

# Crunching the Numbers

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Every now and then various people ask us about numbers, what's come in, what's gone out, how many sites in the system, what are they, how do they compare to the previous years and what (if anything) might be gleaned from any changes. When we look at the numbers, we sometimes see how they correlate to other policies, regulations or even social changes that affect our BWSC universe: requirements to upgrade Underground Storage Tanks lead to the discovery of reportable releases; "green" trends in industry result in a reduction in use of hazardous materials and in the inevitable spills of these materials; and the use of more fuel efficient cars may reduce the total number of gas stations in operation. In addition, the continued improvement of waste management practices statewide eventually is reflected in our site notification and cleanup statistics.

This month, we're including a bit about the history of our sites list, a reminder about information on our data pages and a look into some of our recent audit findings.

## BACKGROUND

When the Bureau of Waste Site Cleanup (BWSC) was formed, and its first comprehensive regulations promulgated in 1988, "site notification" was largely based on the detection of oil or hazardous materials on a property, followed by a phone call or a letter to BWSC by consultants, property owners or sometimes simply concerned neighbors. Site investigations preceding property transfers, UST removals, detections of oily trash mixed in fill used to grade suburban developments, odors or sheens in basements, and excavation of buried drums and tannery wastes during construction were all among the notifications we received. There were vast differences in the nature and complexity of the different sites.

Notification led to the property being added to the "Locations to be Investigated" (LTBI) list. Each year, the Department "investigated" a certain number of LTBI's (a statutory requirement) and they became 21E sites, meaning that the property was moved from the "LTBI" list to the "Sites" list. Under the "old" MCP (much like the federal regulations), the only sites that progressed through assessment and clean up were those that had direct BWSC oversight. Logically, the Department devoted its limited resources to those sites that were the most complex and/or posed the greatest risk – which left many of the simpler sites that posed less risk to languish for lack of DEP oversight.

Eventually, a "Waiver" program was designed to allow Sites demonstrating a certain level of site assessment, risk characterization and risk reduction to finish their clean ups without BWSC approval for every action taken. To be clear, the waiver was a "waiver from approvals", *not* a waiver from the assessment or cleanup requirements. Sites with "Waivers" still had to follow the

steps in the MCP and complete all Phase work and reporting requirements, but they could move much faster through the cleanup process under the oversight of qualified environmental consultants and had five years to get to either a Permanent Solution (i.e., the site was cleaned to background and for unrestricted use) or a “Temporary Solution” – with or without a treatment system which would be periodically reviewed, taking into consideration possible new technologies or site changes that could allow achievement of a Permanent Solution. Sound familiar? The basic model has not really changed over the years.

While the number of notification (and thus Sites) increased, the pace of cleanup stalled and there was ever increasing pressure to explore more efficient ways to achieve the cleanup goals set forth in c.21E. So in 1993, Massachusetts took an unprecedented step to partner with its stakeholders to develop the semi-privatized cleanup program which set forth the roles and responsibilities of the three primary actors in a cleanup: the PRP, the LSP and the Department. Private clean-up contractors (LSPs) guide property owners (or other PRPs) through the process and achieve timely site remediation, while MassDEP focuses on activities that are inherent to the role of government, such as auditing the work done by the private sector and providing Emergency Response services..

At [www.mass.gov/dep/cleanup/priorities/progeval.htm](http://www.mass.gov/dep/cleanup/priorities/progeval.htm) we periodically post the status of the releases and note some of the statistical trends we observe. This count of notifications starts with the original 21 notifications confirmed as Sites in 1985, to the peak of 1299 Sites confirmed in 1989. Altogether, there were nearly 10,000 Sites and LTBI's on the list by the time the 1993 MCP was promulgated.

From a quick look at the link above, at the end of the last fiscal year, July 2010, we had a total of 40199 Sites of all types in our databases. There are three different types of notifications, post 1993: Two-hour notifications (16,254 sites); Seventy-two hour notifications (7,707 sites); and 120-Day notifications (9295 sites). The remaining 6943 were the pre-1993 LTBI's and Sites. Of these, the vast majority have gone through the assessment and remediation process with 28,840 having achieved one or another Response Action Outcome Status.

Through nearly two decades, as sites have been cleaned up, MassDEP has audited the results, identifying both problems at individual sites and systemic issues that have triggered regulatory changes, new guidance, and/or LSP training sessions. This ongoing evaluation of the waste site cleanup program and MassDEP's willingness to revise the program as necessary is one of the reasons we believe the program has been so successful.

In a future article I plan to compare and contrast the path Massachusetts has taken with other state cleanup programs, such as those in Connecticut and New Jersey. Perhaps we can call that article “Different Flavors of Privatization.”

## RECENT AUDIT FINDINGS

Generally, when we've presented Audit Findings or enforcement cases, they are based on Response Action Outcomes we have in our files. Rather than provide the abbreviated summary of individual cases, with a few "typical" findings, here is a glimpse into some of the more interesting violations or findings that caught our attention while perusing the files.

- Audit of an Immediate Response Action Completion Statement (IRAC): Findings – IRAC "Not Valid." In this case, seven residential properties near the subject site were determined to have Critical Exposure Pathways that that not been eliminated or mitigated to the extent feasible (specifically, there was either no system offered to the residents, or a system was installed but was not effective). No system was offered to four of the residences; and in three other residences, despite the passive systems installed, chlorinated solvents were detected in indoor air in post-mitigation sampling rounds, suggesting a different approach was required.
- Audit of a Tier II Classification Submittal: Findings – the primary violations pertained to the scoring in the Numerical Ranking Scoresheet. Twenty additional points each were required for the Fish Habitat and the Protected Open Space in NRS Section V, Ecological Populations. This site was proximate to fish habitat and protected open space, specifically, the 500 foot buffer zone for a freshwater surface water body that is also a Class A public drinking water surface water supply. While the addition of these points didn't change the overall Tier Classification (Tier II) in this particular case, it is a reminder that we *do* look at the details of scoring.
- Audit of a Periodic Review of a Class C RAO where Monitored Natural Attenuation (MNA) of chlorobenzene compounds through natural reductive dechlorination had been proposed and in use since 1999. Five year monitoring reports had been submitted in 2004 and 2010. Based on the ten years of monitoring, results of the proposed MNA did *not* show significant reductions of the target compounds, rather, they had been in steady state since 1999. MassDEP determined that the data did *not* support the original premise that the appropriate conditions were present at the site for reductive dechlorination and that a Permanent Solution would not be achieved without additional response actions.
- Audit of a Downgradient Property Status Submittal found that there was not sufficient investigative and assessment actions to demonstrate that the source of a petroleum release was only from an upgradient parcel. There were several potential on-property sources of petroleum that had not been evaluated. Additionally, there had been no relevant hydrogeologic conditions provided that would support the DPS Opinion, no groundwater flow elevations or directions were determined. In this case, the findings required DPS Termination OR substantial additional assessment to demonstrate the original Opinion.

And finally, for a link to a recent enforcement case with Attorney General involvement due to oil in private wells, see:

[http://www.mass.gov/?pageID=cagopressrelease&L=1&L0=Home&sid=Cago&b=pressrelease&f=2011\\_01\\_14\\_jackson\\_settlement&csid=Cago](http://www.mass.gov/?pageID=cagopressrelease&L=1&L0=Home&sid=Cago&b=pressrelease&f=2011_01_14_jackson_settlement&csid=Cago)