Keep fuel in the tank

By Michael Raine, Saskatoon newsroom

ON-FARM FUEL storage is often taken for granted, say agrologists and engineers.

Bulk fuel storage on many prairie farms is a traditional practice. It stems from the need for large and reliable supplies of fuel at critical times and producers' ability to price their product and manage inventories for financial reasons.

Fuel tanks are slow to wear out and the traditional vessels are simple, single wall, steel units with a filter or two, mounted on steel stands and sporting a rubber hose that is sometimes grounded. Gravity powers the fuel flow. Many are decades old.

Leaks can occur due to corrosion and worn out valves or hoses.

Melissa Orr of Alberta Agriculture said farms should plan to replace obsolete tanks and fuel systems as they become worn out or if they are too small and not high enough to provide gravity-drained fuel to larger, modern farm equipment.

Another consideration is that the older systems are more subject to theft than newer, pump-fed fuel systems. Gravity tanks are also vulnerable to fire, leaks, evaporation, water infiltration and accidental damage.

Orr estimates there are 250 million litres of on-farm fuel storage in Alberta. Manitoba is estimated to have slightly less, while Saskatchewan probably has more. However, volumes are not known, say those provinces' environment departments.

Ground water contamination is one of the major concerns about older fuel systems.

Orr said a single leak of one drop per second from a tank can release about 900 litres in a year. That could mean a loss of $1,080 at a 2008 average price of $1.20 per litre, including provincial tax that might not apply in all farming situations.

Orr warns that producers who fail to show due diligence with their fuel storage may find financial institutions and insurance companies unwilling to deal with them because of potential liability.

Leaks into ground water can affect a single well or farm or even pollute neighbouring farms and communities.

Here are some considerations for producers building new fuel storage facilities:

- Avoid permeable soil near wells or surface water runways.
- It should provide secondary containment of tanks so leaks won't flow onto the ground. Double walled tanks also provide containment without needing to build an impermeable berm.
- Tanks should be approved by the Underwriters Laboratories of Canada.
- Include bumper guards or posts to prevent equipment and vehicles from hitting tanks.
- Use grounding to avoid static electricity discharges between hoses and equipment or vehicles. Include both a minimum three metre ground rod buried in the soil so that it reaches moisture, and a cable with a clamp that attaches to vehicles or tanks being filled. Also have a grounded fuel hose.
- A roof over storage tanks provides shade to reduce tank temperature and evaporation and provides a degree of weather protection. Double wall tanks also provide a thermal barrier that reduces large temperature swings.
- New tanks should be located no closer than one metre from other tanks; three metres from any building; six metres from an ignition source; 30 metres from a treed area or surface water and 50 metres from a water well.
- Tanks should be on concrete foundations or supports, compacted clay or gravel or on short metal stands.
- Use ULC approved meters, pumps and valves and nozzles with automatic shutoffs. Proper ventilation caps can reduce internal pressure caused by heating and cooling.

Producers are advised to have an hazardous products emergency plan.

The Alberta government recommends that a hazardous products emergency plan be posted at the site with contact numbers and a plan to control spills and minimize the risk to people, property and the surrounding environment.

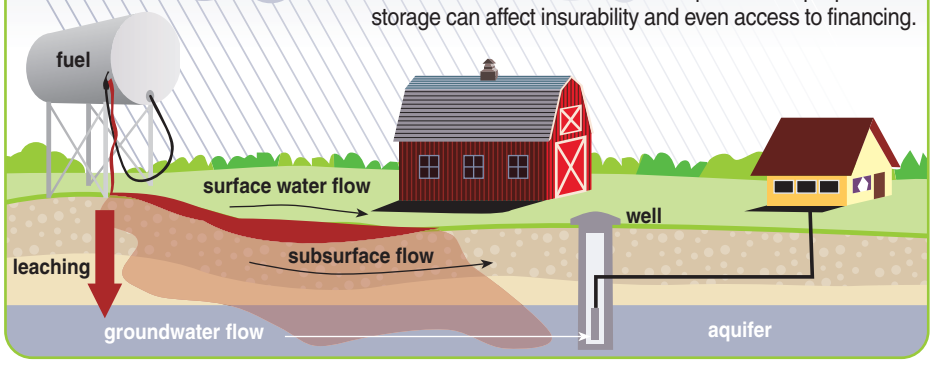
It should include a map that indicates the location of the fuel facility and other features of the farmyard, location of fire extinguishers, the location of potential ignition sources and a power cutoff at the transformer or main farm breaker. Also useful on that map is the location of the nearest telephone.

