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PHASE II BROWNFIELDS ASSESSMENT

3563 and 3657 West Nichols Street Site

Date of Report: February 11, 2011

Assessment Funding: EPA Brownfields Assessment Grant

Acres: Approximately 24

SITE BACKGROUND

Seagull Environmental Technologies Inc. conducted a Phase II Brownfields Assessment of the 3563 and 3657 West Nichols Street site located in Springfield, Missouri. The subject property, which is approximately 24 acres in size, is located west-northwest of the intersection of Highway 160 (also identified as the West Bypass) and West Nichols Street, near the western edge of Springfield. The site is comprised of two parcels of land that are both currently owned by Commercial Metals Company (CMC). Those are (1) the 3563 West Nichols Street property, referred to as the east parcel, and (2) the 3657 West Nichols Street property, referred to as the west parcel. The 3563 West Nichols Street property is approximately 12.09 acres in size, and the 3657 West Nichols Street property is approximately 12.03 acres in size.

The east parcel is a former automotive salvage yard (Nichols Street Auto Salvage). Several buildings and storage trailers that were associated with the former salvage yard remain vacant at the site. The west parcel contains a vacant residence and several outbuildings. A small area containing scrap vehicles is located on the southeast corner of the west parcel.

Phase II Brownfields Assessment activities were conducted at the site on January 6, 2011, and January 13 and 14, 2011. The purpose of the Phase II Brownfields Assessment was to determine whether past site operations have resulted in releases of hazardous contaminants to environmental media (soil, groundwater, surface water, and sediment). In addition, the scope of the Phase II Brownfields Assessment included an inspection of structures located on the site's west parcel for the presence of asbestos-containing building materials (ACM) and lead-based paint (LBP). Suspected ACM was sampled to quantify the material. Paint-covered surfaces were screened with an x-ray fluorescence spectrometer

(XRF) to determine the presence and quantity of LBP. Additionally, a survey to quantify household hazardous waste and other items potentially containing hazardous materials was completed.

Phase II Brownfields Assessment activities included the collection of four subsurface soil samples, five surface soil samples (not including field screened samples), one groundwater sample, one sediment sample, and one surface water sample for laboratory analysis of site-related contaminants (volatile organic compounds [VOC], polynuclear aromatic hydrocarbons [PAH], total petroleum hydrocarbons [TPH] –gasoline range organics [GRO] / diesel range organics [DRO] / oil range organics [ORO], 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 as established by the Missouri Department of Natural Resources (MDNR). For the asbestos inspection, 58 samples were collected from structural materials associated with the former residence and outbuildings located on the site's west parcel. A summary of the Phase II Brownfields Assessment sample results, LBP inspection, and hazardous material inventory follows:

Soil

Soil samples collected from the site contained VOCs and RCRA metals.

- Two VOCs were detected in the soil samples. The VOCs — acetone and methylene chloride — were detected at concentrations that ranged from 0.0041 J to 0.0153 milligrams per kilogram (mg/kg). Both of those VOCs are common laboratory contaminants. No VOCs were detected at concentrations above their respective MRBCA soil standards.
- Subsurface soil samples contained the following RCRA metals: arsenic, barium, cadmium, chromium, lead, and mercury. Two RCRA metals — arsenic and lead — were detected at concentrations that exceeded their respective MRBCA Default Target Levels (DTL). All of the samples contained arsenic above its MRBCA DTL of 3.89 mg/kg. Arsenic was detected at concentrations that ranged from 12.4 to 17.6 mg/kg. Currently, there are no MRBCA Tier 1 Risk-Based Target Levels (RBTL) established for arsenic in subsurface soil. All of the samples contained lead above its MRBCA DTL of 3.74 mg/kg. Lead was detected at concentrations that ranged from 23.4 to 28 mg/kg. 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. For reference, the average concentration for lead in Greene County soils is 61.46 mg/kg. It is likely the detected arsenic and lead concentrations are naturally occurring. No other metals were detected at concentrations that exceeded their established MRBCA standards.

