

A GROUNDWATER PROTECTION PLAN FOR HOME HEATING OIL TANKS

Groundwater Protection Plans

What is a groundwater protection plan?

A groundwater protection plan identifies the activities being conducted that can pollute groundwater and states the practices that will be used to prevent the pollution from occurring.

Why is protecting groundwater important?

Groundwater is a source of drinking water for hundreds of thousands of Kentuckians who obtain their water from wells or springs, including private wells and municipal groundwater systems. Groundwater also provides water for our streams, rivers, lakes, ponds and wetlands.

Am I required to have a groundwater protection plan?

Yes, if you own or use a tank that stores 55 gallons or more heating oil (fuel oil). You should develop a groundwater protection plan or adopt this generic groundwater protection plan. Be sure to keep a copy of the certified plan at the site of the heating oil tank.

Why do I need a groundwater protection plan?

Anyone who engages in an activity with the potential to pollute groundwater must develop and implement a groundwater protection plan as required by Kentucky Administrative Regulation 401 KAR 5:037. Generic groundwater protection plans have been developed by the Energy and Environment Cabinet for the following activities:

- owners/operators of residential septic systems;
- owners/operators of domestic water wells;
- owners/operators of monitoring wells;
- water well drillers, and
- poultry facilities on 10 acres or less.

This publication is the generic groundwater protection plan for home heating oil tanks.

Why is a groundwater protection plan for heating oil tanks important?

Leaks and spills from heating oil tanks can pollute groundwater. Even a small leak continuing over time can cause significant groundwater pollution, rendering wells and springs unusable because chemicals from the heating oil are harmful to both humans and animals.

How will this groundwater protection plan protect groundwater?

This groundwater protection plan provides information about tank life expectancy, how to maintain your tank so that leaks and overfills can be prevented, signs that your tank may be leaking, steps to take should your tank be leaking, and how to properly abandon an old unused tank.

Buried Oil Tanks (Underground Storage Tanks)

How long should underground storage tanks last?

The life expectancy of most tanks placed in the ground in the 1960's or 1970's is 10 – 15 years. They are now at risk of leaking and causing environmental damage. Ideally, these tanks should be removed and replaced with new double-walled tanks or above ground storage tanks.

What causes underground storage tanks to fail and leak?

Water is the major cause of tank failure. It corrodes the tank, causing it to rust and leak. Leaks can also be due to damage during installation, improper installation, corrosive soils, or piping defects. Even water in fuel from an improperly maintained bulk storage facility can cause damage. Buried tanks should be tested for water in the tank bottom and any water pumped out.

Who can test buried tanks to see if they are leaking?

Environmental service companies and some oil companies can test buried tanks for leaks. Contact your fuel supplier or check the yellow pages of the phone book for companies that may test residential tanks.

Should the tank be found to be leaking, state law requires that the Kentucky Department for Environmental Protection be notified immediately at (502) 564-2380 or (800) 928-2380. Federal regulations consider one or more of the following to be evidence of a leak:

- failure of a precision test on a tank.
- encountering petroleum contaminated soil and/or groundwater.

- significant staining of surface soils indicating spillage of petroleum.

Can an underground storage tank be abandoned?

An underground heating oil tank that is no longer in use may be abandoned in place.

Properly abandoning a tank in place involves:

- pumping out the remaining fuel,
- confirming that there has been no leakage,
- cleaning the tank,
- filling the tank with a clean, inert material such as sand or gravel,
- removing the intake or fill lines and valves and sealing any ports to prevent accidents, including the possibility of delivery people or subsequent owners trying to fill the abandoned tank.

If you decide to abandon the tank in place, be sure to document the steps that have been taken to properly abandon the tank.

Kentucky regulations do not require that tanks holding less than 1100 gallons be removed by a state certified tank remover. However, using a certified remover would be very wise because improper removal could result in an explosion or the contamination of soil and water. A list of state certified tank removers is available from the State Fire Marshall's office (502) 564-3626.

What can be done to prevent spills and leaks?

