

River Terminal Expansion

FARMER SURVEY DRIVES ADDITION OF STORAGE, HANDLING EQUIPMENT



Cargill, Incorporated
Wayzata, MN • 952-742-6211

Founded: 1865
Annual earnings: \$1.17 billion
Number of employees: 142,000
Crops handled: Corn, soybeans, wheat (soft red winter, hard red winter, hard red spring), sorghum, rice
Services: Grain handling and merchandising, risk management, crop insurance, crop inputs

Key personnel at Hales Point:

- Jared Bruggman, regional operations manager
- Christy Lee, plant manager
- Annie Ables, origination merchant
- Jeff Via, farm marketer
- Danny Hoskins, production mgr.
- Thomas Sanderson, production
- Kathy Taylor, production
- Jesse Harris, production

Supplier List

Aeration fans.....AIRLANCO,
The GSI Group
Bucket elevators..The Essmueller Co.
Catwalks LeMar Industries Corp.
ContractorKajima Building &
Design Inc. (KBD)
Control system....Control Stuff Inc, KBD
ConveyorsHi Roller Conveyors
Distributors The Essmueller Co.
Elevator buckets Maxi-Lift Inc.
Grain dryer..Zimmerman Grain Dryers
Grain temperature system.....CMC
Electronics/Tri States Grain Conditioning
Hazard monitoring system..Control
Stuff Inc
Manlift.....Sidney Mfg. Co.
Millwright..... KBD, Graber
Construction Inc.
SamplersIntersystems
Scale automation CompuWeigh
Corp.
Steel storage.....The GSI Group
Steel tank erection Bruce Allen
Construction
Tower support systemLeMar
Industries Corp.
Truck probe..... Intersystems
Truck scales.....Rice Lake Weighing
Systems



New construction at Cargill AgHorizons' Hales Point river terminal on the Mississippi in northwest Tennessee includes everything from the center tower to the left, shown here at the start of 2012 fall harvest. Photo courtesy of Cargill AgHorizons.

Before starting the design phase of its latest expansion in 2011 at its Hales Point river terminal on the Mississippi River in northwest Tennessee (731-836-7571), Cargill AgHorizons surveyed its farmer-suppliers in Tennessee and Missouri to find out what they'd like.

"Number one on the list was shorter wait times," says Jared Bruggman, regional operations manager for Cargill's mid-South region in Memphis, TN. (Bruggman started his present position in August 2012 after managing several Cargill facilities in the Topeka, KS area.) "They also said we needed more storage space. Producers around here don't have as much on-farm storage as they do in the Midwest."

As a result, the most recent expansion at the terminal southwest of Dyersburg, TN included two new receiving pits feeding a



From left: Regional Operations Manager Jared Bruggman, Elevator Operator Kathy Taylor, and Production Supervisor Danny Hoskins. Ground-level photos by Ed Zdrojewski.

pair of 25,000-bph legs and 855,000 bushels worth of upright steel storage. Cargill has spent an estimated \$25 million in two phases



Aerial view of the 850,000-bushel Hales Point river terminal near Dyersburg, TN. Aerial photo by Jack Bedford, AMERICA FROM ABOVE, Rogers, AR.

of upgrades at the terminal since 2009.

Project Background

Cargill has operated the Hales Point terminal since the mid-1990s, one of the facilities it acquired with the grain operations of the former Continental Grain Co. “Even though the site is remote, more than 10 miles from the nearest town, it’s ice-free year-round, and it has good connections to major highways,” Bruggman says. “So we attract a lot of farmers from the Missouri Bootheel, as well as western Tennessee.”

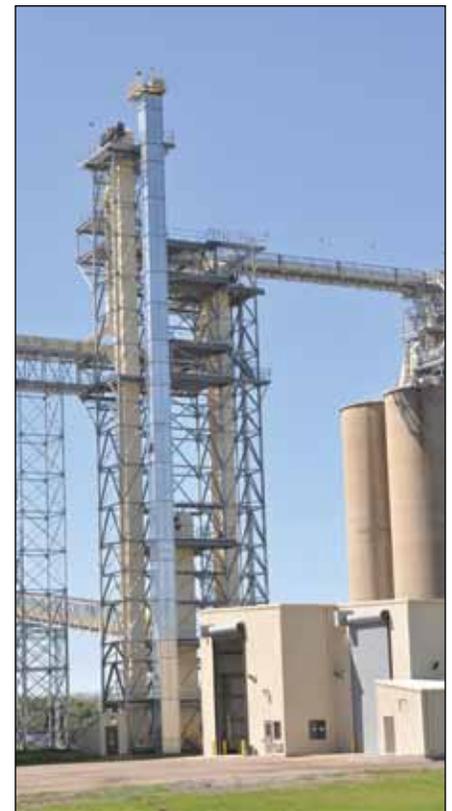
The facility at the time consisted of a “four-pack” of slipform concrete tanks holding a total of about 100,000 bushels and a single receiving leg operating at about 15,000 bph “on a good day,” says Production Supervisor Danny Hoskins. (Hoskins has been with Cargill for 17 years – he came to Hales Point at the start of 2012 and most recently managed a river terminal at New Madrid, MO.)

Cargill AgHorizons began its upgrade

with Phase I in 2009, which included the installation of a 7,000-bph propane-fired Zimmerman grain dryer and 10,000-bph wet and dry legs. The terminal did not have a dryer prior to that.

For Phase II, which included the new storage and receiving equipment, the company took bids and awarded the contract to Kajima Building & Design Group Inc. (KBD), Atlanta, GA (404-812-8635). KBD also performed some of the millwright duties, along with Graber Construction Inc., Washington, IN (812-254-6202). KBD also designed and supplied some of the electrical control systems, along with Control Stuff Inc., Cologne, MN (952-466-2175).

