



Environmental Cleanup Former Unisys Site, Great Neck, N.Y. Program Overview

Spring 2019

Site Background

In 1996 Lockheed Martin acquired Loral Defense Electronics and Systems Integration, which included the former Unisys Corporation site at 1111 Marcus Ave in the village of Lake Success, NY. The site straddles the border between the Village of Lake Success and the Town of North Hempstead, NY. With the acquisition came responsibility for the ongoing environmental cleanup at the site.

The site comprises approximately 90.5 acres and includes one main building and several smaller buildings to the south of the main building. The main building was constructed in 1941 by the U.S. government for the manufacture of sonar and related military equipment. Sperry Gyroscope

bought the business and property in 1951. Sperry merged with the Burroughs Corporation in 1986 to become Unisys Corporation. In 1995, Loral Corporation acquired the assets of Unisys Defense Systems, and in early 1996, Lockheed Martin purchased the electronics and systems integration businesses of Loral. After its purchase, Lockheed Martin discontinued operations at the site in 1998 and in 2000 sold the property. The site is now operated as a commercial property with various tenants occupying the main building. Lockheed Martin remains responsible for the environmental cleanup.

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Environmental Cleanup Background

As a part of the original manufacturing operation at the Unisys site, a series of dry wells were constructed at the southeast corner of the main building for the disposal of liquid wastes. These wells were the primary source of the volatile organic compounds that were first found at the site in the 1970s when the property was owned and operated by Sperry. Environmental contaminants of concern are present at the site in the groundwater, soil, soil vapor and sediments, and in groundwater off-site.

Between 1978 and 2012, a series of studies identified the nature and extent of these contaminants. A number of actions have been taken to address these findings. An area of contaminated groundwater, known as a plume, originates at the site and spreads out under approximately 900 acres, extending north/northwest from the site. Additional information below describes the two groundwater collection and treatment systems that were installed by Lockheed Martin to mitigate the highest contaminant levels within the plume. The plume lies between 100 and 400 feet below the surface of the ground and has affected some public water supply wells of the Water Authority of Great Neck North and Manhasset-Lakeville Water District and golf course irrigation wells such as the Village of Lake Success golf course. Treatment systems are in place on the impacted public water supply and irrigation wells, and the water they supply meets standards appropriate for their use. The primary contaminants of concern in the groundwater are trichloroethene (TCE);

tetrachloroethene (PCE); 1,2-dichloroethene (1,2-DCE) and Freon 113. These chemicals are typically used as cleaning solvents.

The contaminants in the soil and sediments include metals, principally copper, barium and cadmium, and semi-volatile organic compounds (SVOCs), principally polycyclic aromatic hydrocarbons (PAHs). The contaminated soil is located in defined areas on the property.

In a May 1991 Consent Order, the New York State Department of Environmental Conservation (NYSDEC) designated the former Unisys site as a Class 2 Site on the Inactive Hazardous Waste Disposal list. The Consent Order outlined remediation goals for on- and off-site cleanup. The NYSDEC subsequently issued the OU-1 Record of Decision in early 1997 and an amendment in early 2015 that specify the details of construction, operation, maintenance and monitoring of the cleanup of groundwater, soil and soil vapor and sediments on-site. Additionally, the NYSDEC issued a Record of Decision for the off-site groundwater cleanup (OU-2) in December 2014. The Records of Decision respond to cleanup alternatives presented by Lockheed Martin following its extensive investigations and ongoing cleanup actions to address the contaminants. During the course of its investigations Lockheed Martin coordinated with NYSDEC, which discussed all of the alternatives and their ramifications with the citizens of the area surrounding the former Unisys site, and collaborated with local government officials and water purveyors.

Lockheed Martin is committed to doing the right thing, and is working closely with the New York State Department of Environmental Conservation (NYSDEC) to clean up the Site, meet all regulatory standards, and protect public health and the environment.

