

Waiting for the Railroad

RAIL TERMINAL OPENS JULY 1; FIRST TRAIN EXPECTED IN SEPTEMBER

SOUTH DAKOTA

★ Kennebec

Wheat Growers

Aberdeen, SD • 605-225-5500

Founded: 1923

Storage capacity: 71.5 million bushels at 26 locations

Annual volume: 170 million bushels

Annual revenues: \$1.3 billion

Number of members: 5,400

Number of employees: 600

Crops handled: Corn, soybeans, hard red winter and spring wheat, sorghum, sunflowers, millet, oats

Services: Grain handling and merchandising

Key personnel at Kennebec:

- John Kroll, construction manager
- Todd Longville, location manager
- Kenny Miller, grain superintendent
- Brad Simpson, agronomy manager
- Rusty Langenbau, agronomy superintendent

Supplier List

Aeration fans AIRLANCO/Caldwell

Aeration system North American Equipment Co. Inc.

Bearing sensors CMC Industrial Electronics

Bin sweeps Springland Mfg.

Bucket elevators Schlager Inc.

Bulk weigh scales C&A Scales

Bulk weigh scale controls ... Cultura Technologies LLC

Catwalks Warrior Mfg. LLC

Cleaners InterSystems

Contractor/millwright ..SMA, LLC

Conveyors (belt) Hi Roller Conveyors, Straightline Conveyors

Conveyors (drag) Schlager Inc.

Distributor Schlager Inc.

Dust collection system .. CAMCORP

Elevator buckets Tapco Inc.

Engineering (structural) .. VAA, LLC

Fall protection Fall Protection Systems Corp.

Flat storage Chief Agri-Industrial Div.

Grain dryer... GSI Zimmerman Grain Dryers



The new Wheat Growers rail terminal at Kennebec, SD has a storage capacity of a little over 4 million bushels in a combination of slipform concrete, steel, and flat storage structures. Photos by Greg Latza, PeopleScapes Publishing, Sioux Falls, SD.

After the State of South Dakota in 2012 announced plans to extend its state-owned rail line, operated by the Dakota Southern short-line railroad, west from Chamberlain to Presho and eventually to Rapid City, it became inevitable that Wheat Growers would build a rail terminal along the new line.

“We have a lot of loyal farmers in that part of the state,” says John Kroll, corporate construction manager for Wheat Growers. “We wanted to get them some better pricing, since the nearest Wheat Growers rail terminal was in Highmore.”

The large local cooperative looked at several potential sites for a rail terminal and loop track before settling on a site at the west edge of Kennebec, SD. Kroll says the coop already operates a 1-million-bushel elevator in town (605-869-2253), which will continue in operation serving as an overflow facility.

Not that the Kennebec terminal won't already have plenty of space at 4.087 million bushels, a little over 2 million bushels of up-

right slipform concrete and steel storage and another 2 million in a flat storage building.

The elevator was completed this summer and began receiving winter wheat from the 2016 harvest on July 1. No wheat has been shipped, since the Dakota Southern rail line isn't scheduled to be completed as far as Kennebec before September.

Flexible Design

After taking several bids, Wheat Growers selected SMA, LLC, Monticello, MN (763-295-4367), as general contractor and millwright on the project. Kroll says SMA impressed the coop with an aggressive construction timetable and highly flexible elevator design.

From left: John Kroll, Wheat Growers construction manager; Todd Longville, Kennebec location manager; and Kenny Miller, Kennebec superintendent.

Grain temperature system OPI Integris

Liner CoorsTek

Manlift BarnesCo Inc.

Roof system Kooiker Roofing & Insulation

Samplers InterSystems

Steel storage Chief Agri-Industrial Division

Tower support system Warrior Mfg. LLC

Truck scales Mettler Toledo





Kennebec terminal features, from left, slipform concrete storage, 80,000-bph C&A bulk weigh loadout scale housed inside the slip, 10,000-bph Zimmerman tower dryer, two Chief corrugated steel tanks, and Warrior support tower and catwalks.

Groundbreaking on the grain elevator project took place in mid-March 2015. Prior to completing the elevator, SMA completed a 13,750-ton fertilizer plant in September 2015 equipped with 1,200-tph Waconia receiving equipment and a 200-ton Waconia blending tower with two 14-ton vertical blenders. The fertilizer plant also is located along the 11,000-foot loop track.

