# Export Terminal Revived

## TEMCO COMPLETES EXTENSIVE RENOVATIONS ON COLUMBIA RIVER

**TEMCO LLC**
**Inver Grove Heights, MN**
**651-355-6000**

**Founded:** 1999
**Storage capacity:** 12 million bushels at three locations
**Annual volume:** 500 million bushels
**Number of employees:** 50
**Crops handled:** Corn; hard red winter, hard red spring, white, durum, and club wheat; soybeans; barley; sorghum

**Key personnel at Kalama:**
- David Grillot, terminal manager
- Tom Rodman, superintendent
- Adam Dykstra, logistics supervisor

### Supplier List

**Barge unloader .....** Waconia Mfg.
**Bearing sensors .....** CMC Industrial Electronics
**Belting.....** Applied Power Products
**Bucket elevators....** The Essmueller Co.
**Bulk weigh scales .....** Waconia Mfg.
**Catwalks...** JH Kelly, LeMar Industries Corp.
**Cleaners .....** BM&M Screening Solutions Inc., ArrowCorp
**Contractor .....** Borton LC
**Control system...** Wunderlich Malec Engineering
**Conveyors .....** Hi Roller Conveyors
**Distributor.....** The Essmueller Co.
**Dust collection system ..** Donaldson Torit
**Elevator buckets .....** Maxi-Lift Inc.
**Engineering .....** VAA, LLC
**Level indicators.....** Ohmert-Vega
**Liners.....** CoorsTek
**Magnets .....** Eriez
**Manlift.....** Sidney Mfg. Co.
**Millwright.....** JH Kelly
**Motion sensors .....** CMC Industrial Electronics
**Project management ..** Faithful+Gould
**Railcar mover .....** Calbrandt, Inc.
**Rail construction .....** Railworks
**Samplers .....** InterSystems
**Shiploaders .....** Agrico Sales, Inc.
**Tower support system .....** JH Kelly, LeMar Industries Corp., Western Fabricating Co.
**Truck scales....** Mettler Toledo, LLC

*Aerial view of the TEMCO LLC export terminal on the Columbia River at Kalama, WA. New shipping bins are visible at the far right. Aerial photo courtesy of TEMCO.*

When *Grain Journal* visited the TEMCO LLC export terminal on the Columbia River at Kalama, WA (360-673-2011) late in June, employees were just finishing loading the MV Tiger South, a Panamax vessel carrying yellow corn to South Korea.

That's a common sight at the 6.5-million-


*Slipform concrete shipping bins in foreground hold nearly 500,000 bushels. New cleaning house is mounted directly atop the shipping bins. Ground level photos by Ed Zdrojewski.*

*Reprinted from the July/August 2015 GRAIN JOURNAL*

bushel terminal today, but just three years ago, when TEMCO became the new operator of the facility, the terminal was challenged to maintain operations. (TEMCO is a joint venture between CHS and Cargill that operates three export terminals in the Pacific Northwest.)

For the most part, the Kalama terminal was neglected, says Location Manager David Grillot, who transferred to the Kalama facility from the CHS Mississippi River export terminal in Myrtle Grove, LA. "The facility was in need of improvements," Grillot says. "The structural integrity of the dock was marginally usable, and the terminal needed additional rail improvements to better manage shuttle trains from the BNSF."

*Loading of a Panamax vessel with yellow corn destined for South Korea nears completion in June 2015.*

**Two-Phase Renovation**


Almost from the time the terminal changed hands in 2012, TEMCO began a $100 million+ renovation of the facility, a project that took three years to complete in two phases. The first phase, in 2012 and 2013, took place while the terminal continued in operation and included civil engineering, foundations, pile driving, and some structural and electrical work. Then, the terminal shut down for 10 months in 2014 for the second phase, which included completing all the mechanical installation, the remaining structural work, and 100% new electrical systems with eight new MCC rooms. During the second phase, TEMCO sent grain to its sister terminals at Tacoma, WA and Portland, OR.

To select a general contractor for the project, TEMCO undertook a design build process and awarded the contract to Borton LC, Hutchinson, KS (620-669-8211). "We recognized their experience with slipform concrete construction," Grillot comments.

*Location Manager David Grillot (left) and Superintendent Tom Rodman.*

Also engaged during the project:

• JH Kelly, Longview, WA (360-423-5510), served as the millwrights, electricians, and various other trade groups.

• Perlo Construction, Portland, OR (503-624-2090), served as building contractor.

• HME Construction, Vancouver, WA (360-695-4533), served as marine contractor.

