Memorandum

TO:       David Yelton, City of Beverly Hills
CC:       Heidi Rous, PCR Services
FROM:     Everest Yan and Audrey Vinant-Tang, PCR Services
RE:       BEVERLY HILLS ARSENIC MONITORING MEMO

DATE: December 8, 2015

This memorandum presents a summary of particulate arsenic air monitoring activities conducted for Lots 12 and 13 at 9315 Civic Center Drive in the City of Beverly Hills.

Lots 12 and 13 were previously used as a railroad right-of-way until 1998. Soil sampling previously performed on-site indicates that arsenic is present at elevated concentrations throughout the site.¹ The site is currently owned by the Beverly Hills Land Company and previously owned by Union Pacific Railroad (UPRR). The UPRR has entered into a voluntary cleanup agreement with the Department of Toxic Substances Control (DTSC). However, during the month of November 2015, landscaping work was performed on-site which included trimming of vegetation and trees.

Residents living near the site expressed concern about soil disturbance during landscaping activities on-site and potential arsenic exposure. In response to public concerns, the City of Beverly Hills requested that air monitoring be performed to determine arsenic exposure to off-site residents.

Air Sampling

Air sampling was performed to determine the level of particulate arsenic entrained in wind-blown dust coming from the site. Two (2) PQ100 ambient air particulate samplers were installed at one upwind location south-to-southwest of the parcels and one downwind site northeast of the parcel near the intersection of Beverly Boulevard and Civic Center Drive. Particulate arsenic levels in the ambient air is calculated using the incremental value between the upwind (or “background”) and downwind (or “site”) concentration levels. Locations of the air samplers are shown in Figure 1. Samplers were started on December 5th and were removed on December 8th. Maintenance checks were performed during this period to charge batteries and inspect filters.

Wipe Sampling

Wipe sampling was performed to determine the level of arsenic in settled dust within the site’s immediate vicinity. Sampling was conducted using ASTM E1792-compliant wipes for arsenic detection. Wipe samples were collected at the site’s fence post, nearby vegetation, and other hard surfaces on which air-borne dust has been deposited. Wipe samples were taken at three (3) upwind and three (3) downwind surfaces. Locations of the wipe samples taken on Monday December 7th are shown in Figures 2 and 3.

Laboratory Results

Air filters were analyzed using the National Institute for Occupational Safety and Health (NIOSH) Method 7303 and wipe samples were analyzed using the Occupational Safety and Health Administration (OSHA) Method ID125G. Both techniques identify analyte presence and concentration by passing the digested matrix through inductively coupled argon plasma and atomic emission spectroscopy. The laboratory results for air sampling are in micrograms per cubic meter (µg/m³) concentration levels and for wipe sampling in binary presence or absence.

As shown in Table 1, particulate arsenic concentrations in the air upwind and downwind of the parcel were at levels below the laboratory detection limits. A result of non-detection signifies that arsenic levels were not above the laboratory equipment’s detection limit. Although samples are non-detect, arsenic may be present in the sample, but in concentrations below the detection limit. Random sampling does not necessarily represent the site as a whole and detectable levels of arsenic may be present elsewhere in the site vicinity.

<table>
<thead>
<tr>
<th>Sampling Location</th>
<th>Concentration (µg/m³)</th>
<th>Detection Limit (µg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upwind</td>
<td>&lt; 0.09</td>
<td>0.09</td>
</tr>
<tr>
<td>Downwind</td>
<td>&lt; 0.2</td>
<td>0.2</td>
</tr>
</tbody>
</table>

*The detection limit represents the lowest amount of analyte that the laboratory can confidently detect in the sample.*

Source: PCR Services Corporation, 2015.
As shown in Table 2, arsenic concentrations in dust deposited on nearby surfaces was also below the detection limit for both upwind and downwind locations.

