Superfund Program
U.S. Environmental Protection Proposed Plan Agency, Region II

Waldick Aerospace Devices Site

August 2008

EPA ANNOUNCES PROPOSED PLAN

This Proposed Plan describes the U.S. Environmental Protection Agency's (EPA's) proposed change to the groundwater remedy selected in the March 1991 Record of Decision (ROD) for the Waldick Aerospace Devices Superfund Site (Site), located in Wall Township, New Jersey. EPA's preferred groundwater remedy is No Action, with monitoring.

This document is issued by EPA, the lead agency for Site activities, in conjunction with the New Jersey Department of Environmental Protection (NJDEP), the support agency for this project.

EPA is issuing this document as part of its public participation responsibilities under Section 117(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA), and Section 300.430 (f)(2) of the National Contingency Plan (NCP). This document summarizes information that can be found in detail in the Long-Term Monitoring Report Groundwater Phase (OU2), dated June 2008, and other supporting documentation. This Proposed Plan is being provided as a supplement to the Long-Term Monitoring Report to inform the public of EPA's and NJDEP's preferred remedy, and to solicit public comments pertaining to the preferred alternative.

The remedy described in this Proposed Plan is the preferred remedy for the Site. Changes to the preferred remedy, or a change from the preferred remedy to another remedy, may be made if public comments or additional data indicate that such a change will result in a more appropriate remedial action. The final decision regarding the selected remedy will be made after EPA has taken all public comments into consideration. The public is encouraged to review and comment on the preferred alternative considered by EPA in this Proposed Plan.

COMMUNITY PARTICIPATION

EPA and NJDEP provide information regarding the remediation of the Waldick Aerospace Devices Site to the public through public meetings and the Administrative Record file for the Site. EPA and the State of New Jersey rely on public input to ensure that the public will have a more comprehensive understanding of the Site and the Superfund activities that have been conducted.

The dates for the public comment period, the date, location and time of the public meeting, and the locations of the Administrative Record files, are provided on the front page of this Proposed Plan.

MARK YOUR CALENDAR

PUBLIC COMMENT PERIOD:

August 14 - September 13, 2008

U.S. EPA will accept written comments on the Proposed Plan during the public comment period.

PUBLIC MEETING:
August 21, 2008

U.S. EPA will hold a public meeting to explain the Proposed Plan and the preferred remedy in the Long-Term Monitoring Report. Oral and written comments will also be accepted at the meeting. The meeting will be held at the Wall Township Municipal Building, located at 2700 Allaire Road in Wall Township, New Jersey at 7:00 p.m.

For more information, see the Administrative Record at the following locations:

U.S. EPA Records Center, Region II
290 Broadway, 18th Floor.
New York, New York 10007-1866
(212)-637-3261
Hours: Monday - Friday 9 am to 5 pm

Wall Township Public Library
2700 Allaire Road,
Wall Township, New Jersey, 07719

This Proposed Plan and the Long-Term Monitoring report are being made available to the public during the public comment period. Written comments on the Proposed Plan or the Long-Term Monitoring Report will be welcomed through September 13th, and, if received by that date, will be considered in the ROD Amendment, which will formally document the preferred remedy. All written comments should be addressed to:

Ms. Pamela J. Baxter, CHMM
Remedial Project Manager
U.S. Environmental Protection Agency – Region 2
290 Broadway – 19th Floor
New York, N.Y. 10007-1866

The preferred remedy will be documented in the ROD Amendment only after consideration of all comments received. A public meeting has been scheduled for August 21, 2008 at 7:00 pm at the Wall Township Municipal Building.

SITE HISTORY

The Site is an inactive, former industrial facility located at 2121 Highway 35 in the Sea Girt section of Wall Township, Monmouth County, New Jersey. It includes 1.72 acres which appears as Block 733, Lot 5, on the Monmouth County tax map. KDD Realty owned the Site. From Approximately 1979 until approximately 1984, Waldick leased the Site from KDD Realty.

The Site was originally purchased and developed in the mid-1950s. For approximately 25 years, the Site's main and auxiliary buildings were used primarily for storage and handling of plumbing supplies, as well as for office space and storing plumbing supplies. In 1979, the property was leased to Waldick Aerospace Devices Inc.(Waldick), a company that manufactured and electroplated quick release pins for the aerospace industry.

