



What we have now?

In the 1990s many sites were discovered to be of a high risk. In the last 20 years these sites were investigated and remediation systems were selected. The remediation process was started and remains underway, many times with expensive monitoring programs in place which have changed little since system startup. Such sites deserve an additional evaluation to determine remediation progress, and to assess the current risk level.

What changed?

1) The production ceased, the sources were removed, but there is still residual contamination in soil and groundwater—often the contamination levels barely exceed remediation standards. 2) From the regulatory point of view the standards were changed, based on additional risk information, and the environmental guidelines for investigation, risk analyses and remediation were better formulated. 3) From the data analysis point of view, robust and cost effective new software is available.

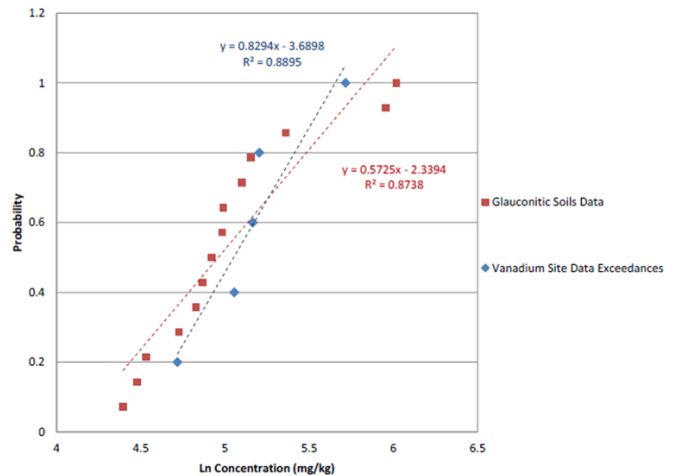
What can be done?

Updated analysis of soil, groundwater and surface water data was performed for a site to assist with remedy modification. Metal levels in soil exceeding standards were compared with background levels for the specific type of soil in the subsurface; groundwater transect analyses were performed to reassess the horizontal and vertical extent of the contaminant plume and the source; groundwater to surface water interaction was investigated; and fate and transport groundwater modeling was performed, to determine past and future contaminant migration.

At an NPL site, additional sampling data was collected in 2010 to assist with the site contamination re-evaluation.

On the Side Lot portion of the site, historical and recently collected metals data showed vanadium exceedances of the soil standards. Based on a geospatial distribution evaluation and the absence of known identified sources, and using the statistical evaluation and geochemical analyses, it was determined that vanadium at the site can be considered background. At the same Side Lot, chlorobenzene in soil above impact to groundwater soil remediation standards was detected. Therefore groundwater beneath the chlorobenzene contaminated soil was investigated. Groundwater data showed chlorobenzene levels below the NJDEP GWQS confirming no need for soil remediation.

Data from prior sampling activities was compiled to provide a detailed picture of the flow system, head relationships and VOC distribution, along a transect running perpendicular to flow direction, “near-field”, close to the source. Review of this information provided insight into potential separate sources contributing to VOC groundwater contamination. In order to document the horizontal and vertical extent of



VOCs in groundwater downgradient of the source, direct-push groundwater sampling data from two “far-field” transects, the Northern and the Central Transects, as well as on the third transect, the Southern Transect near the receptors (surface water and groundwater supply wells) was collected and analyzed. It was concluded that the plume extent is limited off-site, by the Central Transect, and that the source control remedial system on-site is performing well, requiring limited modification. Groundwater to surface water interaction was analyzed and it was concluded that there are no impacts. Fate and transport modeling lead to similar conclusions.

A technical meeting will be held with USEPA and NJDEP to discuss reducing the number of monitoring wells off-site, one for each transect, placed along the centerline of the dilute downgradient plume only. In addition, a plan for delisting the Site Lot portion of the site will be presented. These near-term monitoring program- and site use changes will be followed by source remediation to eventually allow overall site closure.