Work got underway early in 2011, but things did not go smoothly thanks to severe flooding on the Mississippi during the spring. The original grain elevator stayed above water, but other facility buildings and KBD construction trailers were inundated. It was mid-summer before



Two new enclosed receiving pits feed a pair of 25,000-bph Es Mueller receiving legs enclosed in a LeMar tower.

construction could resume at Hales Point. The project finished up in August 2012.

Grain Storage

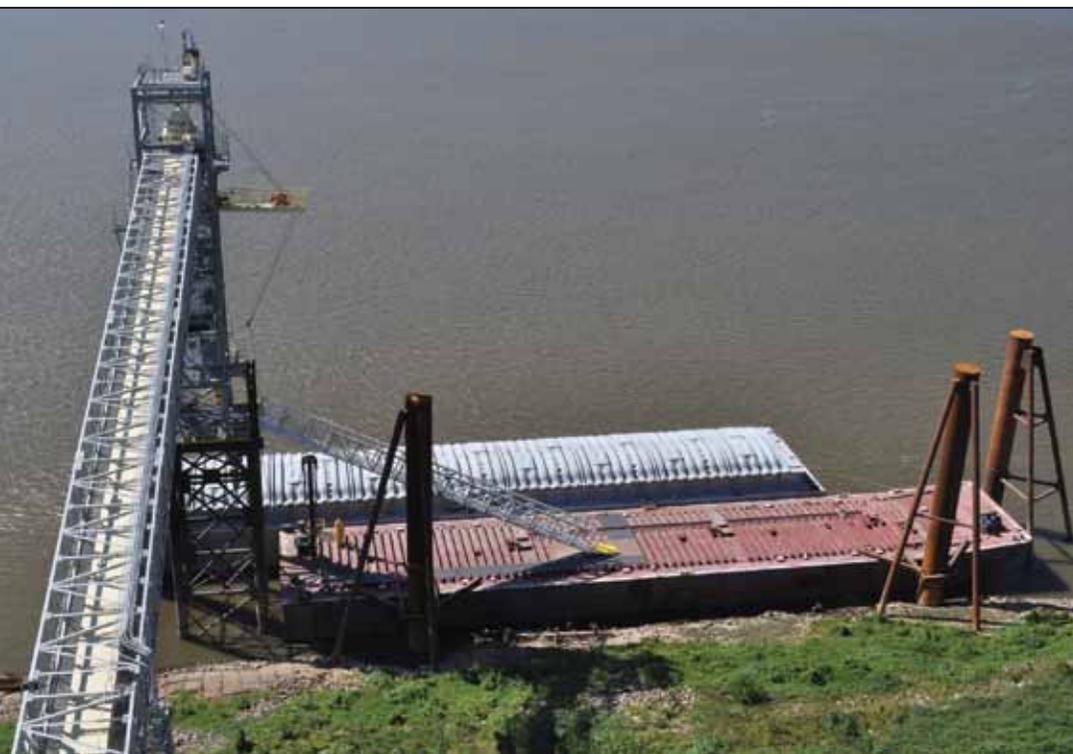
New storage consists of a 105-foot-diameter GSI corrugated steel tanks holding 525,000 bushels and two 60-foot-diameter tanks holding 165,000 bushels each. The new tanks stand only 58 feet tall at the eaves.

“We originally wanted a larger 105-foot tank, but we had to take it down by two rings, because we’re in a seismic zone (New Madrid Fault),” says Hoskins.

Rather than installing sweep augers, the tanks are equipped with Bobcat doors to admit a front-end loader for cleanout.

The tanks also have outside stiffeners and Integris grain temperature monitoring systems, 11 cables in each of the small tanks and 24 cables in the large tank. Aeration is geared for 1/10 cfm per bushel, with three 15-hp AIRLANCO centrifugal fans on the large tank and three 7-1/2-hp fans on each of the small tanks. ►

Hi Roller enclosed belt conveyor rated at 50,000 bph runs out to the dock. Barges are loaded through an Intersystems telescoping spout.





Twin 80-foot Rice Lake pitless truck scales weigh inbound and outbound trucks. Intersystems provided the truck probe, and CompuWeigh provided the scale automation system.

Grain Flow

The Hales Point facility receives grain by truck only. Trucks are weighed on two 80-foot Rice Lake inbound and outbound pitless scales, with an Intersystems truck probe installed between the scales. Data is managed by a CompuWeigh scale automation system, including SmartRead

ID card readers and SmartView electronic bulletin boards for directing traffic.

Trucks proceed to one of two new 1,800-bushel enclosed mechanical receiving pits. These pits feed a pair of Essmueller 30,000-bph legs equipped with two rows of Maxi-Lift Tiger Tuff 18x8 buckets mounted on a 40-inch

Goodyear belt. The legs are enclosed by a 16-foot-x-20-foot LeMar tower.

At the top of the legs, a two-way diverter valve sends grain onto a 50,000-bph Hi Roller enclosed belt conveyor running out to the new tanks or onto a 25,000-bph belt running to existing storage.

The new tanks empty onto another series of 40,000-bph Hi Rollers running back to a 25,000-bph Essmueller jump leg through below-ground tunnels.

The combination of jump leg and gravity spouts load up an overhead 50,000-bph Hi Roller belt running out to the dock. Barges are loaded through a new Industrial Systems telescoping spout equipped with an automated Intersystems sampler.

In addition to the new construction, Cargill also replaced an old distributor on the original elevator with a new six-duct Essmueller rotary model.

Fall harvest came early to Hales Point, but Bruggman notes that the facility has been standing up to the task. "We used to be able to unload 10 trucks an hour," he says. "Now it's 40 trucks."

Ed Zdrojewski, editor