

## Corporate Statement of Qualifications

### Company Profile

Tiry Engineering, Inc. (TEI) was formed in 1994 in response to a need for engineering services in agriculture. We are agricultural waste management specialists dedicated to provide clients cost effective design solutions. With over 80 years of combined experience, we strive to provide the services our clients need by our commitment to both excellence and integrity.

### Services

We specialize in providing agricultural waste management designs for control, treatment, transfer, and storage. We offer our clients site designs that carefully integrate the landowner's needs with the environmental concerns. We are experienced in animal waste utilization and energy recovery. Such services include the design and construction of anaerobic digesters and composting facilities as well as feasibility studies and design for waste-to-energy systems utilizing various means of combustion of separated solids. We have prepared environmental and site assessments for 50 plus CAFO and waste storage permits for compliance with local, state, and federal regulations. We have designed overall waste management systems for dairy, poultry, and hog livestock ranging in size from 50 to 20,000 animal units.

### Technical Personnel Available

- Principal engineer
- Senior project engineer
- Design engineer
- Project engineer
- Environmental scientist
- Civil engineering technicians
- CAD technician
- Construction inspectors

### Projects

- Richland County Economic Development Corporation
- Hoard's Dairyman
- Belmont Bio-Ag
- Holsum Dairy
- Alta Genetics
- Nobelhurst
- Morrisville
- Spring Grove Dairy

## References

Time Baye  
Lafayette Bio-Ag LLC  
216 Pioneer Tower  
Platteville, WI 53818  
(608) 342-1090

Bob Brodbeck  
Belmont Bio-Ag  
170 West Main Street  
Platteville, WI 53818  
(608) 332-9680

Randy Wodrich  
Senior Program Director  
EarthTech, Inc.  
4135 Technology Parkway  
Sheboygan, WI 53083  
(920) 451-2854

Bruce Bullamore  
Richland County Economic Development Corp.  
1140 Sextonville Road  
P.O. Box 49  
Richland Center, WI 53581  
(608) 647-4310

Kenn Buelow  
Holsum Dairy, Inc.  
N5701 Irish Road  
Hilbert, WI 54129  
(920) 849-1133

Jan Scott  
Unison Solutions, Inc.  
5451 Chavenelle Road  
Dubuque, IA 52002  
(563) 585-0967

Raymond Hunter  
Emerald Agriculture  
156 Coash Road  
Dugannon  
Co. Tyrone  
North Ireland BT71 6JB  
011-44-28-8774-0442  
(847) 252-7738

Lee Jensen  
Five Star Dairy  
2911 County Hwy N  
Colfax, WI 54730  
(715) 962-4002

Ed Odgers  
DATCP, ARM  
2811 Agriculture Drive  
P.O. 8911  
Madison, WI 53708-8911  
(608) 224-4630

Ron Caldwell  
State Ombudsman (retired)  
5173 Meek Street  
De Forest, WI 53532  
(608) 846-5934

## Resume of Principal Engineer

Michael J. Tiry, PE

### Summary of Background

Michael J. Tiry grew up on a small family farm in western Wisconsin. He graduated from the University of Wisconsin–Madison in 1970 with a degree in agricultural engineering and then worked for the USDA Soil Conservation Service (SCS) for 25 years serving extensively in the fields of erosion control and animal waste management. His duties at the SCS included supervising engineering work in a 15-county area as area engineer; providing training in engineering practices to county, state, and federal employees; and providing technical assistance to landowners. After leaving governmental service in 1994, he entered private enterprise and founded Tiry Engineering.

### General Education

Bachelor of Science—Agricultural Engineering—1970  
University of Wisconsin Madison

### Digesters Training

- “Anaerobic Treatment of Agricultural Wastes” seminar by Iowa State University on May 21-22, 2007.
- “Anaerobic Treatment of High Strength Agricultural and Industrial Wastes” seminar by University of Wisconsin-Milwaukee on September 11-12, 1997.
- “Treatment Processes for Reducing Gas and Odor Emissions from Livestock and Poultry Facilities” seminar by University of Minnesota on February 24-25, 1999.

### Associations

- National Council of Examiners for Engineering and Surveying
- American Society of Agricultural and Biological Engineers

### Registration

- Professional Engineer, Iowa (17083)
- Professional Engineer, Minnesota (41576)
- Professional Engineer, New York (078903)
- Professional Engineer, Wisconsin (E-14414)
- Certified to conduct assessments under the On Farm Odor/Environmental Assistance Program
- Nationally Registered Technical Service Provider (TSP)
- Wisconsin NRCS Recognized Private Sector CNMP Engineers

### **Governmental Work Experience**

Field Engineer, USDA-Soil Conservation Service, 1968-1994. Duties included:

- Supervising engineering work in an administrative area of 15 counties to ensure technical adequacy as Area Engineer
- Providing training in engineering practice to county, state, and federal employees
- Providing technical assistance to landowners and units of government in soil and water conservation
- Training private engineers in use of Soil Conservation Service engineering references

### **Examples of Project Experience**

**Richland County Economic Development Corporation (RCEDC), Richland County, WI**

Mr. Tiry was the project manager for inventorying participating farms to assess existing waste manure systems to determine potential anaerobic digestion and transfer of waste to a central site. Prepared RFP and transmitted to prospective digester and Cogeneration vendors. Received proposals and evaluated relative merits of each to present to RCEDC.

