



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

Spring 2014

Project Summary

The former Unisys Corporation site (Site) is located at 1111 Marcus Ave. (formerly 365 Lakeville Road) in Lake Success, N.Y., near Great Neck, N.Y. The Site sits on approximately 94 acres, and includes one large building with several smaller buildings to the south.

In 1996, Lockheed Martin acquired the property when it bought a division of Loral Corporation, and in turn inherited the responsibility for the ongoing environmental cleanup of the Site. Today, the Site is owned by Apollo Lake Success Property LLC and 1111 Marcus Avenue Unit 2 Owners, LLC. However, Lockheed Martin continues to be responsible for the cleanup.

In keeping with its commitment to environmental stewardship, 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. Lockheed Martin also is committed to keeping the public informed throughout the cleanup process.

The primary building on the property has been renovated and subdivided for commercial development. Various commercial tenants, including a hospital, now occupy a large portion of the building, and the property owner expects tenant occupancy to increase.

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As a result of historical operations, there are contaminants present at the Site in the groundwater, soil, sediments and soil vapor. Dry wells located in the southeast corner of the facility that were once used for liquid chemical disposal are identified as the source and primary entry point for most of the subsurface contamination associated with the Site.

The plume of impacted groundwater lies under approximately 900 acres, and has a general flow pattern in the north/northwest direction. The groundwater plume ranges from 100 to 400 feet below ground surface. The primary contaminants of concern are volatile organic compounds (VOCs). The VOCs of greatest concern at the Site are trichloroethene (TCE), tetrachloroethene (PCE), 1,2-dichloroethene (1,2-DCE) and Freon 113.

Contaminants of concern in the soil and sediment include metals such as copper, barium and cadmium, and semi-volatile organic compounds (SVOCs) such as polycyclic aromatic hydrocarbons (PAHs). The contaminated soil is located in defined areas on the property.

Currently, there are both on-site and off-site treatment systems in place to address the contaminated areas of concern.

On-site Cleanup Activities

The on-site groundwater treatment system includes three extraction wells that remove impacted water from the ground, a treatment system on the northeast corner of the Site that cleans the water, and three recharge wells northeast of the Site that release water back into the aquifer.

In addition to the groundwater treatment system, there were two temporary sub-slab depressurization systems (SSDS) under the main building on the property that vacuum-extract and treat vapors that have been found under the foundation slab of the building. The vapor-extraction systems are specifically designed to intercept the vapors before they potentially enter the building. The two SSDS systems — identified as the Central SSDS and the Eastern SSDS — were installed in 2008. Today, these

systems underwent modifications and enhancements and became part of an expanded system to provide uniform coverage under the entire building. (*See graphic, page 6*)

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On-site soil remediation was first conducted in 1994 by soil vapor extraction in the dry well area of the site. Later in 1998, remediation focused on the removal of soil and sludge from the three dry wells. In addition to these activities, contaminated soil and sediment located in defined areas of the Site are being managed by way of an environmental easement. This easement legally defines restricted areas to protect human health by limiting the access and use of the areas through deed restrictions and physical barriers. Lockheed Martin continues to certify with NYSDEC that the necessary restrictions and requirements are being followed.

Off-site Cleanup Activities

Off-site groundwater is treated by two separate systems. One is an interim groundwater cleanup system that is being used until the long-term solution is identified, and may become a part of that permanent solution. This system is located north of the Site and operates similarly to the on-site system. Extraction wells pump about 500 gallons of water per minute out of the ground, the treatment system cleans the groundwater, and three recharge wells release the water back to the aquifer.

The other off-site groundwater treatment system is a temporary treatment system at the Village of Lake Success golf course that is used on a seasonal, on-call basis. When the water level is low in Lake Surprise, the golf course management contacts Lockheed Martin. Lockheed Martin then starts up the temporary treatment system that pumps groundwater from the golf course irrigation well through a carbon treatment system for purification. The clean water is discharged to Lake Surprise, which is then used to feed the sprinkler system at the golf course.

Site History and Goals

The main building on the property was built in 1941 by the U.S. government, which used the site as a factory during World War II. The factory manufactured sonar equipment and other related military hardware. Following the war, peace-time defense manufacturing was conducted at the Site. Sperry Gyroscope Company (Sperry) bought the property and operations from the U.S. government in 1951. Sperry merged with Burroughs Corporation in 1986 to form the 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. Lockheed Martin discontinued operations at the Site in 1998, and later sold the property in 2000 to i.Park, Lake Success, LLC, which developed it into a large industrial office complex. Today, the Site is owned by Apollo Lake Success Property LLC and 1111 Marcus Avenue Unit 2 Owners, LLC.