Groundwater Cleanup

In April 1993, Unisys installed an interim groundwater treatment system (Operating Unit-1, OU-1) to begin removing volatile organic compounds from the on-site groundwater at the site's northern boundary and to contain the movement of the plume. The 1997 Record of Decision (ROD) issued by the New York State Department of Environmental Conservation (NYSDEC) directed installation of a state-of-the-art groundwater treatment system to replace the interim system. Lockheed Martin installed this system in 2001-2 and it began operation in August 2002. A separate Record of Decision for off-site groundwater, released by the NYSDEC in late 2014, approved Lockheed Martin's proposal to upgrade the capacity of OU-1 from 730 gallons per minute to 850 gallons per minute by adding an additional deeper well for extracting groundwater from the plume for treatment. Design of the upgrade to the groundwater treatment plant began in 2015



New Manhasset-Lakeville Water District water treatment facility funded by Lockheed Martin to provide clean water to their customers.

and construction was completed in 2018. The system is now operating at 850 gallons per minute.

To clean up the contaminated groundwater that had already moved off site, Lockheed Martin constructed a second interim off-site groundwater treatment system (Operating Unit-2, OU-2) in

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On-Site (OU-1) Groundwater Treatment System



Off-Site (OU-2) Groundwater Treatment System

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June 2004 just south of the Great Neck South school property at a former water supply treatment facility. The Record of Decision issued by the New York State Department of Environmental Conservation (NYSDEC) in late 2014 approved Lockheed Martin's proposal to continue operating OU-2 at its present rate of 500 gallons per minute. It also approved Lockheed Martin's plan to provide funding to protect the public water supply in the wider area, working with the two water providers, Manhasset-Lakeville Water District and Water Authority of Great Neck North. This plan guarantees the distribution of potable water of highest quality to local citizens with treatment systems on wells affected by site-related contamination, including continued operation of all existing systems and installation of additional treatment systems or upgrades to existing systems as necessary. Monitoring well sampling and laboratory analysis will continue to track movement

of groundwater contaminants. Samples from these wells provide early warning of the need to add or adjust wellhead treatment systems.

Since the two operating units, OU-1 and OU-2, have begun working, more than 55,000 pounds of volatile organic compounds have been removed from the on-site property and the groundwater plume. The two units capture the highest contaminant concentrations.

On-Site Soil and Sediment Cleanup

Soil

In January 1994, an interim soil vapor extraction system was installed on-site near the original disposal area to remove any leftover volatile organic compounds from the soil. Responding to the 1997 Record of Decision issued by the New York

State Department of Environmental Conservation (NYSDEC), this system was expanded to remove contaminants from soil and from water perched in the soil above the groundwater aquifer outside the southeast corner of the main building. In 1998 the effort to remove leftover volatile organic compounds was expanded by excavating down to 30 feet around the three dry wells. Approximately 800 tons of contaminated soil was removed and disposed of off-site at an approved disposal facility. The excavation was backfilled with certified clean sand.

The OU-1 ROD Amendment required remediation of seven areas onsite. Five areas were excavated and fully remediated in 2017. The sixth excavation is expected to be completed in early 2019, while the final area is undergoing further review in 2019.