Above ground storage systems require more monitoring and risk prevention than underground systems, but maintenance and installation costs are lower, said Orr.

The importance of proper fuel storage on the farm

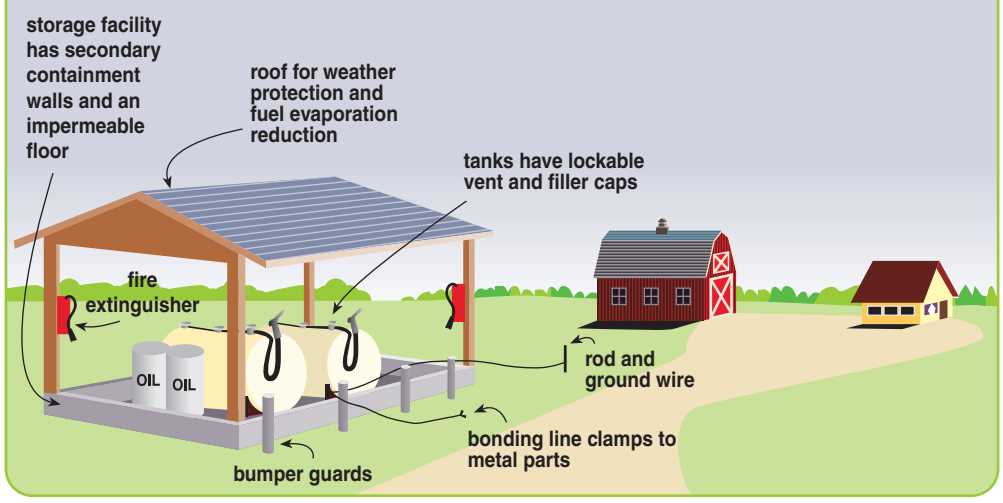
Traditional fuel storage

Surface water can carry fuel into positions where it can enter ground water that supplies home and livestock. Even a small leak of one drop per second, if allowed to continue from April to October, will deposit 450 litres of fuel into the soil. Besides the cost of the lost fuel, this can become a serious environmental problem and it breaches provincial statutes related to release of any substance that might cause environmental harm. Fuel spills and improper fuel storage can affect insurability and even access to financing.



Modern fuel storage

A fuel storage facility can meet farm needs and protect the environment.



Source: Alberta Agriculture and Rural Development, Resource Management Branch, BC Ministry of Agriculture and Lands

WP graphic by Michelle Houlden

Life after death

By Michael Raine, Saskatoon newsroom

Glen Thomson calls his industry the original recycler.

Thomson, who runs Harvest Salvage in Brandon, said the industry finds a new life for agricultural cast-offs.

It is used by farmers and equipment dealers who need an inexpensive source of parts as well as suppliers of obsolete and hard-to-find pieces.

After the salvage companies are done removing useful parts, the leftover steel is loaded, weighed and hauled to steel plants, where it becomes a cost competitive source of raw materials for pipes and parts.

The Saskatchewan Waste Reduction Council says 65 percent of Canadian steel is recycled. Every tonne that is recycled saves 1,000 kilograms of iron ore, 560 kg of coal and 48 kg of limestone.

Joe Henry of Watrous Salvage in Watrous, Sask., said one-third of a farm implement that ends up in a salvage yards is resold to the agriculture business, and the remainder is recycled.

Charlie Smith of Combine World in Elstow, Sask., said the agricultural wrecking industry is no longer seen as the junkyard business.

"The smaller operators and those who don't make use of every pound of material and find new products and services to sell have left this business."

Smith said it is a highly sophisticated sector of agriculture.

"There's no room for junk."