

# CHINOOK ENVIRO-TIMES

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Bringing industry news, views and discussions to you on a monthly basis from the Environmental Service Industry.

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## Flotation

Drilling fluids transport and applications can be limited by the road or fields they travel on. However, technology has evolved to allow equipment to compensate for less-than-favorable ground bases. The avoidance of losing traction and getting stuck, as well as damage to ground base (whether it be roads or fields) can be accommodated by selection of the right 'tool' for the job, and/or standard practices.

### Methodology

The footprint of your fluids transport unit can be modified by not only the type of unit and its tires, but also simple practices. The first and easiest method is to limit your transport activities to when ground conditions allow for dry and/or frozen soil or roads. Limiting land spraying operations to night and shortly after dawn will allow for optimal frozen conditions. As well, rainy days should be avoided to limit any sinking of tires into ground, and limit compaction of soils.

Secondly, to almost halve the per-square-inch pressure on ground, partial (half) loads can be used. Remember, however, that this will double the amount of loads that must be transported!

### Equipment

Generally, adding more square-footage at the ground will make equipment 'lighter' in their footprint. An extra axle-set of tires, as is the case with **Tri-axle vac trucks**, will allow for less weight on the ground. However, a common mistake is to fill the higher-capacity tanks on these units to hold even more fluid than a tandem; coupled with the weight of an extra axle and tires to give the overall unit a much heavier footprint



Tri-Axle Vac Trucks can be a blessing or a curse.

**Flotation tires** are also an alternative. These miniature tractor tires allow for added traction because of the large lugs or cleats that can really dig into the ground. However, an inexperienced driver will soon learn the expensive lesson of twisting an axle due to the better 'grab' torque they induce, and with a load of mud on the truck and a powerful engine, "something's got to give". As well, speeds are very limited with these tires; stories abound across the oil patch of how highway speeds make these tires balloon out at the centre, and the front axles tire's lugs end up clipping the back-axle tire's lugs where they meet between axles. At \$2,500 per tire, this also becomes costly. For slower speeds, then, longer-distance transport ends up taking twice the time, and transporting the truck to location from across the province require the time and expense of hotshotting the tires PLUS switching the road / floater tires at the nearest tire shop.



Borrowed from the forest industry, you may often see the rear tires of a vacuum truck with air lines leading to the wheels. **TPC International** markets a computerized device for the cab, that allows air pressure to increase or release from the tires, thereby increasing the footprint of the tires. Advantages they claim include Low ground pressure/compaction, eliminating need for special permitting, no speed restrictions, no wheel....  
(... cont'd)

Illustration courtesy of [www.tirepressurecontrol.com](http://www.tirepressurecontrol.com)

### Directive-50: Update

Many clients have been asking on the progress of the re-vamped Directive-50. The journey is long and arduous, to enable a high quality product that will satisfy both industry and the public. December saw an industry review process in which industry was able to submit comments to the Energy Resources Conservation Board (ERCB—previously EUB). Approximately 10 groups ended up submitting

swapping, reduced road damage, increased traction and mobility, increased tire life, and an improved vehicle ride. You can find out more on their product at [http://www.tirepressurecontrol.com/oilfield\\_b1.php](http://www.tirepressurecontrol.com/oilfield_b1.php). Where you'll really notice this system shine is where you require increased flotation in the field, but have a longer distance to get there, and a driver can manipulate his tires (and therefore available speed) 'on-the-fly'.



One can not forget the "Terra Gator" available from select Vacuum service companies like **Big Eagle Services**. This unit, while it has a decreased tank capacity, has flotation tires on the back AND the front axles; allowing superior flotation and traction all around. Add the fact it has 4 wheel drive, and this unit can go almost anywhere! Keep in mind that the extra traction of those lugs can really do some ground damage though.

If you remember in December's issue, we explored the option of the "Honey Wagon" - a tractor-pulled tank/vac unit that can be used in place of a normal tandem-axle truck. A common practice by farmers is to replace normal tractor tires with three-point Tracks (see picture). This setup GREATLY reduces compaction, and is very beneficial for such farming practices as zero-till operations. The same low-impact affect can be felt with the honey-wagon setup. Remember though, just as with the normal tires, this unit is still quite slow and your operational range can be very limited.



Next issue: Agitation



#### Experiential Anecdote: Zero-Till Farm Practices

How does driving a vacuum truck with highway tires affect zero-till fields? One farmer in the Lloydminster area failed to inform the Environmental Services Rep. that he used zero-till practices, and planned on seeding Canola in the spring. Ruts as little as 1" deep presented a problem for him. Since zero-till seeding doesn't allow for field tillage, an air seeder puts seed (especially Canola) directly into the soil as shallow as 1-2 cm (3/4") deep. In the end, any ruts 1" deep did not allow the seeder to put canola seed INTO the soil, but instead, left seed exposed in the ruts where the seed applicator popped out of the side of the rut. This left strips of un-germinated seed (therefore no productive crop) anywhere ruts were more than 1" deep, as well as leaving a VERY un-satisfied seed grower. Rest assured, inquires about zero-till farming practices are MANDATORY on the consultation process with *Chinook Environmental Services* field representatives.

#### Directive-50 update (cont'd)

...a total of around 400+ comments to be considered upon review of the initial draft! While many items were repetitive between the groups, there is plenty of items to be addressed. Initially thought to be released and applied for Spring 2008, it is anticipated that date will again be pushed back to take care of the heavy list of particulars. Watch for updates in the *Chinook Enviro-Times* as they arrive!



"At your age, Tommy, a boy's body goes through changes that are not always easy to understand."

### Toxicity Assessment

What makes something 'toxic'? Potatoes are, indeed TOXIC. Glycoalkaloid is found in your everyday potato at approximately 0.025 mg/g (cooked). The toxicity threshold for humans is 6 mg/kg. Therefore, a 100kg human would be required to eat 24 kilograms of potatoes to die from 'potatoe poisoning'.

In earlier times, a good way of assessing if something was 'toxic' to an animal was the *Trout Bio-Assay*. This method (which is still sometimes used today) would entail three rainbow trout in a tank of limited water capacity. A product was then added in certain concentration to the tank, and the fish were observed after 24 hrs. to conclude whether all three fish lived or died.

With the advent of microbiology, and the relief of fish-lovers everywhere, a new medium has been employed that is quicker, and less obtrusive. The *Microtoxicity Assessment* is a very common tool that utilizes bacteria instead of rainbow trout. In general terms, the bacteria are exposed to a chemical or substance, and it is then observed what percentage of them survive after a short (15 minute) time frame. This process allows greater flexibility, decreased cost and lesser sample required to make the assessment of whether something is 'toxic' or not. It also gives an objective % value, rather than a Pass/Fail result.

Chinook Environmental Services uses laboratories such as **Agat Labs, Bodycote Testing Group** and **Kaizen Labs** to perform their microtoxicity assessments on a case per case basis.

Microtox® is the only product of its kind designated as anti-terrorism technology and given Safety Act certification by the U.S. Department of Homeland Security.



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