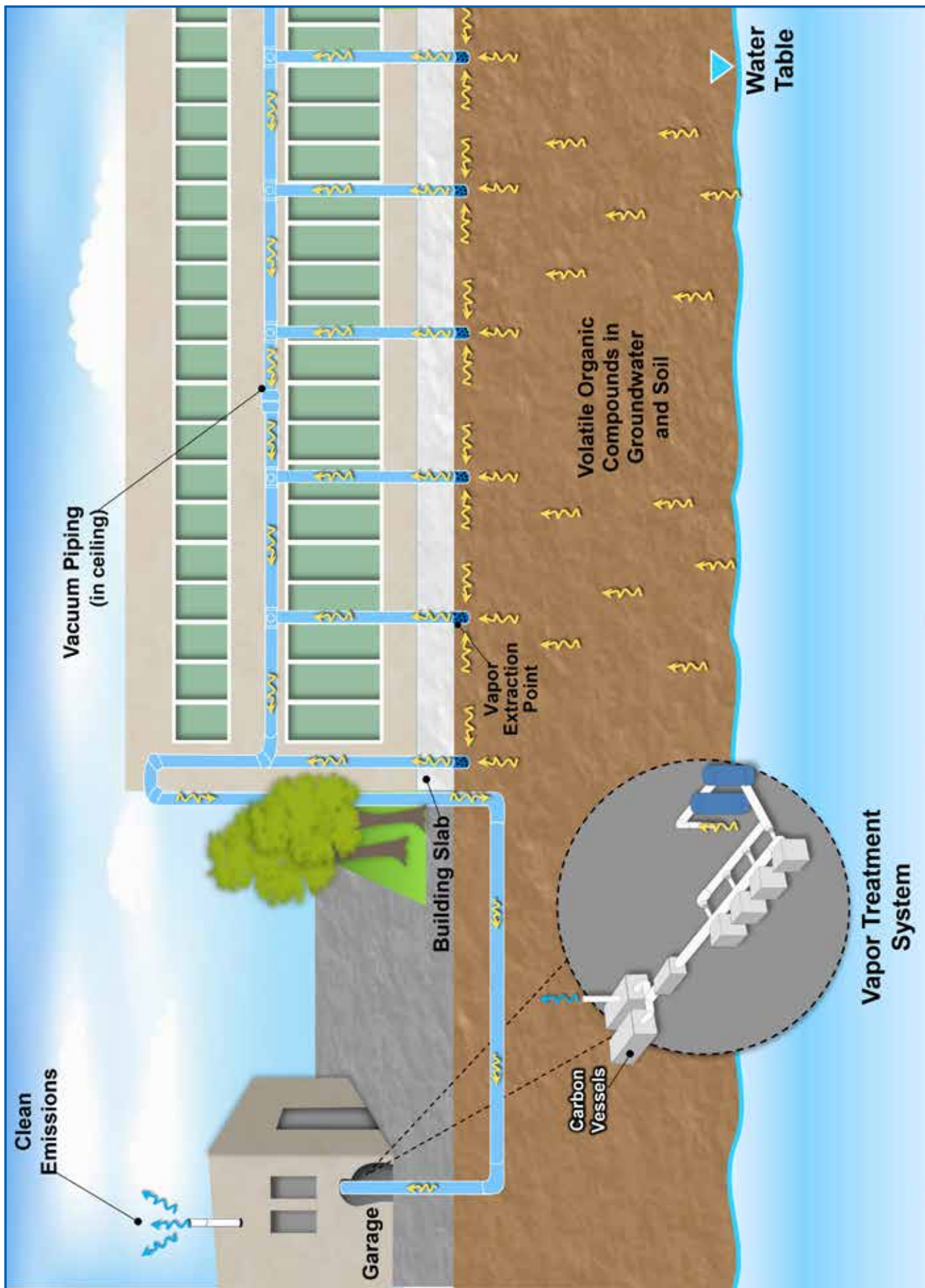
Sediment

During the course of its investigations, Lockheed Martin discovered contaminants at the bottom of three stormwater basins located at the southwest corner of the site. The contaminants resulted from stormwater runoff from site parking lots, roads and building roofs and are confined to the sediment. Lockheed Martin proposed, and the New York State Department of Environmental Conservation (NYSDEC) in its 1997 Record of Decision accepted, that public health would be served best by simply limiting access to these basins. An environmental easement is now in place requiring that these basin sediments not be disturbed and that the basins continue to be used for stormwater management. Deed restrictions have been recorded, a fence was constructed and is maintained around the basins and warning signs to restrict access are posted at the basins, and on the fence.

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The sub-slab depressurization system (SSDS) ensures safe air quality inside the main building



Graphic depicts sub-slab vacuum system which extracts vapors from beneath the entire building and pipes those gases to the garage, where they are treated and clean air is released.

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On-Site Soil Vapor

In 2006, the New York State Department of Health (NYSDOH) released guidance on vapor intrusion. (Vapor intrusion, or soil vapor intrusion, refers to chemicals in soil that move as a gas or vapor through the soil and into a building.) Responding to this guidance, Lockheed Martin investigated whether or not chemical vapors were present at the site. While samples taken in 2007 revealed no indoor air concentrations in the site buildings above the state guidelines, samples taken in 2008 identified two areas in the main building that did not meet state guidelines. Subsequently, Lockheed Martin installed two temporary sub-slab depressurization systems (SSDS) in order to quickly improve indoor air quality in these locations. Sub-slab depressurization systems use a vacuum to collect soil vapor below the foundation of a building, treat it and move the cleaned air to the outside of the building. Lockheed Martin informed building management of the situation and worked closely with tenants and the property owner to install the sub-slab depressurization systems.

