MacArthur Boulevard Associates
c/o Jay-Phares Corporation
10700 MacArthur Blvd., Suite 200
Oakland, CA 94605-5260
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RECEIVED
By Alameda County Environmental Health 8:28 am, Mar 24, 2017

March 23, 2017

Kit Soo
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Subject: **Perjury Statement and Report Transmittal**
Interim Vapor Intrusion Mitigation Plan Implementation
10700 MacArthur Blvd.
Oakland, California
AEI Project #261829
Toxics Case No. RO0002580

Dear Kit Soo:

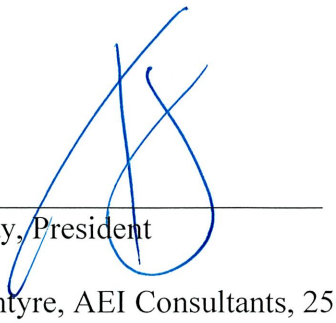
I declare under penalty of perjury, that the information and/or recommendations contained in the attached report for the above-referenced site are true and correct to the best of my knowledge.

If you have any questions or need additional information, please do not hesitate to call me at (510) 562-9500, or Mr. Peter McIntyre at AEI Consultants, (925) 746-6004.

Sincerely,

MACARTHUR BOULEVARD ASSOCIATES
(a California limited partnership)

BY: JAY-PHARES CORPORATION
(Its Management Agent)



By: _____
John Jay, President

cc: Mr. Peter McIntyre, AEI Consultants, 2500 Camino Diablo, Walnut Creek, CA 94597

AEI Consultants
Environmental & Engineering Services
2500 Camino Diablo, Walnut Creek, CA 94597
Tel: 925.746.6000 Fax: 925.746.6099

March 23, 2017

Ms. Kit Soo
Alameda County Department of Environmental Health
1131 Harbor Parkway
Alameda, California 94502

Re: Interim Vapor Intrusion Mitigation Plan Implementation
Former Young's Cleaners
10700 MacArthur Boulevard, Oakland, California
AEI Project No. 261829
Toxics Case No RO0002580

Dear Kit Soo:

AEI Consultants (AEI) appreciates the opportunity to present the partial implementation of the March 6, 2017 *Vapor Intrusion Mitigation Plan* (VIMP) at 10700 MacArthur Boulevard in Oakland, California ("the Site"). This document presents the implementation of the Retro-Coat™ barrier installation and evaluation of the heating, ventilation, and air conditioning (HVAC) system within the Shoe Palace tenant space only, and the initial performance monitoring performed.

This interim report has been prepared to provide the Alameda County Department of Environmental Health (DEH) with preliminary findings of the partial implementation of the VIMP. This report has focused on the activities performed within the Shoe Palace tenant space in an effort to facilitate opening of the retail store to operate as Shoe Palace. Based on the preliminary results provided in this report, AEI recommends that tenant improvements continue in preparation for occupancy of the Shoe Palace and upon completion of the tenant improvements, the opening of the retail space is appropriate. AEI requests that the DEH review this report and comment regarding this recommendation.

Retro-Coat™ Installation

Between March 10 and March 13, 2017, the proposed Retro-Coat™ vapor intrusion barrier system was installed within the Shoe Palace tenant space. American Industrial Coatings was contracted by MacArthur Boulevard and Associates to install the vapor barrier system as described in the VIMP. The extents of the installed vapor intrusion mitigation barrier

are depicted in Figure 3. Installation details are depicted in Figure 4. Photo documentation of the installation procedures are included as Appendix A.

The installation of the Retro-Coat™ barrier system was successful. AEI was periodically onsite during each day of installation activities to document the installation procedures and Site conditions. AEI noted the following general observations during the installation of the vapor barrier system:

- Abrasive surface preparation was completed using a shot-blaster and hand held grinders as depicted in photograph numbers 4 through 8. Abrasive surface preparations were completed on March 10, 2017 except in areas where tiles were revealed. In areas where tiles were revealed, the tiles were removed and the remaining abrasive surface preparations were completed the morning of March 11, 2017.
- Penetrations to the slab and impediments to barrier application identified by AEI prior to abrasive surface preparations are depicted in photograph numbers 9 through 16. Examples include structural I-beams, demising walls, electrical and communications utilities installed as part of tenant improvements to service the point of sale podium, existing soil vapor and sub-slab vapor probes, and fixtures in the two restrooms located in the stock area.
- The foundation appeared to have been floated using cement grout as part of historical tenant improvements. Abrasive surface preparations removed grout which had been used to repair the slab and level the surface. The removal of this grout revealed multiple cracks and penetrations to the slab which were previously not visible, including a historical electrical conduit which had been grouted over. The joint between the structural grade beam and the slab was cracked along the length of the grade beam. Additionally, the northern third of the sales floor was covered in vinyl floor tiling which was not visible prior to surface preparation. A sample of the tile was submitted to a laboratory and found not to contain asbestos above the reporting limit. No cracks larger the ½-inches in width were observed. Representative cracks and penetrations identified after the abrasive surface preparations are depicted in photographs 12 through 26.
- Cracks, penetrations, and indentations in the slab post surface abrasion were repaired and filled using Retro-Coat™ Gel on March 10 and 11 as depicted in photographs 27 through 37.
- Retro-Coat™ Primer was applied to a thickness of approximately 6-mil on March 11, 2017 as depicted in photographs 38 through 41.
- AEI was present to inspect the preparation of the primer and to oversee representative application of the primer in the stock area and restrooms.

- AEI inspected the cured primer application on the morning of March 12, 2017 prior to the application of the first layer of Retro-Coat™ Core as depicted in photographs 42 through 57. The following deficiencies were identified and corrected:
  - Air bubbles were observed in various areas throughout the tenant space as depicted in photographs 49 through 52. Air bubbles were predominantly in areas where concrete was particularly porous. According to the installer, the presence of bubbles is typically an indicator that the primer was applied too thick and displaced air while it infiltrated the concrete. In areas where air bubbles were only occasionally present, air bubbles were popped and smoothed during the squeegee application of Retro-Coat™ Core layer one. In areas were multiple air bubbles were present, the surface was smoothed prior to application using a fine grit disc sander.
  - Loose aggregates that had been bonded to the surface of the primer were identified in two areas. Aggregates were removed and the resulting spurs were sanded with a fine grit sand paper
  - Several small areas totaling approximately three-square feet were identified where primer was adsorbed in to the surface of the concrete as depicted in photographs 55 and 56. AEI was present during application in some of these areas and visually confirmed that primer was applied in these areas.
- In a modification to the VIMP, Retro-Coat™ Core was applied in two approximately 10-mil layers rather than one 20-mil layer, which is a manufacturer-approved method. Additionally, a sand aggregate was added to the second layer in areas where no finished flooring was planned to overlay the Retro-Coat™, specifically within the stock room and restrooms. The sand aggregate is for surface texture only to reduce slippage, as it is the final floor finish in this area, and is not expected to effect barrier performance.
- The first layer of Retro-Coat™ Core was applied on March 12, 2017 to an approximate thickness of 10-mil as confirmed using a wet film thickness gauge. AEI was present during the preparation of the Retro-Coat™ Core mixture and during the application of the Retro-Coat™ Core within a representative portion of the sales area. The application of the first layer of Retro-Coat™ Core was completed following the procedures outlined in the VIMP and is depicted in photographs 58 through 61.
- Prior to the installation of the second layer of Retro-Coat™ Core, AEI inspected the cured first layer as shown in photographs 62 through 86. The following deficiencies were identified and corrected:
  - In areas that were previously identified as having significant primer adsorption, the Retro-Coat™ Core percolated through the concrete resulting in areas of exposed aggregates as depicted in photographs 78 and 79. AEI noted these deficiencies and requested that the second layer of Retro-Coat™ Core be applied to an additional thickness of 15-mil in these areas.

  - Along demising walls, gaps remained between the Retro-Coat™ Core layer and the vertical termination as depicted in photograph 80. AEI recommended that additional Retro-Coat™ Core be added to these areas to better seal between the floor and the walls.
  - AEI requested that the interior of the vapor pins be coated in Retro-Coat™ Core to the extent practical.

- The second layer of Retro-Coat™ Core was applied on March 13, 2017 to a thickness of between 10 and 16-mil as depicted in photographs 88 through 92. Sand aggregate (#1/20) was added to the floor within the stock room and restrooms after application was completed, but before the Retro-Coat™ Core layer had cured. After addition of sand, the applied surface was back-rolled with a soft roller.
- The cured and finished vapor intrusion mitigation barrier was inspected by AEI on March 14, 2017 as depicted in photographs 93 through 110.

Heating, Ventilation, and Air Conditioning Evaluation

On March 11, 2017, Climatech Mechanical Services Inc. conducted measurements on the balance of the HVAC system for the Shoe Palace tenant space. The tenant space is serviced by four units (RTU-1 through RTU-4) as depicted in Photograph 1. The neighboring Rainbow Apparel tenant space, which is serviced by four independent air handling units (photograph 2), and the neighboring utility closet area, which is serviced by one air handling unit (photograph 3), were not included as part of this assessment.

The assessment of the HVAC system included measuring total external static pressure, return air flow in actual cubic feet per minute (acfm), and total air flow in acfm for each of the air units servicing the Shoe Palace tenant space. Additionally, differential pressure measurements between the indoor air and sub-slab were measured at each of the existing sub-slab monitoring points and differential pressure measurements between indoor air and ambient air were measured at both the front and rear door. Pressure and air flow measurements were collected with all exterior and interior doors closed, the sub-slab depressurization system and soil vapor extraction systems operating, and with two of the four HVAC units on and in vent mode fan operation.

Per the manufacturers specifications, vent mode fan operation is the mode of operation with the lowest air flow and ambient air flow. The results of the HVAC assessment are provided in Appendix B and are summarized below:

- The pressure differential between indoor air and sub-slab ranged from 0.009-inches of water column (in-WC) to 0.099 in-WC. The positive differential indicates that there is a positive pressure within the building when compared to the depressurized sub-surface

- The pressure differential between indoor air and ambient air was 0.0135 in-WC at the rear exit door and 0.0196 in-WC at the front door. The positive differential indicates that there is a greater pressure within the building than ambient, outdoor air.
- Roof top unit external air flow rates ranged from 137 acfm to 532 acfm with total air flow ranging from 1,200 acfm to 2,650 acfm.

The results of the HVAC assessment indicate that the current configuration should be adequate to provide a positive pressure environment in the Shoe Palace tenant space. However, AEI recommends that an air balance be conducted on the Shoe Palace tenant space and the two adjacent tenant spaces simultaneously in order to ensure that pressure differentials between tenant spaces do not generate preferential pathways for potential vapor intrusion between the tenant spaces.

Performance Monitoring

Following completion of the vapor intrusion mitigation system and HVAC evaluation, performance monitoring was performed that included collecting indoor air and soil gas samples at the Site in general accordance with the DEH-approved VIMP.

On March 15, 2017, indoor air and soil gas samples were collected at the Site while the sub-slab depressurization system was operational, as follows:

- Indoor air sampling included collecting samples from locations IA-1 through IA-7, and an ambient air sample, at the locations shown on Figure 2. Indoor air samples were collected from within the breathing zone (4 to 6 feet above ground surface) and the ambient air sample was collected from the roof (at approximately 25 feet above ground surface) using evacuated six-liter laboratory-supplied evacuated canisters equipped with flow regulators to allow for the collection of samples over a 24-hour period. The collected air samples were analyzed for select VOCs including 1,1-dichloroethane (1,1-DCA), cis-1,2-dischloroethylene (cis-1,2-DCE), trans-1,2-DCE, tetrachloroethylene (PCE), trichloroethylene (TCE), and vinyl chloride using either US EPA Testing Method TO-15 SIM.
- Upon completion of the indoor air sampling, soil gas samples were collected from existing sub-slab probes SS-1 through SS-10 and the existing five-foot probes VM-3 through VM-9, at the locations shown on Figure 2. VM-1, VM-2, and VM-10 were not sampled because water was present in the soil gas probe. A sample could not be collected from VM-5 due to low-flow conditions. and soil gas probes VM-3 through VM-9. AEI deviated from the VIMP, and collected the soil gas samples in Tedlar® bags, and not evacuated canisters. Samples were collected using laboratory supplied Tedlar® bags using a peristaltic pump to fill the tedlar bag. The peristaltic pump was set to operated at approximately 200-millileters per minute, calibrated by initially pumping ambient air into a one-liter Tedlar® bag, measuring the fill time, and

adjusting the pumping rate as appropriate. The same pumping rate was used on each hole despite observed vacuum. Prior to collecting the samples, the samples were purged for approximately one minute to remove any air present in the sampling train. Soil vapor samples were then collected into the Tedlar® bags at approximately 200-milliliters per minute. Once a sufficient sample was present in the Tedlar® bag, the bag was sealed and removed from the sampling line. The sample was labeled and r laboratory analysis. New dedicated tubing was used for each sampling point.

- The collected soil gas samples were analyzed for select VOCs including 1,1-DCA, cis-1,2-DCE, trans-1,2-DCE, PCE, TCE, and vinyl chloride using either US EPA Testing Method 8260B.

Table 1 presents a summary of the indoor air recent and historical sample results. Table 2 presents a summary of the sub-slab and soil gas sample results. Laboratory analytical results are included as Appendix C. The results can be summarized as follows:

- Indoor air samples IA-1, IA-2, and IA-7 were collected within the Shoe Palace tenant space. PCE was the only chemical detected, observed at concentrations of 0.851, 0.930, and 1.26 micrograms per cubic meter (µg/m^3), respectively.
- Indoor air sample IA-3 was collected within the storage area, currently not occupied for continuous use. It should be noted that the storage area has been sealed off from the Shoe Palace tenant suite and is not part of the Shoe Palace operation or storage. The sample yielded PCE and TCE at concentrations of 69.2 and 6.13 µg/m^3, respectively. Cis-1,2-DCE was observed at a concentration of 1.97 µg/m^3.
- Indoor air samples IA-4 through IA-6 were collected within the Rainbow Apparel tenant space. PCE was detected in each of the samples, observed at a maximum concentration of 1.45 µg/m^3. TCE was detected in two of the samples collected, observed at concentrations of 0.161 and 0.163 µg/m^3.
- PCE was the only chemical observed in the ambient air sample, detected at a concentration of 0.250 µg/m^3.
- PCE and TCE were the only chemical detected in the ten sub-slab soil gas samples collected and analyzed. PCE was detected in three of the ten samples, observed at a maximum concentration of 1,700 µg/m^3. TCE was detected in one sample, SS-5, at a concentration of 580 µg/m^3.
- PCE and TCE were detected in each of the soil gas samples collected, with the exception of VM-4 where only TCE was detected, observed at maximum concentrations of 340,000 and 310,000 µg/m^3, respectively.
- Cis-1,2-DCE was detected in two of the soil gas samples collected, observed at concentrations of 17,000 and 170,000 µg/m^3.

