

Region 3 GPRA Baseline RCRA Corrective Action Facility

Motiva Enterprises (Formerly:Star Enterprise)

3800 Pickett Road
Fairfax City, VA 22031
Congressional District 1



EPA ID #: VAD093952935

Last Updated: 06/01/2008

Current Progress at the Site

In February 1999, EPA issued a Final Decision on the remedy after consideration of public comments on the remedial alternatives. The selected remedy is to continue operation of an existing pump-and-treat system with two new enhancement components: (1) groundwater flushing by horizontal wells, and (2) vacuum enhanced recovery on selected wells.

The installation of the horizontal wells was completed in fall 1999 and start up took place in phases. Full operation of the horizontal wells began in April 2000. To date, the system is

recharging about 350,000 gallons per month.

Vacuum enhanced recovery of onsite wells was completed in 1999. Implementation of off site vacuum enhanced recovery was on hold because recovery rate had been below expectation, and at the request of residence to avoid neighborhood disturbances.

In accordance with the Final Decision, Motiva must operate the system for a minimum of five years (starting from April 2000 when the system began full operation) before it can petition for a EPA review on attainment of the remediation goal, and whether the system can be fully or partially shut down. The remediation goal, as defined in the Final Decision, requires that groundwater be restored to drinking water standards, or that technological limits be reached, whichever comes first, and that partial or full shut down of the system will not pose unacceptable human or environmental risks.

EPA continues to monitor the remediation progress. As of November 2003, the lateral extent of the product plume has diminished to one-third of its peak size in early 1990s and the vertical extent has reduced to a small fraction of the peak thickness throughout the plume.

Motiva has begun a pilot test in February 2004 to evaluate the effect of shutting down 11 of 15 recovery wells located on Tovito Drive. Motiva submitted the test report to EPA in June 2005 summarizing one year of post shut down groundwater monitoring data. Based on review of the data, EPA determines that the Tovito Drive partial shut down has no effect on the remediation effectiveness; however, the groundwater data alone are insufficient to evaluate human health effect due to vapor release from the changing groundwater conditions. EPA thereby required Motiva to submit a work plan to EPA to conduct indoor air assessment in homes affected by the partial shut down of the Tovito Drive system. The work plan was received in March 2006 in which Motiva proposed to collect indoor air samples in 3 homes. EPA disapproved the Work Plan requiring Motiva to add 18 homes in the sampling list. Motiva subsequently withdrew from continuing the shut down test and restore all wells in the Tovito system in full operation thereby avoiding the need for indoor air sampling.

In March 2006, EPA approved a shut down test on the South Trench barrier system as product has not been recovered from the South Trench for several years. The trench will remain in the shut down test mode for 2008 even though no product has returned to any of the monitoring wells since the test begun.

In December 2007, Motiva met with EPA to suggest a total shut down test for all off-site infiltration and recovery wells. Motive submitted the test plan to EPA in May 2008 for review. The plan proposes sub-slab soil vapor sampling of 18 homes located above the dissolved phase plume boundary, in addition to groundwater sampling during the system shut down phase.

Site Description

The Motiva Terminal is one of four oil distribution terminals located on Pickett Road, Fairfax City, Virginia. The terminal has nine two-million-gallon above-ground tanks that supply petroleum to the region at a rate of one million gallons per day. In September 1990, Virginia State Water Control Board discovered oil sheens in Crook Branch, a creek near the terminal. Subsequent investigations identified an underground oil plume that extends 2,000 feet from the Star Terminal into commercial and residential areas. Due to leakage of oil from the plume into the storm sewer system, petroleum odor was detected near Crook Branch and storm sewer inlets

and outfalls. In May 1991, Virginia requested EPA to assume a lead agency role to direct response actions.

Site Responsibility

RCRA Corrective Action activities at this facility are being conducted under the direction of the EPA Region 3 pursuant to the authority of RCRA 7003 and Clean Water Act 311.

Contaminants

The contaminants are petroleum product, vapor and its constituents: benzene, toluene, xylenes and ethylbenzenes and polycyclic aromatic hydrocarbons. The operation of the remedial system and sealing of the storm sewers have prevented oil and oil vapor from seeping into basements and Crook Branch, which may otherwise pose fire, health and ecological hazards. The groundwater contamination has never posed any threat to drinking water because the area is serviced by public water. The aquatic habitat in Crook Branch has been impacted from past oil releases, but the impact has largely subsided after the storm sewers have been successfully sealed since 1994.

Community Interaction

This site has received significant public attention because the plume has encroached under a large residential community. EPA has been working closely with the impacted community, Fairfax County, City of Fairfax and Virginia in the remedy selection process. An Interagency Task Force consisting of technical representatives from state and local governments, and a Community Remediation Community consisting of elected local government officials and citizens representatives met periodically to review the remediation activities. Public interest and involvement is anticipated to continue throughout the life of the remedial operation.

Institutional Controls

No institutional controls are currently in place.

Government Contacts

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For more information about EPA's corrective action webpage, including Environmental Indicators, please visit our site at: www.epa.gov/reg3wcmd/correctiveaction.htm

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