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By Alameda County Environmental Health 1:47 pm, Dec 27, 2016

December 21, 2016

Mr. Mark Detterman  
Alameda County LOP (County)  
1131 Harbor Bay Pkwy  
Alameda, CA 94502

Re: IRM, Vapor Mitigation, and FS Workplan (Report #R03155.IRAP\_RI, 2016-08-30): **Re-Submittal under the stamp of a licensed CA civil engineer**  
Former Four Seasons Cleaners Cleanup Program # RO0003155  
13778 Doolittle Ave., San Leandro, CA

Dear Mr. Detterman:

Attached for your review is a letter from our new contractor RRM, Inc., Santa Cruz, CA (RRM), resubmitting the above-referenced technical report (WTI Report #5121) for the above-referenced cleanup program case. The report was prepared by Well Test, Inc., at my request, as was the re-submittal letter prepared by RRM.

I declare under penalty of perjury that the information and/or recommendations contained in the attached RRM re-submittal letter are true and correct to the best of my knowledge.

If you should have any questions or comments, please do not hesitate to contact me or the Well Test Project Manager Bill Dugan, RG, at (408) 298-2175, or the RRM lead professional in responsible charge Julie Avanto, PE, at 831-475-8141.

Sincerely,



Mr. Ernest Lee  
Marina Faire, LP  
3271 S. Highland Dr., Ste #704  
Las Vega, Nevada 89109

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December 21, 2016  
RRM Project # TBA

Mark Detterman  
Alameda County Department of Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502

Re: ***Response to November 21, 2016 Correspondence***  
Former Four Seasons Cleaners  
13778 Doolittle Drive  
San Leandro, California

Dear Mr. Detterman:

This letter prepared by RRM, Inc. (RRM) on behalf of Marina Faire, Shopping Center (Marina Faire) presents a response to the Alameda County Department of Environmental Health (ACDEH) November 21, 2016 letter regarding the September 9, 2016 *IRM, Vapor Mitigation, and FS Work Plan* (Work Plan) prepared for the referenced site by Well Test Inc. (Well Test). Marina Faire has retained RRM to temporarily take over lead responsible charge of the above-referenced Spills, Leaks Investigation and Cleanup (SLIC) site. In so doing, Marina Faire has requested a California-licensed Professional Civil Engineer review the Work Plan and negotiate approval with ACDEH to implement the proposed scope of work in an expedient manner, and to ensure that good engineering practice is exercised in the conduct of investigations, feasibility studies, and removal actions in compliance with all relevant statutes and regulations including the California professional code.

Interim remedial action and interim mitigation measures were appropriately recommended by Well Test in the January 14, 2016, *Soil Vapor and Indoor Air Investigation Report*. ACDEH endorsed and reiterated these recommendations in a July 27, 2016 letter. Marina Faire readily complied with this directive and has already entered into contracts to implement the proposed interim removal, vapor mitigation, and feasibility studies in the Work Plan with the express intention of removing the on-going threat to and providing protection of human health, safety, and the environment.

In the November 21, 2016 letter ACDEH conditionally approved some of the proposed work, but the proposed interim source area removal action entailing soil excavation and removal of known and suspect areas of shallow soil contamination was unexpectedly rejected on the basis that it is premature. ACDEH rationale for the rejection were that elevated levels of volatile organic compounds (VOCs) in soil, groundwater, and soil gas beneath the building might be found to be more extensive at a future date and

the proposed soil excavation might not be the most cost effective option. ACDEH also made a determination that the proposed work collectively constituted a formal Corrective Action Plan. RRM's responses to these general concerns are presented below.

Soil excavation and removal is a standard and well-accepted engineering practice to remove as much VOC mass as feasible during an interim removal action and is routinely implemented as an interim removal action to address threats to human health, safety and the environment. Excavation is typically the first step in meeting cleanup objectives with the added benefit of allowing the property owner to detoxify the commercial property and place it back on the lease market as quickly as possible. The suggestion from your office to expand the excavation outside the source areas and into the adjacent units is not a viable option as it would not be cost effective and would be extremely disruptive.

Installation of a horizontal vapor extraction well and the well network for a sub-slab venting system during the soil excavation and prior to resurfacing as proposed in the Work Plan is also good engineering practice and cost effective. Individually and collectively, the systems allow a ready means for remediation of any vapor phase VOC contamination that has migrated vertically or laterally within the unsaturated zone while immediately providing mitigation for vapor intrusion. The proposed network of vapor monitoring wells for assessing the radius of influence of these systems is also an established engineering method to ensure the systems are effective. Moreover, the proposed SVE well network or sub-slab depressurization system well network can be easily expanded into adjacent units if the need arrives.

Because groundwater cleanup times can be considerably longer than times for soil cleanup, it is appropriate to conduct testing of secondary soil and groundwater remediation techniques (i.e. sparging-enhanced soil vapor extraction) following completion of the proposed interim removal action. This is routinely completed as a second step to meet cleanup objectives in a cost effective manner.

The scope of work proposed in the Work Plan is consistent with interim removal actions and feasibility studies conducted at similar sites; the Work Plan is not intended to be a formal Corrective Action Plan given that the proposed objective is to mitigate risks by completing a quick first phase of interim remediation in the heavily-impacted source area and testing the feasibility of secondary remediation of soil and groundwater using sparging-enhanced soil vapor extraction. The final remediation plan will, in part, be determined from the results of the completed Work Plan.

ACDEH technical comments 1 through 4 from the November 21, 2016 letter are addressed below without repeating them.