<table>
<thead>
<tr>
<th>Sampling Location</th>
<th>Surface Type</th>
<th>Result (µg)</th>
<th>Detection Limit (µg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upwind</td>
<td>Fenceline</td>
<td>&lt; 5</td>
<td>5</td>
</tr>
<tr>
<td>Upwind</td>
<td>Utility box</td>
<td>&lt; 5</td>
<td>5</td>
</tr>
<tr>
<td>Upwind</td>
<td>Vegetation</td>
<td>&lt; 5</td>
<td>5</td>
</tr>
<tr>
<td>Downwind</td>
<td>Fenceline</td>
<td>&lt; 5</td>
<td>5</td>
</tr>
<tr>
<td>Downwind</td>
<td>Road Signage</td>
<td>&lt; 5</td>
<td>5</td>
</tr>
<tr>
<td>Downwind</td>
<td>Fenceline</td>
<td>&lt; 5</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: PCR Services Corporation, 2015.

Wind Data

Wind speed and direction representative of the site was collected from two nearby weather stations along Wilshire Boulevard. The prevailing wind patterns during the monitoring activities and the month of November were from the south and southeast blowing towards the north and northwest. As seen in Figure 4, winds blow across the site coming from Civic Center Drive and blowing towards North Santa Monica Boulevard. The site is located adjacent to Santa Monica Boulevard which has a large number of vehicle trips on a regular basis. The number of vehicles travelling along Santa Monica Boulevard may generate air flow near the project site. However, the site is currently protected with vegetation for wind screening purposes. Winds were relatively calm during the monitoring period, averaging 1 mile per hour (mph) with a maximum speed of 6 mph. These wind conditions are similar to those present on November 21st and 22nd, 2015, when landscaping work was performed.
Conclusions

Although laboratory analysis did not detect arsenic in the air samples, it should be noted that concentrations in the air may be below detection limits. As discussed previously, winds during the monitoring period were generally calm with no significant gusts. Also, at the time of monitoring, no maintenance activities were performed at the site that would generate dust. The calm wind speeds and inactivity at the site may have resulted in arsenic not being detected in air samples during the monitoring period.

Wipe test sampling indicates that arsenic levels are below the laboratory detection limit. It is possible that arsenic is present in nearby deposited dust below the analytical detection limit.
Figure 1: Air Monitoring Locations
Figure 2: Upwind Sampling Locations

Legend
1. Fenceline Wipe
2. Utility Box Wipe
3. Vegetation Wipe
U. Air Monitor
Figure 4: Wind Rose

Direction blowing from between 12/5-12/8/15
# Metals Analysis of Air Filters

**Job ID / Site:** UPRR Parcels, Beverly Hills  
**Date(s) Collected:** 12/5, 12/7/15  

<table>
<thead>
<tr>
<th>Sample Number</th>
<th>Lab Number</th>
<th>Volume</th>
<th>Analyte</th>
<th>Result</th>
<th>Result Units</th>
<th>Reporting Limit*</th>
<th>Method Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>P0983877</td>
<td>30728149</td>
<td>7150 L</td>
<td>As</td>
<td>&lt; 0.09</td>
<td>ug/m3</td>
<td>0.09</td>
<td>NIOSH 7303</td>
</tr>
<tr>
<td>P0983876</td>
<td>30728150</td>
<td>4950 L</td>
<td>As</td>
<td>&lt; 0.2</td>
<td>ug/m3</td>
<td>0.2</td>
<td>NIOSH 7303</td>
</tr>
</tbody>
</table>

* The Reporting Limit represents the lowest amount of analyte that the laboratory can confidently detect in the sample, and is not a regulatory level. The Units for the Reporting Limit are the same as the Units for the Final Results.