In 1982, New Jersey state and county inspectors found that various degreasing, dip, rinse and plating tanks, as well as a polishing machine were discharging wastewater directly onto the ground. Used machine oil had also been discharged onto the ground. Sampling revealed that the wastes contained heavy metals, acids, and volatile organic compounds. Soil and groundwater, as well as two buildings were contaminated by Waldick. A third building, not used by the Waldick firm, had been used for several retail operations.
On September 29, 1987, a ROD was signed by EPA, which selected a remedy for the Site that included in-situ air stripping to treat contaminated soils, excavation and off-site disposal of all treated soils with residual contamination above action levels, remediation of on-site buildings by decontamination or demolition, installation of additional groundwater wells, establishment of an environmental monitoring program, complete fencing of the Site to restrict access, and well restrictions. Groundwater was to be further investigated.

As part of EPA's enforcement efforts for the Site, several potentially responsible parties (PRPs) were identified. PRPs were notified in writing and given the opportunity to perform work under EPA supervision. None of the PRPs elected to undertake remedial activities for the Site. Additionally, EPA sued one PRP to seek reimbursement for costs incurred and subsequently reached a settlement with that PRP.

On March 29, 1991, a second ROD was signed. This ROD amended the 1987 ROD by selecting on-site thermal desorption to remove organic contaminants, solidification/stabilization treatment for inorganic contaminated soils and backfilling or off-site disposal of treated soil. The ROD also selected an interim pumping and treatment system for groundwater remediation. The goal of this remedy was to prevent further migration of the highly contaminated portion of the groundwater contaminant plume and to evaluate the aquifer's response to extraction and treatment measures.

The operable unit 1 (OU-1) portion of the 1991 ROD was implemented in 1993. The main and the auxiliary buildings were demolished and approximately 3,450 cubic yards of contaminated soils, were excavated, treated and removed from the Site.

SITE CHARACTERISTICS

The Site is bordered to the east by Route 35, to the south by commercial property, and to the north and west by undeveloped woodland. According to the 2004 census tract, the population of Wall Township is 26,500 people.

The nearest residence is approximately 100 yards to the west of the Site. East of Route 35, there are wetlands and commercial and residential properties. A public water system supplies potable water to the residents that live hydraulically downgradient (southeast) of the Site. This system draws water from a well located approximately two miles to the west-southwest of the

Site.

Groundwater in the area of the Site is designated by the State as Class II, indicating that it is a current or potential source of drinking water.

The Site is underlain by the Cohansey and Kirkwood formations, both of which are saturated and part of the Kirkwood-Cohansey aquifer system. The Cohansey formation is about 30 feet thick and made up of medium-fine sand and gravel, while the underlying Kirkwood Formation contains silt with fine sand and clay. The sands of the Cohansey in this area have a moderate permeability (estimated hydraulic conductivity of 60 feet/day), while the Kirkwood near this Site has a much lower permeability.

SUMMARY OF FINDINGS

EPA continued with the remedial investigation of groundwater at the Site after the OU-1 soil remedial action was completed. Long-term groundwater monitoring began at the Site in 1997. EPA conducted seven rounds of groundwater sampling between 1997 and 1998. The first round of sampling included 15 wells. In 2003, EPA conducted additional pre-design investigations which included sampling of 18 monitoring wells. EPA began conducting semiannual sampling events in 2006. Nine monitoring wells, one seep sample and one-co-located surface water sample were included in the long-term monitoring program. The wells monitored were selected based on previous sampling events as part of the pre-design investigation conducted in 2003. Previous sampling indicated that contamination did not extend to the deep wells screened in the underlying Kirkwood aquifer.

As described in the Long-Term Monitoring report, groundwater investigations have documented declining contaminant levels for volatile organic compounds, in particular tertrachloroethene (PCE), which are approaching the cleanup criterion of 1 microgram/liter (µg/L) in all monitoring wells. Exceedances of the 1 µg/L criterion are present in only two isolated areas: one area near on-site monitoring well RD-101S that extends across Route 35 to monitoring well MW-102S had a concentration of 3.9 µg/L , and a second area near Seep SS-02 at Hannabrand Brook had a concentration of 2.1 µg/L**.** (See figure 1).

