



Information for Norwalk Neighbors

ROADMAP TO CLOSURE: SITE CLEANUP COMPLETION TARGETED IN FIVE YEARS

A new cleanup plan is under way at the former Defense Fuel Support Point (DFSP) Norwalk, also known as the Tank Farm, located at 15306 Norwalk Boulevard (see figure on page 2). The goal of the plan is to complete cleanup of the soil and groundwater, which was impacted by former fueling operations in past years, within the next five years.

The Defense Energy Support Center (DESC) used the Tank Farm site to store and transfer military fuels until 2001. Kinder Morgan Energy Partners (KMEP) now leases a two-acre easement on the south side of the facility (as indicated by "B" in the figure on page 2). The company previously operated a pump station within the easement and pumped fuel into and out of the facility. The pump station has since been decommissioned, but three pipelines heading eastward along the southern boundary remain in service to deliver gasoline, diesel, and jet fuels.

DESC and KMEP have been jointly working on investigating and cleaning up the site since impacted soil was first discovered in the mid 1980s. The Regional Water Quality Control Board (RWQCB), the lead regulatory agency on this project, oversees

cleanup at the site and must review and approve any clean-up activities. RWQCB also sets the cleanup goals and can grant closure or "No Further Action" at the site when the cleanup goals are met.

Last year, RWQCB began to review the previous project data. "We have a lot of data, from 10 years of study, and 10 years of cleanup, which is great," said Elizabeth Erickson, former RWQCB Project Manager. "Now it is time to set our sights on completing the cleanup." Therefore RWQCB requested that DESC and KMEP evaluate their cleanup operations and make changes to complete the cleanup in five years in order to get to site closure.

DESC and KMEP submitted their respective new cleanup plans to the RWQCB for review in July 2006. The objectives of each plan are to evaluate the

progress of the cleanup activities to date, evaluate areas that need further investigation, and recommend cleanup strategies to achieve site closure within five years.

The plans were also submitted to the Restoration Advisory Board (RAB) for review. The RAB is an advisory body that is made up of Norwalk-area residents, DESC, KMEP, RWQCB, and the City of Norwalk. The group has been meeting quarterly since 1995 to discuss and comment on the cleanup plans and progress. ■



As part of the new program aimed at completing cleanup within five years, contractors at the Tank Farm prepare to drill a new vapor extraction well in April 2007.