**1. Work Plan Modifications** - We respectfully request ACDEH approve the proposed Work Plan relating to interim removal actions, pilot testing, and additional investigations. Marina Faire has already entered into various contracts to conduct the work and is eager to proceed with actions to protect human health, safety, and the environment and to get the former dry cleaning unit detoxified and back on the lease market.

**1a. Paired sub-slab and vapor wells** - Work is approved as proposed.

**2a. Shallow groundwater wells** - Work is approved as proposed.

**3a. Deep soil bore** - The proposed boring depth near location DP-2 is limited to 50 feet and located at a point where the shallow water-bearing zone tested non detect for tetrachloroethene (PCE) in grab groundwater. Nevertheless, Cone Penetrometer Testing (CPT) equipment is proposed as an alternative to hollow stem auger and the standard methods are included in Attachment A.

**4a. Deep groundwater monitoring well** - Based on my evaluation of site conditions, RRM recommends postponing further vertical delineation of the PCE plume until the currently proposed scope of work is completed; particularly given that it includes tasks for assessing impacts to the lower A zone. RRM typically proposes the use of CPT equipment in step out fashion to delineate the vertical and lateral/down gradient extent of PCE impacts to groundwater in advance of installing deep monitoring wells. The plumes can follow buried stream channels that meander.

**2. Additional Indoor Air Sampling** - Indoor air sampling results for dry cleaning sites are inherently inconclusive due to the use of PCE for dry cleaning clothes, rugs, and drapes, etc. Rather, the proposed scope of work includes the installation of a horizontal vapor extraction well and sub-slab venting system that can be used as needed to mitigate the vapor intrusion concern based on baseline monitoring of the paired soil gas monitoring wells. On this basis, RRM does not view this sampling as necessary. RRM recommends postponing this request, pending the results of the currently proposed additional soil gas investigations discussed in item 3.

**3. Work for Lateral and Vertical Extent** - The Work Plan already includes a proposal to install five pairs of soil gas monitoring wells including four pairs in adjacent commercial units, three additional groundwater monitoring wells, and a deeper soil boring with the intent of satisfying this objective. RRM endorses these recommendations as being sufficient and appropriate for the current phase of work. The baseline monitoring results from the new and existing vapor monitoring point will be used to determine the extent of the vapor phase plume emanating from the source areas and to further assess vapor intrusion risks in adjacent units. The wells will then be available to assess the results of source area cleanup resulting from the proposed interim removal actions and feasibility testing.

**4. Post-Indoor Air Sampling Notification of Building Occupants** - This is outside of RRM's scope of work; RRM understands that Well Test has already prepared the requested document as a draft for ACDEH review and approval, and has submitted it by email to ACDEH for this purpose

From my review and evaluation of the Work Plan, it is adequate to satisfy the California Health and Safety Code work plan requirement to protect human health, safety, and the environment; and is re-submitted here via this signed and stamped cover letter. This interim remediation work was requested by your office, and Marina Faire readily complied with the directive via submittal of the Work Plan. Section 13360 of the California Water Code indicates the person so ordered shall be permitted to comply with the order in any lawful manner; without stipulations for the design, location, type of construction, or particular manner.

RRM is requesting ACDEH approve the Work Plan as proposed with the clarifications regarding drilling and investigation discussed above so that Marina Faire can promptly implement the requested interim removal actions.

December 21, 2016

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Should you have any questions regarding the contents of this document, please call Julie Avanto of RRM at (714) 653-2347.

Sincerely,  
RRM, Inc.



Julie Avanto  
Project Engineer  
RCE 77741



Attachments:

Attachment A – CPT Field Procedures

# ATTACHMENT A

## CPT FIELD PROCEDURES

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### **Cone Penetrometer (CPT) Soil Borings**

Soil borings will be advanced using a Cone Penetrometer Test (CPT) rig. CPT is a direct-push technology using hydraulics to advance a cone-tipped steel rod into the ground. The cone is just under 1.75-inches in diameter, and is fitted with electronic strain gauges that measure the load on the cone tip and the friction on the metal sleeve just behind the cone as the cone and rod are pushed into the ground. The cone is also fitted with a port, just behind the tip, connected to a pore-pressure transducer. The three parameters; cone bearing load, sleeve friction, and pore-water pressure, are measured and recorded continuously as the cone is advanced. Through known relationships between the parameters, the soil behavior type and stratigraphic interpretation may be inferred.

All CPT data is recorded inside the rig and soil lithology and chemical detector responses will be plotted in the field upon completion of each boring.

Soil samples are collected for lithologic description and chemical analysis by advancing a 1.5-inch diameter core sampler with either 48-inch or 24-inch long acetate liners into undisturbed soil during drilling. The sample intervals retained for chemical analysis are capped with Teflon® tape and plastic end caps, placed in sealed plastic bags, labeled, logged onto a chain-of-custody document, and stored on ice pending transport to a laboratory certified by the state of California using appropriate chain-of-custody documentation.

Groundwater samples are obtained by driving a Hydropunch®-type sampling tool to target depths based on soil behavior type and stratigraphy using the CPT rods. Upon reaching the target depth the rods are withdrawn slightly, exposing a screen just behind the tool tip that allows groundwater to enter the hollow center of the rods. A small diameter bailer is used to retrieve the sample through the CPT rods. The groundwater sample is transferred to an appropriate container, sealed, labeled, and stored on ice pending transport to the laboratory. Upon completion of boring and sampling, cement grout is pumped into each borehole under positive pressure as the boring tools are withdrawn to ensure that cross-contamination through the CPT borehole is minimized.