• VAA, LLC, Plymouth, MN (763-577-9100), did equipment layout and structural engineering work.

• Wunderlich-Malec, Minnetonka, MN (952-933-3222), provided the facility control systems.

• Faithful+Gould, New York, NY (212-252-7070), provided project management services.

• David Evans and Associates, Portland, OR (503-223-6663), performed permits and civil site work.

• BergerABAM, Seattle, WA (206-357-5600), served as project engineer.

Most of the renovations fell into five general areas:

• Approximately 500,000 bushels of new slipform concrete shipping bins.

• All new grain cleaning equipment and building atop the new shipping bins.

• The addition of a third rail receiving pit and more track.

• A new barge unloader and unloading dock.

• A new dock for oceangoing vessels with two new shiploaders.

**Shipping Bins**

The new shipping bins consist of an eight-pack of 60,000-bushel reinforced concrete silos standing 42 feet in diameter and 106 feet tall. They are outfitted with 40-degree steel hopper bottoms for zero-entry unloading. The new shipping bins have no aeration or grain temperature monitoring systems, but they do have Ohmert/Vega radar-type level monitoring equipment.

Grain reaches the new shipping bins via overhead 120,000-bph Hi Roller enclosed belt conveyors and Essmueller distributors that feed the shipping bins through 42-inch-square gravity spouts.

The shipping bins empty onto a pair of 120,000-bph Hi Roller enclosed belt conveyors that run on an incline out to the new Agrico shiploaders.

**Cleaning House**

A new 55,000-bph grain cleaning system is housed in an 82-foot-tall structural steel building mounted atop the new shipping bins. The building panels are insulated for soundproofing.

The BM&M/ArrowCorp cleaning system is designed to reduce levels of dockage to meet export standards. It consists of five ArrowCorp aspirators, seven BM&M rotary screeners, and two banks of ArrowCorp/Premier 16-cylinder indented length graders.

**Rail Receiving**

The new enclosed rail receiving pit is located in the middle of the facility's

*BM&M gyratory screeners are a part of the cleaning house flow to bring grain up to export standards on FM.*

railyard, which runs roughly parallel to Interstate 5. The railcars are positioned over the unload pit by a Calbrandt-designed axle railcar mover. The unload pit, which is about two railcars in length, holds 6,000 to 7,000 bushels depending on the commodity.

The unload pit feeds a series of 60,000-bph Hi Roller enclosed belt conveyors running on an incline, which in turn feeds a 60,000-bph Essmueller leg outfitted with three rows of Maxi-Lift Tiger-Tuff 18x8 buckets mounted on a 60-inch Goodyear belt supplied by Applied Power Products. From the leg, grain may be routed to the existing headhouse or direct to the new shipping bins.

The Port of Kalama contracted with Railworks Corp., Lakeville, MN (952-469-4906), to modify the terminal railyard. The rail improvements provide more than 27,000 linear feet of track and can accommodate up to 450 jumbo covered hopper cars.

**Barge Receiving**

Hickey Marine Construction built the BergerABAM-designed barge fender system and associated marine structures totaling over 560 linear feet of barge mooring resources. JH Kelly installed a new barge unloading system about 100 feet offshore in the Columbia River. Barges are unloaded with a Waconia 40,000-bph marine leg. The leg is outfitted with two rows of 18x8 Tiger-Tuff buckets mounted on a 40-inch Goodyear belt.

From there, grain moves via 40,000-bph Hi Roller enclosed belt conveyors to storage or direct to the new shipping bins.

**Shiploading Dock**

Hickey Marine Construction built the Berger ABAM-designed vessel mooring dock and associated marine structures, which is more than 1,100 linear feet in length and capable of handling Panamax-class vessels.

The dock is outfitted with a pair of 120,000-bph Agrico shiploaders with rotating and shuttling functions and a maximum reach of 150 feet.

The vessel loading system is capable of loading a Panamax-size vessel without the need to haul or shift positions. TEMCO and the Port of Kalama manage and maintain dredging events of the dock area to provide the maximum channel draft rated for the Columbia River. The maximum channel of the Columbia River is 43 feet, and TEMCO Kalama is located at river mile marker 77 from the passage into the Pacific Ocean.

**Additional Construction**

In addition to all the other construction, Perlo Construction built a new two-story administration building that includes offices, terminal control room, and a grain grading lab operated by the Washington State Department of Agriculture. The building is constructed with tilt-up reinforced concrete panels designed to be blastproof.

The project also included two structural steel truck loadout buildings for loading grain dust and screenings.

*Ed Zdrojewski, editor*