



Technology/Service: McLanahan Corporation - Rotary Screens

Information by: Rob Plank

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COMPANY INFORMATION

Company: McLanahan Corporation

Phone: (814) 695-9807

Web Site: www.mclanahan.com

Address: 200 Wall Street

City: Hollidaysburg

State: PA

Zip Code: 16648

TECHNICAL CONTACT

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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?

McLanahan Corporation - Rotary Screens Liquid Solid Separators

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

McLanahan’s Rotary Screens separate manure into two components – a thicker portion of concentrated manure solids and a less concentrated liquid portion. Dairy producers can use Rotary Drums to separate solids from the manure stream for a variety of reasons, including regulatory compliance, nutrient management, ease of manure application, or to produce flume or sand separation make-up water. The internally fed rotary screen includes an automated, clean-in-place system that keeps it operating at peak performance.

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

SYSTEMS	NUMBER OF SITES	SIZE OF INSTALLATIONS
Dairy	30+	Herd sizes from 200 to 15,000
Pork		
Poultry		

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

Dairies with 200 to 15,000 cows

Does this technology have a 12-month record of reliable performance on at least three dairy farms?

Yes. References are available.

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

Globally. Systems are successfully operating around the world.

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.

Since every dairy is different, it is relatively simple to estimate the input/output mass balance based on expected capacities from the manure collection system and bedding practices

Input material description and characteristics:

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

Input stream is raw manure and bedding or raw manure with sand separation if sand bedding is used on the dairy

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

McLanahan's Rotary Screens are designed to treat the full manure stream. The modular design can be custom engineered to meet the specific manure separation requirements of most any dairy operation, including those with existing Sand Separation Systems.

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

The rotary screen is a proven technology. McLanahan field-tested a full-scale Rotary Drum before bringing it to market. With information gathered from this testing, the company has accurately generated capacity and efficiency charts for appropriate sizing and selection of screens.

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

Must be protected from freezing.

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

Can be used with any type bedding.

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.

There are two output streams; a thicker portion of concentrated manure solid and a less concentrated liquid portion. McLanahan Rotary Screens Drums will remove up to 35 percent of the total solids (TS) based on the amount of solids in the manure and screen selection.

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?

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

The modular design can be custom engineered to meet the specific manure separation requirements of most any dairy operation, including those with existing Sand Separation Systems.

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

Does this technology require any air input? Yes No

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

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

Fresh water for cleaning

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.

Standard plumbing connections. A pump is used to boost pressure to greater than 100 psi.

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

Rotary Screens require electrical input for controls, pumps and other equipment.

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

Any phase and voltage motor can be specified

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

Electric motor supplied

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

Electric motor supplied

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

Standard NPT connection for spraybar and standard pipe connections on outlets

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

The system is often elevated to allow the thickened portion of the manure to drop into a roll press

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.*

Requires on-site plumbing and electric hookups

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.

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?

Spare parts are industry standard and available

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

Control panel is supplied with system

What is the usable life of the system?

Twenty years

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

Metal scrap value

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

Trained labor should be able to operate the system, including routine maintenance.

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.

Component parts require maintenance and replacement per maintenance schedule. Daily inspections and periodic response to system upsets are required.

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 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 checked="" type="checkbox"/>
313	Waste Storage Facility	<input type="checkbox"/>
634	Waste Transfer	<input type="checkbox"/>
629	Waste Treatment	<input checked="" 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.

Capital cost ranges from \$30,000 – 80,000 for the equipment depending on size and features.

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.

Operational costs are primarily the electric cost to run the 1-3 Hp motor.

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

None

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

No

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?

1 year warranty for all components except wear items. Yes, a guarantee can be provided.

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

This system is similar to other rotary drums on the market but with a better trunnion wheel system that is triple shielded from the manure.

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

There are many locations around the world which are available.

TECHNOLOGY REFERENCES

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

Company Name:	Evergreen Farms
Company Location:	Spruce Creek, PA
Contact Name:	Abe Harpster
Contact Information:	(814) 883-4803

Reference 2

Company Name:	Providence Dairy
Company Location:	Twelve Mile, IN
Contact Name:	Arie DeJong
Contact Information:	(219) 221-9062

Reference 3

Company Name:	Snudden Dairy
Company Location:	Lake Geneva, WI
Contact Name:	Steve Snudden
Contact Information:	(262) 749-8006

Reference 4

Company Name:	Boadwine Farms
Company Location:	Sioux Falls, SD
Contact Name:	Lynn Boadwine
Contact Information:	(605)351-9216

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

Rotary screen separators are regularly replacing slope screens for the past ten years due to the self-cleaning features which reduce labor.