



GREEN MARINE / ALLIANCE VERTE

2010
JULY / JUILLET

GREEN **marine** magazine

**Transparency
verification,
improvement**

define Green Marine's second year



Alliance verte, deuxième année:

**Transparence,
vérification et
amélioration**

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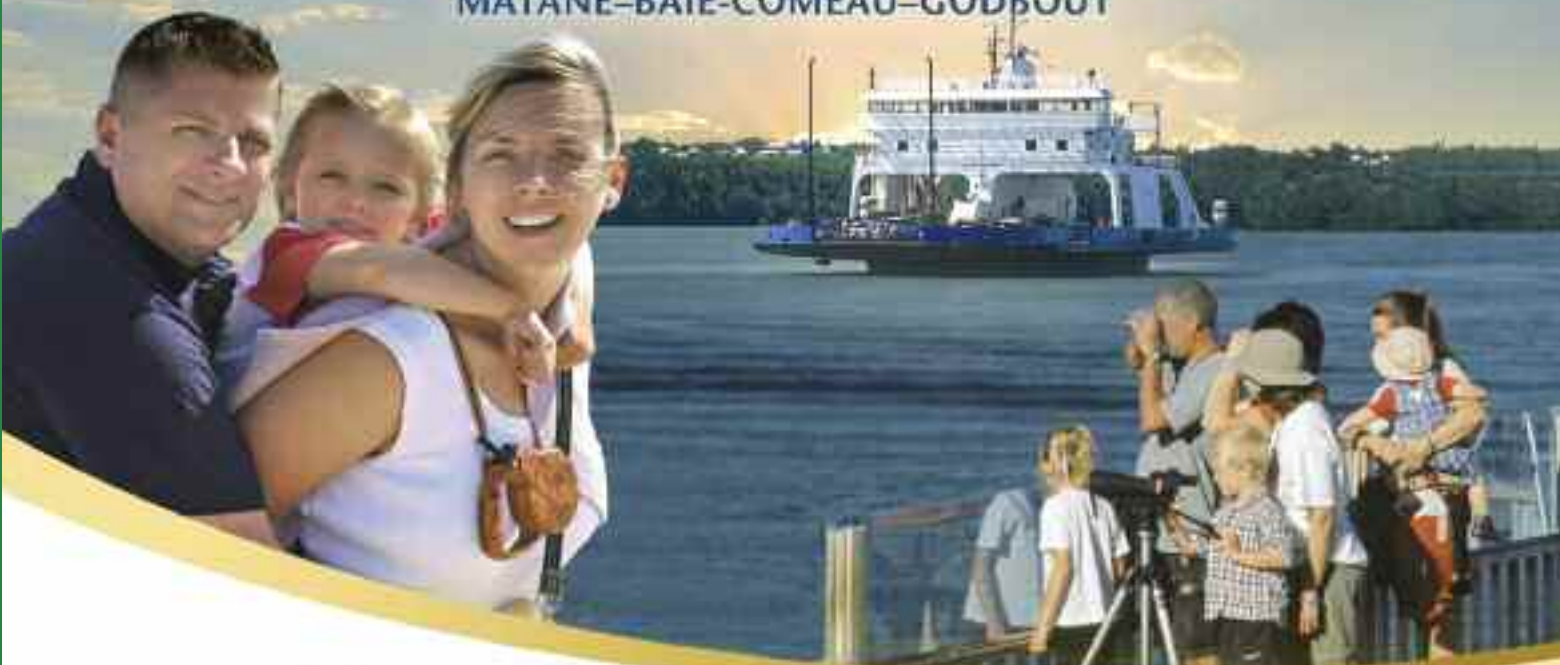
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Green Marine thanks la Société des traversiers du Québec for its generous sponsorship, which made possible the translation to French of Green Marine Magazine.



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GREEN MARINE / ALLIANCE VERTE

A YEAR OF PROGRESS

Welcome to the second issue of Green Marine Magazine and our first bilingual publication. This edition highlights the major progress that Green Marine has made over the past year in terms of demonstrating improved environmental performance, while increasing the program's transparency and credibility.

All 44 of Green Marine's participants have released the individual results of their environmental performance evaluations. Shipowners had their results verified by an independent auditor, and ports and terminals have agreed to do the same next year.

Participants' efforts have significantly improved the overall environmental performance of the marine industry within the Great Lakes and St. Lawrence region.

The Green Marine Management Corporation has strengthened its secretariat by designating the resources for an executive director. I am delighted to have moved into this new role as of January and look forward to helping the voluntary environmental program build on its impressive achievements to date.

Andrée-Anne Stewart fills my former position as the program's co-ordinator and is now in charge of communications as well as co-ordinating various committees. Her background in communications, media relations and events planning makes her a real asset.

Green Marine hit an impressive milestone earlier this year with the total number of members reaching 100, including all the participants, partners and supporters. We are pleased to have Corus International, Magnus Chemicals Ltd., PESCA Environment, Urgence Marine Inc., V Ships Canada Inc. and VapCor Inc. as Green Marine's newest partners, and WWF-Canada as our latest supporter. There are several examples within this issue of how these partnerships are benefiting our industry and the environment.

Green Marine's goals include broadening outreach to attract new membership and participation. That's one of the many reasons we're excited about having our annual GreenTech conference in Chicago on May 25-26 in 2011. It will be the first time we're holding the conference in the United States, and hope it will generate wide interest.

We're also keen to lend greater support to the collaborative efforts of our members in terms of environmental initiatives within Green Marine and on their own. Some of these include the participation of our members in the Great Ships Initiative and the innovative partnership struck between WWF-Canada and Canada Steamship Lines, both of which are outlined within this issue.

None of Green Marine's accomplishments to date would have been possible without the extensive commitment and resources dedicated by all the members and the numerous hours devoted by many of their key representatives on various committees.

It's thanks to this unprecedented voluntary effort that a mere two years after its official launch Green Marine became a finalist at the Sustainable Shipping Awards 2010. Green Marine was nominated along with two other finalists in the Green Shipping Initiative of the Year category and attended the awards ceremony on June 24 in London, England.

We hope you enjoy reading this issue and look forward to relating more Green Marine news in the months ahead.

**David Bolduc,
Executive Director**





GREEN MARINE / ALLIANCE VERTE

UNE ANNÉE DE PROGRÈS

Il nous fait plaisir de vous présenter le second numéro du magazine de l'Alliance verte, notre première publication bilingue. Cette édition souligne les progrès importants que l'Alliance verte a accomplis au cours de la dernière année en termes de performance environnementale, de transparence et de crédibilité.

La performance environnementale des 44 participants de l'Alliance verte a été évaluée et les résultats individuels ont ensuite été publiés. Un vérificateur indépendant a vérifié les résultats des armateurs, et les ports et les terminaux ont convenu de faire la même chose l'an prochain.

Les efforts des participants ont considérablement amélioré la performance environnementale globale de l'industrie maritime dans la région des Grands Lacs et du fleuve Saint-Laurent.

