Iowa
Fields of Opportunities

STATE OF IOWA

CHESTER J. CULVER, GOVERNOR
PATTY JUDGE, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
RICHARD A. LEOPOLD, DIRECTOR

Memo

Date: October 15, 2007
From: Tom Collins/Paul Nelson
Subject: Inspection Database

Most of you have figured out how to navigate through the inspection database by now. I have spoken with many of you about the problems you've had or are having, which have been passed on to Siju, our contractor. Siju has recently left Barker Lemar for a new job, but he will complete the operational part of the contract for us. Barker Lemar will also honor its six month software maintenance contract with us.

If you are not yet entering your inspections on the inspection database, you should be. There is nothing that should prevent you from entering information and uploading pictures. We can still only load one picture at a time, but we'll try to get that corrected in the future. If things work out as we're told, in the next two weeks most of the major changes will be completed, including a new inspection report page which will make for a more complete inspection report form that can be printed or e-mailed to owner/operators.

The compliance inspections have given us a lot more information than we can manage right now, but we're working on it. SQL is a much different system to query than Access, which is what we were using. Paul's figuring out how to query for information. We've hired Charity Miller to enter all the inspections that were done by the compliance inspectors on Excel or Word (pre-database) and she has also entered probably a third or more of the PMMIC inspections. She has also helped us identify problems with the database as she uses it everyday. Charity will be with us through October at least and perhaps longer depending on our need.

We expect PMMIC inspections to be uploaded to our database within the next week and should not have to rely on printing off inspections from disks that PMMIC sends us and entering them manually. The problem has been getting the two databases to communicate and meeting database requirements. We will have to see what the electronic product looks like.

What This Year's Inspections Are Finding
Not surprisingly, we're seeing a major problem with liquid/debris in spill buckets. To allow product or liquid to sit in a spill bucket is to compromise the capacity of the bucket to contain a spill and also leads to rapid deterioration of the material. There have also been several reports of damaged, not sealed, cracked and corroded spill basins. Spill buckets have a short life span and play a vital role in protecting groundwater. Continue to observe these carefully.

There have also been numerous violations of liquid/debris in sumps. As long as the liquid isn't product, cleaning out the sumps is all that's needed. If there is product in the sump, find out where it's coming from and require the owner remove it from the sump as soon as possible. If there is product leaking into an uncontained sump or sump that is not intact, that is a release. Tell the owner to report the release to the DNR. The owner must also report a leak even when it is contained.

We have had several reports of flex connectors in contact with backfill and a couple major releases due to this problem. Flex connectors must be isolated or cathodically protected from the backfill. A pin size corrosion hole in a flex connector is all it takes to eat up an owner/operator's insurance deductible. We have also seen flex connectors kinked, twisted and bent like a pretzel, which can and has led to leaks and releases.

These are severe bends in a flex connector-- beyond what is recommended by the manufacturer. A rupture and leak will eventually occur.

Submersible turbine sumps and dispensers are two areas then where you have reported a lot of problems/violations. Sumps (contained and uncontained) have revealed many more problems. Please inspect sumps carefully for the following:

1) Flex connectors, piping and sub pumps in contact with backfill,
2) Leaking line leak detectors (copper vent tube);
3) Test boots torn, loose or closed;
4) Sump sensors that are improperly placed, not programmed or inoperable;
5) Penetration seals loose, damaged or in poor condition.

Inspecting Containment Sumps
When inspecting secondary containment sumps, i.e., STP sumps, transition or piping sumps and dispenser pans, obviously we're first looking for liquid in the bottom of the sump. No amount of petroleum should be allowed to sit in the sump and must be immediately cleaned out, properly disposed and the leak investigated. Most plastic materials from which sumps are made are not designed for long term contact with petroleum. Water and debris must also be cleaned out of the sump. As mentioned above, water compromises the capacity of secondary containment and corrodes equipment.

Make sure the sump walls are intact. Any cracks or holes must be repaired immediately or a release may go undetected. Make sure test boots are positioned correctly to allow product to enter the sump should a leak occur. All seals penetrating the sump (electrical conduit and piping) must be tight and in good condition. Loose or cracked seals can allow product to be released to the backfill.

If there is petroleum in the sump, where did it come from and how did it get there? Did it drip from a meter, the piping, the shear valve, check valve, or solenoid valve in the dispenser? Did it come through the secondary wall of the piping? Is it from the flex connector, the automatic line leak detector, the STP? Observe the equipment while someone activates the pump. Are there drips or leaks or dampness from the equipment?

