



Technical Memorandum

Date: March 29, 2016 (Revised March 20, 2017)

To: Beverly Hills Land Company

From: Brian Jacobs, PG, CHG
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Subject: **Recommended Industrial Hygiene/Health & Safety Guidelines for Limited Landscape Maintenance Worker Activities Beverly Hills Land Company, Lots 12 and 13 9315 Civic Center Drive Beverly Hills, California**

AECOM has prepared the following recommended guidelines for industrial hygiene/health & safety specifically for landscape maintenance workers conducting limited activities at the subject Site, known as BHLC Lots 12 and 13. The Site consists of an approximately 5-acre former railroad right-of-way along Santa Monica Boulevard between North Doheny and Alpine Drives. The Site is vacant, fenced, unpaved and surrounded on all sides by public right-of-way. Land uses surrounding the Site include residential, commercial and light industrial. Elevated concentrations of arsenic have been detected in Site soils.

This technical memorandum addresses the routine landscaping maintenance tasks listed below:

- Trimming of hedges, shrubs and trees
- Weed abatement
- Edging of hardscape
- Cleanup of trash and vegetation debris
- Drip irrigation improvements and maintenance
- Perimeter chain link fence repair and fence post re-location
- Perimeter shrub planting and tree stump grinding

Field maintenance activities will include the relocation of perimeter chain-link fencing setback 2 feet from the Site property line per city ordinance for vacant property. Fence posts will be set by driving the steel post into the soil. The 2 foot street front setback area will be enhanced with one-gallon plants and drip irrigation. Localized shallow excavations, approximately 6 to 12 inches in depth, will be advanced where needed for perimeter shrubbery, and drip irrigation. Soils will be thin spread in the vicinity of the area of the maintenance activities. Tree stump maintenance along the Site perimeter will be addressed through conventional stump grinding techniques with little or no soil disturbance.

Site Conditions: Surface soil samples were collected at the Site by the City of Beverly Hills in December 2015. On-Site surface soil (0.5 inches) arsenic concentrations ranged from 2.2 to 56.3 milligrams per kilogram (mg/kg) across the Site. Only two of the samples contained concentrations of arsenic above the Department of Toxic Substances Control (DTSC) established background level of 25 mg/kg. The 95% Upper Confidence Level (UCL) for this surficial dataset for arsenic was calculated at

29 mg/kg. The arsenic 95% UCL's for the upper 6-inch and upper 5-foot for soil datasets presented in the February 1, 2016 technical memorandum entitled "Assessment of Potential Health Risks from Tree Cutting Activities", were 133.6 mg/kg and 85.21 mg/kg, respectively.

Additional surface soil samples were collected at the Site by the City of Beverly Hills in July and August 2016 to provide site-specific arsenic concentrations along perimeter landscaped areas to support fence realignment on Lots 12 and 13. The concentration of arsenic in the 113 perimeter samples analyzed ranged from 1.26 mg/kg to 123 mg/kg with concentrations typically lower along the perimeter of the Site when compared to the concentrations from the December 2015 Site-wide sampling event.

Evaluation: In evaluating the industrial hygiene/health & safety requirements, AECOM first evaluated the potential need for worker air monitoring using the December 2015 sampling results. To evaluate the need for worker air monitoring, the "representative" airborne arsenic concentration was calculated using the calculated 95% UCL concentrations of 29 mg/kg (surficial), 133.6 mg/kg (upper 6-inches), and 85.21 mg/kg (upper 5-feet) at a maximum OSHA Permissible Exposure Limit (PEL) for dust of 10 milligrams per cubic meter (mg/m^3).

The resulting calculation identified a concentration of $0.00029 \text{ mg}/\text{m}^3$ arsenic in air¹ for surficial soils, $0.001336 \text{ mg}/\text{m}^3$ for the upper 6-inches, and $0.0008521 \text{ mg}/\text{m}^3$ which are all lower than the established OSHA Action Level of $0.005 \text{ mg}/\text{m}^3$ or maximum PEL of $0.01 \text{ mg}/\text{m}^3$, therefore worker air monitoring is not warranted provided that basic dust mitigation controls are instituted.