- Trans-1,2-DCE was detected in two of the soil gas samples collected, observed at concentrations of 2,000 and 21,000 µg/m^3.

As presented above, indoor air sample results indicate that the PCE concentrations detected in the occupied area of the building at the Site are below the Environmental Screening Level[1] (ESL) under a commercial use scenario of 2.1 µg/m^3. The one indoor air sample collected within the unused storeroom yielded PCE and TCE at concentrations of 69.2 and 6.13, which are both above their respective ESLs of 2.1 and 3 µg/m^3. The observed TCE concentration is below the accelerated (7 µg/m^3) or urgent (21 µg/m^3) response levels[2]. As noted above, five-foot bgs soil gas samples could not be collected from the two soil gas probes installed within the storeroom. AEI recommends further evaluation of potential preferential pathways that may be present within the storeroom, sealing the pathways if identified, and resampling to observe whether PCE and TCE concentrations have decreased to acceptable levels.

This is the first round of soil gas samples collected while the sub-slab depressurization is operational, and were collected as a reference point to the indoor air samples.

Closing

AEI plans to continue implanting outstanding items within the VIMP an upon completion of these items, in accordance with the requirements of the DEH provisional acceptance of the VIMP, a technical report will be submitted which will include as-built construction drawings, an operations and maintenance plan, and additional HVAC evaluation data. This technical report will also include any recommendations for additional work. Please contact the undersigned at (925) 746-6000 if you have any questions regarding the contents of this technical memorandum.

Sincerely,
AEI Consultants

Jeremy Smith
Senior Project Manager

Trent A. Weise, P.E.
Vice President

REGISTERED PROFESSIONAL ENGINEER
TRENT A. WEISE
No. C84480
Exp. 6/17
CIVIL
STATE OF CALIFORNIA

Encl:
Table 1 – Summary of Indoor Air Analytical Results
Table 2 – Soil Vapor Sample Analytical Data – Vapor Probes
Figure 1 – Site Plan

[1] ESLs developed by the California Regional Water Quality Control Board, San Francisco Bay Region, issued February 2016, Rev. 3.
[2] California Department of Toxic Substances Control Human Health Risk Assessment Note No. 5, August 23, 2014.

TABLES

Table 1:
Indoor Air Sample Analytical Data
10700 MacArthur Blvd., Oakland, California

Sample ID	Date	PCE µg/m^3	TCE µg/m^3	cis-1,2-DCE µg/m^3	trans-1,2 DCE µg/m^3	Vinyl Chloride µg/m^3
IA-1	8/23/2016	3.4	0.23	<0.40	<0.40	<0.013
	12/13/2016	1.3	0.15	<0.04	<0.04	<0.03
	3/15/2017	0.851	<0.107	<0.0793	<0.0793	<0.0511
IA-2	8/23/2016	4.1	0.21	<0.40	<0.40	<0.013
	12/13/2016	0.31	<0.05	<0.04	0.16	<0.03
	3/15/2017	0.930	<0.107	<0.0793	<0.0793	<0.0511
IA-3	12/13/2016	7.7	1.7	1.5	0.16	0.05
	3/15/2017	69.2	6.13	1.97	<0.0793	<0.0511
IA-4	12/13/2016	0.48	0.08	0.06	0.13	<0.03
	3/15/2017	1.45	0.163	<0.0793	<0.0793	<0.0511
IA-5	12/13/2016	1.1	0.43	<0.099	0.15	<0.026
	3/15/2017	1.39	<0.321	<0.238	<0.238	<0.153
IA-6	12/13/2016	1.2	0.45	0.32	0.56	0.16
	3/15/2017	1.83	0.161	<0.0793	<0.0793	<0.0511
IA-7	3/15/2017	1.26	<0.321	<0.238	<0.238	<0.153
AMB-1	8/23/2016	<0.069	<0.027	<0.40	<0.40	<0.013
	12/13/2016	<0.17	<0.13	<0.099	<0.099	<0.026
	3/15/2017	0.250	<0.107	<0.0793	<0.0793	<0.0511
ESL	--	2.1	3.0	35	350	0.16
DTSC Accelerated Response / Urgent Response	--	--	7	--	--	--
	--	--	21	--	--	--

Notes:

PCE = Tetrachloroethene

TCE = Trichloroethene

c-1,2-DCE = cis-1,2-Dichloroethene

trans-1,2-DCE = trans-1,2-Dichloroethene

µg/m^3 = micrograms per cubic meter

ESL - Environmental Screening Level for commercial land use; RWQCB February 2016 (Rev.3)

DTSC - Human Health Risk Assessment Note Number 5; August 23, 2014 based on a 10-hour work day under a commercial scenario.

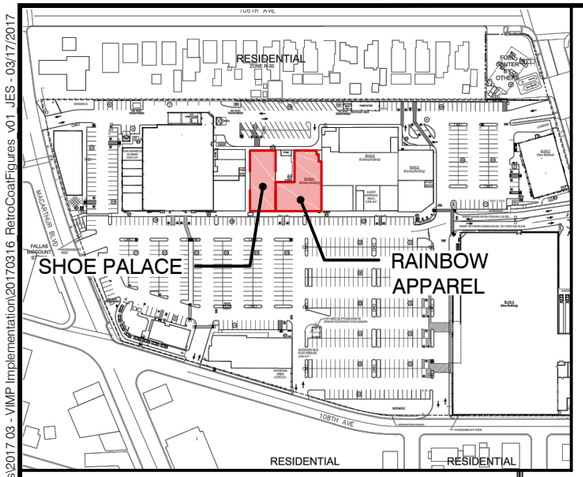
Table 2:
Soil Vapor Sample Analytical Data - Vapor Probes
10700 MacArthur Blvd., Oakland, California

Sample ID	Date	Depth (feet bgs)	PCE mg/m^3	TCE mg/m^3	cis-1,2-DCE mg/m^3	trans-1,2 DCE mg/m^3	Vinyl Chloride mg/m^3
Sub-Slab Vapor Probes							
SS-1	1/6/2014	0.5	1,300,000	440,000	150,000	<50,000	<50,000
	9/28/2015		360	440	<250	<250	<250
	3/15/2017		<250	<250	<250	<250	<250
SS-2	1/6/2014	0.5	360	<250	<250	<250	<250
	9/28/2015		490	480	<250	<250	<250
	3/15/2017		<250	<250	<250	<250	<250
SS-3	1/6/2014	0.5	88,000	11,000	<2,500	<2,500	<2,500
	9/28/2015		670	430	<250	<250	<250
	3/15/2017		1,700	<250	<250	<250	<250
SS-4	1/6/2014	0.5	48,000	18,000	9,200	2,300	<1,200
	9/28/2015		680	510	<250	<250	<250
	3/15/2017		<250	<250	<250	<250	<250
SS-5	1/6/2014	0.5	130,000	31,000	36,000	7,300	<2,500
	9/28/2015		530	470	<250	<250	<250
	3/15/2017		<250	580	<250	<250	<250
SS-6	1/6/2014	0.5	59,000	7,800	<2,500	<2,500	<2,500
	9/28/2015		640	420	<250	<250	<250
	3/15/2017		<250	<250	<250	<250	<250
SS-7	1/6/2014	0.5	120,000	16,000	<2,500	<2,500	<2,500
	9/28/2015		740	500	<250	<250	<250
	3/15/2017		320	<250	<250	<250	<250
SS-8	1/6/2014	0.5	2,000	1,000	2,500	<250	<250
	9/28/2015		710	510	<250	<250	<250
	3/15/2017		<250	<250	<250	<250	<250
SS-9	1/6/2014	0.5	6,600,000	2,500,000	1,100,000	180,000	240,000
	9/28/2015		610	520	<250	<250	<250
	3/15/2017		<250	<250	<250	<250	<250
SS-10	1/6/2014	0.5	<250	<250	<250	<250	<250
	9/28/2015		640	410	<250	<250	<250
	3/15/2017		430	<250	<250	<250	<250

Sample ID	Date	Depth (feet bgs)	PCE mg/m^3	TCE mg/m^3	cis-1,2-DCE mg/m^3	trans-1,2 DCE mg/m^3	Vinyl Chloride mg/m^3
5' Vapor Probes							
VM-1	1/6/2014	5'	1,300,000	440,000	180,000	<50,000	<50,000
	9/28/2015		16,000	1,900	2,300	600	<250
	3/15/2017 [1]		NS	NS	NS	NS	NS
VM-2	1/6/2014	5'	<250	<250	<250	<250	<250
	9/28/2015		16,000	3,200	3,900	1,000	<250
	3/15/2017 [1]		NS	NS	NS	NS	NS
VM-3	1/6/2014	5'	61,000	10,000	<2,500	<2,500	<2,500
	9/28/2015		14,000	2,200	2,700	770	<250
	3/15/2017		14,000	1,700	<250	<250	<250
VM-4	1/6/2014	5'	210,000	86,000	39,000	9,100	<5,000
	9/28/2015		14,000	2,700	3,200	880	<250
	3/15/2017		<12,000	27,000	<12,000	<12,000	<12,000
VM-5	1/6/2014	5'	1,600,000	5,800,000	8,800,000	2,400,000	18,000,000
	9/28/2015		26,000	7,300	12,000	3,400	320
	3/15/2017 [2]		NS	NS	NS	NS	NS
VM-6	1/6/2014	5'	1,700,000	640,000	250,000	<50,000	<50,000
	9/28/2015		15,000	2,100	2,400	680	<250
	3/15/2017		27,000	19,000	17,000	2,000	<1,000
VM-7	1/6/2014	5'	120,000	22,000	<2,500	<2,500	<2,500
	9/28/2015		18,000	2,800	3,400	950	<250
	3/15/2017		56,000	7,400	<250	<250	<250
VM-8	1/6/2014	5'	12,000	1,700	1,700	<250	<250
	9/28/2015		17,000	2,300	2,700	760	<250
	3/15/2017		5,800	460	<250	<250	<250
VM-9	1/6/2014	5'	4,300,000	1,800,000	720,000	110,000	130,000
	9/28/2015		32,000	6,800	9,000	2,500	270
	3/15/2017		340,000	310,000	170,000	21,000	39,000
VM-10	1/6/2014	5'	470	280	<250	<250	<250
	9/28/2015		14,000	2,000	2,400	650	<250
	3/15/2017 [1]		NS	NS	NS	NS	NS

Notes:
PCE = Tetrachloroethene
TCE = Trichloroethene
c-1,2-DCE = cis-1,2-Dichloroethene
trans-1,2-DCE = trans-1,2-Dichloroethene
mg/m^3 = micrograms per cubic meter
bgs = below ground surface
[1] = No sample collected; groundwater present.
[2] = No sample collected; no flow conditions.

FIGURES



AMW-1

SS/VM-2

IA-7

SS/VM-1

IA-6

IA-2

IA-3

SS/VM-10

IA-5

SS/VM-5

SS/VM-9

AMW-6R

SS/VM-3

SS/VM-6

IA-1

SS/VM-8

IA-4

SS/VM-7

SS/VM-4

LEGEND

- Interior Fixture
- SVET & SDS Equipment Location
- Groundwater Monitoring Well
- Soil Vapor/Sub-slab Vapor Monitoring Point
- Indoor Air Sample Location

N

0 16 32 APPROXIMATE SCALE IN FEET

AEI Consultants
San Jose, California

SITE PLAN

10700 MacArthur Blvd
Oakland, California

FIGURE 1
Project No. 261829

\\aeidata\projects\Companywide Projects\365000 Series\365948 Oakland, CA\SM\Deliverables\2017 03 - VIMP Implementation\20170316_RetroCoatFigures_v01_JES - 03/17/2017

AMW-8

AMW-1

AMW-6R

IA-7	
Date	PCE (µg/m^3)
03/15/17	1.26

IA-3	
Date	PCE (µg/m^3)
12/13/16	7.7
03/15/17	69.2

IA-6	
Date	PCE (µg/m^3)
12/13/16	1.2
03/15/17	1.83

IA-2	
Date	PCE (µg/m^3)
08/23/16	4.1
12/13/16	0.31
03/15/17	0.930

IA-1	
Date	PCE (µg/m^3)
08/23/16	3.4
12/13/16	1.3
03/15/17	0.851

IA-5	
Date	PCE (µg/m^3)
12/13/16	1.1
03/15/17	1.39

IA-4	
Date	PCE (µg/m^3)
12/13/16	0.48
03/15/17	1.45

AMB-01*	
Date	PCE (µg/m^3)
08/23/16	<0.069
12/13/16	<0.17
03/15/17	0.250

IA-7 IA-6 IA-3 IA-2 IA-5 IA-1 IA-4

SS/VM-1 SS/VM-2 SS/VM-10 SS/VM-5 SS/VM-9 SS/VM-3 SS/VM-6 SS/VM-8 SS/VM-7 SS/VM-4

LEGEND

- Interior Fixture
- SVET & SDS Equipment Location
- Groundwater Monitoring Well
- Soil Vapor/Sub-slab Vapor Monitoring Point
- Indoor Air Sample Location
- Tenant Improvement Excavation

N

0 16 32 APPROXIMATE SCALE IN FEET

AEI Consultants
San Jose, California

PCE IN INDOOR AIR

10700 MacArthur Blvd
Oakland, California

FIGURE 2
Project No. 261829

AMW-8

AMW-1

SS/VM-2

IA-7

SS/VM-1

IA-6

IA-2

IA-3

SS/VM-10

IA-5

SS/VM-5

SS/VM-9

AMW-6R

SS/VM-3

SS/VM-6

IA-1

SS/VM-8

IA-4

SS/VM-7

SS/VM-4

LEGEND

- Interior Fixture
- SVET & SDS Equipment Location
- Groundwater Monitoring Well
- Soil Vapor/Sub-slab Vapor Monitoring Point
- Indoor Air Sample Location
- Extents of Vapor Intrusion Mitigation Barrier
- Extent of Vapor Intrusion Mitigation Barrier with Aggregate Finish

