



October 1999:

Tank Testing: How and Why

By Steven Hoffman, Sterling Environmental

Selling a house that has UST today inevitably involves testing the tank, but how and why. The second question is easily answered, to insure that the tank did not leak and that the buyer and lender are not buying a liability. How to test the tank is a more complicated question. There are several NJDEP approved options available, however, each of has its drawbacks.

Hydrostatic testing involves filling the tank to capacity with fuel. The tank is then overfilled to create hydrostatic pressure. Instruments are utilized to monitor the level in the tank and temperature variations. Readings are then taken to determine a rate of loss. On a commercial scale, this type of test is viable, however, on a residential scale there are some problems. This type of test is usually costly. Additionally, residential tanks, which are not maintained with any regularity, often have loose fittings on top of the tank. While the tank may be sound a leak may be found at the top of the tank which does not hold any product in the first place. A costly investigation would then ensue, involving excavation of the tank to determine where the leak came from. Worse, the hydrostatic pressure could force oil out of these fittings into the soil creating the very problem that is trying to be avoided.

Vacuum testing utilizes a probe placed in the tank. Vacuum is then placed on the tank. The probe is acoustic in nature and will detect any air bubbles entering through holes in the tank due to the vacuum. The probe also senses water and will detect an ingress of water in to the tank. Finally, if a loss of vacuum is detected the tank will be failed. While many areas are covered by this test some important areas are not. False leaking results are common with this type of test, again due to loose fittings on top of the tank, and again resulting in a costly investigation. When a tank corrodes, pitting of the steel results. Additionally, the entire surface of the tank will rust. The rust from the surface of the tank will often fill in the corrosion holes that are the serious problem. While these "rust plugs" will allow oil to seep out at a very slow rate, when vacuum is introduced, the rust plugs will not allow a detectable loss in vacuum or ingress of water.

Gas testing is a method that introduces an inert gas in to the tank. A hollow, slotted PVC pipe is then placed next to the tank. After approximately one week an air sample is taken from the PVC pipe and analyzed for the inert gas and TPHC's. This method takes at least a week for results and has proven to be unreliable for several reasons. Oil in the tank inhibits the migration of the gas through holes in the bottom of the tank. Soils with high clay content are less permeable, again inhibiting the migration of the gas. Finally, testing for TPHC's in a gaseous state is inaccurate.

Soil borings around the UST are probably the most simple and accurate method of testing a tank. Four soil borings are performed, one on each side, and one on each end of the tank. The borings are taken within two feet of the sides of the tank and within 6 inches of the bottom of the tank. A soil sample is then extracted from each boring and tested in the field. A sample is then submitted to a laboratory for analytical testing. Verbal results are normally available the day of testing, and a complete report is available within three days. This method does not actually test the tank, instead it gets to the heart of the matter, the condition of the soil around the tank. Leakage of oil in to the soil surrounding the tank is what causes environmental liabilities and this is the only method that actually tests the soils. This method will also reveal any historic spills (overfills or problems repaired in the past) that may have occurred. Finally, this is the only method listed by the NJDEP for testing tanks under New Jersey state law. While other methods are accepted, they are reserved for circumstances where the tank is not accessible for borings.

Whatever method is used for your situation, the company and crew performing the test is probably the most important factor. No matter how good a test method is, if the person performing the test is not competent, it is not very likely that accurate results will be obtained. Keeping the test simple and direct will minimize inaccurate results.

NEWSLETTER NOTES

Sterling Environmental Services is licensed for all of the above testing methods. Our tank testers have a minimum of 5 years of experience, and we stand behind our work. Our warranty covers tank tests so your don't have to worry.



June 1999:

Who's Paying For Your Clean Up?

By Steven Hoffman, Sterling Environmental

If you were to ask most people who are dealing with a spill clean up from a UST this question, you are likely to receive a dirty look and an answer of "I am, of course". This is because most people do not realize that there are several avenues that can be pursued to receive funds for, or recover funds spent on, a remediation.

The first cost recovery mechanism is the Innocent Party Grant, administered by the NDJEP. "Grant" is the key word here because a grant does not have to be repaid like a loan. This grant was set up for parties who bought a property without knowledge of the environmental liability that existed. The grant covers 50% of the costs for investigation and remediation. However it must be proven that the discharge occurred prior to 1/31/83. This is often a difficult and costly process, especially in residential situations. So if the cost of the remediation is not excessive it may not be worth pursuing.

