

Stor Dynamics

Elmwood Park Borough, Bergen County

August 2009

Purpose of this Notice

The New Jersey Department of Environmental Protection's (NJDEP) Site Remediation Program is issuing this Draft Decision Document to discuss remedial alternatives to address soil and ground water contamination at the former Stor Dynamics site located at 99 Main Avenue in Elmwood Park, Bergen County, and identify the preferred remedy NJDEP has prepared this document for public release and is soliciting comments during the public comment period that runs for 30 days from **September 3 to October 2, 2009**.

Site Background

The Stor Dynamics site operated between 1965 and 1989. The company subsequently went bankrupt. A dilapidated building currently occupies the site. While it was in operation, Stor Dynamics shared the facility with another tenant known as Atlas Conveyor. Stor Dynamics manufactured and painted metal shelves and storage units and Atlas Conveyor manufactured and painted gravity conveyor systems. A cement cistern inside the building held solvents for cleaning equipment. The cistern leaked, causing the soil and ground water at the property to become contaminated with volatile or ganic compounds (VOCs).

In 1999, NJDEP excavated approximately 760 tons of soil that were highly contaminated with VOCs from beneath the building and backfilled the area with clean material. In 2001, NJDEP installed a ground water extraction system at the site as an interim measure to remove the solvents floating on the water table and prevent the plume of VOC-contaminated ground water from moving off-site. NJDEP shut the system down in 2002, however, because it was unable to draw sufficient ground water from the aquifer to effectively contain the contamination.

The Stor Dynamics ground water plume is migrating toward the Garfield City well field in Elmwood Park, located approximately 1,000 feet away from the site, which was once shut down due to VOCs in the ground water. Garfield City subsequently installed a treatment system at the well field to remove the VOC contamination from the water and the well field is back in operation.

Remedial Investigation Summary

NJDEP engaged a contractor to perform a remedial investigation to determine the extent of the VOC contamination in the soil and ground

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**New Jersey Department of Environmental Protection
Site Remediation Program, Office of Community Relations
www.nj.gov/dep/srp/community/**

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Acting Commissioner**

water at the Stor Dynamics site and the adjacent Grant Industries and LaPlace Chemical sites. The remedial investigation revealed that soils highly contaminated with VOCs were present in the drainage ditch that traversed all three properties. The primary contaminants were chlorinated VOCs, particularly trichloroethene (TCE) and perchloroethylene (PCE). In addition, the remedial investigation revealed there was a small area of VOC-contaminated soil beneath the Stor Dynamics building that had not been addressed during the 1999 soil removal action.

The remedial investigation also confirmed the ground water at the Stor Dynamics site was highly contaminated with VOCs, including TCE and PCE. Treatability studies were subsequently performed to evaluate treatment options and conduct a Remedial Action Selection Evaluation.

Remedial Action Selection Evaluation

Based on the findings of the Remedial Investigation, NJDEP has conducted a Remedial Action Selection Evaluation to evaluate options to address the soil and ground water contamination at the Stor Dynamics site. Two remedial alternatives were considered: 1) Nano-Iron and Edible Oil Substrate (EOS) Injection, and 2) Excavation and Disposal.

1. Nano-Iron and EOS Injection

This remedial alternative involves injecting submicron “nano” particles of iron into the soil and ground water at the property followed by an injection of EOS, a soy bean-based oil product. The nano-iron particles chemically react with the chlorinated VOCs, causing them to degrade into non-toxic compounds. The EOS is added to stimulate the natural biodegradation of the chlorinated VOCs that do not completely react with the nano-iron particles. Due to the dilapidated state of the building, it would be

necessary to demolish it in order to treat the small area of contaminated soil beneath the foundation. The estimated cost to use Nano-Iron and EOS Injection technology to address the soil and ground water at this site (including the building demolition) is \$556,000.

2. Excavation and Disposal

This remedial alternative would entail excavating roughly 4,000 tons of contaminated soil to the ground water table (approximately 10 feet below grade) and disposing of the material at an off-site facility. The contaminated soil beneath the water table and the contaminated ground water would not be addressed under this alternative. The estimated cost to excavate and dispose of the contaminated soil outside of the Stor Dynamics building is \$732,000.

To excavate and dispose of the additional small source area beneath the Stor Dynamics building, the building would need to be demolished at a cost of approximately \$180,000. As a result, the total estimated cost of Alternative 2 is \$912,000.

The Remedial Alternatives were evaluated against the following criteria:

1. The ability of the remedial action to protect public health and safety and the environment.
2. The implementability of the remedial action
3. The consistency of the remedial action with other applicable Federal, State and local laws and regulations
4. The potential impacts of the remedial action on the local community

5. The potential for the remedial action to cause natural resource injury

NJDEP selects the remedial alternative that offers the best balance among the criteria listed above. Regarding the first criterion, Alternative 1 will be effective for source remediation in the soils and ground water near the Stor Dynamics building, while Alternative 2 would not be a comprehensive remediation. Alternative 2 will only address the contaminants to a depth of 10 feet. Ground water pumping and treatment would be required to remove the contaminants below 10 feet. As such, Alternative 1 best addresses the first criteria.

With respect to the second criterion, both alternatives are implementable at the site. Excavation is more difficult due to access issues and nearby structures.

Regarding the third and fourth criteria, both alternatives would be consistent with federal, state and local requirements, and both would likely have no impacts on the local community

Finally, natural resource injury has already occurred at the Stor Dynamics site, and the remedial actions are being considered to mitigate the injury. Therefore, both Alternative 1 and Alternative 2 would be acceptable under the fifth criterion.

Based on the evaluation of the two remedial alternatives against the remedial action criteria, NJDEP has selected **Nano-Iron and EOS Injection** as the preferred approach to address the contamination at the Stor Dynamics site.

Draft Decision Document and Public Comment Period

The public comment period on this Draft Decision Document is between **September 3 and October 2, 2009**. Please direct any written or oral comments to NJDEP at the following:

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This Draft Decision Document is also available online at www.nj.gov/dep/srp/community/sites/stordynamics.