- Check that piping is tight and leak-free. Piping should be equipped with an alarm to signal the delivery person when the tank is full. Over the years, minor dripping can result in considerable soil contamination. If you notice your fuel supplier has spilled fuel and not cleaned it up, contact them to have the spill cleaned up immediately.
- Check that the fill gauge is installed and tight. Loose gauges can cause spills during tank fill operations.
- Check that the vent line is properly capped. Use a screened weather-resistant cap to prevent water entry and clogging by mud or insects.
- Make sure the tank is vented properly to the outside. During fill operations, fuel is delivered at an average rate of 60 gallons per minute. The tank must be properly vented to avoid excessive stress on tank seams and piping.
- Keep the tank relatively full in spring and fall. The extra weight helps prevent tank shifting and related piping leaks, and will reduce water in the tank from condensation.

- Have the tank tested for leaks. This is very important if your tank is more than 10 years old.
- Protect exposed fill ports. If the tank's fill port is located in the lawn, place a barricade around it to keep the port from being damaged by the lawn mower.
- For basement tanks, seal any cracks or holes in the basement floor to prevent any leak or accidental overflow from seeping through to the underlying soil.

For assistance with the above practices, contact a home inspector or your fuel supplier.

Aboveground Oil Tanks

What causes aboveground tanks to fail?

Water is the major factor in failure of outside aboveground tanks. The water may enter the oil tank from condensation as temperatures change, especially when the tank is not kept filled. If the tank is damaged, water can also seep into it. If the tank rests on the ground surface, it is exposed to the corrosiveness of the soil and will eventually rust through.

What can be done to prevent spills and leaks?

- Avoid overfilling the tank. Have any spilled fuel cleaned up immediately.
- Repair poorly fitting valves or lines. Have your fuel supplier tighten the fittings.
- Provide strong support for the tank. A standard 275 gallon tank with an average capacity of 260 gallons weighs approximately 2,000 pounds. Tank support legs must be sound and on firm footing to prevent tipping and spilling. The tank is likely to tip over if placed on wood or dirt.
- Prevent water in the fuel. The tank should be kept relatively full in spring and fall to reduce water in the tank from condensation. Make sure all fittings, valves, and vent caps are tight to prevent water from entering the tank.
- Avoid damaging the tank. Place the oil tank away from areas frequented by vehicles, including riding lawn mowers. If this is not possible, install metal or wooden posts to act as a barricade to prevent vehicles from colliding with the tank.

- Install secondary containment. Oil tanks 55 gallons or larger should have secondary containment. The containment should consist of a diked pad constructed of an impermeable material, such as concrete, metal, or compacted clay with a liner compatible with fuel oil. This will prevent leaks and spills from coming in contact with the soil and migrating to groundwater and allow easy recovery if a spill occurs. Exposed gravel, dirt, or clay surfaces are not acceptable secondary containment as spilled fuel oil will seep through them.

What to watch for

- Areas of dirty brown or black-stained soil that smells like petroleum.
- Blackish sheen on standing water. When stirred, the fuel oil will reform a consistent sheen on top of the water.
- Areas of stressed, dead or absent vegetation, especially seen with darkened soil.
- Strong vapors in the house or in the basement.
- Unusual taste, odor, or sheen in well water. The water should be sampled for laboratory analysis to determine if contamination is indeed present.
- Unusually high fuel consumption may indicate a leak or other problem needing attention.
- Any stains on the concrete floor around the oil tank, the fuel line, and the burner.

These are all signs that your oil tank may be leaking. Seek professional assistance immediately.

Location and Maintenance of Your Heating Oil Tank

On a separate piece of paper sketch the location of the tank. Include the exact distance of the tank from at least two (2) fixed reference points (corner of house, garage, large trees, property line markers). Place the sketch inside this groundwater protection plan.

Keep all records of maintenance conducted on the tank with this groundwater protection plan.

Certification

Each heating oil (fuel oil) tank owner or user is required to implement a groundwater protection plan. You may fulfill this requirement by using this document and signing the certification statement below. You must retain this document at the location served by the heating oil tank.

I certify that I have read and will implement this groundwater protection plan.

Signature of tank owner/user

Date