The salt age is upon us. Are you ready?

How road salts are creating an epidemic problem for vehicles.

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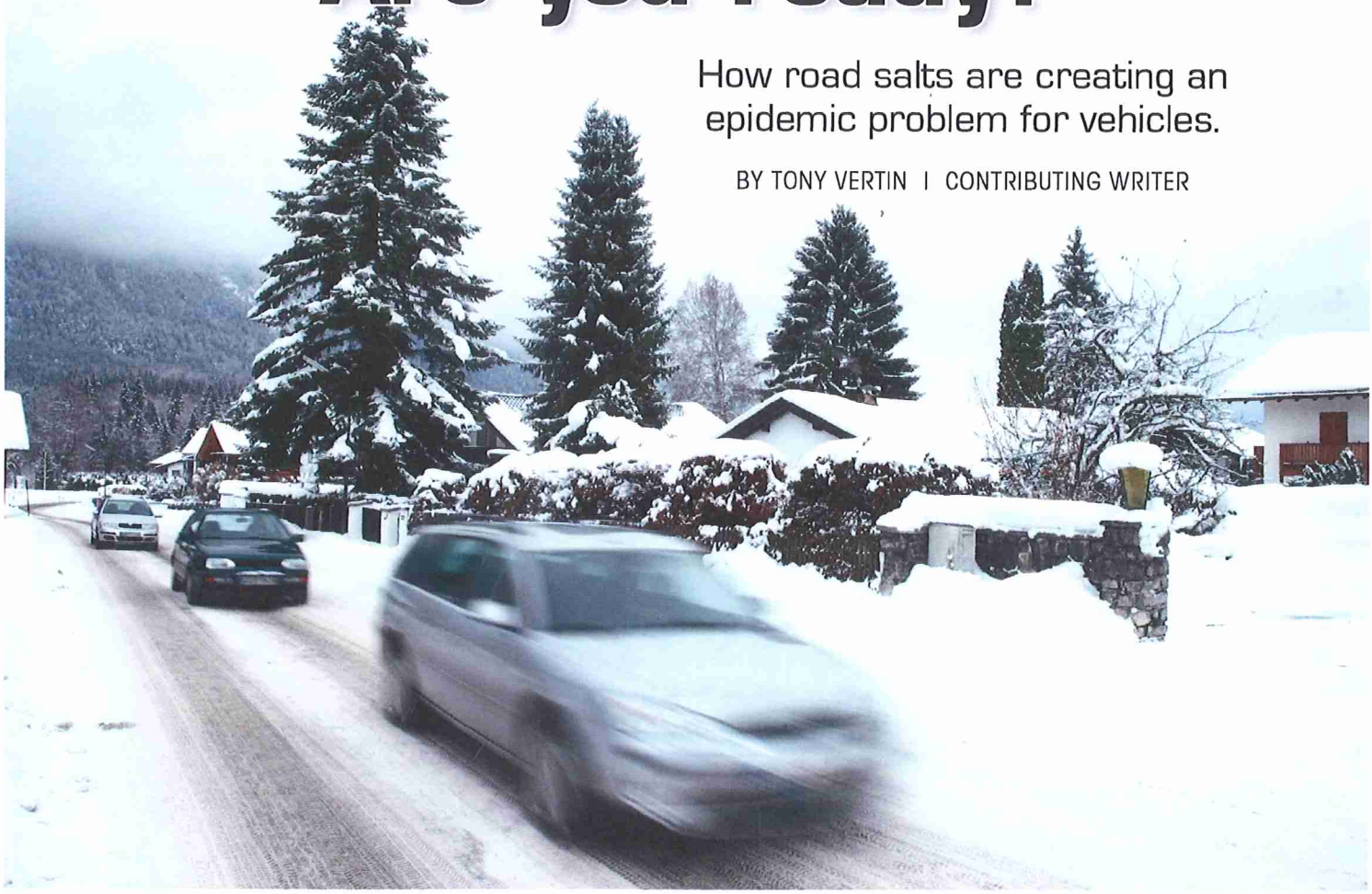

Are you aware of the hidden menace lurking beneath all the cars coming through your wash? The "salt age" is dawning in North America and road salts are creating an epidemic corrosion problem for America's cars and trucks. The carwash industry needs to do something about it. Our industry has the technology to dramatically impact this growing problem and give customers a tangible reason to wash their cars more frequently.

For several years now, the trucking industry has been concerned about the corrosive effects of road salt. I was invited to speak at this year's Technology and Maintenance Council Fall Conference about corrosion control solutions. During the conference, I listened to a number of speakers and spoke to many of the attendees about the extent of the corrosion problem in the trucking industry. I came away from the meeting astounded at the magnitude of the problem. Corrosion is causing the trucking industry millions of dollars every year in damages, as well as safety concerns.