The NJDEP also administers the Hazardous Discharge Site Remediation Fund Loans program. This fund is a loan and does have to be paid back. This fund is ideal for a large clean up that the party can not pay for and a real estate transaction is involved. Responsible parties are often caught in a catch 22; they want to sell their property and could pay for the remediation from the proceeds of the sale, but they can not sell the contaminated property. This loan allows them to complete the clean up, sell the property and then pay back the loan.

Another fund administered by the NJDEP is the Petroleum Underground Storage Tank Remediation, Upgrade and Closure Fund. This fund includes both grants and loans. The responsible party must prove financial hardship in order to be eligible for this fund.

The final fund administered by the NJDEP is the Damage Claims Under the Spill Fund. The responsible party must demonstrate that they have made efforts to recover funds from other sources for eligibility. Additionally, this fund has been used mainly to assist State and Federal agencies in paying for clean ups.

Insurance is another cost recovery mechanism, and there are several options to pursue. Prior to 1987, policies covered leaking USTs. You must prove that leakage occurred prior to 1987, you must have your policy, make a prompt notification of the loss, and it will usually take legal assistance to pursue this option. Your second insurance option is under a claim of third party liability. Third party liability entails damage to neighboring property as well as ground water contamination. Legally, since the ground water belongs to everyone, once ground water is impacted by a spill it becomes a third party liability and is covered even under current insurance policies. Investigation and remediation of ground water contamination is often the most costly part of a clean up so insurance can provide considerable relief. There have also been instances when insurance companies have paid for the entire clean up. Lastly, most oil distributors offer tank insurance for a small premium. These policies do have restrictions so make sure you know them prior to making any decisions about your heating system.

Finally, costs can be recovery from previous owners. Again, you must prove when the release occurred, and it will often take legal assistance to pursue. Keep this in mind when reviewing any new real estate contracts or leases.

Almost none of the cost recovery mechanisms are simple and most will take considerable effort to pursue. However, even an average residential clean up will cost \$4,500. So make that claim and a few phone calls and you still may be able to buy that big screen TV.

Contact Sterling Environmental for additional information on cost recovery mechanisms or for a free estimate today.

Sterling Environmental provides certified tank testing, removals and installations at a fraction of the cost of cleaning up an oil spill. Contact Sterling for a free estimate or to discuss options and solutions.



March 1999:

Crying Over Spilt Oil?

By Steven Hoffman, Sterling Environmental

We all know that Underground Storage Tanks leak. Hopefully, we all agree that oil, leaking in to the environment is harmful. But where do these leaks come from, and more importantly how can we prevent them in the future?

The causes of leaks and spills from underground oil tanks are outlined in the chart below. Improper installations and loose fittings are responsible for 30% of leaks and spills. Improved installation procedures are helping to reduce this figure, however, if you are having a new tank installed, make sure the contractor is licensed by the NJDEP, and be sure that all manufacturers installation and testing procedures are followed. Remember, even though some one else installed your tank, you are responsible for cleaning up any leakage from that tank.

Spills and overfills are another area that state and local agencies have addressed. Requirements for overfill alarm devices on all tanks and 5 gallon spill buckets on regulated tanks are aiding in the prevention of spills and overfills.

Finally, corrosion of USTs causes over half of the leaks and spills from USTs (an example of a corroded UST is shown at right). This is a horrendous figure. As intelligent people we have installed these steel USTs, that will eventually corrode and fail, filled them with hazardous substances harmful to us and our environment, and forgotten about them. Forty years ago when we oiled our dirt roads to prevent dust and did not know the affects of oil on our environment we may have had an excuse. But not today. Oil tank owners must be responsible for the proper use of their tanks. New USTs are corrosion protected and installed by rigorous procedures to prevent oil leakage. Proper maintenance and testing can prevent leakage due to corrosion. Knowing what we know, leaving a UST for 30, 40, 50 years without maintenance, testing, or replacement is just irresponsible. Oil and USTs are not the culprits. Oil gives us a safe, clean, and efficient method of energy production. USTs give us an effective, aesthetically pleasing method of storing the oil. USTs if properly installed and maintained will last 20 to 30 years and longer. You will not get that many years out of most other items in your home.



January 1999:

Oil: Friend Or Foe?

By Steven Hoffman, Sterling Environmental

Thousands of dollars can be spent cleaning up an oil spill. Underground oil tanks often throw a monkey wrench the size of Texas in to real estate transactions, delaying and even ruining deals. So why are we bothering. The oil comes from the ground anyway, doesn't it? A little leakage can't be that harmful, can it?