Chromium concentrations in groundwater have decreased to below the cleanup criterion and are no longer of concern at the Site. However, cadmium concentrations did increase at on-site monitoring well RD-101S, several years after the soil excavation was completed, and peaked during the January 2006 sampling event. Based on the most recent groundwater data, the cadmium concentration in monitoring well

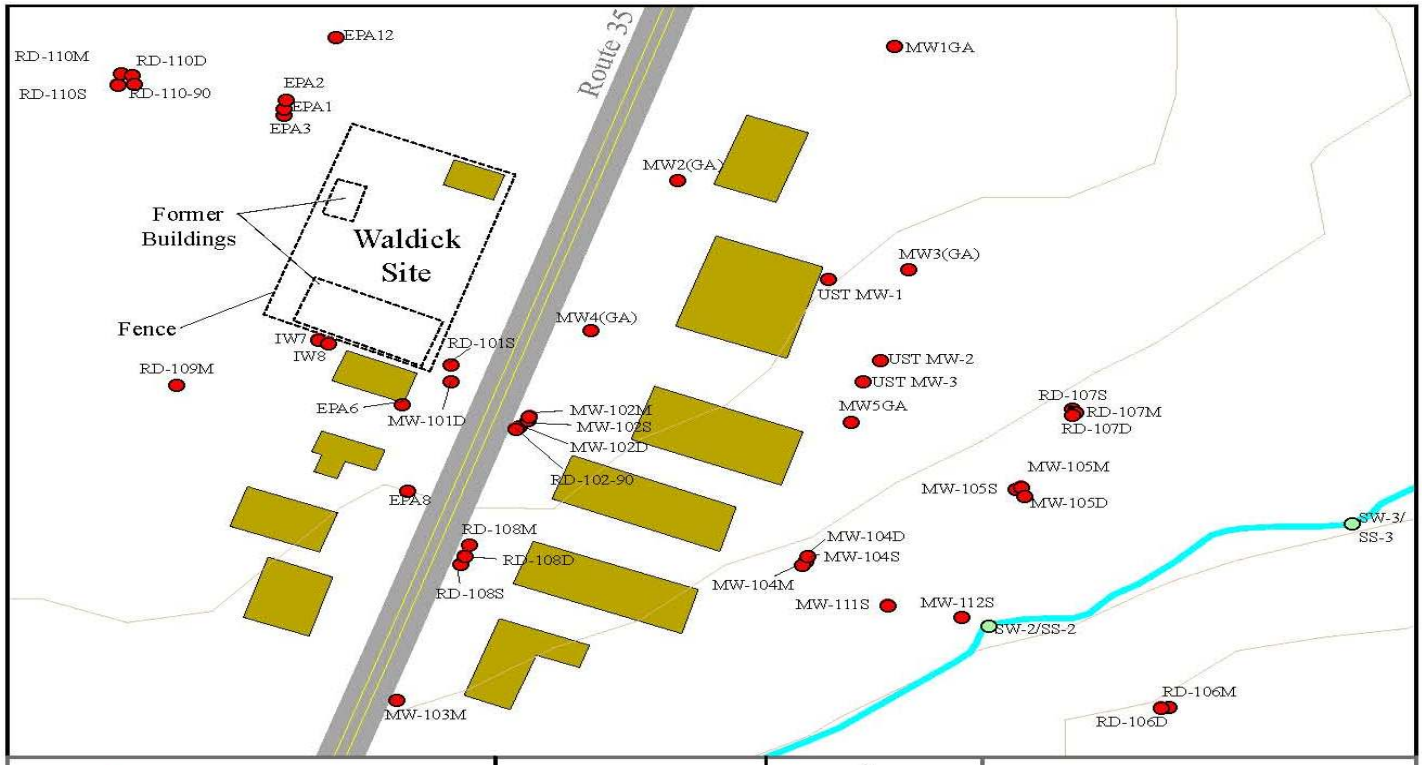

Figure 1
Well Locations

RD-101S was 78.8 µg/L. The cadmium concentrations drop significantly downgradient of RD-101S, decreasing to 23.1 µg/L at MW-102M, approximately 120 feet downgradient of RD-101S.