**Belmont Bio-Ag, Lafayette County, WI**

Mr. Tiry was the project engineer and manager and was responsible for preparing a process flow diagram for a system involving anaerobic digestion of manure from 20,000 head beef cattle and thin stillage from an ethanol plant. The effluent from the digester will be treated by nutrient recovery and solid separation system to produce water of sufficient quality to be used in the ethanol process thus eliminating the liquid waste stream. Heat recovered from the cogeneration of methane electrical power will be used to heat the digester and 10 acres of greenhouse. Nutrients recovered will be blended with digested organic solids to produce a high quality of organic fertilizer.

**Grant County Farm, Grant County, WI**

Mr. Tiry designed systems to collect contaminated stormwater runoff from three outdoor exercise lot. Mr. Tiry engineered concrete walls and outlet structures to contain stormwater on two lots prior to discharge to wastewater treatment strips. He designed wastewater treatment strips in accordance with NRCS Code 635. Mr. Tiry was responsible for coordinating the efforts of personnel from the NRCS, Tiry Engineering, and contractors.

**Majestic View Dairy, Grant County, WI**

Mr. Tiry provided survey, design and construction inspection for construction of reception pits, manure transfer systems, and expansion to an existing NRCS designed waste storage facility.

**Spring Grove Dairy, Green County, WI**

Mr. Tiry was responsible for design of a manure handling system that included concrete reception pits to collect flushed manure in each of three barns and the holding area and transfer manure to a three-stage manure storage facility. Mr. Tiry designed reinforced concrete structures, clay lined manure storage ponds, tile drainage systems, as well as piping, valve and control systems for the flush system. Mr. Tiry was responsible for obtaining necessary permits, including a WPDES permit, stormwater permits and local permits.

### **Additional Project Experience**

Sterken Farms-Walworth County, WI

Holsum Dairy, Calumet County, WI

Julimar Dairy, St. Croix County, WI

Four Cubs Farms, Burnett County

Rosenholm Wolfe Farms, Buffalo County

Maple Leaf Dairy, Manitowoc County  
Al Caron Wildlife Pond, Chippewa County  
Markquart-Slope Stabilization, Chippewa River, Dunn County, WI  
Baldwin Dairy, St. Croix County, WI  
Five Star Dairy, Dunn County, Wisconsin

### **Experience in Digesters**

1998-2000 – Fairgrove Farms – Monitored performance of the Fairgrove Farms in Strugis, Michigan, plug flow digester on a 700 head dairy. This digester was designed by Ted Landers of Perennial Energy and Ray Crammond in 1983 and built by Dave and John Poeschel of Fairgrove Farms. The digester ran consistently 98% of the time from its startup in 1983 until decommissioned in 2002 due to retirement of the owners.

August 27-28, 2001 – Tiry Engineering sponsored two Anaerobic Digester seminars on “The Use of Anaerobic Digesters on Dairy Farms,” The main speaker for this seminar was Dr. Les Gornol of Practically Green Environmental Systems Ltd. of Northern Ireland. These two meetings were held in Eau Claire (on August 27, 2001) and Fond du Lac (August 28, 2001). They were attended by 120 plus dairymen, venders, university, and agency people.

2000 – Holsum Dairy – Worked with GHD on the design of a digester system for the 4000-head Holsum Dairy in Calumet County.\*

2001 – Gordondale Farms – Worked with GHD on design of a digester system for the Gordondale Farms.\*

\* Our work with GHD was primarily in design of the digester tank itself.

May 2001 – - Nobelhurst – worked with Cow Power of Syracuse, New York, to design a digester for the Nobelhurst Dairy in New York State. This is a two chamber; parallel path plug flow digester for 1000-head of dairy cattle. The digester supplies biogas to a CAT CoGen system supplied by Perennial Energy of West Plains, Missouri.

July 2002 – Worked with Unison Solutions on a feasibility study for biogas recovery on Electrical CoGeneration at Purdue University. The digester system was to be located at the Animal Sciences Research and Education Center at West Lafayette, Indiana.

October 2003 – Lewis Pork Farms LLC – Did a feasibility study for digester system for Lewis Pork Farms LLC of Greenfield, Indiana. We worked with Unison Solutions of Dubuque, Iowa, on this project. The project involved 5800 hogs (finishers).

2002-2003 – Worked with Cow Power to design a digester system for the state university of New York for their school of agriculture and natural resources campus at Morrisville, New York.

Designed covered lagoon for Baldwin Dairy with 1500-head.