La Corporation de gestion Alliance verte a amélioré son secrétariat en affectant des ressources à un poste de directeur général. J'ai le plaisir d'assumer ces nouvelles fonctions depuis janvier et je suis impatient de contribuer à l'atteinte des objectifs du programme environnemental volontaire dont les résultats, jusqu'à présent, sont impressionnants.

Andrée-Anne Stewart occupe mon ancien poste à titre de coordonnatrice du programme et est désormais responsable des communications et de la coordination de divers comités. Son expertise en communications, en relations avec les médias et en planification d'événements font d'elle un véritable atout.

L'Alliance verte a franchi une étape importante plus tôt cette année et compte maintenant une centaine de membres, incluant tous les participants, les partenaires et les supporteurs. Nous sommes heureux d'accueillir nos nouveaux partenaires, Corus International, Magnus Chemicals Ltd., PESCA Environment, Urgence Marine Inc., V Ships Canada Inc. et VapCor Inc., ainsi que notre plus récent supporteur, World Wildlife Fund Canada. Ce numéro contient plusieurs exemples de la façon dont ces

partenariats profitent à notre industrie et à notre environnement.

Parmi les objectifs de l'Alliance verte, on vise un accroissement des activités de communications et de recrutement afin d'attirer de nouveaux membres et de favoriser la participation. C'est l'une des nombreuses raisons pour lesquelles nous sommes ravis d'annoncer que notre prochain Colloque environnemental annuel aura lieu à Chicago les 25 et 26 mai 2011. Ce sera la première fois que nous tiendrons cet événement aux États-Unis et nous espérons qu'il suscitera un vif intérêt.

Nous tenons également à apporter un soutien accru aux efforts concertés de nos membres relativement aux initiatives environnementales menées par l'Alliance verte ou de leur propre chef. Celles-ci comprennent notamment la participation de nos membres à la Great Ships Initiative et le partenariat novateur entre World Wildlife Fund Canada et Canada Steamship Lines, toutes deux présentées dans le présent numéro.

Jusqu'à présent, aucune des réalisations de l'Alliance verte n'aurait été possible sans le profond engagement et les ressources de tous les membres, ni les nombreuses heures que plusieurs de leurs représentants clés ont consacrées à divers comités.

C'est grâce à cet effort bénévole sans précédent que deux années seulement après son lancement officiel, l'Alliance verte a fait partie des finalistes au Sustainable Shipping Awards 2010. L'Alliance verte était en nomination, en compagnie de deux autres finalistes, dans la catégorie Green Shipping Initiative of the Year et a assisté à la remise des prix le 24 juin à Londres, en Angleterre.

Nous espérons que ce numéro vous plaira et avons hâte de vous transmettre d'autres nouvelles au sujet de l'Alliance verte au cours des prochains mois.

**David Bolduc,
Directeur général**





Transparency, verification define Green Marine's second year

BY JULIE GEDEON

Green Marine has charted new territory over the last year with all of its participants making public how they ranked in terms of the program's environmental self-assessment. The published results mark an unprecedented level of transparency within the marine transportation industry.

"I'm not aware of anything like this being done elsewhere," said Green Marine chair Raymond Johnston. "It definitely shows that the public and private companies involved in Green Marine take their engagement in the program very seriously."

The program has also successfully launched its auditing component. Shipowners had their 2009 results verified by an independent assessor from Lloyd's Register Quality Assurance (LRQA) this year. Ports and terminals are in line to do the same for their 2010 performance results next year. Future audits will be done for all participants every second year.

"Having the performance results of all our participants audited within a two-year period will give our program a high degree of credibility," said David Bolduc, Green Marine's executive director.

SUPERIOR RESULTS

This year's results bode well for the program's effectiveness. The vast majority of participants showed marked improvement compared to their initial self-evaluation a year earlier. "The companies involved obviously took the time to study the criteria and identify the specific measures they could take to improve their environmental performance," Mr. Bolduc said.

Of the 16 companies registering Level 1 (regulatory compliance) for their 2008 results, 12 have moved up to Level 2 (beyond regulatory compliance) or a higher ranking. The overall average performance rating has risen from Level 2 for 2008 to 2.5 for 2009. One participating company achieved Level 5 (the highest performance rating possible, denoting excellence and leadership) in all applicable categories.

"The results show that Green Marine is serving as

an effective tool for bringing about greater environmental sustainability not only for a few companies but the industry as a whole," Mr. Bolduc said.

A LEARNING PROCESS

The auditing has served an educational purpose in addition to providing independent verification. "Most participants said it helped them to better understand exactly what they had to do to move up to the next level," Mr. Bolduc said.

All of the participants opted to use LRQA's services for their audit. Hugh Hutton, LRQA's lead assessor, said the verifications went smoothly because of the extensive preparation done by the participants.

"Following the trial audits last year, Mr. Bolduc asked me to develop a participant's guide that explains how best to gather and organize documentation so that it corresponds with the program's different categories and levels of achievement," he said. "Nearly all the participants followed the guide, which enabled LRQA to complete each assessment within a single working day."

HEALTHY RIVALRY

No one claimed a level that couldn't be substantiated. "In fact, I was able to point out in several cases how a few steps could be taken to move up a level," Mr. Hutton said.

"The other thing that came across was how competitive most of the companies were because their results were being published. There's definitely peer pressure at work here in a positive way, with many of the companies striving to attain the top 4 and 5 levels."

John Gruszewski, manager of safety, security and environment at McKeil Marine Limited, praised the program for helping businesses to effectively focus their environmental efforts. "Our company was already taking steps as a good corporate citizen but Green Marine gave us precise goals and laid out the exact steps to achieve them." →





ation, improvement



Photo: Ron Samson



July 5, 2010

GREEN MARINE



Green Marine participants receive their certification plaques at a ceremony on May 19.

Photo: Green Marine / Alliance verte

SMALL CHANGES, LARGE IMPACT

By conducting the same ballast procedures on its tugs and barges as on its larger vessels, for example, McKeil Marine was able to move up to Level 2 in terms of its ballast water management.

McKeil Marine also substantiated its Level 5 claim for reducing sulphur oxide emissions by presenting the receipts for all of its fuelling. Each receipt clearly stipulated the percentage of SOx in the fuel being purchased. For all of its tugs, McKeil Marine uses diesel fuel with a sulphur content of no more than 15 parts per million.

Simple changes resulted in Level 1 to 2 improvements in other areas. By only running oily water separators during daylight hours, for example, vessel operators can spot if there is any leakage from a separator, and immediately shut it down.

Plans for additional improvements at McKeil Marine are already in the works. “We’re doing an over-

all ballast water inventory so we can see exactly where our vessels as a fleet obtain and discharge ballast,” Capt. Gruszewski said. “We’re also testing a fuel additive that promises to reduce nitrogen oxide emissions and overall fuel consumption, which will not only cut down on other emissions but save the company some money.”