CLEANUP OPERATIONS OVERVIEW

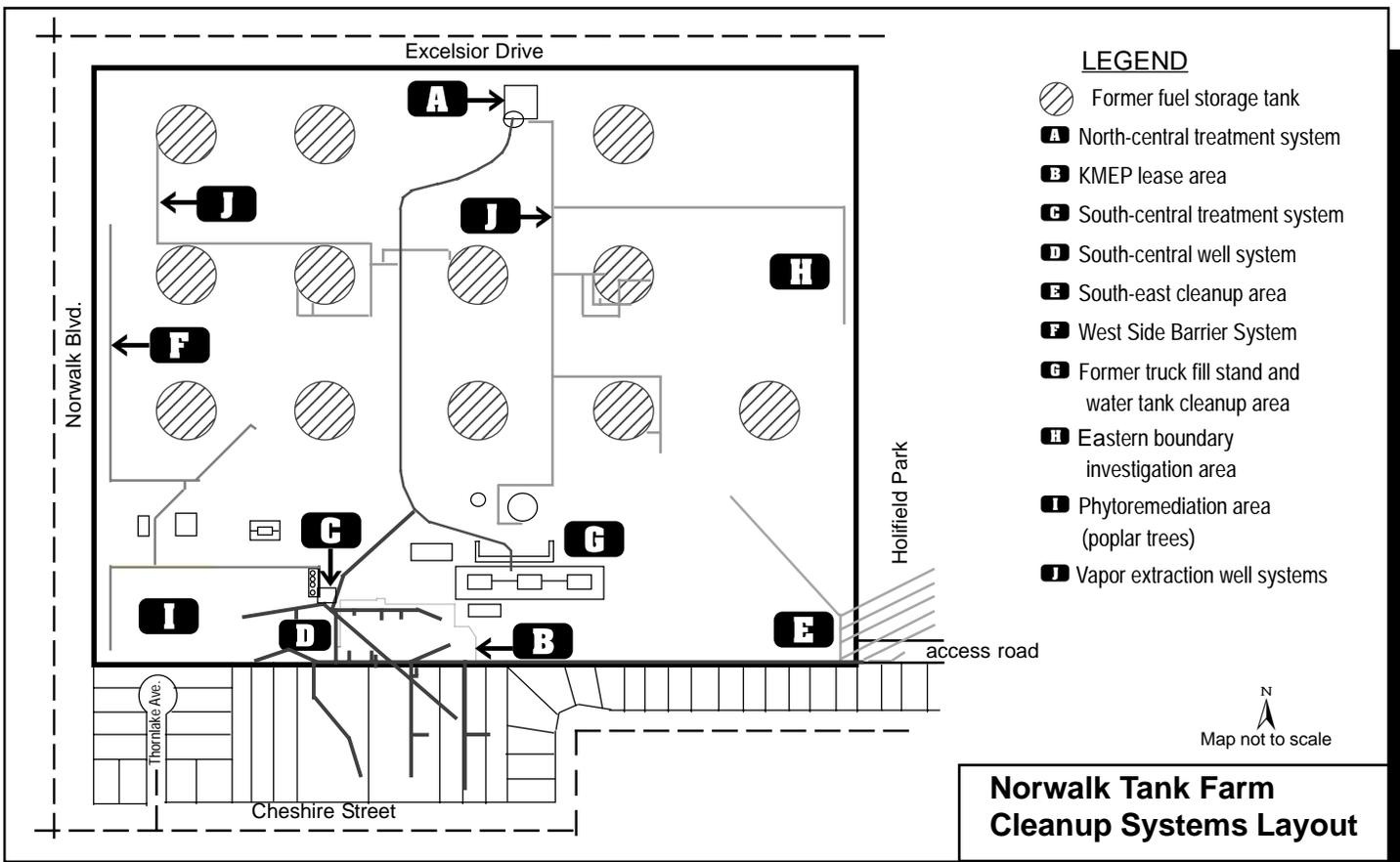
KMEP began full-scale cleanup in 1995, primarily in the south-central area (see figure, C), both on- and off-site (figure, area D), and the southeast area (figure, area E). DESC's full scale cleanup system became operational in 1996, primarily in the north-central area (figure, A). Both cleanup systems used a combination of technologies to treat soil and groundwater beneath the site, including *soil vapor extraction (SVE)* and *free product and groundwater recovery and treatment* (see glossary on page 4 for terms in bold). Chemicals of concern include total petroleum hydrocarbons (TPH), 1,2-dichloroethane (1,2-DCA), benzene, and methyl tertiary-butyl ether (MTBE).

A series of groundwater wells were set up along the west, call the West Side Barrier System, to help prevent the chemicals from migrating further off-site to the west (figure, F). Groundwater extraction for this system began in 1996.

DESC installed a *biosparge* system in 1999. Additional biosparge wells were added in 2001 and 2004 (figure, J). In 1999, KMEP planted 80 poplar trees in the southwest area to act as a natural pump and treat system to remove hydrocarbons from the groundwater (figure, I).

After the facility closed in 2001, DESC began investigation of the former Truck Fill Stand area (figure, G). Vapor extraction wells were installed in this area in 2004. The wells were connected to the DESC treatment system in the north-central area.