N

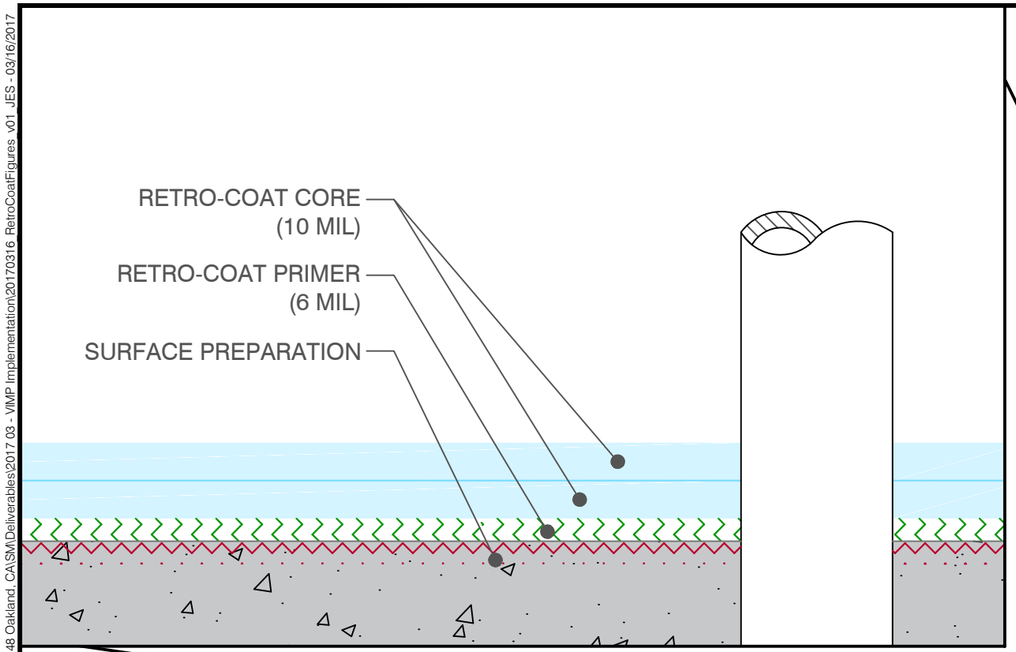
0 16 32 APPROXIMATE SCALE IN FEET

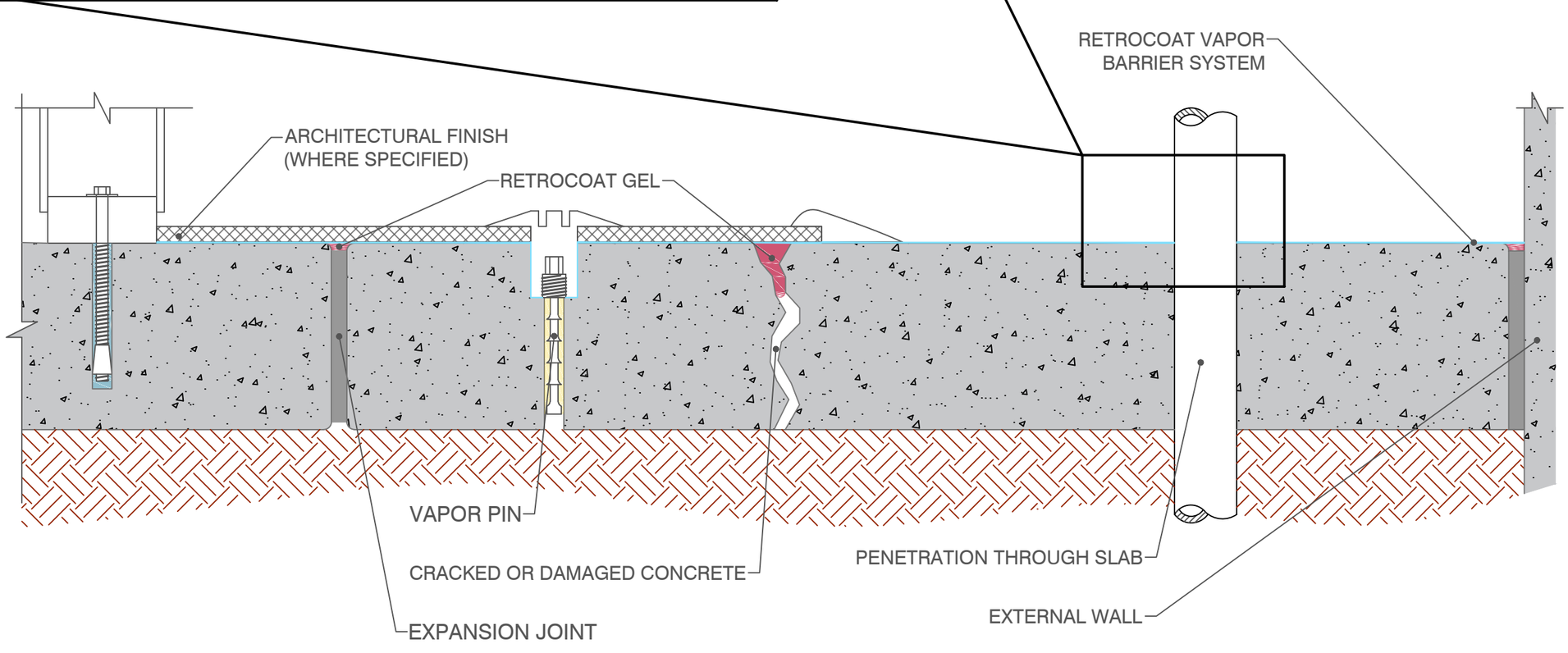
AEI Consultants
San Jose, California

EXTENT OF VAPOR INTRUSION MITIGATION BARRIER INSTALLATION

10700 MacArthur Blvd
Oakland, California

FIGURE 3
Project No. 261829





LEGEND

- Architectural Finish (where specified)
- RetroCoat (R) Core
- RetroCoat(R) Primer
- RetroCoat(R) Gel
- Surface Preparation
- Expansion joint
- Concrete
- Soil

FOR ILLUSTRATIVE PURPOSES ONLY
NOT TO SCALE
NOT FOR CONSTRUCTION

AEI Consultants
San Jose, California

VAPOR INTRUSION BARRIER SYSTEM DETAILING

10700 MacArthur Blvd
Oakland, California

FIGURE 4
Project No. 261829

APPENDIX A

SITE PHOTOGRAPHS

1. Rooftop of Shoe Palace tenant space facing NW. Each of the four HVAC units for the Shoe palace tenant space are visible. (03/10/2017)

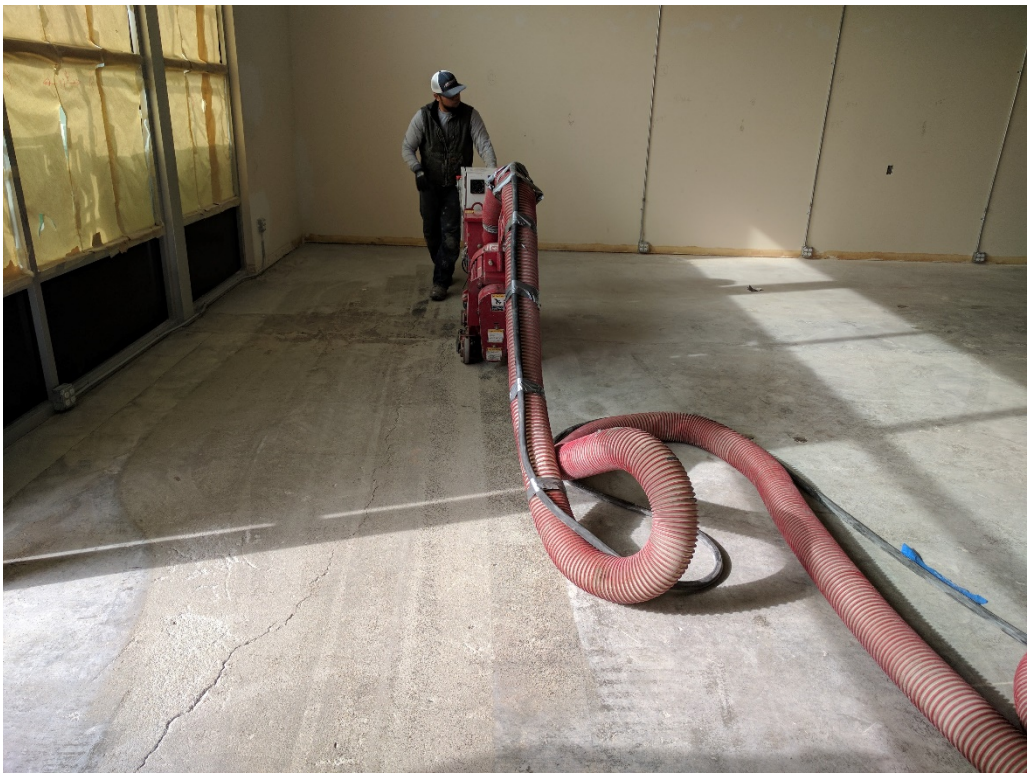
2. Rooftop of Rainbow Apparel tenant space facing NE. Each of the four HVAC units for the rainbow apparel tenant space are visible (03/10/2017)

3. Rooftop above supply closet and SVET room facing N (03/10/2017)

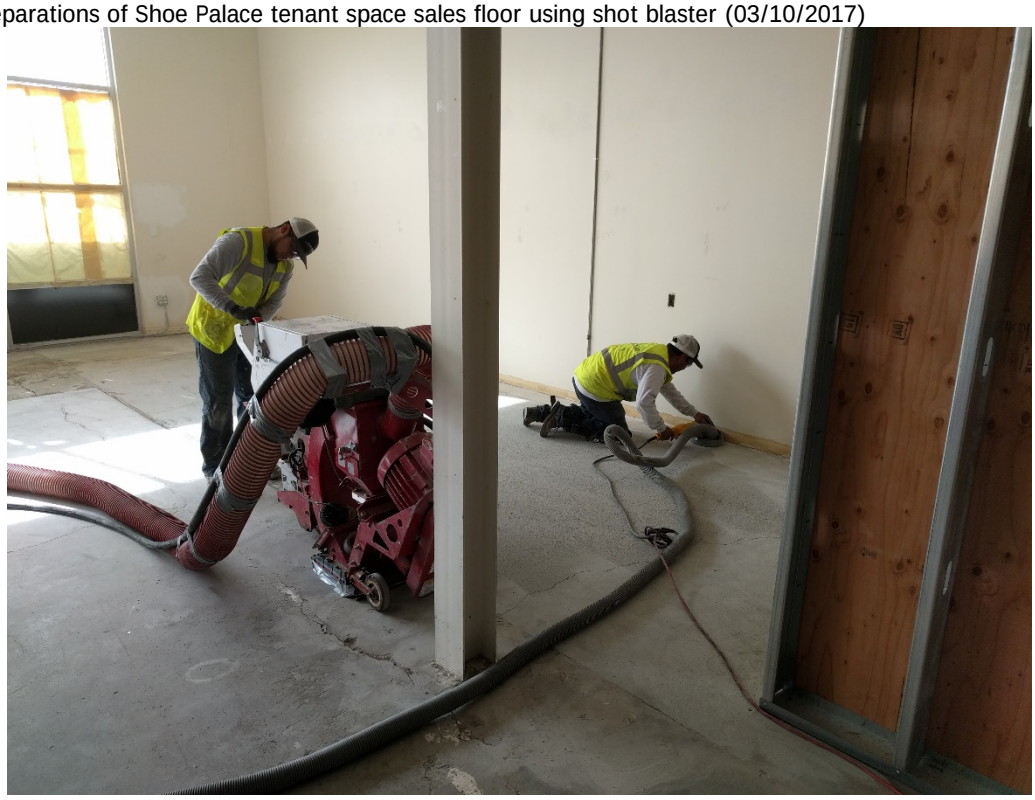
4. Surface abrasion using shot blaster and grinder. View from S corner of sales area facing N as in photo Nos 31, 46 and 97 (03/11/2017)

5. Surface abrasion using shot-blaster and grinder. View from W corner of sales area facing SE as in photo Nos 69 and 95 (03/11/2017)

6. Surface abrasion using shot-blaster and grinder. View from W corner of sales area facing NE as in photo Nos 70 and 96 (03/11/2017)



7. Surface preparations of Shoe Palace tenant space sales floor using shot blaster (03/10/2017)



8. Surface preparations of Shoe Palace tenant space sales floor using shot blaster and grinder (03/10/2017)

9. Surface penetration, representative structural I-beam as in photo Nos 73, and 104 (03/10/2017)

10. Interior wall (03/10/2017)

11. Electric and communications penetrations for POS podium in sales floor (03/10/2017). Utility trench completed as part of TI visible.

12. Penetration from ceiling for com/electric to sales floor POS podium as in photo No 71 (03/10/2017). Utilities run sub-grade to location of POS podium through a trench installed as part of TI.

13. Penetration from ceiling for com/electric to sales floor POS podium as in photo No 72 (03/10/2017)

14. Women's restroom, post surface preparation as in photo Nos 45, 67, and 93. Location of utility trenches installed as part of TI visible (3/11/2017)

15. Mens restroom, post surface preparation. Location of utility trenches installed as part of TI visible (3/11/2017)

16. Representative cox-colvin sub-slab and soil vapor probe locations post abrasive surface preparation (03/11/2017)

17. Representative cracks post surface preparation (03/11/2017)

18. Representative cracks post surface preparation (03/11/2017)

19. Representative cracks post surface preparation (03/11/2017)

20. Cracks along grade beam, post surface preparation (03/10/2017)

21. Cracks along grade beam, post surface preparation (03/10/2017)

22. Representative cracks along historic penetrations and trenches. (03/10/2017)

23. Historic electrical conduit identified post surface abrasion (03/10/2017)

24. Tiles identified during surface preparation (03/10/2017)

25. Northern corner of sales area. Note extent of tiles is visible along the prepared area. (03/10/2017)

26. Damage to trenching between sales area and stock area as in photo No 35 (03/11/2017)

27. Application of Retro-coat Gel post abrasive surface preparation, but prior to primer application (03/11/2017)

28. Application of Retro-coat Gel to seal cracks post surface preparation, but prior to primer application. Photo taken from W corner of stock room facing N as in photo Nos 42, 69, and 88 (03/11/2017)

29. Application of Retro-coat Gel to seal cracks post surface preparation, but prior to primer application. Photo taken from N corner of stock room facing SE (03/11/2017)

30. Representative Retro-coat Gel application (03/11/2017)

31. Retro-coat Gel application. View from S corner of sales area facing N as in photo Nos 4, 46, and 97 (03/11/2017)

32. Retro-coat Gel application. View from W corner of sales area facing SE as in photo Nos 5, 69, and 95 (03/11/2017)

33. Retro-coat Gel application. View from W corner of sales area facing NE as in photo Nos 6, 70, and 96 (03/11/2017)

34. Representative close up of concrete repairs using Retro-coat Gel, pre primer application (03/11/2017)

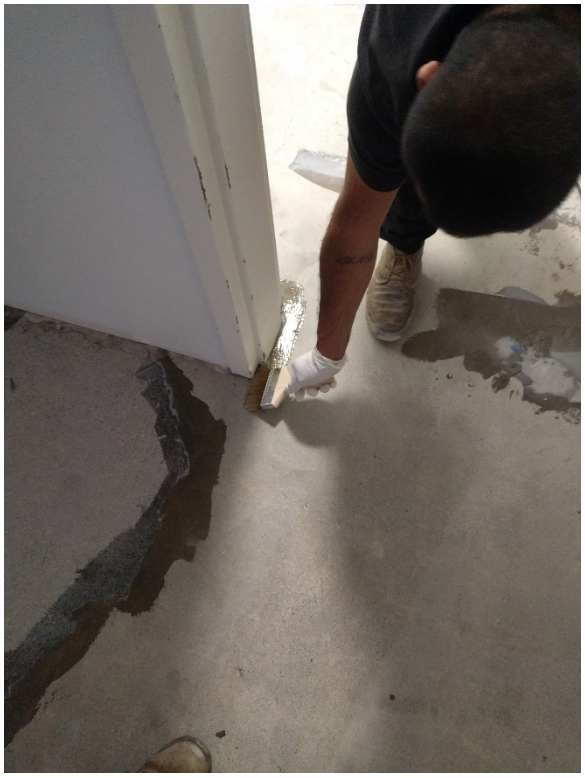
35. Floating of damaged trench area in sales area (see photo No. 26) using Retro-coat Gel (03/11/2017)

