

Volume and Moisture

CAPACITY ISSUES LEAD TO EXPANSION AT MINNESOTA COOP HEADQUARTERS



Glacial Plains Cooperative
Murdock, MN • 320-875-2811

Founded: 2002

Storage capacity: 8.5 million bushels at five locations

Annual volume: 25 million bushels

Annual revenues: \$150 million

Number of members: 1,400

Number of employees: 60

Crops handled: Corn, soybeans, hard red spring wheat

Services: Grain handling and merchandising, feed, agronomy, energy

Key personnel:

- Tom Traen, general manager
- Doug Kavanagh, operations manager
- Keith Bebler, merchandiser

Supplier List

Aeration fans.....AIRLANCO

Aeration system North American Equipment Co. Inc.

Bearing sensors ... Freetly Electric Inc.

Bucket elevatorS-M Enterprises Inc.

Catwalk..... Micada

CleanerIntersystems

Concrete tank builder....Hoffmann Inc.

ContractorCEEC Inc.

Control systems Freetly Electric Inc.

ConveyorsS-M Enterprises Inc.

Distributor.....Schlagel Inc.

Elevator buckets Maxi-Lift Inc.

Engineering VAA LLC

Grain dryer Grain Handler USA

Leg belting..... Goodyear Conveyor Belting

Millwright.....CEEC Inc.

Motion sensors .. Freetly Electric Inc.

Motors Baldor Electric Co.

Speed reducers Dodge

Tower support system Micada



Glacial Plains Cooperative's headquarters elevator in Murdock, MN, has 5 million bushels of upright and temporary storage. A new Hoffmann 220,000-bushel jumpform concrete wet tank and one of two 5,000-bph Grain Handler grain dryer can be seen at right. Aerial photo by JH Photography, Spencer, IA.

Doug Kavanagh, operations manager at Glacial Plains Cooperative based in Murdock, MN for the last decade, has a fairly simple explanation for why the cooperative added storage, grain handling, and drying capacity at its headquarters elevator in 2010.

Volume and moisture.

"The volume of grain is going up every year," Kavanagh says. "That's the result of higher yields and higher prices.

"Then, we had such a wet fall in 2009 that we actually found ourselves having to dry soybeans. We just needed more drying capacity."

It's also the policy at Glacial Plains to do some upgrading every year, to keep up with the farmers who are upgrading their operations at the same time, he notes.

Those reasons combined led the cooperative to add a 220,000-bushel jumpform concrete wet holding tank; 12,500 bph worth of new drying capacity at Murdock and a branch elevator in Milan, MN; and related legs and conveyors.

To construct the \$2.3 million project, Glacial Plains selected Hoffmann Inc., Muscatine, IA (563-263-4733), to build the tank and

CEEC Inc., Wabasso, MN (507-342-2383), as millwright. "CEEC has done a variety of jobs for us in the past," says Kavanagh. "They came to the table with a design we liked, and their quality of work is well known."

VAA LLC, Plymouth, MN (800-205-9691), performed engineering work on the project. Freetly Electric Inc., Kerkhoven, MN (320-264-3121), supplied the electronic control systems. American Engineering Testing Inc., St. Paul, MN (651-659-9001), took soil borings prior to the start of construction.

Construction began in April 2010, and the project was largely complete by mid-



Operations Manager Doug Kavanagh.



Ground level view of the new wet tank, one of two new dryers, and leg on a rainy November afternoon in central Minnesota. Photo by Ed Zdrojewski.

September.

Jumpform Concrete

The 220,000-bushel Hoffmann tank stands 48 feet in diameter and 148 feet tall. It has no grain temperature monitor-

ing system, since virtually all of the grain stored in this tank is destined for the dryer.

However, the tank is equipped with a KanalSystem floor, a sloped and contoured system with steel-covered ducting and delivers air both for aeration purposes and for air-assisted unloading, eliminating the need for workers to enter the tank during cleanout. The system is powered by a pair of AIRLANCO centrifugal fans, one rated at 40 hp and the other at 60 hp.

Adjacent to the new tank is a new 1,000-bushel mechanical receiving pit that delivers grain to a new S-M 15,000-bph leg. The leg is outfitted with a single row of Maxi-Lift Tiger-Tuff 16x8 heavy-duty buckets mounted on an 18-inch Goodyear belt.

The leg feeds grain into a 10-hole Schlager electronic rotary distributor, which can reach three tanks, including the new wet tank, and a new dryer via gravity spout. The distributor also can deposit grain onto a new S-M 30,000-bph overhead drag conveyor running out to existing storage. The extra capacity on this conveyor allows it to receive

grain simultaneously from the new receiving pit and the new dryer.

The wet tank empties onto a 15,000-bph above-ground S-M drag conveyor running back to the new leg.

Grain Dryer

Also new in 2010 at Murdock are two Grain Handler dryers each rated at 5,000 bph at five points of moisture removal. "We looked at several models and liked this one the best," says Kavanagh.

The propane-fired dryers include heat shields and internal vaporizers for improved energy efficiency. Kavanagh reports that harvest in 2010 was unusually wet, and the cooperative dried over 2 million bushels of grain during that period.

In addition to the dryers at Murdock, the coop installed a 2,500-bph Grain Handler dryer at its branch location in Milan, MN.

Plans for 2011 call for the addition of another Hoffmann jumpform concrete tank standing 74 feet in diameter and 148 feet tall in Murdock.

Ed Zdrojewski, editor