DESC and KMEP have been jointly investigating TPH found along the eastern boundary of the facility (figure, H). An investigation is underway to test the soil gas, soil, and groundwater at the adjacent Holifield Park to assess the quality of soil and groundwater there. ■



OVERVIEW OF DESC'S 5-YEAR PLAN

DESC's Revised Remedial Action Plan includes the following recommendations to achieve cleanup goals within five years:

- Stop active free product recovery and remove residual free product using absorbent socks (sponge-like devices that can absorb up to two gallons of fuel from within a well).
- Investigate and remediate areas known to have high impacts but not have been addressed previously, including the Powerine basin (figure, near letter A), the holding/settling tank to the northeast of the site, and areas adjacent to and beneath the tanks.
- Extract vapors using SVE to reduce methane and TPH concentrations.
- Perform *bioventing*.
- Extract groundwater to prevent TPH migration off-site.
- Implement additional biosparging.
- Perform *monitored natural attenuation* to reduce the concentrations to target cleanup levels.

In order to obtain soil closure, DESC proposes to continue operation of the SVE system for approximately a 3- to 6-month period, and then conduct additional testing. If needed, the SVE system will be converted into a bioventing system to meet remedial objectives.

In order to obtain groundwater closure, DESC proposes that a two-year post-remediation groundwater sampling event be conducted. If hydrocarbon concentration trends indicate consistent levels below the cleanup goals, then additional post-remediation sampling will not be needed, and no further action will be requested. If concentrations exceed cleanup goals, monitored natural attenuation will be performed to achieve the cleanup goals. ■

OVERVIEW OF KMEP'S 5-YEAR PLAN

KMEP proposes to expand the SVE and total fluids (groundwater and free product) extraction systems in areas residual free product remains. The expansion will include installing seven new SVE wells, reconfiguring four existing wells to perform total fluids extraction, and continuing with enhancing maintenance activities (such as cleaning existing wells and upgrading aboveground piping). The new SVE wells will be able to take groundwater level fluctuations into account, which will also enhance recovery rates.

KMEP's planned RAP Addendum Implementation activities include:

- Receive Approval from RWQCB – Completed
- Remediation System Improvements
- Remediation System Evaluation
- SVE Rebound Testing (shutting down and restarting the system to test if soil vapor concentrations increase)
- Bioventing Operation
- Bioventing Rebound Testing
- Verification Groundwater Monitoring
- Submit Closure Request to RWQCB. ■



New air sparge wells were installed along the facility's eastern boundary in April 2007.

GLOSSARY

Biosparging: An air compressor is used to inject air into the groundwater below the groundwater level. This helps to volatilize, or turn into vapors, the chemicals that are dissolved in the groundwater. It also provides oxygen for the growth of bacteria. The bacteria eat the dissolved hydrocarbons, breaking them down into non-hazardous components. This process is called **bioremediation**.

Bioventing: Similar to biosparging, but air is injected into the soil above the groundwater to help facilitate bioremediation.

Soil Vapor Extraction: Fuel vapors are removed from the soil by applying a vacuum which extracts them out through a series of underground horizontal wells. The vacuum removes vapors from the free product and removes hydrocarbon vapors created during the biosparge process. The vapors are sent via piping to the treatment system.

Free Product/Groundwater Recovery: Groundwater recovery wells reach down underground to remove groundwater and **free product** (fuel floating on top of the groundwater). The recovered free product and groundwater are sent via piping to the treatment system. Also known as **total fluids** recovery.

Monitored Natural Attenuation: When natural processes, such as bioremediation, are used to achieve cleanup goals. Cleanup takes place without human intervention, but the progress is monitored on a predetermined schedule.

FOR MORE INFORMATION . . .

If you have any questions or comments on the environmental cleanup of the former Norwalk Tank Farm, please contact one of the representatives listed below:

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Or, visit the information repository to review RAB meeting handouts, minutes, and project documents:

Information Repository
Norwalk Regional Library
County of Los Angeles Public Library
Reference Section
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Si quiere una copia de este boletín en español, por favor llame a la Srta. Sylvia Novoa al (714) 433-7650.