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PHASE II ENVIRONMENTAL SITE ASSESSMENT

519 and 525 East Cherry Street Site

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SITE BACKGROUND

Seagull Environmental Technologies, Inc. (Seagull) was tasked by the City of Springfield – Planning and Development Department to conduct a Phase II Environmental Site Assessment (ESA) of the 519 and 525 East (E.) Cherry Street site in Springfield, Missouri. The site contains three buildings (519, 525, and 529 E. Cherry Street) that are located on a 0.34-acre property in downtown Springfield. The subject property is currently owned by Lisa Farmer; future plans are to potentially demolish the buildings on the site.

Phase II ESA activities at the site were conducted on June 21 and June 23, 2016. The primary purpose of the Phase II ESA was to confirm or eliminate recognized environmental conditions (REC) specified in the Phase I ESA report for the site, determine the nature and extent of any soil or groundwater contamination, and assess threats to human health and the environment posed by any contamination in soil and groundwater. In addition, the Phase II ESA would identify and quantify asbestos-containing materials (ACM) and lead-based paint (LBP) in the site buildings.

The Phase II ESA included the collection of five soil samples (including one duplicate sample). The soil samples were submitted for laboratory analysis of volatile organic compounds (VOC), total petroleum hydrocarbons (TPH)–gasoline range organics (GRO)/diesel range organics (DRO)/oil range organics (ORO), polynuclear aromatic hydrocarbons (PAH), and metals regulated under the Resource Conservation and Recovery Act (RCRA). For evaluation purposes, soil sample results were compared to their respective Missouri Risk-Based Corrective Action (MRBCA) standards established by the Missouri Department of Natural Resources (MDNR). Attempts to collect groundwater samples as part of the Phase II ESA were unsuccessful. For the asbestos inspection, suspected ACM was sampled to quantify asbestos

in the material. Paint-covered surfaces were screened with an x-ray fluorescence (XRF) spectrometer to determine the presence and quantity of LBP. Findings and recommendations from the Phase II ESA were as follows:

Soil

Five VOCs were detected in the samples at concentrations that ranged from 0.00020 J to 0.0050 J mg/kg. The detected VOCs were acetone, toluene, m,p-xylenes, total xylenes, and methylene chloride. All of the detected concentrations of VOCs were well below their respective MRBCA standards. Numerous PAHs were detected in the samples. The following PAHs and their concentration were identified on the subject property: benzo(a)anthracene (0.015 and 0.023 mg/kg), benzo(a)pyrene (0.018 J, 0.019 J, and 0.02 mg/kg), benzo(b)fluoranthene (0.025 mg/kg in three samples), benzo(g,h,i)perylene (0.014 J and 0.017 J mg/kg), benzo(k)fluoranthene (0.013 J mg/kg), chrysene (0.018 J and 0.022 mg/kg), fluoranthene (from 0.011 J to 0.033 mg/kg), indeno(1,2,3-cd)pyrene (0.015 and 0.023 mg/kg), phenanthrene (0.019 and 0.021 mg/kg), and pyrene (from 0.019 J to 0.028 mg/kg). None of these detected concentrations of PAHs exceeded any of their respective Missouri Risk-Based Corrective Action (MRBCA) Default Target Levels (DTLs). All five soil samples (including the duplicate sample) contained detectable concentrations of the eight RCRA metals. Three RCRA metals — arsenic, lead, and selenium — were detected at concentrations that exceeded their respective MRBCA DTLs. All samples contained arsenic above its MRBCA DTL of 3.89 mg/kg, ranging from 7.4 mg/kg at SB-4 (from 9 to 11 feet bgs) to 10 mg/kg at SB-3 (from 9 to 11 feet bgs). Currently, there are no MRBCA Tier 1 Risk Based Target Levels (RBTLs) established for arsenic in subsurface soil. Additionally, four detected concentration of arsenic in samples were above the USGS average for arsenic in Greene County, Missouri, soils, which is 8.13 mg/kg. One sample contained selenium above its MRBCA DTL of 6.27 mg/kg. Selenium was detected in the sample collected at SB-1 (from 14 to 16 feet bgs) at 9.4 J mg/kg. It should be noted that the arsenic and selenium Tier 1 RBTLs have not been established for residential or non-residential subsurface soil. Also, all detected concentration of selenium were above the United States Geological Survey (USGS) average for selenium in Greene County, Missouri, soils, which is 0.29 mg/kg. All samples contained lead above its MRBCA DTL of 3.74 mg/kg. Lead was detected between 13 mg/kg at SB-2 (from 3 to 5 feet bgs) to 32 mg/kg at SB-1 (from 14 to 16 feet bgs). None of the lead concentrations exceeded its MRBCA Tier 1 RBTLs established for residential and non-residential subsurface soil, which are 260 and 660 mg/kg, respectively. Additionally, none of the detected concentrations of lead in sample collected at SB-2 (7-9 feet bgs) was above the USGS average for lead in Greene County, Missouri, soils, which is 61.55 mg/kg. No other metals were detected at concentrations that exceeded their established MRBCA standards.

The detected concentrations of VOCs, PAHs, and RCRA metals do not pose a risk to future use and/or redevelopment of the site.

Asbestos-Containing Materials

Seventy-nine bulk material samples were submitted to Quantem for analysis of asbestos. Five materials associated with the building were determined to contain asbestos. Specifically, the materials determined to contain asbestos were 9- by 9-inch vinyl floor tile and associated mastic, 12- by 12-inch vinyl floor tile and associated mastic, and roof flashing. Those materials contained asbestos (chrysotile) at concentrations ranging up to 8%. The EPA defines ACM as any material containing asbestos at a concentration above 1%. Future demolition or renovations (including abatement and disposal activities) that could disturb the ACM should be conducted in accordance with applicable local, state, and federal regulations.

Lead-Based Paint

LBP was identified on several interior components associated with the building. Specifically, LBP was identified at the 525 Cherry Street building on an exterior window frame and sill; an exterior porch post, ceiling, and beam; and roof eaves. Additionally, LBP was identified at the 519 Cherry Street building on the door frame of the main floor entry from the daycare. XRF readings from those components ranged from 1.40 to > 5.0 milligram per square centimeter (mg/cm²). The identified LBP was found to be in good (intact) condition. Future demolition or renovations (including abatement and disposal activities) that could disturb the LBP should be conducted in accordance with applicable local, state, and federal regulations.