36. Close up of Retro-coat Gel application along grade beam. Photo taken from SE portion of sales area facing NW (03/11/2017)

37. Close up of representative crack repair using Retro-coat Gel (03/11

38. Retro-coat Primer preparation; 1 gallon of Part B into 3.5 gallons Part A, mixed for two minutes (03/11/2017)

39. 6 mil application of Retro-coat Primer to mens restroom using soft roller (03/11/2017)



40. Representative application of Retro-coat Primer around vertical terminations using brush (03/11/2017)

41. Representative application of Retro-coat Primer to an ≈6 mil thickness as in photo Nos 65 and 91 (03/11/2017)

42. Cured primer application. Photo taken from W corner of stock room facing N as in photo Nos 28, 62, and 88 (03/12/2017)

43. Cured primer application. Photo taken from S corner of stock room facing NW as in photo Nos 64 and 90 (03/12/2017)

44. Cured primer application. Photo taken from N corner of stock room facing S as in photo Nos 66 and 92 (3/12/2017)

45. Cured primer application, women's restroom as in photo Nos 14, 67, and 93 (03/12/2017)

46. Cured primer application. View from S corner of sales area facing N as in Photo Nos 4, 31, 97 (03/12/2017)

47. Cured primer application. View from E corner facing W as in photo Nos 68 and 94 (03/12/2017)

48. Representative close up of cured primer application (03/12/2017)

49. Air bubbles in cured primer (03/12/2017).

50. Air bubbles in cured primer (03/12/2017)

51. Close up of air bubbles in cured primer (3/12/2017)

52. Close up of air bubbles in cured primer (03/12/2017)

53. Aggregate in cured primer (03/12/2017)

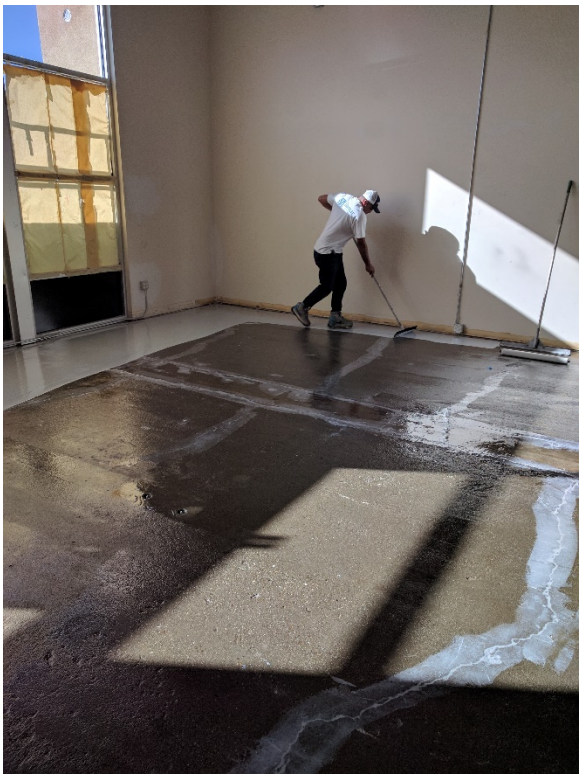
54. Aggregate in cured primer (03/12/2017)

55. Area of primer percolation in high porosity concrete (03/12/2017)

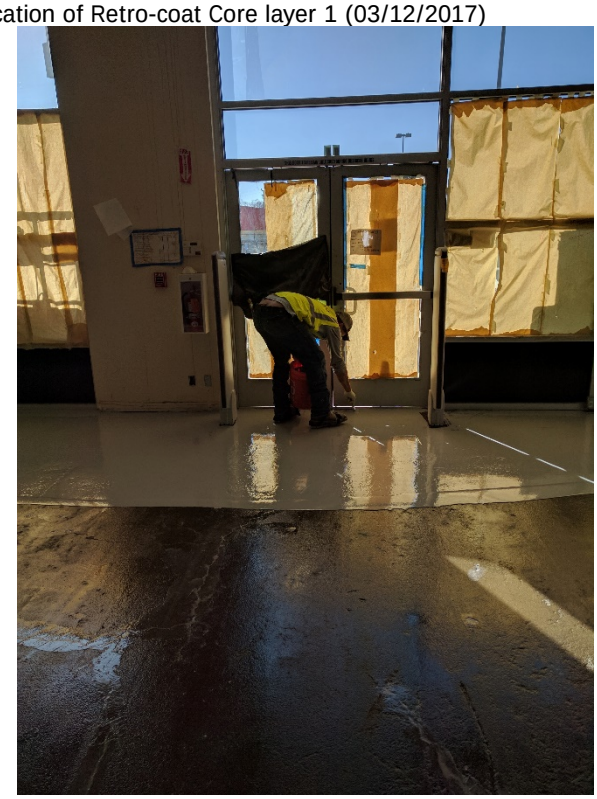
56. Area of primer percolation in high porosity concrete (03/12/2017)

57. Removal of bubbles in primer using fine grit sander (03/12/2017)

58. Representative ribbon pour of Retro-coat Core layer 1 (03/12/2017)



59. Representative squeegee application of Retro-coat Core layer 1 (03/12/2017)



60. Representative detailing of Retro-coat Core layer 1 using a brush (03/12/2017)

61. Representative backrolling of Retro-coat core layer 1 (03/12/2017)

62. Cured Retro-coat layer 1. Photo taken from W corner of stock room facing N as in Photo Nos 28, 42, and 88 (03/13/2017)

63. Cured Retro-coat layer 1. Photo taken from W corner of stock room facing E as in photo No 89 (03/13/2017)

64. Cured Retro-coat layer 1. Photo taken from S corner of stock room facing W as in photo Nos 43 and 90 (03/13/2017)

65. Cured Retro-coat layer 1. Photo taken from S corner of stock room facing NW as in photo Nos 41 and 91 (03/13/2017)

66. Cured Retro-coat layer 1. Photo taken from N corner of stock room facing S as in photo Nos 44 and 92 (3/13/2017)

67. Cured Retro-coat layer 1, women's restroom as in photo Nos 14, 45, and 93 (03/13/2017)

68. Cured Retro-coat layer 1. View from E corner facing W as in photo Nos 47 and 94 (03/12/2017)

69. Cured Retro-coat Core layer 1. View from W corner of sales area facing SE as in photo Nos 5, 69, and 95 (03/13/2017)

70. Cured Retro-coat Core layer 1. View from W corner of sales area facing NE as in photo Nos 6, 33, and 96 (03/13/2017)

71. Retro-coat Core seal of penetration from ceiling for com/electric to sales floor POS podium as depicted in photo No 12 (03/13/2017)

72. Retro-coat Core seal of penetration from ceiling for com/electric to sales floor POS podium as depicted in photo No 13 (03/13/2017)

73. Representative cured Retro-coat Core layer 1 at structural I-beam as in photo Nos 9, 81, and 109 (03/13/2017)

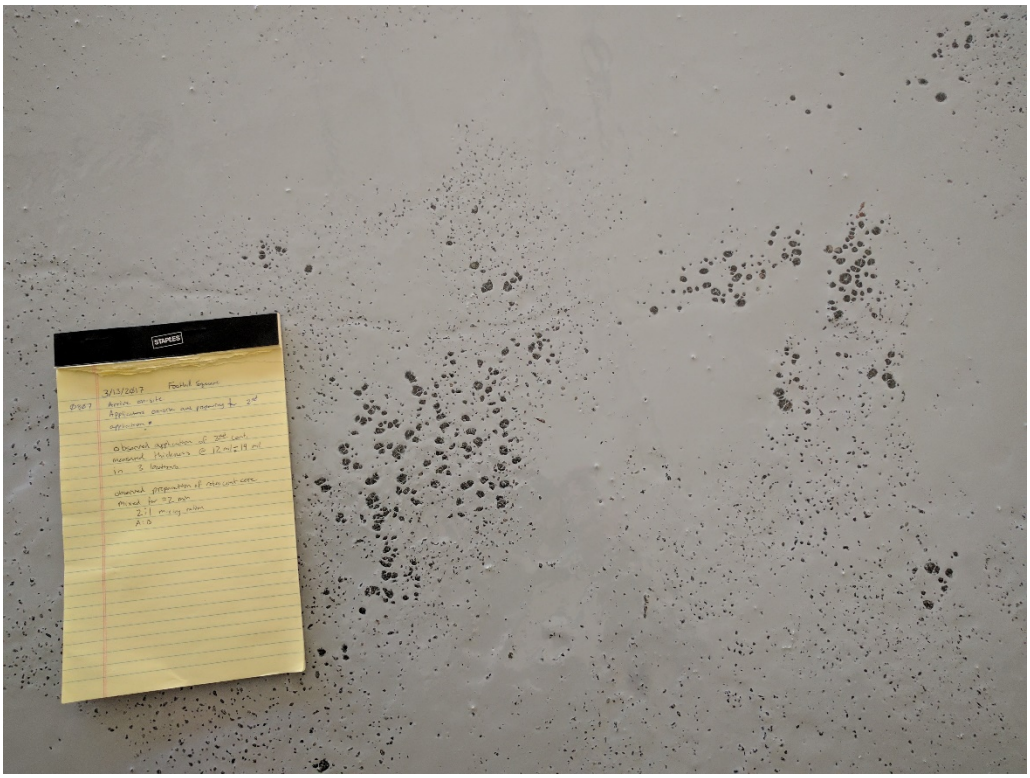
74. Cured Retro-coat Core layer 1 seal around electric and communications penetrations for POS podium in sales floor as in photo Nos 11, 82, and 108 (03/13/2017).

75. Cured Retro-coat Core seal around toilet (03/13/2017)

76. Women's restroom penetration Retro-coat Core layer 1 seal (03/13/2017)

77. Representative Retro-coat Core layer 1 seal at access point

78. Representative exposed concrete aggregate in cured Retro-coat Core layer 1 (03/13/2017)



79. Representative exposed concrete aggregate in cured Retro-coat Core layer 1 (03/13/2017)

80. Representative Retro-coat Core layer 1 seal at vertical wall as in photo No 105 (03/13/2017)

81. Representative cured Retro-coat Core application layer 1 around cox-colvin sub-slab and soil vapor probe locations as in photo Nos (03/13/2017)

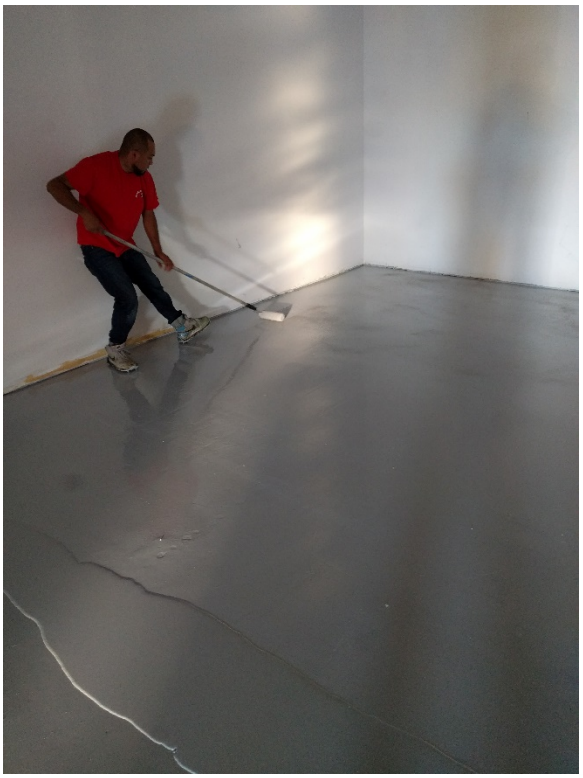
82. Representative Retro-coat Core layer 2 application using brush (03/13/2017)

83. Representative ribbon pour of Retro-coat Core layer 2 (03/13/2017)

84. Representative squeegee application of Retro-coat Core layer 2. Backrolling visible in the background (03/13/2017)

85. Squeegee application and backrolling of Retro-coat Core layer 2 to stock area (03/13/2017)

86. Representative sand addition post application of Retro-coat Core layer 2 (03/13/2017)



87. Backrolling post addition of sand aggregate to Retro-coat Core layer 2 (03/13/2017)

88. Cured and finished Retro-coat Core layer 2 with sand aggregate. Photo taken from W corner of stock room facing N as in Photo Nos 28, 42, and 62 (03/14/2017)

89. Cured and finished Retro-coat Core layer 2 with sand aggregate. Photo taken from W corner of stock room facing E as in photo 63 (03/14/2017)

90. Cured and finished Retro-coat Core layer 2 with sand aggregate. Photo taken from S corner of stock room facing W as in photo Nos 43 and 64 (03/14/2017)

91. Cured and finished Retro-coat Core layer 2 with sand aggregate. Photo taken from S corner of stock room facing NW as in photo Nos 41 and 65 (03/14/2017)

92. Cured and finished Retro-coat Core layer 2 with sand aggregate. Photo taken from N corner of stock room facing S as in photo Nos 66 (3/14/2017)

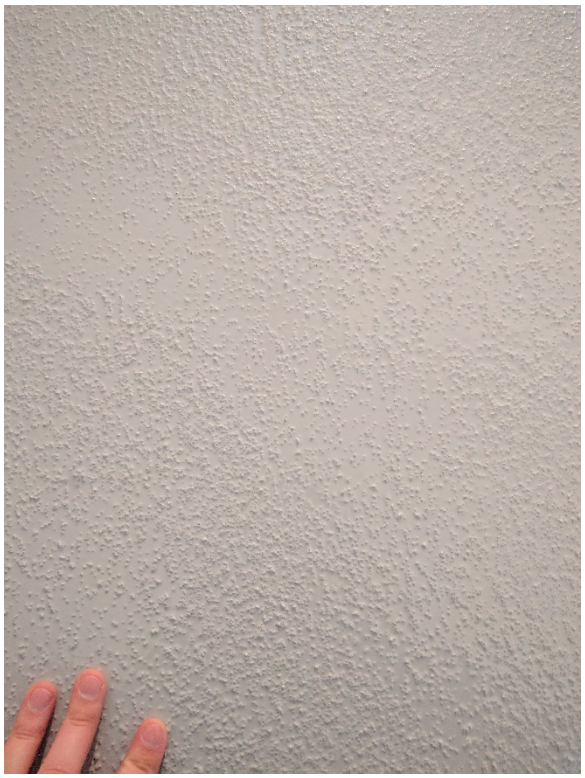
93. Cured and finished Retro-coat Core layer 2, women's restroom as in photo Nos 14, 45, and 67 (03/14/2017)

94. Cured and finished Retro-coat Core layer 2. View from E corner facing W as in photo Nos 47 and 68 (03/14/2017)

95. Cured and finished Retro-coat Core layer 2. View from W corner of sales area facing SE as in photo No 5, 32 and 69 (03/14/2017)

96. Cured and finished Retro-coat Core layer 2. View from W corner of sales area facing NE as in photo Nos 6, 33, and 70 (03/14/2017)

97. Cured and finished Retro-coat Core layer 2. View from S corner of sales are facing N as in photo Nos 4, 31, 46,



98. Representative aggregate suspended in cured and finished Retro-coat Core layer 2 (03/14/2017)

99. Close up of representative aggregate suspended in cured and finished Retro-coat Core layer 2 (03/14/2017)

100. Representative cured and finished Retro-coat Core layer 2 at vertical termination as in photo no 80 (03/14/2017)

101. Transition from sales floor (no aggregate) to stock room (aggregate) for cured and finished Retro-coat Core layer 2 (03/14/2017)

102. Representative cured and finished Retro-Coat Core layer 2 at delimiting wall on sales floor.

103. Representative seal from cured and finished Retro-coat Core layer 2 at penetration for electrical and communications lines for POS podium in sales floor as in photo Nos and 11 and 74(03/14/2017)

104. Representative cured and finished Retro-coat Core layer 2 at structural I-beam as in photo Nos 9 and 73 (03/14/2017).

