



**The Gateway Company Improves Their Customer Satisfaction  
With a Green Environmentally Friendly PICO Corrosion Inhibitor  
May 15, 2007**

*The Gateway-Joliet Co., Inc. successfully uses a water based environmentally friendly corrosion inhibitor from **PICO Chemical** that has been fully and enthusiastically accepted by customers who want a blasted and cleaned steel surface that will not rust yet be non-interfering with all of their post processing and finishing steps. **PICOGUARD 17625** is a new generation technology synthetic (oil and solvent free) water based corrosion inhibitor for steel.*

**COMPANY HISTORY AND CAPABILITIES**

**The Gateway Company**, home based in St. Louis, MO, is a major corporation specializing in metal services such as structural steel fabrication, blast cleaning steel forms, and field painting. Its many customers include construction companies and off-the-road equipment manufacturers.

One of its subsidiaries is **The Gateway Co. of Illinois** in Joliet, IL (aka **Gateway Joliet**), a 500,000 sq. ft. facility established for specific client needs. This plant receives, warehouses, abrasive blast cleans and reships carbon steel plates, forms and parts used in construction equipment and assembly. The facility is built around two automatic roller steel shot blasting machines with abrasive recovery and full dust collection. **Gateway Joliet** was created for a just-in-time delivery system serving a Caterpillar assembly plant as well as providing shot-blast services to various steel service centers. This plant also utilizes a state-of-the art inventory tracking system for its customers.

**Gateway Joliet** employs a plate roller-conveyor machine that processes 123" wide by 10" high x 70' long sections and another unit for parts 102" wide by 20" high up to 70' long. Parts, plates and sheets done one at a time can range in weight from 1 to 30,000 lbs. Blasted sheets are stacked up to 24" high and may be banded for shipments that can weigh up to 40,000 lbs.

In addition to sheet and plate processing, **Gateway Joliet** processes bars, structural members, castings, and piece parts other than those with machined surfaces. The blasting process will remove rust, scale, coatings, and heavy waxy corrosion inhibitor films. The facility also leases some of its warehouse space for its customers. Details about **Gateway Joliet** capabilities are available by directly inquiring.

## CORROSION PROTECTION ISSUE

Blasted steel surfaces need to have a corrosion inhibitor applied so that the “sensitized” cleaned surface will not rust. Many types of protective inhibitor coatings have certain advantages and disadvantages for either a blast-cleaning service center or its customers. **Gateway Joliet** had used various types of corrosion inhibitors including oil, solvent and water soluble oil types depending on customer requirements and specifications. The advantages and disadvantages of these inhibitors are shown in the table:

<b>Inhibitor Type</b>	<b>Advantages</b>	<b>Disadvantages</b>
Oil	Used as received; very popular type in the steel industry; excellent corrosion protection; very high flash point; easy to apply, can reject humidity and condensation, low VOCs.	Can drip off steel shapes; high costs due to quantity consumed, may have to be heated during application; may contain heavy metals such as barium; will produce smoke during welding; may cause welding porosity; can interfere with machining coolants; high probability will interfere with paint adhesion unless thoroughly cleaned off.
Solvent	Used as received; easy to apply; will tend to leave a dry film; water repellent film; excellent long term corrosion protection; appropriate additive system will not interfere with welding; some paint and primer coatings can be applied without cleaning.	Lower flash point than oil; has VOC content; may contain heavy metals such as barium; may have objectionable odors; may be difficult to detect on coated surfaces; may have to be cleaned before coating.
Water Soluble Oil	Easy to apply; no flash point or fire safety issues; possible to use a pre-mixed version; good rust protection; low VOC content.	Usually diluted with water before application; mixing with water has to be done carefully and with pure water; oil residue may interfere with welding and coating adhesion; may interfere with machining coolants; direct exposure to water vapor will tend to wash off coating and cause rust; not as good corrosion protection as other two types.

VOC = Volatile Organic Compound

Because of its overall advantages, **Gateway-Joliet** had chosen and settled on a ready-to-apply soluble oil as its standard coating primarily because it was easy to use, had very low odor, exhibited no flash point and could easily be applied by manual wand sprays. However, company leadership was not satisfied because they wanted to improve the blasted and cleaned surfaces for its valued customers by applying a coating without oil that was more environmentally friendly. They turned to **PICO Chemical Corporation** of Chicago Heights, IL because of **PICO**'s many years of experience in steel mill and service center applications and because **PICO** is widely respected for its environmentally friendly (*Green*) products.

### **THE PICO GUARD SOLUTION**

William (Bill) Bell Gateway-Joliet's Vice President – General Manger and Richard (Rich) Workman assistant plant manager were presented with **PICO GUARD 17625**, a new generation corrosion inhibitor that offers **PICO**'s modern technology to eliminate the disadvantages of oil containing fluids. **PICO GUARD 17625** was accepted for trial and customer approval because it can be conveniently used as received without worry that plant personnel may err in any mixing process. This new technology fluid contains no oil, heavy metals, solvents, or environmentally objectionable ingredients. Some of Gateway's customers such as John Deere publish a restricted list of chemicals and substances that they will not allow into their plant even on coated steel forms. **PICO GUARD 17625** has passed all chemical content hurdles including EPA regulations. **PICO GUARD 17625** offers exceptional corrosion resistance even without forced air drying. It also has proven its value for other metalworking firms that dilute it with water for lesser applications than the one demanded by **Gateway Joliet**.