While many of the environmental initiatives are expected to reduce operating costs and possibly increase customer loyalty, Capt. Gruszewski said they were done with the recognition that businesses are entering a new era of corporate and social responsibility. “It’s our feeling that if a company is not operating sustainably going forward, then it won’t be operating at all.” ■



Summary of progress made by participants of the Green Marine Environmental Program 2009-2010

In 2009, participants received a global average of 2.5 for all issues combined, which is significantly higher than the global average of 2 that was recorded in 2008, Green Marine’s first self-evaluation year (Figure 1, Page 12).





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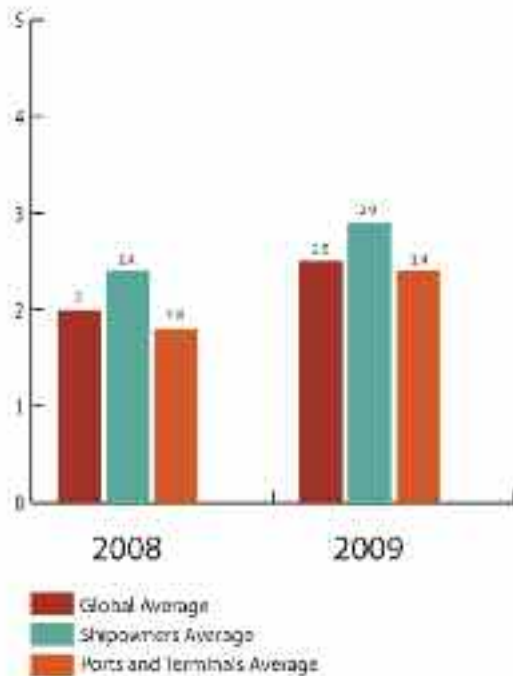
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Summary of progress by participants • 2009-2010

Figure 1
AVERAGE LEVELS ATTAINED
BY ALL GREEN MARINE PARTICIPANTS FOR 2008-2009



2009 RESULTS

The results that participants attained in 2009 clearly indicate that the industry's environmental performance is improving and surpassing regulatory compliance. Figures 2 and 3 show significant progress in the results obtained for almost all performance indicators. Indeed, the increase in global averages reflected in the 2009 results provides irrefutable evidence of the positive behavioural impact that a voluntary program with clear performance measures can have.

Green Marine now has a solid foundation on which to continue building and strengthening its environmental program in 2010-2011 and beyond. Towards that end, the implementation of new performance indicators for ports and terminals, as well as the application of the external verification system to all participants, are among the priority actions that will be undertaken this year to further enhance the program's already well-established credibility.

Legend:

- AIS: Aquatic Invasive Species
- SOx: Pollutant Air Emissions: Sulphur Oxides
- NOx: Pollutant Air Emissions: Nitrogen Oxides
- GHG: Greenhouse Gases
- CR: Cargo Residues
- CW: Oily Water
- CU: Conflicts of Use In Ports and Terminals
- EL: Environmental Leadership

Figure 2
AVERAGE LEVELS ATTAINED BY SHIPOWNERS
PARTICIPATING IN THE GREEN MARINE
ENVIRONMENTAL PROGRAM FOR 2008-2009

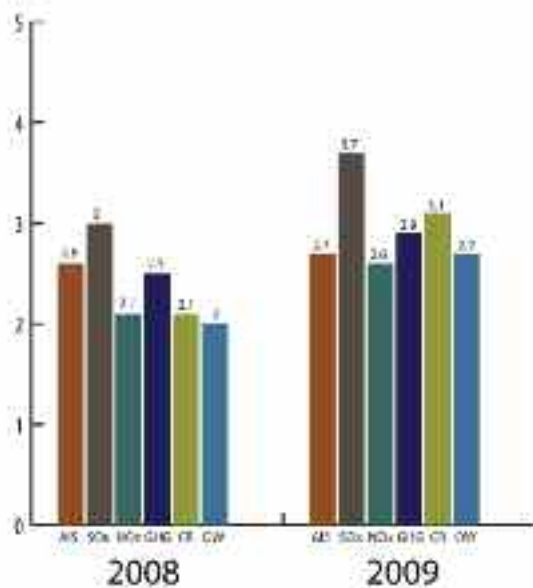
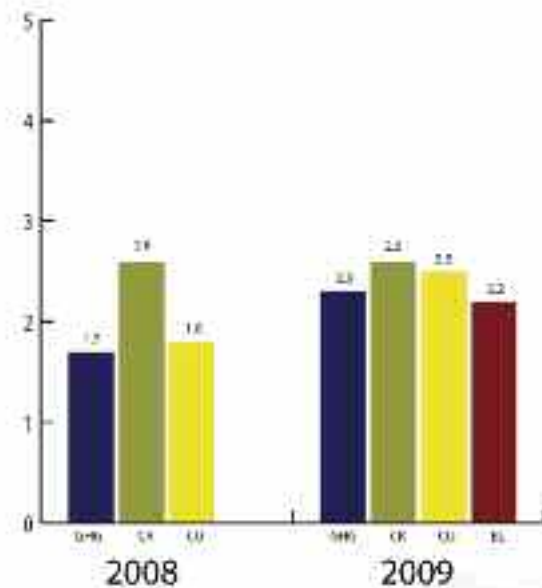


Figure 3
AVERAGE LEVELS ATTAINED BY PORTS
AND TERMINALS PARTICIPATING IN THE GREEN
MARINE ENVIRONMENTAL PROGRAM FOR 2008-2009





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Summary of progress by participants • 2009-2010

SHIPOWNERS	Invasive Species	Air Emissions (SOx)	Air Emissions (NOx)	Greenhouse Gases	Cargo Residues	City Water
* Algoma Tankers	3	4	3	3	na	4
* Canformar	4	4	3	4	4	5
Cogema	na	2	2	2	na	na
* CSL Group	4	4	3	3	4	3
* Fednav	4	3	3	3	5	4
Grande C.T.M.A.	2	2	2	2	na	na
* Groupe Desjardins / Rigei	3	5	3	3	2	2
* Lower Lakes Towing	2	2	2	2	2	2
* McKeil Marine	2	5	3	2	2	2
* Oceanex	2	5	2	2	na	3
* Ocean Group	2	5	2	2	na	1
Reformar	2	2	2	2	2	2
* Seaway Marine Transport / Upper Lakes Group	3	4	3	3	3	3
* Société des Traveurs du Québec	na	5	3	3	na	1

* = results confirmed by third party external verification
na = not applicable

NOTES

- Level 1 – Indicates regulatory compliance
- Level 2 – Systematic use of a defined number of best practices
- Level 3 – Integration of best practices into an adopted management plan and quantifiable understanding of environmental impact
- Level 4 – Introduction of new technologies
- Level 5 – Excellence and leadership

A particular level can only be attained if all the criteria of the previous levels have been fulfilled. This means, for example, that a participant could invest in certain less-polluting equipment and perhaps still not attain a higher performance level under the Green Marine Program.