- Surface soil samples contained the following RCRA metals: arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. Three RCRA metals — arsenic, cadmium, and lead — were detected at concentrations that exceeded their respective MRBCA DTLs. All of the samples contained arsenic above its MRBCA DTL and Tier 1 RBTL for residential land use (surface soil), which is 3.89 mg/kg. Arsenic was detected at concentrations that ranged from 4.7 to 9.4 mg/kg. Arsenic was not detected in any of the samples at a concentration that exceeded its MRBCA Tier 1 RBTL established for non-residential surface soil, which is 15.9 mg/kg. For reference, the average concentration for arsenic in Greene County soils is 8.13 mg/kg. It is likely the detected arsenic concentrations are naturally occurring. Cadmium was detected in one sample, sample SS-28 at 20.9 mg/kg, above its MRBCA DTL and Tier 1 RBTL established for residential surface soil, which are 9.31 and 16.8 mg/kg, respectively. However, the detected concentration of cadmium was well below its MRBCA Tier 1 RBTL established for non-residential surface soil, which is 74.8 mg/kg. Surface soil sample SS-28 was collected on the east parcel, where automobile salvage activities were formerly conducted. All of the samples contained lead above its MRBCA DTL of 3.74 mg/kg. Lead was detected at concentrations that ranged from 68.1 to 650 mg/kg. Two samples, SS-28 and SS-30, contained lead above its MRBCA Tier 1 RBTL established for residential surface soil, which is 260 mg/kg. Neither of those samples contained lead above its MRBCA Tier 1 RBTL established for non-residential surface soil, which is 660 mg/kg. Samples SS-28 and SS-30 were both collected from the east parcel. More specifically, those sample locations were in the northwest corner of the east parcel, near the railroad corridor that borders the site to the north. Based on the sample results, it appears that an area of surface soil containing elevated concentrations of lead (and possibly other metals, cadmium in particular) is present on the east parcel. The elevated concentrations of lead could be attributed to past use of the site as an automobile salvage yard, or to the railroad corridor; elevated levels of lead are commonly associated with railroad ballast, as well as other railroad activities. No other metals were detected at concentrations that exceeded their established MRBCA standards.

Based on the Phase II Brownfields Assessment sample results, arsenic, cadmium, and lead were determined to be present in site soil above their respective MRBCA DTLs. Specifically, arsenic and lead were detected in subsurface soil at concentrations above their respective MRBCA DTLs; however, neither of those metals was detected above their respective MRBCA Tier 1 RBTLs (for residential and non-residential subsurface soil), if established. In addition, it is likely the detected concentrations of those metals are likely naturally occurring. Surface soil samples contained arsenic, cadmium, and lead above their respective MRBCA DTLs and Tier 1 RBTLs for residential land use. None of the metals were detected at concentrations above their respective MRBCA Tier 1 RBTLs for non-residential land use. In

particular, lead and cadmium were detected at elevated concentrations in surface soil samples collected from the east parcel. Lead was detected up to 650 mg/kg and cadmium up to 20.9 mg/kg. Future use of the site should be evaluated to determine if the detected metals concentrations pose a risk to human health and the environment. If proposed use of the site does encompass the east parcel, then additional soil sampling may be warranted to determine the extent of surface soil contamination (lead in particular).

Groundwater

The one groundwater sample collected from the site contained total and dissolved concentrations of the following RCRA metals: arsenic, barium, chromium, lead, and selenium. Total arsenic, cadmium, and lead were detected at concentrations that exceeded their respective MRBCA DTLs. The concentrations of total metals in the sample did not exceed their respective MRBCA Tier 1 RBTLs for both residential and non-residential land use. In the dissolved metals sample, no metal was detected above its MRBCA groundwater standards. The elevated concentrations of metals detected in the unfiltered sample (total metals) are likely attributable to suspended sediment in the sample and are not likely representative of groundwater quality in the site area. The site is currently connected to a public water supply system, and future site use would likely not require use of groundwater obtained from the site; therefore, exposure to contaminated groundwater likely poses minimal risk.

Surface Water/Sediment

In the surface water sample collected from the retention pond on the west parcel, lead was the only metal detected. Lead was detected at 0.0176 milligrams per liter (mg/L), which is slightly above the MRBCA DTL of 0.015 mg/L. The MRBCA DTL is established for ingestion of drinking water; therefore, a comparison of surface water to the MRBCA DTL is not likely applicable. The sample result indicates that historical site activities have not impacted surface water quality.

The sediment sample collected from the retention pond contained arsenic, barium, chromium, lead, and mercury. Consistent with soil (surface and subsurface) samples collected at the site, both arsenic and lead were detected in the sample above their MRBCA DTLs, which are 3.89 and 3.74 mg/kg, respectively. Concentrations of metals, including arsenic and lead, were similar to levels in the surface soil samples collected from the west parcel, which appear to be naturally occurring.

Asbestos

Six different materials were determined to contain detectable concentrations of asbestos. Materials associated with the former residence that were determined to contain asbestos included sink undercoating, linoleum sheet flooring, 9-inch by 9-inch vinyl floor tile, exterior transite siding, roofing tar, and duct wrap. In those materials, chrysotile asbestos was detected at concentrations that ranged from 0.5 to 40

percent (%). 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 state and federal regulations.

Lead-Based Paint

LBP was identified on several components of the former residence and outbuildings. XRF readings from those components ranged from 1.0 to >5.0 milligrams per square centimeter. Specifically, LBP was identified on wood on the exterior of the west garage and barn, metal siding on the barn, exterior concrete foundation of the residence, and the rear exterior wood door frame of the residence. The LBP was all in poor condition. Future demolition or renovations (including abatement and disposal activities) that could disturb the LBP should be conducted in accordance with applicable state and federal regulations.

Hazardous Materials

A hazardous materials survey completed for the structures located on the west parcel identified several materials that remain. Prior to any future redevelopment/demolition, the identified materials/items should be removed and properly used, recycled, or disposed of.