

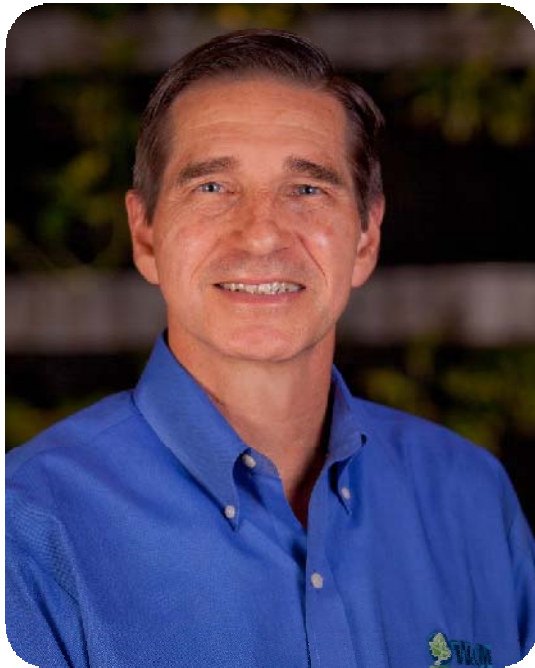
# Solutions to Pollution

## *Dealing with Contaminated Properties*



Presented by:  
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- ❖ 28 years professional experience
- ❖ Expert in Environmental Due Diligence of Real Estate
- ❖ Regulatory Closure of 100+ Projects in Texas



# Environmental Due Diligence

- ▶ Typically the first step in the assessment process; required from lender to evaluate “environmental risk”
- ▶ On cash deals, Phase I Environmental Site Assessment (ESA) not required but recommended
- ▶ ESA performed in accordance with EPA AAI and ASTM along with SBA SOP on SBA loans
- ▶ Lesser scope such as Environmental Questionnaire or regulatory database review for lower value deals
- ▶ Phase I ESA determines if Site is clean or needs further assessment (Phase II)
- ▶ The magic word in ESA is Recognized Environmental Condition (REC)
- ▶ ESA does NOT include asbestos in buildings, wetlands, LPB, and mold unless requested

# If Phase I ESA Identifies a REC, What's Next?

- ▶ REC generally means additional file review or some level of sampling
- ▶ File review generally includes TCEQ files such as LPST, VCP, or Corrective Action for Site and/or neighboring properties
- ▶ Not uncommon for historical data to be available in the files; however, some sampling may still be recommended
- ▶ If file review is NOT sufficient, sampling is generally recommended
- ▶ Sampling can range from a few soil gas samples to an extensive Phase II Investigation
- ▶ Cost ranges from \$3,500 to +\$15,000 with time frame of 2 to 4 weeks

# Proper Assessment Limited vs. Comprehensive

- ▶ Limited Phase II with Geoprobe usually cheaper vs. drilling rig; temporary vs. permanent wells; fewer samples and less analyses
- ▶ A more accurate site picture may require more samples and analyses, but not always
- ▶ More expensive permanent wells may be needed to determine groundwater flow direction and metals in groundwater; poor water quality results in “hits” from sediments
- ▶ Extra cost may NOT give you “bang for the buck”
- ▶ Key: Good EP that works to attain objectives, focus on key issues, and balance completeness with costs (What are primary contaminants based on available information?)

# Vapor Intrusion

- ▶ Vapor intrusion (VI) can be a key driver in your Environmental Due Diligence
- ▶ Common with dry cleaners and gasoline stations
- ▶ Many historically closed sites did NOT include soil gas
- ▶ Impact to Site from on-Site/off-Site vapors associated with the underlying groundwater or impacted soil in vadose zone
- ▶ Vapor typically evaluated using subgrade/subslab soil gas samples rather than indoor air samples
- ▶ Soil gas sampling point or vapor pins (beneath foundation)
- ▶ Soil gas results compared to EPA VISLs since TCEQ guidance is limited at this time; TCEQ regulates indoor air\*
- ▶ Primary vapor concerns are generally TCE, VC, and benzene

# Site Contaminated

## What are My Options?

- 1) Screen “out of TRRP” - useful for soil metals
- 2) TCEQ Voluntary Cleanup Program (VCP) - “gold standard” for cleanup/closure for real estate
- 3) TCEQ Leaking Petroleum Storage Tank (LPST) Program - properties with USTs containing petroleum products
- 4) TCEQ Innocent Owner/Operator Program (IOP) limited to properties that did not “cause or contribute” to contamination (off-Site sources)
- 5) TCEQ and City Municipal Setting Designations (MSD) restrict use of groundwater; used with another regulatory program

# Site Contaminated, What are My Options?

- 6) TCEQ Dry Cleaner Remediation Program (DCRP) for dry cleaners and property owners with dry cleaners
- 7) TCEQ or EPA Brownfields Programs (BSA)
- 8) TCEQ Corrective Action Program - primarily used with industrial facilities or to limit assessment to one media

## Keys:

- ▶ Determine appropriate remediation/closure strategy and associated costs
- ▶ Regulatory closure may not address all potential environmental concerns such as asbestos, vapor, and construction-related issues (removal of impacted soil)



# Remediation Strategies

- ▶ Risk-based closure strategies are preferred (no physical cleanup required)
- ▶ Risk-based strategies include MSD, monitored natural attenuation, PMZ, Site-specific cleanup levels, etc.
- ▶ Remediation of soil and/or groundwater may be required to meet TCEQ cleanup levels
- ▶ Soil Treatment Options: excavation, capping, bio-treatment, stabilization, etc.
- ▶ Groundwater Treatment Options: bio, ISCO/Chem Ox injections, pump and treat, and/or NAPL abatement
- ▶ Groundwater cleanup can be long and costly
- ▶ Soil gas abatement or installation of vapor barrier

# Strategies for “Closure”

- ▶ Proper Assessment, Cost Estimating & Scheduling
- ▶ Limited vs. Comprehensive Phase II Investigation: balancing costs with completeness
- ▶ Can site “screen out of TRRP”? Submit to TCEQ?
- ▶ If not, what is best TCEQ program for property?
- ▶ Using an escrow based on cost estimates (with contingency factors) to close deal prior to final regulatory closure
- ▶ Working with TCEQ (case coordinator and manager) to shorten review cycle and close site in reasonable time frame
- ▶ If TCEQ is driving schedule, you’re moving too slow!
- ▶ Do you have an “environmental team” that has successfully “closed” sites? Consultant and Attorney working together

# Environmental Gone Bad

- ▶ Phase I ESA done by the “greenhorn”
- ▶ Limited Phase II was “too limited” & missed contamination from “perc” resulting in big change with environmental costs.
- ▶ Arsenic and lead in the soil - “not so fast”
- ▶ Metals in groundwater using temporary wells (were metals the results of sediments in sample rather than actual COCs?)
- ▶ Misunderstanding application of Texas rules - use of TRRP rules but not in program - Class 3 Groundwater
- ▶ Consultant didn’t check previous closure levels (common with LPST cases)
- ▶ “Closed” case such as VCP does not eliminate asbestos, vapor, and/or construction related issues with impacted soil
- ▶ Hotel California (“...you can never leave”) - groundwater treatment/monitoring program for 20+ years
- ▶ Do you have any other examples?

# Summary

- ▶ Accurate assessment and cost estimating to properly balance costs with completeness
- ▶ Proper evaluation of data to determine if you have an Affected Property under TRRP or LPST
- ▶ “Screen out of TRRP” or enter a regulatory program?
- ▶ Determine best program to cleanup/close site: VCP, IOP, DCRP, or LPST for most real estate properties
- ▶ MSD is a great risk-based tool to close sites, especially in the DFW Metroplex
- ▶ Is there a risk-based option available or is physical remediation needed to close your Site?
- ▶ Closed sites may still have environmental concerns like VI and added construction costs (removal of impacted soil)
- ▶ “Pay me now or pay me later”; Buyer today will be Seller tomorrow!

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