The results published reflect participants' performance with respect to the performance indicators contained in the Green Marine Environmental Program. Green Marine does not claim to provide an exhaustive evaluation of a given company's environmental performance.

The term "na" (not applicable) appears in several places in the tables above and on the next page because of the high degree of operational diversity among participants. The environmental issues covered by the program do not necessarily apply to all participants in the same way. For example, tug and ferry companies do not pump ballast water, container carriers do not have to treat their cargo residues and most ports do not have "conflict of use" issues if they are not located in an urban area.



Summary of progress by participants • 2009-2010

	Greenhouse Gases	Cargo Residues	Conflicts of Use	Environmental Leadership
PORTS AND TERMINALS				
Bécancour Waterfront Industrial Park	2	na	na	2
Bunge of Canada Ltd	4	2	3	na
Cleveland-Cuyahoga County Port Authority	1	na	na	2
Duluth Seaway Port Authority	2	na	2	1
Empire Stevedoring	4	na	3	na
Federal Marine Terminals	4	5	4	na
Hamilton Port Authority	3	na	2	2
Illinois International Port District	1	1	1	1
Les Élévateurs de Trois-Rivières	1	1	1	na
Logistec Corporation	4	4	2	na
Montreal Gateway Terminals	3	na	4	na
Montreal Port Authority	4	2	5	4
Oshawa Port Authority	1	na	2	1
Porlier Express Inc.	1	2	na	na
Port of Milwaukee	1	na	1	na
Quebec Port Authority	1	na	2	2
Rio Tinto Alcan	5	5	5	na
Saguenay Port Authority	2	na	na	2
Saint Lawrence Seaway Development Corporation	2	na	na	na
St. Lawrence Seaway Management Corporation	4	na	2	3
Sept-Îles Port Authority	3	na	2	3
Société du port de Valleyfield	2	na	na	2
Thunder Bay Port Authority	1	na	na	3
Toledo-Lucas County Port Authority	1	na	na	1
Toronto Port Authority	1	1	1	2
Trois-Rivières Port Authority	2	na	2	3
Ultramar	5	na	3	na
Windsor Port Authority	2	na	na	2

na = not applicable



Cogema CN's Unique Marine Service

Multiple Opportunities

What is the most competitive way to move large volumes of freight from Matane to Baie Comeau and Sept-Iles? Using the Cogema rail ferry, of course! Companies like Alcoa and Aluminerie Alouette, take advantage of this unique service by shipping most of their raw materials and finished goods along the St. Lawrence.

The Compagnie de Gestion de Matane (Cogema), started ferrying up and down the St. Lawrence from Matane to Baie Comeau in 1975, and in November 2008 began twice weekly trips to Sept-Iles, Quebec. The ferry can accommodate 25 railcars per crossing, transporting 670,000 tons annually along the seaway to and from destinations across North America.

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This modal shift results in a reduction in fuel consumption of up to 55%! The Port of Sept-Iles estimates that up to 5 000 tonnes of GHG will be avoided in 2010 with the use of the Cogema ferry.

The benefits don't end there. Traffic along the main highway to northern Quebec is significantly reduced, increasing road safety for non-commercial traffic. Fewer trucks on the road also reduces the cost of infrastructure maintenance, and more consistent deliveries being the norm with rail, the spring thaw period for trucks is avoided. All of these benefits for shipping in a more cost-effective way.

One of the largest users of the Cogema rail ferry is Alcoa Canada, whose plants are located principally in Quebec and Ontario. As producers of primary aluminum, they provide materials for the aerospace and construction industries. The modernization of their aluminum smelter plant in Baie Comeau is underway to comply with new environmental standards effective in 2015. Production will increase to 550,000 tons per year, and will support 3900 jobs in the area.



A 24/7 operation, the Cogema ferry makes the 3 hour trip from Matane to Baie Comeau six days a week, carrying aluminum, paper, and lumber, as well as transformers for Hydro-Quebec. The Sept-Iles voyage is 8 hours, currently running twice a week. Track material such as rail and ties, as well as machinery, aluminum and ammonium nitrate are the primary products traveling to and from Sept-Iles.

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Alliance verte, deuxième année : transparence, vérifica

PAR JULIE GEDEON

L'Alliance verte a exploré de nouveaux territoires au cours de la dernière année. Tous ses participants ont en effet rendu public leur classement dans l'autoévaluation environnementale du programme. La publication de leurs résultats est le fait d'un niveau de transparence sans précédent dans l'industrie du transport maritime.

« Je n'ai pas connaissance de quelque chose de semblable qui se fait ailleurs, a dit le président de la Corporation de gestion Alliance verte, Raymond Johnston. Cela démontre sans contredit que les compagnies publiques et privées qui participent à l'Alliance verte prennent leur engagement envers le programme très au sérieux. »

Le programme a également lancé avec succès son volet de vérification. Les armateurs ont fait vérifier leurs résultats de 2009 par un évaluateur indépendant de Lloyd's Register Quality Assurance (LRQA) cette année. Les ports et les terminaux doivent aussi faire vérifier l'an prochain leurs résultats de rendement de 2010. Tous les participants vont dorénavant faire vérifier leurs résultats tous les deux ans.

« La vérification des résultats de rendement de tous nos participants à l'intérieur d'une période de deux ans confèrera énormément de crédibilité à notre programme, » a affirmé David Bolduc, directeur général de l'Alliance verte.

RÉSULTATS SUPÉRIEURS

Les résultats de cette année augurent bien de l'efficacité du programme. La grande majorité des participants ont affiché une amélioration marquée par rapport à leur auto-évaluation initiale un an auparavant. « Les compagnies qui participaient ont manifestement pris le temps d'étudier les critères et de déterminer les mesures précises qu'elles pourraient prendre pour améliorer leur performance environnementale », a précisé M. Bolduc.

Des 16 compagnies qui ont atteint le niveau 1 (conformité réglementaire) pour leurs résultats de 2008, 12 ont accédé en 2009 au niveau 2 (au-delà de la conformité réglementaire) ou même mieux. L'indice de rendement global moyen est passé du niveau 2 pour 2008 à 2,5 pour 2009. Une compagnie participante a atteint le niveau 5 (l'indice de rendement le plus élevé possible, celui de l'excellence et du leadership) dans toutes les catégories applicables.

« Les résultats démontrent que l'Alliance verte s'avère un outil efficace pour accroître la durabilité environnementale non seulement pour quelques compagnies, mais pour l'ensemble de l'industrie, » se réjouit M. Bolduc.

UN PROCESSUS D'APPRENTISSAGE

Le processus a eu une fonction éducative en plus de fournir une vérification indépendante. « La plupart des participants ont dit que cela les avait aidés à mieux comprendre exactement ce qu'ils devaient faire pour accéder au niveau supérieur », de dire M. Bolduc.