The simple answer to both of these questions is yes. Oil does come from the ground, however, there are several factors that make both crude oil, and the oil we use every day, devastating to the environment. Crude oil comes from hundreds and even thousands of yards below the ground, well below the depth of our ground water. Therefore, the crude oil never comes in to contact with our ground water, unless we put it there. Additionally, the oil we use is refined and chemicals are added to it making it usable as gasoline or fuel oil. While crude oil itself is a carcinogen (cancer causing agent), benzenes, toluene, and xylenes are also carcinogens and poisonous. What about the areas where crude oil is not hundreds of yards below the ground, where it actually bubbles up to the surface? In these areas, the oil is naturally occurring and has developed and been introduced over hundreds and thousands of years. The environment in these areas has had time to adjust to the oil. Plants and animals in these areas have developed so that they are not affected.

What exactly are the detrimental affects of oil and oil by products? A few gallons of oil, in the right conditions, can contaminate a million gallons of water making it unsuitable to drink. While most of us are not directly affected by large oil spills due to where we live, chronic, low level exposure can be just as harmful. Nausea, poisoning, and even death can be the end result in plants and animals. Kidney and liver damage can result as well as weakening of immune systems making it impossible for many animals to survive when exposed to other natural diseases and conditions. Oil has also been attributed to low breeding success and abnormalities. Oil also destroys plant life by interfering with respiration.

The effects of oil contamination can also be economically damaging, especially in coastal areas. When vegetation in these areas is harmed it sets off a chain reaction. The smaller wildlife that feed on these plants can not survive, making it impossible for larger fish and animals to survive. Oils can also bioaccumulate in many animals making them unsuitable to eat. Industries that depend on fishing, crabbing, and claming can be particularly hard hit.

Okay, now that everyone is ready to sell their cars and heat their homes with wood, why do we use oil. Oil is responsible for more than half of the energy we use in the U.S. Oil is also a clean, efficient method of heating and energy production. We simply can't get along without it. So what do we do? Responsible use of oil and oil by products is essential. Used oil needs to be disposed of properly and recycled. Oil transportation, distribution, and handling practices need to be improved. Double hulled oil tankers, overfill protection devices, and improved clean up methods are helping in this area. Underground oil tanks are also a major area of concern.

NEXT ISSUE: THE CAUSES OF LEAKS AND SPILLS FROM USTs

Sterling Environmental is dedicated to finding cost effective solutions for it's clients environmental problems. We realize that while these problems are too serious to be ignored, our clients financial needs must be considered. Call to discuss any environmental needs and we will provide a cost effective means of maintaining regulatory compliance and keeping our environment safe.



November 1998:

The \$50,000 Clean Up: Myth or Reality?

By Steven Hoffman, Sterling Environmental

If you are familiar with Underground Storage Tank removals and clean ups you have heard the horror stories. Years and years of clean up costing tens of thousands of dollars. For the most part these types of clean ups simply do not happen in the north jersey area in residential situations.

The composition of soils in northern New Jersey contains high clay concentrations. If a UST is leaking the clay does not allow the oil to seep very far in to the surrounding soils. Ground water contamination is of great concern because of the clean up costs involved. Again the clay in the soils helps by preventing the spread of contamination to the ground water. Couple that with the fact that ground water elevations are well below the 6-8 foot burial depths of tanks in most locations, and ground water clean ups are not very common. These factors make clean ups a fairly simple matter in most instances.

Typically for residential clean ups, 5-10 tons of contaminated soil will be excavated from the area surrounding the UST. This soil will be placed on to a dump truck for transportation and disposal. After sufficient contaminated soil has been removed from the excavation

4-6 post excavation soil samples will be taken to confirm removal of all contamination above NJDEP limits. These samples will be submitted to an NJDEP licensed laboratory for Total Petroleum Hydrocarbon (TPHC) analysis. The excavation will then be filled with certified clean material. Finally, a report will be compiled and submitted to the NJDEP for their review and final approval. With the exception of the report, all work is normally completed in one day, allowing most real estate transactions to proceed. Often a small escrow account put aside to insure the buyer of NJDEP approval.

