

The NJDEP Historic Fill Material Technical Guidance completed in April 2013 details methods to confirm the presence of historic fill and procedures to delineate and remediate soil and ground water contamination. See http://www.nj.gov/dep/srp/guidance/srra/historic_fill_guidance.pdf.

Historic fill may be cleaned up by assuming it is contaminated, or by analysis of samples taken to show it is not contaminated above the residential soil remediation standards (soil cleanup criteria, or SCCs) for all areas of concern (AOCs) located within areas containing historic fill material. EPA Target Compound List (TCL) polycyclic aromatic hydrocarbons (PAHs), Target Analyte List (TAL) metals and Extractable Petroleum Hydrocarbons (EPH) are the required analyses for these sites.

Sounds straight forward? Management of historic fill remains one of the more challenging issues facing the LSRP, since the contaminants are not related to a discrete spill. Therefore, the usual methods used to delineate the horizontal and vertical limits of contamination may only complicate site characterization - and increase investigation and remedial costs.

Typical contaminants associated with historic fill are PAHs and metals. However, a typical historic fill investigation must account for a host of other contaminants, many of which are more likely associated with discrete spills than historic fill. When such contaminants turn up, the professional judgment of the LSRP comes into play to separate “chaff and grain”.

Historic fill was suspected to be present at an old, vacant property in Newark slated for redevelopment. GZA GeoEnvironmental, Inc. (GZA) conducted a historic fill investigation in accordance with NJDEP protocols. PAHs and metals were present in quantities typical of historic fill. However, one soil sample also contained an elevated levels of polychlorinated biphenyls (PCBs) exceeding non-residential soil standards.

PCBs are typically associated with electrical transformers, waste oil and hydraulic fluids. They can be produced in the manufacture of chlorinated solvents, paints, printing inks, agricultural chemicals, plastics and detergent. Therefore, its presence could be interpreted as evidence of a product spill. Before spending thousands of dollars delineating the PCB contamination, GZA grabbed the phone and called NJDEP.

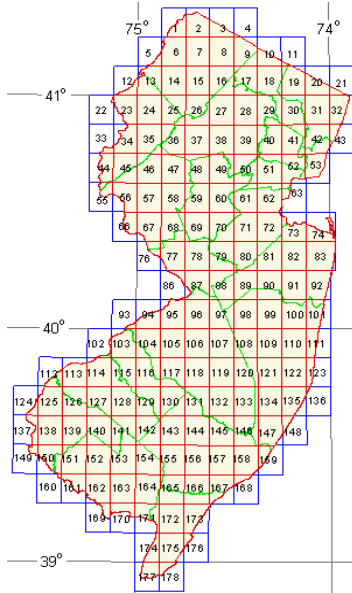
To support implementation of the LSRP program, NJDEP has established a list of specialists in various technical topics whose job is to assist LSRPs and other investigators in exercising professional judgment on their cases. That list is available on-line at http://www.nj.gov/dep/srp/srra/srra_contacts.htm.

GZA called the NJDEP specialist on historic fill and described the situation at the Site. Contaminants that exceed the NJDEP Non-Residential SCC and do not meet the definition of historic fill must be delineated and included under a Deed Notice (engineering and institutional controls). Isolated areas in which total PCB concentrations exceed the SCC of 10 mg/kg are to be delineated in accordance with TSCA guidance and excavated, with off-site disposal, and as approved by the NJDEP.

However, based on the site-specific information provided (e.g., presence of known historic fill contaminants, lower concentrations of PCBs), the NJDEP agreed with the LSRP's professional judgment and interpretation of the guidance that PCBs could be treated as a component of the historic fill for delineation and remediation purposes, and that no further PCB delineation was warranted. Engineering and institutional controls, along with a Deed Notice can be used to reduce exposure at such a historic fill site. The project promptly proceeded to remedial design, with significant cost savings for site investigation and waste disposal.

The historic fill quadrangle coverage/shapefile maps are available

at <http://www.nj.gov/dep/njgs/geodata/dgs04-7.htm>



For more on PCBs, see <http://www.deq.state.or.us/lq/cu/nwr/PortlandHarbor/docs/Sour cePCBs.pdf>, which was used as a source for some of the information in this article. Upcoming case studies will include additional information on PCB characterization and remediation under the Toxic Substances and Control Act (TSCA) and how TSCA applies to site investigation and cleanup in New Jersey.