



Missouri Department of
Natural Resources

Tank Closures

A General Guide to a Closure Report



MRBCA Forms and Notifications

- Submittal of forms CN-1 and CN-2 30 days prior to UST Closure
- Provide notification to DNR Tanks 3 days prior to the beginning of closure activities (Phone 573-751-6822)



MRBCA Forms and Notifications *Con't*

- Call the spill hotline (573-634-2436) once contamination is confirmed (staining, odor, etc.)
- Forms CR-1, CR-2, and CR-3 as part of the closure report. CR-1 includes the signature of the UST owner/operator.



Closure Report

Submittal within 45 days of the
completion of closure activities



Closure Report Inclusions

(In addition to CR- Forms)

- Narrative
- Site Map
- Color Photographs
- Laboratory Data
- Disposal/Cleaning Documentation
- Tanks and Tank Cleaning
- Soil and Water Disposal
- Other possible inclusions



Narrative

- Timeline of site activities
- Clearly state site cleanup target levels
- Reusable product recovered?
- Number of tanks removed and their observed condition
- Number of tanks left in place
- Planned future use of site



Narrative *Con't*

- Are new tanks to be installed onsite?
- Amount of backfill and native soil removed and its fate
- Concrete pad in pit? Its condition?
- Groundwater in pit? Removed? Recharge within 12 hours?
- Bedrock present?



Site Maps

- Drawn to scale
- Current onsite buildings
- All adjacent property use
- Location of tanks, excavation boundaries, product lines, dispenser islands
- Depth of excavation
- Underground utilities
- Downgradient direction and degree of slope
- North arrow
- Locations of all obtained soil samples



Color Photos

- Pictures before excavation
- Ends and sides of all tanks
- Cleaned interior of tanks
- Tank pit floor and sidewalls
- Product line and dispenser trenches
- Tank pad if present



Color Photos *Con't*

- Bedrock if exposed
- Sealed USTs/lines that are closed in place
- Pictures after completion of closure
- Description of photos



Laboratory Data

- Sample results from appropriately obtained samples (Section 4.4.2)
- Sample results for the appropriate COC's (Table 5-1)
- If TPH-DRO or -ORO detected, 25% (or min. of two, whichever is greater) of samples w/ highest concentrations must be analyzed for PAHs (Tech. Bulletin 2160).



Laboratory Data *Con't*

- Sufficient sample results from all soil returned to the pit to establish that it was below clean up target levels for the site
- Sufficient sample results for disposed soil
- Background sample results for waste oil sites and pre-1980 gasoline tanks
- QA/QC documentation



Laboratory Data *Con't*

- A complete chain of custody with all signatures, as well as the dates and times the samples were obtained and subsequently relinquished to the laboratory, and the temperature of the samples as they were received by the laboratory
- Laboratory reporting limits must meet the Required Reporting Limits as outlined in Table 5-3 of the MRBCA guidance document



Tanks and Tank Cleaning

- Photographic documentation and a signed statement by the party performing tank cleaning activities attesting to the proper cleaning of the tanks
- A signed statement by the UST owner or the owner/operator of the receiving facility attesting to the fate of the USTs



Tanks and Tank Cleaning *Con't*

- Documentation on the fate of any usable product recovered from the USTs
- Proper characterization of the sludge/rinsate generated during tank cleaning activities as well as the appropriate manifest(s) signed by the generator, transporter, and receiving facility of the waste



Soil and Water Disposal

- Documentation of the proper disposal of contaminated soil (e.g. landfill disposal receipts, weight tickets)
- Documentation of the proper disposal of contaminated pit water, including: Signed statement of permission from the POTW prior to disposal, documentation of wastewater characterization required by the POTW, and appropriate documentation that the wastewater was accepted by the POTW



Other Possible Inclusions

- If bedrock is encountered in the excavation, a geologic assessment performed by a registered geologist or a qualified professional engineer is necessary (Section 4.4.2.4)
- If the soil type at the site is declared to be Soil Type 2 or 3, a Soil Type Determination must be made by a registered geologist or qualified professional engineer (March 18, 2005 Soil Type Determination Guidelines)