Lockheed Martin subsequently constructed and began operating a new building-wide sub-slab depressurization system in 2013. The system is continuously operated and monitored to ensure that a vacuum is constantly maintained under the building. The New York State Department of Health concurs that the sub-slab depressurization system protects human health. Lockheed Martin will continue to advise tenants and the property owner on the sub-slab depressurization system performance. Since startup, over 340 pounds of VOCs have been removed from the soil vapor.

Terms to Know

1,2-DCE — 1,2-Dichloroethylene is a colorless, volatile liquid with an ether-like, slightly acrid odor.

Aquifer — An underground area of rock or materials such as gravel or sand that contain or through which groundwater moves.

Deed restriction — A legal requirement that is attached to a property deed that controls how land can or cannot be used.

Engineering Controls — Physical barriers such as fences and sub-slab depressurization systems that prevent access to contaminated soil or spaces, or that prevent contaminated vapor from entering buildings.

Environmental Easement — Environmental easements protect public health by restricting the use of a property to specified categories or by requiring deed restrictions or engineering controls.

Freon 113 — Freon 113 is a colorless, nonflammable liquid often used as a solvent. Since 1995, the U.S. Environmental Protection Agency has restricted the use of Freon 113.

PCE — The man-made liquid solvent tetrachloroethene, also known as tetrachloroethylene or perchloroethylene, is used in dry cleaning and for removing grease from metal surfaces. PCE evaporates easily, producing a sweet, ether-like odor.

Plume — a body of contaminated groundwater originating from a specific source and influenced by factors such as local groundwater movement and the character of the aquifer.

Pump and Treat System — Pump and treat systems pump contaminated groundwater to the

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surface where it is cleaned, or treated, and tested to ensure cleanup standards have been met. The cleaned water can be put back into the ground, a body of water, a public sewer, or used in a municipal drinking water supply system. OU-1 and OU-2 are pump and treat systems.

Record of Decision — A public document that explains the methods a state's environmental agency has approved for an environmental cleanup.

Sediments — Soil, sand and minerals that are washed from land into water and catch basins, usually by rain.

Soil Vapor Extraction (SVE) — Soil vapor extraction is a process that uses a vacuum to draw vapors from the soil toward piping that has been placed in the ground near the source of the contamination. The collected vapors are treated before being released into the atmosphere.

Sub-Slab Depressurization Systems (SSDS) — An engineering control that prevents vapors from entering a building by applying a vacuum

Stormwater recharge basin — A sand-lined basin created to collect stormwater to prevent flooding and infiltrate collected water into the ground through permeable soil.

TCE — The chemical compound trichloroethylene, also known as trichloroethylene, is commonly used as an industrial solvent or degreaser. It is a clear, non-flammable liquid with a sweet smell.

Vapor Intrusion — The process by which volatile organic compounds that are present in soil or groundwater move through the soil and enter the air of an overlying building. Vapor intrusion can occur in any type of building through a crack or opening in a basement, crawl space or slab.

Volatile Organic Compound (VOC) — A type of chemical that transforms from a liquid to a gas at room temperature.

Points of Contact

New York State Department of Environmental Conservation – Girish Desai
gvdesai@gw.dec.state.ny.us (631) 444-0243

New York State Department of Health – Renata Ockerby
BEEI@health.state.ny.us (518) 402-7880

Lockheed Martin Corporation –
Meghan O. Macdonald
Meghan.O.Macdonald@lmco.com
(800) 449-4486

Lockheed Martin Corporation – Glenda Clark
Glenda.B.Clark@lmco.com 817.901.9933

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Great Neck Public Library (temporarily closed)
159 Bayview Avenue, Great Neck, NY 11023
Phone: 516-466-8055

Hillside Public Library
155 Lakeville Road, New Hyde Park, NY 11040
Phone: 516-355-7850