105.Representative cured and finished Retro-coat Core layer 2 at interior of vapor pin (03/14/2017)

APPENDIX B

HVAC AIR BALANCE MEASUREMENTS

Work Order

Climatech Mechanical Services Inc.

1200 Krona Lane
Concord, CA 94521
925-693-0583
CA License: 1002516

3/10/2017

Reference #:	1008-436
Tech:	STEVE F

Bill To:	**Job Name:**
MacArthur Boulevard Associates	Shoe Palace
C/O Jay-Phares Corporation	10700 Mac Arthur Blvd.
10700 MacArthur Blvd	Suite 4A
Oakland, CA 94605	Oakland, CA 94605

Cust. PO:	Authorized By:	Make:	Model:	Serial:
None	John Jay	Various	Various	Various

510-562-9500

Description of Work

Service requested - Confirm space pressure in reference test plugs cored in to floor, space pressure in reference to atmosphere, unit airflows and outside air intake.

Obtained equipment data and specifications as required. Measured unit airflows via external static method and compared reading to Manufacturer's data. Outside air was measured with a thermal anemometer and space/test plug pressures were measured with a digital manometer. All duct and hood test ports were plugged with duct plugs upon completion. Findings as follows:

Sub Slab Ports in reference to space pressure:
SS-2 - .009" w.c. (water column)
SS-3 - .099" w.c.
SS-6 - .015" w.c.
SS-7 - .010" w.c.
SS-10- 012" w.c.
Note - Readings were taken with two of the unis in vent mode fan operation. When the units are in cooling or heating mode the supply/outside air flow will increase which will also increase the space pressure.

Space Pressure in reference to atmosphere:
Rear door- .0135" w.c.
Front door- .0196" w.c.
Note - Readings were taken with two of the unis in vent mode fan operation. When the units are in cooling or heating mode the supply/outside air flow will increase which will also increase the space pressure.

Rooftop unit Readings: (RTU)

	Outside Air Quantity	Total External Static Pressure	Unit airflow Quantity
RTU 1-	137	.21"w.c.	1400
RTU 2-	210	.33"w.c.	1200
RTU 3-	532	.26"w.c.	2650
RTU 4-	212	.31"w.c.	1938

Notes:
1. Equipment design specifications were not provided. All readings were taken in the "AS Found" condition with the exception of RTU 3.
2. RTU 3- The OSA damper was closed resulting in preliminary osa readings of less than 100 cfm. We made adjustments as necessary.
3. RTU 1- The filter are plugged with construction debris and were removed for testing. The blower wheel is also dirty.

Work Order

3/10/2017

Reference #:	1008-436
Tech:	STEVE F

1200 Krona Lane
Concord, CA 94521
925-693-0583
CA License: 1002516

Bill To:
MacArthur Boulevard Associates
C/O Jay-Phares Corporation
10700 MacArthur Blvd
Oakland, CA 94605

Job Name:
Shoe Palace
10700 Mac Arthur Blvd.
Suite 4A
Oakland, CA 94605

Cust. PO:	Authorized By:	Make:	Model:	Serial:
None	John Jay	Various	Various	Various

510-562-9500

Description of Work

4. The condensate drain traps are improperly piped. This could lead to water leaks into the space due to poor drainage.
5. RTU's 1, 2 & 4 Control cabinets are very dirty.
6. all units were noted to have "stacked" 1" filters installed, some of which are improperly installed. It is recommended that the proper size 2" filters be installed.
7.RTU 1 - The outside air screen mesh is deteriorated.
Customer to advise if further assistance is needed.

3/9/2017	Labor	2.0
3/10/2017	Labor	8.0
3/10/2017	Truck Charge	1.0
3/10/2017	manometer & anemometer	1.0

* THANK YOU FOR YOUR BUSINESS *
* *

Labor and materials on work order may not be inclusive.
In the event of commencement of suit to enforce payment of this order, I promise to pay such additional sum for attorney's fees and costs as the court may adjudge reasonable.

Signature _____ Date _____

APPENDIX C

LABORATORY ANALYTICAL REPORTS

ANALYTICAL REPORT

March 17, 2017

AEI Consultants - CA

Sample Delivery Group:	L896230
Samples Received:	03/16/2017
Project Number:	261829
Description:	10700 MacArthur Boulevard

Report To: Jeremy Smith/Jonathan Sanders
2500 Camino Diablo
Walnut Creek, CA 94597

Entire Report Reviewed By:

Brian Ford
Technical Service Representative

TABLE OF CONTENTS

IA-1 L896230-01 Air

Collected by: William B Hix
Collected date/time: 03/15/17 09:45
Received date/time: 03/16/17 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG961598	1	03/16/17 23:47	03/16/17 23:47	MBF

IA-2 L896230-02 Air

Collected by: William B Hix
Collected date/time: 03/15/17 09:31
Received date/time: 03/16/17 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG961598	1	03/17/17 00:32	03/17/17 00:32	MBF

IA-3 L896230-03 Air

Collected by: William B Hix
Collected date/time: 03/15/17 10:19
Received date/time: 03/16/17 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG961598	1	03/17/17 01:16	03/17/17 01:16	MBF
Volatile Organic Compounds (MS) by Method TO-15	WG961598	10	03/17/17 07:07	03/17/17 07:07	MBF

IA-4 L896230-04 Air

Collected by: William B Hix
Collected date/time: 03/15/17 09:52
Received date/time: 03/16/17 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG961598	1	03/17/17 02:09	03/17/17 02:09	MBF

IA-5 L896230-05 Air

Collected by: William B Hix
Collected date/time: 03/15/17 09:55
Received date/time: 03/16/17 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG961598	3	03/17/17 04:21	03/17/17 04:21	MBF

IA-6 L896230-06 Air

Collected by: William B Hix
Collected date/time: 03/15/17 10:00
Received date/time: 03/16/17 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG961598	1	03/17/17 02:53	03/17/17 02:53	MBF

IA-7 L896230-07 Air

Collected by: William B Hix
Collected date/time: 03/15/17 09:30
Received date/time: 03/16/17 09:00

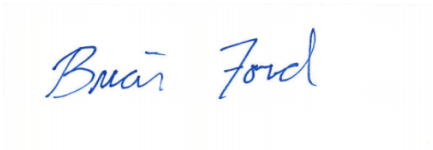
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG961598	3	03/17/17 05:05	03/17/17 05:05	MBF

AMB-1 L896230-09 Air

Collected by: William B Hix
Collected date/time: 03/15/17 10:25
Received date/time: 03/16/17 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG961598	1	03/17/17 03:38	03/17/17 03:38	MBF

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Technical Service Representative

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG961598
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	ND	ND		1	WG961598
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	ND	ND		1	WG961598
Tetrachloroethylene	127-18-4	166	0.0200	0.136	0.125	0.851		1	WG961598
Trichloroethylene	79-01-6	131	0.0200	0.107	ND	ND		1	WG961598
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	ND	ND		1	WG961598
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*121*				WG961598

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG961598
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	ND	ND		1	WG961598
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	ND	ND		1	WG961598
Tetrachloroethylene	127-18-4	166	0.0200	0.136	0.137	0.930		1	WG961598
Trichloroethylene	79-01-6	131	0.0200	0.107	ND	ND		1	WG961598
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	ND	ND		1	WG961598
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*115*				WG961598

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG961598
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	0.497	1.97		1	WG961598
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	ND	ND		1	WG961598
Tetrachloroethylene	127-18-4	166	0.200	1.36	10.2	69.2		10	WG961598
Trichloroethylene	79-01-6	131	0.0200	0.107	1.14	6.13		1	WG961598
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	ND	ND		1	WG961598
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*106*				WG961598
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*149*		J1		WG961598

Sample Narrative:

TO-15 L896230-03 WG961598: Surrogate failure due to matrix interference.

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG961598
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	ND	ND		1	WG961598
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	ND	ND		1	WG961598
Tetrachloroethylene	127-18-4	166	0.0200	0.136	0.213	1.45		1	WG961598
Trichloroethylene	79-01-6	131	0.0200	0.107	0.0305	0.163		1	WG961598
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	ND	ND		1	WG961598
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*114*				WG961598

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1-Dichloroethene	75-35-4	96.90	0.0600	0.238	ND	ND		3	WG961598
cis-1,2-Dichloroethene	156-59-2	96.90	0.0600	0.238	ND	ND		3	WG961598
trans-1,2-Dichloroethene	156-60-5	96.90	0.0600	0.238	ND	ND		3	WG961598
Tetrachloroethylene	127-18-4	166	0.0600	0.407	0.205	1.39		3	WG961598
Trichloroethylene	79-01-6	131	0.0600	0.321	ND	ND		3	WG961598
Vinyl chloride	75-01-4	62.50	0.0600	0.153	ND	ND		3	WG961598
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*111*				WG961598

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG961598
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	ND	ND		1	WG961598
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	ND	ND		1	WG961598
Tetrachloroethylene	127-18-4	166	0.0200	0.136	0.270	1.83		1	WG961598
Trichloroethylene	79-01-6	131	0.0200	0.107	0.0301	0.161		1	WG961598
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	ND	ND		1	WG961598
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*110*				WG961598

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1-Dichloroethene	75-35-4	96.90	0.0600	0.238	ND	ND		3	WG961598
cis-1,2-Dichloroethene	156-59-2	96.90	0.0600	0.238	ND	ND		3	WG961598
trans-1,2-Dichloroethene	156-60-5	96.90	0.0600	0.238	ND	ND		3	WG961598
Tetrachloroethylene	127-18-4	166	0.0600	0.407	0.185	1.26		3	WG961598
Trichloroethylene	79-01-6	131	0.0600	0.321	ND	ND		3	WG961598
Vinyl chloride	75-01-4	62.50	0.0600	0.153	ND	ND		3	WG961598
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*111*				WG961598

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1-Dichloroethene	75-35-4	96.90	0.0200	0.0793	ND	ND		1	WG961598
cis-1,2-Dichloroethene	156-59-2	96.90	0.0200	0.0793	ND	ND		1	WG961598
trans-1,2-Dichloroethene	156-60-5	96.90	0.0200	0.0793	ND	ND		1	WG961598
Tetrachloroethylene	127-18-4	166	0.0200	0.136	0.0368	0.250		1	WG961598
Trichloroethylene	79-01-6	131	0.0200	0.107	ND	ND		1	WG961598
Vinyl chloride	75-01-4	62.50	0.0200	0.0511	ND	ND		1	WG961598
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*109*				WG961598

Method Blank (MB)

(MB) R3203996-3 03/16/17 23:02

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
1,1-Dichloroethene	U		0.00521	0.0200
cis-1,2-Dichloroethene	U		0.00770	0.0200
trans-1,2-Dichloroethene	U		0.00499	0.0200
Tetrachloroethylene	U		0.00457	0.0200
Trichloroethylene	U		0.00736	0.0200
Vinyl chloride	U		0.0117	0.0200
(S) 1,4-Bromofluorobenzene	*100*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3203996-1 03/16/17 21:37 • (LCSD) R3203996-2 03/16/17 22:20

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,1-Dichloroethene	0.500	0.518	0.519	104	104	70.0-130			0.180	25
cis-1,2-Dichloroethene	0.500	0.510	0.509	102	102	70.0-130			0.220	25
trans-1,2-Dichloroethene	0.500	0.519	0.520	104	104	70.0-130			0.0400	25
Tetrachloroethylene	0.500	0.515	0.521	103	104	70.0-130			1.19	25
Trichloroethylene	0.500	0.519	0.517	104	103	70.0-130			0.280	25
Vinyl chloride	0.500	0.520	0.522	104	104	70.0-130			0.490	25
(S) 1,4-Bromofluorobenzene				*102*	*103*	*60.0-140*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1 4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

