Appendix C Recommended Potential Vapor Mitigation Measures for Proposed Project at 2800 Casitas Avenue, Los Angeles, California, prepared by Brownfield Subslab, dated October 22, 2020.

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October 22, 2020

Attn: Robin Ferber, Gwen Tellegen

Recommended Potential Vapor Reduction Measures for Proposed Project at 2800 Casitas Avenue, Los Angeles, California

PROJECT DESCRIPTION. The proposed project is to include mixed-use commercial and multi-family-residential construction, and a parking structure.

VOC REDUCTION. Soil vapor intrusion must be reduced to levels considered safe by the State of California Department of Toxic Substances Control (DTSC) for indoor air (IA). Commercial use has different and slightly higher screening levels than residential occupancy. Health Risk Assessments (HHRA) are used in determining whether soil vapor reduction is required.

- The soil vapor reduction system proposed in this letter is based upon review of an HHRA based upon Leighton and Associates 2015 soil vapor data which was collected with the current industrial and commercial buildings still existing on the site).[1]

- Specific areas of the site requiring vapor reduction measures, and proposed vapor reduction measures for each building area, will be determined by Leighton and Associates and the DTSC following the completion of a post-grading soil vapor survey and an updated HHRA.

The soil vapor reduction system proposed in this letter is based upon review of the architect's Planning Submittal[2] schematics, as follows:

[1] *Human Health Risk Assessment of Soil Exposure and Vapor Intrusion to Indoor Air – 2750 and 2800 Casitas Avenue, Los Angeles, California,* Draft Technical Memorandum to Gwen Tellegen, Leighton, from Jill Ryer-Powder, Environmental Health Decisions, dated October 22, 2020.

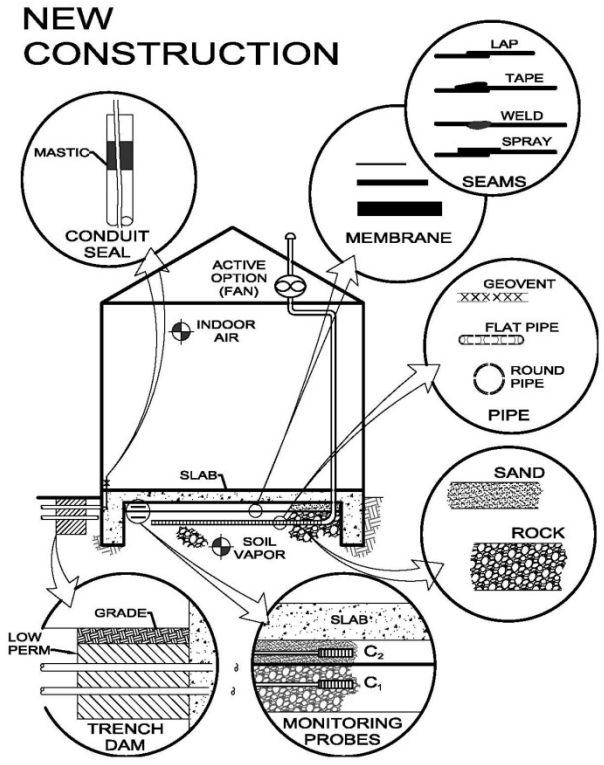
[2] *Bow Tie Yard Lofts,* Planning Submittal, Rios Clementi Hale Studios, dated July 28, 2018.

- Parking Garage. The parking garage is planned to be an "open structure" having natural ambient ventilation with an open perimeter. With the open configuration, this structure will not need soil vapor mitigation except for any small enclosed rooms or areas – such as elevator shafts, enclosed stairwells if any, and perhaps utility rooms -- where based upon a post-grading soil vapor survey, unacceptable health risk may exist. If the parking structure design changes to be more enclosed, additional vapor reduction measures may be considered.

- Mixed Use Buildings. Depending on the results of post grading sampling, some of the mixed-use buildings may require subslab membranes and vent piping with the possible installation of fans in order to activate the passive system -- if the new data requires -- to control soil vapors to regulatory screening levels.

SPECIFIC RECOMMENDATIONS. The specific measures implemented for each building, including potential active components, will be determined in consultation with the DTSC. The conceptual potential soil vapor measures presented below will be modified based upon the results of a post-grading soil vapor survey and updated HHRA for the Project, with input from the DTSC.

- subslab venting – perforated plastic pipe, minimum 3" diameter, in stone layer;
- stone layer – minimum four-inch thick layer of pea rock or gravel;
- membrane – twenty-mil thick ethyl vinyl alcohol (EVOH) composite;
- membrane seams – sprayed;
- monitoring probes – plastic tubes above and below membrane capable of being sampled without entering the building;
- trench dams – low permeability plugs in utility trenches at buildings;
- conduit seals -- low VOC flexible caulk at dry utility conduits.
- power – 120 VAC weatherproof duplex outlet at each vent riser to be installed in buildings which may require active mitigation as determined by the DTSC following the post-grading soil vapor survey and HHRA;; and



- fans – radon type fans capable of 26"H_2O total dynamic head at each vent riser, to be installed in buildings which may require active mitigation as

determined by the DTSC following the post-grading soil vapor survey and HHRA, to allow for active operation as necessary.

- In addition, it is recommended that all construction materials, particularly carpeting, padding, flooring, glues, mastics and foams be tested for PCE prior to installation in the residential buildings. Indoor sources of VOCs from construction materials and cleaning products may off-gas VOCs at levels in excess of above IA screening levels.

SPECIAL INSPECTION. VOC mitigation construction should be special-inspected and certified by an appropriately registered environmental professional.

LIMITATIONS. This report is not a comprehensive review of all environmental conditions on the site, but is based upon the facts described or referenced above. This report has been prepared using currently accepted practices and principles; and is for use only by or as authorized by Leighton and Associates, in relation to the subject project.

Sincerely, Brownfield Subslab

John E. Sepich, P.E.

Conceptual Soil Vapor Reduction Attachments
Conceptual Vapor Reduction Key Map
Conceptual Mitigation Sections
Conceptual Plan - Building G
Conceptual Vapor Reduction Plan - Building A
Conceptual Vapor Reduction Plan - Building B
Conceptual Vapor Reduction Plan - Building C
Conceptual Vapor Reduction Plan - Building D
Conceptual Vapor Monitoring Probe Map
Conceptual Subslab System Details
Conceptual Monitoring Probe Details
Conceptual Vent Riser and Fan Details