

Phase 2 Targeted Brownfields Assessment

West Meadows Union Pacific Property

Date of Report: April 18, 2008

Assessment Funding: EPA Targeted Brownfields Assessment

Acres: approximately 9

Site Background

This site is a former rail yard active from approximately 1910 to 1985. A Phase I environmental site assessment conducted in January 2008 identified recognized environmental conditions (RECs) related to former activities on the site itself and on the property directly to the north. Soil and groundwater contamination were identified previously in the area of the former turntable and fueling facility on the west side of the property.

Findings

During the Phase II site assessment 24 soil samples, 3 ground water samples and 3 surface water samples were obtained and analyzed. All identified contaminants could be associated with activities performed at the former rail yard and railroad fueling facility. The highest concentrations of site-related contaminants were detected in samples downgradient from the former turntable/fueling facility.

1. Soil Sampling Results

Semi-volatile organic compounds (SVOCs) were detected in three surficial soil samples (0-3 feet below ground surface) above their respective Missouri Risk Based Corrective Action (MRBCA) standards. Total petroleum hydrocarbons (TPHs) were detected at two subsurface locations (at 10-12 feet and 12.5 to 14.5 feet below ground surface, respectively) exceeding both the MRBCA Lowest Default Target Level (LDTL) and the Tier 1 Risk Based Target Level (RBTL) for residential use. Arsenic was detected in all but two soil samples above the MRBCA LDTL and Tier 1 RBTL for residential use. However, only two of those samples contained arsenic above the MRBCA Tier 1 RBTL for non-residential use. Lead was detected in all analyzed soil samples above its MRBCA LDTL, but only three soil samples (surface soil samples) exceeded the lead concentrations for MRBCA Tier 1 RBTL for residential use.

2. Ground Water Sampling Results

Three temporary monitoring wells were installed at the site and subsequently sampled. Only one of the ground water samples showed fluorene (an SVOC) and TPH exceeding MRBCA LDTLs. In the samples analyzed for total metals (these samples were not filtered and sediment particles were present), arsenic, barium, cadmium, chromium and lead were detected above their respective MRBCA LDTLs. In ground water samples analyzed for dissolved metals (these samples were filtered prior to analysis), only lead and barium were detected and concentrations were below their respective MRBCA LDTLs. It is assumed that the elevated metal concentrations in the unfiltered samples are due to metals adsorbed to the suspended sediment in the unfiltered

samples.

3. **Surface Water Sampling Results**

Surface water samples were obtained from three locations in Jordan Creek downstream of the site. One sample showed benzene levels above Missouri Water Quality Standards (MWQSs) and TPH concentrations. Currently, there is no MWQS established for TPH. In another sample, a SVOC exceeding MWQSs was detected, but it is not clear if this particular compound originated from the site or from another source as it is a chemical commonly added to plastics. Barium was detected in all surface water samples below its MWQS.

Additional sampling may be required to fully delineate the soil and ground water contamination on site as well as determine the impact of site-related contaminants on the water quality of Jordan Creek.