NEWTRIENT
INNOVATIVE SOLUTIONS IN RESOURCE RECOVERY

TECHNOLOGY PROVIDER
BUSINESS INFORMATION REQUEST

Date:

COMPANY INFORMATION

Company Name:	Daritech		
Phone:	360-354-6900	**Web Site:**	http://www.daritech.com/
Address:	8540 Benson Rd	**City:**	Lynden
State:	WA	**Zip Code:**	98264

BUSINESS CONTACT

Name:	Steve Peerce
Phone:	206-417-1472
Email:	steve@daritech.com
Address:	8540 Benson Rd
City:	Lynden
State:	WA
Zip Code:	98264

TECHNICAL CONTACT

Name:	Ryan DeWaard
Phone:	360-354-6900
Email:	ryan@daritech.com
Address:	8540 Benson Rd
City:	Lynden
State:	WA
Zip Code:	98264

BUSINESS HISTORY

How long have you been in business? 26 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? 60

What is your business structure? Privately held

What types of insurance and or surety do you provide?

Surety: as needed
Insurance: General Liability, Auto, Professional Liability, Foreign Liability, Ocean Marine, Pollution Liability

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.

Marty Myers
Columbia River Dairies
Boardman, OR
541-481-9274

Ken Maarhuis
Maarhuis Dairy
Sumas, WA
360-988-2400

Al Tank
Revolution Energy Solutions
Washington, DC
202-667-2830 x14

Ed Blok
Blok Evergreen Dairy
Lynden, WA
360-354-0510

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

Equipment sales and services
Project development
Design services

Area or region of operation.

Global

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

8,926,846 Systems and methods for extracting particulate from raw slurry material
8,889,016 Systems and methods for extracting sand from raw slurry material
8,728,801 Composter mechanism
8,470,183 Systems and methods for extracting sand from raw slurry material
8,201,495 Pre-separator for a screen separator
8,142,667 Manure separation for digester method

7,987,778 Pre-separator for a screen separator
7,631,595 Force convection milk pasteurizer
7,306,731 Manure separation for digester method and apparatus
6,997,135 Valve for a milking apparatus
6,637,375 Cow indexing & positioning method & appar.
6,443,094 Method/apparatus for cleaning cow udder
6,105,536 Wash system,and method for a rotary milking apparatus

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

To some degree we incorporate equipment manufactured by others

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

Primary:
-CST Storage
-EYS Metals
-Vision Machine
-Schneider Electric
-IBA
-Lely
-Misc. OEM

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

Does not ordinarily come up, point to history. Other arrangements can be made in certain circumstances if necessary

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

We support our own systems as needed

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

Yes, as a means of providing our own equipment. We do not offer design services for fees

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.*

Design worldwide, construction in our service area. Owners typically responsible for operation

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

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

Only vendors whose equipment we incorporate

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

If so, please describe.

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.

No. We rely on the customer reaching his own conclusions, and provide whatever information we can to assist. Typically, there are existing facilities which can be evaluated

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

-Flush water thickening for digester
-Sand bedding separation
-Rotary drum bedding composter

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?

DT Digester

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.

Anaerobic digestion of liquid dairy manure. Other systems incorporated as dictated by dairy needs

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

3

Size of farm(s)?

700-5,000 cows

Location of farm(s)?

Washington and Oregon

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

Currently smallest dairy is 700 cows. Scales well as size of dairy increases

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

Liquid manure from dairy. Can be collected with flush or scrape. Bedding with fiber can go in digester, sand separation would be included for sand bedded operations

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

Full stream, except in flush operations, where thickening can result in some undigested light decant

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

The system is mature in the sense that it is marketable with known costs and performance, while we continually work toward maximizing efficiencies

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

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

No. Sand bedding is separated as part of operation when required

Is this process scalable and to what extent (top and bottom limits)? ◉ **Yes** ○ **No** *Please describe.*

Depending on economics, can scale down to 200 cows with no upper limit. Cost definitely a factor at the lower end

Do you have a known scaling factor? ◉ **Yes** ○ **No** *Please describe.*

Scaling curve goes up rapidly at the lower end, beginning to level off above 1000 cows

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

We do not have a calculated mass balance analysis, could be developed when necessary

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

Digesters need to be part of a comprehensive manure management plan, which Daritech brings to the project. Digesters that do not account for and incorporate dairy operations are likely to be unsuccessful in the end

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

Not the digester, but many of the components such as pumps, tanks, separators, concrete, etc

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?

Daritech digesters are valued engineered to control operating and capital costs. Costs range from $1,500-$2,000/cow for 1000 cows, to under $1,000/cow above 5,000