In addition, VAA, LLC, Plymouth, MN (763-559-9100), performed structural engineering on the facility. Jakes Electric, Clinton, WI (608-295-2470), served as electrical contractor and supplied automation systems. Cross Country Construction LLC, Elbow Lake, MN (218-685-6410), erected the steel storage.

Three Types of Storage

Storage at Kennebec includes an eight-pack slipform concrete house, two 550,000-bushel Chief corrugated steel tanks, and a 2-million-bushel flat storage building.

“We originally planned an all-steel facility,” says Kroll, “but then we converted part of the plan to slipform concrete for longevity and flexibility in blending different grades of wheat. We kept some large steel tanks in the design to hold large amounts of grain for loading shuttle trains.”

The eight large slipform concrete tanks stand 36 feet in diameter and 130

feet tall holding 100,000 bushels each. The slipform section also includes five interstice bins.

Equipment in the big tanks includes a three-cable OPI/Integris temperature monitoring system, Siemens radar-type level monitors, and KanalSystem air-assisted unload floors with side sumps. Four of the tanks have a 40-hp AIRLANCO centrifugal fan supplying 1/10 cfm per bushel of aeration and two 2-hp roof exhausters. The other four tanks have a 75-hp fan supplying 1/7 cfm per bushel of aeration and three 2-hp roof exhausters.

The Chief tanks stand 92 feet in diameter, 88 feet tall at the eaves, and 115 feet tall at the peak. The flat-bottom tanks have outside stiffeners, 14-inch Springland bin sweeps, 16-cable OPI/Integris grain temperature systems, Siemens level monitors, and four 40-hp Caldwell centrifugal fans each supplying 1/10 cfm per bushel of aeration through in-floor ducting. Kroll notes that the site has space to add at least two more steel tanks as needed.

The steel-walled Chief flat storage building stands 180 feet wide by 420 feet long. An overhead 30,000-bph Straightline open belt conveyor fills the building, and the grain is reclaimed by pushing it with front-end loaders through in-floor sumps onto another 30,000-bph Hi Roller running back to the main facility in a below-ground tunnel. Equipment in the flat storage includes 24 7.5-hp Caldwell centrifugal aeration fans and 40 OPI/Integris temperature cables.

Flexible Flow

Incoming grain truck drivers use an RFID card reader system for identification, then move to a probe station with an InterSystems truck probe for sampling. Trucks then proceed onto a 120-foot Mettler Toledo inbound pit-type scale for weighing.

Drivers then are directed by a digital message board to one of two 1,000-bushel mechanical receiving pits in an enclosed shed. After depositing their load, they continue to an outbound scale with an adjacent scale ticket printer.

The receiving pits feed a pair of Schlager 20,000-bph legs outfitted with a single row of Tapco heavy-duty 20x8 buckets mounted on a 22-inch Goodyear belt. Those and three additional legs are enclosed in a Warrior 20-foot-x-36-foot-x-60-foot support tower with switchback stairs. The legs deposit grain into a Schlager eight-duct

swing-set triple distributor. Dust resulting from receiving operations is sent through a CAMCORP baghouse filter placed on the roof of the concrete section.

The distributor can send grain to concrete storage via triple Schlager 20,000-bph drag conveyors, to the steel tanks via dual 20,000-bph Hi Roller enclosed belt conveyors on 12-foot-wide Warrior box bridges, or out to the flat storage building as described earlier. Dual overhead conveyors allow the facility to receive and route multiple commodities simultaneously. The operator has the option of routing grain through a 20,000-bph InterSystems gravity screener above the distributor.

The concrete tanks empty onto a Schlager 20,000-bph drag conveyor, while the steel tanks empty onto a Hi Roller 40,000-bph enclosed belt conveyor, all in below-ground tunnels.

All feed into a 60,000-bph Schlager loadout leg outfitted with three rows of Tapco 20x8 buckets mounted on a 64-inch Goodyear belt. All five facility legs can feed grain into an 80,000-bph bulk weigh loadout scale from C&A Scales controlled by a one Weigh automation system for a total of 140,000 bph as needed. The operator has the option of routing grain through a 40,000-bph InterSystems gravity screener above the bulk weigher.

Workers atop railcars will be protected by a 500-foot trolley unit from Fall Protection Systems.

The facility also includes a dual propane/natural gas-fired 10,000-bph GSI Zimmerman tower dryer serviced by a pair of 20,000-bph Schlager wet and dry legs.

Ed Zdrojewski, editor