

Tire Country

GASOLINE REMEDIATION PROJECT

Site Location: Enfield, Connecticut
Client: Frank Troinano
Date: 2006 – ongoing

After spending \$2.9 million over 17 years on cleanup, a stubborn gasoline plume persisted under three properties and two roadways at a Connecticut gasoline dispensing site. The owner was frustrated by a groundwater pump and treat system and quarterly monitoring that controlled the symptoms, but never remedied the cause. The owner saw no end in sight and approached OTO for a second opinion.

After careful evaluation, we recommended aggressively treating the continuing source of the problem: gasoline-smear soil at the water table. Our solution combined the direct excavation of accessible impacted soil with in-situ chemical oxidation of impacted soil that was inaccessible. Not an easy task, because this soil was located at a depth between 12 and 16 feet.

Figure 1 shows groundwater conditions shortly after the excavation was completed. The nucleus of the groundwater plume with total volatile organic compounds (VOCs) exceeding 10 parts per million (PPM), is shown in red (Figure 1). The nucleus was beneath a roadway. A time-release oxidizer was injected through 19 borings (orange points) into the area of gasoline-smear soil. As shown in Figures 2, 3 and 4, groundwater concentrations of gasoline decreased markedly after the combined excavation/oxidation program. Nine months after injection (Figure 4) the red nucleus (groundwater VOCs > 10 PPM) is gone. Our re-testing of soil in the nucleus area confirmed the treatment's effectiveness.

A second injection of oxidizer was conducted in June 2009, and the results continued to be very favorable (Figure 5). The oxidizer used has an effective treatment life of about one year. We continue to document the treatment's progress by groundwater monitoring.

To summarize, in one year, gasoline concentrations within the gasoline-smear soil have been reduced by 90%. This contrasts with the previous 17-years when little, if any, cleanup progress was made. The improvement was accomplished at a fraction of the cost of other methods and with little disturbance to neighbors or busy roadways. By treating the root cause of the groundwater contamination (gasoline smear soil at the water table) with appropriate technologies, the owner can now envision closure of the site within a reasonable timeframe.

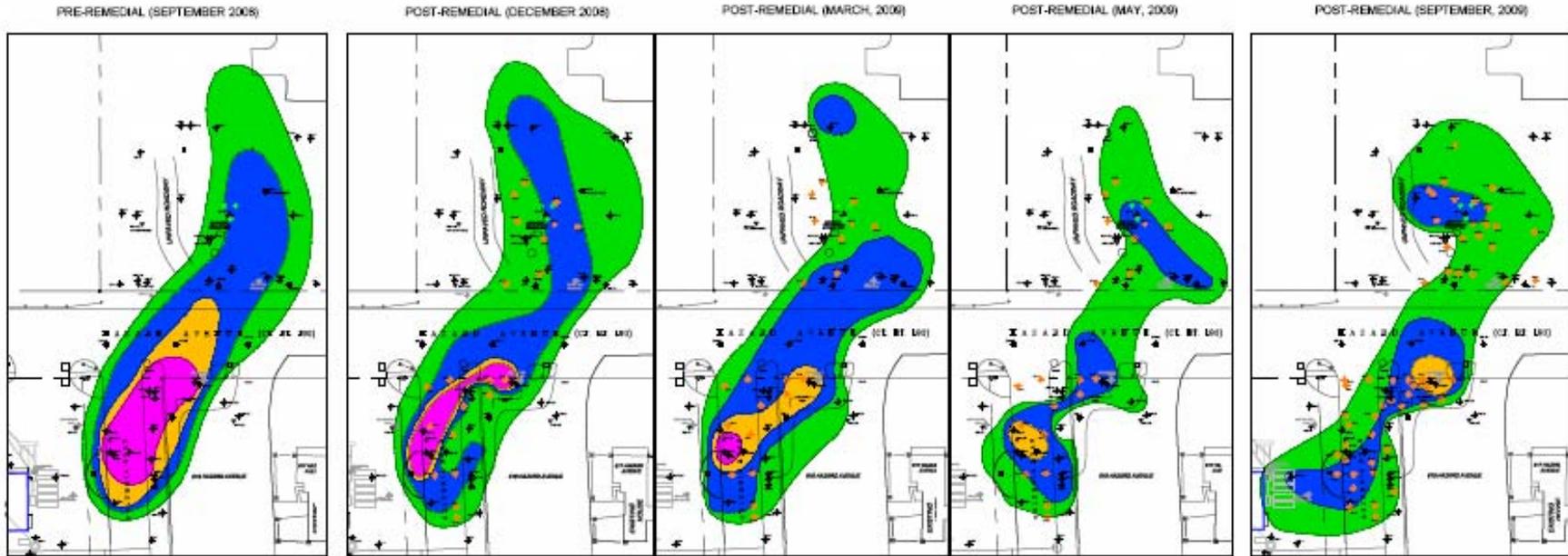


Figure 2
Treatment at 3 months

Figure 1
Before treatment

Figure 4
Treatment at 9 months

Figure 3
Treatment at 6 months

Figure 5
3 months after second treatment

First treatment October 2009

Second treatment June 2009