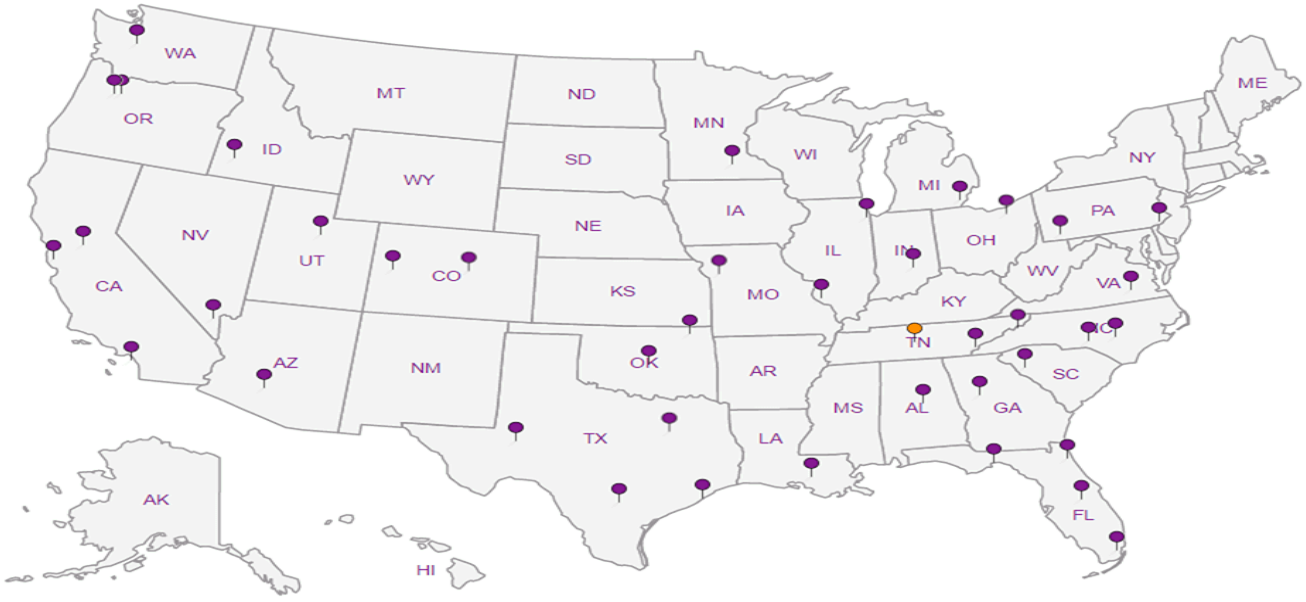
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [n/a] Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



Company Name/Address:
AEI Consultants - CA
2500 Camino Diablo
Walnut Creek, CA 94597

Billing Information:
Accounts Payable - Jeremy Smith
2500 Camino Diablo
Walnut Creek, CA 94597

Report to: Jonathan Sanders

Email To: jsanders@aeiconsultants.com/jsmith@aeiconsultants.cor

Project Description: 10700 MacArthur Boulevard

City/State Collected: Oakland, California

Phone: 925-746-6000
Fax: 925-746-6099

Client Project # 261829

Lab Project # AEICONWCCA-SANDERS

Collected by (print): William B Hall

Site/Facility ID #

P.O. # 127884

Collected by (signature):

Rush? (Lab MUST Be Notified)
X Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed: 5 DAYS FROM RECEIPT

Email? ___No ✓Yes
FAX? ✓No ___Yes

Canister Pressure/Vacuum

Analysis: CVOCs By TO-15 SIM

Chain of Custody Page ___ of ___

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YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# 196730

K218

Acctnum:
Template:
Prelogin:
TSR:
PB:
Shipped Via:

Sample ID	Sample Description	Can #	Date	Time	Initial	Final	Rem./Contaminant	Sample # (lab only)
IA-1	Shoe Palace Sales Floor	ØØ5654	3/14/17 3/15/17	0945 / 0945	29	-7.0		01
IA-2	Shoe Palace stock room	ØØ 5655		0952 0932	0931 3Ø	-8.0		02
IA-3	Supply Area	ØØ6918		0957 1019	27	-3.5		03
IA-4	Rainbow Apparel (S)	ØØ5684		1ØØ4 0952	29	-11.5		04
IA-5	Rainbow Apparel (N)	ØØ6853		1ØØ6 0955	28	-19.0		05
IA-6	Rainbow Apparel Stock Room	ØØ5623		1ØØ8 1000	24	-1.5		06
IA-7	Shoe Palace mens restroom	ØØ7313		0948 0950	>3Ø	-22.0 -20.5		07
AMB-1	Rod, Medical Supply	ØØ5491		1Ø2Ø 1025	3Ø	-5.5		08

Remarks: IA-7 had a faulty regulator

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
William B Hall	3/15/17	10:40	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature) 526 8670 3746
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier ☑ SWA

Temp: A=3 °C Bottles Received: B+8FC

Date: 3/16/17 Time: 0900

Hold #

Condition: (lab use only)

COC Seal Intact: ___Y ___N ___NA

pH Checked: NCF:

ESC LAB SCIENCES
Cooler Receipt Form

Client: AECOM/NCCA		SDG#	496230
Cooler Received/Opened On: 3/16/17	Temperature:	AMB	
Received By: Don Wright			
Signature:			

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	✓		
COC Signed / Accurate?		✓	
Bottles arrive intact?		✓	
Correct bottles used?		✓	
Sufficient volume sent?		✓	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

Matt Shacklock

ESC Lab Sciences
Non-Conformance Form

Login #896230	Client: AEICONWCCA	Date:3/16	Evaluated by:D Wright

Non-Conformance (check applicable items)

	Sample Integrity		Chain of Custody Clarification		
	Parameter(s) past holding time	x	Login Clarification Needed		**If Broken Container:**
	Improper temperature		Chain of custody is incomplete		Insufficient packing material around container
	Improper container type		Please specify Metals requested.		Insufficient packing material inside cooler
	Improper preservation		Please specify TCLP requested.		Improper handling by carrier (FedEx / UPS / Courie
	Insufficient sample volume.		Received additional samples not listed on coc.		Sample was frozen
	Sample is biphasic.		Sample ids on containers do not match ids on coc		Container lid not intact
	Vials received with headspace.		Trip Blank not received.		**If no Chain of Custody:**
	Broken container		Client did not "X" analysis.		Received by:
	Broken container:		Chain of Custody is missing		Date/Time:
	Sufficient sample remains				Temp./Cont. Rec./pH:
					Carrier:
					Tracking#

Login Comments: Received a summa without ID. The end pressure matches IA-7 which we didn't receive. Logged as IA-7

Client informed by:		Call		Email		Voice Mail		Date:	Time:
TSR Initials:bjf	Client Contact:								

Login Instructions:

IA-7=canister 007313

McCampbell Analytical, Inc.
"When Quality Counts"

Analytical Report

WorkOrder: 1703775 **Amended:** 03/17/2017

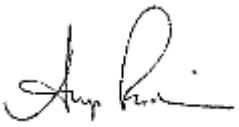
Report Created for: AEI Consultants

2500 Camino Diablo, Ste.#200
Walnut Creek, CA 94597

Project Contact: Jeremy Smith
Project P.O.: 127885
Project Name: 365948

Project Received: 03/15/2017

Analytical Report reviewed & approved for release on 03/17/2017 by:



Angela Rydelius,
Laboratory Manager

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: AEI Consultants
Project: 365948
WorkOrder: 1703775

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

Analytical Qualifiers

H	samples were analyzed out of holding time

McCampbell Analytical, Inc.
"When Quality Counts"

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1703775
Date Received:	3/15/17 16:45	**Extraction Method:**	SW5030B
Date Prepared:	3/15/17-3/16/17	**Analytical Method:**	SW8260B
Project:	365948	**Unit:**	µg/m³

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SS-1	**1703775-001A**	**Air**	**03/15/2017 14:01**	**GC16**	**135622**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	ND	H	250	1	03/16/2017 11:16
trans-1,2-Dichloroethene	ND	H	250	1	03/16/2017 11:16
Tetrachloroethene	ND	H	250	1	03/16/2017 11:16
Trichloroethene	ND	H	250	1	03/16/2017 11:16
Vinyl Chloride	ND	H	250	1	03/16/2017 11:16

Surrogates	REC (%)	Qualifiers	Limits	
Dibromofluoromethane	97	H	70-130	03/16/2017 11:16
Toluene-d8	95	H	70-130	03/16/2017 11:16
4-BFB	97	H	70-130	03/16/2017 11:16

Analyst(s): AK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SS-2	**1703775-002A**	**Air**	**03/15/2017 13:28**	**GC16**	**135622**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	ND	H	250	1	03/15/2017 19:29
trans-1,2-Dichloroethene	ND	H	250	1	03/15/2017 19:29
Tetrachloroethene	ND	H	250	1	03/15/2017 19:29
Trichloroethene	ND	H	250	1	03/15/2017 19:29
Vinyl Chloride	ND	H	250	1	03/15/2017 19:29

Surrogates	REC (%)	Qualifiers	Limits	
Dibromofluoromethane	98	H	70-130	03/15/2017 19:29
Toluene-d8	96	H	70-130	03/15/2017 19:29
4-BFB	92	H	70-130	03/15/2017 19:29

Analyst(s): KF

(Cont.)

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1703775
Date Received:	3/15/17 16:45	**Extraction Method:**	SW5030B
Date Prepared:	3/15/17-3/16/17	**Analytical Method:**	SW8260B
Project:	365948	**Unit:**	µg/m³

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VM-3	**1703775-003A**	**Air**	**03/15/2017 12:39**	**GC16**	**135622**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	ND	H	250	1	03/15/2017 20:09
trans-1,2-Dichloroethene	ND	H	250	1	03/15/2017 20:09
Tetrachloroethene	**14,000**	H	250	1	03/15/2017 20:09
Trichloroethene	**1700**	H	250	1	03/15/2017 20:09
Vinyl Chloride	ND	H	250	1	03/15/2017 20:09

Surrogates	REC (%)	Qualifiers	Limits	
Dibromofluoromethane	97	H	70-130	03/15/2017 20:09
Toluene-d8	96	H	70-130	03/15/2017 20:09
4-BFB	95	H	70-130	03/15/2017 20:09

Analyst(s): KF

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SS-3	**1703775-004A**	**Air**	**03/15/2017 12:46**	**GC16**	**135622**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	ND	H	250	1	03/15/2017 20:48
trans-1,2-Dichloroethene	ND	H	250	1	03/15/2017 20:48
Tetrachloroethene	**1700**	H	250	1	03/15/2017 20:48
Trichloroethene	ND	H	250	1	03/15/2017 20:48
Vinyl Chloride	ND	H	250	1	03/15/2017 20:48

Surrogates	REC (%)	Qualifiers	Limits	
Dibromofluoromethane	98	H	70-130	03/15/2017 20:48
Toluene-d8	95	H	70-130	03/15/2017 20:48
4-BFB	92	H	70-130	03/15/2017 20:48

Analyst(s): KF

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1703775
Date Received:	3/15/17 16:45	**Extraction Method:**	SW5030B
Date Prepared:	3/15/17-3/16/17	**Analytical Method:**	SW8260B
Project:	365948	**Unit:**	µg/m³

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VM-4	1703775-005A	Air	03/15/2017 11:25	GC18	135707

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	ND	H	12,000	50	03/16/2017 20:14
trans-1,2-Dichloroethene	ND	H	12,000	50	03/16/2017 20:14
Tetrachloroethene	ND	H	12,000	50	03/16/2017 20:14
Trichloroethene	**27,000**	H	12,000	50	03/16/2017 20:14
Vinyl Chloride	ND	H	12,000	50	03/16/2017 20:14

Surrogates	REC (%)	Qualifiers	Limits	
Dibromofluoromethane	106	H	70-130	03/16/2017 20:14
Toluene-d8	97	H	70-130	03/16/2017 20:14
4-BFB	92	H	70-130	03/16/2017 20:14

Analyst(s): HK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SS-4	1703775-006A	Air	03/15/2017 11:15	GC16	135707

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	ND	H	250	1	03/16/2017 16:39
trans-1,2-Dichloroethene	ND	H	250	1	03/16/2017 16:39
Tetrachloroethene	ND	H	250	1	03/16/2017 16:39
Trichloroethene	ND	H	250	1	03/16/2017 16:39
Vinyl Chloride	ND	H	250	1	03/16/2017 16:39

Surrogates	REC (%)	Qualifiers	Limits	
Dibromofluoromethane	99	H	70-130	03/16/2017 16:39
Toluene-d8	94	H	70-130	03/16/2017 16:39
4-BFB	91	H	70-130	03/16/2017 16:39

Analyst(s): AK

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1703775
Date Received:	3/15/17 16:45	**Extraction Method:**	SW5030B
Date Prepared:	3/15/17-3/16/17	**Analytical Method:**	SW8260B
Project:	365948	**Unit:**	µg/m³

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SS-5	**1703775-007A**	**Air**	**03/15/2017 14:27**	**GC16**	**135707**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	ND	H	250	1	03/16/2017 11:56
trans-1,2-Dichloroethene	ND	H	250	1	03/16/2017 11:56
Tetrachloroethene	**580**	H	250	1	03/16/2017 11:56
Trichloroethene	ND	H	250	1	03/16/2017 11:56
Vinyl Chloride	ND	H	250	1	03/16/2017 11:56

Surrogates	REC (%)	Qualifiers	Limits	
Dibromofluoromethane	98	H	70-130	03/16/2017 11:56
Toluene-d8	95	H	70-130	03/16/2017 11:56
4-BFB	92	H	70-130	03/16/2017 11:56

Analyst(s): AK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VM-6	**1703775-008A**	**Air**	**03/15/2017 13:01**	**GC10**	**135622**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	**17,000**	H	1000	4	03/16/2017 13:13
trans-1,2-Dichloroethene	**2000**	H	1000	4	03/16/2017 13:13
Tetrachloroethene	**27,000**	H	1000	4	03/16/2017 13:13
Trichloroethene	**19,000**	H	1000	4	03/16/2017 13:13
Vinyl Chloride	ND	H	1000	4	03/16/2017 13:13

Surrogates	REC (%)	Qualifiers	Limits	
Dibromofluoromethane	93	H	70-130	03/16/2017 13:13
Toluene-d8	103	H	70-130	03/16/2017 13:13
4-BFB	72	H	70-130	03/16/2017 13:13

Analyst(s): HK

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1703775
Date Received:	3/15/17 16:45	**Extraction Method:**	SW5030B
Date Prepared:	3/15/17-3/16/17	**Analytical Method:**	SW8260B
Project:	365948	**Unit:**	µg/m³

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SS-6	**1703775-009A**	**Air**	**03/15/2017 12:52**	**GC16**	**135622**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	ND	H	250	1	03/15/2017 22:07
trans-1,2-Dichloroethene	ND	H	250	1	03/15/2017 22:07
Tetrachloroethene	ND	H	250	1	03/15/2017 22:07
Trichloroethene	ND	H	250	1	03/15/2017 22:07
Vinyl Chloride	ND	H	250	1	03/15/2017 22:07

Surrogates	REC (%)	Qualifiers	Limits	
Dibromofluoromethane	98	H	70-130	03/15/2017 22:07
Toluene-d8	95	H	70-130	03/15/2017 22:07
4-BFB	92	H	70-130	03/15/2017 22:07

Analyst(s): KF

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VM-7	**1703775-010A**	**Air**	**03/15/2017 12:30**	**GC16**	**135707**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	ND	H	250	1	03/16/2017 14:40
trans-1,2-Dichloroethene	ND	H	250	1	03/16/2017 14:40
Tetrachloroethene	**56,000**	H	2500	10	03/16/2017 17:13
Trichloroethene	**7400**	H	250	1	03/16/2017 14:40
Vinyl Chloride	ND	H	250	1	03/16/2017 14:40