Cadmium and PCE were not detected in surface water samples obtained from Hannabrand Brook.

As a result of the 1993 soil remedial action, groundwater contaminant concentrations have decreased to levels that no longer warrant active remediation for PCE and cadmium.

SUMMARY OF SITE RISKS

As part of the previously conducted remedial investigation and feasibility study (RI/FS), a public health evaluation (PHE) was conducted to estimate the hazards and risks associated with the current and future effects of contaminants on human health and the environment. A PHE is an analysis of the potential adverse human health effects caused by hazardous-substance exposure in the absence of any actions to control or mitigate these under current and future land uses. A four-step human health risk assessment process was used for assessing site-related non-cancer health hazards and cancer risks. The process includes: Hazard Identification of Chemicals of Potential Concern (COPCs), Exposure Assessment, Toxicity Assessment, and Risk Characterization (see text box, "What is Risk and How is it Calculated?", at this end of this Proposed Plan). Exposures to contaminated groundwater through ingestion and inhalation from showering were evaluated for future residents because there were no current groundwater exposures known to exist. In the PHE conducted as part of the RI, inhalation of volatile organic compounds released while showering and ingestion of contaminated groundwater, evaluated under a hypothetical future use scenario, were the only pathways of exposure considered potentially hazardous to humans in the PHE. Maximum estimation for non-cancer hazards was calculated as 34.9, which exceeds the acceptable value of 1, and carcinogenic risk was calculated as 2×10^{-4} which is slightly above the acceptable risk range of 10^{-6} to 10^{-4}. Based upon these calculations, it was determined that cleanup of the groundwater was warranted because contamination exceeded federal and New Jersey Safe Drinking Water Act maximum contaminant levels (MCLs) and the groundwater should be restored to its beneficial use as a potential drinking water source in the future.
EPA has been monitoring the groundwater affected by the Site through the use of monitoring wells. The most recent results from the March 2008 sampling event indicate that two site-related contaminants, cadmium and PCE, are in the groundwater above MCLs. Two other contaminants, chloroform and acetone, were also detected, however, they were below the MCLs. In 2008, a new risk evaluation was performed for contaminants that exceeded the MCLs. EPA's statistical evaluation of the cadmium and PCE in groundwater, if used as a potable drinking water source for residents in the future, would result in an unacceptable hazard index (HI) of 5.6 for the adult resident and 13 for the child resident. The cancer risks associated with exposure to PCE (1.8×10^{-5} – adult; 8.6×10^{-6} -child) were within the acceptable cancer risk range of 10^{-6} to 10^{-4}.

Even with the HI exceedances, years of monitoring data show that groundwater contamination is localized. Additionally, all nearby residents and businesses are served by a public water supply.

The long-term groundwater monitoring shows that PCE and cadmium contaminant concentrations have been decreasing over time. Groundwater will continue to be monitored until the concentrations are below drinking water standards.

SCOPE AND ROLE

The March 29, 1991 ROD specified an interim groundwater remedy consisting of the installation of a pump and treat system (with chemical precipitation for metals and air stripping for volatile organic compounds) as the selected remedy for groundwater remediation of the PCE and cadmium plumes (OU-2). This system was not installed due to rapidly decreasing contaminant levels. EPA recommends No Action, with monitoring, as the preferred remedy. This remedy is intended to be the final remedy for the Site.

SUMMARY AND EVALUATION OF PREFFERED REMEDY

After careful consideration of the site-specific details and analysis of all data collected, EPA has determined that a No Action remedy, with monitoring, is the preferred remedial approach. EPA has determined that this remedial approach is protective of human health and the environment based on the following:

- Currently, water is provided to the residents in the vicinity of the Site via the local water company. There is presently no elevated risk posed by the Site groundwater since no potable wells are located

within the contaminated area or considered threatened by the contaminated area.