Dispensers
Next to liquid/debris in spill buckets, the second biggest problem area is dispensers. Problems have been reported from the following (starting from below the dispenser and working up and out):

1) Flex connectors (leaking, buried and unprotected, twisted, kinked or severely bent),
2) Pipe leaks
3) Penetration seals in the dispenser pan that are loose or damaged
4) Leaking check valves
5) Shear valves that are unsecured, leaking, improperly installed or disabled,
6) Leaking supply lines, solenoid valves, flow meters and filters,
7) Deteriorated hoses and leaking nozzles.

Pay careful attention to each of these above items as you conduct your inspection. Unsecured shear valves are not a violation (Fire Marshal's domain), but if you see them tell the owner they must be secured.

Ball Floats on Suction Systems
You're still finding suction systems out there with ball float overfill prevention devices. These devices are not allowed on suction UST systems, emergency generator or heating oil tanks, pumped deliveries or remote fills. The danger exists of overfilling and pressurizing a tank. We've had a few situations in Iowa where an over pressurized tank has resulted in a cracked fiberglass tank or product spraying out the dispenser and vent pipe.

Unfortunately, some tanks don't provide removal of the ball float without breaking concrete. We've allowed owner/operators to install an alarm or auto shutoff, which then must engage well before the ball float (90% capacity). There may be special circumstances involved (tank wagon only filling a small tank), etc., so contact me before requiring expensive improvements.

Remember: if you have questions about something, don't guess or don't require something you're not sure about. Don't hesitate to call Paul or me.

ATG Systems

For as prevalent as they are, we're finding fewer problems reported with ATG systems. Among the most numerous is the ATG system in alarm or not operating properly. When this occurs, try to determine the reason for the alarm or what is involved. Is it a failed test, overfill, liquid in a sump, ELLD, product level, product loss, high water? The owner/operator must verify there is not a leak if it is undetermined from the ATG system. It may be necessary to require the owner to contact qualified service personnel to verify the proper operation of the ATG system and document there is no leak by running a tank or line test with the ATG system. If there is no record of a recent test, require that they run a test as soon as possible and submit it to you.

Make sure you check the probe cap on the tank riser to ensure it has a tight seal and fit to the tank. Should an overfill occur, it becomes an access for product to be released, especially with a ball float device. Vapors can also escape from a loose seal.

Take Photos

You are reminded to take photos of each violation. Some of you are not photographing equipment where violations are found. Facility photos are also important, but make sure you take photos of violations as they become important evidence to confirm a violation as well as to assist in the repair. If you're having problems uploading photos, contact Teresa Barrie (515.242.5086), Paul Nelson (515.281.8779) or me (515.281.8879). Please make sure your photos are sized properly (480 x 640). You may be able to adjust your camera to this size photo, if not, you will have to use the download provided for resizing photos (see attachment). If you still have photos that haven't been uploaded, please do it as soon as possible. Don't forget to take facility photos as well.

<u>If you have sites where the violations haven't been resolved within the 60 day period, send them to me and I will refer them to the field offices.</u>

Safety and Compliance Benefit the Owner/operator

I spoke to a compliance officer of a major U.S petroleum marketer a couple weeks ago, who said, in effect, whatever a marketing facility or corporation can do to strengthen its compliance and safety practices are essential to staying in business and succeeding. This is why your job of inspecting UST facilities is so important. You're doing the owner/operator and the public a great service by thoroughly checking the system for safe operation and compliance. That's why we have inspections--to prevent releases and accidents from occurring and to protect groundwater and soil.