Tous les participants ont choisi de recourir aux services de LRQA pour leur vérification. Hugh Hutton, évaluateur principal de LRQA, a dit que les vérifications se sont déroulées harmonieusement parce que les participants s'étaient préparés de façon exhaustive.

« Après les vérifications d'essai de l'an dernier, M. Bolduc m'a demandé d'élaborer un guide des participants pour expliquer les meilleures façons de réunir et d'organiser les documents afin qu'ils correspondent aux critères du programme et aux niveaux atteints, a expliqué M. Hutton. À peu près tous les participants ont suivi le guide, et LRQA n'a jamais eu besoin de plus d'un jour de travail pour procéder à chaque vérification. »





tion et amélioration

Photo: Port de Montréal



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Photo: Alliance verte / Green Marine

Les participants de l'Alliance verte ont reçu leur sceau « certifié » lors de la cérémonie de certification le 19 mai dernier.

SAINE RIVALITÉ

Personne n'a prétendu avoir atteint un niveau sans pouvoir étayer son affirmation. « En fait, j'ai pu signaler dans plusieurs cas comment quelques mesures de plus pourraient faire passer l'entreprise à un niveau supérieur », déclare M. Hutton.

« L'autre aspect qui est ressorti était à quel point la plupart des compagnies étaient compétitives parce que leurs résultats allaient être publiés. Il n'y a pas de doute que la pression des pairs fonctionne ici de façon positive, et qu'elle a incité beaucoup de compagnies à s'efforcer d'atteindre les niveaux supérieurs 4 et 5. »

John Gruszewski, responsable de la sûreté, la sécurité et l'environnement chez McKeil Marine Limited, salue le programme d'avoir aidé les entreprises à concentrer efficacement leurs efforts environnementaux. « Notre compagnie prenait déjà des mesures en tant qu'entreprise socialement responsable, mais l'Alliance verte nous a donné des buts précis et indiqué exactement comment les atteindre », a-t-il dit.

PETITS CHANGEMENTS, GRAND EFFET

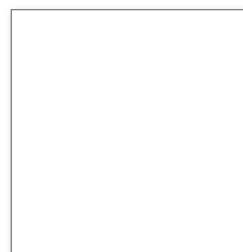
En appliquant les mêmes procédures de ballast sur ses remorqueurs et ses barges que sur ses gros navires, par exemple, McKeil Marine a pu accéder au

niveau 2 pour la gestion de ses eaux de ballast.

McKeil Marine a également démontré que la compagnie était bien fondée de se réclamer du niveau 5 pour la réduction de ses émissions d'oxydes de soufre en présentant les reçus de tous ses ravitaillements en carburant. Chacun des reçus stipulait clairement le pourcentage de SOx dans le carburant acheté. McKeil Marine utilise du carburant diesel d'une teneur en soufre inférieure à 15 parties par million pour tous ses remorqueurs.

Des changements simples ont permis d'améliorer les choses en passant du niveau 1 au niveau 2 dans d'autres aspects. En utilisant seulement des épurateurs d'eau huileuse pendant les heures du jour, par exemple, les opérateurs peuvent déceler si un séparateur fuit et le fermer immédiatement s'il y a lieu.

Des plans d'améliorations additionnelles chez McKeil Marine sont déjà en cours. « Nous sommes en train de faire un inventaire global de l'eau de ballast pour voir exactement où nos navires, en tant que flotte, captent leur eau de ballast et en font le vidage, explique le capitaine Gruszewski. Nous testons aussi un produit d'addition pour le carburant qui promet de





réduire les émissions d'oxydes d'azote et la consommation globale de carburant. En plus de réduire les autres émissions, le procédé permettra aussi à la compagnie de réaliser certaines économies.

Selon le capitaine Gruszewski, un grand nombre des initiatives environnementales dont il est question devraient réduire les coûts d'exploitation et fidéliser peut-être davantage les clients. Elles ont été entreprises en tenant compte du fait que les compagnies passent maintenant à une nouvelle ère de responsabilité sociale. « Nous avons le sentiment que si une compagnie ne s'engage pas dorénavant à fonctionner de façon durable, alors elle ne fonctionnera pas du tout », a-t-il ajouté en terminant. ■



Photo: Seaway Marine Transport

Un seul navire peut transporter la même quantité de marchandises que 870 camions.

www.allianceverte.org

Résumé du rapport sur les progrès des participants à la politique environnementale de l'Alliance verte 2009-2010

En 2008, la première année d'autoévaluation de l'Alliance verte, l'ensemble des participants avait obtenu une moyenne globale correspondant au niveau 2, tous enjeux confondus. La première constatation concernant les résultats de 2009 est l'augmentation significative de cette moyenne globale qui s'établit maintenant à 2,5 (graphique 1, page suivante).

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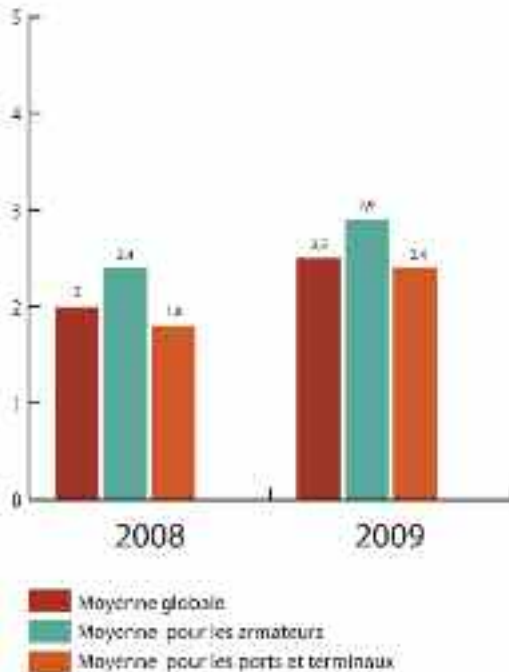
Canada



Rapport sur les progrès des participants • 2009-2010

Graphique 1

MOYENNE DES NIVEAUX ATTEINTS
POUR TOUS LES PARTICIPANTS À L'ALLIANCE VERTE (2008 et 2009)



RÉSULTATS GLOBAUX 2009

Les résultats obtenus en 2009 par les participants nous permettent de faire un constat extrêmement encourageant : l'amélioration de la performance environnementale au-delà des exigences réglementaires est au rendez-vous. Les graphiques 2 et 3 indiquent qu'une progression importante des résultats a été enregistrée pour presque tous les indicateurs de rendement. Des évaluations de 2008 à celles de 2009, l'augmentation des moyennes démontre clairement l'effet d'entraînement positif que peut avoir un programme volontaire avec des mesures de performance claires.