- Although non-cancer human health risks to potential future residents are slightly elevated, this would only occur if a potable well were installed in the wells RD-101S/MW-102 cluster area, which is considered highly unlikely. Furthermore, the extent of contamination is limited. Finally, all area residents are supplied with municipal water; there is no reason to install a potable well.

- Concentrations of PCE and cadmium in the area of contamination are expected to decrease with time, since the bulk of the source of the contamination in the soils has been removed.

EPA's goal for the groundwater remedy at the Site is to restore the groundwater to beneficial use as a drinking water source. The 1993 excavation of contaminated soil removed the source of the groundwater contamination. Groundwater sampling performed since that time has shown that the concentrations of groundwater contaminants have significantly decreased to the extent that a plume of contamination no longer exists. Contamination is limited to a small area near the wells RD-101S/MW-102 cluster area. Therefore, the active remediation of groundwater selected in the 1991 ROD is no longer appropriate or warranted. EPA expects that the localized groundwater contamination will continue to decrease and that the groundwater will be restored to beneficial use.

As a result, as part of the No Action remedy, a groundwater monitoring program will be implemented. The monitoring will assure that the No Action remedy remains effective and protective of human health and the environment. If results clearly show that PCE and cadmium concentrations in groundwater decrease to levels below drinking water standards, then monitoring may be discontinued. Alternatively, future remedial action may be proposed if monitoring shows that the concentrations of PCE and cadmium do not decrease to levels below drinking water standards. EPA understands that, in accordance with its regulations, NJDEP will require establishment of a Classification Exception Area for the Site until contaminant concentrations are below drinking water standards.

What is Risk and How is it Calculated?

A Superfund human health risk assessment is an analysis of the potential adverse health effects caused by hazardous substances released from a site in the absence of any actions to control or mitigate these releases; it estimates the "baseline risk" in the absence of any remedial actions at the site under current and future land uses. To estimate this baseline risk at a Superfund site , a four-step process utilized for assessing site-related human health risk for reasonable maximum exposure (RME) scenarios.

Hazard Identification: The hazard identification step identifies the contaminants of potential concern (COPC) in groundwater for this specific Site. Factors considered include: toxicity, frequency of occurrence, fate and transport of the contaminants in the environment, concentrations of the contaminants in specific media, mobility, persistence, and bioaccumulation.

Exposure Assessment: In this step, the different exposure pathways through which people might be exposed to the contaminants identified in the previous step are evaluated. Examples of exposure pathways for a groundwater site include ingestion of groundwater and inhalation of volatiles while showering. Factors relating to the exposure assessment include but are not limited to the concentrations that people might be exposed to and the potential frequency and duration of exposure. Using these factors, a RME scenario, which portrays the highest level of human exposure that could reasonably be expected to occur is calculated.

Toxicity Assessment: The toxicity step determines the types of adverse health effects associated with exposures to chemicals or radionuclides, and the relationship between the magnitude of exposure (dose) and severity of adverse effects (response). Potential health effects are chemical or radionuclide-specific and may include the risk of developing cancer over a lifetime or other non-cancer health effects such as changes in the normal functions of organs within the body (e.g., changes in the effectiveness of the immune system). Some chemicals are capable of causing both cancer and non-cancer health effects.

Risk Characterization: This step summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site risks. Exposures are evaluated based on the potential risk for developing cancer and the potential for non-cancer health hazards. The likelihood of an individual developing cancer is expressed as a probability. For example, a 10^{-4} cancer risk means a "one in ten thousand excess cancer risk"; or one additional cancer may be seen in a population of 10,000 people as a result of exposure to site contaminants under the conditions explained in the exposure assessment. Current federal Superfund guidelines for acceptable exposures are an individual lifetime excess cancer risk in the range of 10^{-4} to 10^{-6} (corresponding to a one-in-ten-thousand to a one-in-a-million excess cancer risk). For non-cancer health effects, a "Hazard Index" (HI) is calculated. An HI represents the sum of the individual exposure levels compared to their corresponding Reference Doses (RfDs). The key concept for a non-cancer Hazard Index is that a "threshold level" (measured as an HI of 1) exists below which non-cancer health effects are not expected to occur.