



<b>Technology/Service:</b>	EcoFilter biotrickling filter
<b>Information by:</b>	Timur Dunaev
<b>Date:</b>	5/30/2017

**COMPANY INFORMATION**

<b>Company:</b>	BioAir Solutions, LLC		
<b>Phone:</b>	(856) 258 6969	<b>Web Site:</b>	<a href="http://www.bioairsolutions.com">www.bioairsolutions.com</a>
<b>Address:</b>	110 Kresson-Gibbsboro Rd., Ste. 303	<b>City:</b>	Voorhees
<b>State:</b>	NJ	<b>Zip Code:</b>	08043

**TECHNICAL CONTACT**

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<b>Address:</b>	110 Kresson-Gibbsboro Rd., Ste. 303
<b>City:</b>	Voorhees
<b>State:</b>	NJ
<b>Zip Code:</b>	08043

**DEMONSTRATION SITE CONTACT**

<b>Site Name:</b>	
<b>Contact:</b>	
<b>Title:</b>	
<b>Phone:</b>	
<b>Email:</b>	
<b>Address:</b>	
<b>City:</b>	
<b>State:</b>	
<b>Zip Code:</b>	

**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 you provide?**

EcoFilter biotrickling filter

**Describe how this technology is used in a larger Nutrient Management System. Please be as detailed as possible.**

EcoFilter biotrickling filter provides biological, sustainable, long term emissions and odor control.

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

SYSTEMS	NUMBER OF SITES	SIZE OF INSTALLATIONS
Dairy		
Pork		
Poultry		

**Do you have a preferred region or area for the location of projects?**

NA

**Location of farm(s)?**

NA

**What's the smallest and largest farm using your system?**

NA

**Input and output of your unit/system – do you have a mass balance analysis?**

*If a mass balance is available, please include below or attach as a separate document.*

Yes

**Input material description and characteristics:**

*For example: raw manure, digestate, screened digestate, suitable non-farm feedstocks, other.*

Odorous air or air emissions

**Does the technology treat the full manure stream for a farm or a fraction of the stream?**

The technology is designed to treat odorous air and air emissions from the manure stream

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

Mature system with over 250 installations worldwide

**Any weather constraints?** Yes  No  *If so, please describe.*

**Any bedding constraints?** Yes  No  *If so, please describe.*

**Output material description and characteristics:**

*Please include the % of the total stream for each material, i.e. 10% fiber and 90% screened liquid by weight.*

Cleaned air

**Do the Outputs of the process have a resale market identified?** Yes  No

*If so, under what brand name or who is the contract with?*

Sulfuric acid blowdown could be concentrated and resold

**Is this process scalable and to what extent (top and bottom limits)?** Yes  No  *If so, please describe.*

We have installed systems anywhere from 10 to 100,000 cfm in size

**Do you have a known scaling factor?** Yes  No  *If so, please describe.*

**Does this technology require any air input?** Yes  No

Air to be treated

**What is the preferred air connection?** *For example: psi, fitting size, air quality.*

*If not distributed by the system, please list each connected device.*

NA

**Does this technology require any water input?** Yes  No  *If so, please describe.*

Irrigation for biological systems

**What is the preferred water connection?** For example: psi, fitting size, water quality, gpm.  
If not distributed by the system, please list each connected device.

Varies depending on the system size

**Does this technology require any electrical input?** Yes  No  If so, please describe.

Blower and panel power

**What is the preferred electrical connection?** For example: phase #, voltage, full load amps.  
If not distributed by the system, please list each connected device.

Project dependent

**Does this technology require any mechanical input?** Yes  No  If so, please describe.

**What is the preferred mechanical connection?** For example: horsepower, connection, rpms.  
If not distributed by the system, please list each connected device.

**Does this system require any special plumbing?** Yes  No  If so, please describe what is required.

**Does this system require any special foundations or pads?** Yes  No  If so, please describe.

**Do you consider this technology part of a larger system that you provide?** Yes  No  If so, please describe.

**Does your system require any other components that you do not provide or are not included in your proposal?** Yes  No   
If so, please describe.

**How is the system delivered to the site?** For example: skid mounted, assembled on site, constructed on site.

Most of the time the system is delivered on site on a truck, ready to be off-loaded and installed on a concrete pad

**Is this system portable or configured in such a way that it could be easily transported for use in several locations?**  
Yes  No  If so, please describe.

Some of our systems are skidded (usually smaller size)

**Has your technology been accepted by the NRCS and is it included into a practice standard?** Yes  No   
If so, please describe if necessary.

**Are there any unusable or hazardous byproducts of this process?** Yes  No   
If so, please describe the product and recommended means of disposal.