Clean Up Costs

Removal of Contamination.....	\$500
Sampling & Analysis.....	400
Backfilling.....	250
Soil Disposal.....	1,975
State Reporting.....	50
Total:.....	\$4,075

Contact NJDEP for additional information

Now we get down to the most important issue: Money. The cost for an average residential clean up is in the four to five thousand dollar range (a breakdown of the costs involved in an average clean up are included below). Clean ups can and do get more expensive if leakage is extensive or if ground water is impacted.

So the next time you are involved in a clean up, keep these figures in mind and if the clean up exceeds five thousand dollars, there should be a good reason.

Sterling Environmental maintains the proper equipment to insure that your remediation will go smoothly and quickly. We maintain excellent working relationships with our laboratories to guarantee fast turn around time and accurate results. One of our many soil disposal facilities can accommodate the largest or smallest project, allowing quick approvals and cost savings. We have also worked with dozens of NJDEP case managers from the Northern, Central, and Southern field offices, making all of that red tape simply disappear.

Sterling Adds A Heavy Hitter to the Lineup

We are proud to announce the arrival of this 1998 Tri-Axle Mack dump truck as Sterling's newest acquisition. This truck will haul over 27 tons of material and not even break a sweat with its 460 horsepower engine. Heavier loads mean fewer trips, which equals lower costs to our customers. Look for it on the road today (and get out of the way, we're coming through!)



October 1998:

Is You Tank Contractor Licensed?

By Steven Hoffman, Sterling Environmental

N.J.S.A. 58:10A-24.1-8. This is the New Jersey Statute for certifying companies and individuals to perform various services on Underground Storage Tanks. There are five separate categories of services that a company or an individual can be certified: Installation, Corrosion Specialist, Closure, Tank Testing, and Subsurface Evaluation. In order to perform any of these listed services on a regulated UST both the company and the individual performing the work must be certified. Certification for an individual in all of these categories requires 2 years of experience and training, a Bachelor's degree, and the satisfactory completion a proficiency examination. Certification for companies requires proper insurance and that an officer of the company is certified. The penalty for performing work on a regulated tank without proper certifications? \$50,000 per offense. As you can see the State is serious about making sure that only qualified individuals and companies perform UST work, and with good reason. There are large potential liabilities when dealing with USTs.

Where Did I Go Wrong?

You may be asking yourself this very question if you choose the wrong contractor. Category by category you could expose yourself to some serious problems if your UST system is not handled properly. With tank installations, a tank that has been improperly installed, can leak prematurely causing a costly environmental clean up. Upon removal of a leaking UST a corrosion specialist can evaluate the causes and nature of the leakage which may assist you in an insurance claim. Improper closure of a UST can cause property transaction problems. Additionally, an accidental release of oil during the removal of a UST can cost thousands of dollars to clean up, and if your company does not have the proper experience or insurance you may foot the bill. Real estate transactions often rely on tank testing results. Improper testing of a tank can cause major problems for both the buyer and the seller. Subsurface evaluation is not usually considered by tank owners and while it is generally the least understood area involving USTs, it is probably the most important. Once a leaking tank has been removed a difficult and often costly remediation process must ensue to clean up a site. How the remediation is handled can be the difference between spending a few thousand dollars and tens of thousands of dollars. A subsurface evaluator will determine how much contaminated soil needs to be removed from an excavation. Due to the fact that there are acceptable levels of contamination that can remain in the ground, proper evaluation can save thousands. A subsurface evaluator will also be responsible for extracting the soil samples that will prove that the site is properly remediated. The NJDEP will not approve a clean up without the correct number of samples taken from the required locations. More intricate clean ups will rely even more heavily on a subsurface evaluator to make the correct decisions about ground water contamination and alternative clean up methods.

Does Your Contractor Need to Be Licensed

Certification requirements apply to regulated USTs in the State of New Jersey. Residential USTs and USTs that are less than 2,000 gallons in capacity are not regulated by the NJDEP. Therefore, if your tank is unregulated, Joe Blow can install, remove, or test your tank if you so choose. However, with the thousands of dollars of potential liabilities that you could expose yourself to, do you really want to have an unlicensed company doing your job. After all, would you go to an unlicensed lawyer, pay money to an unlicensed plumber, or put your life in the hands of an unlicensed doctor? Well, it is your decision.

Newsletter Notes

Sterling Environmental Services, UST license number USO1108, is licensed by the NJDEP for all of the services listed. Our licensed individuals have a minimum of five years of UST experience. This newsletter is published by Sterling Environmental in an effort to allow consumers to make educated decisions about their USTs.