Surrogates	REC (%)	Qualifiers	Limits	
Dibromofluoromethane	97	H	70-130	03/16/2017 14:40
Toluene-d8	97	H	70-130	03/16/2017 14:40
4-BFB	89	H	70-130	03/16/2017 14:40

Analyst(s): AK

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1703775
Date Received:	3/15/17 16:45	**Extraction Method:**	SW5030B
Date Prepared:	3/15/17-3/16/17	**Analytical Method:**	SW8260B
Project:	365948	**Unit:**	µg/m³

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SS-7	**1703775-011A**	**Air**	**03/15/2017 12:21**	**GC16**	**135707**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	ND	H	250	1	03/16/2017 15:20
trans-1,2-Dichloroethene	ND	H	250	1	03/16/2017 15:20
Tetrachloroethene	**320**	H	250	1	03/16/2017 15:20
Trichloroethene	ND	H	250	1	03/16/2017 15:20
Vinyl Chloride	ND	H	250	1	03/16/2017 15:20

Surrogates	REC (%)	Qualifiers	Limits	
Dibromofluoromethane	99	H	70-130	03/16/2017 15:20
Toluene-d8	95	H	70-130	03/16/2017 15:20
4-BFB	91	H	70-130	03/16/2017 15:20

Analyst(s): AK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VM-8	**1703775-012A**	**Air**	**03/15/2017 12:02**	**GC16**	**135707**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	ND	H	250	1	03/16/2017 13:15
trans-1,2-Dichloroethene	ND	H	250	1	03/16/2017 13:15
Tetrachloroethene	**5800**	H	250	1	03/16/2017 13:15
Trichloroethene	**460**	H	250	1	03/16/2017 13:15
Vinyl Chloride	ND	H	250	1	03/16/2017 13:15

Surrogates	REC (%)	Qualifiers	Limits	
Dibromofluoromethane	97	H	70-130	03/16/2017 13:15
Toluene-d8	96	H	70-130	03/16/2017 13:15
4-BFB	92	H	70-130	03/16/2017 13:15

Analyst(s): AK

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1703775
Date Received:	3/15/17 16:45	**Extraction Method:**	SW5030B
Date Prepared:	3/15/17-3/16/17	**Analytical Method:**	SW8260B
Project:	365948	**Unit:**	µg/m³

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SS-8	**1703775-013A**	**Air**	**03/15/2017 11:40**	**GC16**	**135707**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	ND	H	250	1	03/16/2017 12:35
trans-1,2-Dichloroethene	ND	H	250	1	03/16/2017 12:35
Tetrachloroethene	ND	H	250	1	03/16/2017 12:35
Trichloroethene	ND	H	250	1	03/16/2017 12:35
Vinyl Chloride	ND	H	250	1	03/16/2017 12:35

Surrogates	REC (%)	Qualifiers	Limits	
Dibromofluoromethane	97	H	70-130	03/16/2017 12:35
Toluene-d8	96	H	70-130	03/16/2017 12:35
4-BFB	94	H	70-130	03/16/2017 12:35

Analyst(s): AK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VM-9	**1703775-014A**	**Air**	**03/15/2017 14:59**	**GC16**	**135707**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	**170,000**	H	12,000	50	03/16/2017 22:03
trans-1,2-Dichloroethene	**21,000**	H	12,000	50	03/16/2017 22:03
Tetrachloroethene	**340,000**	H	12,000	50	03/16/2017 22:03
Trichloroethene	**310,000**	H	12,000	50	03/16/2017 22:03
Vinyl Chloride	**39,000**	H	12,000	50	03/16/2017 22:03

Surrogates	REC (%)	Qualifiers	Limits	
Dibromofluoromethane	99	H	70-130	03/16/2017 22:03
Toluene-d8	95	H	70-130	03/16/2017 22:03
4-BFB	99	H	70-130	03/16/2017 22:03

Analyst(s): KF

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1703775
Date Received:	3/15/17 16:45	**Extraction Method:**	SW5030B
Date Prepared:	3/15/17-3/16/17	**Analytical Method:**	SW8260B
Project:	365948	**Unit:**	µg/m³

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SS-9	**1703775-015A**	**Air**	**03/15/2017 14:45**	**GC16**	**135707**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	ND	H	250	1	03/16/2017 22:44
trans-1,2-Dichloroethene	ND	H	250	1	03/16/2017 22:44
Tetrachloroethene	ND	H	250	1	03/16/2017 22:44
Trichloroethene	ND	H	250	1	03/16/2017 22:44
Vinyl Chloride	ND	H	250	1	03/16/2017 22:44

Surrogates	REC (%)	Qualifiers	Limits	
Dibromofluoromethane	99	H	70-130	03/16/2017 22:44
Toluene-d8	95	H	70-130	03/16/2017 22:44
4-BFB	94	H	70-130	03/16/2017 22:44

Analyst(s): KF

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SS-10	**1703775-016A**	**Air**	**03/15/2017 13:11**	**GC16**	**135707**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	ND	H	250	1	03/16/2017 13:59
trans-1,2-Dichloroethene	ND	H	250	1	03/16/2017 13:59
Tetrachloroethene	**430**	H	250	1	03/16/2017 13:59
Trichloroethene	ND	H	250	1	03/16/2017 13:59
Vinyl Chloride	ND	H	250	1	03/16/2017 13:59

Surrogates	REC (%)	Qualifiers	Limits	
Dibromofluoromethane	98	H	70-130	03/16/2017 13:59
Toluene-d8	96	H	70-130	03/16/2017 13:59
4-BFB	95	H	70-130	03/16/2017 13:59

Analyst(s): AK

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1703775
Date Prepared:	3/15/17	**BatchID:**	135622
Date Analyzed:	3/15/17	**Extraction Method:**	SW5030B
Instrument:	GC16	**Analytical Method:**	SW8260B
Matrix:	Air	**Unit:**	µg/m³
Project:	365948	**Sample ID:**	MB/LCS/LCSD-135622

QC Summary Report for SW8260B

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
tert-Amyl methyl ether (TAME)	ND	250	-	-	-
Benzene	ND	250	-	-	-
Bromobenzene	ND	250	-	-	-
Bromochloromethane	ND	250	-	-	-
Bromodichloromethane	ND	250	-	-	-
Bromoform	ND	250	-	-	-
Bromomethane	ND	250	-	-	-
t-Butyl alcohol (TBA)	ND	2500	-	-	-
n-Butyl benzene	ND	250	-	-	-
sec-Butyl benzene	ND	250	-	-	-
tert-Butyl benzene	ND	250	-	-	-
Carbon Disulfide	ND	250	-	-	-
Carbon Tetrachloride	ND	250	-	-	-
Chlorobenzene	ND	250	-	-	-
Chloroethane	ND	250	-	-	-
Chloroform	ND	250	-	-	-
Chloromethane	ND	250	-	-	-
2-Chlorotoluene	ND	250	-	-	-
4-Chlorotoluene	ND	250	-	-	-
Dibromochloromethane	ND	250	-	-	-
1,2-Dibromo-3-chloropropane	ND	250	-	-	-
1,2-Dibromoethane (EDB)	ND	250	-	-	-
Dibromomethane	ND	250	-	-	-
1,2-Dichlorobenzene	ND	250	-	-	-
1,3-Dichlorobenzene	ND	250	-	-	-
1,4-Dichlorobenzene	ND	250	-	-	-
Dichlorodifluoromethane	ND	250	-	-	-
1,1-Dichloroethane	ND	250	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	250	-	-	-
1,1-Dichloroethene	ND	250	-	-	-
cis-1,2-Dichloroethene	ND	250	-	-	-
trans-1,2-Dichloroethene	ND	250	-	-	-
1,2-Dichloropropane	ND	250	-	-	-
1,3-Dichloropropane	ND	250	-	-	-
2,2-Dichloropropane	ND	250	-	-	-
1,1-Dichloropropene	ND	250	-	-	-
cis-1,3-Dichloropropene	ND	250	-	-	-
trans-1,3-Dichloropropene	ND	250	-	-	-
Diisopropyl ether (DIPE)	ND	250	-	-	-

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1703775
Date Prepared:	3/15/17	**BatchID:**	135622
Date Analyzed:	3/15/17	**Extraction Method:**	SW5030B
Instrument:	GC16	**Analytical Method:**	SW8260B
Matrix:	Air	**Unit:**	µg/m³
Project:	365948	**Sample ID:**	MB/LCS/LCSD-135622

QC Summary Report for SW8260B

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
Ethylbenzene	ND	250	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	250	-	-	-
Freon 113	ND	5000	-	-	-
Hexachlorobutadiene	ND	250	-	-	-
Hexachloroethane	ND	250	-	-	-
2-Hexanone	ND	250	-	-	-
Isopropylbenzene	ND	250	-	-	-
4-Isopropyl toluene	ND	250	-	-	-
Methyl-t-butyl ether (MTBE)	ND	250	-	-	-
Methylene chloride	ND	250	-	-	-
n-Propyl benzene	ND	250	-	-	-
Styrene	ND	250	-	-	-
1,1,1,2-Tetrachloroethane	ND	250	-	-	-
1,1,2,2-Tetrachloroethane	ND	250	-	-	-
Tetrachloroethene	ND	250	-	-	-
Toluene	ND	250	-	-	-
1,2,3-Trichlorobenzene	ND	250	-	-	-
1,2,4-Trichlorobenzene	ND	250	-	-	-
1,1,1-Trichloroethane	ND	250	-	-	-
1,1,2-Trichloroethane	ND	250	-	-	-
Trichloroethene	ND	250	-	-	-
Trichlorofluoromethane	ND	250	-	-	-
1,2,3-Trichloropropane	ND	250	-	-	-
1,2,4-Trimethylbenzene	ND	250	-	-	-
1,3,5-Trimethylbenzene	ND	250	-	-	-
Vinyl Chloride	ND	250	-	-	-
Xylenes, Total	ND	250	-	-	-
Surrogate Recovery					
Dibromofluoromethane	12440		12500	100	70-130
Toluene-d8	11990		12500	96	70-130
4-BFB	1236		1250	99	70-130

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1703775
Date Prepared:	3/15/17	**BatchID:**	135622
Date Analyzed:	3/15/17	**Extraction Method:**	SW5030B
Instrument:	GC16	**Analytical Method:**	SW8260B
Matrix:	Air	**Unit:**	µg/m³
Project:	365948	**Sample ID:**	MB/LCS/LCSD-135622

QC Summary Report for SW8260B

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	4590	4650	5000	92	93	56-133	1.29	30
Benzene	5120	5180	5000	102	104	72-122	1.12	30
t-Butyl alcohol (TBA)	13,900	14,200	20000	69	71	35-121	2.28	30
Chlorobenzene	4740	4860	5000	95	97	69-112	2.41	30
1,2-Dibromoethane (EDB)	4700	4760	5000	94	95	62-117	1.25	30
1,2-Dichloroethane (1,2-DCA)	4680	4740	5000	94	95	61-126	1.16	30
1,1-Dichloroethene	4610	4670	5000	92	93	67-122	1.31	30
Diisopropyl ether (DIPE)	4980	5050	5000	100	101	61-131	1.48	30
Ethyl tert-butyl ether (ETBE)	4910	5020	5000	98	100	63-132	2.15	30
Methyl-t-butyl ether (MTBE)	5580	5640	5000	112	113	63-127	0.961	30
Toluene	4840	4960	5000	97	99	64-115	2.46	30
Trichloroethene	5020	5140	5000	100	103	66-127	2.32	30
Xylenes, Total	14,300	15,000	15000	96	100	53-131	4.35	30
Surrogate Recovery								
Dibromofluoromethane	12,400	12,300	12500	99	99	83-124	0	30
Toluene-d8	11,900	11,900	12500	95	95	80-120	0	30
4-BFB	1210	1250	1250	97	100	70-129	3.19	30

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1703775
Date Prepared:	3/16/17	**BatchID:**	135707
Date Analyzed:	3/16/17	**Extraction Method:**	SW5030B
Instrument:	GC16	**Analytical Method:**	SW8260B
Matrix:	Air	**Unit:**	µg/m³
Project:	365948	**Sample ID:**	MB/LCS/LCSD-135707

QC Summary Report for SW8260B

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
tert-Amyl methyl ether (TAME)	ND	250	-	-	-
Benzene	ND	250	-	-	-
Bromobenzene	ND	250	-	-	-
Bromochloromethane	ND	250	-	-	-
Bromodichloromethane	ND	250	-	-	-
Bromoform	ND	250	-	-	-
Bromomethane	ND	250	-	-	-
t-Butyl alcohol (TBA)	ND	2500	-	-	-
n-Butyl benzene	ND	250	-	-	-
sec-Butyl benzene	ND	250	-	-	-
tert-Butyl benzene	ND	250	-	-	-
Carbon Disulfide	ND	250	-	-	-
Carbon Tetrachloride	ND	250	-	-	-
Chlorobenzene	ND	250	-	-	-
Chloroethane	ND	250	-	-	-
Chloroform	ND	250	-	-	-
Chloromethane	ND	250	-	-	-
2-Chlorotoluene	ND	250	-	-	-
4-Chlorotoluene	ND	250	-	-	-
Dibromochloromethane	ND	250	-	-	-
1,2-Dibromo-3-chloropropane	ND	250	-	-	-
1,2-Dibromoethane (EDB)	ND	250	-	-	-
Dibromomethane	ND	250	-	-	-
1,2-Dichlorobenzene	ND	250	-	-	-
1,3-Dichlorobenzene	ND	250	-	-	-
1,4-Dichlorobenzene	ND	250	-	-	-
Dichlorodifluoromethane	ND	250	-	-	-
1,1-Dichloroethane	ND	250	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	250	-	-	-
1,1-Dichloroethene	ND	250	-	-	-
cis-1,2-Dichloroethene	ND	250	-	-	-
trans-1,2-Dichloroethene	ND	250	-	-	-
1,2-Dichloropropane	ND	250	-	-	-
1,3-Dichloropropane	ND	250	-	-	-
2,2-Dichloropropane	ND	250	-	-	-
1,1-Dichloropropene	ND	250	-	-	-
cis-1,3-Dichloropropene	ND	250	-	-	-
trans-1,3-Dichloropropene	ND	250	-	-	-
Diisopropyl ether (DIPE)	ND	250	-	-	-

(Cont.)