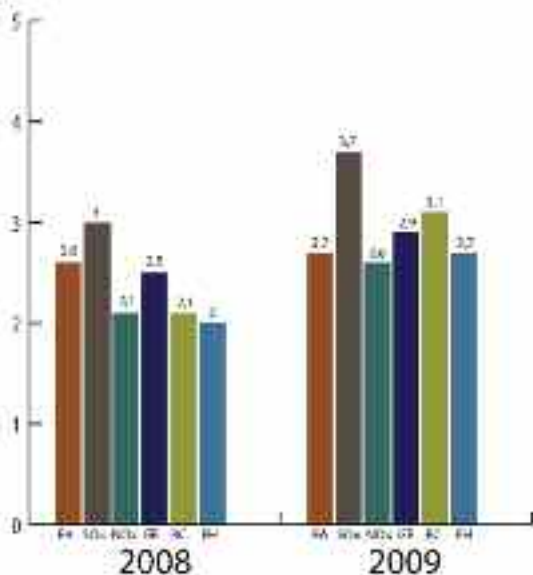
L'Alliance verte pourra de toute évidence s'appuyer sur des bases solides pour poursuivre en 2010 et 2011 ses efforts de consolidation et de développement du programme. Par exemple, l'entrée en vigueur de nouveaux indicateurs de rendement pour les ports et terminaux ainsi que l'application de la vérification externe à tous les participants font partie des actions prioritaires qui contribueront à relever davantage une crédibilité déjà bien établie.

Légende :

- EAE : Espèces aquatiques envahissantes
- SOx : Émissions atmosphériques polluantes : oxyde de soufre
- NOx : émissions atmosphériques polluantes : oxyde d'azote
- GES : Gaz à effet de serre
- RC : Résidus de cargaison
- EH : Eaux huileuses
- CU : Conflits d'usage dans les ports et terminaux
- LE : Leadership environnemental

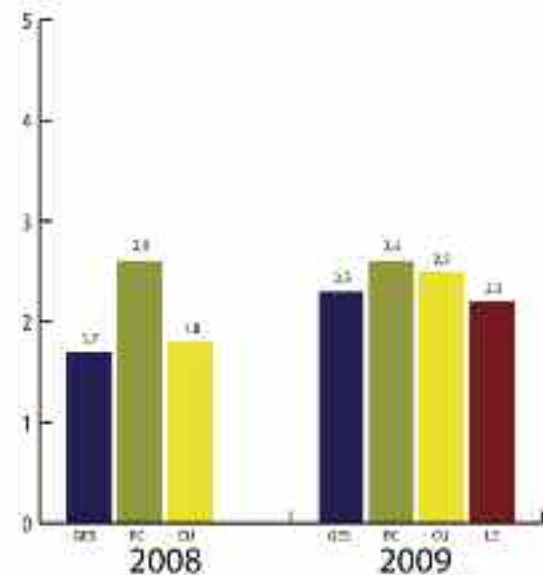
Graphique 2

MOYENNE DES NIVEAUX ATTEINTS PAR LES
ARMATEURS PARTICIPANT À LA POLITIQUE DE
L'ALLIANCE VERTE POUR 2008 et 2009



Graphique 3

MOYENNE DES NIVEAUX ATTEINTS PAR LES
PORTS ET TERMINAUX PARTICIPANT À LA POLITIQUE
DE L'ALLIANCE VERTE POUR 2008 et 2009



Rapport sur les progrès des participants • 2009-2010

RÉSULTATS 2009

ARMATEURS	Espèces envahissantes	Émissions atmosphériques (SOx)	Émissions atmosphériques (NOx)	Sans à effet de serre	Poids de cargaison	Eaux troubles
* Algona-Taners	3	4	3	3	s.o.	4
* Canforay	4	4	3	4	4	5
Cogema	s.o.	2	2	2	s.o.	s.o.
* Fedrav	4	3	3	3	3	4
Groupe C.T.M.A.	2	2	2	2	s.o.	s.o.
† Groupe CSI	4	4	3	3	4	3
* Groupe Desjardins / Bilgal	3	5	3	3	2	2
* Groupe Golan	2	5	2	2	s.o.	1
† Lower Lakes Towing	2	2	2	2	2	2
* M&M Marine	3	4	3	3	3	2
* Océanes	2	5	2	2	s.o.	3
Reformar	2	3	2	2	2	2
* Seaway Marine Transport / Upper Lakes Group	3	4	3	3	3	3
* Société des Traversiers du Québec	s.o.	5	3	3	s.o.	1

* = Résultats obtenus par un référentiel indépendant
s.o. = sans objet

NOTES

Le niveau 1 correspond au respect de la réglementation. Tous les niveaux obtenus au-delà du niveau 1 indiquent une performance supérieure à ce qui est exigé par la réglementation.

Les résultats publiés reflètent la performance environnementale des participants dans le cadre bien précis des indicateurs de rendement de la Politique environnementale de l'industrie maritime du Saint-Laurent et des Grands Lacs. L'Alliance verte ne prétend pas évaluer de façon exhaustive l'ensemble de la performance environnementale des ports et compagnies participants puisque certains aspects environnementaux ne sont pas encore couverts. De plus, un niveau ne peut être atteint que si tous les critères de ce niveau et des niveaux précédents sont respectés. Cette règle fait en sorte qu'un participant pourrait investir dans des équipements moins polluants sans que cette action se traduise immédiatement par l'obtention de niveaux plus élevés.

La mention « sans objet » se retrouve à plusieurs endroits dans le tableau en raison de la grande diversité opérationnelle des participants. En effet, les enjeux environnementaux ne s'appliquent pas à tout le monde de la même manière : par exemple, les remorqueurs et les traversiers ne pompent pas d'eau de ballast, les porte-conteneurs n'ont pas à traiter de résidus de cargaison et la majorité des ports qui ne se trouvent pas en zone urbaine n'ont pas de problématique de « conflits d'usage ».



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Rapport sur les progrès des participants • 2009-2010

RÉSULTATS 2009

PORTS ET TERMINAUX	Gaz à effet de serre	Résidus de cogalson	Conflits d'usage	Leadership environnemental
Administration portuaire de Hamilton	3	s.o.	2	2
Administration portuaire de Montréal	4	2	5	4
Administration portuaire de Québec	1	s.o.	2	2
Administration portuaire de Saguenay	2	s.o.	s.o.	2
Administration portuaire de Sept-Îles	3	s.o.	2	3
Administration portuaire de Thunder Bay	1	s.o.	s.o.	3
Administration portuaire de Toronto	1	1	1	2
Administration portuaire de Trois-Rivières	2	s.o.	2	3
Administration portuaire de Windsor	2	s.o.	s.o.	2
Bridge du Canada Limited	4	2	3	s.o.
Cleveland-Cuyahoga County Port Authority	1	s.o.	s.o.	2
Corporation de Gestion de la Voie Maritime du St-Laurent	4	s.o.	2	4
Duluth Seaway Port Authority	2	s.o.	2	1
Empire Stevedoring Co. Ltd.	4	s.o.	3	s.o.
Federal Marine Terminal	4	5	4	s.o.
Illinois International Port District	1	1	1	1
Les Éléments de Trois-Rivières	1	1	1	s.o.
Lagies Corporation	4	4	2	s.o.
Oshawa Port Authority	1	s.o.	2	1
Par Industriel et Portuaire de Bécancour	2	s.o.	s.o.	2
Potter Express Inc.	1	2	s.o.	s.o.
Port of Milwaukee	1	s.o.	1	s.o.
Rio Tinto Alcan	5	5	5	s.o.
Saint-Lawrence Seaway Development Corporation	2	s.o.	s.o.	s.o.
Société du port de Valleyfield	2	s.o.	s.o.	2
Société des Terminaux Montréal Gateway	3	s.o.	4	s.o.
Toledo-Lucas County Port Authority	1	s.o.	s.o.	1
Ultara Inc.	5	s.o.	1	s.o.





