

turbine components.

With over 861,000ft² of storage and direct Norfolk Southern rail service, it provides specialized solutions for project cargo and bulk materials critical to renewable energy and infrastructure projects.

106TH STREET WAREHOUSE

The 106th Street Warehouse offers flexible covered storage (112,000ft² with four 25 metric tonne overhead cranes) and outdoor capacity, ideal for protected handling of sensitive or weather-sensitive bulk products.

LAKE CALUMET TERMINAL

The Lake Calumet Terminal expands its overall capacity with an additional 3,000ft of berth, four warehouses totalling 30,000ft² of indoor space, and 30 acres of outdoor storage, all supported by Chicago South Shore and Class I rail connections for multimodal connectivity.

Together, these facilities enable QSL to handle a wide range of dry bulk cargoes, including aggregates, minerals, steel products, forest products, and other commodities.

The Great Lakes: a blueprint for global change?

As governments push to protect the world's oceans, regions that have already adopted stringent environmental regulations could serve as templates for sustained change, Thordon Bearings observes.

After years of negotiation, the High Seas Treaty officially entered into force on 17 January 2026, marking a new era of protection for Earth's oceans. As the first global, legally binding framework dedicated to safeguarding marine biodiversity in international waters, the treaty — also known as the Biodiversity Beyond National Jurisdiction (BBNJ) Agreement — has set new rules for environmental impact assessments and the creation of marine protected areas, in a committed effort to support sustainable development goals.

While this effort is to be applauded, many governments have already taken decisive action to protect biodiverse and sensitive marine areas at both national and regional levels. One notable example is the Great Lakes, which straddle the border between the US and Canada and hold approximately one-fifth of the planet's total surface freshwater. These eco-sensitive lakes have been subject to stringent environmental regulations for decades,

By prioritizing direct vessel-to-rail and vessel-to-truck transfers, QSL minimizes handling, reduces transit time, and supports just-in-time delivery.

Through its Chicago operations, the company supports a broad range of industry stakeholders: shipping companies and vessel operators benefit from reliable stevedoring and turnaround times for both ocean and lake vessels.

- ❖ Commodity producers and traders gain efficient access to storage and multimodal distribution for domestic and international movements.
- ❖ Equipment manufacturers and project cargo shippers (particularly in wind energy and heavy industry) utilize specialized heavy-lift capabilities.
- ❖ Logistics providers and trucking firms leverage the terminals' proximity to seven major US highways for seamless last-mile delivery.

By acting as a neutral, customer-focused operator, QSL seamlessly integrates these stakeholders' efforts into resourceful supply chains that reduce costs and improve reliability in the competitive dry bulk sector.

Looking ahead, QSL continues to invest in its Chicago network to meet growing

demand for reliable bulk handling in the Great Lakes region. Priorities include expanding storage capacity, enhancing rail infrastructure, and deploying modern equipment to improve productivity while maintaining high safety and environmental standards.

The company's broader US expansion, including the recent Gulf Coast addition, reflects strong confidence in the future of North American bulk trade growth.

As infrastructure projects, renewable energy development, and domestic manufacturing gain momentum, efficient terminals like those in Chicago will play an increasingly important role in moving raw materials and finished goods.

Through innovation, sustainability, and long-term partnerships, it remains focused on developing cargo-handling techniques, implementing sustainability initiatives aligned with its ISO certifications, and building long-term partnerships across the dry bulk value chain.

In a market where reliability, flexibility, and tailor-made solutions are paramount, QSL is well-positioned to support the evolving needs of shippers, carriers, and terminal users throughout the Great Lakes and beyond.

providing a blueprint that has helped to shape larger international initiatives like the High Seas Treaty.

Other regional rules also impose conditions on operations in the Great Lakes. In 2013, for instance, the US Environmental Protection Agency (EPA) introduced the Vessel General Permit (VGP) regulations, a comprehensive set of requirements for commercial ships trading in US waters. Designed to minimize environmental impacts and promote sustainability, the VGP rules cover a wide range of "discharges incidental to normal

vessel operations", from ballast water, bilge water and grey water run-off to hull coatings leaching into the water. Because the waters of the Great Lakes, spanning



The Algoma Bear (photo: Algoma Central corporation).



COMPAC Open Seawater-Lubricated Propeller Shaft Bearing System (above).

some 244,106km² (94,250m²) come under the jurisdiction of both the US and Canada, vessels operating in the region must comply with VGP rules.