Daniele Siu, Laboratory Supervisor, Hayward Laboratory

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**Analysis Request Form (COC)**

**Client Name & Address:**
Client No.: L1654
PCR Environmental Services
201 Santa Monica Blvd., Suite 500
Santa Monica, CA 90401

**Contact:**
Audrey Vinant-Tang

**Phone:** (310) 566-8031  
**Fax:** (310) 451-5279

**E-mail:** a.vinant-tang@pcnet.com

**Site:** UPRR Parcels

**Site Location:** Beverly Hills, CA

**Sample ID** | **Date / Time** | **Sample Location / Description** | **Type** | **Time On/Off** | **Avg. LPM** | **Total Time** | **Sample Area / Air Volume**
--- | --- | --- | --- | --- | --- | --- | ---
F0093877 | 12/5/15 7:40 | Civic Center (Upwind) | [A] [P] | 7:42 | 2.0 | 3576 min. | 7150 L
F0093876 | 12/5/15 8:55 | Beverly Boulevard (Downwind) | [A] [P] | 8:55 | 2.0 | 2475 min. | 4950 L

**Sampled By:** Everest Yan  
**Date:** 12/6-12/8/15  
**Time:** 24-hours

**Shipped Via:**  
Fed Ex  DHL  UPS  US Mail  Courier  Drop Off  Other

**Condition Acceptable:** Yes

**RECEIVED**

**San Francisco Office:** 3577 Depot Road, Suite 409, Hayward, California 94545-2761 / Phn (510) 887-8828 Fax (510) 897-3310
Los Angeles Office: 2559 Pacific Commerce Drive, Rancho Dominguez, California 90221 / Phn (310) 451-2374 Fax (310) 831-9407
Las Vegas Office: 6765 S. Eastern Avenue, Suite 3, Las Vegas, Nevada 89119 / Phn (702) 784-0040 Fax (702) 784-0030
Metals Analysis of IH Wipes

PCR Environmental Services
Audrey Vinant-Tang
201 Santa Monica Blvd.
Suite 500
Santa Monica, CA 90401

Client ID: L1654
Report Number: M167329
Date Received: 12/09/15
Date Analyzed: 12/10/15
Date Printed: 12/10/15
First Reported: 12/10/15

Job ID / Site: UPRR Parcels, Beverly Hills
Date(s) Collected: 12/7/15

<table>
<thead>
<tr>
<th>Sample Number</th>
<th>Lab Number</th>
<th>Analyte</th>
<th>Result</th>
<th>Result Units</th>
<th>Reporting Limit*</th>
<th>Method Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOWN-1</td>
<td>30728170</td>
<td>As</td>
<td>&lt; 5</td>
<td>ug</td>
<td>5</td>
<td>OSHA ID125G</td>
</tr>
<tr>
<td>DOWN-2</td>
<td>30728171</td>
<td>As</td>
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<td>ug</td>
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<td>OSHA ID125G</td>
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<tr>
<td>DOWN-5</td>
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<td>ug</td>
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<td>OSHA ID125G</td>
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<tr>
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<td>ug</td>
<td>5</td>
<td>OSHA ID125G</td>
</tr>
<tr>
<td>UP-3</td>
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<td>ug</td>
<td>5</td>
<td>OSHA ID125G</td>
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<td>UP-4</td>
<td>30728175</td>
<td>As</td>
<td>&lt; 5</td>
<td>ug</td>
<td>5</td>
<td>OSHA ID125G</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Sample ID</th>
<th>Date / Time</th>
<th>Sample Location / Description</th>
<th>Type</th>
<th>Time On/Off</th>
<th>Avg. LPM</th>
<th>Total Time</th>
<th>Sample Area / Air Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOWN-1</td>
<td>12/7/15 5PM</td>
<td>Northeast fenceline along Civic Center</td>
<td>[A]</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOWN-2</td>
<td>12/7/15 5PM</td>
<td>Back of sign on Civic Center</td>
<td>[A]</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOWN-3</td>
<td>12/7/15 5PM</td>
<td>Northwest fenceline along Santa Monica Blvd.</td>
<td>[A]</td>
<td>P</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>UP-1</td>
<td>12/7/15 6PM</td>
<td>Southern fenceline along Civic Center</td>
<td>[A]</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UP-2</td>
<td>12/7/15 6PM</td>
<td>Utility box southeast of site</td>
<td>[A]</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UP-4</td>
<td>12/7/15 6PM</td>
<td>Vegetation south of site</td>
<td>[A]</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sampled By: Everest Yan

Date: 12/7/15
Time: 5-6PM