The harmful effects of CaCl2 and MgCl2

In order to maintain open highways and increase highway safety, the Northern tier of the United States has used salt (sodium chloride) for years to combat ice, snow and sleet. Over the last decade, many state highway departments have switched to the more effective calcium chloride ($CaCl_2$) and magnesium chloride ($MgCl_2$) deicers because they provide lower freeze points, are less expensive, less corrosive to concrete and less harmful to the environment. However, the use of these additional road salts has resulted in a major increase in vehicle corrosion, particularly the underbody and electronics of our cars and trucks.

The sodium, calcium and magnesium chloride salts lower the freeze points of water to keep highway surfaces wet and

(Continued on page 20)

(Continued from page 18)

slushy rather than icy. Magnesium and calcium chloride are much more effective deicers because they stay liquid at a much lower temperature and less material is required to melt the same amount of snow and ice. Many State DOTs are now spraying calcium and magnesium chloride solutions on the roads prior to and after winter storms. These deicers are often mixed with sugar beet juice or vegetable oils for better adhesion to the road surface. The result is safer roads and dirtier cars.

These road deicers mixed with beet juice, vegetable oils and sand are added to the traditional road film on our vehicles. The result of this winter cocktail is extremely difficult vehicle cleaning. To complicate the situation further, if the road salts are not removed, $MgCl_2$ and $CaCl_2$ will pull moisture out of the atmosphere and continue their corrosive actions.

These deicers are becoming a multimillion dollar headache for our customers. Our customers are keeping vehicles longer and washing less frequently. The vehicle industry is working on many approaches such as metal plating and better coating on new structured components, but this doesn't help the millions of vehicles already on the road with corroding underbodies.

Protecting the vehicles

As an industry, we have an opportunity to help our customers protect their vehicles and increase our revenues. We need a two-step approach to this problem: Clean the vehicle thoroughly and then provide added protection.

Effectively cleaning road salts from vehicles requires a different approach from conventional vehicle washing. The focus needs to be on cleaning the whole car, including the underbody. It is vitally important to use the correct detergent with the right chemistry to break the road film and neutralize the corrosive effects of the deicers. Using the wrong chemistry can make the problem worse. We have found that many of the conventional vehicle wash solutions — particularly the heavy-duty alkalines and the more conventional neutral friction foamers — are not capable of breaking and "neutralizing" the impacted salt deposits. Surprisingly some (not all) low pH detergents have proven to be especially effective at neutralizing the corrosive effects of the deicers. For the undercarriage, spraying high pressure water on the underside of the vehicle as it enters the wash is not sufficient. A low pH detergent must be applied to the underside of the vehicle as well.

In a touchless wash, an alkaline detergent must be used in conjunction with the low pH detergent in order to get a clean

vehicle. It is important to understand that magnesium and calcium chloride increase the effective hardness of the water, as the deicers add additional magnesium and calcium ions to the cleaning cycle. It is very likely that you will need to increase the hardness control of your alkaline products.

Add on even more protection

The second step is to offer temporary added protection in the form of an underbody rust inhibitor. Interestingly, the use of underbody rust preventatives in carwashes, which was once a popular extra service choice, now appears to have become a dying extra service market. According to one of my sales managers, "rust inhibitors have been misused, abused and in the eyes of the public and the operators, are of little value." It is partially due to consumer complacency believing that the expanded use of plastics, fiberglass and galvanized steel has greatly eliminated underbody corrosion and with it the need to constantly hit the local carwash after a storm to remove corrosive road salts. Industry changes are also contributing to lower use of underbody rust inhibitors. In many of the new carwash designs, the underbody rust inhibitor application has been replaced by the underbody high pressure water flush available only as part of the more expensive menu packages. Also, new equipment designs are eliminating all "on the floor" equipment to prevent damage to the underbodies of vehicles.

The rust inhibitor provides a level of temporary protection against corrosion. Rust inhibitors are not a coating, but rather a temporary film. Don't oversell the product. In addition, it is important to thoroughly clean the undercarriage of the vehicle prior to applying the rust inhibitor. If the undercarriage is not clean, it is possible to seal the chlorides to the car body.

I believe this two-step approach has the potential to offer a real value to our customers, as well as to increase industry revenue. Corrosion associated with deicers is a real problem. The vehicle wash chemical companies already have much to offer our industry and our customers. With modifications designed around a specific problem, corrosion, we can formulate a successful program to save vehicle owners millions of dollars annually.

Our industry has always enjoyed the new products and programs designed to please the customer and help the operators with revenues like clear coats, triple foams, all surface protectants and on-line tire and wheel treatments. Perhaps the next one could be corrosion prevention and protection through the joint efforts of the equipment suppliers and chemical companies. **PC&D**