UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
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NEW YORK, NY 10007-1866

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RCRA Site Visit and Assessment

E.I. du Pont de Nemours & Company – EPA ID No. NJD 002 173 946
2000 Cannonball Road
Pompton Lakes, NJ 07442

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A site visit of the DuPont Pompton Lakes Works site was conducted on May 5, 2011. The objective of the visit was to become familiar with the facility and its former and present operations, to obtain information regarding remediation projects being conducted on- and off-site, and to assess whether or not additional efforts could be made to expedite remediation, including of the residential area surrounding the site which was impacted as a result of off-site migration of contaminated groundwater.

Representing the facility was Ms. Norma Eichlin, vice president of O'Brian & Gere Engineers, Inc. (973 492-7725; norma.eichlin@obg.com) and Mr. David Epps, Project Director, DuPont Corporate Remediation Group. The Site Visit consisted of an opening interview, a site tour, a review of documents, and a closing conference.

The site visit was unannounced; in addition, facility representatives allowed the EPA inspectors free access to all areas of the site and to all documents requested.

BACKGROUND

DuPont Pompton Lakes is a 578 acre site which manufactured blasting caps and explosives; the facility began operating at this site in 1904 and ceased manufacturing operations in 1994. Spills of chemicals used to degrease and clean metal parts, and other processes, resulted in groundwater contamination which migrated to the neighboring community southeast of the site.

The primary pollutants of concern in groundwater at the site are about ten chlorinated volatile organic compounds (VOCs) with the predominant pollutants being tetrachloroethene (PCE) and trichloroethene (TCE). As a result of the off-site migration of organic pollutants via groundwater flow, approximately 450 nearby homes could be impacted by subsurface contamination. The depth to groundwater in the area is approximately 10 to 15 feet.

In 2008, sub-slab vapor samples were collected beneath neighborhood homes which determined the presence in the soil of low level organic solvent vapors at above screening criteria. Vapor intrusion of these volatiles from shallow portions of the water-table aquifer is presently the primary concern of local residents. Since 2008, DuPont has offered residents a vapor mitigation system which uses depressurization of the sub-slab to induce preferential pathways for vapors. About 230 of the impacted households have accepted and are using this vapor intrusion mitigation method.

Soil and sediment contamination are present at the site, with lead, arsenic and mercury being the most prevalent pollutants. Some contaminated sediments have been removed and shipped off-site. Geo-textile and "rip–rap" technology is being used to prevent additional impact by remaining contamination by averting overland flow.

Areas of soil and sediment contamination remain on-site for which the facility is awaiting final remedy approval by the EPA and NJDEP. These contaminated areas will either be excavated and shipped off-site, or consolidated, stabilized on-site and/or capped. It was stated that this project should be completed within three (3) years. When asked whether or not these heavy metal constituents would leach into the groundwater, it was stated that groundwater samples do not show lead or mercury contamination at detectable levels.

PRESENT FACILITY OPERATIONS

To control groundwater contamination, on- and off-site, DuPont operates an air-stripper pump-and-treat system which is fed by five on-site groundwater recovery wells and re-injects treated water into on-site infiltration beds at the southern boundary of the site and upgradient to the adjacent community. The system treats approximately120 gallons of contaminated groundwater per minute which may be limited by the fact that at higher rates, at least one local residence's basement floods. The pump-and treat schematic not only strips VOCs from groundwater but also keeps contaminated groundwater from migrating off-site to the nearby residences via hydraulic control of subsurface water.

Although no pump-and-treat recovery wells have been installed off-site to date, DuPont indicated it is starting an in-situ bio-treatment pilot study in late May 2011 to determine the feasibility of biological treatment of the off-site plume. While no off-site treatment of groundwater has been conducted heretofore, DuPont asserts that pump and treat systems would not be feasible at the 2 - 50 ppb pollutant concentrations. Reduction of current concentrations of pollutants would naturally attenuate.

SITE TOUR

Two areas were visited during the site visit: (1) the pump and treat station, and (2) groundwater monitoring wells (to note their physical condition); no concerns were noted in the operation and condition of equipment or of the wells.

RECORD KEEPING

The following records were reviewed:

(1) Site maps including well locations, elevations and most recent groundwater monitoring data;
(2) Air stripper effluent sampling data.
(3) Off-site residence groundwater analyses data and basement vapor monitoring data.

Other records, including videos of walk-throughs of two tunnels that were formerly used to store explosives, are being reviewed.

CONCLUSIONS

1. Other than the Acid Brook Delta and the uplands, off-site sediment and soil remediation of heavy metals has been completed.

2. Off-site groundwater contamination and vapor intrusion: concentrations of PCE and TCE exceed screening levels in the upper part of the water table aquifer resulting in vapor intrusion into residences above the plume. Hydraulic control using a pump and treat system prevents additional groundwater contamination from further impacting nearby homes; sub-slab vapor intrusion mitigation to avert vapors away from homes is offered residents, approximately 250 of whom are using this technique. In addition, biological agents are being considered to attenuate groundwater pollutant concentrations even further.

3. Remediation of remaining on-site sediment and soil contamination of heavy metals is awaiting final remedy approval; this 3-year project will involve excavation, off-site shipment and/or consolidation and capping.

4. Although on-site groundwater contamination is being addressed with pump-and-treat system, at its present rate of treatment, significant attenuation may not be achieved in the near future.

RCB will continue to review the progress of the site remediation and provide comments as necessary which it believes may improve or expedite the remediation.