The contaminants associated with historic operations were found in the 1970s when the property was owned and operated by Sperry. Lockheed Martin assumed responsibility for the environmental cleanup, which already was under way when it purchased the site.

Between 1978 and November 1996, a series of on-site studies were undertaken to investigate volatile organic compound (VOC) contamination in soil and groundwater. The first studies traced the origin of the VOCs to a series of dry wells (subsurface structures constructed for liquid disposal) at the southeast corner of the main building. On May 1, 1991, the New York State Department of Environmental Conservation designated the Site in a Consent Order as a Class 2 Site on the Inactive Hazardous Waste Disposal site list.

This Consent Order also outlined the requirements for both on-site and off-site remediation. Subsequently, in March 1997, a Record of Decision (ROD) was issued by NYSDEC to address the on-site soil and groundwater, and identified these on-site efforts as part of Operable Unit 1 (OU-1). All of the off-site groundwater activities will be addressed in a second ROD (to be issued by NYSDEC in the near future), and will be considered part of Operable Unit 2 (OU-2) remediation activities.

In accordance with the Consent Order, OU-1 ROD, and other NYSDEC and New York State Department of Health (NYSDOH) direction, Lockheed Martin's remediation goals for the Site are to:

- Reduce, control or eliminate, to the extent practicable, the contamination in the soil on the Site.
- Attain Standards, Criteria and Guidance (SCGs) values for groundwater quality, to the extent practicable.
- Mitigate the impacts of contaminated groundwater to the environment.
- Prevent, to the extent possible, movement of contaminants from the sediments to the surface water and groundwater.
- Prevent the movement of contaminants into indoor air.

On-Site Groundwater Cleanup

In April 1993, the first groundwater pump and treat system was installed on-site by Unisys as an interim remedial measure to remove VOCs from groundwater at the northern Site boundary. In 1995, to improve and increase efficiency and air quality, an air stripper with off-gas treatment was added to the pump and treat system.

In accordance with the March 1997 Record of Decision, a state-of-the-art groundwater treatment system was constructed in 2001-2002 and began operation in August 2002 to replace the interim groundwater treatment system.

Objectives of the on-site groundwater treatment system are:

- Contaminant mass removal,
- On-site plume containment.

Since 1993, the on-site groundwater treatment systems (interim and current) have removed more than 42,000 pounds of volatile organic compounds. The on-site groundwater treatment system also has prevented further movement of the plume away from the site.

Off-site Groundwater Cleanup

Lockheed Martin, in close collaboration with NYSDEC, began off-site investigations in the mid-1990s. Results of the investigations showed that, although the on-site groundwater treatment system has been effective, a portion of the groundwater plume had already moved off-site.

To address the off-site contamination, an interim off-site groundwater treatment system was constructed in June 2004, then upgraded with additional fail-safe systems in 2005 and 2006.

To determine a more permanent solution for cleaning up the off-site groundwater, Lockheed Martin has conducted a two-part study to determine the nature and extent of the plume and the best way to clean it up. This is commonly referred to as a Remedial Investigation (RI) and a Feasibility Study (FS).

Lockheed Martin completed its investigation of the nature and extent of the plume off-site, and submitted the findings in a draft investigation report to NYSDEC in 2010. NYSDEC issued comments on the report in March 2012. The results of the RI were used to create a draft Feasibility Study (FS) to evaluate cleanup options.

The final RI/FS has been submitted to NYSDEC. Objectives of the off-site groundwater treatment system are to:

- Continue to protect public health by reducing people's risk of exposure to site-related chemicals of concern in groundwater at concentrations in excess of state and federal "Standards, Criteria, and Guidance" (SCG) values.
- Achieve the SCG values for site-related chemicals of concern in groundwater, to the extent practicable.

Since startup, the interim groundwater treatment system has removed approximately 10,130 pounds of volatile organic compounds from the groundwater.

On-site Soil and Sediment Cleanup

Soil

In January 1994, a soil vapor extraction system (also an interim remedial action) was installed in the dry well area to recover residual volatile organic compounds from the soil. In accordance with the March 1997 ROD, the soil vapor extraction system was expanded to address soil and perched water outside the southeast corner of the main building.

In 1998, to remove the bulk of the contaminated source area, the three dry wells were excavated to a depth of 30 feet, and approximately 800 tons of soil with volatile organic compounds and metals were removed and disposed of off-site at an approved disposal facility. The excavation was then backfilled with certified clean sand.