**What spare parts and redundant components are included with the system?**

We usually provide minor spares (strainers, fuses) necessary for the system

**How is the system controlled and what are the components and capabilities of the control system?**

We provide an Electrical Control Panel with PLC and HMI to control blower and media irrigation

**What is the usable life of the system?**

We guarantee media for > 10 years, and system is designed for > 25 years of operation

**What is the salvage value at the end of the usable life?**

NA

**What is the educational and technical level of competence for the operation of the system?**

**Minimal. There are only two moving parts (blower and irrigation valve). System needs periodical strainer cleaning.**

**What level of maintenance is required for the system?**

*Please indicate if rebuilds or major components must be replaced and what the frequency is for these components.*

NA

**Are consumables used in the process? Yes  No**

*Please provide the nature and purchase relationship for these consumables. For example: proprietary, special contract, generally available.*

**Which of these NRCS codes would your technology be classified under? Check all that apply. Add if necessary.**

CODE	NRCS DESCRIPTION	CHECK ALL THAT APPLY
472	Access Control	<input type="checkbox"/>
560	Access Road	<input type="checkbox"/>
309	Agrichemical Handling	<input type="checkbox"/>
371	Air Filtration and Scrubbing	<input checked="" type="checkbox"/>
591	Amendments for the Treatment of Agricultural Waste	<input type="checkbox"/>
366	Anaerobic Digester	<input type="checkbox"/>
672	Building Envelope Improvement	<input type="checkbox"/>
372	Combustion System Improvement	<input type="checkbox"/>
317	Composting Facility	<input type="checkbox"/>
554	Drainage Water Management	<input type="checkbox"/>
375	Dust Control from Animal Activity on Open Lot Surfaces	<input type="checkbox"/>
373	Dust Control on Unpaved Roads and Surfaces	<input type="checkbox"/>
374	Farmstead Energy Improvement	<input type="checkbox"/>
512	Forage and Biomass Planting	<input type="checkbox"/>
561	Heavy Use Area Protection	<input type="checkbox"/>
516	Livestock Pipeline	<input type="checkbox"/>
590	Nutrient Management	<input type="checkbox"/>
521A	Pond Sealing or Lining, Flexible Membrane	<input type="checkbox"/>
533	Pumping Plant	<input type="checkbox"/>
588	Roof Runoff Structure	<input type="checkbox"/>
367	Roofs and Covers	<input type="checkbox"/>

318	Short-Term Storage of Animal Waste and By-Products	<input type="checkbox"/>
570	Stormwater Runoff Control	<input type="checkbox"/>
606	Subsurface Drain	<input type="checkbox"/>
635	Vegetated Treatment Area	<input type="checkbox"/>
601	Vegetative Barrier	<input type="checkbox"/>
360	Waste Facility Closure	<input type="checkbox"/>
632	Waste Separation Facility	<input type="checkbox"/>
313	Waste Storage Facility	<input type="checkbox"/>
634	Waste Transfer	<input type="checkbox"/>
629	Waste Treatment	<input type="checkbox"/>
359	Waste Treatment Lagoon	<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>
		<input type="checkbox"/>

**Can you provide an estimate of the capital required for the installation of this technology?**

*Please include all components and designate if provided by you or others.*

NA, system is custom in size ranging from \$30,000 to \$MM

**Can you provide an estimate of the operational costs required for this technology?**

*Please include all costs and designate if provided by you or others.*

Blower power and irrigation water, based on the inlet load

**Is there financing available for this system?** Yes  No  *If so, what are the conditions for this financing?*

**Is the system available for lease?** Yes  No  *If so, please describe.*

**What sort of warrantee or guarantee do you provide with this technology?**

*Do you provide any performance guarantees or strictly defects in parts and materials?*

We provide performance guarantee on organic and inorganic compounds removal, as well as fence line odor (through modeling)

**Explain how this system is unique or transformative and how does it improve upon or go beyond other technologies that are currently available.**

EcoFilter system utilizes, unique, patented fully structured, inorganic, self supporting EcoBase media, that does not deteriorate with time and requires no maintenance or replacement.

**Would you be willing to provide a location for a site visit by Newtrient?** Yes  No  *If so, please provide location.*

Multiple locations are available, the closest one is in Milwaukee (FCPC, Patawatomi)

**TECHNOLOGY REFERENCES**

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**Please provide customers with whom we can discuss this technology and its performance.**  
*Include a company name, location, contact name and contact information.*

**Reference 1**

<b>Company Name:</b>	Reference available upon request
<b>Company Location:</b>	
<b>Contact Name:</b>	
<b>Contact Information:</b>	

**Reference 2**

<b>Company Name:</b>	
<b>Company Location:</b>	
<b>Contact Name:</b>	
<b>Contact Information:</b>	

**Reference 3**

<b>Company Name:</b>	
<b>Company Location:</b>	
<b>Contact Name:</b>	
<b>Contact Information:</b>	

**Reference 4**

<b>Company Name:</b>	
<b>Company Location:</b>	
<b>Contact Name:</b>	
<b>Contact Information:</b>	

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