CONTACT

Name:	Tid Griffin
Phone:	270-485-2680
Email:	tidgriffin@gryphonenvironmental.com
Address:	2920 Fairview Drive
City:	Owensboro
State:	KY
Zip Code:	42303

TECHNICAL CONTACT

Name:	Chad Estes
Phone:	270-363-1911
Email:	chad@2gryphon.com
Address:	2920 Fairview Drive
City:	Owensboro
State:	ky
Zip Code:	42303

BUSINESS HISTORY

How long have you been in business?	9 years

Are you part of a larger company? ○ Yes ◉ No

Did you exist as another company before this company was formed? ○ Yes ◉ No
If so, what was that company's name?

Number of employees?	10-15 internal, full-time
What is your business structure?	LLC

What types of insurance and or surety do you provide?
Company umbrella coverage provides for inventory, site and equipment. Bonds can be made available, upon project review.

References. Please provide customers or colleagues with whom we can discuss your business and performance.
Please include a separate list with company name, location, contact name and contact information.

Gryphon clients are kept confidential from Public viewing.

Describe your business service(s). *For example: consulting, development, engineering, equipment sales, finance, other.*

Design, manufacturing, assembly, installation and training. We provide engineering design services, 3D-modelling, installation management and site design services.

Area or region of operation.

North and South America, Europe and select parts of the Middle East and Asia.

Does your company hold any patents or the rights to any patents? *Please identify.*

Yes, 3 approved patents, copyrights on software codes, and multiple pending patent applications.

Do you manufacture equipment? ○ **Yes** ◉ **No** *Please describe.*

Do you integrate equipment manufactured by others? ○ **Yes** ◉ **No**
If you integrate, please list the names of the companies you represent.

Gryphon dryers are provided with industry-leading equipment; such as blowers, natural gas or biogas burners, heat exchangers, sensors, meters, and PLC controls and cabinets.

How do you answer potential customer's question about financial strength of your company?

Gryphon has completed both Series A and Series B rounds of funding and has cash available for operations and growth into the future. Gryphon's patented designs enable higher margins at lower client costs. This breakthrough not only saves clients money, but enables Gryphon stronger margins and a reduced overhead.

Do you offer technical/service support? ◉ **Yes** ○ **No** *If so, what methods?*

Remote Diagnostics, Remote engineering, on-site engineering and operations services.

Do you offer design services? ◉ **Yes** ○ **No** *Please describe.*

We provide engineering design services, 3D-modelling, installation management and site design services.

Do you offer financing? ○ **Yes** ◉ **No** *If so, what terms?*

Are you a full stop shop? *Design to construction to operate?* ◉ **Yes** ○ **No** *Please describe.*

Yes, for dryer and material handling equipment. (Gryphon does not provide civil or structural engineering)

Do you have preferred partners? ○ **Yes** ◉ **No**

If so, please list and provide contact information/identify partners by name.

Do you have any third-party verification/research that has been done on this technology? ◉ **Yes** ○ **No**

If so, please describe.

Third party evaluation of thermodynamics and economics. Additionaly, Western Kentucky University operation and study of the mechanical design.

Do you provide a performance guarantee? ◉ **Yes** ○ **No**

If so, what are you guaranteeing? For example: up time, methane production, biogas production, parasitic load, throughput, O&M cost, percent recovery, other.

Throughput and utility consumption.

Are there any other aspects of your business that you feel should be included in this document?

Gryphon Environmental, LLC supplies Advanced Drying Technology composed of a continuous-operation belt-driven dryer that uses compressed, heated air injection into a vacuum for maximum efficiency. The thermodynamic result is a rapid expansion of air as it passes through the waste residuals to promote the removal of water by evaporative AND non-evaporative drying. The overall energy efficiencies afforded enable clients to dry suspensions at a fraction of traditional costs. With lower capital and operating costs, our technology is the first to produce significant returns on investment while providing advanced automation and the utmost in expandability and process flexibility.