**PICO GUARD 17625** has now met and even exceeded every customer field test including welding (no smoke and high weld integrity), laser cutting, machining (non-contaminating to fluids), cleanliness, excellent coating adhesion with primers or paints, and no bleed through or color variation. In Bill Bell's own words, "For us the best terms to describe **PICO GUARD 17625** are its consistency, safe and trouble-free application and for our customers its total process acceptability and quality results."

Because **PICO GUARD 17625** is used as received directly from its container and not recirculated no fluid controls are required. During the winter months a drum belt heater is used to keep it from freezing by maintaining product temperature between 50-100°F. The workers who apply it with a spray wand find it has virtually little or no odor and they can see where it has been coated before it dries off minimizing over spraying. Flat stacked steel pieces do not stain or stick from having the fluid in between after a lengthy truck shipment and customer storage hold for processing.

There is no drippage on to the floor because of its very light viscosity and the technique used by skilled **Gateway** workers. However, **Gateway** is planning on installing in-line equipment to apply by spray or roller coating the **PICO GUARD 17625** automatically immediately after blasting to speed up the process and raise their productivity. **PICO**

technical specialists can assist them with the application equipment engineering because of **PICO**'s vast experience and success in steel processing techniques.

**PICO GUARD 17625** is a cost effective "Green" formulation compared to other oil/solvent competitive film types but without their disadvantages as listed in the previously mentioned table. After converting to **PICO GUARD 17625**, Gateway personnel feel that they now can expand their business into additional customer markets because the demand for clean rust free steel without an interfering coating is growing.

Bill Bell states that this **PICO** Chemical coating is the best coating product he has ever seen during his many years in the steel processing industry. He says: "**PICO** is the kind of company that continues to innovate with new environmentally responsible technology products and know-how which is especially important for those who have to continue to improve within our very competitive steel industry.

Product	Type	Benefits	Drawbacks
<b>PICO GUARD 17625</b>	Water Soluble Synthetic Solution	No oil; no flash point or fire safety issues; no VOCs, solvents, or heavy metals; no unpleasant odors; no environmentally objectionable ingredients; easy to apply and no dripping or messy floors and equipment; no mixing required; may be dried with heat; non-slippery in handling; no stack stain issues; excellent weld integrity and no smoke generated; non-contaminating to water based machining coolants; many paint and primer coatings can be applied without pre-cleaning;	Not meant for outdoor protection or direct exposure to elements; should be protected during over the road shipments; may have to be heated to prevent freezing in winter months.

## PICO COMMENTS

From **PICO**'s technical perspective, **PICOGUARD 17625** is a technology synthetic oil-free inhibitor that eliminates the need of any emulsified oil, solvents or other objectionable chemicals. When **Gateway** presented their needs and desires we picked **PICOGUARD 17625** because it was a proven performer. Ideally we would like to see **Gateway** have an in line process with dry off capabilities to enhance the film forming characteristics of **PICOGUARD 17625** and thus improve its corrosion protection. But given the set up that **Gateway** presented to us we selected **PICOGUARD 17625** from our full line of products because it offered the best chance of success. The product has some limitations such as it is not meant for outdoor protection nor should coated steel be exposed to direct rain or salt laden atmospheres during shipments or storage. However, the **Gateway**'s successful application using **PICOGUARD 17625** confirms our belief that oil based corrosion inhibitors and even other metalworking fluids will be composed of less oil and more synthetic chemistries in the future. The development of fully synthetic industrial fluids that are environmentally friendly (*Green*) is a **PICO** driving philosophy that distinguishes us from other U.S. fluid manufacturers.

**PICOGUARD 17625**'s clear water based solution and oil free formulation are the keys to its success particularly its great acceptance by **Gateway**'s customers. Although **PICOGUARD 17625**'s film is very acceptable to many primers, paints and other coatings without cleaning, **PICO** strongly recommends that each coating be pre-tested due to the wide variation in formulations and techniques used by the metal finishing industry.

## CONCLUSION

**Gateway Joliet** has greatly improved its blasted and cleaned steel with **PICOGUARD 17625** because of its clean oil-free and environmentally friendly composition. **Gateway**'s customers are experiencing **PICOGUARD 17625**'s many benefits such as its total positive acceptability during their various metal processing steps from welding to finishing not to mention the rust free surfaces. Because this oil free steel coating does not contain any objectionable ingredients, customers will not have to waste treat their effluent nearly as much as they did before. Thus, **Gateway** and their customers have become more "Green" with **PICOGUARD 17625**.

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Photographs taken at **The Gateway Co. Joliet** facility and at **PICO** are available for use in publications and sales or advertising demonstrations. This copy has been reviewed by **The Gateway Co. Inc.** and has been certified to be essentially correct and accurate. Questions may be directed to Mr. William (Bill) Bell, Vice President **The Gateway-Joliet** (815) 722-0703 or email: [gatewayjol@sbcglobal.net](mailto:gatewayjol@sbcglobal.net).

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**PICO Chemical Corporation** is an ISO 9001:2000 registered manufacturer of value-enhanced specialty chemicals and lubricants to clean, condition, lubricate and protect metalworking, metal finishing and related processes since 1976.

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