Other Possible Inclusions *Con't*

- If the cleanup target levels are above the Default Target Levels, the domestic use of groundwater pathway must be evaluated in strict accordance with Sect. 6-3 and Fig 6-2
- If the cleanup target levels are for non-residential use, documentation on the reasonably anticipated future use of the site must be submitted



Pre-Closure Characterization

- In some cases, RP might benefit from conducting investigations and evaluating gw pathway and RAFU prior to beginning closure activities
 - Determines whether release has occurred
 - Allows determination of cleanup standards and estimation of area exceeding standards prior to digging
 - Can allow for all necessary actions - closure and remediation - during one mobilization
 - At the discretion of the RP
 - Potentially saves time and money



Closure Contact Information

- Closure Main Phone Line
 - (573) 751-6822
- Heather Maschler
 - Heather.Maschler@dnr.mo.gov
- Brett Bottomley
 - Brett.Bottomley@dnr.mo.gov
- Rick Brown
 - Richard.Brown@dnr.mo.gov



References and Forms

- MRBCA Guidance Document
- MRBCA Closure Forms (CN- and CR-)
- Technical Bulletin 2160 (PAH analysis)
- Soil Type Determination Guidelines
- The above may be found at:
<http://www.dnr.mo.gov/env/hwp/tanks/mrbca-pet/mrbca-pet-tanks.htm>



QUESTIONS on the DNR Closure Report Presentation?



Missouri Department of
Natural Resources



UST Closures Using Missouri Risk Based Corrective Action (MRBCA)

*Daniel L. Henry Petroleum Storage Tank Insurance Fund
May 2007*



UST Closure

- ◆ Typical UST Closure Sequence
 - ◆ Removal of tanks and backfill
 - ◆ Site characterization
 - ◆ Remediation
 - ◆ Issuance of an NFA



UST Closure *cont.*

- ◆ Resulting potentially in a
 - ◆ Longer life of project
 - ◆ Additional costs



UST Closure *cont.*

PSTIF Preferred Sequence

- ◆ Develop of an Exposure Model (EM) for the site prior to closure
- ◆ Determine cleanup standards for the tank pit and piping runs based on the land use and groundwater use assessment
- ◆ Use appropriate Tier I Soil Type 1 standards: residential (Table 7-1a), non-residential (Table 7-1b)
- ◆ Removal of the tank system



UST Closure *cont.*

- ◆ Resulting potentially in a
 - ◆ A shorter life of project – Quicker NFA
 - ◆ Overall cost savings



Pre-Closure Risk Assessment

- Tier 1 Risk Assessment
- Tier 2 Risk assessment



Over Excavation Outside the Tank Pit During Closure

- For the Fund to pay for substantial over-excavation out side of the tank pit and piping runs, typically a Tier 2 risk assessment will be necessary



Risk Assessment Prior to Closure

- In some situations a preliminary Tier 2 risk assessment, prior to closure, may be appropriate while in others a complete Tier 2 risk assessment may be appropriate
 - ◆ Site has already had a release and is completely or partly characterized
 - ◆ Property sale or redevelopment require expedited completion of cleanup once started



RA Prior to Closure, *cont.*

- For sites with an established claim, we can pre-approve costs of Tier 1/Tier 2 as part of existing claim
- For sites with no previous release
 - ◆ Need confirmation of contamination before costs can be recognized
 - ◆ Sample(s) for landfill pre-qualification permit can be used to satisfy this requirement.



RA Prior to Closure, *cont.*

- Once impacts are documented, we can recognize costs for site characterization and risk assessment prior to UST closure
- Provides more options and more latitude for tank owners and operators in accomplishing cleanup



Conclusions

- Use of DTLs for UST closure is often conservative and unnecessarily expensive
- Using an exposure model allows the use of appropriate Tier 1 Soil Type 1 look up table (residential or non-residential) to determine appropriate disposition of tank pit backfill



Conclusions *cont.*

- Also gives you the option of doing a Tier 2 assessment prior to UST closure
- This gives you maximum flexibility to meet your client's needs



QUESTIONS?