The Gryphon Dryer uses compressed, heated air injection into a vacuum that acts to simultaneously evaporate and physically remove interstitial and bound water from a suspension. Units are designed as a closed-loop air system, meaning the air used during the process is condensed and then re-circulated, thus reducing energy demand of air-permitting requirements. Temperatures can be managed to within 5 degrees F of the operator's settings. Throughput and performance may be adjusted by:

1) Speed of the conveyor belt (process cycle time or sludge residence time in dryer)
2) Volume of Air Supplied
3) Heat of the Air Supplied

INITIAL TECHNOLOGY OVERVIEW

This information is to guide in the development of a more specific and detailed Technology Information Request.
Please answer the following questions for each Technology or Service Provided.

What is the name of the technology or service?

Gryphon advanced drying technology

What unit process is the technology used in?

For example: initial collection/transfer manure storage, energy recovery, primary/coarse solids recovery, advanced suspended/fine solids recovery, drying, struvite production, nitrification denitrification, ammonia stripping, algae, vermi composting, membrane filtration, evaporation, other.

drying
pellet production
biosolids/biomass material handling

How many systems have you installed on dairy farms or other livestock operations?

3 agricultural installations

Size of farm(s)?

N/A

Location of farm(s)?

Vancouver, Georgia, Cape Town

What's the smallest/largest farm for your system?

N/A

Input material description/characteristics:
For example: raw manure, digestate, screened digestate, suitable non-farm feedstocks, other.
proteins, biomass, and biosolids.

Does the technology treat the full manure stream for a farm or a fraction of the stream?
dewatered solids are treated and converted to dry, pathogen-free solids.

Do you consider this a mature system or ongoing farm development?
mature

Any weather constraints? ◉ **Yes** ○ **No** *Please describe.*
should be located where protected from wind and rain

Any bedding constraints? ○ **Yes** ◉ **No** *Please describe.*

Is this process scalable and to what extent (top and bottom limits)? ◉ **Yes** ○ **No** *Please describe.*
The dryer is composed of sectional pieces. This enables the dryer to be expanded to increase capacity. A tremendous advantage over prior technologies.

Do you have a known scaling factor? ◉ **Yes** ○ **No** *Please describe.*
Each ten by ten section can remove 10 tons of water on a daily basis.

Input and output of your unit/system – do you have a mass balance analysis? ◉ **Yes** ○ **No** *Please describe.*

Do you consider this technology part of a larger system that you provide? ◉ **Yes** ○ **No** *Please describe.*

Has your technology been accepted by the NRCS? ○ **Yes** ◉ **No** *Please describe.*

Would you be willing to provide information for a technical review? ◉ **Yes** ○ **No**

Would you be willing to respond to a Request for Quotation (RFQ) on a generic project for comparison of your technology against other technologies in the same unit process? ◉ **Yes** ○ **No**

Are there any other facts about this technology that you feel should be included in this document?

TECHNOLOGY ADVANTAGES

- Modular Design – Enables additions to the length of the dryer for additional capacity. Reduces capital cost. Decreases lead times for delivery and installation.
- Efficiency – Anticipated Thermal Energy Demand of 2.1 MMBTU Per Ton of Water Removed.
- Re-circulated air stream reduces/eliminates exhaust released to atmosphere and associated permitting. Eliminates the needs for bag-houses, scrubbers or exhaust stacks.
- Flexible throughput enabled by advanced temperature & air volume controls. – ON THE FLY AUTOMATION.
- Flexible sourcing of thermal energy; including natural gas, biogas, waste heat or steam.
- Advanced software enables “lights-out” operation and three-level alarming.
- Reduced maintenance enabled by air filters that can be rapidly swapped during operation of the dryer.
- Ease of annual maintenance with removable condenser coils and mechanical lid-lifting mechanism.
- Automated Dryer washing of chambers and belt – Operators select frequency and duration.
- Controllable Air Volume, Air Temperature, Height of In-feed, and Cycle Time.
- Less than 15-minute Start-up time to begin sludge processing (add 15 minutes for natural/bio gas units).
- Less than 15 minute Shut-down that includes 10 minutes of visual inspection.
- Reduced installation time & cost, with an anticipated three weeks required for installation & initial start-up.
- Expandable system allows for up to 200 square feet of additional drying surface area to be installed at a fraction of replacement costs.
- Remote diagnostics capability.
- Low chamber temperature enhances drying safety.