NELAP 4033ORELAP

QA/QC Officer

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1703775
Date Prepared:	3/16/17	**BatchID:**	135707
Date Analyzed:	3/16/17	**Extraction Method:**	SW5030B
Instrument:	GC16	**Analytical Method:**	SW8260B
Matrix:	Air	**Unit:**	µg/m³
Project:	365948	**Sample ID:**	MB/LCS/LCSD-135707

QC Summary Report for SW8260B

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
Ethylbenzene	ND	250	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	250	-	-	-
Freon 113	ND	5000	-	-	-
Hexachlorobutadiene	ND	250	-	-	-
Hexachloroethane	ND	250	-	-	-
2-Hexanone	ND	250	-	-	-
Isopropylbenzene	ND	250	-	-	-
4-Isopropyl toluene	ND	250	-	-	-
Methyl-t-butyl ether (MTBE)	ND	250	-	-	-
Methylene chloride	ND	250	-	-	-
n-Propyl benzene	ND	250	-	-	-
Styrene	ND	250	-	-	-
1,1,1,2-Tetrachloroethane	ND	250	-	-	-
1,1,2,2-Tetrachloroethane	ND	250	-	-	-
Tetrachloroethene	ND	250	-	-	-
Toluene	ND	250	-	-	-
1,2,3-Trichlorobenzene	ND	250	-	-	-
1,2,4-Trichlorobenzene	ND	250	-	-	-
1,1,1-Trichloroethane	ND	250	-	-	-
1,1,2-Trichloroethane	ND	250	-	-	-
Trichloroethene	ND	250	-	-	-
Trichlorofluoromethane	ND	250	-	-	-
1,2,3-Trichloropropane	ND	250	-	-	-
1,2,4-Trimethylbenzene	ND	250	-	-	-
1,3,5-Trimethylbenzene	ND	250	-	-	-
Vinyl Chloride	ND	250	-	-	-
Xylenes, Total	ND	250	-	-	-
Surrogate Recovery					
Dibromofluoromethane	12370		12500	99	70-130
Toluene-d8	11950		12500	96	70-130
4-BFB	1200		1250	96	70-130

(Cont.)

NELAP 4033ORELAP

QA/QC Officer

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http://www.mccampbell.com / E-mail: main@mccampbell.com

Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1703775
Date Prepared:	3/16/17	**BatchID:**	135707
Date Analyzed:	3/16/17	**Extraction Method:**	SW5030B
Instrument:	GC16	**Analytical Method:**	SW8260B
Matrix:	Air	**Unit:**	µg/m³
Project:	365948	**Sample ID:**	MB/LCS/LCSD-135707

QC Summary Report for SW8260B

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	4400	4680	5000	88	94	56-133	6.00	30
Benzene	4920	5180	5000	98	104	72-122	5.10	30
t-Butyl alcohol (TBA)	13,000	13,700	20000	65	69	35-121	5.59	30
Chlorobenzene	4390	4610	5000	88	92	69-112	4.91	30
1,2-Dibromoethane (EDB)	4160	4580	5000	83	92	62-117	9.62	30
1,2-Dichloroethane (1,2-DCA)	4430	4690	5000	89	94	61-126	5.76	30
1,1-Dichloroethene	4260	4500	5000	85	90	67-122	5.70	30
Diisopropyl ether (DIPE)	4980	5240	5000	100	105	61-131	5.24	30
Ethyl tert-butyl ether (ETBE)	4780	5110	5000	96	102	63-132	6.53	30
Methyl-t-butyl ether (MTBE)	5280	5660	5000	106	113	63-127	7.07	30
Toluene	4480	4750	5000	90	95	64-115	5.81	30
Trichloroethene	4620	4900	5000	92	98	66-127	5.94	30
Xylenes, Total	13,600	14,300	15000	90	95	53-131	5.23	30
Surrogate Recovery								
Dibromofluoromethane	12,400	12,600	12500	99	100	83-124	1.43	30
Toluene-d8	11,700	11,800	12500	93	95	80-120	1.32	30
4-BFB	1180	1190	1250	95	95	70-129	0	30

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1703775 **ClientCode: AEL**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
Jeremy Smith
AEI Consultants
2500 Camino Diablo, Ste.#200
Walnut Creek, CA 94597
(925) 283-6000 FAX: (925) 944-2895

Email: jasmith@aeiconsultants.com
cc/3rd Party: jsanders@aeiconsultants.com;
PO: 127885
ProjectNo: 365948

Bill to:
Accounts Payable
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
AccountsPayable@AEIConsultants.com

Requested TATs: **1 day; 2 days;**

Date Received: **03/15/2017**
Date Logged: **03/15/2017**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below) 1	2	3	4	5	6	7	8	9	10	11	12
1703775-001	SS-1	Air	3/15/2017 14:01	☐	A											
1703775-002	SS-2	Air	3/15/2017 13:28	☐	A											
1703775-003	VM-3	Air	3/15/2017 12:39	☐	A											
1703775-004	SS-3	Air	3/15/2017 12:46	☐	A											
1703775-005	VM-4	Air	3/15/2017 11:25	☐	A											
1703775-006	SS-4	Air	3/15/2017 11:15	☐	A											
1703775-007	SS-5	Air	3/15/2017 14:27	☐	A											
1703775-008	VM-6	Air	3/15/2017 13:01	☐	A											
1703775-009	SS-6	Air	3/15/2017 12:52	☐	A											
1703775-010	VM-7	Air	3/15/2017 12:30	☐	A											
1703775-011	SS-7	Air	3/15/2017 12:21	☐	A											
1703775-012	VM-8	Air	3/15/2017 12:02	☐	A											
1703775-013	SS-8	Air	3/15/2017 11:40	☐	A											
1703775-014	VM-9	Air	3/15/2017 14:59	☐	A											
1703775-015	SS-9	Air	3/15/2017 14:45	☐	A											

Test Legend:

1	8260B_A(UG/M3)	2		3		4	
5		6		7		8	
9		10		11		12	

Prepared by: Jena Alfaro

Comments: 003,008,010 on 1 Day TAT, the remaining on 2 Day TAT

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1703775 **ClientCode: AEL**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
Jeremy Smith
AEI Consultants
2500 Camino Diablo, Ste.#200
Walnut Creek, CA 94597
(925) 283-6000 FAX: (925) 944-2895

Email: jasmith@aeiconsultants.com
cc/3rd Party: jsanders@aeiconsultants.com;
PO: 127885
ProjectNo: 365948

Bill to:
Accounts Payable
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
AccountsPayable@AEIConsultants.com

Requested TATs: **1 day; 2 days;**

Date Received: **03/15/2017**
Date Logged: **03/15/2017**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below) 1	2	3	4	5	6	7	8	9	10	11	12
1703775-016	SS-10	Air	3/15/2017 13:11	☐	A											

Test Legend:

1	8260B_A(UG/M3)	2		3		4	
5		6		7		8	
9		10		11		12	

Prepared by: Jena Alfaro

Comments: 003,008,010 on 1 Day TAT, the remaining on 2 Day TAT

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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WORK ORDER SUMMARY

Client Name: AEI CONSULTANTS **Project:** 365948 **Work Order:** 1703775
Client Contact: Jeremy Smith **QC Level:** LEVEL 2
Contact's Email: jasmith@aeiconsultants.com **Comments:** **Date Logged:** 3/15/2017

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1703775-001A	SS-1	Air	SW8260B (VOCs) <cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	Tedlar	☐	3/15/2017 14:01	2 days		☐	
1703775-002A	SS-2	Air	SW8260B (VOCs) <cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	Tedlar	☐	3/15/2017 13:28	1 day		☐	
1703775-003A	VM-3	Air	SW8260B (VOCs) <cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	Tedlar	☐	3/15/2017 12:39	1 day		☐	
1703775-004A	SS-3	Air	SW8260B (VOCs) <cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	Tedlar	☐	3/15/2017 12:46	1 day		☐	
1703775-005A	VM-4	Air	SW8260B (VOCs) <cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	Tedlar	☐	3/15/2017 11:25	2 days		☐	
1703775-006A	SS-4	Air	SW8260B (VOCs) <cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	Tedlar	☐	3/15/2017 11:15	2 days		☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

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WORK ORDER SUMMARY

Client Name: AEI CONSULTANTS **Project:** 365948 **Work Order:** 1703775
Client Contact: Jeremy Smith **QC Level:** LEVEL 2
Contact's Email: jasmith@aeiconsultants.com **Comments:** **Date Logged:** 3/15/2017

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1703775-007A	SS-5	Air	SW8260B (VOCs) <cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	Tedlar	☐	3/15/2017 14:27	2 days		☐	
1703775-008A	VM-6	Air	SW8260B (VOCs) <cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	Tedlar	☐	3/15/2017 13:01	1 day		☐	
1703775-009A	SS-6	Air	SW8260B (VOCs) <cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	Tedlar	☐	3/15/2017 12:52	1 day		☐	
1703775-010A	VM-7	Air	SW8260B (VOCs) <cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	Tedlar	☐	3/15/2017 12:30	1 day		☐	
1703775-011A	SS-7	Air	SW8260B (VOCs) <cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	Tedlar	☐	3/15/2017 12:21	1 day		☐	
1703775-012A	VM-8	Air	SW8260B (VOCs) <cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	Tedlar	☐	3/15/2017 12:02	2 days		☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

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http://www.mccampbell.com / E-mail: main@mccampbell.com

WORK ORDER SUMMARY

Client Name: AEI CONSULTANTS **Project:** 365948 **Work Order:** 1703775
Client Contact: Jeremy Smith **QC Level:** LEVEL 2
Contact's Email: jasmith@aeiconsultants.com **Comments:** **Date Logged:** 3/15/2017

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1703775-013A	SS-8	Air	SW8260B (VOCs) <cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	Tedlar	☐	3/15/2017 11:40	2 days		☐	
1703775-014A	VM-9	Air	SW8260B (VOCs) <cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	Tedlar	☐	3/15/2017 14:59	2 days		☐	
1703775-015A	SS-9	Air	SW8260B (VOCs) <cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	Tedlar	☐	3/15/2017 14:45	2 days		☐	
1703775-016A	SS-10	Air	SW8260B (VOCs) <cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	Tedlar	☐	3/15/2017 13:11	1 day		☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

General COC

RUSH

MAI Work Order # 1703775

McCAMPBELL ANALYTICAL, INC.

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Telephone: (877) 252-9262 / Fax: (925) 252-9269
www.mccampbell.com main@mccampbell.com

CHAIN OF CUSTODY RECORD

Turn Around Time: 1 Day Rush * | 2 Day Rush ● | 3 Day Rush | STD | Quote #
J-Flag / MDL | ESL * | Cleanup Approved | Bottle Order #
Delivery Format: GeoTracker EDF | PDF ● | EDD | Write On (DW) | EQuIS

Report To: Johnathan Sanders and Jeremy Smith — Bill To: AEI Consultants
Company: AEI Consultants
Email: jsanders@aeiconsultants.com
Alt Email: jasmith@aeiconsultants.com — Tele: (925) 746-6050
Project Name/#: 365948
Project Location: 10700 Macarthur Boulevard, Oakland — PO #127885
Sampler Signature:

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative	Analysis Requested: PCE, TCE, Cis/trans DCE, vinyl chloride by 8260B
~~VM-1~~	3/15/17			Tedlar/air		
SS-1		1401				X
SS-2 *		1328				X
~~VM-2~~						
VM-3 *		1239	1			X
SS-3 *		1246	1			X
VM-4	"	1125	1	Tedlar/air		X
SS-4		1115	1	Tedlar/air		X
~~VM-5~~						
SS-5		1427	1			X

MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.

Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
[illegible]	3/15/17	1645		3/15/17	1645

Comments / Instructions

* prioritized as 1 Day TAT

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other

Preservative Code: 1=4°C 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=ZnOAc/NaOH 7=None

Temp _____ °C Initials _____

Page 1 of 2

General COC MAI Work Order # ____________

McCAMPBELL ANALYTICAL, INC.

1534 Willow Pass Rd. Pittsburg, Ca. 94565-1701
Telephone: (877) 252-9262 / Fax: (925) 252-9269
www.mccampbell.com main@mccampbell.com

CHAIN OF CUSTODY RECORD

Turn Around Time: 1 Day Rush		2 Day Rush	●	3 Day Rush		STD		Quote #	
J-Flag / MDL		ESL		Cleanup Approved				Bottle Order #	
Delivery Format: GeoTracker EDF		PDF	●	EDD		Write On (DW)		EQuIS	

Report To: Johnathan Sanders and Jeremy Smith Bill To: AEI Consultants
Company: AEI Consultants
Email: jsanders@aeiconsultants.com
Alt Email: jasmith@aeiconsultants.com Tele: (925) 746-6050
Project Name/#: 365948
Project Location: 10700 Macarthur Boulevard, Oakland PO #127885
Sampler Signature:

Analysis Requested

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative	PCE, TCE, cis/trans DCE-, Vinyl chloride by 8260B
VM-6 *	3/15/17	1301	1	Tedlar/air	None	X
SS-6 *	↓	1252	1	↓		X
VM-7 *		1230	1			X
SS-7 *		1221	1			X
VM-8		1202	1	A		X
SS-8		1148	1	A		X
VM-9		1459	1			X
SS-9		1449	1			X
SS-10 *		1311	1			X
~~VM-10~~						

MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.

Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
[signature]	3/15/17	1645	[signature]	3/15/17	1645

Comments / Instructions

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other
Preservative Code: 1=4°C 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=ZnOAc/NaOH 7=None

Temp _____ °C Initials _____

Page 2 of 2

McCampbell Analytical, Inc.
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http://www.mccampbell.com / E-mail: main@mccampbell.com

Sample Receipt Checklist

Client Name:	**AEI Consultants**	Date and Time Received	**3/15/2017 16:45**
Project Name:	**365948**	Date Logged:	**3/15/2017**
		Received by:	Jena Alfaro
WorkOrder №:	**1703775** Matrix: Air	Logged by:	Jena Alfaro
Carrier:	Client Drop-In		

Chain of Custody (COC) Information

Chain of custody present?	Yes	☑	No	☐	
Chain of custody signed when relinquished and received?	Yes	☑	No	☐	
Chain of custody agrees with sample labels?	Yes	☑	No	☐	
Sample IDs noted by Client on COC?	Yes	☑	No	☐	
Date and Time of collection noted by Client on COC?	Yes	☑	No	☐	
Sampler's name noted on COC?	Yes	☑	No	☐	

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes	☐	No	☐	NA ☑
Shipping container/cooler in good condition?	Yes	☑	No	☐	
Samples in proper containers/bottles?	Yes	☑	No	☐	
Sample containers intact?	Yes	☑	No	☐	
Sufficient sample volume for indicated test?	Yes	☑	No	☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes	☑	No	☐	NA ☐
Sample/Temp Blank temperature		Temp:			NA ☑
Water - VOA vials have zero headspace / no bubbles?	Yes	☐	No	☐	NA ☑
Sample labels checked for correct preservation?	Yes	☑	No	☐	
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes	☐	No	☐	NA ☑
Samples Received on Ice?	Yes	☐	No	☑	

UCMR3 Samples:

Total Chlorine tested and acceptable upon receipt for EPA 522?	Yes	☐	No	☐	NA ☑
Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539?	Yes	☐	No	☐	NA ☑

Comments: