

MTBE/USTs: A True Perspective
Mealey's MTBE & UST Litigation Conference
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2. In the Beginning ... the installation of underground storage tanks (USTs) was made necessary by existing fire codes and property space restrictions. Most major oil companies began to realize the hazards and potential liabilities resulting from leaking UST systems in the mid-1970's. The oil companies then individually launched their own tank improvement programs. As an industry, the oil companies worked closely with federal and state rule makers in the early 1980's to minimize future, undetected releases with early detection to assure minimal damage and to facilitate clean up should there be a UST system failure.

At the same time, lead was being phased out of gasoline as an octane enhancer. In many cases, MTBE was added to unleaded gasoline to make up for the lost octane. Within a few years, in areas with an excess of winter carbon monoxide emissions, oxygen was required to be added to gasoline. Then there was the Clean Air Act Amendments of 1990 that required the addition of oxygen to summer gasoline to reduce ozone precursor emissions. During the winter months there was a fairly equal use of ethanol and MTBE to provide the required oxygen. During the summer months however, because of volatility concerns related to ethanol, MTBE became the oxygenate of choice.

3. While several states, including California, precluded the federal government in the development of UST laws and regulations, in 1988 the USEPA promulgated a comprehensive list of pre-upgrade requirements for UST systems. However, many of these rules included operational and maintenance requirements that made enforcement critical to the effectiveness of this regulatory program.

4. Unfortunately, the USEPA allowed ten years for required upgrades that have ultimately made the UST program more effective. Full upgrades of UST systems were required prior to December 22, 1998. Many UST owners waited until the end of 1998. **5.** With adequate enforcement of the pre-upgrade requirements, however, there would have been early detection and minimal occurrence of the lengthy plumes that are now the subject of clean up difficulties and litigation. With early detection, the remedial activities are focused on cleaning up gasoline containing MTBE, not MTBE in groundwater. It should be clear that the problem with MTBE in groundwater was lacking UST program enforcement.

6. Let's take a look at the origin of the California MTBE phase out. It began with a six-month, \$500,000 University of California study assessing the environmental and health impacts of MTBE in gasoline. The study predicted \$340,000,000 to \$1,500,000,000 per year in CA groundwater

remediation costs. The study also predicted 60 to 340 additional California public supply wells contaminated with MTBE. **7.** This study led to Governor Davis' Executive Order D-5-99 dated, March 25, 1999. It is noted that the Order found that, "... because of leaking underground fuel storage tanks MTBE poses an environmental threat to groundwater and drinking water." This initial Order required the removal of MTBE from California gasoline by December 31, 2002.

8. At the same time the University of California was conducting its study, there were other less known studies under development that specifically looked at the California UST program. In particular was one study **9.** ordered by then Governor Wilson requiring the State Water Resource Control Board (SWRCB) to assemble a panel of experts on USTs. This panel was split up into four teams.

10. Advisory Team One focused on "UST Compatibility & Permeability." Compatibility of the product stored within the UST system is a federal law and **11.** the Team found that MTBE in gasoline was totally compatible in existing UST systems. **12.** However, ethanol was found to have some compatibility and permeability problems, especially in older UST systems.

13. Advisory Team Two looked at "Upgraded Tank Release Site Evaluations" and their findings should be no surprise. Most importantly, the panel found there was no evidence that fully upgraded, compliant and well-maintained UST systems are subject to on-going continuous leaks.

14. Advisory Team Three conducted a paper investigation of "Leak Source & Detection Data Collection & Analysis." They found that the data regarding failed UST systems was very limited.

15. Now let's talk a bit about the California UST program. First, there are four different types of UST systems found in California. **16.** The ultimate is the fully double-walled and contained system. **17.** Second, the California UST program is administered and enforced by over 100 different local agencies reporting to their respective governing bodies. The degree of support provided by these individual governing bodies to their agencies varies widely. **18.** Looking at a listing of MTBE detections in drinking water, one can see where the enforcement effort was not quite adequate. This lack of adequacy is further documented by independent audits of local UST agency programs. It is unbelievable that the primary agency in charge of UST rulemaking, the SWRCB, has no enforcement authority. **19.** On top of that, the USEPA has never approved the California program partially because of this decentralized approach to enforcement.

20. Many of you may have heard that the original phase out date for MTBE was extended by one year. The reasons given in the press were related to ethanol but in reality are related to a pending gasoline supply crisis. Note that the latest Executive Order, D-52-02, acknowledges that, "strengthened underground storage tank requirements and enforcement have significantly decreased the volume and rate of MTBE discharges since Executive Order D-5-99 was issued in March of 1999." Further, Governor Davis found that, "... it is not

possible to eliminate use of MTBE on January 1, 2003, without significantly risking disruption of the availability of gasoline in California" ... which "would substantially increase prices, harm California's economy and impose an unjustified burden upon our motorists." What concerns me is that not all that much has been done to correct these pending and serious supply problems since the issuance of this Order.

21. It would appear that there is another pending energy crisis in California that will be exacerbated by the removal of MTBE from California gasoline. Taking MTBE out of California gasoline will result in further shortage of from 5% to 10% of the already short gasoline supply. Using ethanol to replace MTBE does not increase but further reduces the gasoline supply. Yes, today California is a net importer of gasoline and gasoline components. With the latest formulation of California gasoline, it is going to be even more difficult and expensive for refiners outside of California to make gasoline for import to California. **22.** California RFG3 will require clean, scarce and expensive blendstocks. This is going to mean a minimum increase cost of gasoline of \$300,000,000 per year to consumers with recurring supply disruptions that will bring the prices up to \$3 per gallon or more.

Going back to the extension of the MTBE phase out, what about continued impacts to the environment? Well, MTBE detections in public drinking water continue at less than 1.0 percent of wells sampled with a reduced rate of detections and at lower levels. **23.** Additionally, the incidence of leaking tanks is also reduced and clean up technologies are more effective today. Now let's take a look at the real world statistics.

24. Statistics maintained by the Department of Health Services (DHS) clearly demonstrate that following the 1998 UST upgrade requirement, the previously low rate of detections of MTBE in drinking water sources are even lower today. Note that these numbers are cumulative from when the DHS began the recording of these statistics, many of these wells are now at non-detect and many of the newer detects are probably from old releases. **25.** This is further reflected in a graph developed by the California Energy Commission (CEC). **26.** This low rate correlates well with the reduced incidents of reported leaking USTs as recorded by the SWRCB which are declining at a rate of almost 50% per year. Even the claims against the leaking UST fund are declining.

27. It is interesting to compare the costs projected in the 1998 University of California MTBE Study against the numbers that are now available in the real world. You can see that the UC numbers indicated a high cost for keeping the water clean versus taking MTBE out of gasoline. **28.** Now, according to SWRCB and CEC calculations, the relative magnitudes have completely reversed. **29.** But the phase out of MTBE continues in spite of a clear indication, when comparing the two Executive Orders, that the original "problem" resulting in the phase out has been addressed.

30. By the way these trends and projections regarding reduced groundwater contamination, UST program improvements and grave gasoline supply impacts are reflected in the national statistics as well.

31. In addition to the passing of the UST upgrade requirement deadline, there have been several other things happening here in California to further improve the UST program. In 1999 SB 989 was signed into law mandating tighter requirements for USTs and more recently AB 2481 was also signed into law making the requirements even more stringent. **32.** Included in SB 989 were such things as:

- Increased agency tank site inspections from once every 3 years to once a year.
- Enhanced protection of vulnerable drinking water sources from single-walled tank systems.
- Phased-in installation of under-dispenser containment at all sites.
- Increased training requirements to include tank owners & operators.
- Required periodic testing of secondary containment systems, leak detection & alarms.
- Increased civil penalties for tampering with or disabling leak detection systems.

33. There were also some mandated investigative studies from which recommendations came resulting in enforcement program improvements for local agencies under AB 2481 but still no enforcement authority for the SWRCB. **34.** Other UST provisions coming from AB 2481 included:

- New USTs installed after July 1, 2003 must be vapor tight.
- All piping must be double-walled & maintained under vacuum/pressure.
- All existing USTs within 1,000 feet of a drinking water well must be tested using enhanced leak detection by January 1, 2004.
- Prohibition of fuel deliveries to "Red Tagged" gasoline dispensing facilities.
- Certified Unified Participating Agencies (CUPAs) are authorized administrative penalties.
- Continued DHS MTBE Treatment Research and Water Replacement at MTBE sites.

35. By the way, there is a bill in Congress that is being kicked around that would bring some of the more effective California mandates to the federal program. Last time I checked, the bill number was S.1850 and was called the "Underground Storage Tank Compliance Act of 2001." Obviously, the title needs an update but the provisions include:

- Funds for improved state enforcement.
- A required 2-year inspection frequency
- Required UST operator training.
- MTBE remediation provisions.
- Improved release prevention & compliance provisions.

36. Is there still room for improvement to UST programs? I say yes. There is a critical missing element to most UST programs. When a tank system fails, there should be at least a random effort to ascertain whether the failure was from improper installation, faulty equipment, lack of maintenance or equipment tampering. By the way, in the California studies, tampering was found to be alarmingly prevalent leading to increased penalties and required owner/operator training as dictated by SB 989.

37. This past summer the press reported that two-thirds of the remaining USTs in California were leaking. One of those studies mandated by SB 989 directed the SWRCB to conduct field-testing to verify the effectiveness of new and upgraded tank systems. The SWRCB selected an ultra-sensitive “Tracer Tight” test to conduct this testing requirement. They found only one suspected tank system with a liquid leak but two-thirds of sites detected vapor leaks mostly in lines and fittings. **38.** Now in my mind, this is a very good record and vapor leaks are a matter of potential air quality concern, not a groundwater concern.

There was some noise about the vapor leaks having a potential to affect groundwater and the SWRCB launched a study of the situation. But before the study was completed, the SWRCB managed to include a provision in AB 2481 for all new UST systems to be vapor tight as well as liquid tight.

39. Putting this whole matter into perspective, there are many other chemicals used in commerce that are much more of a threat to the environment and public health. Remember that less than 1 percent of the wells monitored for MTBE, which is now almost 90 percent of all public wells, were found to have any detection of MTBE. The groundwater contamination by other chemicals is much greater in magnitude. Out of a total of 16,000 public supply wells in California, more than 4,000 have been forced out of service due to contamination by these other chemicals that are just now receiving greater attention in California.

40. It should be abundantly clear that the bottom line problem in the past has been lacking effective UST enforcement leading to:

- Unreported UST system alarms and failed tests,
- Leak detection ignorance and tampering, and
- Delayed clean up response usually facilitated by oversight agencies.

With compliant UST systems there are fewer leaking UST incidents, early discovery and response with less costly and more rapid clean up.

41. The fact is that any continued threat to groundwater from MTBE in gasoline are only as great as is the deficiencies of the resident petroleum storage integrity assurance programs.

42. & 43. ... for more information regarding MTBE ...
<http://www.CalGasoline.com>

44. END

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