The objective for the soil cleanup for Operable Unit 1 was to remove contaminated soil and sludge from the three on-site dry wells.

Operable Unit 1 soil requirements are now largely complete. Under the direction of the NYSDEC, the remaining areas of soils contamination are being investigated and either removed or managed with an environmental easement.

Sediment

Investigations showed metal contamination in sediments at the bottom of three stormwater recharge basins located in the southwest corner of the property. The contaminants — which resulted from storm runoff from the site parking lots, roads and building roofs — are confined to the sediments. The 1997 ROD addressed these sediments and allowed the use of an environmental easement. This easement legally defines restricted areas to protect human health by limiting the access and use of the areas through deed restrictions and physical barriers. To ensure that the basin sediments are not disturbed and that the basins can continue to function normally for stormwater management, deed restrictions were recorded with the proper authorities. A fence was constructed around the basins, and warning signs were posted at the basins and on the fence.

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The objectives of the sediment cleanup are to implement engineering controls and deed restrictions that prevent public access to the basins.

On-Site Soil Vapor

In 2006, the New York State Department of Health (NYSDOH) released guidance on vapor intrusion. The term “vapor intrusion” or “soil vapor intrusion” describes a process in which a chemical present in soil or groundwater moves as a gas or “vapor” through the subsurface and enters a building.

In accordance with this guidance, Lockheed Martin began vapor investigations at the Site. Although sampling in 2007 did not identify any indoor air concentrations above the NYSDOH guidelines, investigations in 2008 identified two areas of the main building that did not meet the New York State Department of Health guidelines. Upon receiving this data, Lockheed Martin mobilized to install two temporary sub-slab depressurization systems (SSDS) 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, clean it, and move it to the outside before it enters the building. In addition, Lockheed Martin informed the tenants of the situation, and worked closely with both the tenants and the property owner to install the SSDS systems.

System monitoring continues to ensure that the air quality within the building meets state standards. To date, over 450 indoor air samples have been collected since the two temporary sub-slab depressurization systems were installed. The system monitoring has shown that all guidelines are being met. Lockheed Martin will continue to keep the property owner and tenants informed and up-to-date on the performance of the SSDS by providing sample results to the property owner for distribution to building tenants.

With the goal to proactively protect building occupants, Lockheed Martin constructed a new building-wide sub-slab depressurization system. The construction began in 2010 and began startup of the system in 2013. Sampling will continue during system operation to ensure the system is effective.

Objectives of the soil vapor treatment systems are to:

- Eliminate the potential for vapor intrusion
- Maintain full compliance with the 2006 New York State Department of Health Soil Vapor Intrusion Guidance