Recommendations: Safe work procedures for the specific activities listed herein are provided in Table 1. Only established landscape and maintenance firms should be used to perform the listed activities, such as Oakcrest or Westchester Landscape. The firm should be informed in advance regarding the Site's history and arsenic contamination on the Site. The firm must have a competent supervisor that will oversee the implementation of the procedures for the listed activities. These procedures should be documented in a Hazard Communication Program document. A qualified industrial hygienist should train the supervisor(s) on the procedures and the effective communication of the procedures to all landscape & maintenance employees that will access the Site.

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Calculation of 95% UCL soil As concentration to be equivalent concentration in maximum PEL dust ($10 \text{ mg}/\text{m}^3$). Calculation for the 95% UCL arsenic concentration is:

- 29 mg/kg Surficial = 29 ppm = 0.000029
Worst case California OSHA Max PEL for Dust ($10 \text{ mg}/\text{m}^3$):
 $10 \times 0.000029 = \underline{0.00029 \text{ mg}/\text{m}^3 \text{ arsenic in air}}$
- 133.6 mg/kg Upper 6-inches = 133.6 ppm = 0.0001336
Worst case California OSHA Max PEL for Dust ($10 \text{ mg}/\text{m}^3$):
 $10 \times 0.0001336 = \underline{0.001336 \text{ mg}/\text{m}^3 \text{ arsenic in air}}$
- 85.21 mg/kg Surficial = 85.21 ppm = 0.00008521
Worst case California OSHA Max PEL for Dust ($10 \text{ mg}/\text{m}^3$):
 $10 \times 0.00008521 = \underline{0.0008521 \text{ mg}/\text{m}^3 \text{ arsenic in air}}$

https://www.osha.gov/dts/chemicalsampling/data/CH_259640.html

**Table 1 –
Industrial Hygiene/Health & Safety Guidelines for Landscape Maintenance Workers**

Job Steps	Potential Hazards	Hazards Control Procedures
Surficial Trash Collection/Vegetation Debris Collection	Dust generation	Minimize driving on-site, low speeds
		Use collection bags instead of bins
		Irrigate dusty areas before working
		Wear proper personal protective equipment (PPE), i.e. gloves, long sleeved shirt, long pants, and safety shoes.
	Wash hands and face thoroughly after completing job	
	Mechanical hazards	Don't touch moving equipment parts, if any
Weeding, edging, pruning, tree trimming, leaf removal, perimeter stump grinding and shrub planting.	Dust generation	Avoid activities that create excess dust
		Use hand tools (shovel, spade, rake, etc) when possible (ie. no mechanical leaf blowers)
		Irrigate dusty areas before working, apply water mist as necessary.
		Wear dust mask if visible dust
		Wash hands and face thoroughly after completing job
		Wear proper PPE, i.e. gloves, ear protection (ear plugs), long sleeved shirt, long pants, and safety shoes
	Mechanical hazards	Follow precautions normally used around sharp blades, edges, mechanical edgers.
		Use hand tools when possible. Adhere to standard procedures and training for tree trimming, pruning, and stump grinding.
Drip Irrigation System, Fence Post Installation, and Fence Maintenance	Dust generation	Avoid digging soil, if possible.
		Irrigate dusty areas before working
		Wear proper PPE, i.e. gloves, long sleeved shirt, long pants, and safety shoes
		Wear dust mask if visible dust
		Wash hands and face thoroughly after completing job
		Use hand tools (shovel, spade etc.) when possible to perform sprinkler repair.
	Mechanical hazards	Ensure that water pressure is off before repair.
		Follow normal operating procedures to avoid sharp edges, mechanical hazards.