Among their key requirements, the VGP regulations impose strict controls on oil-to-sea interfaces, including stern tubes, bearings and seals, to prevent oil pollution during routine vessel operations. The rules state that vessels sized 79ft (24m) and larger navigating the Great Lakes must use environmentally acceptable lubricants (EALs): in other words, lubricants that are biodegradable, minimally toxic and, most importantly, non-bioaccumulative, meaning they do not accumulate in the tissues of aquatic organisms. This last point is crucial because even minor oil leaks from vessels' bearings could lead to long-term contamination of the Great Lakes food chain.

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As a result, many ship and boat operators have come to investigate and adopt seawater-lubricated bearing systems, attracted by the opportunity to completely eliminate the risk of oil leakage. As well as being good for the planet, these systems can save money because they enable significantly longer maintenance intervals and reduce the number of inspections and documents needed to demonstrate compliance. The latter benefits have even encouraged vessel operators exempt from VGP to voluntarily switch to water-lubricated bearing systems.

The Great Lakes hold special importance for Canadian company Thordon Bearings, whose headquarters is located in Burlington, on the shores of Lake Ontario. While Thordon has clients, worldwide, the Great Lakes remain

particularly significant to the company; its water-lubricated bearing systems are now installed on more than 120 vessels operating in these waters, predominantly bulk carriers (known as 'Lakers') carrying raw materials but also including larger US vessels and smaller Canadian self-unloaders. Early adopters of self-lubricating bearings include Algoma Central, American Steamship, Lower Lakes Towing, Canada Steamship and Interlake Steamship.

Craig Carter, Vice President of Business Development, Thordon Bearings, explains: "Our polymer bearing systems reduce operating costs, extend service life, perform well in abrasive conditions, and eliminate the risk of oil and grease discharges into our rivers, lakes and oceans. The economic and environmental benefits are compelling." According to research presented at the IMO, conventional oil-lubricated propeller shafts release approximately 80 million litres (21 million US gallons) per year of oil pollution into the oceans and lakes.

In fact, that volume may well be much higher, because crew members tend to regularly top up the oil in the header tanks — the reservoirs that feed the metal bearing. "Oil-lubricated propeller shafts are often considered to be sealed systems, but they don't always work at 100% leak free. If they were, then a ship's oil header tank, containing 2,000–3,000 litres (528–792 US gallons) of oil, wouldn't need topping up with oil every year," Carter explains.

Carter also points to the maritime industry's strange propensity to focus heavily on curbing air emissions such as CO₂, NO_x and SO_x while largely ignoring the effects of 'invisible' leaks from oil-

lubricated propeller shaft bearings and stern tubes beneath the waterline.

"To advance ocean sustainability and enable truly zero-emission ships, the industry must replace oil-lubricated shaft lines with seawater-lubricated systems," Carter warns. "From well to wake, the environmental impact of oil-lubricated stern tubes requires serious attention."

TIGHTENING REGULATIONS

The environmental rules affecting the Great Lakes go far beyond the VGP regulations, including oversight from the US Coast Guard (USCG) and Canadian Coast Guard (CCG) and bodies like Environment Canada (now part of Environment and Climate Change Canada) and Transport Canada. The Fisheries Act is a powerful Canadian federal law that prohibits anyone from depositing a "deleterious substance" (such as oil, grease, or even treated water containing pollutants) into any water frequented by fish (or any place where it could reach such water). Even a small stern tube oil leak counts as depositing a deleterious substance and can lead to heavy fines, even prosecution.

It is, therefore, no wonder that many Great Lakes operators are also adopting water-lubricated bearings. For example, long-time Thordon customer Lower Lakes Towing replaced an existing oil-lubricated system on board its bulk carrier *Kaministiquia* with Thordon COMPAC water-lubricated propeller shaft bearings, a Water Quality Package (which supplies water from the sea chest to the propeller shaft bearings) and SXL grease-free rudder bearings.

Similarly, Algoma Central Corporation's 225m (738ft) bulk carriers *Captain Henry Jackman* and *Algoma Bear*, which entered service on the Great Lakes-St. Lawrence Seaway in 2021 and 2024, respectively, have been equipped with Thordon's COMPAC stern tube bearings, ThorShield shaft corrosion protection, and Water Quality Packages.

The environmental protections pioneered in the Great Lakes, particularly the transition to water-lubricated bearings, have shown that proactive regional regulation can drive real technological adoption and economic benefit without compromising safety or commerce. As the High Seas Treaty and future international frameworks seek to safeguard the world's oceans, the Great Lakes example is a powerful reminder that sustained, enforceable local action can set the standard for meaningful, scalable global change.



Algoma Endeavour being christened in 2024 (photo: Algoma Central Corporation).