References

Reference documents in the public repository and on Lockheed Martin website

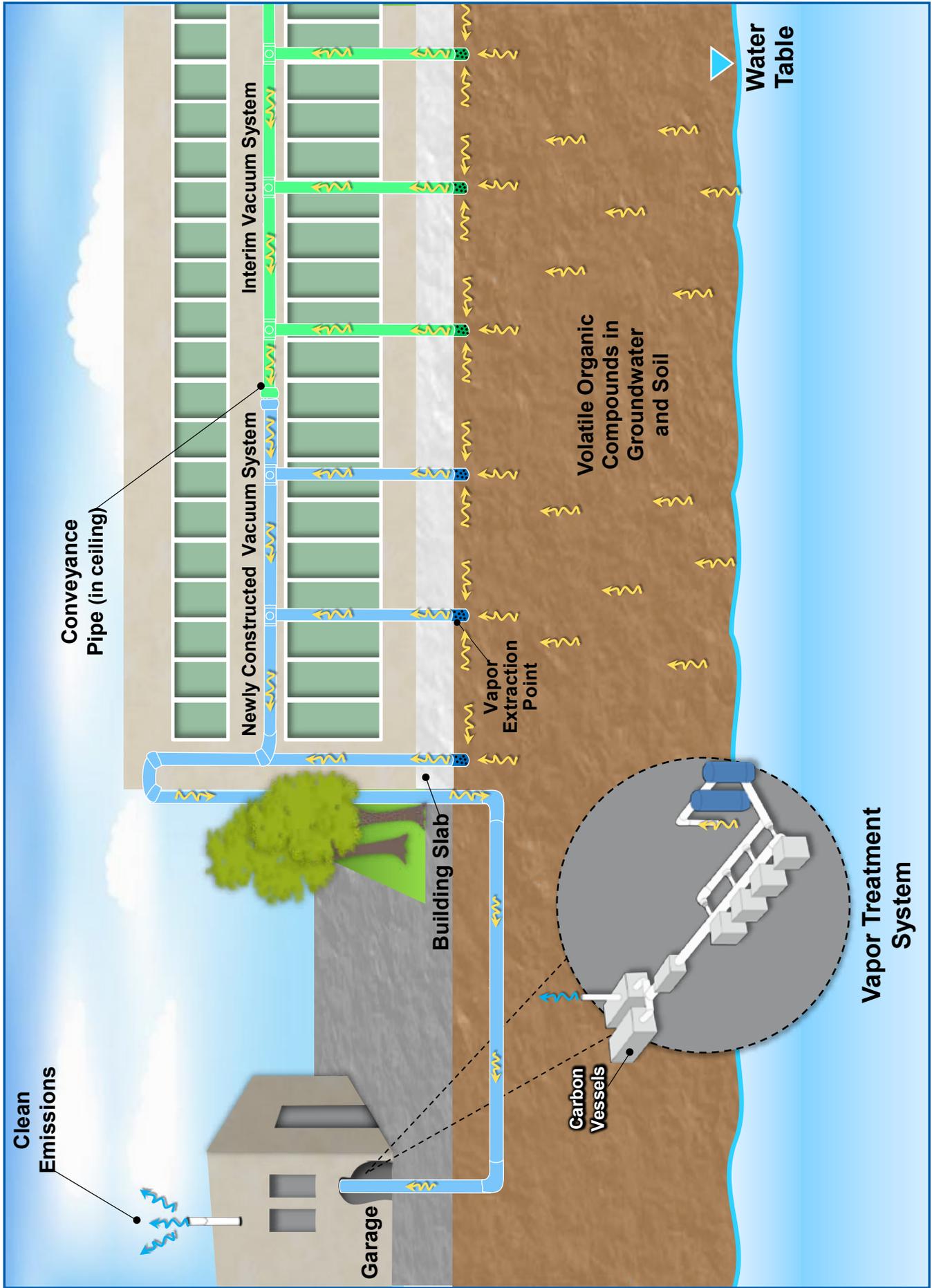
- This fact sheet
- OU-1 RI/FS
- OU-1 ROD
- Soil Vapor Data

Reference DEC and DOH Fact Sheets that are published online

- TCE
- PCE
- VI
- Website: http://www.health.state.ny.us/environmental/investigations/soil_gas/svi_guidance/docs/svi_appendh.pdf

Reference the Lockheed Martin Great Neck web page <http://www.lockheedmartin.com/us/who-we-are/sustainability/remediation/great-neck.html> which also has links to:

- This fact sheet
- OU-1 RI/FS
- OU-1 ROD
- Soil Vapor Data
- DEC/DOH Information



Graphic depicts interim and newly expanded 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.

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 can contain or move water that can be used for well water.

Deed restriction — A legal requirement that is attached to the property deed that controls how real estate buyers can (or can't) use the land and what they can (or can't) do on it.

Engineering Controls — These controls encompass constructed physical barriers such as fences to prevent exposure to contamination.

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

Feasibility Study — a comprehensive study conducted to develop, screen and evaluate alternative actions for cleanup.

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

Interim Remedial Measures — Temporary environmental cleanup measures that are used until a final one is defined.

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

Pump and Treat System — This type of system pumps polluted groundwater to the surface, where it is cleaned (treated) and tested to ensure cleanup standards are 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.

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

Remedial Investigation/Feasibility Study — A remedial, or environmental, investigation is conducted, then a feasibility study is done that develops and compares several remedial cleanup alternatives to help decide which is the best possible approach for site cleanup.

Sediments — Soil, sand and minerals that are washed off from land into the water, usually after rain.

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

Standards, Criteria and Guidance (SCGs) — State and federal guidance documents and regulations relating to the investigation and remediation of environmental cleanup sites.

Stormwater recharge basin — A sandy-type basin made to collect stormwater to replenish groundwater supply.

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 term “vapor intrusion” describes a process in which certain types of chemicals — 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.

455 Hillside Trail
Eddyville, Ky 42038



On-Site (OU-1) Groundwater Treatment System

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 – Gary Cambre
gary.cambre@lmco.com (800) 449-4486

Lockheed Martin Corporation – Stan Phillips
robert.s.phillips@lmco.com (817) 495-0251

**To be added to the mailing list for future updates, please notify
Kay Armstrong at 1-888-340-2006 or darrylkay@aol.com
or by mail to: 455 Hillside Trail, Eddyville, KY 42038**