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Wärtsilä Canada is an ISO 9001:2000 and ISO 14001:2004 certified company with offices and workshop facilities at five strategic locations in Canada; Vancouver (Richmond), Victoria, Halifax (Dartmouth), St. John's and Montreal, with Richmond being the head office and centre of excellence for reconditioning of diesel engine equipments as well as other industrial components in the Americas. In addition to all workshop related tasks, we provide well trained service technicians to carry out daily maintenance and trouble shooting activities on board vessels and power plants.

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GREEN MARINE PARTICIPANTS

Green Marine now comprises 44 participants, 29 partners and 28 supporters in both Canada and the United States. Here is the list of the 44 Green Marine participants.

Algoma Central Corporation	Oceanex
Bécancour Waterfront Industrial Park	Oshawa Harbour Commission
Bunge of Canada	Porlier Express
Canfornav	Port of Milwaukee
Cleveland-Cuyahoga County Port Authority	Port of Valleyfield
Cogema	Quebec Port Authority
CSL Group	Reformar
CTMA Group	Rigel Shipping Canada
Duluth Seaway Port Authority	Rio Tinto Alcan
Empire Stevedoring Company Limited	Saguenay Port Authority
Federal Marine Terminals	Saint Lawrence Seaway Development Corporation
Fednav Limited	St. Lawrence Seaway Management Corporation
Groupe Desgagnés	Seaway Marine Transport
Hamilton Port Authority	Sept-Îles Port Authority
Illinois International Port District	Société des traversiers du Québec
Les Élévateurs de Trois-Rivières	Thunder Bay Port Authority
Logistec Corporation	Toledo-Lucas County Port Authority
Lower Lakes Towing Limited	Toronto Port Authority
McKeil Marine	Trois-Rivières Port Authority
Montreal Gateway Terminals Partnership	Upper Lakes Group
Montreal Port Authority	Ultramar
Ocean Group	Windsor Port Authority

PARTICIPANTS DE L'ALLIANCE VERTE

À ce jour, l'Alliance verte regroupe 44 participants, 29 partenaires et 28 supporteurs au Canada et aux États-Unis. Voici la liste des 44 participants de l'Alliance verte.

Administration portuaire de Hamilton	Groupe Océan
Administration portuaire de Montréal	Illinois International Port District
Administration portuaire de Québec	Les Élévateurs de Trois-Rivières
Administration portuaire de Saguenay	Logistec Corporation
Administration portuaire de Sept-Îles	Lower Lakes Towing Limited
Administration portuaire de Thunder Bay	McKeil Marine
Administration portuaire de Toronto	Oceanex
Administration portuaire de Trois-Rivières	Oshawa Harbour Commission
Administration portuaire de Windsor	Porlier Express
Algoma Central Corporation	Port of Milwaukee
Bunge du Canada Ltée	Reformar
Canfornav	Rigel Shipping Canada
Cleveland-Cuyahoga County Port Authority	Rio Tinto Alcan
Cogema	Saint Lawrence Seaway Development Corporation
Corporation de Gestion de la Voie Maritime du Saint-Laurent	Seaway Marine Transport
Duluth Seaway Port Authority	Société du parc industriel et portuaire de Bécancour
Empire Stevedoring Company Limited	Société du port de Valleyfield
Federal Marine Terminals	Société des traversiers du Québec
Fednav Limitée	Société Terminaux Montréal Gateway
Groupe CSL	Toledo-Lucas County Port Authority
Groupe CTMA	Upper Lakes Group
Groupe Desgagnés	Ultramar





GREAT SHIPS INITIATIVE

focuses on freshwater concerns regarding ballast treatment

BY JULIE GEDEON



Photo: Great Ships Initiative

The GSI land-based testing facility in Superior, Wisc.

BENCH, LAND-BASED AND SHIPBOARD TESTING involves members of Green Marine

Green Marine participants are playing a key role in the Great Ships Initiative (GSI) established to use science to eliminate the chances of ships introducing aquatic invasive species (AIS) in the Great Lakes-St. Lawrence Seaway System.

Ten of the 25 representatives on the GSI Advisory Committee are Green Marine participants. Top administrators from the ports of Cleveland-Cuyahoga, Duluth, Hamilton, Milwaukee, Toledo, Toronto, and the Illinois International Port District meet at least





Allegra Cangelosi

Important to have different fleets and ports represented

four times a year with the other committee members and become readily available if needed otherwise. The same goes for high-ranking management from American Steamship Company, Canada Steamship Lines and Fednav. Many other Green Marine participants also play an active role in discussions.

"I am very grateful to the Green Marine members being among all those participating on the GSI Advisory Committee," Allegra Cangelosi, director of environmental projects for the Northeast-Midwest Institute and principal investigator of the institute's GSI, told Green Marine Magazine. "It's so important to have different fleets and ports represented. We're aiming to be effective in a very changeable environment in which the technical aspects of ships and biological elements of marine life are no small matters."

Green Marine partner Lloyd's Register North America and Green Marine supporter Great Lakes United also currently serve on the GSI Advisory Committee. (Other Green Marine participants, namely the Saint Lawrence Seaway Devel-

opment Corporation and the St. Lawrence Seaway Management Corporation, are ex-officio committee members.)

While Green Marine in no way directs what these representatives say or do regarding GSI, their involvement in both initiatives bolsters information exchange and avoids duplicating efforts. "Green Marine and GSI are distinct but fit together nicely," said Green Marine chair Ray Johnston. "Green Marine builds support for initiatives such as GSI, and GSI implements objectives set out by Green Marine."

TESTING CONCEPTS

GSI has a busy summer and autumn planned testing different ballast-water treatment concepts to determine whether they eliminate AIS from ballast water and whether they are or become non-toxic after they've done their job.

"We're also setting up land-based testing for technology approved by the International Maritime Organization in Europe or elsewhere to validate whether the IMO's testing protocols fare as well here within our continent's fresh water," Ms. Cangelosi said.

"Our scientific and transparent review will allow each of the associated vendors to speak with authority about their system's ability to perform in fresh water."

The additional testing will also make certain that a technology successful in obtaining approval at one testing facility achieves the same degree of performance at another location even if the water conditions are different.