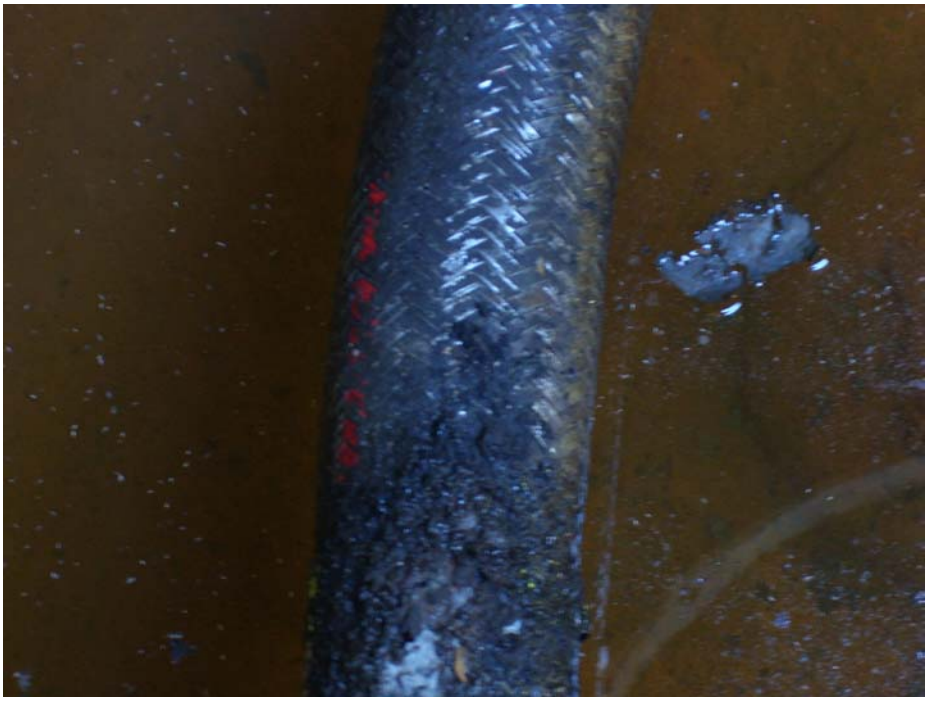
One of our compliance inspectors discovered this uncontained sump full of diesel fuel. After the pressurized system was activated, bubbles came up from the backfill. An unprotected flex connector was corroded and the site will undergo an expensive cleanup. The inspector told the operator to take the tank out of service and to report it to the DNR.

Disabling Shutoff Valves

If you ever witness a product measuring stick in a fill port, require the owner to have qualified service personnel (such as yourself) determine whether the drop tube or shut off valve has been compromised. It's a serious violation. Show the owner/operator what's going on. If it's the transporter fault, they are opening themselves up to a lot of liability. Get the name of the transport company and let me know about it.

Tank Access

We would find out very little about a site if all we looked at were records. That's why all inspectors must pull every cover, lid, access plate and manway to find out what's going on. While the lids are off, don't forget to inspect probe caps and interstitial monitoring access caps. They must be tight and sealed. If not, vapors and product can escape; especially with a ball float vent valve device used for overfill prevention.



Deteriorated and leaking flex connector sitting in product and water. Flex connectors must be isolated from water and backfill (or protected).

This photo shows product released up to the penetration seal of an STP sump (electrical conduit). If these seals are not tight, a release can occur, or product and vapors can travel through the pathway. The problem here was in the primary wall of the piping. The sump did its job and the test boots were open to allow product to flow into the sump. Although this leak should have been detected a lot earlier.

PMMIC Inspections
Before contracting with an owner/operator to conduct a compliance inspection, make sure they haven't already had one completed. As long as the UST owner/operator has current PMMIC insurance and signed a waiver allowing PMMIC to provide us with the inspection, it is not necessary for the owner/operator to contract for another compliance inspection. Both DNR and PMMIC have informed owner/operators about this, but there is still some confusion.

Report Releases
If you come across situations depicted in the photos above, tell the operator to report it to the DNR. In the photo of the contained sump, a leak occurred from the primary wall of the piping and the leak was contained, it didn't reach the soil or groundwater. In the photo of the uncontained sump, a release occurred, not a leak, because it wasn't contained and reached (saturated) the backfill.

Letter to Owner/operators
Within a couple weeks we will send a letter to non-PMMIC owner/operators who have not yet had an inspection informing them they must have an inspection done by the end of the year and preferably before the snow and ice starts. We will inform them to schedule the inspection with you as soon as possible. We will include a list of temporarily certified inspectors.

Compliance Inspector Permanent Certification
Permanent certification for third party or compliance inspectors will take place sometime in January or February. We're currently working on the RFP for the contract. At this date, it looks like a two-day inspector training session including a comprehensive test on the second day. We're also planning an eight hour renewal course for installers, installation inspectors, testers and liners on the third day, so you will probably want to stay around for that as well. We will keep you informed as matters progress. Keep up the good work.