Illinois’ Use of Risk-Based Corrective Action Closures

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Questions

• Presentation to answer the following questions:
  • Why risk based closures?
  • When were risk based closures implemented?
  • What regulations are used?
  • What risk based closures are required by the regulations?
  • Have there been cost savings realized by the use of RBCA closures?
Players in Illinois’ UST Program/Fund

- Governor/Legislators
- Illinois Department of Revenue (IDoR)
- Illinois Emergency Management Agency (IEMA)
- Illinois Office of the State Fire Marshal (OSFM)
- Illinois Environmental Protection Agency (Illinois EPA)
- Illinois Petroleum Marketers Association (IPMA)
- Tank owners/operators
- Consultants
Revenue

- 1.1 cent per gallon deposited into the Underground Storage Tank Fund
- Approximately $90 million generated each year
- $80 million appropriated by legislators in budget which is signed by Governor
  - Salaries for IDoR, IEMA, OSFM, Comptroller’s Office and Illinois EPA
  - Bond payment
  - $40 Million appropriated for reimbursements to owners/operators
Regulations

- Tiered Approach to Corrective Action Objectives (“TACO”)
  - 35 Illinois Administrative Code Part 742
  - Provides procedures for evaluating risk to human health and developing remediation objectives that achieve acceptable risk levels.
  - Applicable for Leaking UST, Site Remediation Program (Voluntary) and RCRA Part B Permit and Closure Plan sites.
  - Three “Tiers” can be used to address contamination and can be used in any combination.
Regulations - TACO

• Tier 1
  • Concentration of contaminants detected at a site are compared to remediation objectives for residential and industrial/commercial properties.
    • Remediation objectives are provided in tables
    • The extent and concentrations of the contaminants of concern, groundwater class, and land use classification are required.
    • Comparison of concentrations to the established remediation objectives.
    • Pathways evaluated are ingestion, outdoor inhalation, indoor inhalation, soil migration to groundwater and groundwater ingestion.
Section 742 APPENDIX B Tier 1 Illustrations and Tables

Section 742 TABLE A Tier 1 Soil Remediation Objectives

<table>
<thead>
<tr>
<th>CAS No.</th>
<th>Chemical Name</th>
<th>Exposure Route-Specific Values for Soils</th>
<th>Soil Component of the Groundwater Ingestion Exposure Route Values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Ingestion (mg/kg)</td>
<td>Inhalation (mg/kg)</td>
</tr>
<tr>
<td>83-32-9</td>
<td>Acenaphthenne</td>
<td>4,700$^b$</td>
<td>---$^c$</td>
</tr>
<tr>
<td>67-64-1</td>
<td>Acetone</td>
<td>70,000$^b$</td>
<td>100,000$^d$</td>
</tr>
<tr>
<td>15972-60-8</td>
<td>Alachlor$^o$</td>
<td>8$^e$</td>
<td>---$^c$</td>
</tr>
<tr>
<td>116-06-3</td>
<td>Aldicarb$^o$</td>
<td>78$^b$</td>
<td>---$^c$</td>
</tr>
<tr>
<td>309-00-2</td>
<td>Aldrin</td>
<td>0.04$^e$</td>
<td>3$^e$</td>
</tr>
<tr>
<td>120-12-7</td>
<td>Anthracene</td>
<td>23,000$^b$</td>
<td>---$^c$</td>
</tr>
<tr>
<td>1912-24-9</td>
<td>Atrazine$^o$</td>
<td>2700$^b$</td>
<td>---$^c$</td>
</tr>
<tr>
<td>71-43-2</td>
<td>Benzene</td>
<td>12$^e$</td>
<td>0.8$^e$</td>
</tr>
<tr>
<td>56-55-3</td>
<td>Benzo(a)anthracene</td>
<td>0.9$^{c,w}$</td>
<td>---$^c$</td>
</tr>
<tr>
<td>205-99-2</td>
<td>Benzo(b)fluoranthene</td>
<td>0.9$^{c,w}$</td>
<td>---$^c$</td>
</tr>
</tbody>
</table>
Regulations - TACO

• Tier 2
  • Uses site-specific information to calculate remediation objectives applicable for a certain site using the Soil Screening Level (SSL), Risk Based Corrective Action (RBCA) and modified Johnson and Ettinger (J&E) equations (for indoor inhalation).
    • Site-specific parameters include: organic carbon content of soil, soil bulk density, soil particle density, total soil porosity, soil moisture content…

• Tier 3
  • Allows alternative parameters and factors, not available under a Tier 1 or Tier 2 evaluation, to be considered when developing remediation objectives.
    • Exposure route exclusion, impractical remediation, modification of parameters, use of models outside of TACO, use of building controls not identified in the regulations…
Regulations

• Leaking UST Regulations - 35 Illinois Administrative Code Part 734
  • Applies to owners/operators of any underground storage tank system used to contain petroleum and for which a confirmed release is reported to the Illinois Emergency Management Agency (IEMA) except:
    • Farm or residential tanks of 1,100 gallons or less used for storing motor fuel for non-commercial
    • Farm and residential underground storage tanks used to store heating oil for consumptive use on the premises where they are stored
    • Any underground storage tank storing a hazardous waste
    • Any underground storage tank storing less than 110 gallons
    • Emergency spill or overfill containment underground storage tank system that is emptied after use
Regulations - Leaking UST Program

- 35 Illinois Administrative Code Part 734 (cont.)
  - Applies to owners/operators of any underground storage tank system used to contain petroleum and a release is reported to the Illinois Emergency Management Agency (IEMA) except:
    - Wastewater treatment tank system part of a wastewater treatment facility
    - Equipment or machinery that contains petroleum substances for operational purposes such as hydraulic lift tanks and electrical equipment tanks
    - Emergency spill or overfill containment underground storage tank system that is emptied after use
    - Underground storage tank system containing de minimis concentrations of petroleum substances
Regulations - Leaking UST Program

• 35 Illinois Administrative Code Part 734
  • After incident is reported, the OSFM makes an eligibility determination allowing reimbursement from the UST Fund for eligible costs
  • Costs for eligible activities are reimbursed after a deductible is paid – currently $5,000, previously deductibles were $10,000, $25,000, $50,000 and $100,000
  • Costs are capped at $1.5 million per occurrence
Regulations - Leaking UST Program

- Regulations
  - Prior to 2006, sites could remediate to residential remediation objectives and remediate groundwater to below groundwater standards – no restrictions required for the property
  - Created a drain on the Underground Storage Tank Fund where money was not available for reimbursement to owners/operators for work performed
  - Long wait times for reimbursements (checks) to be mailed out (up to 18 months)
  - Consultants “refused” to complete work without payments
Regulations - Leaking UST Program

• 2006 Leaking UST Regulations (Part 734) required:
  • Use of industrial/commercial objectives unless plans to develop into residential
  • If municipality has an approved groundwater ordinance, ordinance must be used
  • Use of an on-site groundwater use restriction
  • Tier 2 remediation objectives must be used and must not be less than the Tier 1 remediation objectives
Leaking UST Program

- Tier 2 remediation objectives require collection of the following site-specific parameters:
  - Hydraulic Conductivity, Soil Bulk Density, Soil Particle Density, Moisture Content and Organic Carbon Content
Statistics

- As of September 1, 2019
  - 5,509 Open incidents (5th most in the nation)
  - 367 new incidents since October 1, 2018
  - 423 closures since October 1, 2018
  - Average cost for a site from start through closure in 2019: $170,000
  - Previously costs were almost $100,000 higher
Questions?

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