SALT VS. FRESH WATER

"I favour testing at different places because you can't always predict what the most challenging feature of a location will be," Ms. Cangelosi said. "In the case of ozone-based treatments, for example, there is more concern about toxic residuals in salt water than in fresh water. On the other hand, the performance of other technologies could be affected by how much organic compound exists in the water, as well as the water temperature and other variables.

"For example, many types of freshwater zooplankton tend to be smaller than zooplankton in brackish or saltwater systems," Ms. Cangelosi noted. "If a treatment developer creates a system that filters out all or practically all the zooplankton and subsequently treats what remains in terms of smaller organisms with ultraviolet rays or another secondary application, that developer will probably have some freshwater zooplankton to handle, too, which can sometimes make a difference, depending on the process used."

One treatment developer having a system retested by GSI in fresh water is also seeking ways to optimize the operational aspects of its new technology to reduce its power consumption. "So we'll test a sort of Mach II version, which hasn't received IMO approval yet,





Photo: Great Ships Initiative

A mobile field laboratory and stationary structure provide analysis space to support time-sensitive assays associated with GSI land-based tests.

to compare the power used in a quantitative way,” Ms. Cangelosi said. “Vendors know they have to be sensitive to mariners’ needs or they won’t sell their system.” The findings will be posted on the GSI website and could benefit other treatment developers as well as inform potential buyers.

All testing done at the GSI’s Land-Based Ballast Treatment Test Facility is at a flow rate of 200-340 cubic metres per hour, considerably slower than the 1,000-2,000 cubic metres per minute handled by many lakers. “Vendors will separately have to make their own arguments about whether their treatment systems can operate at the necessary flow rates, and then we can validate that in shipboard testing over time,” Ms. Cangelosi said.

LAKER AND SEAWAY FOCUS

GSI’s research services are intended to encourage treatment developers to focus their products on lakers and Seaway vessels. Both markets have been largely ignored to date in favour of larger ocean-going fleets, some of which have faced earlier regulatory con-

straints. “Vendors don’t have to pay for the testing at our facilities, which is a really good deal considering what they do have to pay at other facilities,” Ms. Cangelosi said. “In return, we ask them to look at applicability issues associated with their treatment systems on our Great Lakes and St. Lawrence fleets.”

The land-based facility has cost almost \$2 million with its recent updates – a price that would be amortized into the cost of testing at other facilities. Testing associated with one salinity level (two are required) takes about six weeks and involves a microbiologist, three zooplankton biologists, two phytoplankton biologists, three toxicologists, a field biologist to collect and handle samples, a chemist, engineers to operate the facility, and a project manager.

TECHNOLOGICAL BARRIER

All of this effort is intended to enable governments and shipowners to determine with confidence whether a treatment will meet IMO standards in use. Testing for possible performance beyond IMO standards hasn’t been merited yet by GSI applicants. “Using our exist-





ing methods, we should first consistently be seeing zeros across the board in terms of living organisms surviving a ballast treatment when testing to IMO standards," Ms. Cangelosi said. "So far we haven't seen those kinds of zeros. I don't believe anyone has. And that's the first indication that we're still bumping up against a technological barrier.

"Once we have something that clearly performs better than IMO standards as evidenced by those consistent zeroes, then we have two options: We could stop there and say the system performs to 'below detect.' Or, we could filter larger volumes of water over more test trials to determine how much better than IMO standards a system is."

GSI collects four to six cubic

metres of treated water obtained evenly during an entire simulated ballast discharge. The sample is drained through a net designed to capture zooplankton that are 50 micron (50 millionth of a metre or 0.002 of an inch) or larger. Every drop of that concentrate is analyzed to see if any of them has survived. "The first hint that a system could perform significantly better

is if there's no live organism in the four to six cubic metres," Ms. Cangelosi aid. "Finding nothing alive in these samples doesn't mean that you've met higher standards," she quickly added. "You would then have to sample more water or replicate the

same tests more times. You would need to get zero living organisms over some higher number of trials in a row sampling larger volumes of water to be able to conclude that additional tests would yield the same results." →

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metres of treated water obtained evenly during an entire simulated ballast discharge. The sample is drained through a net designed to capture zooplankton that are 50 micron (50 millionth of a metre or 0.002 of an inch) or larger. Every drop of that concentrate is analyzed to see if any of them has survived. "The first hint that a system could perform significantly better

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Toronto, ON
Thunder Bay, ON

US Gulf Ports
Houston, TX
Freeport, TX
New Orleans, LA
Baton Rouge, LA
Lake Charles, LA





Photos: Great Ships Initiative

DEAD OR ALIVE?

Challenges remain and vary according to the type of ballast-water treatment system being tested. “If a system doesn’t filter zooplankton, we’re sorting through millions of dead bodies to try to find that one live organism,” Ms. Cangelosi said. “If the system is filtering or otherwise disintegrating organisms, then there’s the hope that you can filter enough water volume that would give you some confidence about whether you’re operating at 10 or 100 times IMO.”

Simply measuring to IMO standards can be difficult. Miniscule organisms called protists present a special challenge. “They don’t move and they don’t change

Microscope analysis of live zooplankton occurs onsite at the GSI land-based facility.

colour when they die,” Ms. Cangelosi said. “So the question of how to pick up the signals of whether they’re dead or alive is being hotly debated but I think biologists and microscopists will soon have answers for us.” At GSI, these micro-organisms are stained and put under a florescent microscope. Live organisms glow.

Making regular testing logistically practical is another challenge. Ideally, the process would be automated. “In some cases it is possible with existing technology, but new detection methods also have to be developed,” Ms. Cangelosi said.

MONITORING SYSTEM

Like land-based testing, ship discharge testing must be done on the spot. If samples were collected for later analysis there would be no way to ensure they hadn’t survived the ballast-water treatment, only to die later on the way to a lab.

With the co-operation of its Green Marine partners, GSI is designing and installing a monitoring apparatus in Great Lakes ships to demonstrate representative sampling of ballast discharge in preparation for upcoming regulations. The apparatus will also help shipowners to determine whether their best management practices are putting a stop to AIS. “So for regulatory and non-regulatory reasons we want to develop a monitoring system that works for mariners,” Ms. Cangelosi said.

The idea is to put a hole in a pipe that’s so carefully positioned and engineered that it takes a representative sample without interrupting the ballast pumping operations and then returns the water to the ballast system after analysis. “We have to figure out where it should be, the type of valve we should use, what kind of wand can be put into the pipe that won’t fall off and break a ballast pump, and other logistics,” Ms. Cangelosi said. “We also have to make sure that we get enough water throughout the ballast pumping operation for a representative sample within each cubic metre.”

Although the ships that will be involved haven’t been decided yet, “all the people we’ve contacted have indicated they are most willing to help,” Ms. Cangelosi said. The information will be made public, which should help regulators to determine what is and isn’t feasible in terms of testing. ■

