

**Voluntary Evaluation, Risk Assessment, and Closure of an Active Locomotive
Fueling Facility**

by

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The Norfolk Southern Railway Company (NSRC) Luther Yard in St. Louis, Missouri (Site) is an active locomotive fueling and maintenance facility. The Site was enrolled in the Missouri Voluntary Cleanup Program (VCP) in 1999 to address petroleum hydrocarbon impacted media resulting from historical and ongoing locomotive fueling and maintenance, as well as petroleum storage and underground conveyance. A Tier I Site Assessment (SA) was conducted in 1999 to evaluate soil and ground water impacts at the following locations: the fueling platform, fuel unloading pad, former used oil storage area, and along the underground fuel pipeline. The field sampling activities, data evaluation, and report preparation were conducted in accordance with the Tier I Analysis specified in the Cleanup Levels for Missouri (CALM) guidance document developed by the Missouri Department of Natural Resources (MDNR, September, 1998).

Land use at the Site is industrial and consists of rail yard operations including locomotive refueling, lubrication, and light maintenance. Properties surrounding the Site are used for a combination of industrial and commercial purposes, with the nearest residential areas beginning two blocks to the southwest. Analytical results were compared to the Tier 1 Scenario C (non-residential land use with restricted access) soil and ground water target concentrations (STARC and GTARC, respectively) in MDNR's CALM guidance document. Only total petroleum hydrocarbons (TPH) diesel range organics (DRO) results for some surface soil samples exceeded the Tier I Scenario C STARC (1000 milligrams per kilogram [mg/kg]). This occurred in surface soil samples (0-2 feet below grade) collected from three locations, which were flanked by locations where soil sample results indicated lower or similar TPH results. TPH results that exceeded the STARC ranged from 1200 to 15000 mg/kg.

The CALM guidance document describes the Scenario C STARC for TPH as an “alternatively derived cleanup level” based on aesthetics and other considerations. A toxicity value for TPH is not provided by CALM. Therefore, a conservative site-specific STARC for TPH was developed for the residual, weathered product using the Scenario C equations and variables in CALM along with composite toxicity values and the current USEPA default exposure values. This methodology allowed the unfractionated 1999 TPH data to be used to develop the site-specific STARC, eliminating the need to collect additional data. After negotiations with MDNR and the Missouri Department of Health (MDOH), the proposed methodology was accepted. In 2004, a Tier 3 evaluation was conducted to develop a site-specific STARC for TPH of 15200 mg/kg. MDNR approved the Tier 3 site-specific STARC for TPH in 2005. A restrictive covenant and Certificate of Completion were recorded in the St. Louis Record of Deeds office in January 2006.